STATE MINE INSPECTOR
AUG 08 2022

Himes Consulting LLC

July 29, 2022
Reference No. 21-51

Arizona State Mine Inspector
Amanda Lothner, Reclamation Specialist
1700 W. Washington, Suite 403
Phoenix, AZ 85007-2805

Re: Revised Reclamation Plan Black Rock Material Source, Navajo County, AZ.

Dear Ms. Lothner:

Attached is one original and three copies of the updated Reclamation and Closure Plan for the Black Rock Material Source in Navajo County, AZ, based on your technical comments dated May 20, 2022. Comments have been addressed as follows:

1. Section 2.9.1 has been updated based on your comments.
2. Figure 3 has been updated to include "Great Basin Desertscrub Habitat" for the entire project vicinity.
3. *Please include a specific revegetation and monitoring plan for the site.* Section 3.6 describes the specific Revegetation Plan for the site. "To promote natural revegetation, scarification will be conducted within the disturbed to support the open space land use of the site. Since these areas are not proposed to support grazing, fish or wildlife habitat, forestry or recreation post-mining land uses, proposed measures to encourage fish and wildlife habitat <u>are not required</u> to be described further in accordance with A.R.S. §27-1271 (B)(9d). This approach has been approved in many recent plans and is featured on the Arizona State Mine Inspector's website as a sample Reclamation Plan (Section 2.9). Section 4.4, Monitoring, has been updated to specify that monitoring includes all areas, including those that are naturally revegetating. This approach was confirmed with you recently via email.
4. Proposed Tentative Schedule. A proposed tentative schedule has been outlined, similar to that used in the Sample Reclamation Plan on the Mine Inspector's website.
5. Table 2 Cost Estimate has been updated to show revegetation costs (scarification). Source for the unit costs provided at the top of the cost estimate have been highlighted in bold (direct cost quotes from third-party vendor Desert Construction, Inc., similar to that approved recently on other plans). Monitoring costs are included in the Care & Maintenance section of the cost estimate.
6. Various clerical revisions were incorporated.

3301 W. Genoa Way • Chandler, AZ 85226 • Phone 480.899.5708 • Fax 480.659.4102 • jillhimes@cox.net

Please feel free to contact me in regards to any questions.

Sincerely,

HIMES CONSULTING, LLC
Jill A. Himes
Biologist

cc: Matt Click, Cutting Edge Grading, LLC

3301 W. Genoa Way • Chandler, AZ 85226 • Phone 480.899.5708 • Fax 480.659.4102 • jillhimes@cox.net

RECLAMATION AND CLOSURE PLAN

CUTTING EDGE GRADING, LLC

BLACK ROCK MATERIAL SOURCE

SUBMITTED TO THE STATE MINE INSPECTOR'S OFFICE FOR REVIEW AND APPROVAL IN ACCORDANCE WITH ARIZONA REVISED STATUTE TITLE 27 - CHAPTER 6 STATE MINE INSPECTOR AGGREGATE MINED LAND RECLAMATION

JULY 2022

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1.0 ADMINISTRATIVE INFORMATION

Company:	Cutting Edge Grading, LLC
Contact:	Matthew Click Cutting Edge Grading, LLC Phone 928-587-9214 mattclick@outlook.com
Applicant:	Matthew Click Cutting Edge Grading, LLC PO Box 483 Joseph City, AZ 86032 Phone 928-587-9214 mattclick@outlook.com
Permit Technical Consultant:	Jill Himes, Himes Consulting LLC 3301West Genoa Way Chandler, AZ 85226 (480) 899-5708 (602) 499-9253 (cell) jillhimes@cox.net
Landowner:	Matthew and Mitzi Click
Parcel Nos:	104-43-009 and 104-43-018
Operator:	Cutting Edge Grading, LLC Matthew Click

2.0 INTRODUCTION

2.1 PURPOSE AND SCOPE

Cutting Edge Grading, LLC (Cutting Edge) proposes to conduct aggregate mining and processing at the existing material source north of Joseph City in Navajo County, Arizona. The existing Black Rock Quarry is located within a portion of the NW ¼ of Section 11 in Township 20 North, Range 19 East, Gila & Salt River Meridian.

The purpose of this Mine Reclamation and Closure Plan (MRCP) is to present the details of rehabilitation of the Black Rock Quarry in Navajo County, Arizona concurrent with or after mining operations have ceased in accordance with the Arizona Aggregate Mined Lands Act (AAMLRA) (Arizona Revised Statutes[A.R.S.] § 27-1201 as authorized by A.R.S. § 27-1204. This plan has been developed pursuant to the format and content prescribed in the Arizona Aggregate Mined Lands Reclamation Rules (Arizona Administrative Code {A.A.C}, R11-3-101, et seq.). The MRCP addresses environmental, technical and operational issues that are identified in those documents.

2.2 RECLAMATION STATEMENT OF RESPONSIBILITY

Cutting Edge Grading, LLC assumes responsibility for the reclamation of surface disturbances that are attributable to the aggregate mining unit consistent with A.R.S §. 27-1201 and A.C.C. R11-3-501 pursuant to that chapter. All areas that have been disturbed at the site will be reclaimed to a safe and stable condition when mine operations conclude.

