Geitus Mine Plan of Operations

San Juan County, Utah

Submitted To: Bureau of Land Management Monticello Field Office 365 North Main Street Monticello, Utah 84535

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Acronyms

ABA acid based accounting ALARA As low as reasonable achievable amsl above mean sea level AO Air Approval Order ARD acid rock drainage APE Area of Potential Effect BLM U.S. Bureau of Land Management **BMP Best Management Practice** CFM cubic feet per minute CFR Code of Federal Regulations **CR** County Road CWA Clean Water Act cy cubic yards **KML Kimmerle Mining LLC** DOT U.S. Department of Transportation DRA Development Rock Area EA Environmental Assessment EPA U.S. Environmental Protection Agency H:V Horizontal to Vertical IO Isolated Occurrence kVA kilovolt-ampere kW Kilowatt LOS Level of Service MBTA Migratory Bird Treaty Act mrem Millirem mrem/hr millirem per hour mrem/yr millirem per year

MSHA Mine Safety and Health Administration mSv millisieverts NAD North American Datum NCRP National Council on Radiation Protection and Measurements NESHAP National Emissions Standards for Hazardous Air Pollutants NHPA National Historic Preservation Act NRC Nuclear Regulatory Commission NRCS Natural Resources Conservation Service OSHA Occupational Safety and Health Administration pCi/g picocuries per gram PLS pounds live seed SCBA Self-Contained Breathing Apparatus SPCC Spill Prevention Control and Countermeasures SWCA SWCA Environmental Consultants SWPPP Storm Water Pollution Prevention TI Transport Index UAC Utah Administrative Code UDAQ Utah Division of Air Quality UDEQ Utah Department of Environmental Quality UDOGM Utah Division of Oil, Gas, and Mining UDOT Utah Department of Transportation UDWR Utah Division of Water Rights UL Underwriter Laboratories Inc. USGS United States Geological Survey **USHPO Utah State Historic Preservation Office** UTM Universal Transverse Mercator vph vehicles per hour WL Working Level WLM Working Level Month

Section 1: The Need

The United States relies upon Nuclear Power for 20% of its total electricity generation. According to the National Energy Institute Nuclear power accounts for 55% of the nation's carbon neutral energy production.

(https://www.nei.org/advantages/climate#:~:text=Nuclear%20energy%20provides%20nearly%2055%20 percent%20of%20America's%20carbon%2Dfree%20electricity. Nuclear power runs a significant portion of the US Navy including Aircraft carriers and submarines.

Because of these and other important reasons Uranium was included in President Trumps list of critical minerals. President Trump could clearly see the vital importance to our nation of producing these critical minerals domestically and so he issued Executive Order 13953 which states in part:

These critical minerals are necessary inputs for the products our military, national infrastructure, and economy depend on the most. Our country needs critical minerals to make airplanes, computers, cell phones, electricity generation and transmission systems, and advanced electronics. Though these minerals are indispensable to our country, we presently lack the capacity to produce them in processed form in the quantities we need. American producers depend on foreign countries to supply and process them....

It is the policy of the United States that relevant agencies should, as appropriate and consistent with applicable law, prioritize the expansion and protection of the domestic supply chain for minerals and the establishment of secure critical minerals supply chains, and should direct agency resources to this purpose, such that:

(i) the United States develops secure critical minerals supply chains that do not depend on resources or processing from foreign adversaries;

(ii) the United States establishes, expands, and strengthens commercially viable critical minerals mining and minerals processing capabilities; and

(iii) the United States develops globally competitive, substantial, and resilient domestic commercial supply chain capabilities for critical minerals mining and processing.

In coming years, the need for electricity is projected to increase, and America's capacity to produce these minerals will therefore need to increase. President Biden in just the first few days of his presidency has actually agreed with the former administration and issued his own Executive Order relating to this vital matter. President Biden's EO 14017of February 24, 2021 states in part:

"The United States needs resilient, diverse, and secure supply chains to ensure our economic prosperity and national security. Pandemics and other biological threats, cyber-attacks, climate shocks and extreme weather events, terrorist attacks, geopolitical and economic competition, and other conditions can reduce critical manufacturing capacity and the availability and integrity of critical goods, products, and services. Resilient American supply chains will revitalize and rebuild domestic manufacturing capacity, maintain America's competitive edge in research and development, and create well-paying jobs. They will also support small businesses, promote prosperity, advance the fight against climate change, and encourage economic growth in communities of color and economically distressed areas.

More resilient supply chains are secure and diverse — facilitating greater domestic production...

Therefore, it is the policy of my Administration to strengthen the resilience of America's supply chains....

"Critical minerals" has the meaning given to that term in Executive Order 13953 of September 30, 2020 (Addressing the Threat to the Domestic Supply Chain from Reliance on Critical Minerals from Foreign Adversaries and Supporting the Domestic Mining and Processing Industries).

Furthermore, President Joe Biden in furtherance of his policies to combat climate change has set the U.S. on a tract towards greater utilization of carbon neutral energy sources such as nuclear power, and has issued executive orders such as Executive Order 14005 of January 25, 2021 "Ensuring the Future is Made in All of America by All of America's Workers." Which states in part:

It is the policy of my Administration that the United States Government should, consistent with applicable law, use terms and conditions of Federal financial assistance awards and Federal procurements to maximize the use of goods, products, and materials produced in, and services offered in, the United States. The United States Government should, whenever possible, procure goods, products, materials, and services from sources that will help American businesses compete in strategic industries and help America's workers thrive.

At a time when our nation is deeply divided about nearly everything there is one thing both Presidential Administrations realize - that there is a need for a healthy domestic Uranium and other mineral production industry!

Kimmerle Mining LLC and the Proposed Geitus Uranium mine will help achieve the needs and goals of the United States in these important areas.

1.1 Purpose

This Geitus Mine Plan of Operations addresses proposed surface disturbance on federal lands administered by the U.S. Bureau of Land Management (BLM). The purpose of this Plan is to facilitate: Permitting of surface facilities at the Geitus Mine Portal Area, Man Camp Area, construction of vent holes, exploration drill holes, and associated access roads to support future mining. These proposed surface disturbing activities are incident to locatable mining activities, and are located on federal lands administered by the BLM. Therefore, BLM approval of a Plan of Operations as set forth at 43 Code of Federal Regulations (CFR) 3809 is required before Kimmerle Mining LLC can commence the proposed activities.

1.2 Background

The Geitus Mine is located at the southwest edge of Deer Flat, in the central portion of the Colorado Plateau in southeastern Utah. The project is located in western San Juan County off Highway 95. The mine is accessed from Utah Highway 95 by exiting onto SR 275 at the Natural Bridges turnoff, then northwesterly approximately 1 mile. Then turning right and utilizing approximately 16 miles of existing San Juan County roads. The Burch Canyon Road county road (CR) B254 for 14 miles, and Deer Flat Corral road (CR B2881) for 3 miles. Then CR D0067 for .75 miles. Finally, .75 miles to the end of CR D 2663 at the edge of Deer Flat (and the beginning of the Geitus Mine area1), as shown in Figure 1-1.

The Geitus Mine is a previously discovered underground uranium deposit located on unpatented mining claims that are owned by Kimmerle Mining LLC. Company officers and contact information are provided in Section 2.1.

Uranium mining has occurred on Deer Flat and the surrounding areas since the 1950's, with intervening periods of decreased or increased mining activity in relation to changing economic conditions. Kimmerle Mining has designed the proposed Geitus Mine disturbance area to include portions of several historical uranium exploration areas including the access roads, planned ventilation shaft pads, exploration drill pads, and portal area access road. As such the new surface disturbance has been kept as low as possible.

1.3 Planned Mine Development

The proposed surface disturbing activities described in this Plan are based on existing exploration data and projected extensions to uranium mineralization. Projected extensions are forward-looking and subject to change based on geological findings and market conditions. Surface disturbances associated with the planned mine development will be 4.75 acres. Roughly half of that area has already been disturbed by previous Operators between the 1950's- 1990's. Without further exploration drilling and mining, KML can only predict mining activity for the next five years; however, 95,000 tons of ore production and associated surface disturbance is proposed in this plan over the next 10 years. This approach was adopted so that the maximum potential impacts of future mining could be addressed by the BLM in its review of the project. The proposed surface disturbing activities are described in Section 3.

Uranium deposits at the Geitus Mine are found in localized stratigraphic horizons that underlie the mesa and sloping rough terrain. As a result, the specific locations of future development such as mine vent holes are difficult to determine in advance, and their ultimate placement will rely on geological conditions determined primarily from underground exploration and development. Therefore, planned locations for vent holes are described generally to allow flexibility in future placement of these facilities; however, it is reasonably foreseeable that three ventilation holes will be required for ventilation in the future. This approach is necessary to maintain adequate flexibility to support the future requirements of the mining operations.

1.4 Prevention of Unnecessary or Undue Degradation

Protection of the environment is a major component of the BLM regulations for locatable mining operations, which are set forth at 43 CFR 3809. BLM regulations address requirements for protection of the environment in terms of prevention of "unnecessary or undue degradation" which is set forth at 43 CFR 3802.0-5(I).

Kimmerle Mining's proposed activities are authorized by the General Mining Law of 1872 as amended, comply with applicable environmental laws and regulations, and employ current procedures, methods and standards for mining and environmental protection. Unnecessary or undue degradation is defined in 43 CFR 3809.0 5(I) as follows:

"...impacts greater than those that will normally be expected from an activity being accomplished in compliance with current standards and regulations and based on sound practices, including use of the best reasonably available technology".

BLM also sets forth the requirements to prevent unnecessary or undue degradation (43 CFR §3809.415):

...You prevent unnecessary or undue degradation while conducting operations on public lands by— (a) Complying with § 3809.420, as applicable; the terms and conditions of your notice or approved plan of operations; and other Federal and State laws related to environmental protection and protection of cultural resources ...

In accordance with 43 CFR 3809.420, this Plan provides the required information to demonstrate that the proposed operations will not result in unnecessary and undue degradation of public lands.

1.5 Organization of the Plan

This Plan is organized to meet the general purpose described in Section 1 and to provide information required for plans of operations for locatable minerals set forth at 43 CFR Part 3809. This Plan contains the following sections:

Section 1 Introduction

Section 2 Operator Information Section 3 Geitus Mine Plan of Operations Section 4 Reclamation Plan Section 5 Monitoring Plan Section 6 Interim Management Plan Section 7 Reclamation Cost Estimate

Section 8 Operational and Baseline Environmental Information

Section 9 Period of Use/Occupancy for Surface Facilities

Section 10 References

Sections 2 through 7 provide information required by 43 CFR 3809.401(b) and 43

CFR 3809.401(d). Section 8 provides operational and baseline environmental

information in accordance with 43 CRF 3809.401(c).

Section 2 Operator Information

In accordance with 43 CFR 3809.401(b)(1), this section presents information about the operator of the Geitus Mine, the location and legal description of BLM lands affected and proposed to be affected by the mining activities, and information regarding mining claims. A list of other local, state, and federal permits required for mine operations is also provided.

2.1 Geitus Mine Operator Information

The Geitus Mine is operated by Kimmerle Mining LLC. The project claims and other assets are also held by Kimmerle Mining LLC.

Corporate:

Kimmerle Mining LLC 2056 Simpatica Ct Moab UT 84532 Date of Incorporation Apr 22, 2005 FEIN 20-2716757

Officers:

Managing Member Kyle Kimmerle 2056 Simpatica Ct Moab UT 84532

Member David Kimmerle 222South 100 East Blanding UT 84511

KML will notify the BLM of any change in operator in writing within 30 days of such a change.

2.2 Location and Legal Description

The Geitus Mine will be generally located at 37 degrees 37 minutes 41 seconds North Latitude and 110 degrees 02 minutes 23 seconds West Longitude. This mine site has been specifically selected because it is situated in a hidden cove along the western edge of Deer Flat, in western San Juan County as shown in Figure 1-1. This site has been selected because it is hidden from the view of visitors to the Natural Bridges National Monument, all but the tiniest sliver of state highway 95, as well as most of the back country. This will ensure that the visual and audible impact is as low as possible. The Geitus Mine is located in portions of the NE ¼, and SE 1/4 of Sec. 28S, T36S, R17E. The Geitus Mine access road begins in the NW ¼ Sec. 27; T36S, R17E, Salt Lake Meridian, San Juan County, Utah.





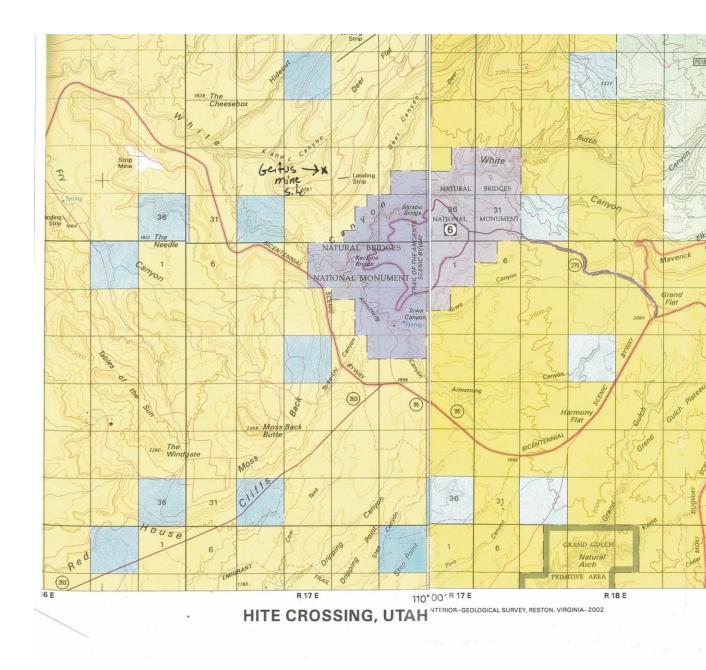


Figure 1-1 Geitus Mine Site Location Surface Ownership

2.3 Surface Ownership within Area of Operations and Mining Claim Information

The surface facilities of the Geitus Mine will be located exclusively on federal lands administered by the BLM, as shown in Figure 1-1

