



P.O. Box 533 | Pueblo, Colorado 81003
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FOX No. 1 CLAY PIT

112 - Regular Operation - amendment
Permit # M-1977-219

PUEBLO COUNTY, COLORADO
June 2017

AMENDMENT TO AN APPLICATION FOR A MINED LAND RECLAMATION PERMIT

PREPARED BY
ENVIRONMENT, INC.
7985 VANCE DR., SUITE 205A
ARVADA, CO 80003
(303) 423-7297

STATE OF COLORADO

DIVISION OF RECLAMATION, MINING AND SAFETY
Department of Natural Resources

1313 Sherman St., Room 215
Denver, Colorado 80203
Phone: (303) 866-3567
FAX: (303) 832-8106



CONSTRUCTION MATERIALS REGULAR (112) OPERATION RECLAMATION PERMIT APPLICATION FORM

CHECK ONE: ☒ There is a File Number Already Assigned to this Operation

Permit # M - - - - - (Please reference the file number currently assigned to this operation)

☐ New Application (Rule 1.4.5)

☒ Amendment Application (Rule 1.10)

☐ Conversion Application (Rule 1.11)

Permit # M - 1977 - 219 - - - - (provide for Amendments and Conversions of existing permits)

The application for a Construction Materials Regular 112 Operation Reclamation Permit contains three major parts: (1) the application form, (2) Exhibits A-S, Addendum I, any sections of Exhibit 6.5 (Geotechnical Stability Exhibit); and (3) the application fee. When you submit your application, be sure to include one (1) complete signed and notarized ORIGINAL and one (1) copy of the completed application form, two (2) copies of Exhibits A-S, Addendum I, appropriate sections of 6.5 (Geotechnical Stability Exhibit), and a check for the application fee described under Section (4) below. Exhibits should NOT be bound or in a 3-ring binder; maps should be folded to 8 1/2" X 11" or 8 1/2" X 14" size. To expedite processing, please provide the information in the format and order described in this form.

GENERAL OPERATION INFORMATION

Type or print clearly, in the space provided, ALL information requested below.

1. Applicant/operator or company name (name to be used on permit): Summit Brick & Tile Co.
 - 1.1 Type of organization (corporation, partnership, etc.): Corporation
2. Operation name (pit, mine or site name): Fox #1 Clay Mine
3. Permitted acreage (new or existing site): 40.3 permitted acres
 - 3.1 Change in acreage (+): 1006.5 acres
 - 3.2 Total acreage in Permit area 1046.8 acres
4. Fees:

4.1 New Application	<u>\$2,696.00</u>	application fee
4.2 New Quarry Application	<u>\$2,400.00</u>	quarry application
4.4 Amendment Fee	<u>\$2,229.00</u>	amendment fee
4.5 Conversion to 112 operation (set by statute)	<u>\$2,600.00</u>	conversion fee
5. Primary commodity(ies) to be mined: clay sandstone borrow
 - 5.1 Incidental commodity(ies) to be mined:

1. <u>-</u> lbs/Tons/yr	2. <u>/</u> lbs/Tons/yr
3. <u>/</u> lbs/Tons/yr	4. <u>/</u> lbs/Tons/yr
5. <u>/</u> lbs/Tons/yr	
 - 5.2 Anticipated end use of primary commodity(ies) to be mined: brick clay, stone products & fill material
 - 5.3 Anticipated end use of incidental commodity(ies) to be mined:

6. Name of owner of subsurface rights of affected land: Summit Brick & Tile Co., et al (See Exhibit O)
If 2 or more owners, "refer to Exhibit O".

7. Name of owner of surface of affected land: Summit Brick & Tile Co, et al (See Exhibit O)

8. Type of mining operation: ☒ Surface ☐ Underground

9. Location Information: The center of the area where the majority of mining will occur:

COUNTY: Pueblo

PRINCIPAL MERIDIAN (check one): ☒ 6th (Colorado) ☐ 10th (New Mexico) ☐ Ute

SECTION (write number): S 30

TOWNSHIP (write number and check direction): T 22 ☐ North ☒ South

RANGE (write number and check direction): R 67 ☐ East ☒ West

QUARTER SECTION (check one): ☐ NE ☐ NW ☒ SE ☒ SW

QUARTER/QUARTER SECTION (check one): ☐ NE ☐ NW ☒ SE ☐ SW

GENERAL DESCRIPTION: (the number of miles and direction from the nearest town and the approximate elevation): 21.0 miles southwest of Pueblo on HWY 78 the 1 mile north on Siloam Road. Site elevation 6430'

10. Primary Mine Entrance Location (report in either Latitude/Longitude OR UTM):

Latitude/Longitude:

Example: (N) 39° 44' 12.98"
(W) 104° 59' 3.87"

Latitude (N): deg 38 min 06 sec 08 72 (2 decimal places)

Longitude (W): deg 104 min 55 sec 27 13 (2 decimal places)

OR

Example: (N) 39.73691°
(W) -104.98449°

Latitude (N) _____ (5 decimal places)

Longitude (W) _____ (5 decimal places)

OR

Universal Transverse Mercator (UTM)

Example: 201336.3 E NAD27 Zone 13
4398351.2 N

UTM Datum (specify NAD27, NAD83 or WGS 84) WGS 84 Zone 13

Easting _____

Northing _____

11. Correspondence Information:

APPLICANT/OPERATOR (name, address, and phone of name to be used on permit)

Contact's Name: Matthew Welte Title: Chief Operating Officer
Company Name: Summit Brick & Tile CO.
Street/P.O. Box: 13th & Erie Streets P.O. Box: 533
City: Pueblo
State: CO Zip Code: 81003
Telephone Number: (719) - 542-8278
Fax Number: (719) - 542-5245

PERMITTING CONTACT (if different from applicant/operator above)

Contact's Name: Steve O'Brian Title: President
Company Name: Environment Inc
Street/P.O. Box: 7985 Vance Dr. #205A P.O. Box: _____
City: Arvada
State: CO Zip Code: 80003
Telephone Number: (303) - 423-7297
Fax Number: (303) - 423-7599

INSPECTION CONTACT

Contact's Name: Matt Welte Title: Chief Operating Officer
Company Name: Summit Brick & Tile CO.
Street/P.O. Box: 13th & Erie Streets P.O. Box: 533
City: Pueblo
State: CO Zip Code: 81003
Telephone Number: (719) - 542-8278
Fax Number: (719) - 542-5245

CC: STATE OR FEDERAL LANDOWNER (if any)

Agency: _____
Street: _____
City: _____
State: _____ Zip Code: _____
Telephone Number: (_____) - _____

CC: STATE OR FEDERAL LANDOWNER (if any)

Agency: _____
Street: _____
City: _____
State: _____ Zip Code: _____
Telephone Number: (_____) - _____

12. Primary future (Post-mining) land use (check one):

- | | | |
|--|--|--|
| <input type="checkbox"/> Cropland(CR) | <input type="checkbox"/> Pastureland(PL) | <input type="checkbox"/> General Agriculture(GA) |
| <input checked="" type="checkbox"/> Rangeland(RL) | <input type="checkbox"/> Forestry(FR) | <input type="checkbox"/> Wildlife Habitat(WL) |
| <input type="checkbox"/> Residential(RS) | <input type="checkbox"/> Recreation(RC) | <input type="checkbox"/> Industrial/Commercial(IC) |
| <input type="checkbox"/> Developed Water Resources(WR) | | <input type="checkbox"/> Solid Waste Disposal(WD) |

13. Primary present land use (check one):

- | | | |
|--|--|--|
| <input type="checkbox"/> Cropland(CR) | <input type="checkbox"/> Pastureland(PL) | <input type="checkbox"/> General Agriculture(GA) |
| <input checked="" type="checkbox"/> Rangeland(RL) | <input type="checkbox"/> Forestry(FR) | <input type="checkbox"/> Wildlife Habitat(WL) |
| <input type="checkbox"/> Residential(RS) | <input type="checkbox"/> Recreation(RC) | <input type="checkbox"/> Industrial/Commercial(IC) |
| <input type="checkbox"/> Developed Water Resources(WR) | | |

14. Method of Mining: Briefly explain mining method (e.g. truck/shovel): Track-hoe's, dozers and loaders remove material and load into trucks for delivery to stockpile area.

15. On Site Processing: ☒ Crushing/Screening

15.1 Briefly explain mining method (e.g. truck/shovel): Two primary types of material is mined, Clay an Sandstone. Sandstone must be drilled & blasted to get to the clay. The Sandstone is crushed & the clay moved to the brick plant

List any designated chemicals or acid-producing materials to be used or stored within permit area: None

16. Description of Amendment or Conversion:

If you are amending or converting an existing operation, provide a brief narrative describing the proposed change(s).

Amendment adds approximately 1006.5 acres to permit area to increase the permitted reserves that have been leased since 1955 for sandstone and fire clay removal. Change also modifies sloping plan by removing the requirement to slope the hard sandstone face from near vertical to 3:1. This will leave a final face so the upper portions is sloped 3:1 and the clay layer is sloped 3:1 and the sandstone face is left vertical so it blends with surrounding canyon areas. This amendment will not increase activities at the mine only the life of the mine. The reclamation plan is unchanged as the mined areas will be reclaimed as rangeland.

Maps and Exhibits:

Two (2) complete, unbound application packages must be submitted. One complete application package consists of a signed application form and the set of maps and exhibits referenced below as Exhibits A-S, Addendum I, and the Geotechnical Stability Exhibit. Each exhibit within the application must be presented as a separate section. Begin each exhibit on a new page. Pages should be numbered consecutively for ease of reference. If separate documents are used as appendices, please reference these by name in the exhibit.

With each of the two (2) signed application forms, you must submit a corresponding set of the maps and exhibits as described in the following references to Rule 6.4, 6.5, and 1.6.2(1)(b):

EXHIBIT A	Legal Description
EXHIBIT B	Index Map
EXHIBIT C	Pre-Mining and Mining Plan Map(s) of Affected Lands
EXHIBIT D	Mining Plan
EXHIBIT E	Reclamation Plan
EXHIBIT F	Reclamation Plan Map
EXHIBIT G	Water Information
EXHIBIT H	Wildlife Information
EXHIBIT I	Soils Information
EXHIBIT J	Vegetation Information
EXHIBIT K	Climate Information
EXHIBIT L	Reclamation Costs
EXHIBIT M	Other Permits and Licenses
EXHIBIT N	Source of Legal Right-To-Enter
EXHIBIT O	Owners of Record of Affected Land (Surface Area) and Owners of Substance to be Mined
EXHIBIT P	Municipalities Within Two Miles
EXHIBIT Q	Proof of Mailing of Notices to County Commissioners and Conservation District
EXHIBIT R	Proof of Filing with County Clerk or Recorder
EXHIBIT S	Permanent Man-Made Structures
Rule 1.6.2(1)(b)	ADDENDUM I - Notice Requirements (sample enclosed)
Rule 6.5	Geotechnical Stability Exhibit (any required sections)

The instructions for preparing Exhibits A-S, Addendum I, and Geotechnical Stability Exhibit are specified under Rule 6.4 and 6.5 and Rule 1.6.2(1)(b) of the Rules and Regulations. If you have any questions on preparing the Exhibits or content of the information required, or would like to schedule a pre-application meeting you may contact the Office at 303-866-3567.

Responsibilities as a Permittee:

Upon application approval and permit issuance, this application becomes a legally binding document. Therefore, there are a number of important requirements which you, as a permittee, should fully understand. These requirements are listed below. Please read and initial each requirement, in the space provided, to acknowledge that you understand your obligations. If you do not understand these obligations then please contact this Office for a full explanation.

MRW

1. Your obligation to reclaim the site is not limited to the amount of the financial warranty. You assume legal liability for all reasonable expenses which the Board or the Office may incur to reclaim the affected lands associated with your mining operation in the event your permit is revoked and financial warranty is forfeited;

MRW

2. The Board may suspend or revoke this permit, or assess a civil penalty, upon a finding that the permittee violated the terms or conditions of this permit, the Act, the Mineral Rules and Regulations, or that information contained in the application or your permit misrepresents important material facts:

MRW

3. If your mining and reclamation operations affect areas beyond the boundaries of an approved permit boundary, substantial civil penalties, to you as permittee can result;

MRW

4. Any modification to the approved mining and reclamation plan from those described in your approved application requires you to submit a permit modification and obtain approval from the Board or Office;

MRW

5. It is your responsibility to notify the Office of any changes in your address or phone number;

MRW

6. Upon permit issuance and prior to beginning on-site mining activity, you must post a sign at the entrance of the mine site, which shall be clearly visible from the access road, with the following information (Rule 3.1.12):

- a. the name of the operator;
- b. a statement that a reclamation permit for the operation has been issued by the Colorado Mined Land Reclamation Board, and,
- c. the permit number.

MRW

7. The boundaries of the permit boundary area must be marked by monuments or other markers that are clearly visible and adequate to delineate such boundaries prior to site disturbance.

MRW

8. It is a provision of this permit that the operations will be conducted in accordance with the terms and conditions listed in your application, as well as with the provisions of the Act and the Construction Material Rules and Regulations in effect at the time the permit is issued.

MRW

9. Annually, on the anniversary date of permit issuance, you must submit an annual fee as specified by Statute, and an annual report which includes a map describing the acreage affected and the acreage reclaimed to date (if there are changes from the previous year), any monitoring required by the Reclamation Plan to be submitted annually on the anniversary date of the permit approval. Annual fees are for the previous year a permit is held. For example, a permit with the anniversary date of July 1, 1995, the annual fee is for the period of July 1, 1994 through June 30, 1995. Failure to submit your annual fee and report by the permit anniversary date may result in a civil penalty, revocation of your permit, and forfeiture of your financial warranty. It is your responsibility, as the permittee, to continue to pay your annual fee to the Office until the Board releases you from your total reclamation responsibility.