[signature]	7-25-22
Signature	Date
Owner	
Title	

2.3 RECLAMATION APPROACH

Cutting Edge will reclaim areas surrounding and within the excavated areas necessary to accomplish the post-mining land use of open space. The goals of the mine plan and reclamation measures are to provide for a safe, stable, and sustainable site once mining has ceased. Reclamation will take place concurrently to the degree possible, but no later than the cessation of mining activities.

2.4 CURRENT OWNERSHIP AND LAND USE INCLUDED IN THE AGGREGATE MINING UNIT

Cutting Edge is conducting aggregate mining and processing operations for commercial use at the Black Rock Quarry. The existing pit was originally mined in the 1960's. Approximately 4.5 acres of the site is previously disturbed as shown in Figure 3. The extraction/processing operation consists of mining to remove aggregate material as described in A.R.S. § 27-441. At the Black Rock Quarry, the process includes the use of a screen and other mobile equipment for the support of production, and other construction material related operations. Simple operations currently consist of excavation, screening, stockpiling, loading, and hauling. Access is directly off of Black Rock Road, a county-maintained road. Land use is currently mining and open space. The mining boundary includes 80 acres, as shown in Table 1 below. Cutting Edge has estimated the removal of up to 1.078 million cubic yards over a period of 20 years.

The project vicinity lies within the Great Basin Desertscrub vegetation community as described by Brown (1994). Vegetation observed in the project vicinity includes snakeweed (*Gutierrezia sarothrae*), rabbitbrush (*Ericameria nauseosa*), Russian thistle (*Salsola kali*), silverleaf nightshade (*Solanum elaeagnifolia*), four wing saltbush (*Atriplex canescens*), and grasses. The project site is located within Arizona Game and Fish Department (AGFD) Game Management Unit 4B. This unit is managed for antelope (*Antilocapra americana*), black bear (*Ursus americanus*), elk (*Cervus canadensis*), mule deer (*Odocoileus hemionus*), mountain lion (*Puma concolor*), Merriam's turkey (*Meleagris gallopavo*), and tree squirrel (*Sciurus arizonensis*).

Table 1
Existing Surface Disturbance

Feature	Acres
Mining Area	4
Processing Area	0.5
Access Road (County-Maintained)	1.4
Subtotal Disturbed Area	**5.9**
Undisturbed	74.1
Total	**80**

2.5 PROPOSED POSTAGGREGATE MINING LAND USE

Proposed post-aggregate mining land use of the site is open space. Current nearby use is open space, grazing, and agriculture.

2.6 DESCRIPTION OF THE AGGREGATE MINING UNIT AND PROPOSED SURFACE DISTURBANCES

Proposed surface disturbances include expansion of aggregate mining at the existing disturbed area (the western mining area) to a final disturbance of approximately 24.8 acres, and the addition of a new mining area (to the southeast) of approximately 11.8 acres, as shown in Figure 4. The eastern mining area requires the construction of a new access road. The existing processing area will remain in the same location but increase to the east and west. Equipment including a screen, crusher, bulldozer, excavator, loader, and an office trailer will be kept within the processing area. Stockpile placement will vary within the mining area and processing area. Cutting Edge has estimated the removal of up to 1.078 million cubic yards over a period of 20 years.

Table 2
Proposed Final Surface Disturbance

Feature	Acres
Mining Area	36.6
Processing Area	5.7
Access Roads	2.0
Undisturbed	35.7
Total	**80.0**

2.7 EXISTING AND PROPOSED FINAL TOPOGRAPHY

Existing topography and survey information is provided in Figure 3 (attached). Existing elevations of the basalt outcrops within the project site range from approximately 5,150 feet (ft) above mean sea level (msl) in the southwestern portion of the site to 5,235 ft above msl in the northwestern corner, and 5,230 ft above msl near the southeastern corner of the site. Proposed final elevations are shown in Figure 4 attached. Proposed final topography of the slopes will have an overall 3:1 slope to provide a safe slope at the end of mine life.

2.8 A NARRATIVE DESCRIPTION OF ROADS

Black Rock Road, the existing county-maintained road, is not proposed to change or be impacted in any way. A new access road will be constructed, with a new easement on the adjacent private property to the south, to access the southeastern mining area. Existing and proposed access roads are shown in Figures 3 and 4.

2.9 ACREAGE AFFECTED BY EACH TYPE OF SURFACE DISTURBANCE

Area Descriptions:

2.9.1 Mining Area

Aggregate mining is proposed to occur within two separate areas within this site and would impact an additional 32.6 acres of undisturbed area for a total of approximately 36.6 acres. The existing 4-acre mining area would be expanded to the north, west, and east to reach 24.8 acres. An additional mining area proposed to the southeast would encompass 11.8 acres. Final build-out is shown in Figure 4.

2.9.2 Processing Area

The processing area currently occurs in the southwestern portion of the site. The processing area would be expanded to the east and west to include stockpiles, a pond, a crusher, equipment, and an office trailer.

2.9.3 Access Roads

Black Rock Road, the existing county-maintained road, is not proposed to change. An additional access road would be constructed to access the eastern mining area. Existing access roads are shown in Figures 3 and 4.