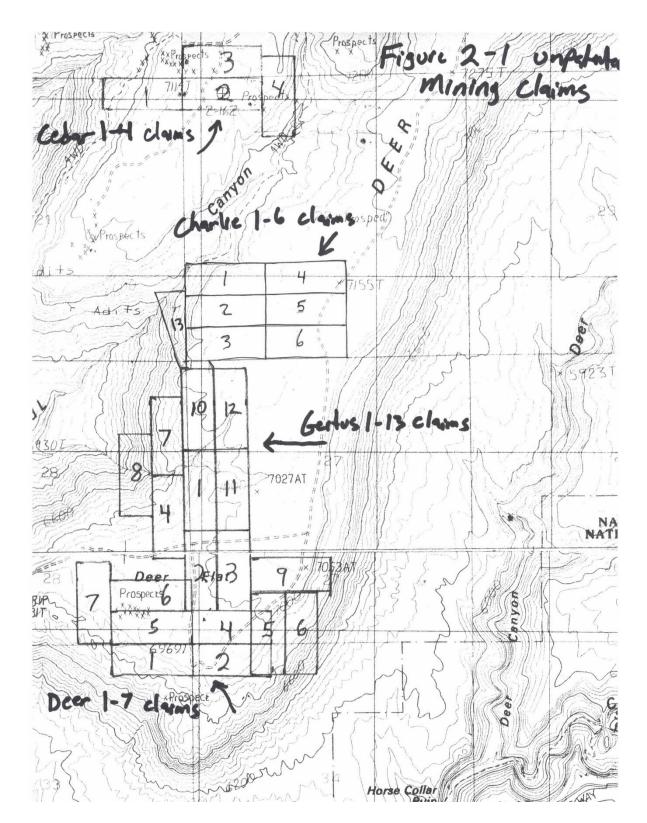


Figure 1-2 Unpatented Mining Claims in the Geitus Mine Project Area, located in San Juan County, Utah

Claim Name Charlie #1	BLM Serial No. UMC 375308	Claim Name Charlie #2	BLM Serial Number UMC 375309
Charlie #3	UMC 375310	Charlie #4	UMC 375311
Charlie #5	UMC 375312	Charlie #6	UMC 375313
Deer #1	UMC 375314	Deer #2	UMC 375315
Deer #3 Deer #5	UMC 375316 UMC 375318	Deer #4 Deer #6	UMC 375317 UMC 375319
Deer #7	UMC 375320	Deel #0	0101C 375519
Geitus #1	UMC 354040	Geitus #2	UMC 354041
Geitus #3	UMC 354042	Geitus #4	UMC 354043
Geitus #5	UMC 354044	Geitus #6	UMC 354045
Geitus #7	UMC 409599	Geitus #8	UMC 409600

Table 1-1 Unpatented Claims Owned by KML Comprising the Geitus Project

Geitus 9-13 have not yet been assigned BLM Serial Numbers (as of 4/04/2021)

Cedar 1	UMC 429369	Cedar 2	UMC 429370
Cedar 3	UMC 429371	Cedar 4	UMC 442213

There has been much contention in San Juan County about the Bears Ears National Monument. The Monument was established by President Obama by presidential proclamation on December 28, 2016. The monument's original size was 1,351,849 acres, which was reduced by 85% by President Trump on December 4, 2017. When President Obama enacted the monument, it was subject to "valid pre-existing rights" of mining claimants and other land use groups. When President Trump reduced the Monument the areas that were excluded (including the Geitus Mine Area), were reopened to mineral entry.

KML's Geitus Property Claims were located on various dates: Geitus 1-4 were located 09/02/1993, Geitus 5-6 were located 10/03/1993, Deer 1-7 were located 02/01/2005, Charlie 1-6 were located 02/05/2005, Cedar 1-3 were located 09/03/2016 all of these were before Bears Ears was established. These would unquestionably be "valid pre-existing rights".

Cedar 4 was located 09/06/2018, Geitus 9-13 were located during March of 2021- after the area was reopened for location by President Trump. As such all of the claims are valid.

Surface disturbance during Phase 1 of the project will occur on Geitus Claims 1,4, and 7

Surface Disturbance during Phases 2-3 will occur on Geitus 5,6,9, and Deer 2 and 4

Surface Disturbance during Phases 4-5 will occur on Geitus 1,10-13, and Charlie 1-6

2.4 Other Federal, State, or Local Authorizations

The following table provides a list of permits or approvals that the Geitus Mine has applied for or will apply for in order to operate The Geitus Mine:

Table 2-1

BLM Plan of Operations

Utah Division of Oil, Gas and Mining (UDOGM) /Small Mine Permit/Mine and Reclamation Plan

Building Permit San Juan County Community Development and Planning Department (Will be applied for prior to construction of any buildings).

Septic System Permit Southeast Utah Public Health Department (Will be applied for prior to installation of system).

Mine Safety and Health Administration (MSHA) Mine Registration U.S. Department of Labor (Will be applied for prior to opening the mine).

MSHA Training Plan, Escape and Evacuation Plan, and Ventilation Plan

U.S. Department of Labor (Will be applied for prior to reopening the mine).

Section 3 Proposed Geitus Mine Plan of Operations

This Plan supports future development at the Geitus Mine in accordance with KML's rights under the General Mining Law as amended. This section describes the proposed surface disturbing activities as required by 43 CFR 3809.401 and 43 CFR 3809.432:

3.1 Pre-mining disturbances

3.2 Access Road Improvement

3.3 Construction of two declines into the uranium ore body for purposes of ore haulage, mine ventilation and a secondary escape route.

3.4 Development Rock Area (DRA) (i.e., waste rock)

3.5 Construction and operation of surface facilities, which include a mine yard/portal area, office/shop area, fuel storage and dispensing area, Compressor and Generator facilities, Employee Housing (Man Camp) area, ore stockpile area, DRA, and topsoil / inert material stockpile areas.

3.6 Installation of an offsite water well, onsite cistern, septic tank, and plumbing to support surface and underground activities.

3.7 Production of up to 95,000 tons of uranium ore during ten-year period of operation.

3.8 Transportation of ore by truck on existing county and state roads for offsite processing.

3.9 Drilling of up to 40 development drill holes to further delineate the ore body.

3.10 Construction of three 6–8-foot diameter mine ventilation boreholes.

3.1 Pre-Mining Disturbances

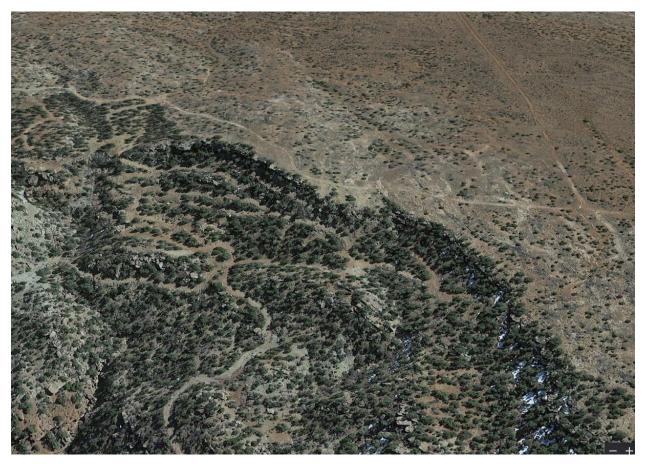


Figure 3 – Geitus Project Site Current Condition

Visible pre-mining surface disturbances at the Geitus Mine site are very extensive, and are mostly associated with historic mining and exploration operations. Most of the site that will be used for this mine has already been levelled and roads constructed. These historic disturbances include former haul roads, Exploration drilling roads and pads, portal access roads, and an airplane landing site. These pre-mining disturbances are easily visible from Google Earth Images such as those shown as figures 3, 3-1, 3-2, 3-3.

Construction, Operation, and maintenance of these facilities will occur throughout the life of the project (approximately 10 years). The facilities will be constructed in a phased manner.

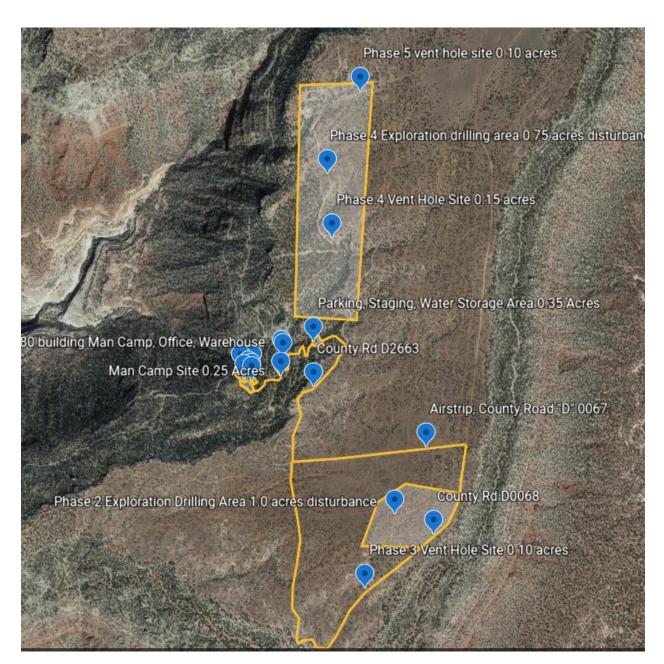


Figure 3a Geitus Proposed Surface Facilities (phases 1-5)

Phase 1 will be initial mine construction beginning at the Geitus Portal Area, the Man Camp area, the Water Well, and the Parking/staging/ and water storage areas. Phase 1 will consist of up to 3 acres of surface disturbace. Of that roughly 1.5 Acres are predisturbed areas. All pre-mining disturbed areas within the proposed boundary of surface disturbance for this Plan of Operations that are re-disturbed by KML will be reclaimed in accordance with the Reclamation Plan (see Section 4.



Figure 3- 1: Phase 1 Surface Disturbance

Phase 2-3 will be the Exploration drill holes and Ventilation shafts at the southern part of the project. These will not be needed until the or 3rd or 4th year of operations depending upon how quickly development and depletion of the ore body is accomplished.



Figure 3- 2: Phase 2-3: Surface Disturbance

Phases 4-5 will be the drill holes and ventilation shafts at the northern part of the project. These areas will not be needed until years 5-7 depending upon how quickly development and depletion of the prior phases is accomplished.

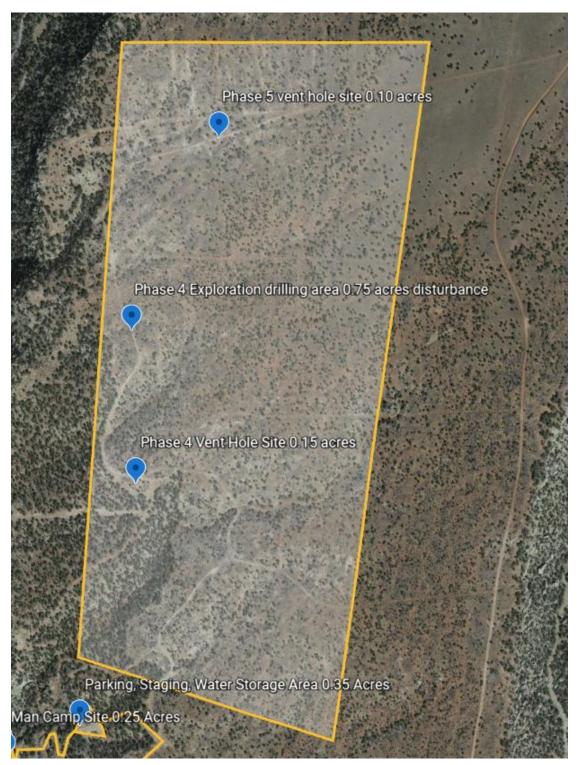


Figure 3- 3: Phase 4-5 Surface Disturbance

3.2 Access Road Improvement

The San Juan County Roads that will be used, require minor widening, drainage ditch construction, and grading. These roads will need to be brought up to a standard that will allow for safe, efficient transportation of men, materials, and haul trucks. These existing County roads will all continue to be used by members of the general public, as well as the mine personnel.

San Juan County Road D2663 ends at the top western edge of Deer Flat mesa. At this point there is an existing disturbed area large enough to turn vehicles around. This is where the Geitus mine access road begins. For safety reasons appropriate signage and a locking gate will be constructed at the narrow spot where the existing road passes through the top rim ledge. During times of mine closure this gate will remain locked. This will prevent unauthorized vehicle entry into the mine area. The mine access road will also require minor widening, drainage ditch construction, and grading. At the bottom of the hill this road forks. The left fork continues on around the side of Deer Flat, this portion will not be used. The right fork continues for 100' and terminates at the site where the upper mine portal and associated surface facilities will be constructed. This fork will also be extended downhill and to the north east for 125' to the site of the lower portal. This fork will also be extended uphill and to the south for 150' forming a circular loop back to the access road. This will facilitate the turning around and loading of the haul trucks.

3.3 Construction of the mine portals

KML will construct two new portals sometimes referred to as twin declines, with one new portal used for primary access and ore haulage and the other portal used for ventilation, and emergency escapeway. The portal structures will be constructed consistent with modern mining practices and MSHA regulations. They will be used for ventilation of, and haulage from, the planned underground mine workings to the east. In addition, they could provide entry into potential resources to the north and southern extensions of known mineralized areas, should planned development drilling discover further reserves in the vicinity.

The Upper Portal will begin at the following point:	37 Deg 37 Min 41 Sec North Latitude 110 Deg 02 Min 22 West Longitude
The Lower Portal will begin at the following point:	37 Deg 37 Min 42 Sec North Latitude 110 Deg 02 Min 22 Sec West Longitude

3.4 Development Rock Area

The area between the two portals and north of the existing Mine Access Road will be utilized as the Development Rock Area (DRA). A single medium sized DRA will be constructed by adding material beginning at the edge of the road and extending out to the north. A total DRA capacity of 45,000 cy is proposed for the Geitus Mine.

During reclamation, all angle of repose slopes will be reduced to a final reclamation slope of 3H:1V or less steep as discussed in Section 4. The full extent of the proposed DRA footprint will be utilized upon completion of reclamation activities when the slopes are reduced to the finished grade.

The DRAs will contain rock, which must be mined to reach the ore, but which does not contain sufficient mineralization to warrant mineral processing. DRAs may contain materials that are potentially deleterious or acid-forming.

3.2.4 Delineation of Ore Stockpile Areas

Based on an estimated 95,000 tons over 10 years, the total annual ore production is estimated at approximately 9,500 tons/year. This equates to an annual ore volume of approximately 4,925 cy/year (with the assumption of an ore stockpile density of 130 pounds per cubic foot to convert tonnage to cubic yards). No mineral processing will be conducted at the Geitus Mine, and therefore, ore is only present in temporary stockpiles. Ore will be typically transported from the underground workings via low-profile, end-dump haul trucks and dumped into temporary ore stockpiles. These stockpiles are located as close as reasonably possible to the portal entrances. Stockpiled ore is then loaded into over-the-road carriers for transport to an offsite processing facility. It can reasonably be assumed that not more than 3000 tons of ore would ever be stockpiled at the mine site, as hauling of the ore to offsite processing plants will be occurring concurrently with mining. Ore stockpiles may contain materials that are potentially deleterious or acid forming.

3.2.5 Topsoil stock piles:

Topsoil salvaged from the disturbed areas as a result of construction of the DRAs, ore stockpile areas, and the mine yard will be stored at the proposed topsoil stockpile area at the southern edge of the portal area. This stock pile will be used to bring the new turnaround spur up to grade with the mine access road. This is a strategic location at the uppermost end of all the mining activities. As such the topsoil will be protected from runoff from the ore stockpiles, and the DRA. Upon final reclamation this stock piled topsoil will be used to cover the disturbed area then scarified and reseeded.

