File No.

NEW MEXICO OFFICE OF THE STATE ENGINEER

WR-07 APPLICATION FOR PERMIT TO DRILL

A WELL WITH NO WATER RIGHT

(check applicable box):

For fees, see State Engineer website: http://www.ose.state.nm.us/

Purpose:	☐ Pollution Control And/Or Recovery	☐ Ground Source Heat Pump
☒ Exploratory Well*(Pump test)	☐ Construction Site/Public Works Dewatering	☐ Other(Describe):
☐ Monitoring Well	☐ Mine Dewatering	

A separate permit will be required to apply water to beneficial use regardless if use is consumptive or nonconsumptive.

*New Mexico Environment Department-Drinking Water Bureau (NMED-DWB) will be notified if a proposed exploratory well is used for public water supply.

☐ Temporary Request - Requested Start Date: 15 February 2023 Requested End Date: 31 January 2024

Plugging Plan of Operations Submitted? ☒ Yes ☐ No

1. APPLICANT(S)

Name: American Copper Development Corporation	Name:
Contact or Agent: check here if Agent ☐ Mark Osterberg	Contact or Agent: check here if Agent ☐
Mailing Address: 12460 N Sandby Green Drive	Mailing Address:
City: Marana	City:
State: AZ Zip Code: 85653	State: Zip Code:
Phone: 520-405-8922 ☐ Home ☒ Cell Phone (Work):	Phone: ☐ Home ☐ Cell Phone (Work):
E-mail (optional): markosterberg@minemappers.com	E-mail (optional):

FOR OSE INTERNAL USE Application for Permit, Form WR-07, Rev 07/12/22

File No.:	Trn. No.:	Receipt No.:
Trans Description (optional):		
Sub-Basin:	PCW/LOG Due Date:	

2. WELL(S) Describe the well(s) applicable to this application.

Location **Required: Coordinate location must be reported in NM State Plane (NAD 83), UTM (NAD 83), or Latitude/Longitude (Lat/Long - WGS84).**
District II (Roswell) and District VII (Cimarron) customers, provide a PLSS location in addition to above.

☐ NM State Plane (NAD83) (Feet)
☐ NM West Zone
☐ NM East Zone
☐ NM Central Zone

☐ UTM (NAD83) (Meters)
☐ Zone 12N
☐ Zone 13N

■ Lat/Long (WGS84) (to the nearest 1/10th of second)

Well Number (if known):	X or Easting or Longitude:	Y or Northing or Latitude:	Provide if known: -Public Land Survey System (PLSS) (*Quarters or Halves , Section, Township, Range)* OR - Hydrographic Survey Map & Tract; OR - Lot, Block & Subdivision; OR - Land Grant Name
PL-001	-108° 45' 40.603"	32° 18' 9.406"	
PL-002	-108° 45' 40.38"	32° 17' 53.984"	
PL-003	-108° 44' 5.621"	32° 18' 23.35"	
PL-004	-108° 43' 58.671"	32° 18' 33.184"	
PI-005	-108° 43' 57.578"	32° 18' 5.218"	

NOTE: If more well locations need to be described, complete form WR-08 (Attachment 1 – POD Descriptions)
Additional well descriptions are attached: ■ **Yes** ☐ **No** **If yes, how many** 7

Other description relating well to common landmarks, streets, or other:

Well is on land owned by: American Copper Development Corp, BLM

Well Information: **NOTE: If more than one (1) well needs to be described, provide attachment.** **Attached?** ■ **Yes** ☐ **No**
If yes, how many 19

Approximate depth of well (feet): 4000	Outside diameter of well casing (inches): 4
Driller Name: Major Drilling	Driller License Number: WD-1821

3. ADDITIONAL STATEMENTS OR EXPLANATIONS

One drill hole will be open at a time.