3.0 RECLAMATION

3.1 EQUIPMENT AND STRUCTURE REMOVAL

All equipment on this site is mobile and can be re-located at will throughout the mining process. All mobile equipment will be removed from the site. There are no buildings or structures proposed to be located on the site.

3.2 ROADS, POWER LINES, WATERLINES AND FENCES

Black Rock Road is a county-maintained road and will remain unchanged. The access road to the eastern area will be removed by final grading and scarifying during reclamation as shown in Figure 5. There are no powerlines that occur within the site. There are no waterlines within the site. Mobile generators are used on an as-needed basis for the mining equipment which will be removed post-mining. During operations or at closure, the accessible western mining area would be fenced and gated.

3.3 AREA PREPARATION

Post-mining, the site interior will be lightly re-graded and scarified to promote natural revegetation, as shown in Figure 5.

3.4 SLOPE STABILIZATION

Mining incorporates 3:1 (horizontal:vertical) slopes or flatter to result in geotechnical stability for the area. No additional physical stabilization will be necessary after mining.

3.5 SOIL CONSERVATION

Natural revegetation on previously disturbed areas has been successful on the southern side of the existing mining area. Natural revegetation of the disturbed areas is therefore reasonably expected to be successful without soil amendments.

3.6 REVEGETATION

To promote natural revegetation, scarification will be conducted within the disturbed areas to support the open space land use of the site. Since these areas are not proposed to support grazing, fish or wildlife habitat, forestry or recreation post-mining land uses, proposed measures to encourage fish and wildlife habitat are not required to be described further in accordance with A.R.S. §27-1271 (B)(9d).

3.7 THE PROPOSED RECLAMATION MEASURES TO ACHIEVE POST MINE LAND USE AND PUBLIC SAFETY

A. What measures will restrict public access to pits or other hazardous surface features?

As the mined slopes are proposed at 3:1, no hazardous surface features are anticipated to remain after reclamation. Fencing and a gate would be installed during operations or at closure to prevent access to the western mining area. Vehicular access to the eastern area would be restricted by removing the access road. In addition, all scrap metal, wood, trash and other debris that pose a threat to public safety or create a public nuisance will be removed from the project site.

B. What measures will be taken to address erosion control and stability?

Site-specific grading shall be conducted, as necessary, to address erosion. Scarification will promote natural revegetation over the long-term to assist in erosion control. No permanent piles of mined material or overburden will remain. The basalt material is hard and not prone to erosion. The site will not be mined below ground surface so no pits would be created.

C. What measures will be taken to address revegetation, conservation, and the care and monitoring of revegetated areas?

Scarification would promote natural revegetation which occurs in the region; however direct revegetation is not proposed as appropriate for the post-mining land use. Monitoring of the entire site would be conducted for two years.

3.8 TIMELINE AND PHASING OF RECLAMATION

In accordance with A.R.S. § 27-926, reclamation & monitoring will be completed within 2 years of cessation of mining. Proposed tentative schedule includes:

- Mining operations are anticipated to continue through approximately 2042.
- Reclamation on the processing and related areas will commence immediately upon completion of mining operations and is estimated to be completed within 2 years of the start date (estimated 2044).
- Year 1 includes equipment removal, processing area cleanup, light grading, scarification to promote natural revegetation, and annual monitoring (trash removal, natural revegetation monitoring).
- Year 2 includes fencing and annual monitoring.
- Reclamation will be deemed complete once the reclaimed surfaces have been regraded to a safe and stable condition, scarification has been conducted, access restrictions measures are in place, and ASMI verifies that the owner or operator has fulfilled the requirements of the approved reclamation plan.

3.9 RECLAMATION COSTS – FINANCIAL ASSURANCE

All reclamation costs will be wholly born by the applicant. Financial surety will be obtained by bonding.

4.0 MINE CLOSURE

4.1 MINING AREAS

Reclamation of the mining area will commence immediately upon closure of mining operations. There will be no substantial period between operation and reclamation.

4.2 PROCESSING AND OTHER AREAS

Stockpile areas will be removed by the end of mine life. Reclamation will commence immediately upon completion of mining operations. There will be no substantial period between operation and reclamation.

4.3 PERSONNEL

Personnel employed at this site will be re-assigned to other job sites if possible or assigned to assist with the reclamation process and then re-assigned.

4.4 MONITORING

The closure of operations at this site will be monitored in accordance with the approved conditions of this plan in accordance with the Arizona State Mine Inspector's Office. During reclamation, monitoring will occur annually to inspect the main gate and lock, remove trash, monitor natural revegetation of scarified areas, and conduct a general inspection.

APPENDIX 1

RECLAMATION CONSTRUCTION ESTIMATE

BLACK ROCK MINERAL SOURCE

Reclamation Cost Estimate

7/12/2022

Black Rock Source Mine - portion of Section 11, T.20N., R.19E., G&SRM, Navajo County, Arizona

Excavation Areas are approximately 42.3 acres which will be graded

There are no concrete pads or infrastructure at the site, no removals will be needed.

