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: Fire Rock Mine

NAME OF APPLICANT: New Mexico Humate, LLC

ADDRESS: P.O. Box 2010
Milan, New Mexico 87021

PHONE #: 505-328-9713

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

Jeff Warren

ADDRESS: P.O. Box 2010
Milan, New Mexico 87021

PHONE #: Office: 505-328-9713; Cell: 505-263-7323

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

Jeff Warren

ADDRESS: P.O. Box 2010
Milan, New Mexico 87021

PHONE #: Office: 505-328-9713; Cell: 505-263-7323

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:

New Mexico Humate, LLC (NMH) will enter into a Contract for the Sale of Mineral Materials (Form 3600-9) with the Bureau of Land Management, Farmington Field Office upon completion of the NEPA process.

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

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

Name	Address	Phone #
BLM - Farmington Field Office	6251 College Blvd., Farmington, NM 87402	505-564-7600

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

Name	Address	Phone #
BLM - Farmington Field Office	6251 College Blvd., Farmington, NM 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:

Report Title: *Class III Archaeological Inventory of the Fire Rock Mine Humate Project, San Juan County, New Mexico*
Report Author: Chris Carlson
Dates of Cultural Resource Survey: 08/05/2024 - 08/07/2024

The cultural resource inventory report will be submitted to the Bureau of Land Management, Farmington Field Office which will then undergo Section 106 consultation with the State Historic Preservation Office to comply with the National Historic Preservation Act. The cultural resource inventory report is attached to this application for your reference.

3. MAPS (§304.D.2)

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

Township 21 North, Range 08 West, Section 34

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):

Please see figures 1, 2, and 3 attached.

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:

Not applicable - no other environmental permits are actively held by NMH.

LIST PERMIT VIOLATIONS; NUMBER, TYPE AND ISSUING AGENCY:

Not Applicable

5. MINING DESCRIPTION (§304.D.4)

A. Type of mineral or minerals to be mined: Humate

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

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

Plant Site/Staging Area:

How Many __1 Staging Area__ Acreage 0.5 Acre

Pits or Quarries: How Many 2-3 Pits Acreage 0.25-0.50 acre each Volume (cu.yds.) 12,721 - 16,940 each
Stockpiles: How Many 2-3 Acreage <0.5 each Volume (cu.yds.) 12,721 - 16,940 each
Waste Dumps: How Many 0 Acreage N/A Volume (cu.yds.) N/A

List the following for **New Road(s):** 1 new temporary access route for truck and equipment traffic to safely access the staging area.

Length (ft.) ~1,320 Width (ft.) 30

Length (ft.) _____ Width (ft.)

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

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

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

Other Disturbances: Type - NONE

How Many _____ 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:

Two loaders, one bulldozer, two to four semi-trucks, motor grader, and a power screen.

6. CHEMICAL USE (§304.D.4)

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

Name: **Use:**

Diesel fuel, hydraulic fluid, equipment coolant, and oil lubricants will be utilized for equipment and vehicle use.

Herbicide will be utilized as needed for invasive plant species management.

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 ground water (ft.): 75-705 feet T.D.S. concentration: Unknown

B. Describe the source of groundwater information:

New Mexico Office of the State Engineer - Water Column/Average Depth to Water. Available online at: https://nmwrrs.ose.nm.gov/nmwrrs/water-column-form. In T21N R09W, average water depth is 75 feet from the surface in 8 water wells in the area; in T22N R08W, average water depth is 705 feet from the surface in 6 water wells in the area; there are no wells in the database for T21N R07W; there are no wells with water depths recorded in T21N R08W.

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

No dewatering activities will be required during mine operations. Any accumulated water on-site will be allowed to evaporate.

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. Once humate is mined, the pit areas will be backfilled and re-contoured to match the overall landscape and promote positive drainage. Compacted soils will be ripped to a depth of 12 inches before contouring, and contouring furrows will be created to minimize erosion and protect the seedbed. Native seed will be spread across the reclamation areas via broadcast application and will then be cultivated using the teeth of the wheel loader to ensure bare seed is covered to the greatest extent possible. NMH will monitor and protect all reclaimed areas to ensure reclamation success. Berms or other erosion-control features may be implemented to protect reclaimed surfaces until vegetation is established. General noxious weed treatment and control would be implemented as necessary to prevent the spread of invasive weed species. Other noxious weed control measures include cleaning equipment before moving them to the mine site, only using defined and established access roads to minimize ground disturbance, and only utilizing certified weed-free straw mulch during reclamation. Periodic monitoring of reclaimed areas for re-vegetative success will be performed and evaluated against an undisturbed reference area in the vicinity of the mine site. Re-seeding will occur as necessary to achieve re-vegetation goals. Regional groundwater generally occurs at depths greater than 75 feet below ground surface, and groundwater is not anticipated to be encountered during mining activities.

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 will be designed and operated to prevent hazards to public health and safety, and to minimize potential environmental damage to surrounding lands. Long-term reclamation goals include protection of water resources, surface soil stabilization, re-vegetation, and an eventual return of the land to a pre-disturbance conditions.

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:

Mining and reclamation activities are currently designed and operated to safeguard employees and the public. Safety signage indicating "Caution" and "Unauthorized Personnel-Keep Out" will be posted at the site entrance. No underground workings will be employed in the mining process, and all 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 minimize potential impacts to water quality by:
- Using proper soil best management practices, including clearing and grubbing, topsoil segregation, stockpiling, backfilling, and re-application of topsoil to establish pre-existing soils and surface conditions;
- Establishing stable soil surfaces and drainage conditions to minimize potential surface erosion and pollutant discharge to surface waters;
- Reclaiming all disturbed areas using a native plant species seed mix compatible with the local soil conditions to establish long-term, productive plant communities and to minimize invasive plant species establishment; and
- Utilizing erosion control best management practices for stormwater and sediment management, as well as reclamation monitoring to ensure adequate best management function for long-term stabilization of all disturbed and reclaimed areas.

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

Mining and reclamation activities and best management practices to protect water quality and prevent erosion are included in Sections 8.A - 8.D and are further described in the Mining Plan of Operations included with this application. Best management practices will be implemented to limit erosion and capture any sediment that has the potential to leave the disturbance areas. Roads and temporary impact areas will be reclaimed as soon as practicable after mining operations are complete, and effort will be applied to minimize slope gradients to not exceed 3H:1V. All disturbed areas will be re-contoured and re-seeded with an appropriate seed mix to facilitate long-term soil stabilization and to establish a productive plant community with minimal invasive species. All reclamation areas will be monitored to assess stability and re-vegetation success; all disturbance areas will be limited to the smallest area possible, and contemporaneous reclamation will continue during all stages of mine operation.

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):
Wildlife grazing; oil and gas production, recreation, and residential activities.

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

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

A cultural resource survey was conducted on 08/05/2024 - 08/07/2024, and two isolated sites were identified. The sites are not likely eligible for listing on the National Register of Historic Places or the State Register of Historic Properties. NMH will consult with the BLM-Farmington Field Office (lead federal agency) who will initiate Section 106 consultation with the State Historic Preservation Division. No cultural resources or historic properties eligible for listing under the National Register of Historic Places or the State Register of Cultural Properties will be impacted by mining activities.

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

Reclamation will consist of backfilling and re-contouring of all mined, staging, and stockpile areas. Overburden from the stockpiles will be returned to the excavation locations, and disturbed areas will be returned to pre-existing grades to the extent practicable.

