REV.DATE: 5/18/09

FOR MMD USE ONLY:

PROJECT NAME:_____

PERMIT #: _____

DATE RECEIVED:_____

DATE APPROVED:_____

LEAD INSPECTOR: _____

STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
Director
Mining and Minerals Division
1220 South Saint Francis Drive
Santa Fe, New Mexico 87505
Telephone: (505) 476-3400

SUBPART 3
MINIMAL IMPACT NEW MINING OPERATIONS PERMIT APPLICATION

The following information is required under the New Mexico Mining Act (Sections 69-36-1 through 69-36-20, NMSA 1978) and associated rules. The Mining and Minerals Division of the Energy, Minerals and Natural Resources Department is the administrative agency through which this application is to be processed. See §304, Minimal Impact New Mining Operations, of the New Mexico Mining Act Rules for all regulations associated with Minimal Impact Mining operations.

Permit Application Requirements: (§304.A-C and §601)

- A minimal impact new mining operation will not be considered a minimal impact mining operation if it exceeds 10 acres of disturbed land, except that pre-existing roads and reclaimed areas within the permit area will not be counted. Reclaimed, for this purpose means all financial assurance has been released, except the amount held to reestablish vegetation pursuant to §1204.

- Permit applications shall be submitted in ample time to have the permit issued before mining operations begin, and operations shall not begin until after the permit is issued.

- Six copies of the completed application need to be submitted.

- Confidential information needs to be **clearly** indicated and submitted separately.

- Check the "**YES**" or "**NO**" box for each of the following characteristics as related to the proposed minimal impact mining operation:

YES	NO	
☐	X	Located in or having a direct surface impact on wetlands, springs, perennial or intermittent streams, lakes, rivers, reservoirs or riparian areas.
☐	x	Located in designated critical habitat areas as determined in accordance with the federal Endangered Species Act of 1973 or in areas determined by the Department of Game and Fish likely to result in an adverse impact on an endangered species designated in accordance with the Wildlife Conservation Act, Sections 17-2-37 through 17-2-46 NMSA 1978 or by the State Forestry Division for the Endangered Plants Act, section 75-6-1 NMSA 1978.
☐	x	Located in an area designated as Federal Wilderness Area, Wilderness Study Area, Area of Critical Environmental Concern, or an area within the National Wild and Scenic River System.
☐	X	Located in a known cemetery or other burial ground.
☐	x	Located in an area with cultural resources listed on either the National Register of Historic Places or the State Register of Cultural Properties.
☐	X	Having or expected to have a direct impact on ground water that has a total dissolved solids concentration of less than 10,000 mg/L, except exploratory drilling intersecting ground water may be performed as a minimal impact operation.
☐	x	Expected to use or using cyanide, mercury amalgam, heap leaching or dump leaching in its operations.
☐	x	Expected to result in point or non-point source surface or subsurface releases of acid or other toxic substances from the permit area.
☐	x	Requiring a variance from any part of these Rules as part of the permit application.

IMPORTANT NOTES!

- If you have checked "**YES**" to any of the above boxes, the mining operation does not qualify as a minimal impact mining operation. Do not continue to fill out the remainder of this form.
- If you do meet the above requirements and have checked "**NO**" to **all** of the above boxes, continue filling out this application.
- Obtaining a Mining Act permit does not necessarily satisfy the obligation to obtain permits required by other governmental entities.
- PLEASE FILL IN ALL APPLICABLE INFORMATION AS COMPLETELY AS POSSIBLE.
- PLEASE PRINT OR TYPE ALL INFORMATION.

1. OPERATOR INFORMATION (§304.D.1)

LIST PROJECT NAME: Ojo Encino Humate Mine, McKinley County, New Mexico

NAME OF APPLICANT: MIOCENE, LLC

ADDRESS: 100 Fillmore Street, Suite 500
Denver, Colorado 80206

PHONE: (303) 385-8620

NAME OF OWNER (if different from applicant's name and address):

Broken Pick Proprietary, LLC

ADDRESS: PO Box 21342, Albuquerque, New Mexico 87154

PHONE: 235-1946; 850-2897; 850-7462

NAME OF ON-SITE CONTACT OR OPERATOR'S REPRESENTATIVE:

Mr. Steve Brady

ADDRESS: 23 Cubita Road; PO Box 1277
Cuba, New Mexico 87013

PHONE #: (575) 289-2565

2. RIGHT TO ENTER INFORMATION (§304.D.1)

A. Describe or provide evidence for the basis of the applicant's right to enter the property to conduct the mining and reclamation:

Broken Pick Proprietary, LLC has entered into a Permit for the sale of a Mineral Material with the Bureau of Land Management, Farmington Field Office. Field reconnaissance indicates that humate occurs at the surface to at least 5 ft below ground surface in Section 9, Township 19 North, Range 5 West, NMPM, specifically, the N½ of the NW¼ of Section 9 and the SW¼ of the NW¼ of Section 9. The acreage proposed in this contract totals 120 acres. Maps identifying the proposed operation and initial minimal impact mine, hereafter referred to as "MIM," are provided in Figures 1 and 2. Figure 1 is a topographic map of the proposed permit area. Figure 2 is a map of the proposed Ojo Encino permit area and access road.

B. List the names and addresses of surface and mineral ownership within the proposed permit area:

1. **Surface Owner(s):**

Name	Address	Phone #
Bureau of Land Management, Farmington Field Office	6251 College Blvd, Suite A Farmington, New Mexico 87402	(505) 564-7600

2. **Mineral Owner(s):**

Name	Address	Phone #
Bureau of Land Management, Farmington Field Office	6251 College Blvd, Suite A Farmington, New Mexico 87402	(505) 564-7600

C. List the author(s), title(s), date(s) and report number(s) of any cultural resource survey report(s) submitted to the agency(ies) or landowner(s) listed above:

Environmental Assessment DOI-BLM-NM-F010-2013-0003-EA
Broken Pick Proprietary, LLC
Ojo Encino Humate Mine

McKinley County, New Mexico
Marron and Associates, August 2013

Biological Evaluation
Broken Pick Proprietary, LLC
Ojo Encino Humate Mine
McKinley County, New Mexico
Marron and Associates, January 2013

A Cultural Resources Survey
Broken Pick Proprietary, LLC
Ojo Encino Humate Mine Project
McKinley County, New Mexico
Marron and Associates, December 2012

3. MAPS (§304.D.2)

A. Provide a legal description of the site [Township(s), Range(s) and Section(s)]:

Section 9, Township 19N, Range 5W: N ½ of NW ¼; SW ¼ of NW ¼ (see Figure 2).

B. Provide a topographic map(s) of at least 1 inch = 2,000 feet (or appropriate for the size of disturbance) showing the areas of land to be disturbed by the proposed mining and reclamation. Identify general area shown on the map(s) by Township, Range and Section(s). If the area to be mined contains the following features, show them on the map(s):

See *Figures 1, 2, and 3.*

1. **Boundary of the proposed permit area** with the existing and proposed area of disturbance
2. Previously disturbed areas
3. Perennial, intermittent and ephemeral streams; springs; wetlands; riparian areas; lakes and reservoirs
4. Proposed and existing roads and other access routes
5. Residences
6. Support facilities
7. Cemeteries, burial grounds; cultural resources listed or eligible for listing on either the National Register of Historic Places or the State Register of Cultural

Properties
8. Pipelines
9. Oil, gas, water and monitoring wells on and within two miles of the permit area
10. Identify the location of shafts, adits, trenches, ponds, pits, quarries, stockpiles, waste dumps, etc.

4. ENVIRONMENTAL PERMITS HELD FOR OTHER OPERATIONS (§304.D.3)

Provide a list of other environmental permits held for other mining operations within the United States and any violations issued for non-compliance with those permits.

NAMES OR TYPES OF ENVIRONMENTAL PERMITS:

SWPP: Stormwater Pollution Prevention Plan, Electronic Notice of Intent (ENOI) will be filed with the EPA prior to commencement of humate extraction operations

LIST PERMIT VIOLATIONS; NUMBER, TYPE AND ISSUING AGENCY:

None

5. MINING DESCRIPTION (§304.D.4)

A. Type of mineral or minerals to be mined: *carbonaceous shale, clay- and mudstone.*

B. Check the method of proposed mining: __X__ Surface **or** _____ Underground

C. Describe the sizes and volumes of the facilities to be used:

Staging Area: How Many: 1; Acreage 0.1

Excavations: How Many__1__ Acreage__5__ Volume (cu.yds.) TBD
Stockpiles: How Many__4__ Acreage__1__ Volume (cu.yds.) TBD
Waste Dumps: How Many__0__ Acreage__NA____ Volume (cu.yds.) NA

List the following for **New Road(s):** (See Figure 2)

Length (ft.) __4800__ Width (ft.) __20__

List the following for extension or widening of **Existing Road(s):**

Length (ft.) _____ Width (ft.) _____

Other Disturbances: Type

How Many NA Acreage _____ Volume (cu.yds.) _____

TOTAL ACREAGE TO BE DISTURBED: 10 Acres

D. Describe the type of processing that will be conducted on site:

No processing will be conducted on-site.