4. SPECIFIC REQUIREMENTS: The applicant must include the following, as applicable to each well type. Please check the appropriate boxes, to indicate the information has been included and/or attached to this application:

Exploratory:	**Pollution Control and/or Recovery:**	**Construction De-Watering:**	**Mine De-Watering:**
Is proposed well a future public water supply well? ☐ Yes ☒ NO If Yes, an application must be filed with NMED-DWB, concurrently. ☐ Include a description of the requested pump test if applicable.	☐ Include a plan for pollution control/recovery, that includes the following: ☐ A description of the need for the pollution control or recovery operation. ☐ The estimated maximum period of time for completion of the operation. ☐ The annual diversion amount. ☐ The annual consumptive use amount. ☐ The maximum amount of water to be diverted and injected for the duration of the operation. ☐ The method and place of discharge. ☐ The method of measurement of water produced and discharged. ☐ The source of water to be injected. ☐ The method of measurement of water injected. ☐ The characteristics of the aquifer. ☐ The method of determining the resulting annual consumptive use of water and depletion from any related stream system. ☐ Proof of any permit required from the New Mexico Environment Department. ☐ An access agreement if the applicant is not the owner of the land on which the pollution plume control or recovery well is to be located.	☐ Include a description of the proposed dewatering operation, ☐ The estimated duration of the operation, ☐ The maximum amount of water to be diverted, ☐ A description of the need for the dewatering operation, and, ☐ A description of how the diverted water will be disposed of.	☐ Include a plan for pollution control/recovery, that includes the following: ☐ A description of the need for mine dewatering. ☐ The estimated maximum period of time for completion of the operation. ☐ The source(s) of the water to be diverted. ☐ The geohydrologic characteristics of the aquifer(s). ☐ The maximum amount of water to be diverted per annum. ☐ The maximum amount of water to be diverted for the duration of the operation. ☐ The quality of the water. ☐ The method of measurement of water diverted. ☐ The recharge of water to the aquifer. ☐ Description of the estimated area of hydrologic effect of the project. ☐ The method and place of discharge. ☐ An estimation of the effects on surface water rights and underground water rights from the mine dewatering project. ☐ A description of the methods employed to estimate effects on surface water rights and underground water rights. ☐ Information on existing wells, rivers, springs, and wetlands within the area of hydrologic effect.
Monitoring ☐ The reason and duration of the monitoring is required.		**Ground Source Heat Pump:** ☐ Include a description of the geothermal heat exchange project, ☐ The number of boreholes for the completed project and required depths. ☐ The time frame for constructing the geothermal heat exchange project, and, ☐ The duration of the project. ☐ Preliminary surveys, design data, and additional information shall be included to provide all essential facts relating to the request.	

ACKNOWLEDGEMENT

I, We (name of applicant(s)), Mark Osterberg
Print Name(s)

affirm that the foregoing statements are true to the best of (my, our) knowledge and belief.

Applicant Signature

Applicant Signature

ACTION OF THE STATE ENGINEER

This application is:

☐ approved ☐ partially approved ☐ denied

provided it is not exercised to the detriment of any others having existing rights, and is not contrary to the conservation of water in New Mexico nor detrimental to the public welfare and further subject to the attached conditions of approval.

Witness my hand and seal this _____ day of _____ 20 _____ , for the State Engineer,

_____, State Engineer

By: _____ _____
Signature Print

Title: _____
Print

FOR OSE INTERNAL USE Application for Permit, Form WR-07 Version 07/12/22

File No.:	Trn No.:

NEW MEXICO OFFICE OF THE STATE ENGINEER

ATTACHMENT to WD-08 Plan of Plugging
MULTIPLE MONITORING WELL DESCRIPTIONS

This Attachment is to be completed if more than one (1) monitoring well is to be plugged using the same method.

Location (Required):

☐ NM State Plane (NAD83) (Feet)
☐ NM West Zone
☐ NM Central Zone
☐ NM East Zone

☐ UTM (NAD83) (Meters)
☐ Zone 13N
☐ Zone 12N

■ Lat/Long (WGS84) (1/10th of second)

OTHER (allowable only for move-from descriptions - see application form for format)
☐ PLSS (quarters, section, township, range)
☐ Hydrographic Survey, Map & Tract
☐ Lot, Block & Subdivision
☐ Grant

