

### **AMERICAN MAGNESIUM LLC**

Box 1013 Elephant Butte, NM 87935 www.AMERICANMAGNESIUM.COM

September 19, 2022

Mr. Bill Childress District Manager, Las Cruces District Office Bureau of Land Management 1800 Marquess Street Las Cruces, NM 88005

Mr. Holland Shepherd Program Manager, Mining Act Reclamation Program New Mexico Energy, Minerals and Natural Resources Department Mining and Minerals Division 1220 South St. Francis Drive Santa Fe, NM 87505

RE: Minimal Impact Exploration Operation Permit Application (State of New Mexico) Drilling and Resource Determination Executive Summary

Dear Messrs. Childress and Shepherd:

I am writing regarding a new minimal impact drilling exploration permit request that will enable American Magnesium LLC to complete a 43-101 Report for resource verification. Attached is the completed Minimal Impact Exploration Operation Permit Application, required by the State of New Mexico's Energy, Minerals and Natural Resources Department, as well as an Executive Summary of the Drilling Plan and Resource Determination Study. Our hope is to begin the exploration drilling on the Claims 21 and 22 held by American Magnesium LLC, by October 31, 2022, or as soon as possible thereafter.

As you know, magnesium has been identified as a critical mineral under Presidential Executive Order 13817 signed December 20, 2017, and the Final List of Critical Minerals issued by the U.S. Geological Survey on May 18, 2018. The NI 43-101 Report will enable American Magnesium to verify the assays from surface samples already processed by subsurface core drilling, sampling and analysis. It is American Magnesium's understanding the performance of this resource assessment will not impact the existing Plan of Operations.

Please direct your questions to the NI 43-101 Report lead geologist, Mr. Terry Jensen with Gauvreau GeoEnvironmental Group Inc. at 519-635-0160 or by email at <u>tjensen@g3inc.ca</u>

Regards,

American Magnesium LLC

Carol Ness, Managing Member

### PART 3

### MINIMAL IMPACT EXPLORATION OPERATION

### PERMIT APPLICATION

Accompanying instructions for this permit application are available from MMD, and on MMD webpage:

http://www.emnrd.state.nm.us/MMD/MARP/MARPApplicationandReportingForms.htm

Send 6 copies of the completed application to:

#### 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

Webpage: www.emnrd.state.nm.us/MMD/index.htm

## CHECK OFF LIST TO DETERMINE YOUR PROJECT'S STATUS AS A MINIMAL IMPACT EXPLORATION OPERATION:

Yes	✔ No	My project <b>will exceed 1000 cubic yards of excavation</b> , per permit.
Yes	✔ No	Surface disturbances for constructed roads, drill pads and mud pits <u>will</u> <u>exceed 5 acres</u> total for my project.
Yes	🖌 No	My project is located in or is expected to have a direct surface impact on wetlands, springs, perennial or intermittent streams, lakes, rivers reservoirs or riparian areas.
Yes	₽ No	My project is 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.
Yes	VNO	My project is 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.
Yes	🖌 No	My project is located in a known cemetery or other burial ground.
Yes	V No	My project is located in an area with cultural resources listed on either the National Register of Historic Places or the State Register of Cultural Properties.
Yes	✔ No	My project will or is 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.
Yes	🖌 No	My project is expected to use or using cyanide, mercury amalgam, heap leaching or dump leaching in its operations.
Yes	🖌 No	My project is expected to result in point or non-point source surface or subsurface releases of acid or other toxic substances from the permit area.
Yes	🖌 No	My project requires a variance from any part of the Mining Act Rules as part of the permit application.

If you answer <u>yes</u> to any of the above questions, your project <u>does not</u> qualify as a minimal impact exploration operation.

#### **Confidential Information**

Yes v No Is any of the information submitted in this application considered by the applicant to be confidential in nature? If yes, please provide this information separately and marked as "confidential."

#### Timeline

- Exploration applications must be provided no less than 45 days prior to the anticipated date of operations desired by the applicant.
- Renewal applications shall be filed at least 30 days preceding expiration of the current permit. Permits are valid for one year.
- Approved permit is valid for one year from the date of approval.