NA

10. For joint venture/partnership operators: the signing representative is authorized to sign this document and a power of attorney (provided by the partner(s)) authorizing the signature of the representative is attached to this application.

NOTE TO COMMENTORS/OBJECTORS:

It is likely there will be additions, changes, and deletions to this document prior to final decision by the Office. Therefore, if you have any comments or concerns you must contact the applicant or the Office prior to the decision date so that you will know what changes may have been made to the application document.

The Office is not allowed to consider comments, unless they are written, and received prior to the end of the public comment period. You should contact the applicant for the final date of the public comment period.

If you have questions about the Mined Land Reclamation Board and Office's review and decision or appeals process, you may contact the Office at (303) 866-3567.

Certification:

As an authorized representative of the applicant, I hereby certify that the operation described has met the minimum requirements of the following terms and conditions:

1. To the best of my knowledge, all significant, valuable and permanent man-made structure(s) in existence at the time this application is filed, and located within 200 feet of the proposed affected area have been identified in this application (Section 34-32.5-115(4)(e), C.R.S.).
2. No mining operation will be located on lands where such operations are prohibited by law (Section 34-32.5-115(4)(f), C.R.S.);
3. As the applicant/operator, I do not have any extraction/exploration operations in the State of Colorado currently in violation of the provisions of the Colorado Land Reclamation Act for the Extraction of Construction Materials (Section 34-32.5-120, C.R.S.) as determined through a Board finding.
4. I understand that statements in the application are being made under penalty of perjury and that false statements made herein are punishable as a Class 1 misdemeanor pursuant to Section 18-6-503, C.R.S.

This form has been approved by the Mined Land Reclamation Board pursuant to section 34-32.5-112, C.R.S., of the Colorado Land Reclamation Act for the Extraction of Construction Materials. Any alteration or modification of this form shall result in voiding any permit issued on the altered or modified form and subject the operator to cease and desist orders and civil penalties for operating without a permit pursuant to section 34-32.5-123, C.R.S.

Signed and dated this 19th day of JUNE, 2017

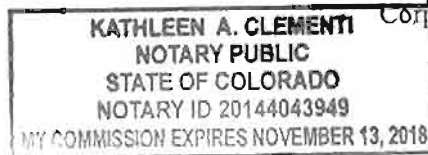
Summit Brick & Tile Co.
Applicant/Operator or Company Name

If Corporation Attest (Seal)

Signed: Matthew Welte

Signed: Joseph C. Welte
VICE PRESIDENT
Corporate Secretary or Equivalent

Title: Chief Operating Officer



Town/City/County Clerk

State of Colorado)
) ss.
County of Pueblo)

The foregoing instrument was acknowledged before me this 19th day of June, 2017, by Matthew Welte as Chief Operating Officer of Summit Brick & Tile Co.

Kathleen A. Clementi
Notary Public

My Commission expires: 11/13/2018

SIGNATURES MUST BE IN BLUE INK

You must post sufficient Notices at the location of the proposed mine site to clearly identify the site as the location of a

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EXHIBIT A

LEGAL DESCRIPTION

EXISTING PERMIT

Parts of the NE $\frac{1}{4}$ SE $\frac{1}{4}$, SE $\frac{1}{4}$ SE $\frac{1}{4}$, SW $\frac{1}{4}$ SE $\frac{1}{4}$ & NW $\frac{1}{4}$ SE $\frac{1}{4}$ of Section 30, T-22-S, R-67-W, 6th P.M., Pueblo County, Colorado.

Containing 40.3 acres. more or less.

AMENDMENT AREA

Parts of the SE $\frac{1}{4}$ NE $\frac{1}{4}$ & NE $\frac{1}{4}$ SE $\frac{1}{4}$, and all of the W $\frac{1}{2}$ NE $\frac{1}{4}$, SE $\frac{1}{4}$ SE $\frac{1}{4}$, W $\frac{1}{2}$ SE $\frac{1}{4}$, SW $\frac{1}{4}$ & NW $\frac{1}{4}$ of Section 19.

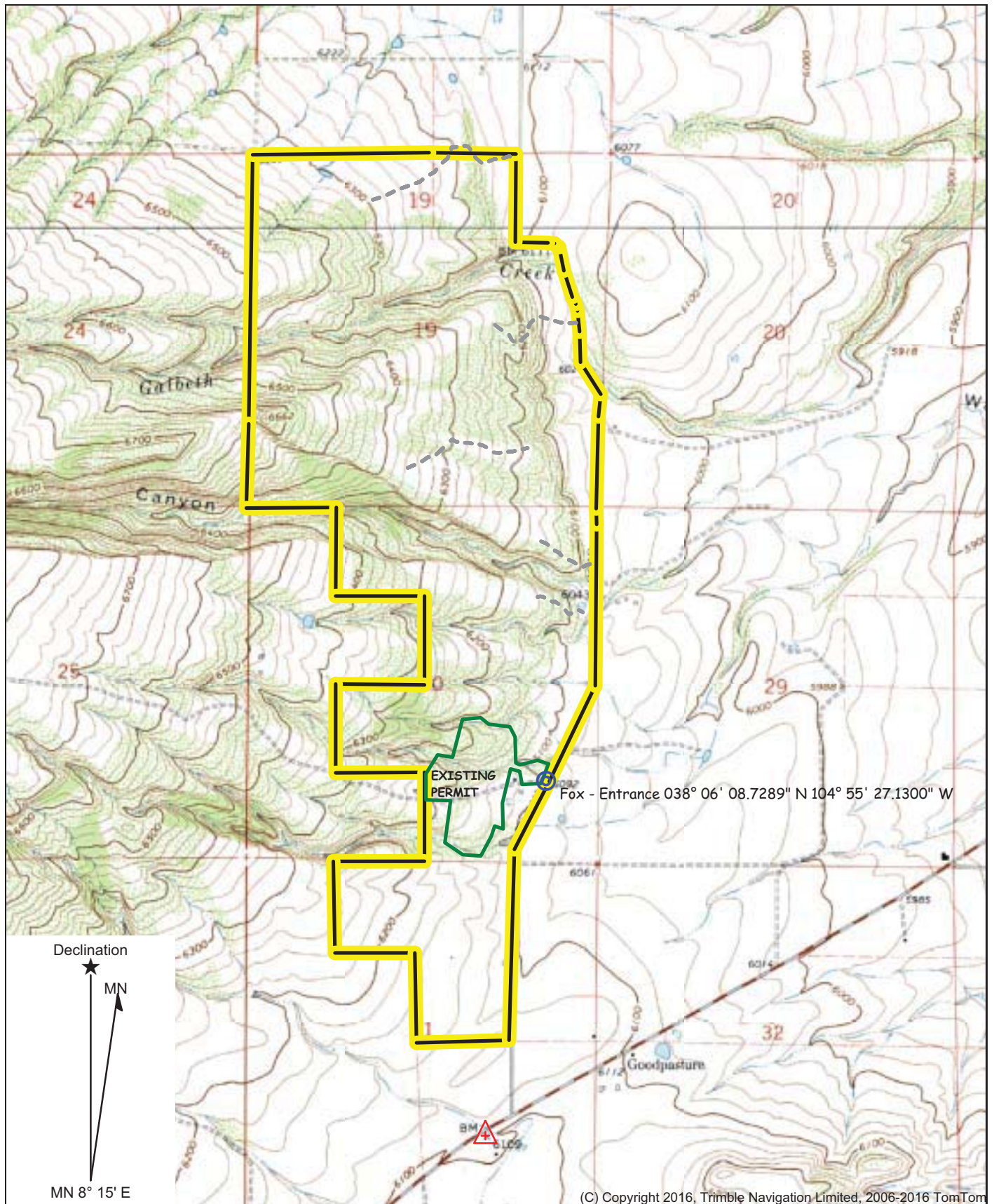
Parts of the NE $\frac{1}{4}$ SE $\frac{1}{4}$, & SE $\frac{1}{4}$ SE $\frac{1}{4}$. And all of the NE $\frac{1}{4}$, W $\frac{1}{2}$ SE $\frac{1}{4}$, NE $\frac{1}{4}$ SW $\frac{1}{4}$, & NE $\frac{1}{4}$ NW $\frac{1}{4}$ of Section 30.

And the W $\frac{1}{2}$ NE $\frac{1}{4}$ and NE $\frac{1}{4}$ NW $\frac{1}{4}$, Section 31, T-22-S, R-67-W, 6th P.M., Pueblo County, Colorado.

Containing 1,006.5 acres. more or less.

Total permit area 1,046.8 acres. more or less .

ENTRANCE LOCATION 38°06'8.72" N, 104°55'27.13" W (WGS 84)



Name: BEULAH (CO)
 Date: 12/28/16
 Scale: 1 inch = 2,000 ft.
 Navigation Limited

PART OF SECTIONS 19, 30 & 31, T-22-S,
 R-67-W, PUEBLO COUNTY, COLORADO
 Entrance 38d06'8.73" 104d55'27.13'

SUMMIT BRICK & TILE COMPANY
 FOX NO. 1 CLAY PIT
 EXHIBIT B - VICINITY MAP

Exhibit C - PRE MINING MAP

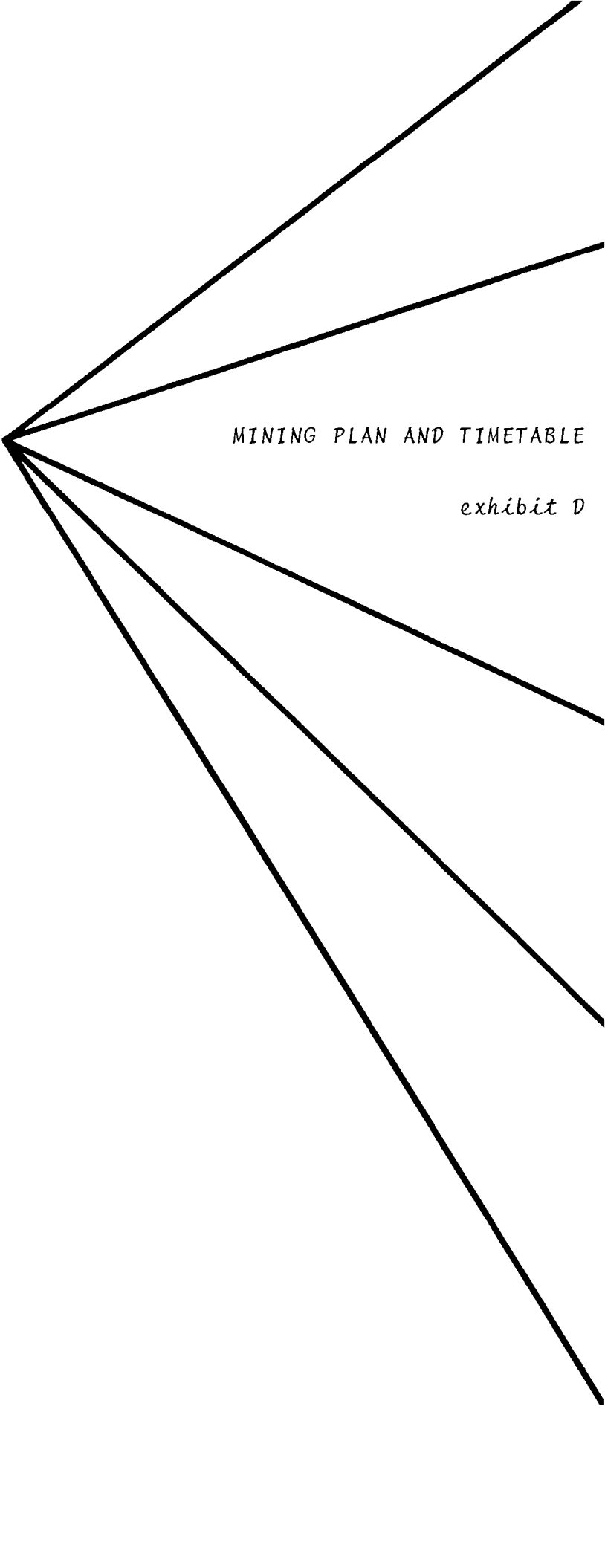
Revised and added new area. See Map packet

Exhibit C-1 - MINING PLAN MAP

Revised and added new area. See Map packet

Exhibit F - RECLAMATION PLAN MAP

Revised and added new area. See Map packet



MINING PLAN AND TIMETABLE

exhibit D

Unless specifically discussed below, the methods described and approved in the existing permit application and amendments to the mining and reclamation plans will remain unchanged. This will stay a dry mining operation of sandstone and clay. **Map Exhibit C** shows the current permit area and the area being added to the permit.

There are no changes to the mining method as approved in the 1977 permit and the 2 amendments that followed the original approval. The primary reason for this amendment is to add approximately 1006.5 acres to the permit area that covers the reserves leased or owned by Summit Brick and will extend the life of the mine. The additional area has been owned or leased by various owners for the purpose of mining since the 1950's.

At the time of permitting we are not sure of the location of actual reserves in the mining areas so, as the mine develops, we will be investigating each mining Stage and developing specific mining plans for the individual Stages. It is possible that, during exploration activities throughout the property, additional clay and sandstone reserves will be discovered that were not included in the current mining plan. If this occurs a new Stage may be added or an existing stage will be expanded to cover the new area. If at any time it is determined that the disturbed area will exceed the maximum allowed by the bond, a Technical Revision to increase the amount of area will be submitted.

The maps and the Mining Timetable list show a series of 7 mining stages that are used to designate where mining will be done. Their sequencing does not denote the direction of mining and there are 2 small Stages labeled E1 & E2 that may also be mined in the future if they contain clay reserves. At this time mining is taking place in Stage A. The Mining Plan Map shows that mining has ended in Stages A, B, & C and continuing in Stage D. This was done to show that reclamation is running concurrent with mining, and not to indicate that mining will move in that direction. As mining approaches the end in a given Stage the Division will be notified in the Annual Report as to where mining will be done next.