3.2.6 Inert Materials

Inert materials are defined as those rocks, clays, and soils originating from a higher stratigraphic zone than the ore zone. Sources for such inert material include the declines, vent holes, road extensions, septic tank, and material excavated from the areas to be used for development rock and topsoil stockpiles. Some may be placed directly on the Geitus DRA during concurrent reclamation, the remainder will be placed in a stockpile at the Southern end of the Portal Area as shown on Figure 3-4.



Figure 3- 4: Portal Site showing proposed surface facilities



Figure 3- 5: Man Camp/Office Warehouse

3.2.7 Installation of Drainage Control Structures

KML has selected a site relatively safe from severe storm water drainage problems. The portals are located in a site that drains a small area. In fact, existing roads that have not been maintained since at least 1992 currently shoe relatively little erosion. However, areas of potential erosion include the topsoil stockpiles, the ore stockpiles, and the DRA. KML proposes to install drainage control structures around and within the proposed disturbance areas. The purpose of the drainage control structures is to manage stormwater and mitigate potential effects of erosion on water quality. Drainage control structures drainage structures designed to manage stormwater in accordance with requirements of the federal Clean Water Act (CWA) and other laws.

3.2.8 Installation of Mine Infrastructure Systems

The main surface infrastructure will be located at the Geitus Portal Area, and a few hundred feet up the road at the Man Camp / office / warehouse area. This installation will include two or three buildings. One diesel-powered 150-kilowatt (kW) generator. An emergency generator (65 kW) will be stored onsite to provide power if needed (e.g., vent hole construction, back-up power, etc.). One 600 cubic feet per minute (CFM) diesel air compressor, and one backup 375 CFM Diesel air compressor will be utilized. Compressed air is used underground to power jack-leg rock drills and other mining equipment.

Up to 3000 gallons of diesel fuel will be stored above-ground in self-contained fuel tanks. The diesel will be used to power the generators, compressors, and the underground equipment. These tanks will be designed for storage of petroleum products. The tanks will be leak tested prior to installation and will be maintained and monitored. The proposed above-ground storage tanks will either be double walled with monitoring ports, or else additional secondary containment will be provided as required under federal regulations.

A variety of underground and surface equipment will be utilized during production at the Geitus Mine. Tables 3-2 through 3-4 provide summaries of the expected equipment. The raise-bore equipment will only be on site during installation of new vent holes. The quantities and types of equipment are subject to change depending on market conditions, equipment availability, mining conditions and other factors.

Table 3-2 Mine Equipment List:

	Description	(Quantity)
Diesel Loaders	1-4 cy capacity	2-4
Underground Diesel Trucks 5-10-ton capacity		3-6
Production Drill	ls, Jacklegs	6-12
Diesel Mantrips and Utility Vehicles		1-3
Underground W	Vater Truck	1
Above ground \	Nater Truck	1
Skid Steer Load	er / forklift	1-2
Exploration Lon	g Hole/Short Hole Machine	1
Tracked Dozer		0- 1
Dump Truck		0-1
Highway Haul T	rucks	2-5
Tracked Excava	tor	0-1
Motor Grader		0-1
Generator, 150	kW	1
Generator, 65 k	W	1
Generator Singl	e Phase 12kW	1
Air Compressor	600-750 CFM	1
Portable Compr	ressor, 375CFM	1
Pick-up Trucks (4-wheel drive)	3-5
Water Tanks		1-3
Propane Tanks		2-4
Ventilation Fans	s and Associated Electrical Equip	ment 6-12
Variety of Shop	Tools and Equipment	varies
Notes		

a. Highway haul trucks are provided by a Contractor

Table 3-4 Raise Bore Equipment (onsite during Vent Hole Installation only)

Description	(Quantity)
Raise Bore machine	1
Caisson Machine	1
Skid Steer Loader	1
4 WD Pickup Trucks	3
Concrete Trucks	1
Drill Rig	1

3.2.9 Installation of Office/Shop Complex at Portal Area

Mine offices and dry room (changing and shower facility)

Maintenance shop and warehouse

Designated parking areas and storage yard

Septic Tank (including leach field)

Non-potable water holding tank

Sanitation facilities

The location and orientation of the office/shop complex is shown in Figures 3-4, 3-5. The proposed size and orientation of the surface facilities may change slightly during construction depending upon suitable building material availability, and price; as well as location and space availability. However, these surface facilities will remain within the proposed disturbed areas.

3.3 Construction of Vent Holes and Access Roads

Vent Holes and Access Roads

Adequate ventilation is required for underground mining activities. Worker health and safety at the Geitus Mine depends on the installation of vent holes, which are vertical shafts that provide for either inflow or discharge of air. A total of 3 vent holes are proposed within the future development areas shown in Figures 3-2,3-3. This area of future development is based on professional judgment, past operations, and estimated ore trends. Existing County "D" roads will be rehabilitated and used, to the extent practicable, for access to vents. The total disturbed area associated with the installation of the vent holes and construction of the access roads will result in an estimated surface disturbance of 0.5 acres. This estimate is based on an average surface disturbance of 0.10 acre per vent hole, and an allowance of 0.20 acres for associated access roads.

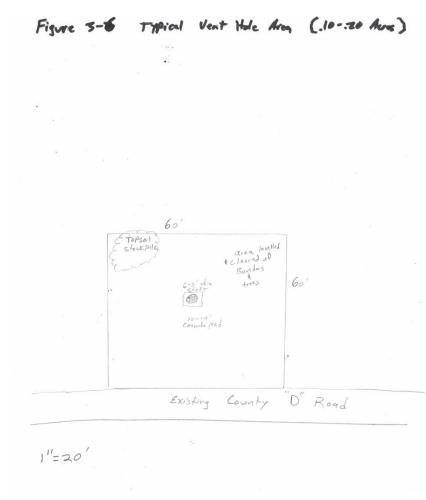
The specific location of these 3 vent holes and access roads within the area of future development, shown on Figure 3-2, 3-3, cannot be determined exactly at this time. The placement of these vent holes is uncertain and dependent on the specific location and geometry of ore delineated underground. Therefore, KML has provided general locations of these activities for review and approval by BLM. KML proposes that the specific locations for these facilities and the location of associated access roads be subject to BLM review prior to construction.

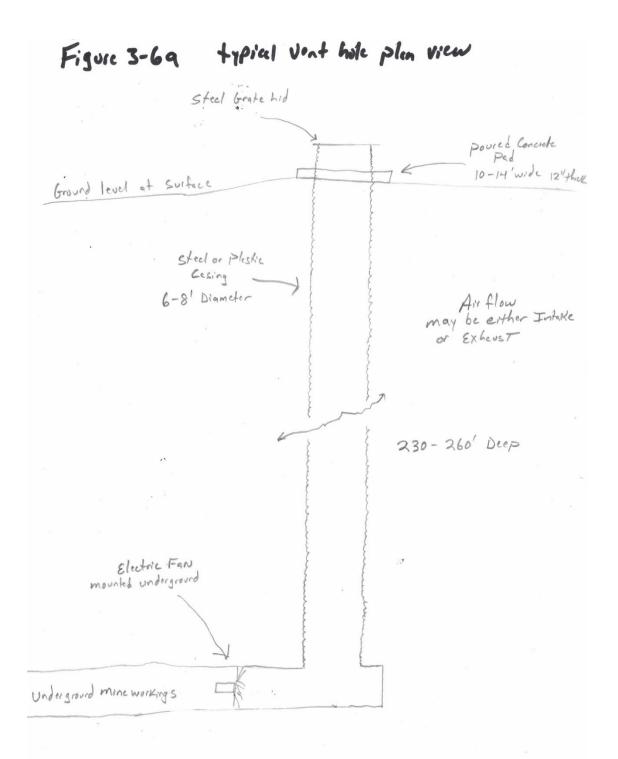
If approved, KML proposes that this requirement be included in the BLM Decision Notice as a Condition of Approval. Installation of these facilities is required to support extraction of uranium ore from the Geitus Mine, and will be conducted in accordance and compliance with applicable federal and state rules and regulations.

Installation of a vent hole requires that an access road be constructed to the site if existing road access is not present. A small-diameter pilot hole is then drilled from the surface into the mine workings. A large six to ten foot cutting head is then connected to the drill steel within the mine and used to upream the hole from the mine to the surface. The resulting cuttings that collect below in the mine workings are mucked out and hauled to the surface where they are placed in an inert stockpile for later use during reclamation.

During each drilling operation, there will typically be a 1,000 gallon portable diesel tank, one to two 55gallon drums of hydraulic oil, and several 5 gallon cans of motor oil present at the raise bore machine. These petroleum products will be stored with adequate secondary containment using Best Management Practices (BMPs). In the event of an inadvertent leak of petroleum products during drilling activities, the BLM will be contacted, and containment and clean-up activities will be conducted. Any necessary mitigation activities such as excavation of affected soil will be conducted in accordance with state and federal requirements. The proposed vent holes are expected to be six to eight feet in diameter. The surface disturbance associated with the proposed vent holes will be minimal (approximately 0.15 acre per vent hole). A steel or plastic Casing will project out of the ground 4-5'. These will be screened to prevent entry.

Fans can be placed underground in areas where workers will not be continuously working. A figure of a typical vent hole layout is included as Figure 3-6. A figure showing a completed Vent Shaft is included as Figure 3-6a. Electrical lines to power the vent fans will all be placed underground. In some instances where underground power is initially unavailable, the emergency generator may be placed on the surface next to the fan until electrical line power is established underground.





Individual vent holes may be reclaimed prior to final reclamation of the Geitus Mine if they are no longer needed for ventilation. This could occur where an area is mined out and sealed off from the main workings. However, concurrent reclamation will only be performed if these activities do not jeopardize worker health and safety (i.e., adequate ventilation and emergency escapeways have to remain in place until the mine is closed). Reclamation of vent holes will be performed as described in Section 4.

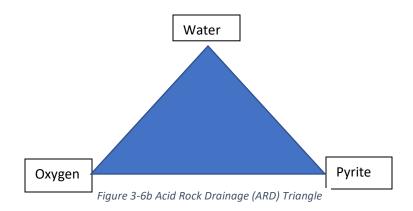
3.6 Rock Characterization and Handling Plans

The ore deposits of the Geitus Mine are hosted by an approximately 20-30-foot-thick unit of interbedded sandstone and conglomerate of the Shinarump Member of the Chinle Formation. The Shinarump Member is underlain by the Moenkopi Formation and is overlain by a nearly 270-foot-thick sequence of sedimentary mudstone and sandstone rocks of the Chinle Formation. The ore occurs within sandstone and conglomerate units of the Shinarump Member in association with fossilized wood and other organic debris. Uranium and copper minerals occur as replacement minerals within fossilized wood and other organic matter, and as disseminations spatially associated with organic matter (Thaden et al. 1964).

Mining of uranium ore at the Geitus Mine occurs entirely within the Shinarump Member, and commonly the top of the underlying Moenkopi Formation is kept in the sill (floor) of the drifts (i.e. tunnels). The stability of the overlying sandstone and siltstone units of the Chinle Formation is poor, and the back (roof) of the tunnels seldom intersects the sandstone and siltstone units unless necessary. Therefore, the ore and most development rock is mined from the Shinarump Member.

Mudstone and Sandstone units of the Chinle formation overlying the Shinarump Member will be mined during construction of ventilation shafts and the decline tunnels at the Portal Sites. The Shinarump is overlain by approximately 250 feet of non-ore-bearing siltstone and sandstone. These overlying units are not ore-bearing (Thaden et al, 1964), and are not expected to exhibit acid generating or deleterious characteristics.

Because the mineralized portions of the Shinarump Member often contain sulfide minerals including pyrite, samples of this lithology were analyzed for the potential to generate acid by the BLM (BLM 2011) as part of the approval of the Daneros Mine approximately 9 miles to the southwest. Re-examination of this data shows that 5 of the 8 samples BLM analyzed were classified as acid generating based on the acid-based accounting (ABA) data. It is expected that the Shinarump member at the Geitus mine will be similar in chemistry as at the Daneros Mine. This data suggests that mineralized portions of the Shinarump Member will have the propensity to generate acid rock drainage (ARD) if other required components of the ARD triangle are present.



The ARD triangle shows diagrammatically the components that must be present for ARD to occur. The first component is pyrite or other acid-generating sulfide minerals, which produce acidity when exposed to air and water. The second component is air, or more accurately oxygen, which supports oxidation of pyrite or other acid-generating sulfide minerals. The final component is sufficient water to cause deep percolation through a rock pile and generation of leachate in quantities that could affect surface water or groundwater quality.

The acid potential of the Shinarump Member development rock varies over short distances. Therefore, segregation of acid generating and non-acid generating development rock from the Shinarump Member during mining is likely to be difficult. Both Shinarump Member development rock and ore have potential to generate deleterious leachate if sufficient water is present to cause percolation through the rock piles. Ore has potential to generate leachate containing antimony, arsenic, nitrate, thallium and uranium, and development rock has potential to generate leachate containing arsenic, nitrate and uranium.

Ore has potential to cause direct contact risks to wildlife/livestock from copper, lead and zinc, and development rock has potential to cause direct contact risks to wildlife/livestock from copper.

3.6.1 Geochemical Characteristics of other Rock and Soil Units

Development of the Geitus Mine will affect two other rock units during construction of ventilation shafts and declines extending from the surface to the underground mine. These rock units are not expected to pose any health risks, because they are not ore-bearing and are well-described by existing US Geological Survey data (Thaden et al 1964). Rock units that will be intersected during construction of vent shafts and declines include the Chinle Monitor Butte Formation and the Mossback Member of the Chinle. The Chinle Formation is composed of interbedded clastic and sedimentary rocks including shale, siltstone, sandstone and limestone.

These rock units are composed of minerals such as quartz, feldspar, various clays, and calcite, which do not generate acid. In addition, rocks containing calcite or other carbonate minerals will provide significant neutralization potential. Therefore, the rock units that will be excavated during construction of vent shafts, declines and surface facilitates are not deleterious or acid forming. In contrast, these rock units provide a valuable source of construction materials to use during mine reclamation as part of a management strategy designed to address potential risks associated with acid forming or deleterious materials produced during mining of the Shinarump Member of the Chinle Formation.

Development of the Geitus Mine will also affect soils, which will be excavated and placed into temporary stockpiles during mine development. After mining is complete, these soils will be redistributed over mining-disturbed areas to support revegetation.

Mine Rock Radiological Characteristics

Gamma radiation is ubiquitous in the environment and results from both space radiation and terrestrial radiation caused by radioactive decay of radionuclides such as uranium, potassium and thorium that occur naturally as trace constituents in soil and rock. Gamma radiation levels associated with ore and development rock are higher than background, because of the relatively higher concentration of radium

in these materials. Radium is a decay product of uranium and is typically found in equilibrium with uranium in its native state.