### SECTION 1 – OPERATOR INFORMATION (§304.D.1)

Project Na	Project Name: American Magnesium Little Mountain				
Nearest To	own To Project: <u>Deming</u> , New Mexico	)			
Applicant I	Name and Contact Information (entity	obligated under the Mining Act):			
Name:	Carol Ness, Managing Member				
Address:	PO Box 1013				
	Elephant Butte, NM 87935				
Office Pho	ne: (505) 699-8807	Cell Phone: (505) 699-8807			
Fax Number: <u>NA</u>		Email: carolemilyness@gmail.com			
Name of C	Name of On-Site Contact, Representative, or Consultant:				
Name:	E. Terry Jensen				
Address: P.O. Box 444, 201 W. Spruce St Demi		ng, NM			
	88030				
Office Pho	ne: 519-635-0160	Cell Phone: 519-635-0160			
Fax Number: <u>NA</u>		Email: tjensen@g3inc.ca			

### SECTION 2 – RIGHT TO ENTER INFORMATION (§302.D.1)

A. Describe or attach copies of documents that give the applicant the right to enter the property to conduct the exploration and reclamation, include: lease agreements, access agreements, right of way agreements, surface owner agreements, and claim numbers, if applicable.

#### Attachment See attachment

B. List the names and addresses of surface and mineral ownership within the proposed permit area. If the mineral is federal mineral, indicate as federal mineral, but provide the name of the claim holder or lease holder.

#### Surface Estate Owner(s):

Name	Address	Phone #
U.S. BLM	1800 Marquess St.	(575) 525-4300
	Las Cruces, NM 88005	
U.S. Forest Service		
State of NM		
		_
Private/Corporate		
Name:		_
Other		
Name:		

#### Lease Holder(s) of Surface Estate (if applicable):

Name	Address	Phone #
		-
Mineral Estate Owner(s):		
Name	Address	Phone #
Bureau of Land Management	1800 Marquess St.	(575) 525-4300
	Las Cruces, NM 88005	
US Forest Service		
State of NM		
		-
Claim/Lease Holder		
Name:		-
Claim Numbers:		
Claim/Lease Holder	PO Box 1013	(505) 699-8807
Name: <u>American Magnesium, LLC</u>	Elephant Butte, NM 87935	-
Claim Numbers: MAG 21 Lode Claim	m (NMMC197579) & MAG 22 Lode Clain	n (NMMC197580)
Other		
Name:		_

C. Has a Cultural Resource Survey been performed on the site?

Yes No

If yes, please provide the author, title, date and report number, and include a copy of the survey with this application, if possible:

Please see: Plan of Operations Foothill Dolomite Mine Deming, New Mexico August 27, 2020 (Revision 5)

Attachment \_\_\_\_\_

D. Has a wildlife survey or vegetation survey been performed for the permit area?

Yes No If yes, please provide the author, title, date and report number, and include a copy of the survey with this application, if possible:

Please see: Plan of Operations Foothill Dolomite Mine Deming, New Mexico August 27, 2020 (Revision 5)

Attachment \_\_\_\_\_

### SECTION 3 - MAPS AND PROJECT LOCATION (§302.D.2)

A. Project Location:

Township 25 South	Range <u>8 West</u>	Section 27
Township 25 South	Range <u>8 West</u>	Section <u>34</u>
Township	Range	Section

List the drill hole/exploration name and the GPS coordinates for each site.

I.D.	Northing /	Easting /	I.D.	Northing /	Easting /
Number	Latitude	Longitude	Number	Latitude	Longitude
BV1: 2495 BV2: 2496 BA3: 2496 BA4: 2496 BA5: 2496 BA6: 2496 BV7: 2497 BV8: 2498 BA9: 2498 BA9: 2498 BA10: 2498 BA11: 2498	73.33, 3554073.83 56.93, 3554138.36 56.93, 3554138.36 56.93, 3554138.36 56.93, 3554138.36 56.93, 3554138.36 02.82, 3554161.54 33.07, 3554104.56 833.07, 3554104.56 833.07, 3554104.56 833.07, 3554104.56	6 6			

Coordinate system used to collect GPS data points:

- NAD83 Geographic
- NAD83 UTM Zone 13 (or 12)
   WGS 1984

	NAD27	Geographic
	NAD27	UTM Zone 13 (or 12)
Γ	Other:	

Attachment \_\_\_\_\_ (for listing additional boreholes)

B. Maps (see application form instructions for examples of maps to be included):

	Are topographic maps included with the application that show the following items:			
	Yes – The boundary of the proposed exploration project Permit Area			
	Yes – The proposed exploration locations (i.e., borehole locations)			
	Yes – Existing roads, new roads and overland travel routes			
	Yes N/A – Areas of proposed road improvement			
Att	Attachments Figure 2			
	Are maps or figures included with the application showing the approximate dimensions and locations of drill pads and other disturbances:			
	Yes – Drill pad dimensions and constructed drill pad locations			
Att	achments			
C.	Provide detailed driving directions to access the site:			
	See attached map - Figure 1			