This amendment changes the final sloping design for the mined area. Since vertical faces of the solid sandstone are stable, it makes little economic sense to reclaim by building slopes to cover the solid rock face. The stability of the sandstone is proven by the numerous stable natural vertical rock faces of the same sandstone throughout the permit area and surrounding areas.

Any unconsolidated materials on the top of the sandstone and any exposed clay bed below the solid sandstone will be reclaimed to 3h to 1v slopes. The Typical Cross Section shown on the Reclamation Plan Map depicts the final surface configuration. For the most part, the topsoil and overburden above the solid sandstone consists of unconsolidated material ranging in thickness from a few inches to several feet. This unconsolidated material is a combination of topsoil/growth medium (0 to 6 inches), and rocky dirt (overburden) (up to 8 feet thick). The topsoil/growth medium will be stripped off the overburden and stockpiled on the perimeter of the mined area or placed on areas

where mining has ended. The overburden found under the topsoil will be used to backfill previously mined areas or saved for use as root zone. The waste from the clay bed and unusable crusher fines left from sandstone processing, will be used for backfill or to build the 3h to 1v slopes.

The Stage labeling in the revised Mining and Reclamation Timetables are there to label the mining areas within the mine and not necessarily to show the direction or timing of mining. In general, we propose that mining will continue in Stage A and once that is done will move onto the northern end of Stage S or the east side of Stage B.

As the topsoil is removed on a Stage it will be placed in stockpiles along the edges of the mining area or on the floor of the previous Stage being reclaimed. The stockpiles will be located in areas where disturbances by ongoing mining operations will be at a minimum, i.e., along setbacks on the pit perimeter. The topsoil will be handled as little as possible until it is replaced onto disturbed areas. If the topsoil/growth medium piles remain undisturbed for more than 180 days, 2.0 #PLS of Crested Wheatgrass, per 100 sq-ft will be planted on the piles or other means will be employed to preserve the piles from wind and water erosion. This will keep it free of contaminants so that it remains useful for sustaining vegetation when reclamation begins.

Once the sandstone is exposed, it will be drilled and shot as described in the approved Blasting Plan. The sandstone varies greatly in thickness but mining will only occur where it is between 0 and 35 feet thick. In most Stages, mining and processing will begin on the east side of the stage and move from east to west. The plan is to have a north/south trending open mining face that stretches across each stage. No highwalls or backfilled slopes are planned on the sides where the mining can daylight out into the canyons that bisect several of the stages within the property.

During the life of the mine inert material as defined in Rule 1.1(20) may be imported into the site for use to rebuild slopes or other reclamation. This material will consist mostly of reject brick produced from materials mined at this site. Some of the brick material may be processed and reused in brick manufacture or for road base. We have included an Inert Material affidavit, as required Rule 3.1.5(9) in the Appendix of this submittal.

Material processing will continue in Stage A until there is sufficient floor area for the material stockpiles and processing areas.

Of the 1046.8 acres in this amendment, the old permit area covers 40.3 acres \pm and the new area is 1006.5 acres \pm . The mined area will be reclaimed as rangeland to return it to its present use. There is adequate topsoil, overburden and waste material onsite to complete the sloping without importing material should mining and reclamation ended prematurely. The approved plan calls for, having no more than 40.00 acres \pm disturbed or need more than 1570 feet of slope grading at any-one-time. Due to the change to the sloping plan, the cost to

do the sloping is reduced as the sandstone does not need to be blasted and sloped only the unconsolidated layer will need sloping. The rock high wall face, is not included in the slope grading number and if a working face becomes longer than 1570 feet the portion above that length will have a temporary slope installed above and below the open rock face.

The **Mining Plan Map** shows how the mine will look when approximately 36% of Stage D is mined. Note how some of the mined area around the perimeter of Stage D has been day lighted out the north and south sides and reclamation is completed on Stages A, B & C.

The working face will be mined near vertical (0h:1v) to maximize removal of material from the mine. At its widest point, the working face will be approximately 1570 feet long. If mining ended prematurely, a cut/fill sloping method will be used on the topsoil/overburden level, the clay seam would be backfilled to a 3h to 1v slope, and the rock face no greater than 25 feet would be left undisturbed. The temporary sloping plan that keeps the working face limited, reduce the amount of sloping work needed in the larger Stages like S & F. The mining operation setbacks will vary from 25 to 300 feet along the permit boundaries. For structures within the permit boundary, a 200-foot setback will be maintained from buildings and for other structures adequate distance except to replace or repair the structure if they are damaged. From the mine entrance to the north Permit limit along Siloam Road the clay seam is over 200 feet from the road. No mining operations will take place within 200 feet of those structures along the east side of the mine, and east of Siloam Road. The Hanratty Leases, grant the holder (Summit Brick) the right to mine around all structures on the land covered by the leases.

Along the west side, the setback will vary from 25 to 50 feet depending on the nature of the deposit and the land. The setback areas will be reclaimed if disturbed and the roads will remain for access to the property. We estimate that by adding the new area, the life of the mine will be extended by 99 years.

Mining Timetable

The continuing uncertainty of economic conditions in the construction materials industry precludes an accurate forecast of demand for materials during the life of the mine. We therefore, can only estimate the mining timetable based on an average year and may expect a specific year to vary widely from the average.

MINING TIMETABLE (revised 1/13/2017)

Stage*	Years	Total Area (ac±)	Mined Area (ac±)	Slope Area (ac±)
A		72.9	72.9	10.1
B		21.7	21.7	6.5
C		32.2	32.2	6.9
D		71.0	71.0	5.7
E		224.2	224.2	0.5
E1		27.7	27.7	1.4
E2		36.0	36.0	1.0
F		152.5	147.6	10.0
S		120.3	115.4	21.1
Misc (i.e. set-backs, and undisturbed, etc.) (ac±)	0	288.3	0.0	0.0
Grand Totals		1046.8	748.7	63.2

* areas are only used to explain the mining areas, not the direction or timing of the mining operations.



RECLAMATION PLAN AND TIMETABLE

exhibit E

Exhibit E

RECLAMATION PLAN

Unless specifically discussed below, the reclamation methods described and approved in the approved permit application will remain unchanged. The following text explains the changes to the reclamation plan as proposed in this amendment. Reclamation will run concurrent with mining as the site is developed to reduce the amount of reclamation required at any one time. Once a Stage is completed, it is renamed to Phase, on the Reclamation Map since it is now a phase of reclamation.

The current post mining land uses are listed as rangeland. Please see the original plan and amendments and their adequacy responses for details on the reclamation requirements approved.

The current **Reclamation Plan** for Phase A, calls for the base of the clay bed to be graded and any side slopes to be graded 3h to 1v by cut/fill sloping from the original surface to the mine floor. This applies to all 3 layers of material and required blasting of the rock face to make it 3:1.

That changes in this amendment, so as to leave the solid sandstone layer with a near vertical face and only slope the unconsolidated layers above and below it at 3h to 1v. As noted in the Mining Plan, the sandstone face will not exceed 25 feet high without a 20 foot wide bench being constructed on the face.

The excess overburden, unusable clay and sandstone processing waste will be used to build the slopes and some of the overburden will be used to place at least 6 inches of cover on any exposed bedrock as root zone.

As mining progresses on the working face, the perimeter slopes on the clay seam and unconsolidated material will be graded at, or flatter than 3h to 1v as discussed in the **Mining Plan**. This will ensure that when mining ceases, only a minor amount of work will have to be done to finish reclamation in the disturbed area. The salvaged topsoil/growth medium will then be placed on the seedbed and seeded using the approved seed mix listed below. No trees or shrubs will be planted as we expect natural invasion of those species to occur and no trees were included in the approved revegetation plan.

<u>SEED MIX</u>	
<u>Species</u>	<u>Lbs. PLS/Acre</u>
Indian Ricegrass (Champ)	1.0
Blue Grama	3.0
Russian wildrye	1.0
Western Wheatgrass	3.0
TOTALS	8.0

Roads will be left across the mine to provide access for planting crews, and for the supervision and inspection of the

completed reclamation. These roads will remain when mining ends to ensure the owner's access to the site. Final grading on the roads will be done before any Phase is closed.

All refuse will be hauled away or disposed of in a manner that will control unsightliness and protect the drainage system from pollution. There are no acid-forming or toxic materials involved with the operation.

Final revegetation will be done by the end of the second fall after resoiling is completed. The Phase will be monitored for success of revegetation until accepted by the Division for release. If revegetation failures occur prior to release, an analysis of the site will be made and the area will be revegetated again as necessary.

The reclamation timetable shows the types and amount of land in each Phase when reclamation is complete. Approximately 22.3% of the area in the permit will not be disturbed by mining, because it is in setbacks around the permit lines or non-clay bearing areas. **Figure E-1** is a color rendition of the reclamation plan showing the various final land forms on the **Reclamation Plan Map**.

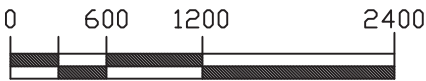
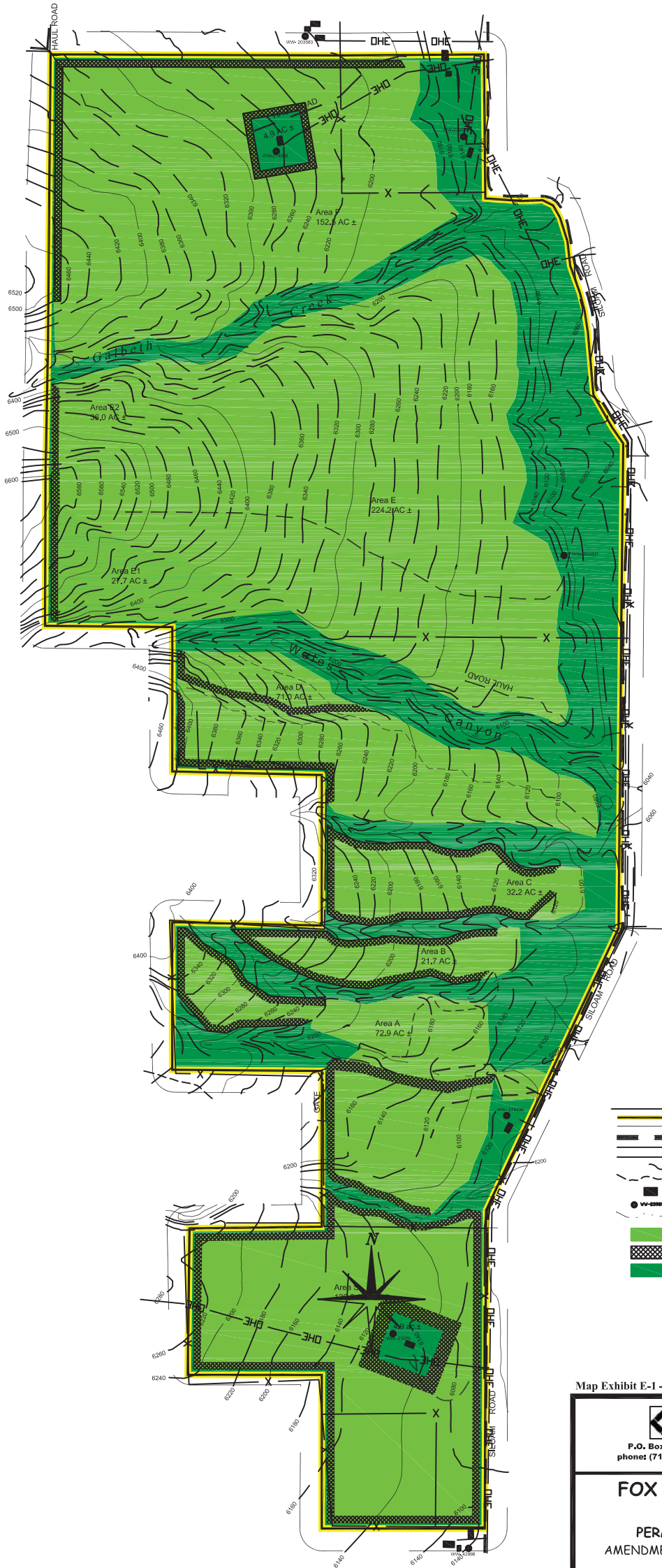
Reclamation Timetable

The numbers presented below represent our estimate of the various areas of disturbance in the reclamation Phases. They may change as the actual mining progresses through the site.

RECLAMATION TIMETABLE (revised 1/3/2017)

Phase*	Years	Total Area (ac±)	Revegetation Area (ac±)	Road Area (ac±)
A	3-5	72.9	71.6	1.3
B	3-5	21.7	21.7	0.0
C	3-5	32.2	32.2	0.0
D	3-5	71.0	70.4	0.7
E	3-5	224.2	223.0	1.2
E1	3-5	27.7	27.7	0.0
E2	3-5	36.0	36.0	0.0
F	3-5	152.5	151.7	0.8
S	3-5	120.3	115.0	0.3
Misc (i.e. setbacks, and undisturbed, etc.) (ac±)	0	288.3	0.0	0.0
Grand Totals		1,046.8	749.3	4.3

* areas are only used to explain the mining areas, not the direction or timing of the mining operations.