Stockpiled topsoil will be re-applied evenly to the surface of disturbance areas, and slopes will not exceed 3H:1V. Contemporaneous reclamation will be conducted as mining progresses such that no more than 10 acres of area is disturbed at any given time. The surface will be broadcast seeded using an appropriate native seed mix. Refer to the Mining Plan of Operations included with this application for more information.

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

Reclamation efforts will be applied to minimize disturbed slopes. Earthen berms or other erosion control best management practices will be implemented to manage stormwater run-on and run-off to prevent potential sediment discharge to surface waters. All mining and reclamation design will be implemented to ensure proper drainage in and around the disturbance areas.

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 needed for reclamation. Slope gradients will be minimized to mitigate erosion. Overburden and topsoil will be applied evenly to the surface and contoured to match the surrounding landscape. The surface will be broadcast seeded with a suitable native seed mix.

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?

Compacted soils will be ripped to a depth of 12 inches before contouring furrows for seeding. Furrows will create a rough soil surface that reduces runoff and increases water storage. Seeded areas will be cultivated using the teeth of a wheel loader to ensure bare seed is covered. No amendments are anticipated during reclamation activities.

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

Plant Name:	**Rate of application (lb/ac)**
Please refer to the seed mix and rates included in the attached Mining Plan of Operations.	

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

Reclamation will consist of broadcast seeding.

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

Certified weed-free straw mulch may be applied during reclamation after seeding at a rate of approximately 1,000 - 2,000 pounds per acre, as needed.

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

There are no proposed structures associated with the mining operation.

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

One temporary access route will be utilized for vehicle and equipment travel from the existing County Road 7900 to the proposed staging area. The access route will be a maximum of approximately 39,600 square feet, and will be adjusted as mining operations progress. The temporary access road will be reclaimed by scarification, seeding, and mulching. The road will be reclaimed after all mining operations are complete.

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

Contemporaneous reclamation will continue following active mining operations as the mined material is exhausted. Reclamation will be conducted on all disturbance areas leaving no more than 10 acres of disturbance at any given time.

Proposed reclamation dates: Begin:____/____/____ End:____/____/

Reclamation will occur directly after mining operations are complete at the various mine areas. Please refer to the Mining Plan of Operations included with this application for more information.

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
EPA and NMED - Clean Water Act Section 402 Construction General Permit	Will be obtained prior to construction and mining activities
BLM FFO NEPA Compliance - Environmental Assessment	Actively being prepared. Will be completed after on-site with EMNRD and BLM.
BLM FFO Contract for the Sale of Mineral Materials	Will be obtained after the NEPA compliance process is complete.

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.

Including the supplemental 2.5% escalation to account for inflation over 5 years, the estimated financial assurance would be $59,964.64. Financial assurance will be finalized near the end of the MMD permitting review process.

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.

Please see the check included with this hard-copy application submittal.

TBK BANK

State of New Mexico

County of Cibola

This instrument was acknowledged before me on November 13th, 2024 by

Jefferey S. Warren as owner of New Mexico Humate.

Signature of Notarial Officer

[Official Stamp]

Notary Public Title of Office

ANTHONY D JARAMILLO
Notary Public - State of New Mexico
Commission # 1139715
My Comm. Expires Feb 14, 2027

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: Jeff Warren

Name (typed or print): Jeff Warren

Title/Position: owner/manager

Date: November 13, 2024

Signature of Notary:

└— Notary Seal —┘

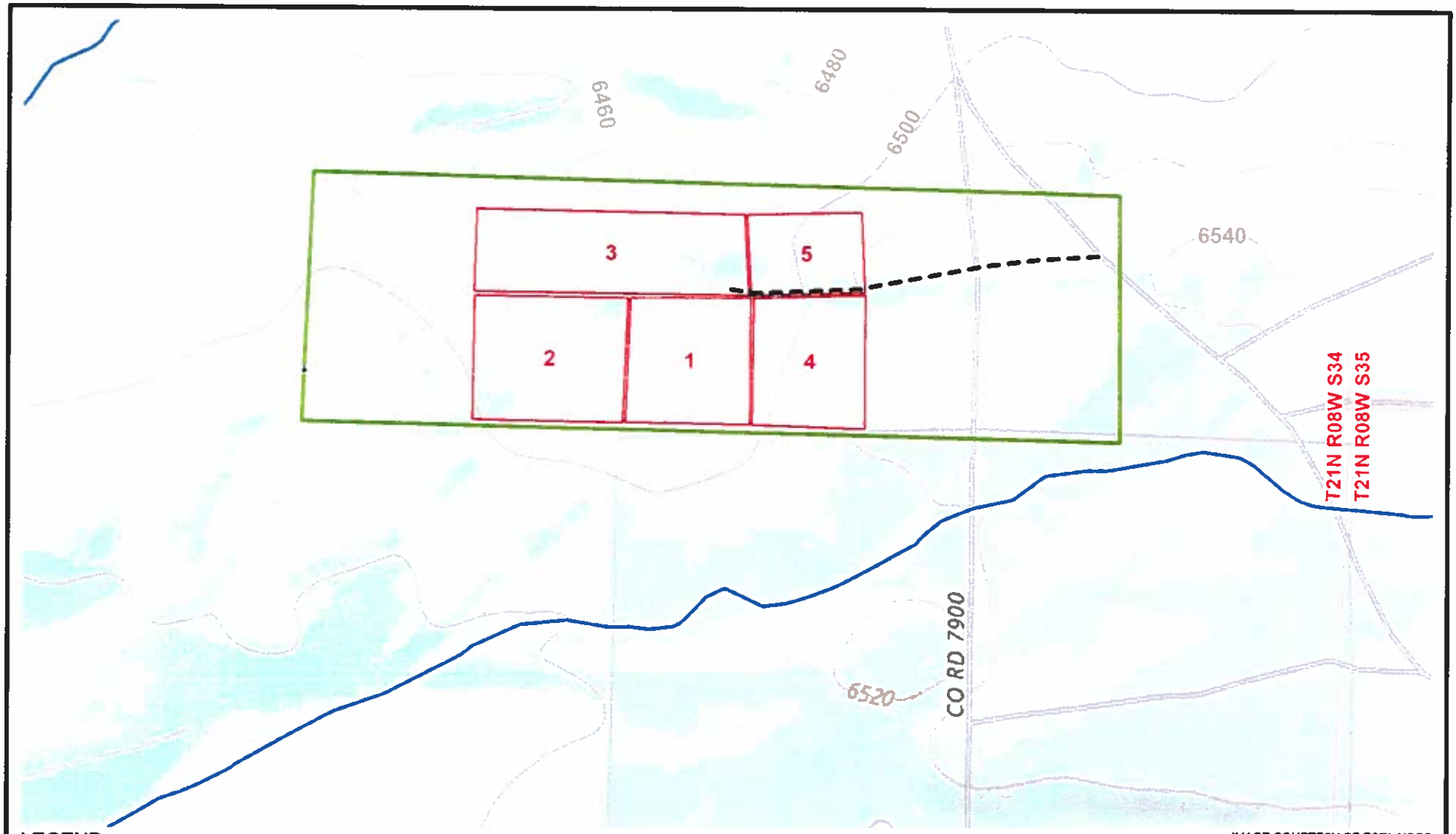


FIGURE 1
TOPOGRAPHIC MAP
FIRE ROCK MINE
SEC34-T21-R08W
SAN JUAN COUNTY, NEW MEXICO
NEW MEXICO HUMATE, LLC

L:\gis\IM_Humate\Fire_Rock_Mine\Maps\APRX\FireRockMineFigures_202409 ures_20240912.aprx