The proposed rock management plan is designed to address potential adverse effects of deleterious or acid-forming material. The rock management plan addresses Shinarump Member development rock, development rock generated from non-mineralized units overlying the Shinarump Member, ore, and low grade ore.

3.6.2 ROCK MANAGEMENT PLAN:

The rock management plan includes the following components:

To the extent practicable, development rock generated from the Shinarump Member will be placed into mined out voids within the underground mine, and will not be hauled to the surface.

Development rock areas at the Geitus portal areas will be constructed in a vertically zoned design. Development rock generated from the Shinarump Member will be placed in the lower zone of the pile. These potentially acid-forming or deleterious materials will then be covered with an upper zone composed of inert materials prior to reclamation. The upper zone is designed to serve as a buffer to prevent upwards migration of products of sulfide mineral oxidation into the soil layer during evaporation and/or transpiration.

Ore will be managed within discrete stockpiles, and will be hauled offsite for mineral processing on a daily to weekly basis.

Low-grade ore (ore-bearing rock that could be economical to process in the future) will be managed in the proposed stockpile areas. If this rock has not been processed by the end of the mine life, it will be hauled back underground during reclamation.

Inert materials will consist of development rock produced from non-ore-bearing rock units overlying the Shinarump Member, which are excavated during construction of ventilation shafts, mine declines, or other mine activities. Approximately 2500 cy of inert materials are planned to be stockpiled at the Portal areas for use during mine reclamation. This inert material will be used to cover the DRA during reclamation.

Topsoil will be removed from areas to be disturbed and stockpiled at the uppermost (southern) portion of the Portal Area. Then spread across the top of the disturbed areas and reseeded with the approved seed mixture upon reclamation.

This process is more fully described in Section 4.7

3.7 Quality Assurance Plans

Quality assurance will be conducted during construction of the facilities at the Geitus Mine. This will include monitoring the extent of proposed ore stockpile areas and DRA to facilitate construction and maintenance of drainage controls and allow for future reclamation in accordance with the approved reclamation plan.

3.8 Spill Prevention Plans

The State of Utah Oil Gas and Mining Website states the following:

"What Kind of Facility is SPCC-Regulated? You must comply with EPA's SPCC requirements (40 CFR 112.1 through 112.7) if both of the following conditions describe your facility operations. The first is that you own or operate a non-transportation-related fixed facility that could reasonably be expected to discharge oil into or upon the navigable waters of the United States or adjoining shorelines. The second is that your facility has (1) an aboveground oil storage capacity of more than 660 gallons in a single container; or (2) a total aboveground oil storage capacity of more than 1,320 gallons; or (3) a total underground buried storage capacity of more than 42,000 gallons. SPCC applicability is dependent on the tanks maximum design storage volume and not "safe" operating or lesser operational volume. When determining if you are subject to SPCC requirements, consider all tanks, drums, equipment capacity, and electrical transformers. For example, a surface mine or guarry with a 20,000-gallon underground tank; ten 55- gallon drums of various oils; 15 trucks each with an oil capacity of 40 gallons; a service truck with a 150-gallon tank; and five transformers each with an 8-gallon capacity must comply because the facility would have an aboveground capacity of 1,340 gallons (550 gallons in drums, 600 gallons in equipment, 150 gallons on the service truck, and 40 gallons in the transformers). Underground mine oil capacity is considered aboveground if a spill could potentially reach the surface. Your facility may not be regulated if, due to its location, it could not reasonably be expected to discharge oil into navigable waters of the U.S. or the adjoining shorelines."

https://fs.ogm.utah.gov/pub/MINES/Coal_Related/MiscPublications/EPA_SPCC/mines.pdf

The Geitus Mine does proposed to store a combined total of 4000 gallons (3000 gallons diesel fuel, plus up to 1000 gallons of other types of oil). However, the closest navigable waters to the proposed Geitus Mine are 25 miles downstream at the head of Lake Powell. Therefore, "due to its location, it could not reasonably be expected to discharge oil into navigable waters of the US..." Therefore, the proposed Geitus Mine will be exempt from EPA's SPCC requirements.

However, KML will enact protocols and best practices to mitigate the possibility of spills including but not limited to:

Diesel fuel will be stored above-ground in self-contained fuel tanks. These tanks will be designed for storage of petroleum products. The tanks will be leak tested prior to installation and will be maintained and monitored throughout the life of the mine. The proposed above-ground storage tanks will either be double walled with monitoring ports, or else additional secondary containment will be provided as required under federal regulations. Care will be taken to ensure that spilling does not occur when refueling mobile equipment, and that if spills do occur, they will be remedied according to law as soon as possible. Fuel Storage Area Monitoring will occur as described in section 5-2. KML will perform regular external visual inspections for any oil spilled outside the tank, especially at seams, joints, and piping. Monthly and annual inspections of the facilities will be conducted when the mine is in operation. Precipitation that accumulates within the diked areas is visually inspected for oil sheen, and, if none is present, the water is allowed to evaporate or the water is removed. When the mine is on standby, fuels and other petroleum products will be removed from the site thereby eliminating the need for monthly inspections.

Mobile and Stationary Equipment will be kept in good working order and all other petroleum and other potentially damaging to the environment substances will be handled in a professional manner and according to all applicable laws.

3.9 Schedule of Mining and Operations

Typically, the Geitus Mine will operate a single 10 hour shift four to five days per week. Depending on market conditions and production rates, it is possible that these facilities could run on two or three shifts that operate from five to six days a week. Potential extended periods of nonoperation are discussed in Section 6.

3.10 Access Roads

The project is located in western San Juan County off Highway 95. The mine is accessed from Utah highway 95 by exiting onto SR 275 at the Natural Bridges turnoff, then northwesterly approximately 1 mile. Then utilizing approximately 16 miles of existing San Juan County roads: The Burch Canyon Road (CR) B254 for 14 miles. Deer Flat Corral Road (CR B2881) for 3 miles. Then CR D0067 for .75 miles. Finally, .75 miles to the end of CR D2663 at the edge of Deer Flat (and the beginning of the Geitus Mine area), as shown in Figure 1-1, and 3-7. Except during severe winters these roads are passible year-round. The County Roads that will be used, require minor widening, drainage ditch construction, and grading. The last 3 miles of these roads will need to be brought up to a standard that will allow for safe, efficient transportation of men, materials, and haul trucks. These existing County roads will all continue to be used by members of the general public, as well as mine personnel.

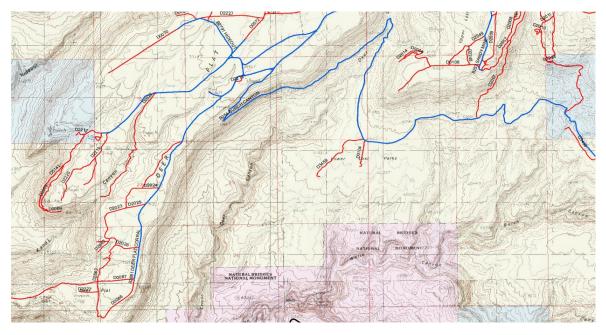


Figure 3-7 San Juan County Road System Vicinity

San Juan County Road D2663 ends at the edge of Deer Flat mesa. At this point there is an existing disturbed area large enough to turn vehicles around. This is where the Geitus mine access road begins. KML plans to utilize this exiting disturbed area as a staging, parking, and water storage area. 0.25 acres is proposed to be used for these purposes, and a reclamation bond will be posted. For safety reasons appropriate signage and a locking gate will be constructed at the narrow spot where the existing road

passes through the top rim ledge. During times of mine closure this gate will remain locked. This will prevent unauthorized vehicle entry into the mine area. The mine access road will also require minor widening, drainage ditch construction, and grading. At the bottom of the hill this road forks. The left fork continues on around the side of Deer Flat, this portion will not be used. The right fork continues for just 100' and terminates at the site where the upper mine portal and associated surface facilities will be constructed. This fork will be extended downhill and to the north east for 125' to the site of the lower portal. This fork will also be extended uphill and to the south for 125' forming a circular loop back to the access road. This will facilitate the turning around and loading of the haul trucks. These two short extensions as well as the mine access road will be reclaimed upon completion of the project.

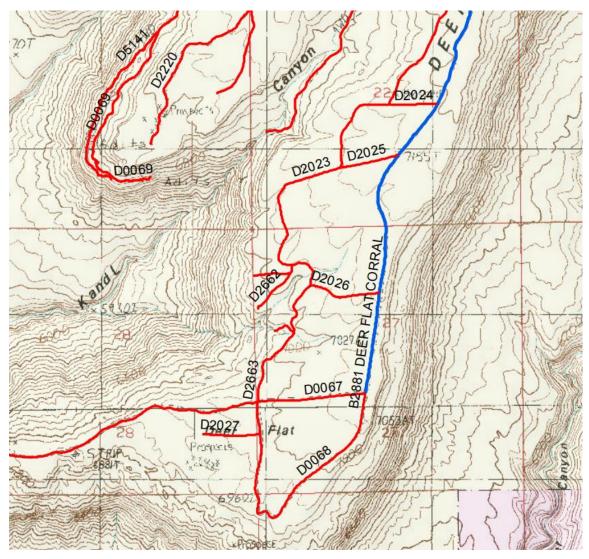


Figure 3-7a San Juan Road System in Project Area

3.11 Electrical and Water Utilities

A generator and a backup generator will be located at the Geitus Portal Area to provide power to the mine. Another much smaller single-phase generator as well as a small solar collection and storage

system will be installed at the Man Camp/Office/Warehouse. An electrical power line will be run into the mine portal entrance. Power will then be conveyed within the underground mine to provide power to the underground vent fans. Lighting at all surface facility areas and active operating areas will be downcast to the extent possible while providing for safe working conditions.

Water is necessary to support the mining operation for general uses in surface facilities and for drilling and dust suppression in the underground mine. The surface facilities utilize water for Sanitation facilities, washing equipment, and other general uses. Water is necessary in the underground workings to drill and to control dust during drilling, mining and haulage activities.

Surface water is nearly non-existent in the area of the Geitus mine, and is limited to a few stock ponds 1-4 miles upslope and north of the mine. The Mine will be located near the head of K&L Canyon which is a tributary to White Canyon which is the primary drainage channel in the region. K&L Canyon only has surface water during precipitation events. White Canyon is an ephemeral drainage that empties into the Colorado River near the top of Lake Powell approximately 25 miles downstream. White Canyon has some areas where surface water pools in narrow sandstone channels.

Ground water is also very scarce in the area of the Geitus Mine. The water wells and associated water rights within a 5-mile radius of the mine are discussed in greater detail in section 8.2.3. The Shinarump member of the Chinle occasionally holds water in small perched aquifers. A water well is planned to be drilled into this formation at a site approximately 2.5 miles to the north. Reports from drilling conducted in the 1980's indicate this to be the most likely area to encounter ground water in the vicinity. Depth to this potential target will be 250-300'. A water well permit will be obtained from the State of Utah prior to construction of this well. If water is encountered in this well it would then be fitted with a solar powered pump and holding tank. Water would then be transported to the mine in a water truck, and stored in holding tanks. It is anticipated that the mine will require 1500-3500 gallons of water per day, once in full operation.

An additional water well may need to be developed at the Portal Area by drilling to a depth of approximately 1600' into the White Rim of the Cutler Sandstone. Details regarding depth to groundwater and pumping rate at the South Portal Area are unknown at this time.

As an alternative, water may be hauled in a tanker truck to the Geitus Mine. Drinking water will initially be provided by bottled-water systems. A potable water system will be installed for bathrooms and showers, and will comply with state law. This system could be supplied by the well to the north, at the South Portal Area or by a cistern that is periodically filled with potable water obtained from an off-site source and trucked to the mine.

4.0 Reclamation Plan

The following sections describe KML's plan to reclaim disturbed areas and surface facilities in accordance with UDOGM and BLM regulations. This section conforms to the standards in 43 CFR Part 3809.420.

4.1 Drill and Vent Holes

Drill holes and vent shafts will be abandoned in accordance with UAC Rule R647-4-108. Drill Holes that encounter groundwater will be plugged by placing a 50-foot cement plug immediately above and below

the aquifer(s) or filling the hole from the bottom up with a high-grade bentonite/slurry mixture in accordance with UAC Rule R647-4-10. The very extensive exploration drilling in this area indicate that it is very unlikely that holes will encounter groundwater. Drill holes that do not encounter ground water will be filled with cuttings removed from the hole and then the top 5' of the hole plugged with concrete, and a permanent Hole ID tag affixed. Drill pads and access roads will be scarified to a depth of 18", rocks and other debris scattered to prevent unauthorized vehicle travel and reseeded with the approved seed mixture.

Vent shaft abandonment will be generally similar to drill holes but some of the details depend on if the vent was only surface cased and grouted, cased and grouted due to dry but incompetent material, or cased and grouted due to intercept with a perched aquifer.

For all vent shafts, the vent surface casing will be removed to 5.5 feet below the ground surface, and placed inside the vent shaft. Approximately 3 inches of surface soil around the vent will also be placed within the vent shaft. Gamma surveys will then be performed to identify any potential hot spots or soils exceeding the reclamation standard of 15 mrem/yr above background levels. Foam will be inserted into the vent opening as a plug. Above the foam, an 12-inch-thick reinforced concrete cap will be placed over and beyond the diameter of the vent to a width of 4 feet. The remaining depth to surface grade will be filled with soil and graded to drain away from the vent.

4.1.1 Surface Cased Vent Shaft

If the geologic formations below a vent shaft are competent, dry and do not require support during mining, the vent shaft may only be cased for the top 20 feet. Reclamation of these vent shafts will include backfilling with inert material from the mine workings to the base of the foam plug. The backfill material will create the bottom form for the foam placement.

4.1.2 Fully Cased Vent Shaft

It is anticipated that the vent shafts to be installed at the Geitus mine will need to be fully cased because the geologic formations are not sufficiently competent to remain stable over the life of the mine and could create a safety hazard for miners underground. Reclamation of these fully cased vent shafts will not include full backfill. The rest of the reclamation will follow the abandonment measures discussed above.

4.1.3 Fully Cased and Grouted Vent Shafts

It is highly unlikely, but if during vent shaft development, perched groundwater is encountered, the vent shaft will be fully cased and grouted to 50 feet above and below the water bearing zone. During closure of this type of vent shaft, the shaft will be backfilled to 50 feet below the water-bearing zone with inert material. A low-permeability seal will be placed continuously to 50 feet above the water-bearing zone. The remainder of the shaft will be backfilled to the bottom of the foam plug. The backfill will be used as the base of the foam plug. The foam plug, concrete cap and soil cover will be installed as described above.

Stockpiled topsoil from the vent shaft areas will be used during reclamation. Disturbed areas will be ripped to a minimum depth of 18" to alleviate soil compaction and broadcast seeded in the late fall using the BLM and UDOGM approved seed mix.

4.2 Regrading and Reshaping

The following subsections present KML's proposed plans for regrading and reshaping of disturbed areas.