### SECTION 4 – EXPLORATION DESCRIPTION (§302.D.3 & 4)

A.	Anticipated exploration: Start Date: End Date:	
B.	List the mineral(s)/element(s) to be explored for: <u>Magnesium</u>	
C.	Proposed method(s) of exploration:	
	] Air drilling (air rotary, coring, etc.):	
	<u>12</u> # of holes <u>200' vertical</u> Depth (ft.) <u>2"</u> Diameter (in.)	
	4# of drill pads <u>60</u> Length (ft.) <u>40</u> Width (ft.)	
	Will drill pads be graded/bladed or overland: Graded/bladed I Overland	
	Grading or undisturbed overland will depend on the location. Will drill pads need some mechanical leveling (grading/blading): Yes No	
	Approx. Weight of Drill Rig (lbs.) 7500 Number of Axles: Track	
	Total length of drill stem that can be carried on the rig:	
	Is a support pipe truck anticipated? 🗌 Yes 🔳 NoWeight (lbs.)	
	Weight of support compressor (lbs.): <u>NA</u> Trailer mounted?	
Anticipated Drilling Contractor: <u>Holman Drilling</u> License No. <u>W</u>		
	] Mud/fluid drilling:	
	12# of holes200' vertical Depth (ft.) _2_ Diameter (in.)	
	<u>4</u> # of drill pads, <u>60</u> Length (ft.) <u>40</u> Width (ft.)	
	Will drill pads be graded/bladed or Graded/bladed Overland overland: Grading or overland will depend on the location.	
	Will drill pads need some mechanical leveling (grading/blading): 🗌 Yes 🛛 🕅 No	
	Will a closed loop system be used or will mud/fluid pits be used? <u>Closed loop tank</u>	

If mud/fluid pits are proposed:

NA_# of pitsLength (ft.)Width (ft.)Depth (ft.)
Anticipated excavating equipment:
How will excavating equipment be transported to the site (i.e., driven, low-boy, etc.):
Will mud pits be lined?: 🗌 Yes 🛛 No
If yes, proposed material to line the mud pits:
Approx. Weight of Drill Rig (lbs.) 7500 Number of Axles: Track
Anticipated Drilling Contractor: <u>Holman Drilling</u> License No. <u>WD1834</u>
Test pits / exploratory trenches:
NA # of pitsLength (ft.)Width (ft.)Depth (ft.)
Anticipated excavating equipment:
How will excavating equipment be transported to the site (i.e., driven, low-boy, etc.):
<b>Other methods of exploration</b> (i.e., cuts, shafts, tunnels, adits, declines, blasting, etc.). Indicate method and details:

NA

# TOTAL ACREAGE TO BE DISTURBED DUE TO DRILL PADS = 0.22acres(To convert to acres, multiply total square footage of drill pads by 0.0000229)

Four drill locations are planned. Both vertical and angle core holes are planned at each location. If drill site flat enough then no grading is planned. The discussion will be made in the field.  $4(60 \times 40) \times (0.0000229) = 0.22$  acres

#### D. Disposal of drill cuttings

Bulldozer

Backhoe

Trackhoe

Trailers

Other

Scaper/Grader

Portable Toilet

 $\square$ 

	If this exploration project is for uranium or other radioactive elements/minerals, applicant agrees to perform a gamma radiation survey at each drill site prior to, and after, exploration activities. Applicant/Owner/Operator agrees to restore gamma radiation levels at each drill site to pre-exploration levels.					
	Will excess drill cuttings be buried at each drill site location or within a single disposal pit?					
	lf	f a <u>single disposal pit</u> is prop	oosed, please provide the following:			
	C	Description or GPS coordina	tes of the proposed cuttings disposal pit location:			
	NA					
	Dimensions of the single proposed cuttings disposal pit (length, width, and depth):					
	_	Length (ft.)	Width (ft.)Depth (ft.)			
<b>TOTAL ACREAGE TO BE DISTURBED DUE TO DISPOSAL PIT = <u>NA</u> acres</b> (To convert to acres, multiply total square footage of disposal pit by 0.0000229)						
E.	Other Supporting Equipment (check all that apply):					
		4x4 Trucks/Vehicles	Quantity: 1			
		Water Truck	Weight (lbs.): 9000			
		Geophysical Truck	Weight (lbs.):			
		Pipe Truck (rig support)	Weight (lbs.):			