Unit Price estimates provided by **Desert Construction, Inc.**

Proposed Reclamation Cost Estimation Summary - WorkSheet

Reclamation Item	Units	Description	Suggested Cost	Number of Units	Reclamation Cost
Processing and Stockpile Area					
	Acre	Re-Grading & Leveling	$ 500.00	42.3	$ 21,150
	Acre	Revegetation Cost (Disc)	$ 607	0.0	$ -
	Acre	Revegetation Cost (Hydro-seed)	$ 1,175		$ -
	Each	Containerized Trees and Shrubs	$ 10	0.0	$ -
Roads (Access)					
(Roads with Side Slope < 30%)	Linear Ft.	Re-Grading and Topsoiling Costs	$ 1.70	0.0	$ -
(Roads with Side Slope >30%)	Linear Ft.	Re-Grading and Topsoiling Costs	$ 2.60		$ -
	Acre	Regrading - Ripping	$ 607	29.5	$ 17,900
	Acre	Revegetation Cost (Hydro-seed)	$ 1,175		$ -
Structures					
(Break-up and bury Slab)	Sq. Ft.	Demolition & Removal - Metal Building	$ 3.40		$ -
(Break-up and bury Slab)	Sq. Ft.	Demolition & Removal - Masonry Block Building	$ 3.50		$ -
(Break-up and bury Slab)	Sq. Ft.	Demolition & Removal - Concrete Building	$ 15.86		$ -
	Linear Mile	Powerline Removal (Single Pole Utility)	$ 10,000		$ -
	each	Transformer Removal	$ 5,000		$ -
	Linear Ft.	Demolition - Chain Link Fencing	$ 3.47		$ -
	Linear Ft.	Demolition - Barb Wire Fencing (3 strand)	$ 1.94		$ -
	Linear Ft.	Removal - 15" Culvert	$ 10.29		$ -
	Linear Ft.	Removal - 36" Culvert	$ 17.15		$ -
(Break-up and remove)	Each	Processing Equipment Removal	10,000	1.0	$ 10,000
Construction					
	Linear Ft.	Construction - Barb Wire Fencing (3 strand)	$ 8.00	4500.0	$ 36,000
	Sq. Yard	Install Rip Rap Erosion Lining	$ 23.75		$ -
Material Haulage for Backfill					
Miscellaneous Leveling	Cu. Yard	Truck and Loader - 2000Ft. One Way	$ 1.03		$ -
	Cu. Yard	Dozer and Scraper - 1000Ft. One Way	$ 0.72		$ -
Care and Maintenance					
	Each	Processing Area Cleanup	$ 2,000.00	3.0	$ 6,000
	Annual	Site Monitor and Reporting	$ 500	2.0	$ 1,000
				Estimated Reclamation Operating and Material	$ 92,100

Administrative Costs				
	% of O&M Cost	Contigency	10%	$ 1,620
	% of O&M Cost	General Mobilization / De-Mobilization	4%	$ 648
	% of O&M Cost	Indirect costs	2%	$ 324
	% of O&M Cost	Contractor Profit	10%	$ 1,620
	% of O&M Cost	Contract Administation	10%	$ 1,620
			Total Estimated Financial Assur	$ 97,932

PREPARED BY: Raymond W. Stadler, P.E.