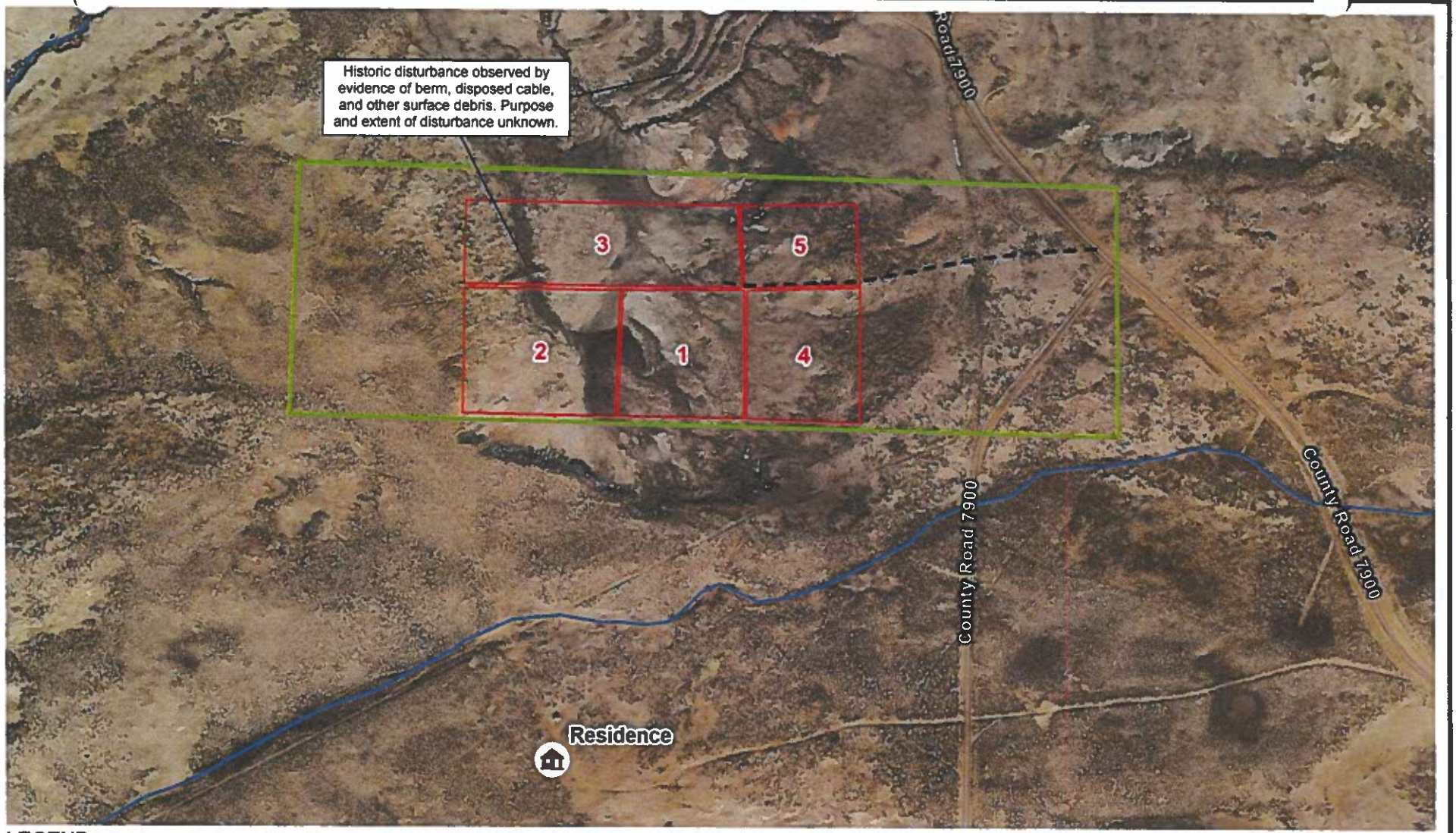


IMAGE COURTESY OF ESRI, USGS

LEGEND

- Residence
- NHD Stream/River
- Fire Rock Mine Access Road
- Permit Area
- Mine Area