E. Describe the typical equipment to be used for the mining operations:

Track hoe, front-loader, and scraper for mining; road grader for road maintenance, scraper and farm tractor for reclamation.

6. CHEMICAL USE (§304.D.4)

A. List all chemicals proposed to be used by the mining operation.

No chemicals will be used.

Name:	**Use:**
_____	_____
_____	_____

7. GROUND WATER INFORMATION (§304.D.5)

A. Provide an estimate of depth to ground water and the total dissolved solids (T.D.S.) concentration.

Depth to regional ground water (ft.) 1200ft T.D.S. concentration: *unknown*

B. Describe the source of groundwater information:

Peabody Energy Company, St. Louis, Missouri

C. Describe any dewatering activities to be conducted during mining operations:

No dewatering activities will be required. All water accumulated on-site during mining operations will be allowed to evaporate to the atmosphere.

8. PERFORMANCE STANDARDS (§304.D.7)

A. Provide a general description of how the mining and reclamation will be designed and operated using the most appropriate technology and best management practices:

Mining and reclamation will be carried out in such a manner that no more than 10 acres are actively mined and/or disturbed at any one time. For each area mined, an equal area will be reclaimed. Humate will be defined by means of hand or mechanical auger drilling ahead of mining operations. The drill rig will travel overland from one drill site to another without the need for road or drill site construction. Boreholes will be drilled using solid stem auger or air rotary drilling techniques. No fluids are necessary for drilling. Completed boreholes will be refilled and compacted to grade with drill cuttings. Drill cuttings in the Fruitland Formation consist of silt and clay with hydraulic conductivity of 1.0×10^{-5} to 1.0×10^{-9} cm/sec. Borehole depth will vary from 5 to 6 feet but may at times attain 20 feet if field characterization warrants: diameter will be 4 inches. Drilling will be intermittent, implemented ahead of future mining operations on 500 foot centers.

Regional groundwater occurs at 1200 feet below ground surface (Peabody Energy). Perched groundwater has not been encountered by Peabody Energy or Miocene drilling operations at these shallow depths in the Star Lake area.

Only acreage defined by the drilling program as meeting humate quality and volume requirements will be developed. Mulch, topsoil, and overburden will be stored in separate, temporary stockpiles until which time the material is used for reclamation. Reclamation will consist of backfilling, contouring, and vegetation of all mined, staging, and stockpile areas.

All disturbed areas will be scarified using the furrow technique and sloped to be consistent with the regional landscape. The furrow technique consists of using a tractor and plow to create deep depressions or "furrows" in the topsoil perpendicular to slope and predominating wind direction. The furrows allow for capture and retention of moisture and wind-transported seed from existing shrubs and grasses by prevailing west-southwest winds. Furrowing, in essence, is an extension of the farming technique by means of creating deeper depressions for moisture and seed capture. Scarification is a key element of high-altitude revegetation.

The finished surface will be broadcast seeded by hand using a standard seed mix recommended by EMNRD. Periodic monitoring of reclaimed areas for vegetative success will be gauged against a Vegetative Reference Area. This will begin upon completion of the reclamation effort and include each successively mined area as each is reclaimed. A Vegetative Reference Area will be proposed. Reseeding will occur as necessary to achieve vegetative goals. Invasive and transient species shall be monitored and if warranted, removed.

B. Provide a general description of how the mining and reclamation will be designed and operated to assure protection of human health and safety, the environment, wildlife, and domestic animals:

Mining and reclamation goals include prevention of hazards to public health and safety and minimization of environmental damage to surrounding land. Long-term reclamation goals include protection of water resources, surface soil stabilization, revegetation, and an eventual return of the land to a climax, ecological community.

C. Provide a general description of how the mining and reclamation will be designed and operated to safeguard the public from unauthorized entry into shafts, adits and tunnels and to prevent falls from highwalls or pit edges:

Acreage designated for mining will be bounded by earthen berms and later fenced for reclamation. No underground workings will be employed in the mining process. Finished slopes will not exceed 3H:1V.