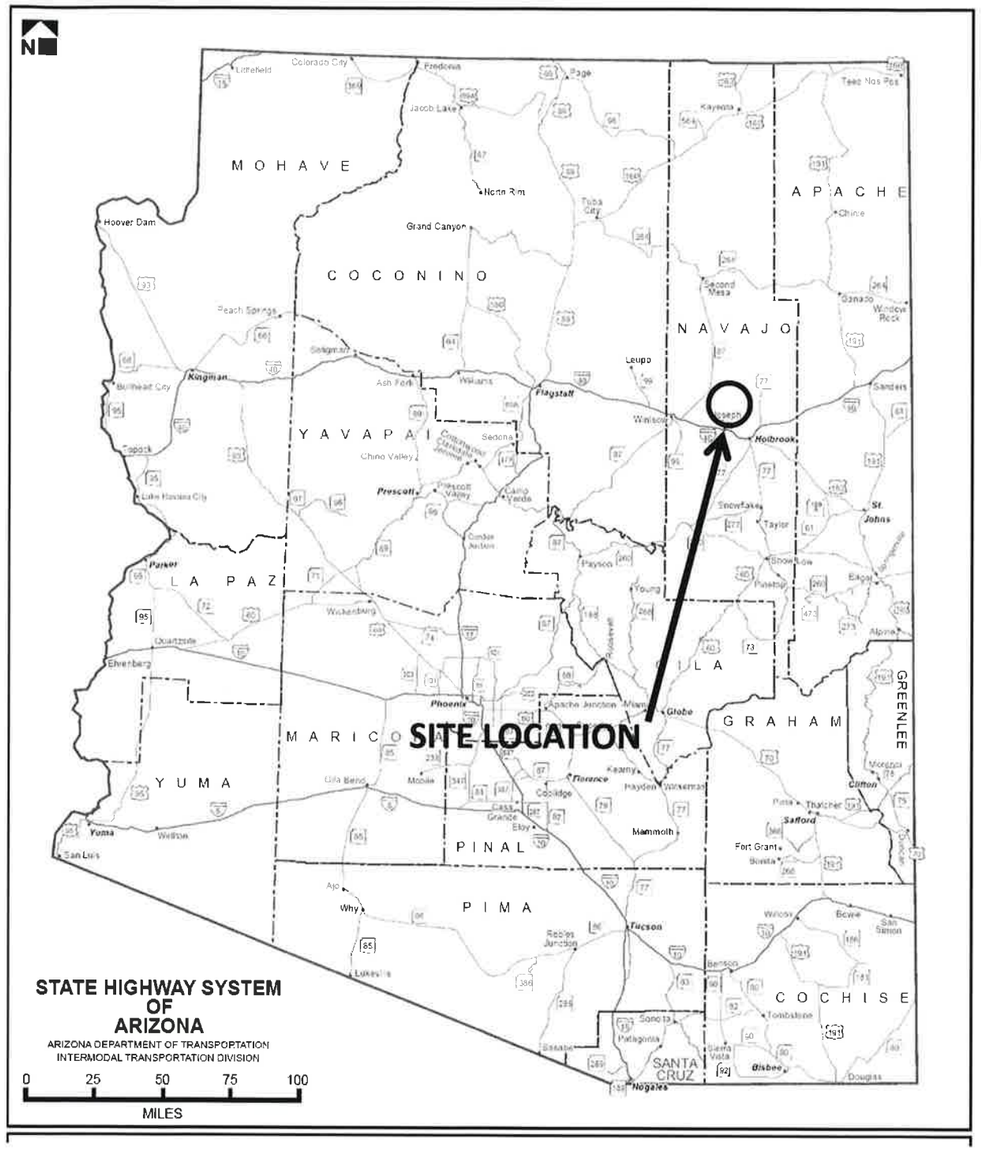


Figure 1. Project Vicinity Map.
Black Rock Material Source.
Navajo County, AZ.

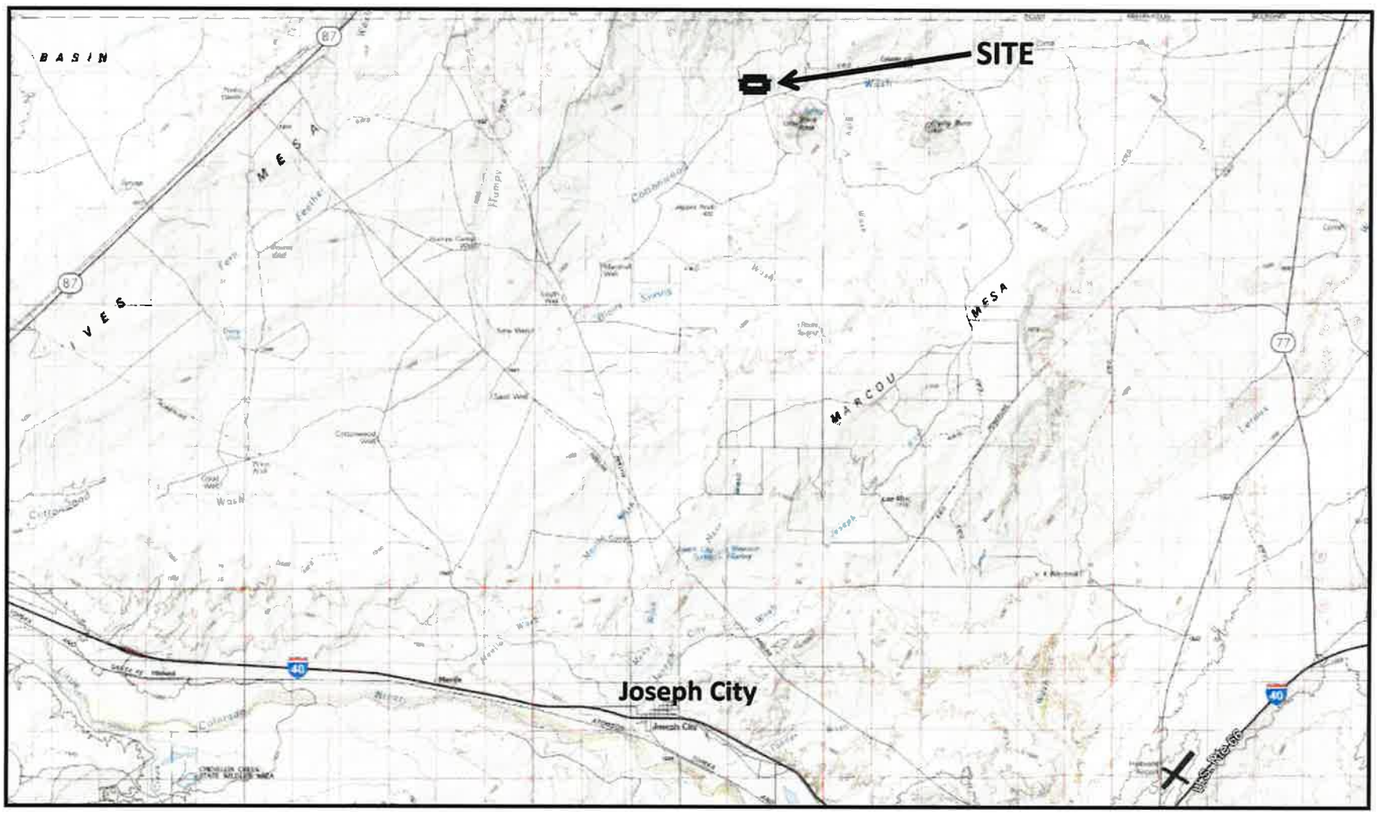


Figure 2. Site Location Map.
Cutting Edge Black Rock Material Source.
Navajo County, AZ.