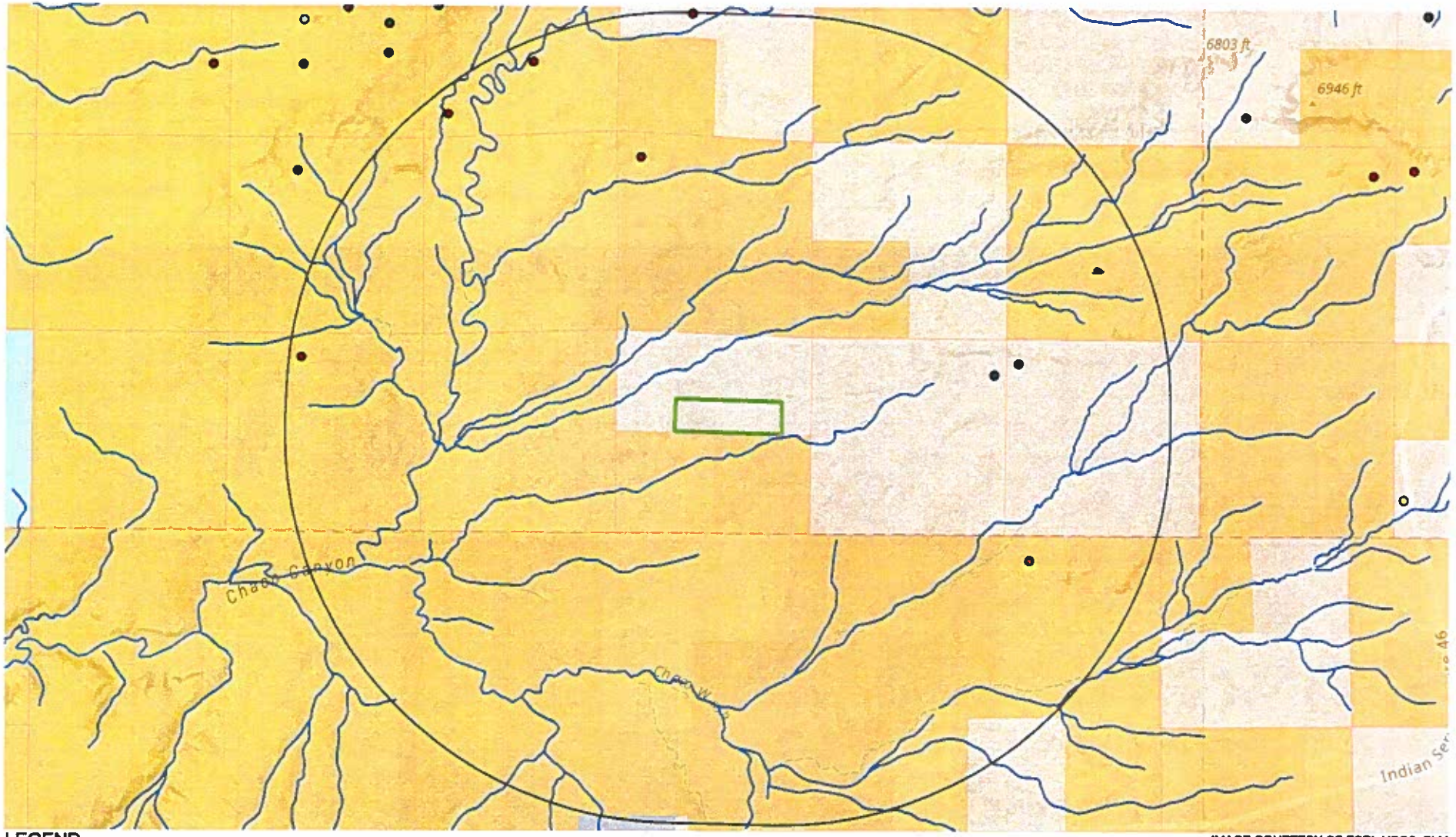
0 500 1,000
Feet

N

FIGURE 2
SITE MAP
FIRE ROCK MINE
SEC34-T21-R08W
SAN JUAN COUNTY, NEW MEXICO
NEW MEXICO HUMATE, LLC

wsp

L:\gis\NM_Humate\Fire_Rock_Mine\Maps\APRX\FireRockMineFigures_20240912\FireRockMineFigures_20240912.aprx



LEGEND

IMAGE COURTESY OF ESRI, USGS, BLM

New Mexico Wells
- Gas
- Miscellaneous
- Oil
- Salt Water Disposal

NHD Stream/River
Permit Area 2 Mile Buffer
Permit Area
PLSS Boundary

BLM NM Surface Ownership
- Bureau of Land Management
- National Park Service
- State
- Tribal

0 1 2
Miles

N

FIGURE 3
VICINITY MAP
FIRE ROCK MINE
SEC34-T21-R08W
SAN JUAN COUNTY, NEW MEXICO
NEW MEXICO HUMATE, LLC

wsp

L:\gis\IM_Humate\Fire_Rock_Mine\Maps\APRX\FireRockMineFigures_20240912.aprx

MINING PLAN

1.1 Proposed Operations

The proposed mine plan for the Fire Rock Mine includes a sequence of mining areas, associated with the estimated mineable reserves, where open pits would be excavated within the constraints of the Minimal Impact Permit (mining related disturbances less than 10 acres at a time). Based on the 20-year mining knowledge of New Mexico Humate, the mineable humate reserve within the proposed 60-acre mining area is approximately 2 to 8 feet thick and continuous. New Mexico Humate proposes to mine humate in the mining areas shown below. Approximately 16 to 21 feet of overburden is expected to be removed in +/- 0.25-acre increments through each mining area as the pit progresses. Overburden will be salvaged separately and placed in designated stockpile areas next to the pit for use in reclamation.

Areas 1 through 5 are labeled as A 1 – A 5 on Figure 3, A 1 through 3 would be developed first. Area 1 is approximately 4.5 acres Area 2 is approximately 5.5 acres and Area 3 is approximately 6.5 acres. Future mining would progress to Areas 4 (4.3 acres) and Area 5 (2.7 acres) as the mine expands. As Area 1-5 reserves are exhausted, mining would move east within the 60-acre area and one pit on the west to determine reserve quality.

New Mexico Humate estimates the total in situ humate within Areas 1 through 5 are between 68,400 and 168,550 tons. The specific in situ humate estimate for each mining area is as follows:

- Area 1: 13,200 to 33,000 tons
- Area 2: 14,400 to 36,000 tons
- Area 3: 12,000 to 30,000 tons
- Area 4: 14,700 to 34,300 tons
- Area 5: 14,100 to 35,250 tons

New Mexico Humate proposes to operate the mine Monday through Thursday and occasionally Friday from 7:00 am to 3:00 pm, except for holidays (New Year's Day, Easter, Memorial Day, July 4, Labor Day, Thanksgiving, and Christmas). The proposed mine would employee three full-time employees working 10-hour shifts, operating front-end wheel loaders, bulldozer, and a portable scalp screen. Approximately two to four semi-trailer trucks (end dump trailers) operated by contract carriers would haul the humate to NMH's processing plant in Milian, New Mexico. A detailed equipment list is included in Table 1.

1.1.1 Stage I: Initial Mine Operation Setup

Step 1: Protection of Natural and Cultural Resources

NM Humate will protect any natural or cultural resources identified in the NEPA process requiring mitigation or protection. If previously undocumented cultural sites are encountered during mining, all activities will stop near the discovery, and the BLM would be immediately notified. The site would then be evaluated. Mitigation measures such as data recovery may be required by the BLM to prevent impacts to newly identified cultural resources.

Step 2: Designation of the Initial Staging Area and Regrading Access Roads

An approximately half-acre staging area would be designated during the first phase of mining in each of the designated mining areas. The staging area would be large enough to accommodate storage of personnel vehicles, mining equipment, materials, and supplies, and a secondary containment area for storage of fuel and hazardous materials would be designated. Relocation of the staging area during mining and reclamation operations would be minimized as much as possible; however, as mining and reclamation activities progress, the staging area would be moved at least once to allow for extraction of the humate beneath that staging area.

The proposed Mine would be accessed via Pueblo Pintado Road within the permit area. NM Humate would grade a road to allow truck and equipment traffic to access the staging site safely. The access road would be graded to 20-feet wide with a 5-foot-wide drainage ditch on either side for a total road width of 30-feet.

1.1.2 Stage II: Mining

Humate would be mined from open pits in the proposed mining areas in phases, as described below. The pit size is expected to be limited between 0.25 acre to 0.50 acres. At any one time, NM Humate would have two to three pit disturbances: the active pit and the next pit's being opened with the dozer. Thus, there may be up to 1.5-acre of pit disturbance at any one time. A typical mining sequence for the proposed mine plan is illustrated on Figure 4 for A 1.

Step 1: Removal of Overburden

Overburden would be removed using a bulldozer and stockpiled in the designated location adjacent to the active pit, for reuse during reclamation. Overburden would be removed within each mining area, with no greater than 0.5 acre of excavated overburden stockpiled at any given time. Topsoil would not be segregated.

The soils in proposed mining area generally have thin and poorly developed A horizons (topsoil). In many locations wind and water erosion have completely removed the A horizon. These conditions make it operationally difficult to salvage topsoil separately from subsoil materials. Additionally, surface soils may be a seed source for halogeton (*Halogetion glomeratus*), a non-native, invasive, noxious plant species that occurs in the Site and is harmful to livestock. The use of topsoil as a final topdressing has the potential to

increase the spread of halogeton. For these reasons, topsoil will not be salvaged separately from other overburden materials.

Stockpiles would be located and protected so that wind and water erosion are minimized and reclamation potential is maximized. The overburden would be stockpiled at angle of repose and left undisturbed until reclamation activities commence, to limit susceptibility to wind erosion. Berms would be used as necessary to control stormwater runoff and run-on. Erosion control and slope stabilization measures for the stockpiles would be implemented according to a Stormwater Pollution Prevention Plan (SWPPP) to be obtained.