OSE POD Number:	Other Well ID:	X or Longitude (ddmmss):	Y or Latitude (ddmmss):	Other Location Info (PLSS):	Casing ID- (inches):	Depth to Water- (ft bgs):	Total well Depth- (ft bgs):	Grout Volume:	Surface Casing (**Y** or **N**):
	PL-006	-108° 43' 37.718"	32° 18' 52.768"		4				N
	PL-007	-108° 44' 47.009"	32° 19' 7.464"		4				N
	PL-008	-108° 45' 56.827"	32° 19' 3.642"		4				N
	PL-009	-108° 44' 13.132"	32° 18' 50.327"		4				N
	PL-010	-108° 45' 45.979"	32° 17' 33.606"		4				N
	PL-011	-108° 47' 2.023"	32° 19' 18.134"		4				N
	PL-012	-108° 46' 58.734"	32° 18' 59.764"		4				N
	ResP001	-108° 46' 1.974"	32° 17' 56.705"		4				N
	ResP002	-108° 45' 16.652"	32° 18' 0.745"		4				N
	ResP003	-108° 45' 26.171"	32° 17' 37.29"		4				N
	ResP004	-108° 45' 59.915"	32° 17' 6.763"		4				N
	ResP005	-108° 45' 43.203"	32° 18' 13.109"		4				N

FOR OSE INTERNAL USE Multiple Montioring POD Descriptions, Form wr-08m (Rev 7/31/19)

File Number:	Trn Number:
Trans Description (optional):	

NEW MEXICO OFFICE OF THE STATE ENGINEER

ATTACHMENT to WD-08 Plan of Plugging
MULTIPLE MONITORING WELL DESCRIPTIONS

This Attachment is to be completed if more than one (1) monitoring well is to be plugged using the same method.

Location (Required):

☐ NM State Plane (NAD83) (Feet) ☐ NM West Zone ☐ NM Central Zone ☐ NM East Zone	☐ UTM (NAD83) (Meters) ☐ Zone 13N ☐ Zone 12N	■ Lat/Long (WGS84) (1/10th of second)	OTHER (allowable only for move-from descriptions - see application form for format) ☐ PLSS (quarters, section, township, range) ☐ Hydrographic Survey, Map & Tract ☐ Lot, Block & Subdivision ☐ Grant

OSE POD Number:	Other Well ID:	X or Longitude (ddmmss):	Y or Latitude (ddmmss):	Other Location Info (PLSS):	Casing ID- (inches):	Depth to Water- (ft bgs):	Total well Depth- (ft bgs):	Grout Volume:	Surface Casing (**Y** or **N**):
	ResP006	-108° 47' 0.427"	32° 19' 22.981"		4				N
	ResP007	-108° 47' 29.564"	32° 19' 3.922"		4				N

FOR OSE INTERNAL USE Multiple Montioring POD Descriptions, Form wr-08m (Rev 7/31/19)

File Number:	Trn Number:
Trans Description (optional):	

WELL PLUGGING PLAN OF OPERATIONS

NOTE: A Well Plugging Plan of Operations shall be filed with and accepted by the Office of the State Engineer prior to plugging. This form may be used to plug a single well, or if you are plugging multiple monitoring wells on the same site using the same plugging methodology.

Alert! Your well may be eligible to participate in the Aquifer Mapping Program (AMP)-NM Bureau of Geology geoinfo.nmt.edu/resources/water/cgmn/ if within an area of interest and meets the minimum construction requirements, such as there is still water in your well, and the well construction reflected in a well record and log is not compromised, contact AMP at 575-835-5038 or -6951, or by email nmbg-waterlevels@nmt.edu, prior to completing this prior form. Showing proof to the OSE that your well was accepted in this program, may delay the plugging of your well until a later date.

I. FILING FEE: There is no filing fee for this form.

II. GENERAL / WELL OWNERSHIP: ☑ Check here if proposing one plan for multiple monitoring wells on the same site and attaching WD-08m

Existing Office of the State Engineer POD Number (Well Number) for well to be plugged: _____

Name of well owner: American Copper Development NMX, Inc.