Type: D4

Type:

Type:

Type:

Quantity:  $\overline{1}$ 

List:

Quantity/Type:

#### F. Roads and Overland Travel:

List of <u>new</u> roads to be constructed for this exploration project:

Description of NEW Roads	Length (ft.)	Width (ft.)	Total Acres (length x width x 0.0000229)
See attached Figure 2 of new road locations. The new road will s relatively flat ground and not on the dolomite. The road and sup bulldozer. 962 x 8 x 0.000029 = 0.18 acres	service the pport area	support are will be crea	ea. This road is on ated by the
TOTAL ACRES DISTURBED BY NEW ROAD C	ONSTRU	ICTION:	0.18

Describe how new roads will be constructed:

A bulldozer will blade and grade an 8-foot-wide path for the drill rig to pass on.

List for <u>extension or widening of existing</u> roads:

Description of Modification to EXISTING Roads	Length (ft.)	Width (ft.)	Total Acres (length x width
The modifications on existing roads will be the grading of eroded of what section of road that will need grading will be made during feet estimate should be considered a high estimate. 200 x 8 x 0.0000229 = 0.04 acres	areas ensu the mobili	ure safe trav zation of th	x 0.0000229) vel. The decision le drill rig. The 200
TOTAL ACRES DISTURBED BY ROAD IM	IPROVE	MENTS:	0.04

Describe how existing roads will be extended or widened:

List for routes of overland travel:

TOTAL ACRES DISTURBED BY OVERL		RAVEL:	0.35	
1916 x 8 x 0.000029 = 0.35 acres				
See attached Figure 2. The overland travel path will be created by the bulldozer which will assist the drill rig to each drilling location on the ridgeline of Little Mountain. The overland travel path will be a one-way path starting at the upper most drilling location and then moving downhill to each of the lower drilling locations.				
Description of OVERLAND TRAVEL Routes	Width (ft.)	Total Acres (length x width x 0.0000229)		

G. Support Facilities

Describe (location and size) any support facility disturbances (equipment staging, equipment and material storage and/or lay down areas, vehicle parking, temporary housing and/or trailers) to be created or situated on the site during exploration operations.

Support area will be 60' by 60' equaling 0.08 acres.

See attached Figure 2 which illustrates the support area location south side of Little Mountain. The support area will contain the water truck, support equipment truck (which will contain fuel, oil, hydraulic oil, etc), chemical toilet and core tent.

H. TOTAL ACREAGE TO BE DISTURBED BY PROJECT = $0.1$	87 acres
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(Include all disturbed acreage from drill pads, cuttings disposal pit, new roads, improved roads and overland travel routes)

Table 1				
Disturb Areas	Distance (Ft.)	Width (Ft.)	Area (Sq. Ft.)	Acres
Overland Road	1926	8	15,408	0.35
New Road	962	8	7,696	0.18
Grading Existing Road	200	8	1,600	0.04
Support Area	60	60	3,600	0.08
Drill pads (4)	60	40	9600	0.22
	Total Affected	Area	37,904	0.87

### SECTION 5 - CHEMICAL USE (§302.D.4)

A. Check any and all chemicals that will be used for this project.

Drilling Mud (i.e., EZ Mud)	Type/Quantity:	
Diesel Fuel	Quantity:	100 gallons
Down-hole Lubricants	Type/Quantity:	
Lost Circulation Materials	Type/Quantity:	
Oils/Grease	Quantity:	
Gasoline	Quantity:	15 gallons
Hydraulic Fluid	Quantity:	
Ethylene Glycol	Quantity:	
Cement	Type/Quantity:	
Water	Source:	Local
Bentonite	Quantity:	
Fertilizer	Type/Quantity:	
Other	Type/Quantity:	

B. Describe, in detail, a plan for the containment, use and disposal of all chemicals listed above:

General policy is the drill rig will be inspected at the beginning of each day looking for problems. If an uncontrolled release occurs then the impacted soils will be containerized. Any free product will be further collected by adsorbents. Impacted soils will be drummed, sampled, analyzed and disposed of following State and Federal guidelines.