D. Provide a general description of how the mining and reclamation will be designed and operated so the disturbed area will not contribute suspended solids above background levels, or where applicable the Water Quality Control Commission's standards, to intermittent and perennial streams:

Mining and reclamation efforts will meet water quality controls by:

- *Using proper soil management practices, including clearing and grubbing, removal of topsoil and overburden, stockpiling, backfilling, and reapplication of topsoil to reestablish the soil profile and surface conditions conducive for development of a climax, ecological community.*
- *Establishing stable soil surface and drainage conditions which would minimize surface erosion.*

- *Revegetation of disturbed areas using plant species compatible with soil physiology to establish long-term, productive plant communities compatible with existing land use and minimizing noxious and invasive plant species.*
- *Reestablishing topography compatible with the surrounding landscape.*
- *Monitoring during the operational phases to assess reclamation goals.*
- *Minimizing temporary construction impacts along the access and haul route by limiting the road width to avoid unnecessary impact to the environment, where practical and safe.*
- *Roads within the area will provide future access to permitted MIMs while minimizing impact to previously mined and reclaimed areas. Access roads within the area will be planned to capture future mining areas within the permit with minimal relocation or realignment. Reclamation of mined areas and access roads will be implemented at the end of each MIM operation.*
- *All effort will be applied to minimize slope gradients and to apply mulch from the existing stockpile to mitigate erosion. Final slopes of all reclaimed areas will not exceed 3H:1V.*
- *Earthen swales may be utilized to control surface water flow and to facilitate revegetation. These man-made water traps may be installed to provide erosion control and moisture retention to support vegetative growth. Swales consist of a low profile (e.g., one-foot high) earthen berm with an upslope swale. These surfaces also capture and retain wind-blown seed.*
- *Best management practices for stormwater and sediment control will be monitored and documented with implementation of the project SWPPP and associated Sediment Control Plan (SCP). The SCP will be prepared as an appendix to the SWPPP.*

E. Provide a general description of how the mining and reclamation will be designed and operated to control erosion:

(See D above)

9. RECLAMATION PLAN (§304.D.8)

The operation will be operated and reclaimed to a self-sustaining ecosystem appropriate for the life zone of the surrounding areas following closure unless conflicting with the approved post-mining land use.

A. List adjacent land use other than mining (i.e. grazing): *grazing*

B. List the proposed post mining land use (i.e. wildlife): *grazing*

C. Describe how reclamation activities will avoid adverse impact to cultural resources:

Ojo Encino assessment by Marron and Associates indicates no cultural resources or historic properties would be impacted by the establishment of mining operations. Any and all archeological, paleontological, or cultural artifacts discovered during operations will result in cessation of mining and EMNRD will be notified immediately.

D. Describe any backfilling and grading operations to be performed after mining:

Backfilling and grading operations (reclamation) will consist of backfilling and contouring of all mined, staging, and stockpile areas. Overburden will be returned to the excavation and contoured to local grade as much as practicable. Topsoil will be applied evenly to the surface and contoured to the surrounding terrain as much as practicable. Slopes will not exceed 3H:1V.

Backfilling and surface grading will be conducted on a "rolling" basis i.e., directly following mining activity as mined material is exhausted. Rolling reclamation will be conducted on all previously mined acreage such that no more than 20 acres inclusive of access roads, staging, and stockpiling is disturbed at any given time.

Mulch, topsoil, and overburden, will be stored in separate, temporary stockpiles until which time the material is used for reclamation. After reclamation, finished slope gradients will be not exceed 3H:1V. Slope gradients will be minimized and accumulated mulch will be beneficially used to mitigate erosion.

Periodic monitoring of reclaimed areas for vegetative success will begin upon completion of the reclamation effort and include each successively mined area as each area is reclaimed.

All disturbed areas will be scarified using the furrow technique and sloped to be consistent with the regional landscape. Furrows allow for capture and preservation of moisture and naturally transported seed from existing shrubs and grasses by prevailing west-southwest winds. The optimum time for seeding is prior to the monsoon season and late winter months.

E. Describe what mitigation steps will be taken to reconstruct or protect the hydrologic balance of the site after mining:

Swales, straw wattles, and/or silt fences for prevention of sediment and water run-on/runoff will be constructed and maintained. These engineering controls will be used to control and maintain proper drainage in and around the disturbed areas during mining operations and reclamation.