4.2.1 Road Reclamation

Temporary roads will be used to provide access to mine facilities and vent holes. Typically, these roads will be developed by pushing aside the top layer of soil into a windrow along the edge of the roadway. Upon reclamation, the windrows along these roads will be pushed back across the roadway and the road will be ripped and seeded with the BLM and UDOGM approved seed mix. The other temporary access roads will be reclaimed by:

Re-grading any cuts and fills to re-establish approximate original ground contours and drainages

Ripping the roads to a minimum depth of 18 inches to alleviate soil compaction (if depth to bedrock allows)

Placing six inches of loose topsoil (as available) in locations where topsoil was removed (if applicable). Ideally, temporary access roads will have windrows of native soil that can be pushed back across the road. Seeding the soil with the BLM and UDOGM approved seed mix(es)

Interim reclamation will be performed on any areas of road disturbance that are created during road construction that are not needed for regular use or maintenance. This includes cut banks and slopes, drainage ditches, berms and other features adjacent to the roadway. These areas will be stabilized with erosion control measures where appropriate and seeded.

Culverts installed along the mine access road will be removed during reclamation.

4.2.2 Slope Stability and Reclamation

The slopes created by mining activities will be regraded to achieve reclaimed slopes of 3H:1V or less steep, with the exception of the mine portals which will be graded to 2H:1V slopes. Compacted areas will be ripped on contour to a depth of 12 inches (in accordance with UAC Rule R647-4-110.5 (b)). Topsoil will be placed over the regraded slopes and scarified on contour and seeded with the BLM and UDOGM approved seed mix(es). BMPs, such as silt fence, straw waddles, or haybales will be installed during reclamation to mitigate erosion until vegetation has been established.

4.2.3 Mine Portals

The mine portals will be sealed by pushing development rock 30 ft into each opening and then back filling additional material against the opening to create a 2H:1V slope. Material from the DRA in the area will be used for backfill within each of the portals. Inert material will be used to create the 2H:1V slopes. Topsoil will be placed over the final slope and seeded with the BLM and UDOGM approved seed mix upon reclamation.

4.2.4 Drainages

Most drainage channels at the Geitus mine will be reclaimed. Selected drainage channels at the Geitus Portal Area will remain in place following closure of the mine sites to minimize the amount of runoff flowing down the slopes of the reclaimed DRA and the across the mine sites.

4.2.5 Development Rock Areas

In-place reclamation of DRAs will include reduction of slopes, re-contouring, scarification of the surface to alleviate soil compaction, placement of inert rock and topsoil, and revegetation. The top of the DRAs will be re-contoured to create natural appearing surfaces. The angle of repose slopes will be graded to achieve slopes of 3H:1V or less steep.

After re-contouring is complete, compacted areas of the DRA's will be scarified with suitable equipment. Gamma surveys will be performed to identify hot spots and determine the amount of cover needed to limit gamma exposure rates to 15 mrem/hr above background, over a 14-day period. Inert material consisting of non-acid generating rock from development of vent holes and declines and subsoils will be placed over the regraded surface. Topsoil will then be placed as the final cover material. An average of 18 inches of loose inert material and topsoil will be placed over the regraded DRAs. The ratio of soil to inert material will be dependent on material availability, but the depth of topsoil will be maximized to the extent practicable. The DRAs will be seeded with the UDOGM and BLM approved seed mix(es).

KML will monitor the revegetation success and take any necessary measures to promote establishment of a self-sustaining vegetative cover until reclamation is established that meets the performance standards. BMPs will be installed to mitigate erosion until vegetation has successfully been established. Reclamation performance standards are addressed below in Section 4.9.

4.3 Final Deposition of Stockpiled Ore Materials

Any remaining ore stockpiles will be shipped offsite for processing if market conditions are favorable. If low-grade ore has not been sent to the mill by the end of the mine life, it will be hauled back underground during reclamation. Because the ore stockpiles will likely contain relatively high levels of uranium and radionuclides, the ore stockpiles will be placed underground within the mined-out areas if they are not shipped to the mill. Based on experience at other sites, the compacted soil immediately below the ore stockpile areas is expected to have radioactivity levels above background. These soils will be surveyed for radiation and any material with elevated radiation levels will be excavated and placed in the mine. Afterwards, the ore stockpile areas will be regraded, ripped, covered with soil, and seeded.

4.4 Wildlife Habitat Rehabilitation

Land uses prior to proposed mine disturbance included uranium mining, recreation, livestock grazing, and wildlife habitat. The post-mining land will be returned to recreation and wildlife land uses on a natural landscape. Seed mix(es) will be designed to reflect the species composition observed within the project area and surrounding landscape, as well as those not observed, but typically associated with the landscape, soil type, elevation, and precipitation of the resource management area.

4.5 Topsoil Handling

Topsoil analyses indicate that the topsoil at the site is suitable for revegetation. Compacted areas will be ripped on the contour to a minimum depth of 12 inches prior to placement of topsoil and growth media. Stockpiled topsoil will be placed as the final cover to the greatest extent practicable. This work will be accomplished using a dozer, front-end loader, excavator, and trucks. Based on the availability of soil and inert material, the reclamation plan calls for the placement of 18 inches of inert rock and topsoil over the DRAs and 6 inches of topsoil over the other portions of the mine's reclaimed surface area. The

ratio of topsoil to inert rock on the DRAs will vary according to the location and material availability, but topsoil and subsoil material will be given preference over inert rock cover.

Following the placement of topsoil, the surface will be roughened by scarifying the soil. Care will be taken on the DRA to limit scarification to the topsoil and not penetrate the underlying inert and potentially acid-generating development rock. A roughened soil surface exhibits lower soil loss potential, increased moisture retention, cooler surface soil temperatures, and greater seed germination.

4.6 Revegetation

The following sections describe KML's procedures to reestablish vegetation and achieve a minimum of 70 percent of the pre-mining vegetative ground cover after reclamation activities.

4.6.1 Seed Bed Preparation

To minimize surface compaction and timeliness of the initial seeding efforts in late fall, broadcast seeding will be conducted concurrent with surface scarification. Where the regraded surface allows and the post-mine topography is determined to not be too steep, a tracked-dozer with rippers and broadcast seeder (or equivalent method) will be used to seed along (parallel to) the re-contoured surface. Care will be taken to limit the depth of scarification to the upper topsoil layer.

4.6.2 Seed Mixture

The broadcast seed mix and rate, will be recommended by the Utah Division of Oil, Gas and Mining, and or BLM Personel for re-vegetation of the Geitus Mine. This Approved Seed Mix will be added to this plan and incorporated by reference herein.

All seed will be certified or source-identified seed.

4.6.4 Seeding Method

Seeding of all species will be achieved with a broadcast applicator in late fall. This will allow for the advantage of a natural cold scarification of the seeds as well as sufficient moisture at the onset of germination. A rake, flex or drag harrow, or similar method, will be used to lightly cover the seed with topsoil after broadcasting in all reclaimed areas that are accessible by mobile equipment. Hand rakes will be used to cover seed with 1/8 to 1/4-inch of soil in small or steep areas where equipment access is limited.

4.6.5 Fertilization

No fertilizers are proposed to be used in the re-seeded areas. In areas where soils historically have exhibited nutrient limitations, and reclaimed soils continue to be low in plant-available nutrient content; the use of fertilizers has resulted in the proliferation of invasive species populations.

4.6.6 Irrigation

Irrigation will not be employed at the site. KML will rely on precipitation for growth of vegetation in the reseeded areas. Growth of new vegetation will be monitored and additional actions including reseeding or weed control will be taken if adequate growth has not occurred after two growing seasons.

4.6.7 Other Revegetation Procedures

In conjunction with the reclamation activities described above, erosion control measures such as silt fence, straw wattles, and riprap will be installed in critical areas to minimize erosion. Straw mulch may also be applied in selected areas if recommended by the agencies. KML will mark areas where noxious weeds are found on the reclaimed areas and either spray or remove the weeds by hand. Weed identification and removal efforts will be documented and reported to the BLM and UDOGM.

4.7 Isolation and Control of Acid-Forming, Toxic, or Deleterious Materials

Data regarding environmental characteristics of development rock and the rock management plan designed to isolate and control potentially deleterious materials were described previously in Section 3.6 – 3.6.2 The data show that potentially deleterious materials may be produced during mining of the Shinarump Member, the host unit for uranium mineralization. The rock management plan described in Section 3.6.2 is designed to manage development rock in a manner that will support reclamation and meet environmental performance standards of 43 CFR 3809.420.

A focus of this management plan is construction of a zoned DRA designed to protect surface soil resources and facilitate establishment of a diverse and self-sustaining vegetative cover. Construction of the zoned backfill at the Geitus portal site will occur concurrently with mining. The lower zone of the DRA will contain rock from the Shinarump Member, which may contain pyrite and trace concentrations of other metals and radionuclides. Once the capacity of the DRA is reached, or mining is discontinued, the rock piles will be re-graded to a 3H:1V slope and rock mined from the overlying non-mineralized sedimentary rocks, or other stockpiled inert material will be placed, forming the upper zone of the DRA. Stockpiled soil will then be placed over the upper zone, and will be revegetated as described in Section 4.6.

No federal or State of Utah radiological standards exist for reclamation of the DRAs at uranium mine sites. The Nuclear Regulatory Commission (NRC) has specifically excluded natural ores from regulation under the Atomic Energy Act (Section 6.2 of the Atomic Energy Act (42 U.S.C. 2092), and as set forth in 10 CFR 40.13(b)).

This rock management plan will mitigate adverse effects that could be caused by the Geitus Mine development rock piles and provide for reclamation success after mining is completed.

4.8 Removal or Stabilization of Buildings, Structures, and Support Facilities

No mine surface facilities will be left after reclamation of the Geitus Mine. Mobile buildings will be removed from the site. Prefabricated buildings will be disassembled and reassembled at another facility, sold, or disposed of at an off-site landfill. All scrap metal or other materials removed from the site will be surveyed for potential radiation contamination.

Solid waste meeting the definition of "inert waste" under UAC Rule R315-301-2 (e.g., concrete, blocks, brick, incidental rebar, and glass) will be broken up and buried on site. Concrete foundations and pads will be broken, using a hydraulic excavator with a concrete breaker (or equivalent) to dimensions of five feet or less. The broken concrete will be buried/covered with a minimum of three feet of soil or development rock, or alternately, it may be hauled to and disposed of within the mine underground workings prior to closing the portals.

4.9 Post-Closure Management

After reclamation is completed, post-closure monitoring and maintenance is anticipated to take 1-2 years. Success and progress of revegetation efforts are dependent on seasonal growth patterns, precipitation, and weather patterns.

Additional erosion control measures and seeding may be required during the post closure period to meet BLM and UDOGM reclamation standards. Revegetation success will be measured in accordance with UAC Rule R647-4-111 such that revegetation has achieved 70 percent of the pre-mining vegetative ground cover. In addition, the vegetation must survive three growing seasons following the last seeding. Revegetation will also be considered accomplished if the BLM and UDOGM determine that the site is stable and revegetation work has been satisfactorily completed within practical limits. This provision of the rules is especially applicable to mine sites such as the Geitus Mine where historic mining activities have decreased the amount of salvageable topsoil

In accordance with UAC Rule R647-4-113, KML will maintain a surety bond for reclamation until the BLM and UDOGM concur that reclamation is complete. KML will notify the agencies to conduct an inspection upon completion of reclamation activities. A partial release of surety may be requested in the event that substantial phases or segments of reclamation such as demolition, backfilling, regrading, and/or vegetation establishment has been successfully performed and the residual amount of retained surety is determined adequate to verify completion of reclamation. Annual assessments of reclamation progress and annual reporting will be conducted to inform BLM and UDOGM of reclamation progress.

Section 5 Monitoring Plan

The following sections discuss KML's proposed plan for monitoring the environmental effects of proposed operations at the Geitus Mine. This section conforms to 43 CFR Part 3809.401, Section (b)(4).

5.1 Surface Water and Sediment Monitoring

Erosion control for the site will be conducted in accordance with this Plan of Operations. Qualified personnel will inspect the stationary equipment and mine areas on a monthly basis, at a minimum, during active mine operations for compliance with the plans and specifications. The monthly inspections may be done at any time during the month and preferably following a precipitation event when drainage or sedimentation problems are generally more noticeable. Inspections are not required when adverse weather conditions, such as snow, make the site inaccessible.

Stormwater inspections will be performed biannually during periods of temporary closure. Biannual inspections are typically performed in late spring and fall.

All material handling areas will be inspected for evidence of, or the potential for, pollutants entering the drainage system. Erosion and sediment control systems and devices will be inspected to determine if they are working properly. Appropriate actions will be taken in response to inspections.

In addition to inspections, follow-up maintenance will occur and be adequately documented. Follow-up maintenance includes maintaining equipment, and repairing BMPs that have been damaged by mining or construction activities, stormwater runoff, and or wind erosion. Maintenance may require replacement or addition of BMPs in areas where high erosion or sedimentation is occurring.

Acid-forming or deleterious materials are unlikely to affect surface water, because areas containing these materials will be protected from excessive drainage. Drainage controls will be constructed to

contain all surface water runoff from the areas containing acid-forming or deleterious materials in sediment detention ponds for all storm events up to the design storm event (the 24-hour 10 year storm). Although an episodic storm water discharge from areas of the mine containing acid-forming or deleterious materials is possible during storm events that exceed the design storm, very large volumes of storm water from other unaffected areas would be present during these events. This water would dilute any potential discharge from the detention ponds effectively mitigating adverse effects to surface water quality. In addition, no perennial or intermittent surface water bodies are present in vicinity of the Geitus mine, and any discharge that occurred during these infrequent, very large storm events would be adversely affected.

5.2 Fuel Storage Area Monitoring

KML will perform regular external visual inspections for any oil spilled outside the tank, especially at seams, joints, and piping. Monthly and annual inspections of the facilities will be conducted when the mine is in operation. Precipitation that accumulates within the diked areas is visually inspected for oil sheen, and, if none is present, the water is allowed to evaporate or the water is removed. When the mine is on standby, fuels and other petroleum products will be removed from the site thereby eliminating the need for monthly inspections.

5.3 Wildlife Monitoring

KML has designed the operation to minimize the effects to wildlife to the extent practicable including bats, migratory birds, and bighorn sheep. KML will maintain records of on-site and transportation-related wildlife mortality and will provide this information to BLM upon request.

5.4 Noxious Weed Monitoring

Weeds and invasive species are spread by a variety of means including humans (e.g., workers, hikers and recreationalists, etc.), vehicles, construction equipment, construction and reclamation materials, livestock, and wildlife. Implementation of preventive measures to control the spread of noxious weeds and invasive plants is the most cost-effective management approach. The following preventive measures will be implemented to prevent the spread of noxious/invasive plants during construction and future operations and maintenance activities:

Prior to construction, KML and its contractors will be trained on methods for cleaning equipment, identification of problem plant species in the project area, and procedures to follow when an invasive or noxious weed is located. To assist in identification, construction personnel will be supplied with a list and pictures of noxious and invasive species that may exist within the project area.