SCALE 1"=1200'

REVISION	DATE
DESIGN/PERMIT APPROVAL	04/05/2017
CONSTRUCTION APPROVAL	05/05/2017
PERMITTEE'S APPROVAL	05/05/2017
INTERAGENCY REVIEW/REVISION	05/05/2017
APPROPRIATE AGENCY REVIEW	05/05/2017

Map Exhibit E-1 - Color Reclamation Plan Map



P.O. Box 533 | Pueblo, Colorado 81003
phones: (719) 542-8278 | fax: (719) 542-5245

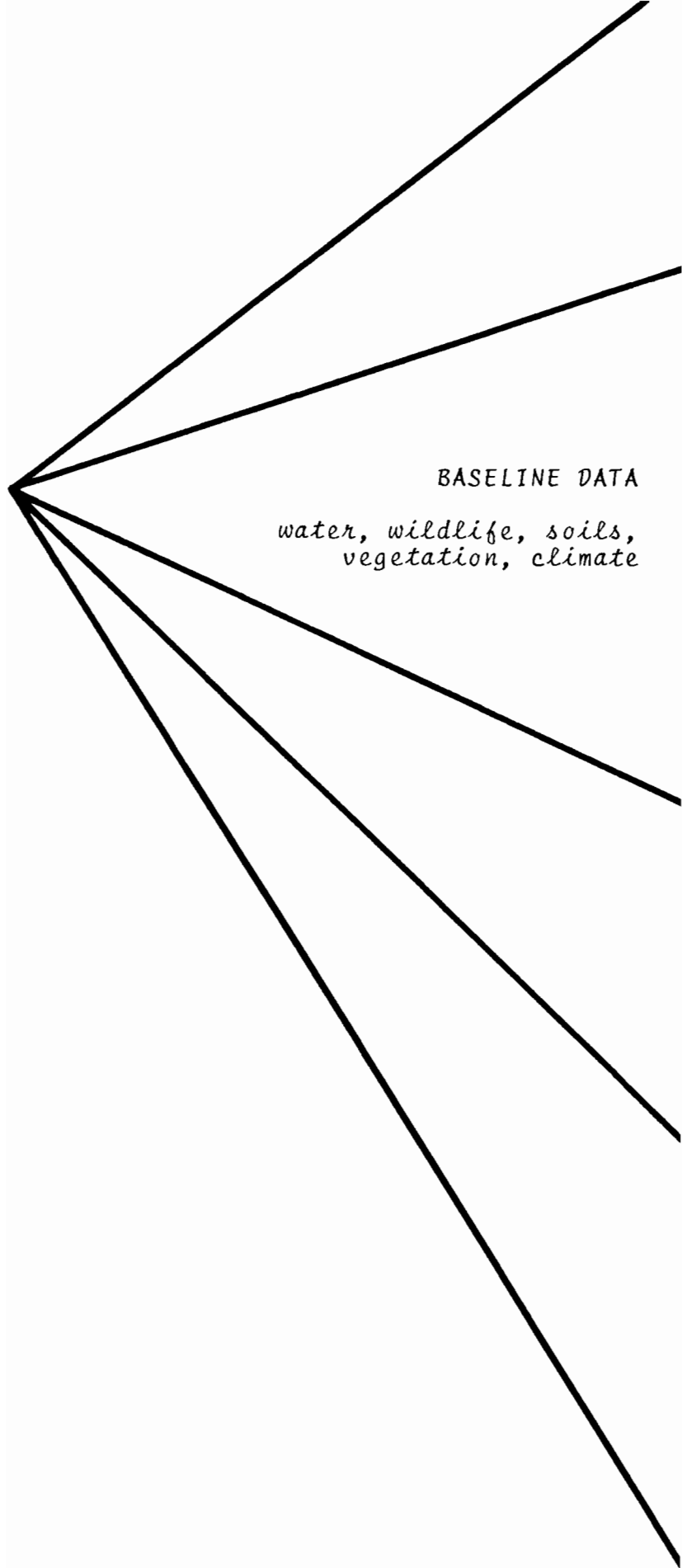
FOX NO 1 CLAY PIT

PERMIT - M-1977-219
AMENDMENT OF A 112 MLRB PERMIT

Parts of the NE1/4 of all of the W1/4 SE1/4, W1/4, SW1/4 the NW1/4 of Section 19, Parts of the NE1/4, SE1/4 and all of the NE1/4, W1/4, NE1/4, NW1/4 NW1/4 of Section 30, and the W1/4 and NE1/4 NW1/4, Section 31, T-22-S, R-67-W, 6th P.M., Pueblo County, Colorado, Containing 1,046.8 ac. more or less.

DESIGNED BY: [Signature]
DRAWN BY: [Signature]
CHECKED BY: [Signature]
APPROVED BY: [Signature]
DATE: 6/15/2017

SCALE 1"=400'
DATE 6/15/2017



BASELINE DATA

water, wildlife, soils,
vegetation, climate

There is no change to the baseline water information presented from 1995. The water discussion at that time addressed the needs, uses and surrounding conditions for the general area and will apply to the expansion of the mining area. All surface drainages will remain in their current state and when reclamation is completed the mined areas will be graded to retain the current drainage patterns on the site.

No ground water will be exposed at this mine and all water used for dust control is purchased from a source approved for that use and hauled to the mine.

Site berms and isolation ditches will be placed up-gradient from the disturbed area to prevent stormwater runoff from entering the active mining area. Swales and berms will be used to direct any stormwater runoff to temporary detention ponds where it will be retained for no more than 72 hours before being released. This will provide the necessary time to clean the water to meet our discharge permit standards.

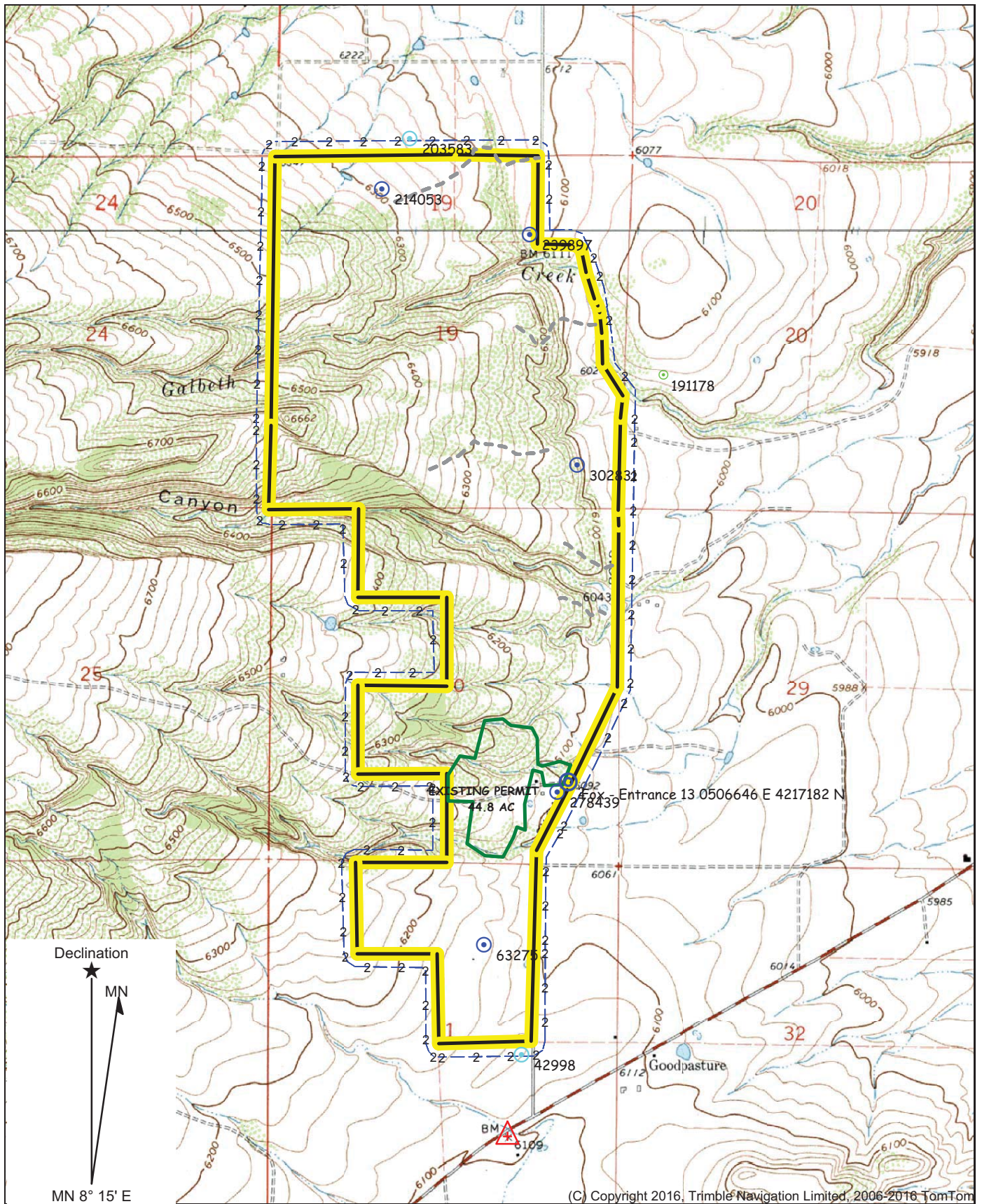
Table G contains a list of all wells within 200 feet of the amended permit area and **Map Exhibit G-1** shows the location of the well listed on Table G. The shallowest well is listed as being 315 feet deep, so since mining will only take place on the upper 40± feet, mining will not impact the groundwater aquifer associated with the wells.

There are no jurisdictional wetlands on the mining operation parts of the new area, therefore no 404 permit is needed.

EXHIBIT G**WATER (cont)****Table G - WATER WELLS WITHIN 200 FEET OF PERMIT AREA**

FULL NAME	MAILING ADDRESS	CITY	STATE	SIP	PERMIT NO.	DATE WELL CONSTRUCTED	UTM X	UTM Y	WELL DEPTH	PARCEL SIZE	SEC	q160	q40	USE 1	USE2	PERMITTED AREA	PERMITTED DIMS
Section 19																	
HANRATTY, MICHAEL J	4495 SILOAM RD	BEULAH	CO	81023-	239897	5/23/2002	506469	4219664	350	40	19	NE	NW	DOMESTIC	STOCK	1	1 ACRES
BALLARD, MATTHEW & DANETTE	2700 W 11TH	PUEBLO	CO	81003	214053	6/29/1999	505799	4219867	1075	40	19	NW	NE	DOMESTIC			acres
RUTTEN, KATHLEEN	1201 S LACROSSE	PUEBLO	CO	81001-	302831		506685	4218622		40	19	SE	SE	DOMESTIC		1	1 ACRES
Section 30																	
JAT INVESTMENTS LLC	P O BOX 533	PUEBLO	CO	81002-	278439		506596	4217145	365	46	30	SE	SE	DOMESTIC		1000	SQ.FT.
Section 31																	
HANRATTY, JAMES P (Langdon)	5115 SILOAM RD S	BEULAH	CO	81023	63275	10/10/1972	506264	4216453	315		31	NE	NW	STOCK		560	acres
ELLIOTT, C BERNARD & JACQUELINE S	5421 SILOAM RD	BEULAH	CO	81023	42998	2/15/1971	506435	4215957	397		31	SE	NW	DOMESTIC	STOCK		acres
Section 18																	
LAUGHLIN, KERMIT D	11223 E PARKER RD	PARKER	CO	80138-	230583	1/22/2001	505925	4220096	800	40	18	SW	SE	DOMESTIC	STOCK	1	1 ACRES

SOURCE - Division of Water resources - well permit data



Name: BEULAH (CO)
 Date: 12/21/16
 Scale: 1 inch = 2,000 ft.

PART OF SECTIONS 19, 30 & 31, T-22-S,
 R-67-W, PUEBLO COUNTY, COLORADO
 Entrance 38d06'8.73" 104d55'27.13'

SUMMIT BRICK & TILE COMPANY
 FOX NO. 1 CLAY PIT
 EXHIBITG-1 WELL MAP

Exhibit H

WILDLIFE INFORMATION

Attached is a copy of a December 27, 2016 Wildlife Information Letter prepared by Mr. Michael Trujillo from CPWD. He noted that the expansion should no have any more impact on the wildlife in the area then the current mine has. We wish to thank Mr. Trujillo for taking the time to prepare this information.



COLORADO

Parks and Wildlife

Department of Natural Resources

Pueblo Service Center - Area 11
600 Reservoir Road
Pueblo, CO 81005
P 719.561.5300 | F 719.561.5321

December 27, 2016

Stevan L. O'Brian
Environment, INC.
7985 Vance Drive, Suite 205A
Arvada, CO 80003

Re: Wildlife Statement for Clay Mine Pueblo County Colorado

To: Mr. O'Brian,

Colorado Parks and Wildlife has received a request to comment on potential wildlife impacts at Summit Brick and Tile Co., an active mining property located west of Pueblo, CO, on Siloam Rd. We appreciate the request and have the following comments.

The proposed expansion is contiguous with an ongoing mining operation. The surrounding area is abundant with wildlife, and has a variety of both big game and small game species, and numerous migratory bird species, including raptors. Due to the continued development and the consistent activity at the mine, it may be unlikely that a difference in big and small game wildlife responses will be noted. However, with the presents of raptors in the immediate area, CPW is strongly committed to minimizing raptor disturbance and we recommend complying with the attached raptor guidelines and buffer zones.

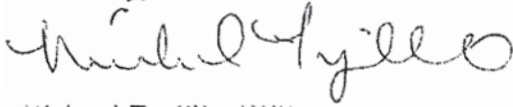
CPW additionally recommends compliance to the current NRCS reclamation guidelines. The habitats adjacent to this mine are utilized heavily by mule deer, elk and bear. Proper reclamation, from a wildlife perspective, involves not only stabilizing the soil and establishing ground cover, but fostering plant communities with a diversity of species and plant types (grasses, broadleaf forbs, and woody vegetation) which will fully serve the nutritional and cover needs of wildlife. All reclamation seed mixes should be comprised of native seed only, suited to on- site soil types, and mirror native plant communities. All reseeding should be completed in a timely manner and should be monitored for success and noxious weed establishment. Seeding disturbed areas with preferred vegetation species that are beneficial to wildlife would be ideal.