- C. Describe where equipment fueling/refueling will occur: The support truck will have a 50-gallon tank on-board at the support area. Refueling will take place utilizing 5-gallon Jerry cans each morning. Daily fuel consumption is expected not to exceed 15 gallons per day. If an uncontrolled release occurs then the impacted soils will be containerized. Any free product will be further collected by adsorbents. Impacted soils will be drummed, sampled, analyzed and disposed of following State and Federal guidelines.
- D. Describe how hazardous material spills/leaks will be handled: See Section 5B

- E. Identify spill cleanup materials that will be kept on-site (check all that apply):
  - Bentonite clay or cat litter
  - Adsorbent pads, rolls, mats, socks, pillows, dikes, etc.
  - Drum or barrel for containing contaminated soil/adsorbent materials
  - Other/list:
  - Other/list:
  - Other/list:
- F. Applicant/owner/representative agrees to immediately notify the State of New Mexico immediately of any spills of hazardous materials (see page 1 of this application for phone numbers to notify):

# SECTION 6 – GROUNDWATER/SURFACE WATER INFORMATION (§302.D.5)

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

Depth to groundwater (ft.):  $\frac{250 \text{ ft bgs}}{250 \text{ ft bgs}}$  TDS concentration (mg/L):  $\frac{\text{NA}}{250 \text{ ft bgs}}$ 

Describe the source of this information:

1.) Well 25S/8W-26.43413 (USGS 320544107381301) is located on private land in Mahoney Park approximately 0.7 mile east of the Foothill Site. The well is located at an elevation of 5,194 feet above NGVD 1929, but the depth of the well is not known. The USGS reports that the water level in this well on March 7, 1972, was 118.95 feet bgs, or an elevation of 5,075 feet above NGVD 1929. The USGS reported no other water levels.

В.	Will dewatering activities be conducted:	Yes	No
	5		

If yes, please describe:

C. Is groundwater anticipated to be encountered during exploration: Yes No

#### If <u>YES</u>:

Have you completed Form WR-07 (Application for permit to drill a well with no consumptive use of water) and mailed it to the District Office of the State Engineer?

Attachment (copies of the completed WR-07 and WD-08 forms)

D. Exploration Borehole Abandonment

#### **Dry Boreholes**

Dry hole abandonment (option 1): 100% bentonite pellets/chips (i.e. HOLEPLUG® manufactured by Baroid Industrial Products), dropped from surface then hydrated in place according to the manufacturer's recommendations, emplaced from total depth to within 12 feet of the original ground surface, followed by 10 feet of neat cement, followed by 2 feet of topsoil/topdressing.

Dry hole abandonment (option 2): Neat cement slurry, mixed according to the manufacturer's recommendations, emplaced with a tremie pipe from total depth to within 2 feet of the original ground surface, followed by 2 feet of topsoil/topdressing.

Dry hole abandonment (option 3): Cement + 6% bentonite slurry, mixed according to the manufacturer's recommendations, emplaced with a tremie pipe from total depth to within 2 feet of the original ground surface, followed by 2 feet of topsoil/topdressing.

Dry hole abandonment (option 4): High-density bentonite clay (≥ 20% active solids; i.e. QUIK-GROUT® manufactured by Baroid Industrial Products), mixed according to the manufacturer's recommendations, emplaced with a tremie pipe from total depth to within 12 feet of the original ground surface, followed by 10 feet of neat cement, followed by 2 feet of topsoil/topdressing.

Dry hole abandonment (option 5): Other materials / describe and justify use:

#### Wet Boreholes

Wet hole abandonment (option 1): Neat cement slurry, mixed according to the manufacturer's recommendations, emplaced with a tremie pipe from total depth to within 2 feet of the original ground surface, followed by 2 feet of topsoil/topdressing.

Wet hole abandonment (option 2): High-density bentonite clay (≥ 20% active solids; i.e. QUIK-GROUT® manufactured by Baroid Industrial Products), mixed according to the manufacturer's recommendations, emplaced with a tremie pipe from total depth to within 12 feet of the original ground surface, followed by 10 feet of neat cement, followed by 2 feet of topsoil/topdressing.