Step 2: Removal of the Humate
Active open pits would be developed by removing overburden to expose the ore zone. The pits would be benched and limited in extent and height. Humate would be mined using a front-end loader, portable scalp screen and 36-foot end-dump trailers. During mining, berms and grading would be used around the pit to control stormwater run-on. Berms would be used as slope stabilization devices to control runoff within the proposed mine area. Constructed berms would be approximately 3 to 5-feet high and about 5 to 8-feet wide. The berms would surround the active open pit except for the ingress/egress road.

Step 3: Product Verification & Delivery of the Humate
Humate would be delivered to NM Humate processing facility in Milian, New Mexico, for processing. Daily production rates would be determined based on weight logs recorded for each load at the truck scales at the Milian processing facility. Copies of all records would be kept at the NM Humate processing facility office in Milian, New Mexico.

Step 4: Reclamation
Reclamation would be performed contemporaneously with mining. As new pits are developed for mining, the overburden removed is used to backfill previously mined pits. The contemporaneous reclamation as shown below in Figure 4 is considered preliminary reclamation which consists of backfilling the pit and recontouring the surface to tie in with the surrounding topography. This reclamation pattern, concurrently closing old pits with overburden removed to create new pits, would continue through the entire mining operation. Contemporaneous reclamation enables NM Humate to limit the ground disturbance areas and open pits in accordance with the Minimal Impact Permit. More detail of reclamation is provided in 2.0 – Reclamation Plan.

1.1.3 Stage III: Reclamation/Final Closure of Site

Step 1: Final Mine Activity: Reclamation
Once ~10 acres of disturbed land, including the active open pit (1 to 1.5 acres) and preliminary reclaimed pits (6 to 8.5 acres), has been disturbed, NM Humate would initiate final reclamation of the preliminary reclaimed pits. Final reclamation of each 10-acre mining area would include (see Reclamation Plan for details):

- All remaining mine areas, stockpile areas, and staging areas would be re-contoured to approximate natural contours and to promote positive drainage to the surrounding undisturbed landscape.
- Reclaimed slopes would not exceed 3H:1V.
- The re-contoured surfaces would be re-vegetated per Table 3.

Step 2: Monitoring and Maintenance

- All reclamation areas within the Site would be monitored for re-vegetation success.
- Re-seeding would occur as necessary to achieve re-vegetation success.
- Invasive/noxious weed species would be monitored and treated.

Step 4: Final Closure

When reclamation success has been determined by MMD per the Permit, each 10-acre mined area would be considered Closed. Once a 10-acre permitted disturbance area has been reclaimed and seeded, NM Humate submits a permit modification to MMD to have the area inspected before moving on to the next 10-acre ground disturbance area.

1.2 Equipment and Personnel Information

The proposed mine would employ three full-time employees working 10-hour shifts, four to five days a week (Monday through Friday), excluding holidays. Work would occur from 7:30 a.m. to 3:00 p.m. The employees execute all mine operations, including front-end wheel loaders, bulldozer, and portable screen. All vehicles would be restricted to the existing and proposed access roads and active mining operations. No vehicles would be operated on the reclaimed areas except for reclamation maintenance or rehabilitation activities. The following equipment for each phase of mining would be operated by the employees or contractors:

Table 1: Equipment Required for Mining Operations

Equipment	Stage I (Initial Setup)	Stage II (Operation)	Stage III (Reclamation/closure)
2 x Front-End Wheel Loaders (Caterpillar 966 or equivalent)		X	X
1 x Bulldozer (Caterpillar D8T or Caterpillar D7F)	X	X	X
2 to 4 Semi-Trailer Truck with 36-foot End Dump Trailer (operated by contract carriers)		X	X
1 x Motor Grader (Caterpillar 120M)	X		X
1 x Portable Power Screen		X	
Portable Toilet	X	X	X

1.3 Committed Procedures

NM Humate would implement the following procedures to prevent degradation or destruction to public lands and resources. NM Humate would comply with BLM's terms and conditions related to the specific mining and reclamation activities and with other federal and state laws related to environmental protection and protection of cultural resources.

1.3.1 Roads, Residence, Bridges, Etc.

The travel route between the mine site and the processing plant in Milian, New Mexico, is expected to follow Indian Service Route 9 south to 509 south to 605 south to Milian, NM. Speed limits would be followed, and use would be limited to only necessary travel (e.g., partial loads would not be transported). The maximum weight on bridges would not be exceeded. When encountered, right-of-way would be given to the nearby residents. Loads would be covered according to New Mexico Department of Transportation (DOT) standards to avoid damage to other vehicle's windshields, etc.

1.3.2 Post-Mining Land Use

The ground disturbances within the 60-acre mine area would be properly reclaimed and returned to a grazing post-mining land use for livestock and wildlife.

1.3.3 Surface and Ground Waters

New Mexico Humate will obtain a SWPPP. The SWPPP would be implemented and maintained through the life of the Mine until final reclamation has been achieved. Hazardous materials in the form of fuel and lubricants for the mining equipment and vehicles would be contained in designated areas, and within secondary containment. Appropriate spill kits will be available on-site to address potential spills. There is no surface water present.

1.3.4 Vegetation and Wildlife

All mining operations would be restricted to the boundaries of the Site. To minimize impacts to vegetation and wildlife within the Site, NM Humate would implement the following measures:

- Use existing access roads.
- Keep surface impacts to the minimum that is required to provide safe equipment access and crew working areas.
- Maintain prudent speed limits to protect wildlife that may pass through the Site.
- Contractors will be required to have vehicles that have traveled on unmaintained roads cleaned prior to entering the mine area to prevent accidental introduction of noxious weeds.
- Limit mine operations to occur between dawn and dusk to avoid the illumination of adjacent habitat areas that may affect light-sensitive species.
- Implement contemporaneous reclamation.

1.3.5 Air Quality (dust and emissions control), Noise, Light, and Vibration

Mining and reclamation would occur only during regular working, daylight hours. Minimal equipment would be used to accomplish the mining.

1.3.6 Visual Resources

Visual resources can be impacted by ground disturbance; amount and types of equipment, machinery, and vehicles; and infrastructure. Siting and design considerations to reduce, avoid, or mitigate visual impacts at the Site would include:

- Minimizing all ground disturbances for roads and staging areas.
- Not storing equipment on high land features and along "skylines" that are readily visible from nearby residences to the extent practicable.
- Keeping equipment and vehicles within the limits of the initially disturbed areas.
- Avoiding impacts to public road right-of-ways. Existing vegetation and topography within the right-of-ways would be left undisturbed.
- Regularly performing maintenance of the Site while mining. Inoperative equipment and poor housekeeping, in general, creates a poor image of the Site in the eyes of the public.
- Minimizing vehicular and human activities, as practicable, during regular hours of mine operations. Vehicular and human activities would not occur outside of daylight hours to minimize disturbance to neighboring landowners.

1.3.7 Safety

Mining and reclamation operations would be designed and operated to safeguard employees and the public. Signs with "Caution" and "Unauthorized Personnel-Keep Out" would be posted at the site entrances. Pit side slopes would be benched and limited in height and extent. During mining, berms and grading would be used around the pit to control stormwater run-on. Berms would be used as slope-stabilization measures to control stormwater runoff within the proposed Site. Final slopes of all reclaimed areas would not be steeper than 3H:1V. Shafts, adits, and tunnels are not included in the humate mining process, and therefore would not endanger personnel or the public. All mine vehicles would be required to follow posted speed limits, and all vehicles would adhere to load limits outlined by the New Mexico and Navajo DOT. Right-of-way would be given to the residents and other non-commercial traffic. Loads would be covered according to New Mexico DOT standards to avoid damage to windshields, etc.