CPW does not foresee any complications with federally or state threatened or endangered species.



Thank you for consulting with CPW for wildlife concerns that may result with the proposed mining activity. Please call our Pueblo Area 11 CPW office if you have further concerns or questions.

Sincerely,

A handwritten signature in black ink, appearing to read "Michael Trujillo". The signature is fluid and cursive, with the first name "Michael" and last name "Trujillo" clearly distinguishable.

Michael Trujillo AWM
600 Reservoir Rd.
Pueblo, CO 81005
719-561-5303

Cc: Gretchen Holschuh, DWM Pueblo West

The following information is presented to supplement the information from the original submittal. The soil designation information provided in the 1995 amendment was changed by the NRCS since submitted and some of the soils names have changed. New data is supplied in the following pages covering the existing area and all of the new area.

Vegetation

The vegetation described in the original application is common for the entire area. The soils and Vegetation Report in the NRCS download described the typical types and species found on the site for any soils group. The vegetation map was prepared from air photos and named with the type of vegetation present in those areas. Minimal site visitation was done so the information is not site specific. The typical vegetation information in the report is used to define the vegetation areas. Map Exhibit J-1 Vegetation shows the location of the following described areas.

The Canyon area is mostly in the steeper draws and canyons associated with the drainages that cross the site and are covered with soil types EBF. The vegetation is dominated by conifer trees and brush with some grasses and forbs. The vegetation makeup in these areas are 85% trees & Brush and 35% grasses.

The Grass area is mostly on the flatter areas associated with the open grassland area on the site and are covered with soil types Ho and Wo. The vegetation is dominated by grasses and a little brush. The vegetation makeup in these areas are 5% brush and 95% grasses

The Brush/Grass area is mostly on rockier portions of the rangeland areas adjacent to the Canyon areas and are covered with soil types NuC, StE, TsD, and VmE. The vegetation is dominated by grasses and brush. The vegetation makeup in these areas are 15% brush and 85% grasses.



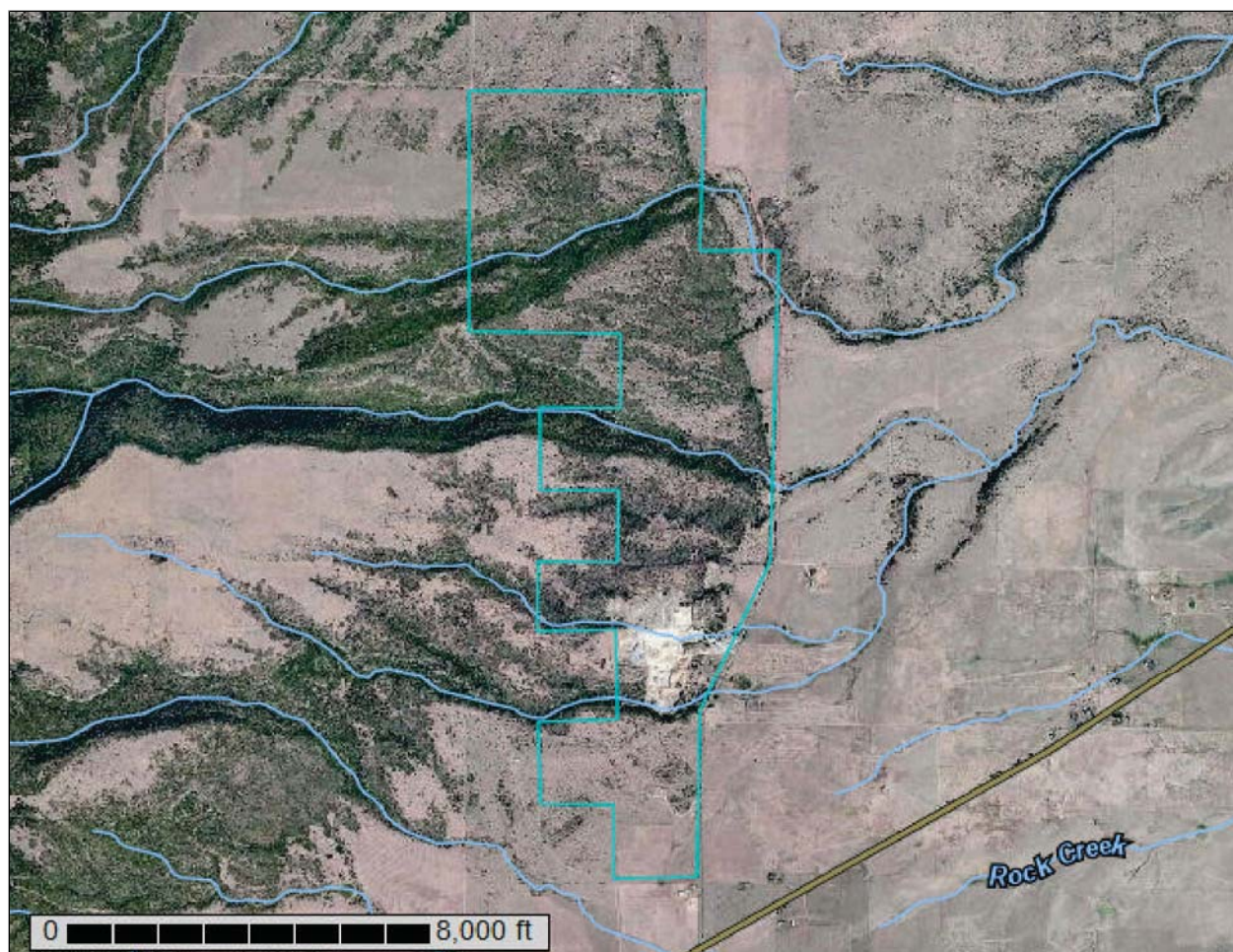
United States
Department of
Agriculture

NRCS

Natural
Resources
Conservation
Service

A product of the National
Cooperative Soil Survey,
a joint effort of the United
States Department of
Agriculture and other
Federal agencies, State
agencies including the
Agricultural Experiment
Stations, and local
participants

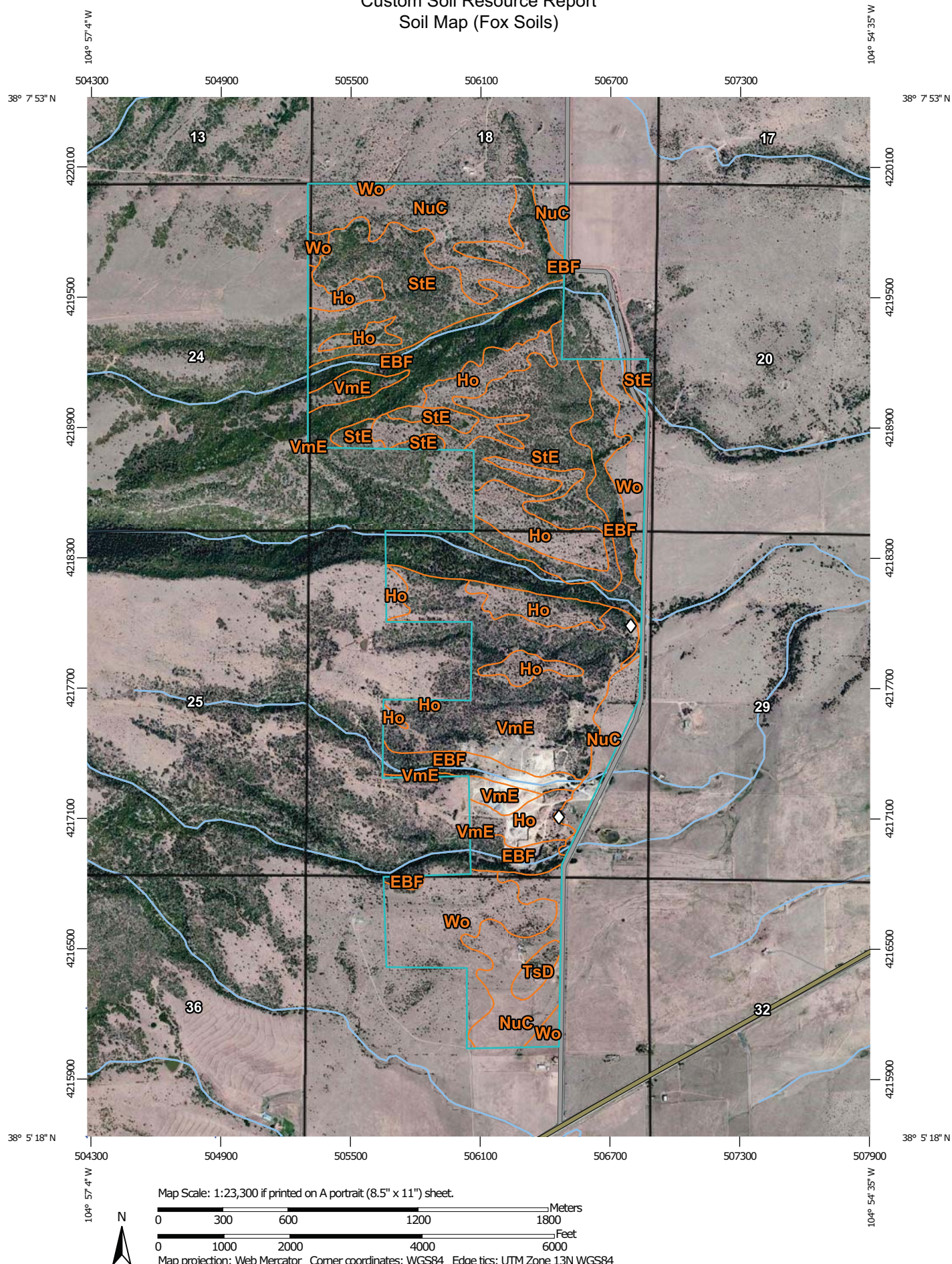
Custom Soil Resource Report for Pueblo Area, Colorado, Parts of Pueblo and Custer Counties



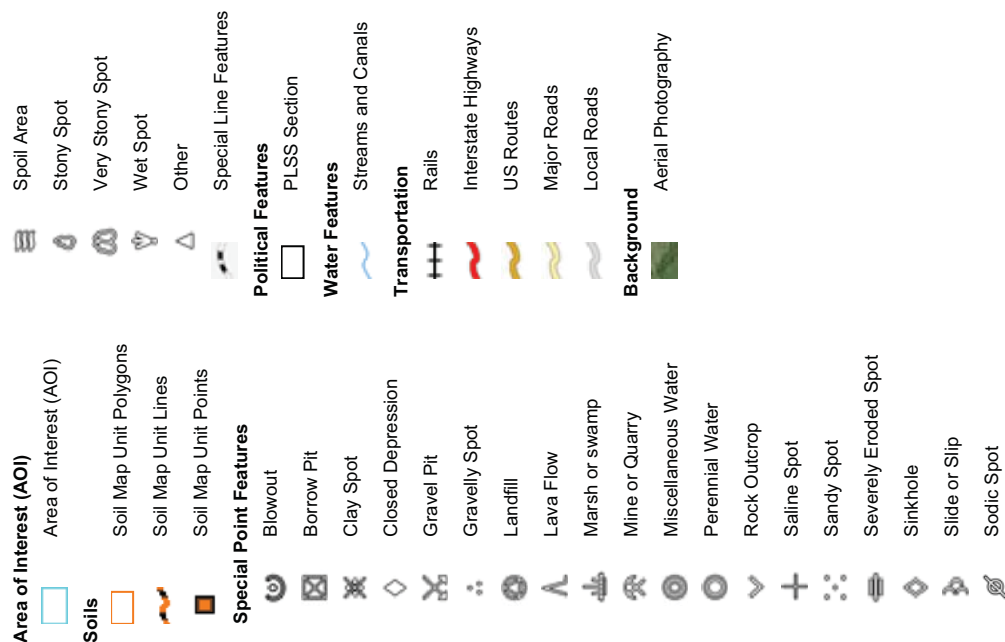
Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report Soil Map (Fox Soils)



MAP LEGEND



MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov>
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Pueblo Area, Colorado, Parts of Pueblo and Custer Counties
Survey Area Data: Version 15, Sep 22, 2015

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Apr 15, 2011—Sep 22, 2011

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend (Fox Soils)

Pueblo Area, Colorado, Parts of Pueblo and Custer Counties (CO626)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
EBF	Eutroboralfs, steep	176.2	18.7%
Ho	Holderness silt loam, 3 to 9 percent slopes	138.7	14.7%
NuC	Nunn clay loam, 0 to 3 percent slopes	145.8	15.4%
StE	Stroupe extremely stony loam, 9 to 25 percent slopes	212.7	22.5%
TsD	Travessilla sandy loam, 1 to 9 percent slopes	7.8	0.8%
VmE	Vamer-Rock outcrop complex, 5 to 25 percent slopes	162.3	17.2%
Wo	Wormser silt loam	100.9	10.7%
Totals for Area of Interest		944.4	100.0%

Map Unit Descriptions (Fox Soils)

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially

where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Pueblo Area, Colorado, Parts of Pueblo and Custer Counties

EBF—Eutroboralfs, steep

Map Unit Setting

National map unit symbol: 36c9

Elevation: 6,900 to 8,500 feet

Mean annual precipitation: 15 to 22 inches

Mean annual air temperature: 42 to 47 degrees F

Frost-free period: 75 to 100 days

Farmland classification: Not prime farmland

Map Unit Composition

Eutroboralfs and similar soils: 70 percent

Minor components: 30 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Eutroboralfs