Prior to any construction disturbance, all known noxious weed populations will be flagged so that they may be avoided.

Equipment, materials, and vehicles will be stored at specified work areas or construction yards. All personal vehicles, sanitary facilities, and staging areas will be confined to a limited number of specified weed-free locations to decrease chances of incidental disturbance and spread of noxious weeds and invasive plants.

Disturbed areas will be seeded following completion of activities to reduce the potential for the establishment and spread of noxious weeds and invasive plants. Seeding should occur as soon as possible following the disturbance activities and during the optimal seasonal time period. Only state/BLM-approved mixtures of certified "weed-free" seed will be used. All other introduced materials used for the mining activities, such as straw and fill, will also be certified weed-free.

Should problematic weed infestation areas occur on site, KML will confer with the BLM and the County regarding the appropriate control measures to be implemented.

5.5 Air Quality Monitoring

Because the operations at the Geitus Mine are so small and remote they will qualify for a small source exemption with the UDEQ, Air Quality Division (UDAQ), under rule R307-401-9.

5.6 Radiation Monitoring

The working environment, including mine safety and radiation exposure of site personnel, is regulated by the Mine Safety and Health Administration (MSHA), which will inspect the mine on a regular basis. KML is required by MSHA to monitor and control particulate and radiation exposure to workers at the mines. This program involves monitoring and control of dust, radon daughters and gamma radiation within the working areas of the mine. In addition, KML will maintain a health and safety plan for mine workers that includes ear protection, respirator policies, an evacuation plan, fire drills, stench evacuation tests, and 40- hour MSHA training.

Section 6 Interim Management Plan

This section conforms to the requirements of 43 CFR Part 3809.401, Section (b) (5). Mineral commodity markets tend to be cyclical, that is, prices rise and fall substantially over periods of years. In the uranium market for example, high prices in the late 1970s gave way to very low prices in the early 1990s, with spot prices falling below the cost of production for most mines. In 1996 spot prices recovered to the point that many mines could produce profitably, though prices soon declined again and only started to recover strongly late in 2003. Given market conditions, temporary closure may occur, as it has in the past, due to the unpredictable market. In the past, these market fluctuations have led to temporary closure and the re-opening of uranium mines in the U.S. In some instances, uranium mines were reclaimed prior to the exhaustion of recoverable resources. Interim management of the mines protects BLM lands from undue degradation during periods of non-operation. In the event that market conditions or other circumstances require a temporary closure of mine operations, KML will provide notice to the BLM in accordance with the requirements of 43 CFR Part 3802.4.7.

During non-operating periods, KML will maintain the buildings, drainage structures, roads, and other surface facilities in a safe and environmentally acceptable condition. Underground openings, gates, and buildings will be locked (or otherwise blocked) to discourage unauthorized access when mine personnel are not present.

To prevent unnecessary or undue degradation during temporary closure, the following Interim Management Plan will be followed by KML:

6.1 Measures to Stabilize Excavations and Workings

The following measures will be used to stabilize excavations and workings.

6.1.1 Mine Portals and Vent Holes

Mine portals will be gated and locked, or blocked with development rock, during periods of temporary closure. Vent shafts will be fenced and secured with locking gates. Vent holes will have metal grates (on all vents) to prevent access to them. These grates will remain in place during periods of non-operation. KML may also weld a cover over each vent during extended closure periods. The Geitus Mine will be an entirely underground mine; therefore, no trenches or pits will be excavated during mining operations, and stabilization is not required.

6.1.2 Gates and Signage

The signage and gates will remain in place and will be maintained by KML.

6.2 Measures to Isolate or Control Toxic or Deleterious Materials.

Appropriate measures will be taken to control toxic or deleterious materials in the event of short-term temporary closure of mining operations. These measures are commensurate with potential environmental risks associated with these materials. No mineral processing is conducted at the Geitus Mine. Therefore, neither mineral processing chemicals nor waste generated by mineral processing are present at the mine.

Because none of the ore body is currently exposed, the environmental characteristics of the mine rock cannot be evaluated at this time. However, the mine rock is expected to be very similar in nature as that encountered and studied by BLM as part of the environmental review conducted on the Daneros Mine. The Shinarump member does form an outcropping along all sides of Deer flat for many miles in every direction. In addition to the miles of Shinarump outcroppings there are several DRA's of historic mines in the area that could be studied for confirmation.

Because KML expects the mine development rock to be similar in nature to the Daneros Mine KML will be implementing a rock management plan which is described in Section 3.6.2 to address potential acid forming or deleterious materials. Generation of ARD is not expected due to the arid climate and the large excess of evaporation over precipitation in the project area.

Stormwater control structures associated with the DRAs will be maintained during periods of temporary closure to mitigate potential erosion of development rock. Stockpiled ore will contain elevated concentrations of uranium, copper, and other trace metals. Stockpiled ore will be removed from the mine or placed back into the mine prior to periods of temporary closure. Stockpiled low-grade ore will remain in the proposed low-grade stockpile.

Any sediments or accumulated materials present in stormwater runoff ponds will be removed and placed on DRAs prior to standby operations.

6.3 Noxious Weeds

KML will continue to manage noxious weeds at the mine site during any periods of temporary closure. If noxious weed infestations are found at the Geitus Mine, the BLM will be notified and additional weed control measures will be implemented.

6.4 Provisions for the Storage or Removal of Equipment, Supplies, and Structures

Equipment and supplies at the mine will be placed into locked buildings and within the locked and gated mine workings. No equipment and supplies will remain outside of mine buildings or outside of the workings. The locks and buildings will be monitored periodically and repaired in the event of damage due to vandalism or other causes.

6.5 Measures to Maintain the Project Area in a Safe and Clean Condition

Signage for access limitations will remain in place at the mine sites and will be maintained. When temporary closure occurs at the mine, all equipment will either be removed from the site, secured underground or placed inside locked buildings. Topsoil stockpiles will be seeded if not already stabilized and measures will be taken to ensure that the DRAs are stable and stormwater controls are functioning. In addition, earthen berms will be repaired prior to cessation and maintained as needed during the closure period. The mine offices and dry will be locked and maintained.

6.6 Plans for Monitoring Site Conditions during Periods of Non-Operation

This section meets the requirements of 43 CFR Part 3809.401(b) (4) to establish a proposed plan for monitoring at the Geitus Mine during periods of nonoperation. The mine facilities and surface structures such as buildings, portals, vent holes, roads, sediment controls structures, and fencing will, at a minimum, be monitored on a bi-annual basis during periods of temporary closure. Maintenance of facilities and stabilization structures and controls will occur at the mine site following monitoring activities and will be reported to the BLM. In addition, permits will be maintained and permit conditions will continue to be adhered to during temporary closure including environmental monitoring programs.

6.7 Schedule of Temporary Closure

As long as market conditions warrant the Geitus Mine will be operated continuously until resources are depleted. During excessive winter weather shutdown may occur until weather permits resumption of activity. If depressed uranium prices prevent profitable operation of the mine it will be closed and the Plan for periods of Non-Operation will be implemented. The mine will be reopened once the price increases sufficiently to allow for profitable operations. The BLM will be notified of any temporary closure in accordance with requirements of 43 CFR Part 3802.4.7.

Section 7 Reclamation Cost Estimate

This section conforms to 43 CFR Part 3809.401, Section (d).

7.1 Proposed Reclamation Surety for Geitus Mine.

Table 7-1			
Proposed Reclamation Surety for Geitu	us Mine		
Phase 1 total Disturbed Acres 3.0			
Equipment mobilization / demobilization		3500	
General site clean-up and removal of trash and debris		1500	
Removal/disposal of deleterious or hazardous materials		1500	
Portal Closure (two)		10000	
Cleanup and removal of structures		7000	
Demolition, removal or burial of facilities/structures		2500	
Backfilling, grading and contouring		2500	
Regrading, ripping of DRA tops and slopes		2500	
Regrading/ripping Portal Area and access roads		3000	
Soil material redistribution, scarification, and stabilization		4000	
Revegetation (preparation, seeding, etc)		2000	
	Phase 1 Total		40000
Phase 2 Disturbed Acres 1.0			
Up to 20 Drill Holes average depth 250' (\$200 / Each)		4000	
Soil material redistribution, scarification, and stabilization		3000	
Revegetation (preparation, seeding, etc)		1500	
	Phase 2 Total		8500
Phase 3 - Southern ventilation shaft	Phase 3 Total		5000
Phase 4 Disturbed Acres 1.0			
Up to 20 Drill Holes average depth 250' (\$200 / Each)		4000	
Soil material redistribution, scarification, and stabilization		3000	
Revegetation (preparation, seeding, etc)		1500	
	Phase 4 Total		8500
Phase 5 - two ventilation shafts	Phase 5 Total		10000
	Grand Total		72000

7.2 Incremental Bonding

Initial disturbance at the Geitus Mine will be limited to the Geitus Portal Area, Man Camp, Staging, Parking, and water storage area, the access road leading to it, and the surface facilities which will be constructed (Phase 1).

Expansion of this area will occur when once the mine has been operating for 2-3 years. At that time additional exploration drilling will be required to determine the extent of additional resources. If additional resources are discovered then additional ventilation holes will be required to extend the mine workings to access them. Therefore, those portions of the Plan will occur later on a phased basis.

The timing of these phases is dependent on uranium prices and other economic considerations. Therefore, KML proposes that these mine areas and vent holes be bonded on an incremental basis and that submittal of reclamation bonds for individual phases be required prior to commencement of these activities. KML proposes that this requirement be included as a Condition of Approval for this Plan of Operations.

KML requests the following condition of approval to address incremental bonding for future mine areas and ventilation shaft installation:

Prior to initiation of surface disturbance at the Geitus Portal Area and new areas at the Expansion Areas, and proposed ventilation shafts in accordance with the Geitus Mine Plan of Operations, KML shall submit a reclamation bond for the proposed activities to the Utah Division of Oil, Gas and Mining that complies with requirements of 43 CFR Part 3809.401, Section (d) and is approved in advance by the BLM and UDOGM.

The ability to use incremental bonding to address the very forward-looking plans for future surface disturbance provides UDGOM and the BLM with adequate bonding prior to any new surface disturbance while limiting KML's bonding costs to existing surface disturbances and new disturbances that will occur in the immediate future. No new disturbance or construction will commence until UDOGM and BLM have approved the bond amount. KML proposes to post the reclamation after approval of this Plan of Operations but prior to commencement of any mining operations. At that time, a bond will be posted with UDOGM for the proposed disturbance in three phases:

Phase 1 consists of construction of the Development Rock Area (DRA), the Geitus Portal area. The twin declines mine entrances, mine access road, entrance gate, mine buildings, Man Camp /office / warehouse, water well, water storage and sanitary facilities, fuel tanks, stationary equipment, an ore pad, inert material storage area, topsoil stockpiles, and drainage and sediment control features.

Phase 2 consists of the items covered in Phase 1 plus up to 20 exploration drill holes to be located in the southern exploration / expansion area.

Phase 3 If that exploration is successful an additional ventilation shaft and associated access roads.

Phase 4 consists of the items covered in Phases 1-3 plus up to 20 exploration drill holes to be located in the northern exploration / expansion area.

Phase 5 If that exploration is successful one or two additional ventilation shafts and associated access roads.

Table 7-2Surface Disturbance Area Summary

Phase 1		Area Disturbed		Total Un-reclaimed Area
Portal	Area	1.	.75 Acres	
Mine	Access Road	0.	.40 Acres	
Man (Camp, Office, Warehouse	0.	.25 Acres	
Parkir	g Lot, Staging, Water Storage	0.	.25 Acres	
	Phase 1 Total Disturbance Area	2.	.65 Acres	2.65 Acres
Phase 2	Up to twenty Drill Holes in South	ern Area 1.	.0 Acres	3.65 Acres
(Phase 2 will be reclaimed prior to Phase 3 commencing)		nencing)		2.65 Acres
Phase 3	One Vent Shaft in Southern Area	0.	.10 Acres	2.75 Acres
Phase 4	Up to twenty Drill Holes in Northern Area 1.		.0 Acres	4.75 Acres
(Phase 4 will b	e reclaimed prior to Phase 5 comm	nencing)		2.75 Acres
Phase 5	Up to two Vent Shafts in Northe	rn Area <u>0.</u>	.20 Acres	2.95 Acres
	Total Area Disturbed by all 5 Pha	ses 4.	.95 acres	

Section 8 Operational and Baseline Environmental Information

Operational and baseline environmental information is presented in the following sections in accordance with 43 CFR 3809.401.

8.1 Air Quality

Because it is so small and remote the Geitus Mine will qualify for a Small Source Exemption from UDAQ.

The underground working environment, including air quality, dust, and radiation exposure, is regulated by MSHA. MSHA inspects and regulates the overall safety of mining operations. KML is required by MSHA to monitor and control particulate and radiation exposure to workers at the mines. This program involves monitoring and control of dust, and radon daughters in working areas of the mine. In addition, KML maintains a health and safety plan for mine workers that includes ear protection, respirator policies, an evacuation plan, fire drills, stench evacuation tests, and 40 hour annual MSHA training.

8.2 Surface and Groundwater Resources

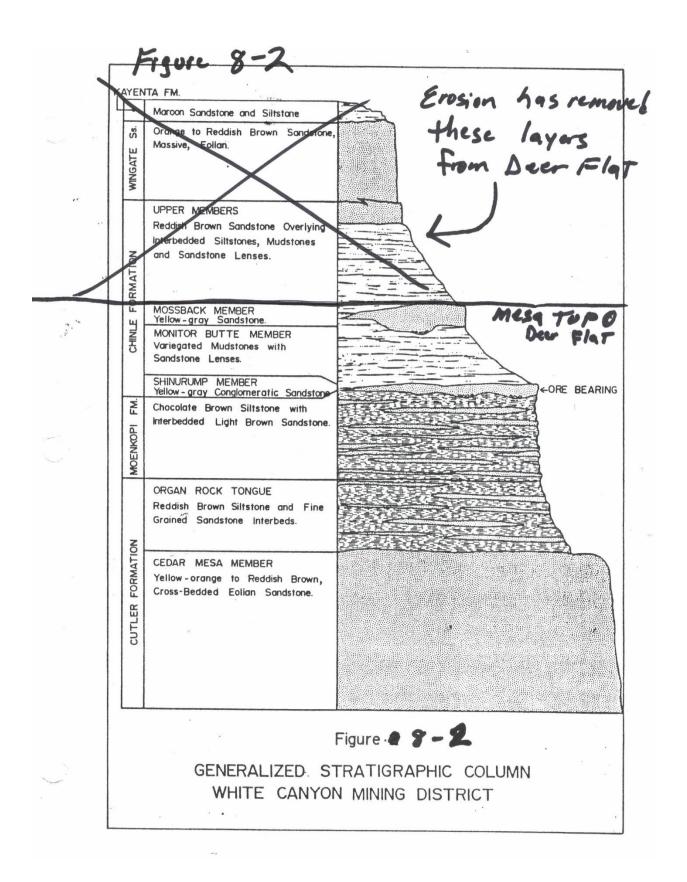
Surface Water

The Geitus mine portals will be located entirely on the southwest side of Deer Flat. The drainages in the vicinity of the mine portals flow only during significant precipitation events. No streams exist, no stream gauges exist and no historical record of flows exists for these tributaries (U.S. Geological Survey 2008). There is a stock watering well and associated tanks located on Deer Flat approximately 1.25 miles away and roughly 300' in elevation above the proposed Geitus Mine site.