Mailing address: 500 4th Street NW, Suite 1000 County: _____

City: Albuquerque State: NM Zip code: 87102

Phone number: 520-405-8922 E-mail: markosterberg@minemappers.com

III. WELL DRILLER INFORMATION:

Well Driller contracted to provide plugging services: Major Drilling

New Mexico Well Driller License No.: WD-1821 Expiration Date: 3/15/2023

IV. WELL INFORMATION: ☑ **Check here if this plan describes method for plugging multiple monitoring wells on the same site and attach supplemental form WD-08m and skip to #2 in this section.**

Note: A copy of the existing Well Record for the well(s) to be plugged should be attached to this plan.

1) GPS Well Location: Latitude: _____deg, _____ min, _____ sec
Longitude: _____deg, _____min, _____sec, NAD 83

2) Reason(s) for plugging well(s):

Reached planned depth for minerals exploration.

3) Was well used for any type of monitoring program? no If yes, please use section VII of this form to detail what hydrogeologic parameters were monitored. If the well was used to monitor contaminated or poor quality water, authorization from the New Mexico Environment Department may be required prior to plugging.

4) Does the well tap brackish, saline, or otherwise poor quality water? no If yes, provide additional detail, including analytical results and/or laboratory report(s):

5) Static water level: 150 feet below land surface / feet above land surface (circle one)

6) Depth of the well: 4000 feet

7) Inside diameter of innermost casing: _____ inches.

8) Casing material: _____

9) The well was constructed with:

[■] an open-hole production interval, state the open interval: 10 to 4000 feet,

[ ] a well screen or perforated pipe, state the screened interval(s): _____

10) What annular interval surrounding the artesian casing of this well is cement-grouted? Surface to 10 feet.

11) Was the well built with surface casing? yes If yes, is the annulus surrounding the surface casing grouted or otherwise sealed? yes If yes, please describe:

Recirculation apparatus installed to recover drilling fluids. Annulus around recirculation apparatus plugged with cement or other suitable material to prevent fluid bypass.

12) Has all pumping equipment and associated piping been removed from the well? yes If not, describe remaining equipment and intentions to remove prior to plugging in Section VII of this form.

V. DESCRIPTION OF PLANNED WELL PLUGGING:

[ ] **If plugging method differs between multiple wells on same site, a separate form must be completed for each method.**

Note: If this plan proposes to plug an artesian well in a way other than with cement grout, placed bottom to top with a tremie pipe, a detailed diagram of the well showing proposed final plugged configuration shall be attached, as well as any additional technical information, such as geophysical logs, that are necessary to adequately describe the proposal. Attach a copy of any signed OSE variance to this plugging plan.

Also, if this planned plugging plan requires a variance to 19.27.4 NMAC, attach a detailed variance request signed by the applicant.

1) Describe the method by which cement grout shall be placed in the well, or describe requested plugging methodology proposed for the well:

Holes are abandoned by pumping approved sealant through the drill pipe from the bottom to the surface as rods are tripped out of the drill hole using a tremie pipe.

2) Will well head be cut-off below land surface after plugging? Yes. (Surface casing will be removed).

VI. PLUGGING AND SEALING MATERIALS:

Note: The plugging of a well that taps poor quality water may require the use of a specialty cement or specialty sealant. Attach a copy of the batch mix recipe from the cement company and/or product description for specialty cement mixes or any sealant that deviates from the list of OSE approved sealants.

1) For plugging intervals that employ cement grout, complete and attach Table A.

2) For plugging intervals that will employ approved non-cement based sealant(s), complete and attach Table B.

3) Theoretical volume of grout required to plug the well to land surface: 2620

4) Type of Cement proposed: _____

5) Proposed cement grout mix: _____ gallons of water per 94 pound sack of Portland cement.

6) Will the grout be: _____ batch-mixed and delivered to the site

_____ mixed on site

7) Grout additives requested, and percent by dry weight relative to cement:

8) Additional notes and calculations:

VII. ADDITIONAL INFORMATION: List additional information below, or on separate sheet(s):

Sealant material table attached. Preferred sealant will be bentonite chips or pellets mixed with fresh water at rate of five (5) gallons per 50 pounds of bentonite as per Office of State Engineer Sealant guidelines placed with a tremie pipe from the bottom of the drill hole to within four (4) feet of the surface. Soil to be placed from the top of the bentonite column to the surface.