2.0 RECLAMATION PLAN

2.1 Objectives

The reclamation objective for the Site is to reclaim the ground disturbances to a condition as good as or better than the pre-mining surface. The reclaimed mine areas would be a self-sustaining ecosystem matching the undisturbed characteristics surrounding the mine areas. Pre-mining land use is livestock grazing and wildlife habitat. Post-mining land use is expected to be the same or similar.

The objective is to return the ground disturbances to a stable landscape by minimizing erosion and re-establishing vegetation. The reclaimed areas will be constructed and monitored to prevent the following conditions:

- Large rills or gullies (excessive erosion that affects vegetation)
- Perceptible soil movement or head cutting in any drainage
- Slope instability on or adjacent to the reclaimed area

2.1.1 Visual Resource Standards

The reclaimed landscape would approximate the visual quality of adjacent and surrounding areas with regard to surface contouring, drainage patterns, and vegetation. Disturbed ground, staging areas, access roads, and the Site would be re-graded to restore as near-natural contours as feasible. All ground disturbances would be re-vegetated.

2.1.2 Reclamation Sequence

Contemporaneous reclamation enables NM Humate to limit ground disturbance and open pits in accordance with the minimal impact permit. As new pits are developed for mining, the overburden removed is used to backfill previously mined pits. Once a pit has been completely backfilled, preliminary reclamation would be initiated. Preliminary reclamation includes backfilling and recontouring. This reclamation pattern, concurrently closing old pits with overburden removed to create new pits, would continue through the entire excavation portion of the mining operation. Final reclamation is initiated once ~10-acres of land, including the active open pit and preliminary reclaimed areas, has been disturbed. Final reclamation includes additional contouring, furrowing, and seeding.

The estimated disturbance and reclaimed area by year are listed in Table 4. These values are estimated. NM Humate will not know exact areas until mining commences. Since NM Humate will operate under a Minimal Impact Permit with MMD, no more than 10 acres of land would be disturbed at any one time. As discussed previously, the active pit areas are expected to be approximately 0.25 to 0.50 acres of open disturbance at one time. Once the humate resource has been mined, the active pit area is backfilled and contoured, and then seeded once final reclamation commences. Therefore, the disturbance values and

reclamation values listed on Table 2 are cumulative values. The active pit, backfill and seeding areas are the cumulative value of disturbance and reclamation expected to occur each year.

Table 2: Areas Disturbed and Reclaimed by Year in Acres

Mine Operation Component	Year 1		Year 2		Year 3	
	Disturbed	Reclaimed	Disturbed	Reclaimed	Disturbed	Reclaimed
Roads	0.5	0	0.5	0	0.5	0
Staging	1	1	1	2	1	3
Overburden	1	1	1	2	1	3
Pits, Backfill, Seeding	6	6	3	9	5	14

Note: The proposed access road would be disturbed the first year and would remain active until mining ceases. Truck haul roads adjacent to the pit are included in the active pit area.

The mining and reclamation work described here does not include weather contingencies, but reclamation activities that cannot be completed due to weather should be completed as soon as the weather allows, limiting the exposure of non-reclaimed surfaces.

2.2 Reclamation Activities

2.2.1 Surface Recontouring

Open pit areas would be backfilled with stockpiled overburden as the mine progresses. Soils would then be contoured (graded) to match original slopes as closely as practicable and provide positive drainage matching the pre-mining patterns.

2.2.2 Seedbed Preparation

Compacted soils would be ripped to a depth of 12 inches before contouring furrows for seeding. Contour furrows create a rough soil surface that reduces stormwater runoff and increases soil water storage. Water erosion is common to the arid southwest especially during intense precipitation events common with the summer monsoons. As stormwater control is a critical path to ensuring reclamation success, NM Humate prefers to use contour furrows to protect the seedbed and minimize erosion by reducing stormwater runoff. Irregular surface roughness not performed on the contour would leave the reclaimed slopes susceptible to concentrated water flow and could ultimately lead to rilling. Secondly, the depression created by the furrows collects precipitation and increases soil water content in the seedbed.

2.2.3 Seeding

Seed would be sowed across the mine reclamation areas by broadcasting at an application rate of 22.1 pounds pure live seed per acre. Seeded areas would then be cultivated using the teeth of the wheel loader to ensure bare seed is covered to the extent possible. Hydroseeding is not recommended for native seeds

due to poor seed-soil contact percentage, and the tendency of the seed to self-sort by weight and size, and therefore resulting in uneven application distribution.

Table 3: Proposed Seed Mix

Species	Variety	Percent of Seed Mix
Indian ricegrass (*Achnatherum hymenoides*)	Paloma or Rimrock	8.3
Blue grama (Bouteloua gracilis)	Alma	16.7
Mountain Bromegrass (Bromus marginatus)	Bromar	25.0
Galleta grass (Pleuraphis jamesii)	Viva	8.3
Western wheatgrass (Pascopyrum smithii)	Arriba	16.7
Lewis Blue Flax (Linum Lewisii)	Appar	4.1
Mexican Cliffrose (Purshia Mexicana)	VNS	4.1
Mexican Hat (Ratibida columnifera)	Red	4.1
Fourwing saltbush (Atriplex canescens)	High Elev	12.6
Total		100

2.2.4 Reclamation Protection

During and after reclamation, NM Humate would monitor and protect the reclaimed landscape to help ensure reclamation success to MMD's requirements. Berms or other erosion-control features may be utilized to protect reclaimed surfaces until vegetation is established.

2.3 Invasive/Noxious Species Control

Noxious weed control is a BLM-required compliance action for surface reclamation. The objective of the BLM/FFO weed management program is to detect invasive plant populations, prevent the introduction of new invasive populations, control the spread of existing populations using the tools of integrated weed management, and eradicate invasive populations using the safest environmental methods available. Preventing the introduction of noxious weeds into an area is the most effective and economical means of weed control and management.

The BLM/FFO's invasive, non-native plant species of concern, and the management protocol for each, is provided in Table 4. Only one of the listed species was observed during site visits to evaluate the reserve potential of the area, halogeton (*Halogeton glomeratus*) was identified.