F. Describe how topsoil or topdressing will be salvaged, stockpiled and distributed for the re-establishment of vegetation:

Mulch, topsoil, and overburden will be stored in separate, stockpiles until which time the material is used for reclamation. Slope gradients will be minimized and accumulated mulch will be beneficially used to mitigate erosion. Overburden and topsoil from stockpiles will be applied evenly to the surface and contoured to match the surrounding landscape as much as practicable. The surface will be broadcast hand-seeded using a seed mix specified by EMNRD.

G. Describe what kind of seed bed preparation will take place prior to seeding. What soil amendments will be added? Scarification of the seed bed needs to take place. Will this involve discing or ripping?

All disturbed areas will be scarified using the furrow technique and sloped to be consistent with the regional landscape. The furrow technique consists of using a tractor and plow to create deep depressions or "furrows" in the topsoil perpendicular to slope. Furrows allow for capture and preservation of moisture and naturally transported seed from existing shrubs and grasses by prevailing west-southwest winds. Scarification is a key element of high-altitude revegetation. Once established, the furrows must remain intact without vehicular damage.

H. Describe in detail the plant species to be used in the re-establishment of vegetation:

Plant Name:	**Rate of application (lb/ac)**
Blue Gamma	7
Western Wheatgrass	5
Sand Dropseed	4
Indian Ricegrass	4

I. Will the seeds be broadcast or drilled into the seed bed?

The seed will be broadcast by hand so as to preserve the furrows to maximize seed and moisture retention. In order to remain effective, the furrows must remain intact without degradation by overland, vehicular traffic.

J. Describe the type of mulch material to be applied after seeding and its application

rate:

Mulch will consist of vegetative material cleared and grubbed from the area and stockpiled for reclamation. Mulch will be used to mitigate surface erosion and to establish regional wildlife habitat.

K. What structures will be on the site and how will they be removed or reclaimed? (Buildings, portals, adits, shafts, bore holes, ponds, etc.):

No structures or ponds exist in Section 9. None are planned for construction on-site.

L. What roads are part of the mine site and how will be reclaimed? Please provide an estimate of road square footage and explain if reclamation will involve ripping, scarification, backfilling, contouring, and top-soiling, etc.:

A single road, beginning at the existing Navajo Service Road 47, will be constructed to access all 120 acres of the permit area. The roads will bisect the acreage, providing access to each 10-acre MIM. The road will provide future access to permitted MIMs while minimizing impact to previously mined and reclaimed areas. The access roads will be judiciously planned to capture future mining areas with minimal relocation or realignment. Reclamation of all access roads will be implemented at the end of each MIM operation. Mine reclamation will be made part of mine operations as mining progresses from one MIM to the next MIM. This "real-time" or "rolling" reclamation concept will be made part of mine operations as mining progresses from one MIM to the next.

M. What will be the time frame for reclamation, (e.g. time of year, during mining, after mining, etc)?

Reclamation will be conducted on a "rolling" basis i.e., directly following mining activity as mined material is exhausted. Reclamation will be conducted on all previously mined acreage such that no more than 10 acres, inclusive of access roads, staging, and stockpiling is disturbed at any given time.

All mining equipment and materials will be removed upon completion of mining activities and closure of the area. The optimum time for seeding is just prior to the monsoon season and late winter months

Proposed reclamation dates:

Directly after each MIM operation ceases and ultimately after all mining activity

ceases.

10. OTHER REQUIRED PERMITS FOR THIS OPERATION (§304.D.9)

A. Provide a list of other permits required for the operation and the anticipated schedule for receipt of these.

Permit Name & Issuing Agency	**Date or anticipated date of receipt**
SWPP, EPA	14 days after ENOI

11. FINANCIAL ASSURANCE AND PERMIT FEES (§304.E & F)

A. Provide a financial assurance estimate based on the cost of reclaiming the site by a third party. Include supporting calculations. Operations with less than 2 acres total disturbance are not required to provide financial assurance.

TBD by BLM FFO and EMNRD

B. Attach the permit fees as determined pursuant to Subpart 2. The permit application fee for a minimal impact new mine is $1,000.00.

12. CERTIFICATION REQUIREMENT (§304.J.5)

Each application shall be signed **and notarized** by an applicant for the operation with the following certification made:

I certify that I have personally examined and am familiar with the information submitted herein, and based on my inquiry of those individuals responsible for obtaining the information, I believe the submitted information is true, accurate, and complete. I agree to comply with the requirements of the permit, these Rules, and the Act. Further, I hereby allow the Director to enter the permit area for the purpose of conducting inspections until release of financial assurance.