8.2.2 Groundwater

The Geitus Mine is located on Deer Flat which an elevated and isolated sequence of Triassic era sedimentary rocks that were resistant to erosion. This mesa contains dominantly clastic rocks including sandstone, siltstone, and shale with local limey shale. The sedimentary sequence overlying the mine includes members of the Triassic Chinle Formation. Because of this ground water on Deer Flat is sparse and isolated in perched aquifers seasonally recharged by surface precipitation. The ore occurs within the Shinarump Member, which is the lowermost member of the Chinle Formation. Extensive exploration drilling within the vicinity of the mine indicate that the Shinarump member is void of ground water in the proposed mine area.

The lower contact of the Shinarump Member is an unconformity, which is a former erosional surface at the top of the Moenkopi Formation. The Moenkopi is underlain by the Permian Cutler Formation and other Paleozoic sedimentary rocks (Thaden et al. 1964). The White Rim of the Cutler contains the aquifer used by Natural Bridges Visitors Center. This formation would lie +/_ 1500' below the level of the Geitus Mine. A conceptual cross section of the geology is included as Figure 8-2 and Figure 1-1 shows the overall site topography and drainages. Mine operations at the Geitus mine will not come in contact with this potential source of ground water.



8-3 Operational and Baseline Environmental Information

Alluvial materials in the drainages in the Project Area are limited or absent, and groundwater flow is not associated with the drainages. Very little development of groundwater resources has been completed in the area. Lack of exploration of groundwater resources has resulted in the hydrogeologic system not being well understood and the degree of connectivity between the shallow perched and a deeper Cutler groundwater system is relatively unknown. The two aquifer systems are almost certainly hydrologically separated because the Chinle and Moenkopi Formations have low transmissivity which limits vertical movement of groundwater (Howells 1990).

8.2.3 Existing and Future Uses of Groundwater

As previously discussed, a stock water well is located 1.25 miles upslope northeasterly from the Geitus portal Area. According to the State of Utah Division of Water Rights, the well was originally developed in 1981 for mining purposes. In 2005 this water right was converted to be used for livestock watering purposes. These water rights are assigned number (99-62) and are owned by Sandy, Gail, and Preston Johnson, local ranchers.

The Natural Bridges National Monument Visitors Center is located approximately 3.5 miles east from the Geitus mine area. There are three water wells on file with the Utah Division of Water Rights (99-121, 99-38, and 99-88). Records on file with UDOWR indicate each of these well are about 600' in depth and produce +/- 2 gallons per minute of water.

The primary water source for the Geitus Mine is planned to be a new well to be drilled approximately 2.5 miles north of the mine portal at a site that was drilled in the mid 1980's and reportedly encountered water in the Shinarump member at a depth of 270'. Should that site prove not to have groundwater at a depth of less than 300' then a well at the Geitus Portal Area may be constructed and is projected to be around 1,500 ft deep into the White Rim of the Cutler formation. If KML completes either of these planned wells the water would be used for dust control and underground mining operations.

8.3 Soil Resources

The Geitus Mine is located along the western edge of Deer Flat. The topographic pattern of the general area is varied, consisting of defined ridges, flat mesa tops, and deep, incised valleys and canyons. Soil compositions found in the mine disturbed area include sandy clay loam and bouldery loam. The most prevalent soil type in the mine area is the Strych-Skos-Badland complex with Myton family-Skos-Rock outcrop association (Natural Resources Conservation Service [NRCS] 2011).

The Strych-Skos-Badland complex consists of three components, two of which are described here (Badland is not considered a major soil component). The Strych component is found on slopes from 30 to 50 percent on structural benches. The parent material consists of alluvium derived from sandstone and shale and/or colluvium derived from sandstone and shale. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well-drained and water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is low as is the shrink-swell potential. This soil is not flooded or ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 4 percent and the calcium carbonate equivalent within 40 inches, typically, does not exceed 20 percent.

The Skos component is also found at slopes from 30 to 50 percent on structural benches. The parent material consists of colluvium derived from interbedded sandstone and shale and/or residuum weathered from interbedded sandstone and shale. Depth to a root restrictive layer, bedrock, lithic, is 4 to 20 inches. The natural drainage class is well drained and water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is very low with a moderate shrink-swell potential; this soil is not flooded or ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 4 percent and the calcium carbonate equivalent within 40 inches, typically, does not exceed 8 percent. The soil has a slightly sodic horizon within 30 inches of the soil surface.

The Myton family-Skos-Rock outcrop association also consists of three components, one of which is described below (rock outcrop is also not considered a major soil component and the Skos component was described above). The Myton family component is found on slopes from 50 to 70 percent on hill slopes and ledges. The parent material consists of colluvium derived from sandstone and shale. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained and water movement in the most restrictive layer is high. Available water to a depth of 60 inches is low as is the shrink-swell potential. This soil is not flooded or ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 1 percent and the calcium carbonate equivalent within 40 inches, typically, does not exceed 10 percent.

8.4 Vegetation Resources

There are six major vegetation communities that exist within the mine area: Colorado Plateau Piñon-Juniper Woodland; Colorado Plateau Piñon-Juniper Shrubland; Colorado Plateau Mixed Bedrock Canyon and Tableland; Colorado Plateau Blackbrush-Mormon Tea Shrubland; Inter-Mountain Basins Mixed Salt Desert Scrub; and Inter-Mountain Basins Big Sagebrush Shrubland. Descriptions and locations of vegetation cover types were derived from the United States Geologic Survey (USGS) Southwest Regional Gap Analysis Program (USGS 2004).

Vegetation within the mine area is comprised mainly of piñon-juniper woodland and shrubland, at about 70 percent cover. The understory consists of patches of four-winged saltbrush (Atriplex canescens), shadescale saltbrush (Atriplex confertifolia), cliffrose (Purshia stansburiana), yellow rabbitbrush (Chrysothamnus viscidiflorus), rubber rabbitbrush (Ericameria nauseosa), and mountain mahogany (Cercocarpus montanus) with sparse cacti, forbs, and graminoids.

8.4.1 Colorado Plateau Piñon-Juniper Woodland

This ecological system occurs in dry mountains and foothills of the Colorado Plateau region including the Western Slope of Colorado to the Wasatch Range, south to the Mogollon Rim and east into the northwestern corner of New Mexico. It is typically found at lower elevations ranging from 5,000 to 8,000 feet amsl. These woodlands occur on warm, dry sites on mountain slopes, mesas, plateaus, and ridges. Severe climatic events occurring during the growing season, such as frosts and drought, are thought to limit the distribution of piñon-juniper woodlands to relatively narrow altitudinal belts on mountainsides. Soils supporting this system vary in texture ranging from stony, cobbly, gravelly sandy loams to clay loam or clay. Piñon pine (Pinus edulis) and/or Utah juniper (Juniperus osteosperma) dominate the tree canopy. In the southern portion of the Colorado Plateau in northern Arizona and northwestern New Mexico, one-seed juniper (Juniperus monosperma) and hybrids of juniper may dominate or codominate

the tree canopy. Rocky Mountain juniper (Juniperus scopulorum) may codominate or replace Utah juniper at higher elevations. Understory layers are variable and may be dominated by shrubs, graminoids, or be absent. Associated species include greenleaf manzanita (Arctostaphylos patula), big sagebrush (Artemisia tridentate), littleleaf mountain mahogany (Cercocarpus intricatus), mountain mahogany (Cercocarpus montanus), blackbrush (Coleogyne ramosissima), stansbury cliffrose (Purshia stansburiana), antelope bitterbrush (Purshia tridentate), Gambel oak (Quercus gambelii), blue gramma (Bouteloua gracilis), James' galleta (Pleuraphis jamesii), or mutton grass (Poa fendleriana). This system occurs at higher elevations than Great Basin Piñon-Juniper Woodland and Colorado Plateau shrubland systems where sympatric (SWCA 2008a).

8.4.2 Colorado Plateau Piñon-Juniper Shrubland

This ecological system is characteristic of the rocky mesa tops and slopes on the Colorado Plateau, but these stunted tree shrublands may extend further upslope along the low-elevation margins of taller piñon -juniper woodlands. Sites are drier than Colorado Plateau Piñon-Juniper Woodland. Substrates are shallow/rocky and shaley soils at lower elevations (4,000 to 6,500 feet amsl). Sparse examples of the system grade into Colorado Plateau Mixed Bedrock Canyon and Tableland. The vegetation is dominated by dwarfed (usually <10 feet tall) piñon pine and/or Utah juniper trees forming extensive tall shrublands in the region along low-elevation margins of piñon-juniper woodlands. Other shrubs, if present, may include black sagebrush (Artemisia nova), Wyoming big sagebrush (Artemisia tridentata ssp. wyomingensis), yellow rabbitbrush (Chrysothamnus viscidiflorus), or blackbrush. Herbaceous layers are sparse to moderately dense and typically composed of xeric graminoids (SWCA 2008a).

8.4.3 Colorado Plateau Mixed Bedrock and Tableland

The distribution of this ecological system is centered on the Colorado Plateau where it is comprised of barren and sparsely vegetated landscapes (generally <10 percent plant cover) of steep cliff faces, narrow canyons, and open tablelands of predominantly sedimentary rocks, such as sandstone, shale, and limestone. Some eroding shale layers similar to Inter-Mountain Basins Shale Badland may be interbedded between the harder rocks. The vegetation is characterized by very open tree canopy or scattered trees and shrubs with a sparse herbaceous layer. Common species include piñon pine, ponderosa pine (Pinus ponderosa), juniper spp., blackbrush, and other short-shrub and herbaceous species, utilizing moisture from cracks and pockets where soil accumulates (SWCA 2008a).

8.4.4 Colorado Plateau Blackbrush-Mormon-tea Shrubland

This ecological system occurs in the Colorado Plateau on benchlands, colluvial slopes, pediments or bajadas. Elevation ranges from 1,800 to 5,400 feet amsl. Substrates are shallow, typically calcareous, non-saline and gravelly or sandy soils over sandstone or limestone bedrock, caliche or limestone alluvium. It also occurs in deeper soils on sandy plains where it may have invaded desert grasslands. The vegetation is characterized by extensive open shrublands dominated by blackbrush often with Mormon tea (Ephedra viridis), Torrey's jointfir (Ephedra torreyana), or Grayia spinosa (spiny hospage). Sandy portions may include sand sagebrush (Artemisia filifolia) as codominant. The herbaceous layer is sparse and composed of graminoids such as Indian ricegrass (Achnatherum hymenoides), James' galleta, or sand dropseed (Sporobolus cryptandrus).

8.4.5 Inter-Mountain Basins Mixed Salt Desert Scrub

This extensive ecological system includes open-canopied shrublands of typically saline basins, alluvial slopes and plains across the Intermountain western U.S. This type also extends in limited distribution into the southern Great Plains. Substrates are often saline and calcareous, medium- to fine-textured, alkaline soils, but include some coarser-textured soils. The vegetation is characterized by a typically open to moderately dense shrubland composed of one or more Atriplex species such as shadescale saltbush (Atriplex confertifolia), four-winged saltbush (Atriplex canescens), cattle saltbush (Atriplex polycarpa), or spinescale saltbush (Atriplex spinifera). Other shrubs present to codominate may include Wyoming big sagebrush, yellow rabbitbrush, rubber rabbitbrush (Ericameria nauseosa), Nevada jointfir (Ephedra nevadensis), spiny hospage, winterfat (Krascheninnikovia lanata), wolfberry (Lycium spp.), bud sagebrush (Picrothamnus desertorum), or horsebrush (Tetradymia spp). Greasewood (Sarcobatus vermiculatus) is generally absent, but if present does not codominate. The herbaceous layer varies from sparse to moderately dense and is dominated by perennial graminoids such as Indian ricegrass, blue gramma, thickspike wheatgrass (Elymus lanceolatus ssp. Lanceolatus), western wheatgrass (Pascopyrum smithii), James' galleta, big galleta (Pleuraphis rigida), Sandberg bluegrass (Poa secunda), or alkali sacaton (Sporobolus airoides). Various forbs are also present (SWCA 2008a).

8.4.6 Inter-mountain Basins Big Sagebrush Shrubland

This ecological system occurs throughout much of the western U.S., typically in broad basins between mountain ranges, plains and foothills between 5,000 and 7,500 feet amsl. Soils are typically deep, well-drained and non-saline. These shrublands are dominated by basin big sagebrush (Artemisia tridentata ssp. Tridentate) and/or Wyoming big sagebrush. Scattered juniper spp., greasewood, and saltbush spp. may be present in some stands. Rubber rabbitbrush, yellow rabbitbrush, antelope bitterbrush, or mountain snowberry (Symphoricarpos oreophilus) may codominate disturbed stands. Perennial herbaceous components typically contribute less than 25 percent vegetative cover. Common graminoid species include Indian ricegrass, blue gramma, thickspike wheatgrass, Idaho fescue (Festuca idahoensis), needle and thread (Hesperostipa comata), basin wildrye (Leymus cinereus), James' galleta, western wheatgrass, Sandberg bluegrass, or bluebunch wheatgrass (Pseudoroegneria spicata) (SWCA 2008a).

8.4.7 Wetlands

The Geitus Mine site lacks appreciable surface and/or sub-surface waters for the establishment and maintenance of wetlands/riparian zones. Wetlands are not identified in the mine area; however, there are drainages adjacent to the proposed disturbed areas that will require protection through the construction and maintenance of stormwater and erosion control measures.

8.4.8 Vegetation Inventory

A formal vegetation inventory of the Geitus Portal has not been completed. The project area is not heavily infested by noxious weeds. Invasive species observed in the area include Russian thistle, saltlover (halogeton), cheatgrass, and tumbleweed.

8.5 Wildlife Resources

A formal biological survey has not been conducted at the Geitus mines site.