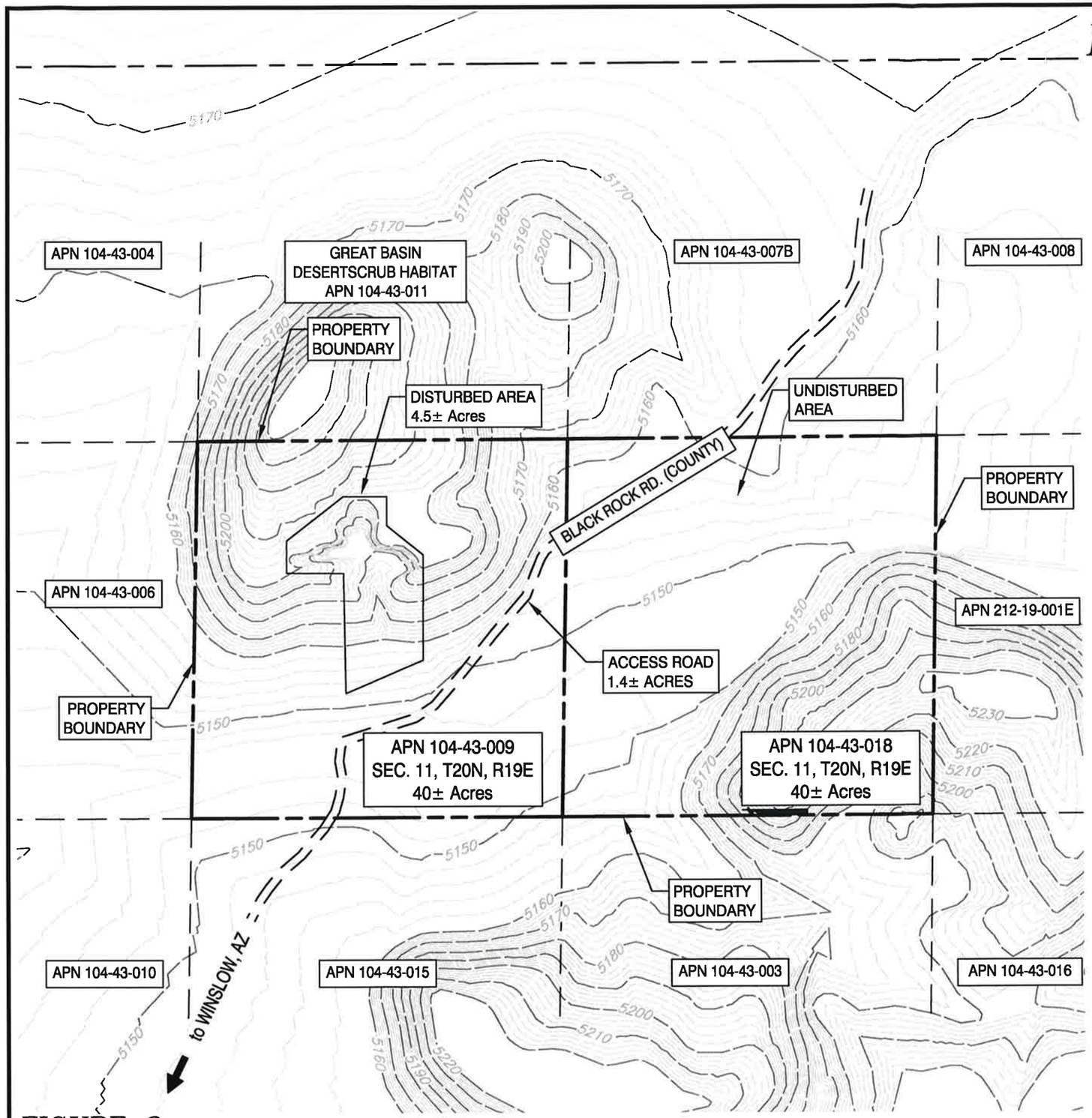
0 4 Miles

Base Map: Earth Point USGS 1:250,000
Quadrangle: Holbrook, AZ.