VIII. SIGNATURE:

I, _____, say that I have carefully read the foregoing Well Plugging Plan of Operations and any attachments, which are a part hereof; that I am familiar with the rules and regulations of the State Engineer pertaining to the plugging of wells and will comply with them, and that each and all of the statements in the Well Plugging Plan of Operations and attachments are true to the best of my knowledge and belief.

_____ 2-16-2023

Signature of Applicant Date

IX. ACTION OF THE STATE ENGINEER:

This Well Plugging Plan of Operations is:

_____ Approved subject to the attached conditions.
_____ Not approved for the reasons provided on the attached letter.

Witness my hand and official seal this_____day of _____,_____

_____., New Mexico State Engineer

By:_____

TABLE A - For plugging intervals that employ cement grout. Start with deepest interval.

	Interval 1 – deepest	Interval 2	Interval 3 – most shallow
			Note: if the well is non-artesian and breaches only one aquifer, use only this column.
Top of proposed interval of grout placement (ft bgl)			4
Bottom of proposed interval of grout placement (ft bgl)			4000
Theoretical volume of grout required per interval (gallons)			2620
Proposed cement grout mix gallons of water per 94-lb. sack of Portland cement			10
Mixed on-site or batch-mixed and delivered?			Onsite
Grout additive 1 requested			
Additive 1 percent by dry weight relative to cement			
Grout additive 2 requested			
Additive 2 percent by dry weight relative to cement			

TABLE B - For plugging intervals that will employ approved non-cement based sealant(s). Start with deepest interval.

	Interval 1 – deepest	Interval 2	Interval 3 – most shallow
			Note: if the well is non-artesian and breaches only one aquifer, use only this column.
Top of proposed interval of sealant placement (ft bgl)			
Bottom of proposed sealant of grout placement (ft bgl)			
Theoretical volume of sealant required per interval (gallons)			
Proposed abandonment sealant (manufacturer and trade name)			

OFFICE OF THE STATE ENGINEER SEALANT GUIDELINES FOR WELL CONSTRUCTION AND PLUGGING

(FOR USE IN NON-CONTAMINATED CONDITIONS)

MATERIALS & METHODS

SEALANT	HYDRATION REQUIREMENT	PLACEMENT METHOD	APPLICATION: Non-Artesian (Unconfined) Well: Plugging	Annular Seal	Surface Casing	Artesian (Confined) Well: Plugging (Non-flowing)	Plugging (Flowing)	Annular Seal (Non-flowing)	Annular Seal (Flowing)	Surface Casing	Special Conditions: Dry Borehole (Upper 10 feet sealant; drill cuttings or clean native fill below)	Ground Source Heat Pump
Bentonite Chips*	Fresh water to be added above water column at rate of 5 gallons per 50-lb. sack/bucket	Pour < 20' and dry	√	√	√	√				Variance Only	√	
		Tremie	√	√	√	√		√			√	
Bentonite Pellets*	Fresh water to be added above water column at rate of 5 gallons per 50-lb. sack/bucket	Pour < 20' and dry	√	√	√	√				Variance Only	√	
		Tremie	√	√	√	√		√			√	
Time Release Bentonite Pellets*	Fresh water to be added above water column at rate of 5 gallons per 50-lb. sack/bucket	Pour < 20' and wet	√	√	√	√				Variance Only	√	
		Tremie	√	√	√	√		√			√	
High-Solids Bentonite Grout	Manufacturers' mixing ratios to attain minimum 20% active solids by weight	Tremie	√	√	√	√		√		Variance Only	√	
Neat Cement Slurry** (type I or II portland cement)	No more than 6.0 gallons water per 94-lb. sack portland cement	Tremie	√	√	√	√	√	√	√	√	√	√
		Pressure Grout		√	√			√	√	√		
Cement-Bentonite Slurry** (type I or II portland cement plus bentonite powder)	Maximum 5.2 gallons water per 94- lb. sack portland cement **PLUS** 0.6 gallon per 1% increase in bentonite up to maximum 6% bentonite by dry weight ratio. Bentonite must be hydrated separately and then mixed.	Tremie	√	√	√	√		√	√	√	√	√
		Pressure Grout		√	√			√	√	√		
Sand-Cement Grout** (max 1 part sand to 1 part portland cement by dry weight ratio)	No more than 6.0 gallons water to 94-lb. sack portland cement. Ok to moisten sand before mixing.	Tremie	√	√	√	√		√	√	√	√	√
		Pressure Grout		√	√			√	√	√		
Thermally-Enhanced Grout	Manufacturers' mixing ratios to attain minimum 20% active solids by weight. Addition of fine sand not in excess of 400-lb per 50-lb sack of bentonite. Permeability must remain less than 10^{-7} cm/sec.	Tremie	√	√	√						√	√
Stratified			*Request Variance*									
Additives			*Describe and Request on Plan*									