Wet hole abandonment (option 3): Other sealing material approved by the Office of the State Engineer. Describe and include well plugging plan approval by the State Engineer:

- D. Applicant agrees to contain any water produced from the exploration borehole at the drill site and acknowledges that discharge of this water to a watercourse may be a violation of the Federal Clean Water Act:
   Yes
   No
- E. Is any drilling proposed to occur <u>within the channel</u> of any perennial, intermittent, or ephemeral streams?
- F. Is any drilling anticipated to occur <u>within 100 feet</u> of any perennial, intermittent, or ephemeral streams? 
  Yes 
  No

### SECTION 7 – RECLAMATION & OPERATION PLAN (§302.D.6 AND 302.I.K)

A. Salvage/Preservation of Topsoil

Before any g	grading/bladir	ng or similar activitie	s occur in relation to th	nis project, operator
agrees to sa	lvage and pro	eserve all topsoil and	d topdressing for use i	n future reclamation of
this project	Yes	No Where applie	cable.	

Describe how topsoil will be salvaged prior to initiation of exploration activities (check all that apply):

N/A – no construction work will occur; therefore no soil salvage is needed.

- Excavated from drill pads and stored at each drill pad
- Excavated from road improvements/construction and stored adjacent to road
- Excavated from mud/fluid pits and storage at each pit
- Other, describe:
- B. Erosion Control

Describe the best management practices that will be implemented to control erosion:

Silt fencing	Location:	Not Necessary/Not Applicable
Straw waddles	Location:	Not Necessary/Not Applicable
Straw bales	Location:	Not Necessary/Not Applicable
Ditches/swales	Location:	Not Necessary/Not Applicable
Berms/dikes/dams	Location:	Not Necessary/Not Applicable
Sediment basins	Location:	Not Necessary/Not Applicable
Other or N/A	Type/Location:	Not Necessary/Not Applicable

C. Wildlife Protection / Noxious Weed Prevention

	Will the perimeter of drill pits be fenced to prevent wildlife entrapment?  Yes No Not Applicable
	Proposed pit perimeter fence material: Not Applicable
	Describe how the pit perimeter fencing will be installed and secured (i.e., T-posts, wooden stakes, etc.): Not Applicable
	Will at least one side of the interior of the drill pits be sloped at 3:1 as a ramp for wildlife escape?
	If No, will another type of constructed escape ramp be installed? Describe: Not Applicable; no pit is required
	Applicant/Owner/Operator commits to pressure-washing or steam-clean all equipment prior to entering the permit area: Yes INO
D.	Reclamation Details

Describe in general how re-contouring or re-establishment of the surface topography will be restored:

Not Applicable; none will be required. The roads construction will the natural contour of the ridgeline and minimize the impact to slopes. The reclamation will focus the roads and restoring the ground back to natural conditions.

Describe how the reclamation of portals, adits, drilling fluid/mud and/or waste pits, shafts, ponds, roads and other disturbances will be performed: Not Applicable; none will be required.

Is seeding of the reclaimed areas proposed: X Yes No If no, provide a justification as to why no revegetation is needed:

Very little soil profile exists on the ridge line where the drilling will occur. The surface is primarily a bedrock surface. Nonetheless arid desert vegetation has taken a foot hold so, once the drilling is completed, a reclamation program to stabilize areas of potential erosion on the temporary overland roads and drill locations will be completed.

Plant mix to be used in the re-establishment of vegetation:

US Forest Service specified mix applied through broadcast at their recommended rate
 BLM specified mix applied through broadcast at their recommended rate
 Other:

Plant Name	Seeding Rate (lbs./acre)		
Blue grama		0.5	
Spike dropssed		0.2	
Six weeks threeawn		0.5	
Scarlet globemallow		1.0	
American vetch		7.0	
Fourwing saltbush		4.0	
White-thorn acacia		7.0	
Broadcast applied or drill-seeded:	Broac	lcast 🔲 Drill	-seeded

Cuttings and salvaged topsoil material that is suitable as a plant growth medium, shall be spread over the surface of the drill areas, temporary roads, and other disturbed areas, including any other heavily compacted areas, then raked prior to seeding to prepare a suitable seedbed for seed germination and root growth. The seed mixture shall be broadcast sown immediately after seedbed preparation has been completed and while the soil surface is still friable. After the seed mix has been sown, the soil shall be raked into the surface using hand tools to cover the seed. Reclaimed areas not seeded before or during the summer shall be seeded in late fall to maximize the probability of successful revegetation.