Signature of Applicant:

Steve Brady

Name (typed or print):

Steven Brady

Title/Position:

Manager of operations and Engineering

Date:

Dec 02, 2013

Signature of Notary:

Lucy M. Morfin

OFFICIAL SEAL
Lucy M. Morfin
NOTARY PUBLIC - STATE OF NEW MEXICO
My Commission Expires: 02/25/2015

Figure 1. Topographic map of the proposed permit area.

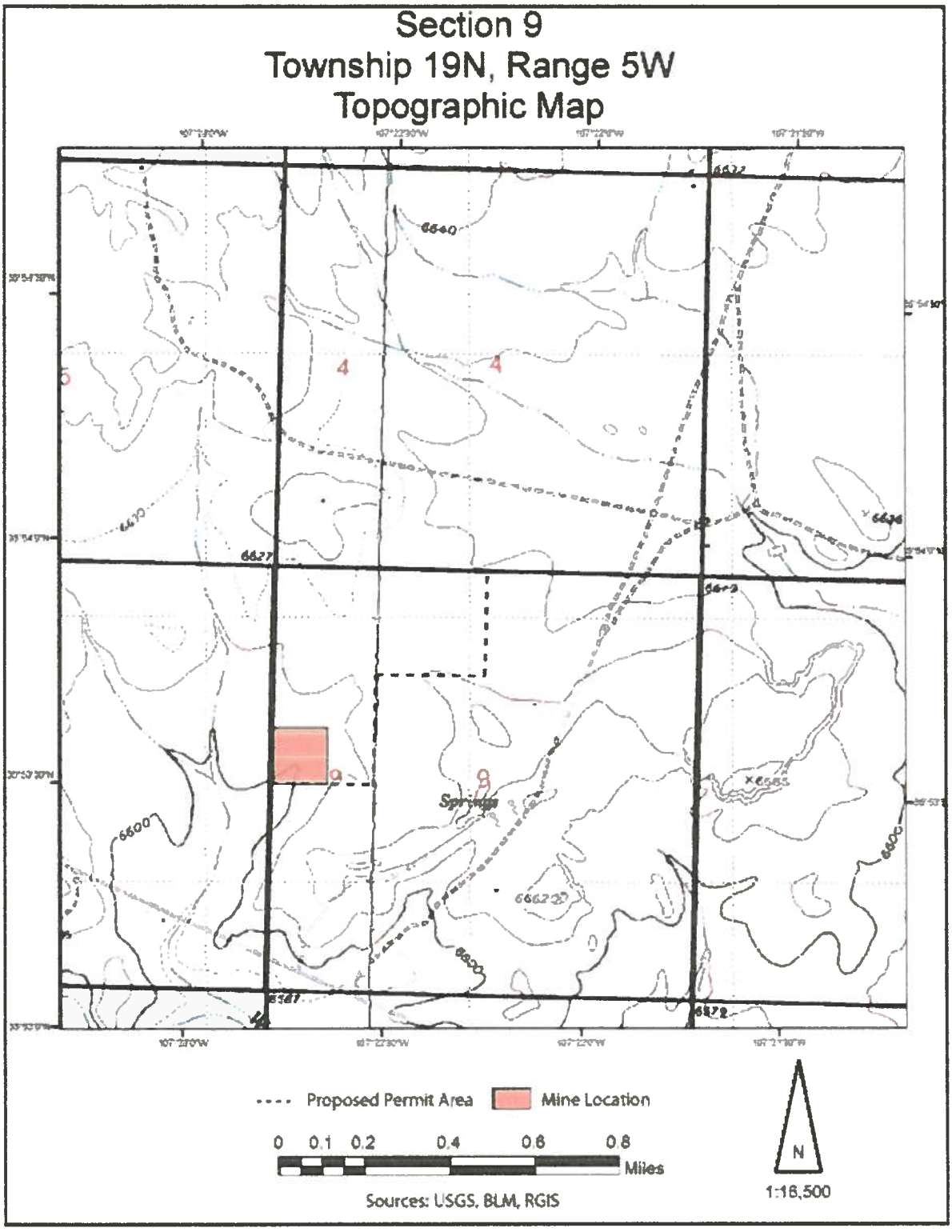

Figure 2. Map of the proposed permit area and access road.