BLACK ROCK MATERIAL SOURCE

MATERIAL SOURCE & PLANT SITE EXISTING CONDITIONS

A PORTION OF SECTION 11, T-20N., R-19E, of the GILA & SALT RIVER BASE & MERIDIAN NAVAJO COUNTY, ARIZONA



LEGEND

- SECTION LINE
- ACCESS ROAD
- EXISTING 10' CONTOURS
- EXISITNG 2' CONTOURS

MATERIAL & PLANT AREAS

EXISTING CONDITIONS

ACCESS ROAD		– 1.4± ACRES
MINING AREA		
DISTURBED AREA	– 4.5± ACRES	
UNDISTURBED AREA	– 74.1± ACRES	
		– 78.6± ACRES
TOTAL		– 80.0± ACRES

NORTH

400 0 200 400

SCALE: 1" = 400'

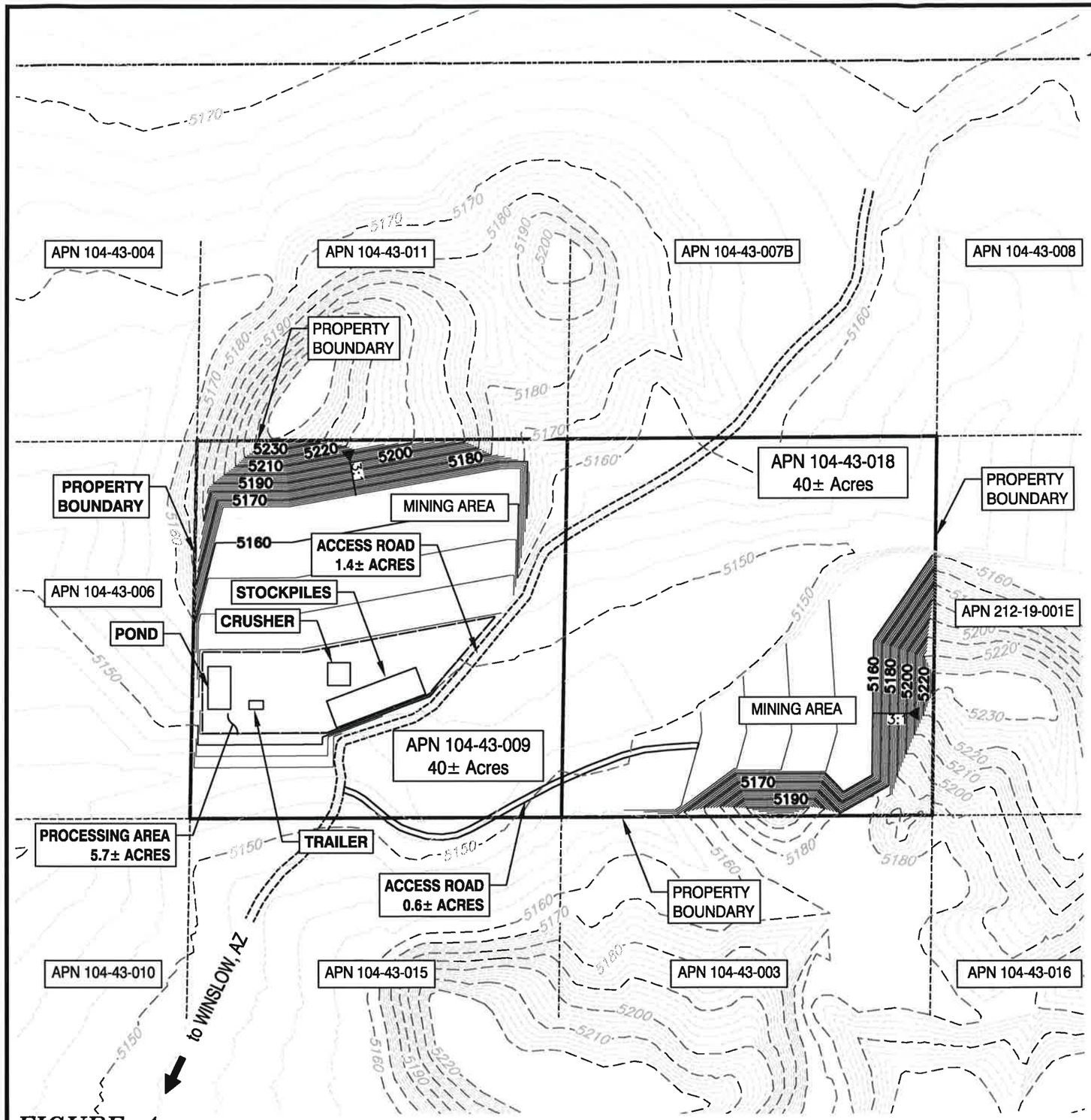
RAYMOND W. STADLER P.E., R.L.S.
2504 AIRFIELD COURT
KINGMAN, ARIZONA 86401
PHONE: (928) 753-8927 * FAX (928) 753-4050

FIGURE 3

BLACK ROCK MATERIAL SOURCE

MATERIAL SOURCE & PLANT SITE PROPOSED CONDITIONS

A PORTION OF SECTION 11, T-20N., R-19E, of the GILA & SALT RIVER BASE & MERIDIAN NAVAJO COUNTY, ARIZONA



LEGEND

- PROPERTY LINE
- EXISTING 10' CONTOURS
- EXISITNG 2' CONTOURS
- PROPOSED 10' CONTOURS
- PROPOSED 2' CONTOURS

MATERIAL & PROCESSING AREAS

ACCESS ROAD	– 2.0± ACRES
PROCESSING AREA	– 5.7± ACRES
MINING AREA	– 24.8± ACRES
MINING AREA	– 11.8± ACRES
UNDISTURBED AREA	– 35.7± ACRES
TOTAL	– 80.0± ACRES

SOURCE MATERIAL VOLUME

MINING AREA	– 36.2± ACRES
VOLUME EAST MINING AREA	– 545,561± C.Y.
VOLUME WEST MINING AREA	– 533,103± C.Y.
TOTAL AREA	– 36.2± ACRES
TOTAL VOLUME	–1,078,664± C.Y.