Scarification Methods (check all that apply):

Primary tillage to greater than 6-inches depth of all constructed drill pads and roads

Where possible, Secondary tillage of all constructed drill pads and roads, and/or overland travel routes, or

Where possible, Chain drag or tire drag over seeds in areas used for overland travel, or

Light raking of soil over seeds in areas used for overland travel

None

Other/describe:

Mulch Use:

Certified weed-free straw mulch will be placed over areas that have been tilled/disced or ripped at a rate of 2 tons per acre, and will be crimped in place

No mulch is proposed

E. Reclamation Timeline

Applicant/Owner/Operator commits to reclamation of the disturbed area as soon as possible
following the completion or abandonment of the exploration operation, unless the disturbed
area is included within a complete permit application for a new mining permit:
Yes No

Anticipated Start of Reclamation:

0-30 days after completion of drilling

Other/specify:

### SECTION 8 – PERMIT FEES AND FINANCIAL ASSURANCE (§302.I.2 AND 5)

A. Financial assurance must be posted with Mining and Minerals Division prior to approval of this application. The acceptable forms of financial assurance are surety bonds, letters of credit, and certificates of deposit. Provide an estimate of, and an instrument for, the proposed financial assurance required by Subpart 3.

Surety Bond	ł
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Letter of Credit

Cash Account / Certificate of Deposit

Estimated amount of financial assurance:

Or

Applicant will provide the amount of financial assurance calculated by MMD.

B. Attach the permit fees as determined pursuant to Subpart 2. The application fee for a minimal impact exploration permit is \$500.00.

Money Order/Cashier's Check

Check Number : \_\_\_\_\_

Financial Institution:

### SECTION 9 - CERTIFICATION REQUIREMENT (§302.1.3 & 4)

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 reclamation requirements set forth in this permit application and related correspondence, the New Mexico Mining Act and the Rules. Further, I certify that I am not in violation of any other obligation under the New Mexico Mining Act or the Rules adopted pursuant to that Act and I allow the Director to enter the permit area, without delay, for the purposes of conducting inspections during exploration and reclamation.

Signature of Permittee or	Authorized Agent:	 
Name (type or print):		
Title/Position:		
Date:		

**FIGURES** 





Drilling and Resource Determination Executive Summary

**Prepared For:** 

American Magnesium, LLC Elephant Butte, New Mexico

**Prepared By:** 

Gauvreau GeoEnvironmental Group Inc.

Sudbury, Ontario



22-004

September 2022



#### **Drilling and Resource Determination Executive Summary**

Gauvreau GeoEnvironmental Group Inc. (G3) is providing geological consulting and project management services to American Magnesium (AmMg) in relation to their Little Mountain dolomite deposit (the Project). AmMg plans to assess the Little Mountain dolomite deposit as an economic resource as defined by Canadian National Instrument 43-101 (NI 43-101). The project is located approximately 13 miles southeast of Deming, New Mexico, on the western edge of the Florida Mountains and just west of Mahony Park. The AmMg claims encompass two unnamed peaks, that are referred to by AmMg as 'Little Mountain' and 'Big Mountain', and are located approximately 2 miles NNW of South Peak, and 1.8 miles WSW of Baldy Peak. Figure 1 shows the property location with respect to Deming. AmMg's current focus is Little Mountain which surface rights are controlled by Bureau of Land Management (BLM). The mineral rights are controlled by AmMg and are covered by mineral claims MAG 21 Lode Claim (NMMC197579) and MAG 22 Lode Claim (NMMC197580).

Surface sampling indicates a consistent magnesium concentration across Little Mountain however, there is an absence of subsurface drill data for Little Mountain. The purpose of this drilling plan is to collect defendable subsurface data that will confirm previous tonnage estimates and define the Little Mountain dolomite project as a magnesium economic resource.

One of the key assumptions for this study is that the early Silurian age Fusselman Formation dolomite was deposited in a classic peritidal marine environment. These dolomite beds may now no longer be flat lying due to tectonic events but the mineralogy and petrology of the dolomite still reflects that deposition. This depositional environment does not require the high-density drill hole spacing required for deposits where the mineralized zone is characterized by pinch and swell such as expected for veins, or following fractures or shears for base/precious metal deposits, coal beds or peneconcordant uranium beds, because the dolomite deposition is by definition uniform over a wide area, both vertically and horizontally. Furthermore, the total thickness of the Fusselman Formation is estimated to be over 4,600 ft in the Florida Mountains, however the drilling will explore only the area above the desert floor or approximately 200' in depth from the



top of the mountain. Both Little Mountain and Big Mountain have been mapped and surface sampled, thus establishing a well understood stratigraphic order. Core descriptions will pay close attention to stratigraphic marker bends so the different units of the Fusselman Formation can be stratigraphically tied together.