8.5.1 Threatened or Endangered Species

Table 8-5-1 The Federally Listed and Candidate Species that are known to Occur or Have the Potential to Occur in San Juan County, Utah are:

Common Name	Scientific Name	Federal Status
Gunnison Sage Grouse	Centrocerus minimus	Threatened
Bonytail chub	Gila elegans	Endangered
California condor	Gymnogys californianus	Endangered
Humpback chub	Gila cypha	Endangered
Greenback Cutthroat Trout	Oncorhynchus clarki	Threatened
Mexican spotted owl	Strix occidnetalis lucida	Threatened
Razorback sucker	Xyrauchen texanus	Endangered
Southwestern willow flycatche	r Empidonax traillii extimus	Endangered
Western Yellow-billed cuckoo	Coccyzus americanus occidentailis	Threatened
Colorado pikeminnow	Ptychocheilus lucius	Endangered
Navajo sedge	Carex specuicola	Threatened

8.5.2 BLM Sensitive Species

Table 8-5-2 The BLM Monticello Field Office has identified three sensitive species in addition to raptors in general, which have potential to occur in San Juan County.

BLM Sensitive Species			
Common Name	Scientific Name		
Bighorn Sheep	Ovis canadensis		
Silky Pocket Mouse	Perognathus flavus		
Raptors Multiple species			
Cronquist's milkvetch	Astragalus cronquisti		

The general area encompassing and surrounding the Geitus Mine is characterized by deeply incised canyons, mesas, and cliff faces, which provide suitable habitat for various raptors and bighorn sheep.

Direct impacts on raptors and bighorn sheep are unlikely due to lack of nesting sites in the proposed disturbance area and immediately surrounding area, and the abundance of similar foraging habitat in the general vicinity.

8.5.3 Bat Species

The project area is located within a region comprised of steep canyon walls and cliffs with numerous locations that could contain roosting sites for bat species. Bat species may occur in the surrounding area. The following bat species are identified by the Utah State Division of Wildlife Resources, as sensitive species that occur in portions of San Juan County: Allen's big-eared bat (Idionycteris phyllotis), Big free-tailed bat (Nyctinomops macrotis), Fringed myotis (Myotis thysanodes), Spotted bat (Euderma maculatum), and Townsend's big-eared bat (Corynorhinus townsendii) (Canyon Environmental 2011a).

8.5.4 Migratory Birds

The Migratory Bird Treaty Act (MBTA) (16 USC 703–712), Executive Order 121186 for migratory bird protection, and the Bald and Golden Eagle Protection Act (16 USC 668–668d) establishes protections for migratory birds and their parts (e.g., eggs, nests, and feathers) from taking, hunting, capture, transport, sale, or purchase. Most species of birds are classified as migratory under the MBTA, except for upland game and introduced birds. Utah Partners in Flight (UPIF) has ranked those birds occurring in the Colorado Plateau physiographic region by priority of concern (Parish et al. 2002). The following bird species are considered priority due to habitat availability surrounding the proposed mine area. Three priority species are identified by UPAF for pinion-juniper habitat: grey vireo (Vireo vicinoir), blackthroated gray warbler (Dendroica nigrescens), and ferruginous hawk (Buteo regalis).

Two priority species are identified for shrub-steppe habitat: greater sage grouse (Centrocercus urophasianus) and sage sparrow (Amphispiza belli). The potential exists for breeding birds protected by the MBTA and the BGEPA to occur within the project area. KML will minimize potential impacts to migratory birds by limiting vegetation removal during the breeding season (March through August) and conducting nest surveys within five days prior to vegetation removal in the event that vegetation removal cannot be deferred to the nonbreeding season.

8.6 Cultural Resources

Cultural resources are sensitive, irreplaceable resources with potential public and scientific uses, and are an important and integral part of our national heritage. Cultural resources constitute "a definite location of human activity, occupation, or use identifiable through field inventories (i.e. surveys), historical documentation, or oral evidence" (BLM-M-8110).

A cultural resources inventory will need to be conducted by BLM as part of the review process of the Plan of Operations.

8.7 Paleontological Resources

Mine facilities and surface operations may disturb bedrock exposures. Surface facilities will be located mainly on old mine exploration roads or Quaternary colluvial deposits which have little or no potential of containing paleontological resources. Impacts to surface fossils resulting from the proposed surface disturbance are anticipated to be negligible due to the surface characteristics (minimal exposed bedrock) of the project area.

Underground mine development and production operations will occur in the Monitor Butte and Shinarump Members of the Upper Triassic Chinle Formation. Vertebrate fossils are known to occur in these members, although occurrences are scarce. It is unlikely that vertebrate fossils will be encountered during mining; however, in the event of an unanticipated discovery, KML will temporarily stop work in the immediate vicinity of the find and notify the BLM so that a BLM specialist can assess the situation and take appropriate action.

8.8 Socioeconomic Conditions

The population of San Juan County in 2019 was 15,308 people (estimated at census.gov website). San Juan County's regional economy relies largely on education, health and social services (30.5 percent), arts, entertainment, recreation, accommodation, and food services (12.9 percent), retail trade (12.4 percent), and construction (10.1 percent). Agriculture, forestry, fishing and hunting, and mining are also conducted in the county (8.9 percent). In 2010, San Juan County contained 6,064 housing units. The median household income in San Juan County was estimated at \$45,394. The 2020 cost of living index in San Juan County is low at 87.9 (U.S. Average is 100, Utah average is 110).

The nearest habitation to the mine is Natural Bridges National Monument; however, services and housing in Natural Bridges are limited to a employee housing, visitors' center, and camping. Blanding, Utah is located approximately 37 miles to the east. The races in San Juan County are broken out as 49 percent American Indian, 47.8 percent white, 5.8 percent Hispanic, 2.1 percent with two or more races (total can be greater than 100 percent because Hispanics could be counted in other races).

The Geitus Mine operations will provide for employment of up to 10 miners and support personnel with the majority of the employees coming from the existing local work force. These will be relatively high paying jobs that will provide a direct positive impact on the local economy. Mine operations will also contribute to the San Juan County tax base through property taxes and sales and use receipts.

In addition, the mine will provide continued ancillary employment for the following:

Contracted ore trucking companies

Contracted road maintenance companies

Processing support at an offsite location

Other technical services such as mechanics, electricians, etc.

Mine equipment manufacture, sales, and delivery

8.9 Worker Health and Safety

Mining-related illnesses and injuries have steadily declined over the years because of stricter safety laws and improvements in mining machinery and practices. Although mine health and safety conditions have improved dramatically, worker health and safety at the Geitus Mine can be affected by multiple work hazards, such as ground falls, explosives handling, scaling activities, roof bolting, drilling, dust and other respiratory issues associated with inadequate ventilation, and equipment handling and maintenance. Dust generated by drilling in mines can still place miners at risk of developing silicosis from rock dust. The Federal Coal Mine Health and Safety Act of 1969 regulates dust concentrations in mines, and respirable dust levels are closely monitored. Dust concentrations in mines have declined as a result. Underground miners have the option to have their lungs x-rayed when starting a job, with a mandatory follow-up x-ray 3 years later, in order to monitor any development of respiratory illness. Additional x-rays are given every 5 years, on a voluntary basis (MSHA 2012).

Worker health and safety can also be affected by exposure to ionizing radiation and radon gas and its progeny. Uranium mine sites comprise rocks and soils that contain naturally occurring radioactive material. Most of the natural radioactivity is derived from the uranium-238 and uranium-235 decay chains. One of the products in the uranium-238 decay chain is radium-226, which is the principal radionuclide of concern for characterizing the distribution of radioactivity in the environment. When radium-226 decays, it emits radon that can become concentrated in unventilated or poorly ventilated areas of the mine.

Radon and its daughter products exposed during mining operations are reduced to acceptable levels by ventilation to the outside, where atmospheric dispersion quickly reduces concentrations to well below the allowable levels for the general public established by UDAQ and EPA's NESHAP program. The Operator will conduct monitoring and inspection programs responsive to the requirements of MSHA, as discussed below, to protect worker health and safety.

For radon, the safety program at the mine calls for keeping all working areas ventilated to at or below 0.3 working levels (WL). A working level is any combination of the short-lived radon daughters in one liter of air that will result in ultimate emission of 1.3x105 million electron volts of potential alpha energy. This level is used as a precaution to ensure that a person working in the area will not receive greater than 4 Working Level Months (WLM) in a year, in accordance with regulatory standards. If radon levels rise above this level, additional ventilation will be implemented. If radon levels rise above 1.0 WL, respiratory protection will be required in the area. The only work that will be permitted in an area with radon levels above 1.0 WLs will be to install or improve ventilation, and additional ventilation will be used to reduce the radon level to 0.3 or below. Work in areas exhibiting radon at more than 10 WL will require the use of Self-Contained Breathing Apparatus (SCBA). Breathing zone samples will also be taken in accordance with approved MSHA protocols to (30 CFR 56.5002 and 57.5002) assess potential exposures to both radon and dust. Gamma surveys are also periodically conducted in the working areas of the mine to ensure protection of workers from external radiation from radium-226 and other gamma emitters. In addition to these environmental controls, the miners are equipped with half-face respirators with a 99 percent efficiency rating for protection against radon and particulates.

8.10 Transportation

Ore extracted from the Geitus Mine will be hauled offsite for processing. An independent contractor will transport the ore according to the U.S. Department of Transportation (DOT) regulations (CFR Title 49, Transportation)

The Geitus Mine proposes to employ up to 6 ore trucks per day traveling to and from the mine site. In addition to the 6 ore trucks, an additional 2 trips per day are anticipated for employee traffic and support vehicles. The ore truck haul route is from the mine to the offsite processing location. Most likely the White Mesa Mill south of Blanding via State Highways 95 and 191. Utah Department of Transportation's (UDOT) Traffic Volume Map for 2017 (most recently available data) lists a total of 510 vehicle trips per day for the segment of State Highway 95 between State Highway 261 and State Highway 191, and lists a total of 3,000 vehicle trips per day for that segment of State Highway 191 between State Highway 95 and the uranium mill south of Blanding.

State Highways 95 and 191 are each two-lane divided highways with minimum 12 foot lane widths along the proposed haul route corridor. Per Exhibit 12-15 of the Highway Capacity Manual (HCM 2000), a Class I highway with a Free Flow Speed of 60 mph in rolling terrain is capable of accommodating up to 130 vehicles per hour (vph) with a Level of Service (LOS) A condition (State Highway 95), and is capable of accommodating up to 290 vph with a LOS B (State Highway 191). The mine is expected to employ up to 10 miners and support personnel.

In order to reduce travel impact and related safety concerns KML will provide on-site accommodations. Employees will be housed at the Geitus Man Camp, or in other local area communities. For long term production at the mine site, KML estimates a total of 4-10 employees at the mine. Work schedule is anticipated to be 5 days per week, and an occasional Saturday. Based on this information, it is likely that most traffic will occur Monday through Friday and an estimated 1-2 passenger vehicles will travel to the Geitus Mine.

It is the responsibility of KML to ensure that the radiation levels associated with ore transportation fall within applicable limits. Based on the grade of the Geitus Mine uranium ore, the exposure rate will be less than 1 mrem/hr to recipients standing outside of the truck. As a result, the following requirements are expected to be satisfied in all cases:

The requirements of 49 CFR 173.427(a)(1) that the external dose rate may not exceed a radiation level of 1,000 mrem/hr at 3 meters from the unshielded material and the requirements of 49 CFR 173.427(a)(5) and 173.441(a) that under conditions normally incident to transportation,

The requirements of 49 CFR 173.427(a)(5) and 173.441(a) that under conditions normally incident to transportation: The radiation level does not exceed 200 mrem/hr at any point on the external surface of the package. The transport index (TI) does not exceed 10. TI is a dimensionless number placed on the label of a package, to designate the degree of control to be exercised by the carrier during transportation. TI is determined by multiplying the maximum radiation level in millisieverts (mSv) per hour at 1 meter (3.3 feet) from the external surface of the package by 100 (equivalent to the maximum radiation level in mrem/hr at 1 meter (3.3 feet) It is expected that the average reading in the occupied space of each truck cab will not exceed the DOT limit of 2 mrem/hr specified in 49 CFR 173.441(b)(4). In addition, KML will perform and document spot gamma surveys on uranium ore shipments as appropriate in order to ensure that the regulatory standards are satisfied.

KML's will only employ ore transport truck operators who commit in writing to covering every load with a tarp or other suitable device. With regard to accidents and other incidents involving the spillage of uranium ore, KML requires that the transportation contractor is responsible for handling the accident and that the contractor must have an Emergency Response Plan in case of emergency. Emergency response crews from the offsite processing facility will also likely assist in any cleanup and confirmation sampling at a spill site.

8.11 Noise Emissions

The human ear experiences sound as pressure on the ear. The sound pressure level is expressed in decibels (dB). A value of 0 dB corresponds to the approximate threshold of human hearing. Environmental sounds are measured with the A-weighted scale of a sound level meter. The A scale simulates the frequency response of the human ear by giving more weight to the middle frequency sounds and less to the low and high frequency sounds. A-weighted sound levels are designated as dBA. Typical background sound levels for remote undeveloped areas are 25 dBA for nighttime average and 35 dBA for daytime average.

The sources of noise generated by the Geitus Mine include the ventilation fans, generators, and vehicle traffic and are typical of most construction sites. In general, the backup alarms on the trucks generate the loudest noise during loading, unloading and hauling which are the same sound levels that are encountered at ordinary construction sites.

One of the reasons KML has selected the proposed site for the Geitus mine Portal Area is because it is tucked into the cove along the western side of Deer flat. This site will ensure that noise levels from the mine observed at Natural Bridges and nearly all of the back country areas surrounding the mine will be as low as is possible. Since this site is on the opposite side of the mesa from Natural Bridges it is not expected to negatively impact visitor's experience there at all.

Surface Facilities

The Surface Resources Act of July 23, 1955, and associated regulations at 43 CFR 3715 authorize surface occupancy of unpatented mining claims for "prospecting, mining, or processing operations and uses reasonably incident thereto". KML's activities at the Geitus Mine are focused on prospecting and mining. Mineral processing will be not conducted at the Geitus Mine. KML will also conduct activities that are reasonably incident to prospecting and mining such as operation of surface support facilities for underground mining operations.

KML's proposed occupancy of BLM land is in accordance with 43 CFR 3715.2 and meets the following requirements:

- (a) Be reasonably incident;
- (b) Constitute substantially regular work;
- (c) Be reasonably calculated to lead to the extraction and beneficiation of minerals;
- (d) Involve observable on-the-ground activity that BLM may verify under §3715.7; and

(e) Use appropriate equipment that is presently operable, subject to the need for reasonable assembly, maintenance, repair or fabrication of replacement parts.

Surface occupancy in association with prospecting, mining and reasonably incident uses will continue for the life of the mine complex. The current life of the mine is estimated at 10 years; however, results of future exploration, market conditions, and other factors may extend the life of the mine. Depending on market conditions and production rates.

Unnecessary or undue degradation of the public lands and resources will be prevented or avoided during use and occupancy. Use and occupancy conforms to the applicable Federal and State environmental standards and necessary local, state and federal permits will be obtained, as required under 43 CFR 3800. Permanent and temporary structures on public lands conform with applicable State and local building, fire, and electrical codes and occupational safety and health and mine safety standards.

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