Table 4: Invasive, Non-Native Plant Species of Concern to the BLM/FFO

Common Name	Scientific Name	Management Class
Camelthorn	*Alhagi maurorum*	A - Prevent and eliminate
Woolyleaf bursage	*Ambrosia grayi*	A - Prevent and eliminate
Onionweed	*Asphodelus fistulosus*	A - Prevent and eliminate

Diffuse knapweed	*Centaurea diffusa*	A - Prevent and eliminate
Spotted knapweed	*Centaurea maculosa*	A - Prevent and eliminate
Malta star thistle	*Centaurea solstitialis*	A - Prevent and eliminate
Yellow starthistle	*Centaurea solstitialis*	A - Prevent and eliminate
Houndstongue	*Cynoglossum officinale*	A - Prevent and eliminate
Dyer's woad	*Isatis tinctoria*	A - Prevent and eliminate
Tall whitetop (perennial pepperweed)	*Lepidium latifolium*	A - Prevent and eliminate
Dalmatian toadflax	*Linaria dalmatica*	A - Prevent and eliminate
Yellow toadflax	*Linaria vulgaris*	A - Prevent and eliminate
Purple loosestrife	*Lythrum salicaria*	A - Prevent and eliminate
African rue	*Peganum harmala*	A - Prevent and eliminate
Jointed goatgrass	*Aegilops cylindrica*	B - Contain and prevent
Canada thistle	*Cirsium arvense*	B - Contain and prevent
Leafy spurge	*Euphorbia esula*	B - Contain and prevent
Black henbane	*Hyoscyamus niger*	B - Contain and prevent
Scotch thistle	*Onopordum acanthium*	B - Contain and prevent
Halogeton	*Halogeton glomeratus*	B - Contain and prevent
Hoary cress (whitetop)	*Cardaria draba*	C - Manage and suppress
Musk thistle	*Carduus nutans*	C - Manage and suppress
Russian knapweed	*Centaurea repens*	C - Manage and suppress
Bull thistle	*Cirsium vulgare*	C - Manage and suppress
Russian olive	*Elaeagnus angustifolia*	C - Manage and suppress
Saltcedar	*Tamarix spp.*	C – Manage and suppress

Halogeten is listed as a New Mexico Department of Agriculture (NMDA) Class B species (2009). "Class B species are limited to portions of the state. In areas with severe infestations, management should be designed to contain the infestation and stop any further spread" (NMDA, 2009). It is highly toxic to both sheep and cattle; however, the toxicity potential for harm can depend on livestock health, site conditions and pant maturity (USDA, 2014).

NM Humate would take all reasonable precautions to prevent the introduction, establishment, and spread of halogeton and any other noxious weeds found in and around the Site. NM Humate may implement the following control measures for halogeton:

- Physically remove small localized infestations.

- Re-vegetate with perennials (halogeton is a poor competitor).
- Treat affected areas with 2,4-D (2,4-dichlorophenoxyacetic acid) LV ester at 1 to 2 pounds of acid equivalent per acre when plants are actively growing, before flowering (USDA, 2014).

General noxious weed treatment and control would be repeated, as necessary, to promote re-vegetation with native plants and prevent the spread of noxious weeds. Control measures would be implemented before, during, and after mining and reclamation to prevent the introduction of undesirable plant species, and to reduce the spread of noxious weeds. These control measures could include:

- Removing all mud, dirt, and plant parts from all off-road equipment used at other locations before moving them into the Site
- Using only defined and established access roads to minimize ground disturbance
- Using only certified noxious weed-seed-free straw mulch during reclamation

NM Humate would be responsible for weed control on disturbed ground and reclaimed areas within the limits of the Site and associated access roads. NM Humate would be responsible for consulting with the BLM and/or local authorities for acceptable weed control measures. During mining operations, any noxious or invasive plants observed within the Site would be treated consistent with the BLM/FFO and the San Juan County Noxious Weed Management Program.

Use of pesticides and herbicides shall comply with applicable federal/state laws. Pesticides and herbicides shall be used only in accordance with their registered uses and within limitations imposed by the Secretary of the Interior.