Water is not expected to be intersected during this drilling event, therefore the permit process will be a simple matter of identifying the drilling method, depth of boring, boring abandonment procedure and appropriate reclamation. AmMg will complete a Part 3 Minimal Impact Exploration Operation Permit (MIEOP) as required by the New Mexico Mines & Minerals Division (NMMMD).

Four drill locations are proposed with a total of twelve vertical and angular boreholes. These locations are illustrated on Figure 2. These drill locations will require the construction of some limited temporary/overland roads for access. The drill locations were selected due their spatial relationship on the mountain, and the stratigraphic location within the Fusselman Formation. Due to the steep topography, as illustrated on Figure 2, the temporary roads will transverse the topography in a northeast/southwest orientation. Each drill location with require a drill pad with an approximate dimension of 40 feet by 60 feet.

Over 2300 feet of dolomite core will be collected during this drilling event. Table 1 summarizes the estimated drill depths for each core hole. The core will be NQ (1.75"OD) in diameter.

Boring #	Prefix	Surface Elevation (ft)	Target Depth Elevation (ft)	Drill Angle from horizontal	Estimated Length of Boring (ft)
1	BV	4910	4860	90	50
2	BV	4930	4860	90	70
3	BA	4935	4865	60	130
4	BA	4935	4865	60	125
5	BA	4935	4865	60	130
6	BA	4935	4865	60	125
7	BV	5015	4865	90	150

Table	1 –	Core	Drilling	Details
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8	BV	5060	4865	90	195
9	BA	5060	4865	60	350
10	BA	5060	4865	60	350
11	BA	5060	4865	60	350
12	BA	5060	4865	60	350
Total					2375

A G3 engineer/geologist will direct the drill rig to each core hole location. As SOP, the engineer/geologist observing the drilling will maintain a log in a drill site bound field book of observations during drilling and sampling.

The core holes will be completed at variable depths depending on the collar location/elevation on Little Mountain (See Table 1). Prior to the removal of the drill rig from the core hole location, a measurement from the bottom of the boring to top of ground surface will be collect by dropping a weighted measuring tape end down the bore hole for final confirmation measurement. Once the boring is completed, the bore hole location will be marked with a steel casing painted red and flagged. The borehole will be abandoned following the guidance in the NMMMD Part 3 MIEOP.

Temporary/overland road and drill pad reclamation will be completed once the drilling has finished. The reclamation procedures will follow the methods defined in the Part 3 MIEOP. The procedures will include grading the temporary roads, re-seeding and haying/strawing impacted the areas to reduce surface erosion. The hay/straw will be indigenous grasses.

Upon retrieval of each core, the entire length of core will be visually described, logged and classified by rock type. Visual description/classification will be performed by the on-site engineer or geologist. Mineralogy, petrology, fractures, jointing, fossils, stratigraphic marker beds etc. will be described in detail. The visual inspection for petrologic rock type for this project is expected to be dolomite. The only variations expected are in shades of gray and the occurrence of minor chert, sand, silt/clay and calcite, and fossils. All descriptions will be recorded on the field log book as a permanent record.



For laboratory analyses, the rock core will be split in half longitudinally. At 3-foot intervals, a split core no more than 4" and no less than 3" in length will be collected and placed in a sample bag for laboratory analysis. Sample handling will follow standard practices which involves assigning a sample identification number, labeling the sample containers, maintaining the samples in controlled and secure condition/location, chain-of-custody procedures, and shipping.

At the completion of the field tasks and data evaluation, G3 will prepare a core drilling field report summarizing the field sampling activities and analytical results. G3 will receive, validate and tabulate the laboratory data. The field report will be prepared to be part of the NI 43-101.

In addition, the observations, and analytical results from the Phase 1 Chip sampling, previously completed by AmMg, will be included as an Appendix in the field report. This study will tie together the previous surface sampling with the current subsurface sampling results.

Upon completion of the Field Report and subsequent review by AmMg, G3 will complete the NI 43-101 technical report. The purpose of an NI 43-101 technical report, is to provide a summary of scientific and technical information concerning the mineral exploration, development, and production activities of a mineral property. The report will contain a mineral resource estimate. The report will include information and data from the Field Report, past geologic work completed by NMBM, USGS and other consultants such as DBS and surface chip sampling completed by AmMg. The focus of the NI 43-101 will be the Little Mountain project as a magnesium economic resource. Issues of metallurgy and future processing have been addressed in the Tru Group's Pre-feasibility Study previously completed for AmMg.



FIGURES