Setting

Landform: Escarpments, hills

Landform position (three-dimensional): Side slope

Down-slope shape: Concave, linear

Across-slope shape: Concave, linear

Parent material: Colluvium and/or residuum weathered from sandstone

Typical profile

A - 0 to 13 inches: very stony loam

Bt - 13 to 22 inches: very stony loam

C - 22 to 30 inches: clay

Properties and qualities

Slope: 10 to 65 percent

Depth to restrictive feature: 10 to 40 inches to paralithic bedrock

Natural drainage class: Well drained

Runoff class: High

Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum in profile: 5 percent

Available water storage in profile: Very low (about 2.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 7e

Hydrologic Soil Group: C

Hydric soil rating: No

Minor Components

Rock outcrop

Percent of map unit: 30 percent

Hydric soil rating: No

Ho—Holderness silt loam, 3 to 9 percent slopes

Map Unit Setting

National map unit symbol: 36cj
Elevation: 6,500 to 7,200 feet
Mean annual precipitation: 16 to 20 inches
Mean annual air temperature: 42 to 52 degrees F
Frost-free period: 100 to 130 days
Farmland classification: Not prime farmland

Map Unit Composition

Holderness and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Holderness

Setting

Landform: Hills
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loess and/or residuum weathered from sandstone

Typical profile

A - 0 to 6 inches: silt loam
Bt - 6 to 30 inches: silty clay loam
Btk - 30 to 42 inches: clay loam
Bk - 42 to 48 inches: loam
R - 48 to 52 inches: unweathered bedrock

Properties and qualities

Slope: 3 to 9 percent
Depth to restrictive feature: 40 to 60 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 10 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Moderate (about 8.0 inches)

Interpretive groups

Land capability classification (irrigated): 4e
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: C

Custom Soil Resource Report

Ecological site: Loamy Park (R048AY222CO)

Other vegetative classification: Blue grama - needlegrass (BOGR2-STIPA) (G0710)

Hydric soil rating: No

Minor Components

Nunn

Percent of map unit: 10 percent

Landform: Fan remnants

Down-slope shape: Linear

Across-slope shape: Linear

Hydric soil rating: No

Stroupe

Percent of map unit: 5 percent

Landform: Mesas

Down-slope shape: Linear

Across-slope shape: Linear

Hydric soil rating: No

NuC—Nunn clay loam, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 2tqj

Elevation: 5,800 to 7,800 feet

Mean annual precipitation: 15 to 18 inches

Mean annual air temperature: 48 to 52 degrees F

Frost-free period: 100 to 130 days

Farmland classification: Not prime farmland

Map Unit Composition

Nunn and similar soils: 90 percent

Minor components: 10 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Nunn

Setting

Landform: Fan remnants

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Old alluvium

Typical profile

A - 0 to 6 inches: clay loam

Bt1 - 6 to 16 inches: clay loam

Bt2 - 16 to 23 inches: clay loam

Bk1 - 23 to 32 inches: clay loam

Bk2 - 32 to 79 inches: loam

Custom Soil Resource Report

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 10 percent
Salinity, maximum in profile: Very slightly saline (2.0 to 3.9 mmhos/cm)
Available water storage in profile: High (about 9.9 inches)

Interpretive groups

Land capability classification (irrigated): 3s
Land capability classification (nonirrigated): 4c
Hydrologic Soil Group: C
Ecological site: Loamy Foothill (R049BY202CO)
Hydric soil rating: No

Minor Components

Noden

Percent of map unit: 10 percent
Landform: Fan remnants
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: Loamy Foothill (R049BY202CO)
Hydric soil rating: No

StE—Stroupe extremely stony loam, 9 to 25 percent slopes

Map Unit Setting

National map unit symbol: 36dw
Elevation: 5,800 to 6,500 feet
Mean annual precipitation: 14 to 18 inches
Mean annual air temperature: 49 to 52 degrees F
Frost-free period: 115 to 145 days
Farmland classification: Not prime farmland

Map Unit Composition

Stroupe and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Stroupe

Setting

Landform: Mesas

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Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Stony loamy slope alluvium and/or residuum weathered from sandstone

Typical profile

A - 0 to 4 inches: extremely stony loam

Bw - 4 to 9 inches: very stony loam

Bt - 9 to 25 inches: very stony clay loam

R - 25 to 29 inches: unweathered bedrock

Properties and qualities

Slope: 9 to 25 percent

Depth to restrictive feature: 20 to 40 inches to lithic bedrock

Natural drainage class: Well drained

Runoff class: Medium

Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Available water storage in profile: Very low (about 2.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 7s

Hydrologic Soil Group: D

Ecological site: Shallow Foothill (R049BY204CO)

Other vegetative classification: Oneseed juniper/blue grama (JUMO/BOGR2) (W0102)

Hydric soil rating: No

Minor Components

Rock outcrop

Percent of map unit: 15 percent

Landform: Mesas

Hydric soil rating: No

TsD—Travessilla sandy loam, 1 to 9 percent slopes

Map Unit Setting

National map unit symbol: 2q08y

Elevation: 4,700 to 6,500 feet

Mean annual precipitation: 11 to 16 inches

Mean annual air temperature: 48 to 54 degrees F

Frost-free period: 130 to 170 days

Farmland classification: Not prime farmland

Map Unit Composition

Travessilla and similar soils: 75 percent

Custom Soil Resource Report

Minor components: 25 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Travessilla

Setting

Landform: Scarps

Landform position (two-dimensional): Shoulder, summit

Landform position (three-dimensional): Crest

Down-slope shape: Convex

Across-slope shape: Linear

Parent material: Slope alluvium and/or residuum weathered from sandstone

Typical profile

A - 0 to 5 inches: sandy loam

AC - 5 to 11 inches: sandy loam

Bk - 11 to 14 inches: sandy loam

R - 14 to 79 inches: bedrock

Properties and qualities

Slope: 1 to 9 percent

Depth to restrictive feature: 10 to 20 inches to lithic bedrock

Natural drainage class: Well drained

Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum in profile: 15 percent

Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

Sodium adsorption ratio, maximum in profile: 1.0

Available water storage in profile: Very low (about 1.6 inches)

Interpretive groups

Land capability classification (irrigated): 6s

Land capability classification (nonirrigated): 6s

Hydrologic Soil Group: D

Ecological site: Sandstone Breaks (R069XY053CO)

Other vegetative classification: Needs Field Review (G069XW050CO), Sandstone Breaks #53 (069XY053CO_2)

Hydric soil rating: No

Minor Components

Rock outcrop

Percent of map unit: 10 percent

Landform: Scarps

Hydric soil rating: No

Villedry

Percent of map unit: 4 percent

Landform: Interfluves, plains

Landform position (two-dimensional): Shoulder, summit, backslope

Landform position (three-dimensional): Rise

Down-slope shape: Linear

Across-slope shape: Linear

Ecological site: Loamy Plains, LRU's A & B 10-14 Inches, P.Z. (R069XY006CO)

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Other vegetative classification: Loamy Plains #6 (069XY006CO_2)

Hydric soil rating: No

Kim

Percent of map unit: 4 percent

Landform: Plains

Landform position (three-dimensional): Talf

Down-slope shape: Linear

Across-slope shape: Linear

Ecological site: Loamy Plains, LRU's A & B 10-14 Inches, P.Z. (R069XY006CO)

Hydric soil rating: No

Olney, bedrock substratum

Percent of map unit: 4 percent

Landform: Ridges

Landform position (three-dimensional): Interfluve, side slope

Down-slope shape: Linear

Across-slope shape: Linear

Ecological site: Sandy Plains (R069XY026CO)

Other vegetative classification: Sandy Plains (069XY026CO_1)

Hydric soil rating: No

Villegreen

Percent of map unit: 3 percent

Landform: Plains

Landform position (two-dimensional): Backslope, shoulder

Landform position (three-dimensional): Rise

Down-slope shape: Linear

Across-slope shape: Linear

Ecological site: Loamy Plains (R067BY002CO)

Other vegetative classification: Loamy Plains #2 (067XY002CO_2)

Hydric soil rating: No

VmE—Vamer-Rock outcrop complex, 5 to 25 percent slopes

Map Unit Setting

National map unit symbol: 36f1

Elevation: 6,500 to 7,200 feet

Mean annual precipitation: 16 to 20 inches

Mean annual air temperature: 42 to 47 degrees F

Frost-free period: 90 to 125 days

Farmland classification: Not prime farmland

Map Unit Composition

Vamer and similar soils: 80 percent

Rock outcrop: 20 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Vamer

Setting

Landform: Mesas, ridges

Landform position (three-dimensional): Head slope, interfluvium

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Clayey residuum weathered from sandstone

Typical profile

A - 0 to 2 inches: stony loam

E/B - 2 to 6 inches: stony clay loam

Bt - 6 to 12 inches: very stony clay loam

R - 12 to 16 inches: unweathered bedrock

Properties and qualities

Slope: 5 to 25 percent

Depth to restrictive feature: 10 to 20 inches to lithic bedrock

Natural drainage class: Well drained

Runoff class: Medium

Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Available water storage in profile: Very low (about 1.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 7s

Hydrologic Soil Group: D

Hydric soil rating: No

Description of Rock Outcrop

Typical profile

R - 0 to 60 inches: unweathered bedrock

Properties and qualities

Slope: 5 to 25 percent

Depth to restrictive feature: 0 inches to lithic bedrock

Available water storage in profile: Very low (about 0.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 8s

Hydrologic Soil Group: D

Hydric soil rating: No

Wo—Wormser silt loam

Map Unit Setting

National map unit symbol: 36f7
Elevation: 5,800 to 7,000 feet
Mean annual precipitation: 16 to 20 inches
Mean annual air temperature: 49 to 52 degrees F
Frost-free period: 130 to 140 days
Farmland classification: Not prime farmland

Map Unit Composition

Wormser and similar soils: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Wormser

Setting

Landform: Pediments
Landform position (three-dimensional): Base slope, side slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Clayey alluvium and/or residuum weathered from sandstone

Typical profile

A - 0 to 4 inches: silt loam
Bt - 4 to 20 inches: clay loam
Btk - 20 to 25 inches: clay loam
Bk - 25 to 33 inches: clay loam
R - 33 to 37 inches: weathered bedrock

Properties and qualities

Slope: 1 to 4 percent
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Natural drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 5 percent
Salinity, maximum in profile: Nonsaline to slightly saline (0.0 to 4.0 mmhos/cm)
Available water storage in profile: Low (about 6.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: C
Ecological site: Clayey Foothill (R049BY208CO)

Custom Soil Resource Report

Hydric soil rating: No

Minor Components

Nunn

Percent of map unit: 15 percent

Hydric soil rating: No

Stroupe

Percent of map unit: 5 percent

Hydric soil rating: No

Custom Soil Resource Report

Chemical Soil Properties—Pueblo Area, Colorado, Parts of Pueblo and Custer Counties									
Map symbol and soil name	Depth	Cation-exchange capacity	Effective cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio	
EBF—Eutroboralfs, steep	<i>In</i>			<i>pH</i>	<i>Pct</i>	<i>Pct</i>	<i>mmhos/cm</i>		
Eutroboralfs	0-13	9.0-16	—	6.1-7.8	0-5	0	0	0	
	13-22	8.7-15	—	6.1-7.8	0-5	0	0	0	
	22-30	21-31	—	6.1-7.8	0-5	0	0	0	
Ho—Holderness silt loam, 3 to 9 percent slopes									
Holderness	0-6	9.3-23	—	6.1-7.8	0	0	0	0	
	6-30	24-37	—	6.6-8.4	0-1	0	0	0	
	30-42	24-37	—	6.6-8.4	0-5	0	0	0	
	42-48	15-27	—	7.4-8.4	1-10	0	0.0-2.0	0	
	48-52	—	—	—	—	—	—	—	
NuC—Nunn clay loam, 0 to 3 percent slopes									
Nunn	0-6	22-28	—	6.6-7.8	0	0	0.0-1.9	0	
	6-16	26-34	—	6.6-7.8	0-1	0	0.0-1.9	0	
	16-23	26-34	—	6.6-7.8	0-1	0	0.0-1.9	0	
	23-32	26-31	—	6.6-8.4	5-10	0	2.0-3.9	0	
	32-79	14-24	—	7.4-8.4	5-10	0	2.0-3.9	0	
StE—Stroupe extremely stony loam, 9 to 25 percent slopes									
Stroupe	0-4	16-24	—	6.6-7.8	0	0	0	0	
	4-9	15-22	—	6.6-7.8	0	0	0	0	
	9-25	23-32	—	6.6-8.4	0	0	0	0	
	25-29	—	—	—	—	—	—	—	

Custom Soil Resource Report

Chemical Soil Properties—Pueblo Area, Colorado, Parts of Pueblo and Custer Counties									
Map symbol and soil name	Depth	Cation-exchange capacity	Effective cation-exchange capacity	Soil reaction	Calcium carbonate	Gypsum	Salinity	Sodium adsorption ratio	
	<i>In</i>	<i>meq/100g</i>	<i>meq/100g</i>	<i>pH</i>	<i>Pct</i>	<i>Pct</i>	<i>mmhos/cm</i>		
TsD—Travessilla sandy loam, 1 to 9 percent slopes									
Travessilla	0-5	8.6-16	—	7.4-8.4	0-5	0	0.0-2.0	0	
	5-11	4.1-15	—	7.4-8.4	1-15	0	0.0-2.0	0-1	
	11-14	4.1-15	—	7.4-8.4	1-15	0	0.0-2.0	0-1	
	14-79	—	—	—	—	—	—	—	
VmE—Vamer-Rock outcrop complex, 5 to 25 percent slopes									
Vamer	0-2	14-20	—	6.6-7.3	0	0	0	0	
	2-6	14-20	—	6.6-7.3	0	0	0	0	
	6-12	19-26	—	6.6-7.3	0	0	0	0	
	12-16	—	—	—	—	—	—	—	
Rock outcrop	0-60	—	—	—	—	—	0	—	
Wo—Wormser silt loam									
Wormser	0-4	15-22	—	6.6-7.8	0	0	0	0	
	4-20	26-34	—	6.6-7.8	0-1	0	0	0	
	20-25	19-29	—	7.9-9.0	1-5	0	0.0-4.0	0	
	25-33	19-29	—	7.9-9.0	1-5	0	0.0-4.0	0	
	33-37	—	—	—	—	—	—	—	

Custom Soil Resource Report

Absence of an entry indicates that the data were not estimated. The asterisk '*' denotes the representative texture; other possible textures follow the dash. The criteria for determining the hydrologic soil group for individual soil components is found in the National Engineering Handbook, Chapter 7 issued May 2007(<http://directives.sc.egov.usda.gov/OpenNonWebContent.aspx?content=17757.wba>). Three values are provided to identify the expected Low (L), Representative Value (R), and High (H).