I hereby approve the above sealant guidelines for well construction and plugging this 16 *day of* MAY *2016.*

Tom Blaine

Tom Blaine, New Mexico State Engineer

Office of the State Engineer
Interstate Stream Commission

*Groundwater concentrations of chloride and hardness are limited.

**Groundwater concentrations of sulfates are limited.

	NAD 83, UTM 12 Meters				Lat-long decimal degree			Latitude			Longitude			
Drillhole	x	y	z	Length_m	Latitude	Longitude	Elevation	Deg	Min	Sec	Deg	Min	Sec	Type
PL-001	710785	3576180	1448.55628	750	-108.7612785	32.30261271	1448.55628	-108	45	40.603	32	18	9.406	Private
PL-002	710800.74	3575705.1	1433.26676	1500	-108.7612167	32.29832877	1433.26676	-108	45	40.380	32	17	53.984	Private
PL-003	713259.96	3576692.527	1388.887891	1000	-108.7348948	32.30676397	1388.887891	-108	44	5.621	32	18	24.350	BLM
PL-004	713463.8091	3576895.714	1383.576133	1000	-108.732964	32.30921788	1383.576133	-108	43	58.671	32	18	33.184	BLM
PL-005	713511.2681	3576090.477	1391.956509	800	-108.7326606	32.30144944	1391.956509	-108	43	57.578	32	18	5.218	BLM
PL-006	713971.32	3577583.3	1365.75555	800	-108.7271438	32.31465785	1365.75555	-108	43	37.718	32	18	52.768	BLM
PL-007	712130.2	3577997	1388.20573	1000	-108.7463914	32.31874005	1388.20573	-108	44	47.009	32	19	7.464	Private
PL-008	710325.74	3577883.5	1397.72782	800	-108.7657853	32.31767831	1397.72782	-108	45	56.827	32	19	3.642	BLM
PL-009	713122.5801	3577519.555	1378.520169	1000	-108.736981	32.31397968	1378.520169	-108	44	13.132	32	18	50.327	Private
PL-010	710667.36	3575074.4	1450.70339	1500	-108.762772	32.29266842	1450.70339	-108	45	45.979	32	17	33.606	Private
PL-011	708611.3004	3578252.618	1343.223142	750	-108.7838951	32.32170382	1343.223142	-108	47	2.023	32	19	18.134	BLM
PL-012	708666.03	3577685.948	1347.140582	750	-108.7829816	32.31660114	1347.140582	-108	46	58.734	32	18	59.764	BLM
ResP001	710203.97	3575754.3	1410.56013	450	-108.7672151	32.29908466	1410.56013	-108	46	1.974	32	17	56.705	Private
ResP002	711366.2	3575970	1453.17987	450	-108.7546255	32.30020692	1453.17987	-108	45	16.652	32	18	0.745	Private
ResP003	711228.9	3575253	1470.73067	450	-108.7572696	32.29369173	1470.73067	-108	45	26.171	32	17	37.290	BLM
ResP004	710320	3574240	1452.37288	300	-108.766643	32.28521198	1452.37288	-108	45	59.915	32	17	6.763	BLM
ResP005	710687.8	3576273.7	1434.86826	900	-108.7620008	32.30364127	1434.86826	-108	45	43.203	32	18	13.109	Private
ResP006	708650	3578400	1339.71628	450	-108.7834519	32.32302519	1339.71628	-108	47	0.427	32	19	22.891	BLM
Resp007	707900	3577800	1332.80598	750	-108.7915456	32.31775607	1332.80598	-108	47	29.564	32	19	3.922	BLM