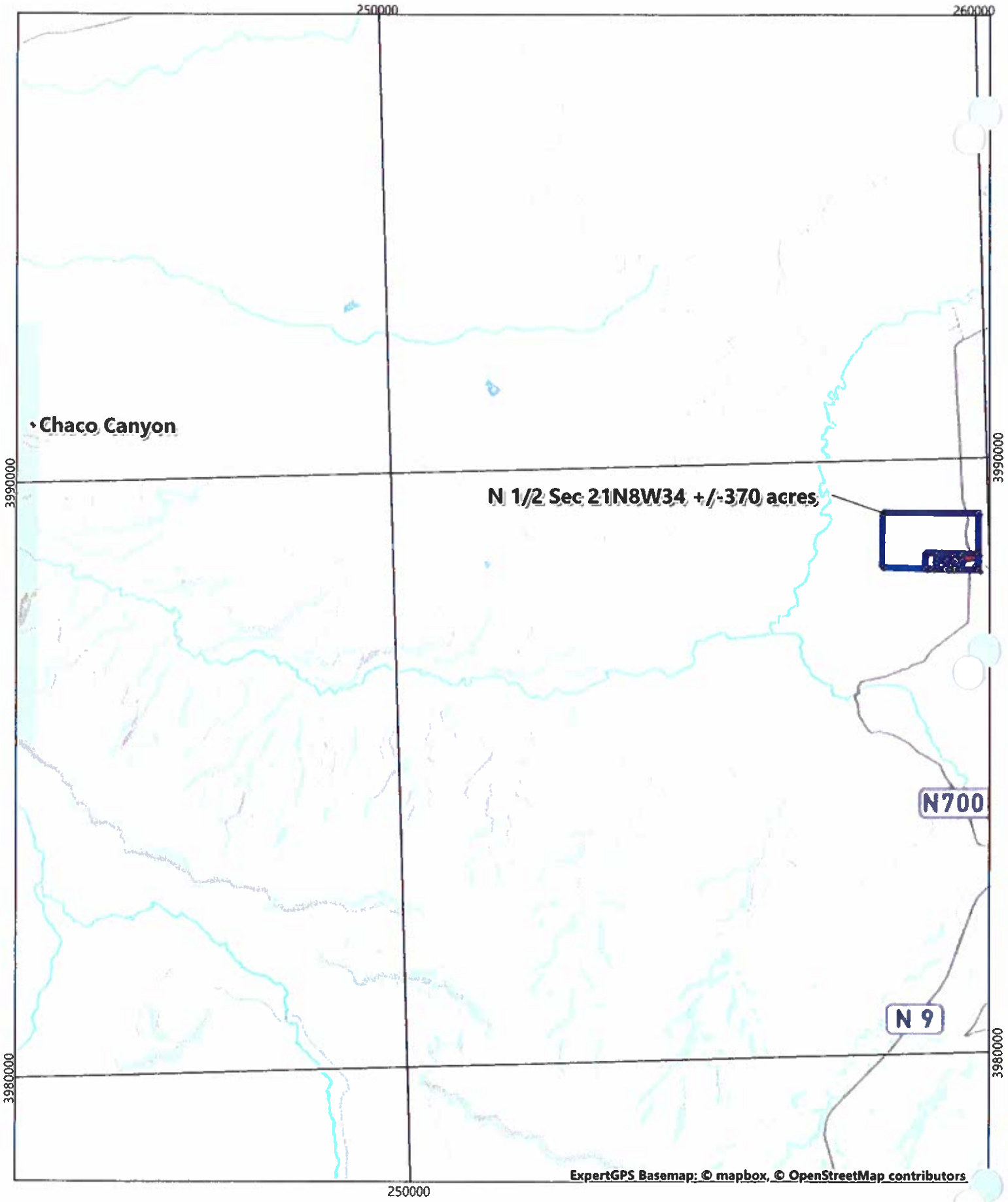


Figure 1

ExpertGPS

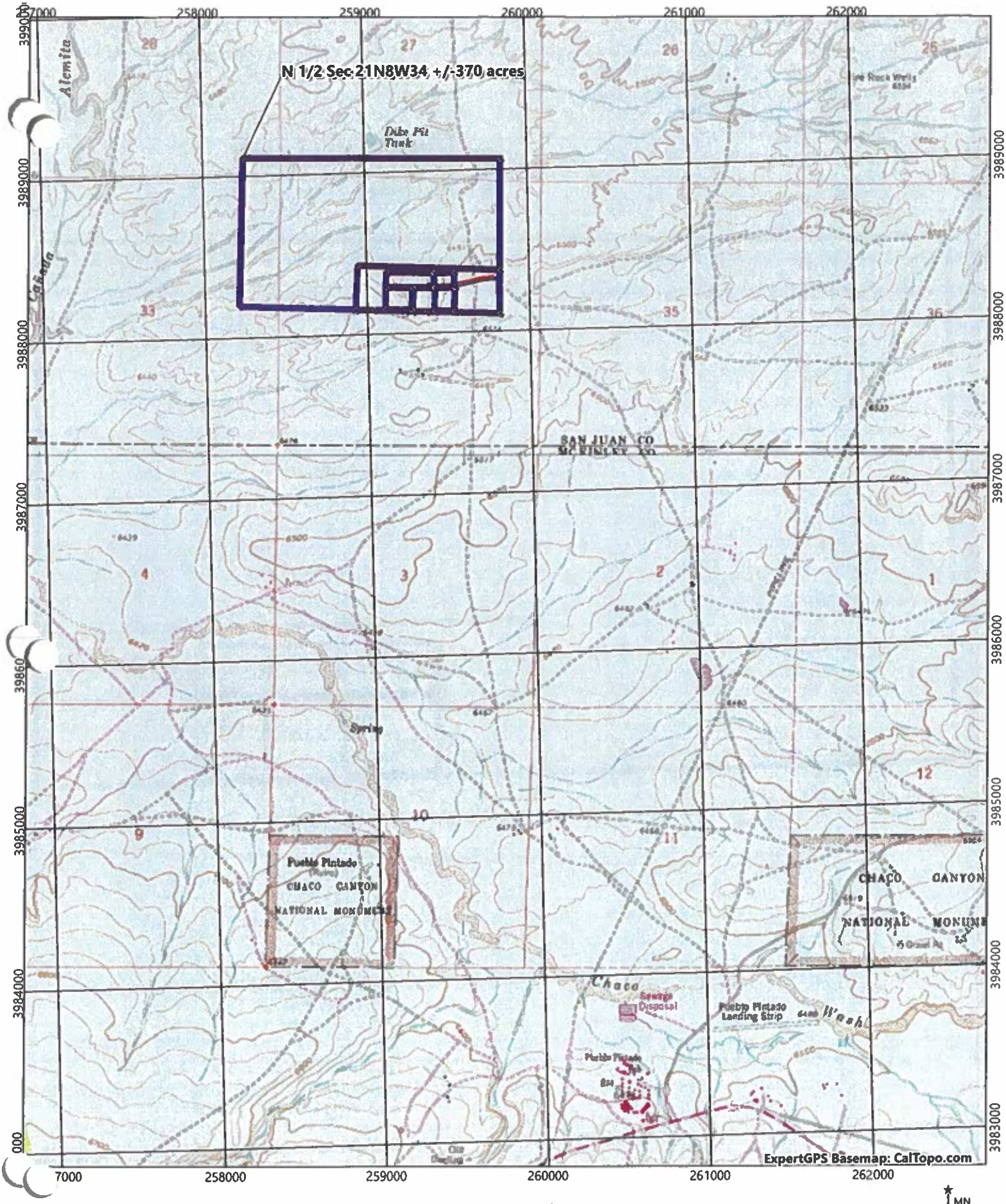


Figure 2

ExpertGPS

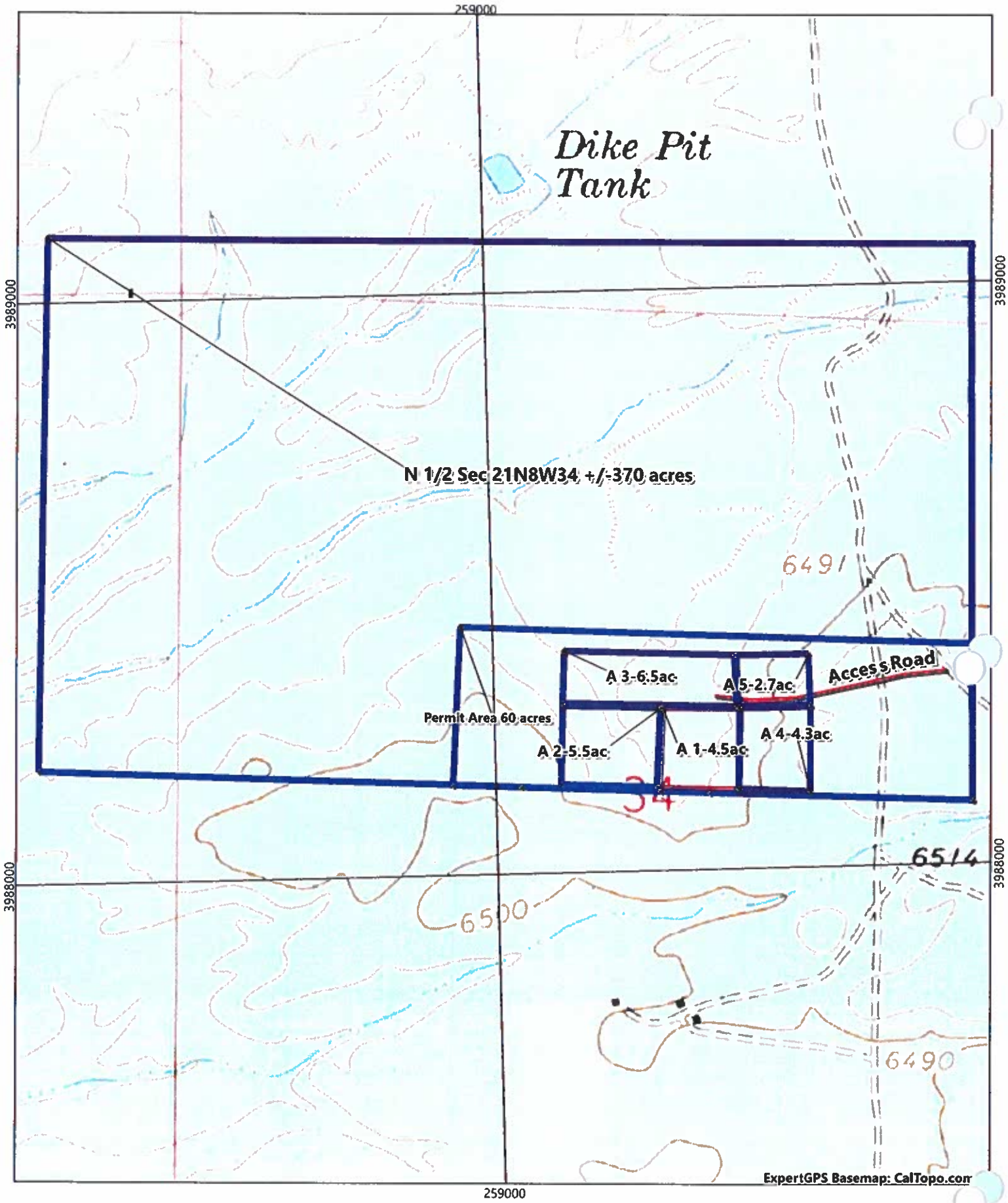


Figure 3

ExpertGPS

500 ft

MN
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