Engineering Properties—Pueblo Area, Colorado, Parts of Pueblo and Custer Counties														
Map unit symbol and soil name	Pct. of map unit	Hydrologic group	Depth	USDA texture	Classification		Pct Fragments		Percentage passing sieve number—				Liquid limit	Plasticity index
					Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
EBF—Eutroboralfs, steep			In				L-R-H	L-R-H	L-R-H	L-R-H	L-R-H	L-R-H	L-R-H	L-R-H
Eutroboralfs	70	C	0-13	Very stony loam	GC, GC-GM, SC, SC-SM	A-6, A-4	25-48-70	5-28-50	45-65-85	40-60-80	35-53-70	25-38-50	26-32-39	7-14-19
			13-22	Very stony loam	GC, GC-GM, SC, SC-SM	A-6, A-4	25-48-70	5-28-50	45-65-85	40-60-80	35-53-70	25-38-50	24-31-38	7-14-19
			22-30	Clay	CH, CL	A-7-6	0-5-10	0-5-10	85-93-100	80-90-100	75-88-100	60-78-95	49-59-69	29-36-44
Ho—Holderness silt loam, 3 to 9 percent slopes														
Holderness	85	C	0-6	Silt loam	CL	A-6	0-0-0	0-0-0	85-93-100	80-90-100	75-88-100	55-73-90	25-35-45	6-12-18
			6-30	Silty clay loam, clay loam, clay	CH	A-7-6	0-0-0	0-0-0	100-100-100	100-100-100	90-95-100	70-80-90	45-51-64	25-28-36
			30-42	Silty clay loam, clay loam, clay	CH	A-7-6	0-0-0	0-0-0	100-100-100	100-100-100	90-95-100	70-80-90	45-51-64	25-28-36
			42-48	Loam, clay loam	CL	A-6	0-0-0	0-0-0	85-93-100	80-90-100	75-88-100	50-65-80	29-36-45	13-18-25
			48-52	Unweathered bedrock	—	—	—	—	—	—	—	—	—	—

Custom Soil Resource Report

Engineering Properties—Pueblo Area, Colorado, Parts of Pueblo and Custer Counties															
Map unit symbol and soil name	Pct. of map unit	Hydrologic group	Depth	USDA texture	Classification		Pct Fragments		Percentage passing sieve number—					Liquid limit	Plasticity index
					Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200			
			<i>In</i>				<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>
NuC—Nunn clay loam, 0 to 3 percent slopes															
Nunn	90	C	0-6	Clay loam	CL	A-7-6	0-0-0	0-0-0	100-100-100	89-95-100	81-90-99	62-70-78	39-45-51	19-22-25	
			6-16	Clay loam, clay	CH	A-7-6	0-0-0	0-0-0	100-100-100	89-94-100	82-90-100	65-73-83	46-51-59	25-28-33	
			16-23	Clay loam, clay	CH	A-7-6	0-0-0	0-0-0	100-100-100	89-94-100	82-90-100	65-73-83	46-51-59	25-28-33	
			23-32	Clay loam, clay	CH	A-7-6	0-0-0	0-0-0	100-100-100	89-95-100	82-90-100	66-73-83	45-50-57	23-27-32	
			32-79	Loam, clay loam	CL	A-6	0-0-0	0-0-0	100-100-100	90-95-100	82-92-100	59-68-81	29-35-46	12-16-24	
StE—Stroupe extremely stony loam, 9 to 25 percent slopes															
Stroupe	85	D	0-4	Extremely stony loam	SC, GP-GC	A-2-6, A-6	27-36-44	9-14-17	50-70-100	10-45-100	9-40-94	7-30-71	31-38-45	11-15-18	
			4-9	Very stony loam	CL, SC, CL	A-6	22-23-24	22-22-24	75-75-92	50-63-87	43-56-82	31-42-62	29-35-41	12-15-19	
			9-25	Very stony clay loam, very stony clay	SC, CH, CL	A-7-6	22-25-25	22-25-25	74-74-92	49-51-86	44-48-86	36-40-77	42-46-57	24-27-36	
			25-29	Unweathered bedrock	—	—	—	—	—	—	—	—	—	—	

Custom Soil Resource Report

Engineering Properties—Pueblo Area, Colorado, Parts of Pueblo and Custer Counties														
Map unit symbol and soil name	Pct. of map unit	Hydrologic group	Depth	USDA texture	Classification		Pct Fragments		Percentage passing sieve number—				Liquid limit	Plasticity index
					Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
			<i>In</i>				<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>
TsD—Travessilla sandy loam, 1 to 9 percent slopes														
Travessilla	75	D	0-5	Sandy loam	SC-SM	A-2-4, A-4	0-0-0	0-0-0	89-99-100	79-96-100	59-75-83	28-40-48	21-23-32	5-5-12
			5-11	Sandy loam, loam	SC, SC-SM	A-4, A-2-4	0-0-0	0-0-1	89-100-100	80-100-100	57-77-83	26-41-50	15-24-29	1-8-12
			11-14	Sandy loam, loam	SC, SC-SM	A-2-4, A-4	0-0-0	0-0-1	89-97-100	81-93-100	56-71-82	29-42-54	15-26-29	1-9-12
			14-79	Bedrock	—	—	—	—	—	—	—	—	—	—
VmE—Vamer-Rock outcrop complex, 5 to 25 percent slopes														
Vamer	80	D	0-2	Stony loam	CL, SC	A-2, A-6	24-30-57	3-3-37	54-93-100	12-88-100	10-79-93	7-59-71	33-39-45	13-16-18
			2-6	Stony clay loam	CL, SC	A-2, A-6	24-28-42	3-3-24	54-93-100	12-88-100	10-80-94	8-63-74	33-39-45	13-16-18
			6-12	Very stony clay loam, very stony clay	CL, SC	A-7-6	25-43-57	16-32-44	53-72-100	12-47-100	11-44-100	9-36-89	43-49-60	25-28-36
			12-16	Unweathered bedrock	—	—	—	—	—	—	—	—	—	—
Rock outcrop	20	D	0-60	Unweathered bedrock	—	—	—	—	—	—	—	—	0-7-14	—

Custom Soil Resource Report

Engineering Properties—Pueblo Area, Colorado, Parts of Pueblo and Custer Counties														
Map unit symbol and soil name	Pct. of map unit	Hydrologic group	Depth	USDA texture	Classification		Pct Fragments		Percentage passing sieve number—				Liquid limit	Plasticity index
					Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
			<i>In</i>				<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>	<i>L-R-H</i>
Wo—Wormser silt loam														
Wormser	80	C	0-4	Silt loam	ML, CL	A-6	0-0-0	0-0-0	100-100-100	100-100-100	90-95-100	70-80-90	29-36-43	12-15-18
			4-20	Silty clay loam, clay loam, clay	CH	A-7-6	0-0-0	0-0-0	100-100-100	100-100-100	90-95-100	70-83-95	44-50-58	25-28-32
			20-25	Clay loam	CL	A-6, A-7-6	0-0-0	0-0-0	85-93-100	80-90-100	75-88-100	60-70-80	37-43-50	19-24-29
			25-33	Clay loam	CL	A-7-6, A-6	0-0-0	0-0-0	85-93-100	80-90-100	75-88-100	60-70-80	37-43-50	19-24-29
			33-37	Weathered bedrock	—	—	—	—	—	—	—	—	—	—

Custom Soil Resource Report

Three values are provided to identify the expected Low (L), Representative Value (R), and High (H).

Physical Soil Properties—Pueblo Area, Colorado, Parts of Pueblo and Custer Counties														
Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
										Kw	Kf	T		
	In	Pct	Pct	Pct	g/cc	micro m/sec	In/in	Pct	Pct					
EBF— Eutroboralfs, steep														
Eutroboralfs	0-13	-42-	-37-	15-21- 27	1.25-1.30- 1.35	4.23-9.00-14.11	0.07-0.09-0.10	0.0- 1.5- 2.9	0.5- 0.8- 1.0	.15	.37	3	8	0
	13-22	-42-	-37-	15-21- 27	1.25-1.30- 1.35	4.23-9.00-14.11	0.07-0.09-0.10	0.0- 1.5- 2.9	0.0- 0.3- 0.5	.15	.43			
	22-30	-22-	-28-	40-50- 60	1.15-1.20- 1.25	0.42-1.00-1.41	0.14-0.15-0.16	6.0- 7.5- 8.9	0.0- 0.3- 0.5	.17	.17			
Ho— Holderness silt loam, 3 to 9 percent slopes														
Holderness	0-6	-27-	-54-	10-19- 27	1.15-1.23- 1.30	4.00-23.00-42.00	0.14-0.16-0.18	0.0- 1.5- 2.9	2.0- 3.0- 4.0	.43	.43	3	5	56
	6-30	- 7-	-55-	35-39- 50	1.15-1.28- 1.40	0.42-1.00-1.41	0.15-0.17-0.19	6.0- 7.5- 8.9	0.0- 1.0- 2.0	.37	.37			
	30-42	-31-	-31-	35-39- 50	1.15-1.28- 1.40	0.42-1.00-1.41	0.15-0.17-0.19	6.0- 7.5- 8.9	0.0- 1.0- 2.0	.28	.28			
	42-48	-37-	-37-	20-26- 35	1.25-1.33- 1.40	1.41-3.00-4.23	0.13-0.15-0.17	0.0- 1.5- 2.9	0.0- 0.5- 1.0	.37	.37			
	48-52	—	—	—	—	0.42-1.00-1.41	—	—	—					

Custom Soil Resource Report

Physical Soil Properties—Pueblo Area, Colorado, Parts of Pueblo and Custer Counties															
Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index	
	In	Pct	Pct	Pct	g/cc	micro m/sec	In/In	Pct	Pct	Kw	Kf	T			
NuC—Nunn clay loam, 0 to 3 percent slopes															
	Nunn	0-6	25-35- 40	25-34- 46	27-31- 35	1.38-1.42-1.47	1.41-3.00-4.23	0.15-0.16-0.17	3.2- 4.2- 6.2	1.0- 2.0- 3.0	.28	.28	5	6	48
		6-16	25-30- 40	18-31- 40	35-39- 45	1.32-1.38-1.45	0.42-1.00-1.41	0.15-0.16-0.17	5.5- 6.8- 8.7	0.5- 1.0- 2.0	.32	.32			
		16-23	25-30- 40	18-31- 40	35-39- 45	1.32-1.38-1.45	0.42-1.00-1.41	0.15-0.16-0.17	5.5- 6.8- 8.7	0.5- 1.0- 2.0	.32	.32			
	23-32	25-30- 40	18-31- 40	35-39- 45	1.34-1.42-1.49	0.42-1.00-1.41	0.15-0.16-0.17	5.1- 6.3- 8.0	0.5- 0.8- 1.0	.32	.32				
	32-79	25-38- 40	25-36- 51	20-26- 35	1.43-1.49-1.55	4.23-9.17-14.11	0.16-0.17-0.18	1.6- 2.7- 5.5	0.0- 0.3- 0.5	.37	.37				
StE—Stroupe extremely stony loam, 9 to 25 percent slopes															
Stroupe	0-4	-40-	-38-	18-23- 27	1.25-1.33-1.40	4.23-9.00-14.11	0.04-0.05-0.06	0.0- 1.5- 2.9	2.0- 3.0- 4.0	.05	.24	2	8	0	
	4-9	-40-	-38-	18-23- 27	1.25-1.33-1.40	1.41-2.00-4.23	0.07-0.08-0.09	0.0- 1.5- 2.9	1.0- 1.5- 2.0	.10	.37				
	9-25	-28-	-34-	35-39- 50	1.15-1.28-1.40	0.42-1.00-1.41	0.07-0.09-0.11	0.0- 1.5- 2.9	0.0- 0.3- 0.5	.05	.32				
	25-29	—	—	—	—	0.42-1.00-1.41	—	—	—						

Custom Soil Resource Report

Physical Soil Properties—Pueblo Area, Colorado, Parts of Pueblo and Custer Counties														
Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
										Kw	Kf	T		
	In	Pct	Pct	Pct	g/cc	micro m/sec	In/In	Pct	Pct					
TsD— Travessilla sandy loam, 1 to 9 percent slopes														
Travessilla	0-5	55-65- 75	11-25- 35	10-10- 18	1.45-1.53- 1.61	14.11-28.00-42. 33	0.10-0.11-0.1 2	0.8- 0.9- 1.9	0.5- 1.3- 2.0	.28	.28	1	3	86
	5-11	40-65- 70	12-21- 43	5-14- 18	1.49-1.54- 1.58	14.11-28.00-42. 33	0.09-0.12-0.1 5	0.2- 1.3- 1.9	0.0- 0.3- 0.5	.32	.32			
	11-14	40-60- 70	12-24- 46	5-16- 18	1.56-1.59- 1.62	14.11-28.00-42. 33	0.09-0.12-0.1 5	0.2- 1.5- 1.9	0.0- 0.3- 0.5	.32	.32			
	14-79	—	—	—	—	0.42-0.92-1.41	—	—	—					
VmE—Vamer- Rock outcrop complex, 5 to 25 percent slopes														
Vamer	0-2	-39-	-37-	20-24- 27	1.25-1.33- 1.40	4.23-9.00-14.11	0.07-0.08-0.0 9	0.0- 1.5- 2.9	2.0- 3.0- 4.0	.10	.24	1	8	0
	2-6	-35-	-33-	27-32- 35	1.25-1.33- 1.40	4.23-9.00-14.11	0.07-0.08-0.0 9	0.0- 1.5- 2.9	2.0- 3.0- 4.0	.10	.24			
	6-12	-28-	-33-	35-39- 50	1.15-1.28- 1.40	0.42-1.00-1.41	0.08-0.09-0.1 0	3.0- 4.5- 5.9	0.0- 0.5- 1.0	.10	.24			
	12-16	—	—	—	—	0.42-1.00-1.41	—	—	—					
Rock outcrop	0-60	—	—	0- 0- 0	—	—	0.00-0.00-0.0 0	—	—			8	0	