NORTH

400 0 200 400

SCALE: 1" = 400'

RAYMOND W. STADLER P.E., R.L.S.
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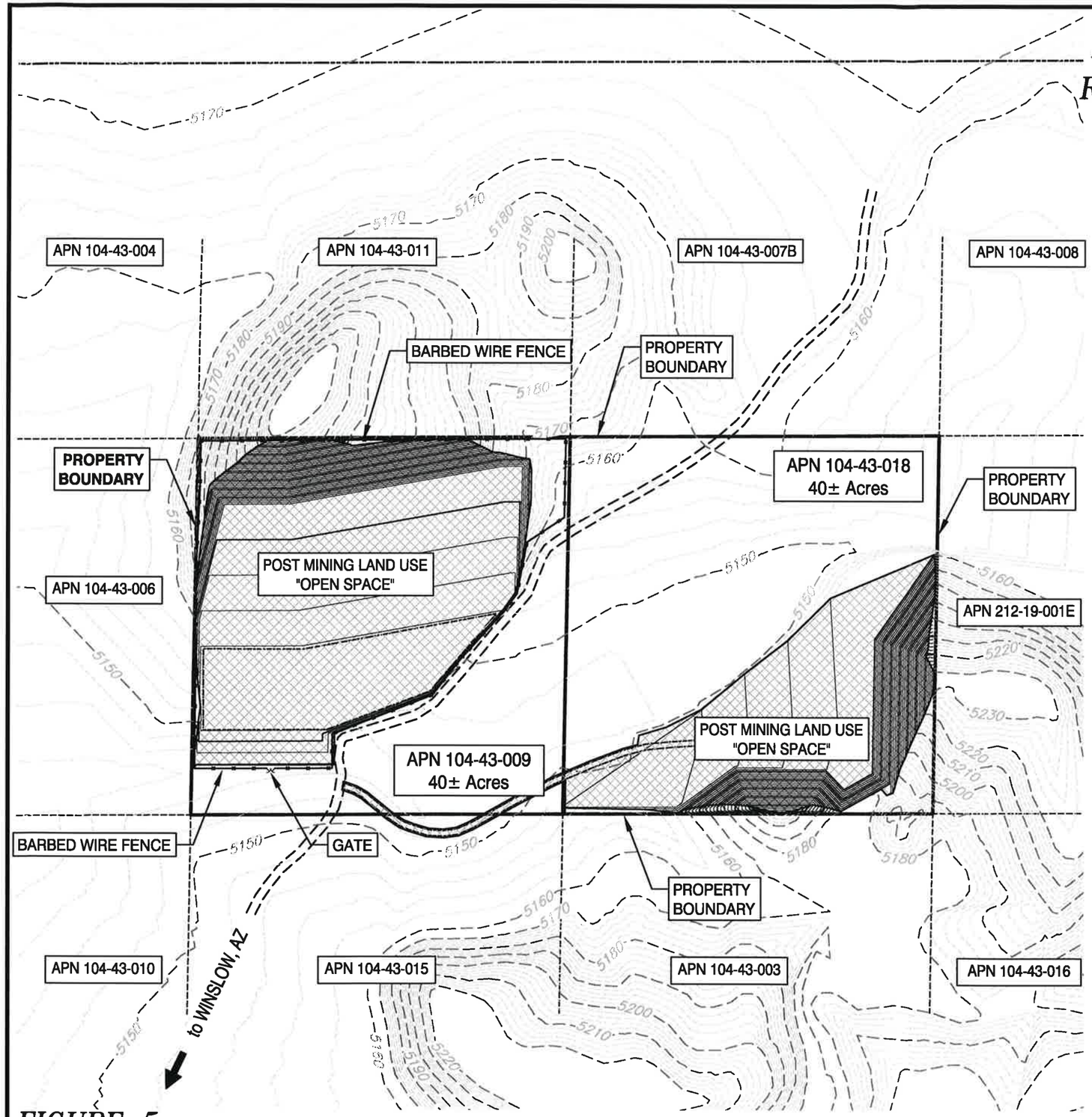
FIGURE 4

BLACK ROCK MATERIAL SOURCE

RECLAMATION & POST MINING LAND USE MAP "OPEN SPACE"

A PORTION OF SECTION 11, T-20N., R-19E, of the GILA & SALT RIVER BASE & MERIDIAN NAVAJO COUNTY, ARIZONA



LEGEND

- PROPERTY LINE
- EXISTING 10' CONTOURS
- EXISITNG 2' CONTOURS
- PROPOSED 10' CONTOURS
- PROPOSED 2' CONTOURS
- 3-STRAND BARBED WIRE FENCE
- FINAL GRADING AREA & SCARIFYING

NORTH

400 0 200 400

SCALE: 1" = 400'

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FIGURE 5