Custom Soil Resource Report

Physical Soil Properties—Pueblo Area, Colorado, Parts of Pueblo and Custer Counties														
Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Saturated hydraulic conductivity	Available water capacity	Linear extensibility	Organic matter	Erosion factors			Wind erodibility group	Wind erodibility index
										Kw	Kf	T		
	In	Pct	Pct	Pct	g/cc	micro m/sec	In/In	Pct	Pct					
Wo—Wormser silt loam														
Wormser	0-4	-25-	-53-	18-23- 27	1.15-1.23- 1.30	4.23-9.00-14.11	0.16-0.18-0.2 0	0.0- 1.5- 2.9	1.0- 2.0- 3.0	.37	.37	2	6	48
	4-20	-29-	-32-	35-39- 45	1.15-1.28- 1.40	0.42-1.00-1.41	0.17-0.19-0.2 1	3.0- 4.5- 5.9	0.5- 1.3- 2.0	.24	.24			
	20-25	-34-	-32-	27-34- 40	1.25-1.33- 1.40	1.41-3.00-4.23	0.15-0.17-0.1 9	3.0- 4.5- 5.9	0.0- 0.3- 0.5	.28	.28			
	25-33	-34-	-32-	27-34- 40	1.25-1.33- 1.40	1.41-3.00-4.23	0.15-0.17-0.1 9	3.0- 4.5- 5.9	0.0- 0.3- 0.5	.28	.28			
	33-37	—	—	—	—	0.42-1.00-1.41	—	—	—					

Custom Soil Resource Report

Rangeland and Forest Vegetation Classification, Productivity, and Plant Composition—Pueblo Area, Colorado, Parts of Pueblo and Custer Counties									
Map unit symbol and soil name	Ecological Site, Plant Association, or Habitat Type	Total dry-weight production			Characteristic rangeland or forest understory vegetation	Composition			Forest understory
		Favorable year	Normal year	Unfavorable year		Rangeland	Forest understory	Pct cover	
		Lb/ac	Lb/ac	Lb/ac		Pct dry wt	Pct dry wt	Pct cover	
EBF—Eutroboralfs, steep									
Eutroboralfs	—	—	—	—	elk sedge	—	15	—	—
					Gambel's oak	—	15	—	—
					true mountain mahogany	—	15	—	—
					Arizona fescue	—	10	—	—
					bluegrass	—	10	—	—
					multongrass	—	10	—	—
					prairie Junegrass	—	5	—	—
					twoneedle pinyon	—	5	—	—
					Rocky Mountain juniper	—	2	—	—
Ho—Holderness silt loam, 3 to 9 percent slopes									
Holderness	Loamy Park (R048AY222CO); Blue grama - needlegrass (BOGR2-STIPA) (G0710)	2,000	1,400	1,000	Arizona fescue	30	—	—	—
					mountain muhly	25	—	—	—
					Parry's danthonia	10	—	—	—
					Gambel's oak	5	—	—	—
					needlegrass	5	—	—	—
					nodding brome	5	—	—	—
					prairie Junegrass	5	—	—	—
					western wheatgrass	5	—	—	—

Custom Soil Resource Report

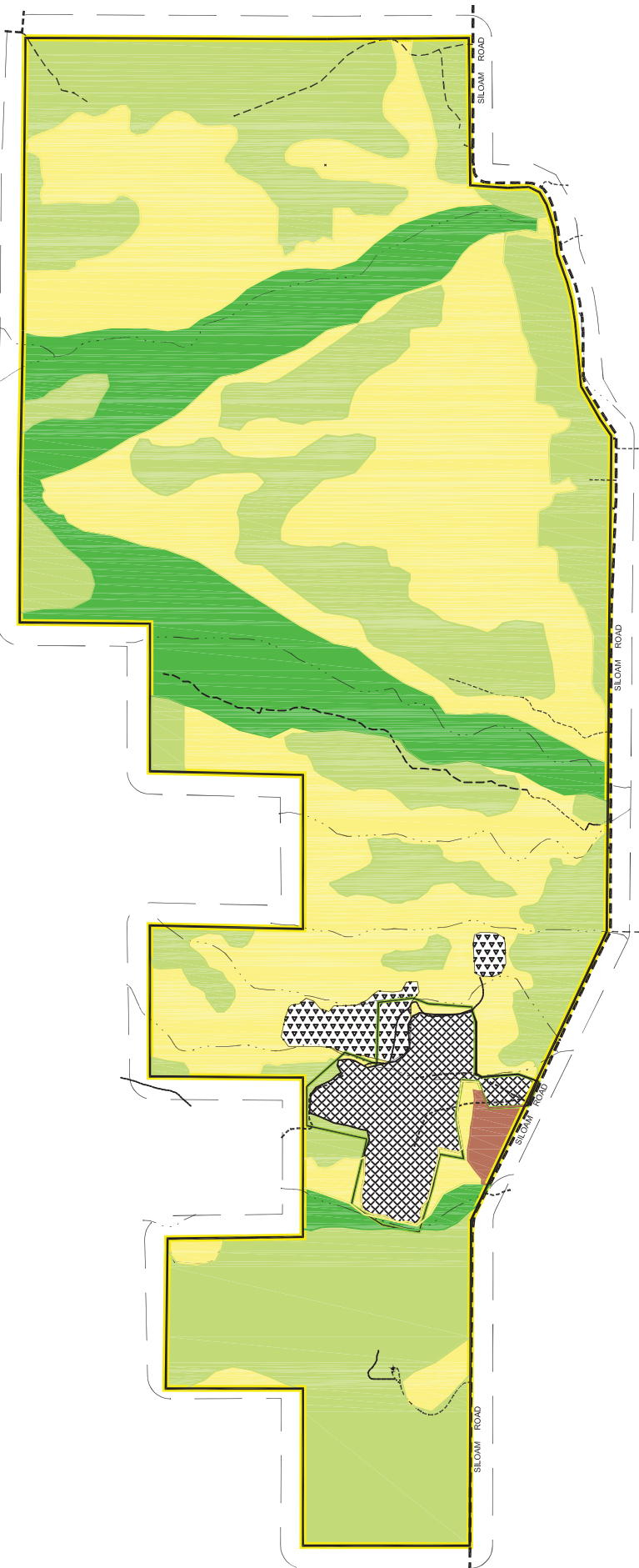
Rangeland and Forest Vegetation Classification, Productivity, and Plant Composition—Pueblo Area, Colorado, Parts of Pueblo and Custer Counties									
Map unit symbol and soil name	Ecological Site, Plant Association, or Habitat Type	Total dry-weight production			Characteristic rangeland or forest understory vegetation	Composition			Forest understory
		Favorable year	Normal year	Unfavorable year		Rangeland	Forest understory	Forest understory	
		Lb/ac	Lb/ac	Lb/ac		Pct dry wt	Pct dry wt	Pct cover	
NuC—Nunn clay loam, 0 to 3 percent slopes									
Nunn	Loamy Foothill (R049BY202CO)	1,800	1,400	800	blue grama	30	—	—	—
					western wheatgrass	30	—	—	—
					Griffith wheatgrass	10	—	—	—
					Gambel oak	5	—	—	—
					green needlegrass	5	—	—	—
					mountain mahogany	5	—	—	—
					mountain muhly	5	—	—	—
					oneseed juniper	5	—	—	—
					pinyon pine	5	—	—	—
StE—Stroupe extremely stony loam, 9 to 25 percent slopes									
Stroupe	Shallow Foothill (R049BY204CO); Oneseed juniper/blue grama (JUMO/BOGR2) (W0102)	1,000	600	400	sideoats grama	20	—	—	—
					little bluestem	10	—	—	—
					mountain muhly	10	—	—	—
					needlegrass	10	—	—	—
					juniper	5	—	—	—
					other shrubs	5	—	—	—
					other perennial forbs	5	—	—	—
					other perennial grasses	5	—	—	—
					twoneedle pinyon	5	—	—	—

Custom Soil Resource Report

Rangeland and Forest Vegetation Classification, Productivity, and Plant Composition—Pueblo Area, Colorado, Parts of Pueblo and Custer Counties							
Map unit symbol and soil name	Ecological Site, Plant Association, or Habitat Type	Total dry-weight production			Characteristic rangeland or forest understory vegetation	Composition	
		Favorable year	Normal year	Unfavorable year		Rangeland	Forest understory
		Lb/ac	Lb/ac	Lb/ac		Pct dry wt	Pct dry wt
TsD—Travessilla sandy loam, 1 to 9 percent slopes							Pct cover
Travessilla	Needs Field Review (G069XW050CO); Sandstone Breaks (R069XY053CO); Sandstone Breaks #53 (069XY053CO_2)	1,700	1,000	500	sideoats grama	20	—
					blue grama	15	—
					little bluestem	15	—
					big bluestem	5	—
					black grama	5	—
					needleandthread	5	—
					prairie Junegrass	5	—
					sand dropseed	5	—
					western wheatgrass	5	—
					true mountain mahogany	3	—
					oneseed juniper	2	—
					twoneedle pinyon	2	—

Custom Soil Resource Report

Rangeland and Forest Vegetation Classification, Productivity, and Plant Composition—Pueblo Area, Colorado, Parts of Pueblo and Custer Counties									
Map unit symbol and soil name	Ecological Site, Plant Association, or Habitat Type	Total dry-weight production			Characteristic rangeland or forest understory vegetation	Composition			Forest understory
		Favorable year	Normal year	Unfavorable year		Rangeland	Forest understory	Forest understory	
		Lb/ac	Lb/ac	Lb/ac		Pct dry wt	Pct dry wt	Pct cover	
VmE—Vamer-Rock outcrop complex, 5 to 25 percent slopes									
Vamer	—	—	—	—	Arizona fescue	—	20	—	—
					mountain muhly	—	20	—	—
					pine dropseed	—	15	—	—
					California brome	—	10	—	—
					Gambel's oak	—	10	—	—
					Parry's danthonia	—	10	—	—
					mountain mahogany	—	5	—	—
					twoneedle pinyon	—	2	—	—
Rock outcrop	—	—	—	—	—	—	—	—	—
Wo—Wormser silt loam									
Wormser	Clayey Foothill (R049BY208CO)	1,200	900	600	western wheatgrass	25	—	—	—
					needleandthread	15	—	—	—
					little bluestem	10	—	—	—
					sideoats grama	10	—	—	—
					Arizona fescue	5	—	—	—
					mountain muhly	5	—	—	—
					other perennial forbs	5	—	—	—
					prairie Junegrass	5	—	—	—



- LEGEND**
- NEW PERMIT BOUNDARY/ AFFECTED LANDS
 - EXISTING PERMIT BOUNDARY/ AFFECTED LANDS
 - 200 FOOT LIMIT
 - ROADS (HAUL, ACCESS) (TYP.)
 - TRAILS
 - EPHEMERAL DRAINAGE
 - MINING & STOCKPILE AREA
 - PRE 1976 DISTURBED & RECLAIMED AREA
 - GRASS - BRUSH - 85% GRASS, 15% BRUSH
 - CANYON 35% GRASS, 65% TREES & BRUSH
 - GRASSLAND- 95% GRASS, 5% BRUSH
 - FARM YARD



SCALE 1"=1400'

Map Exhibit J-1 - Vegetation Map



P.O. Box 533 | Pueblo, Colorado 81003
phone: (719) 542-8278 | fax: (719) 542-????

FOX NO 1 CLAY PIT

PERMIT - M-1977-219

AMENDMENT OF A 112 MLRB PERMIT

Parts of the NE $\frac{1}{4}$ SE $\frac{1}{4}$ and all of the W $\frac{1}{4}$ NE $\frac{1}{4}$, SE $\frac{1}{4}$ SE $\frac{1}{4}$, W $\frac{1}{4}$ SE $\frac{1}{4}$, SW $\frac{1}{4}$ & the NW $\frac{1}{4}$ of Section 19. Parts of the NE $\frac{1}{4}$ SE $\frac{1}{4}$ & SE $\frac{1}{4}$ SE $\frac{1}{4}$ and all of the NE $\frac{1}{4}$, W $\frac{1}{4}$ SE $\frac{1}{4}$, NE $\frac{1}{4}$ SW $\frac{1}{4}$ & NE $\frac{1}{4}$ NW $\frac{1}{4}$ of Section 30, and the W $\frac{1}{4}$ NE $\frac{1}{4}$ and NE $\frac{1}{4}$ NW $\frac{1}{4}$, Section 31, T-22-S, R-67-W, 6th P.M., Pueblo County, Colorado.
Containing 1,046.8 ac. more or less.

PREPARED BY: **ENVIRONMENT, INC.**
7000 VANCE DR. & 25th
ARVADA, CO 80003
303-425-7907
environment@enviroinc.com

SCALE 1"=1400'
DATE 06-20-2017

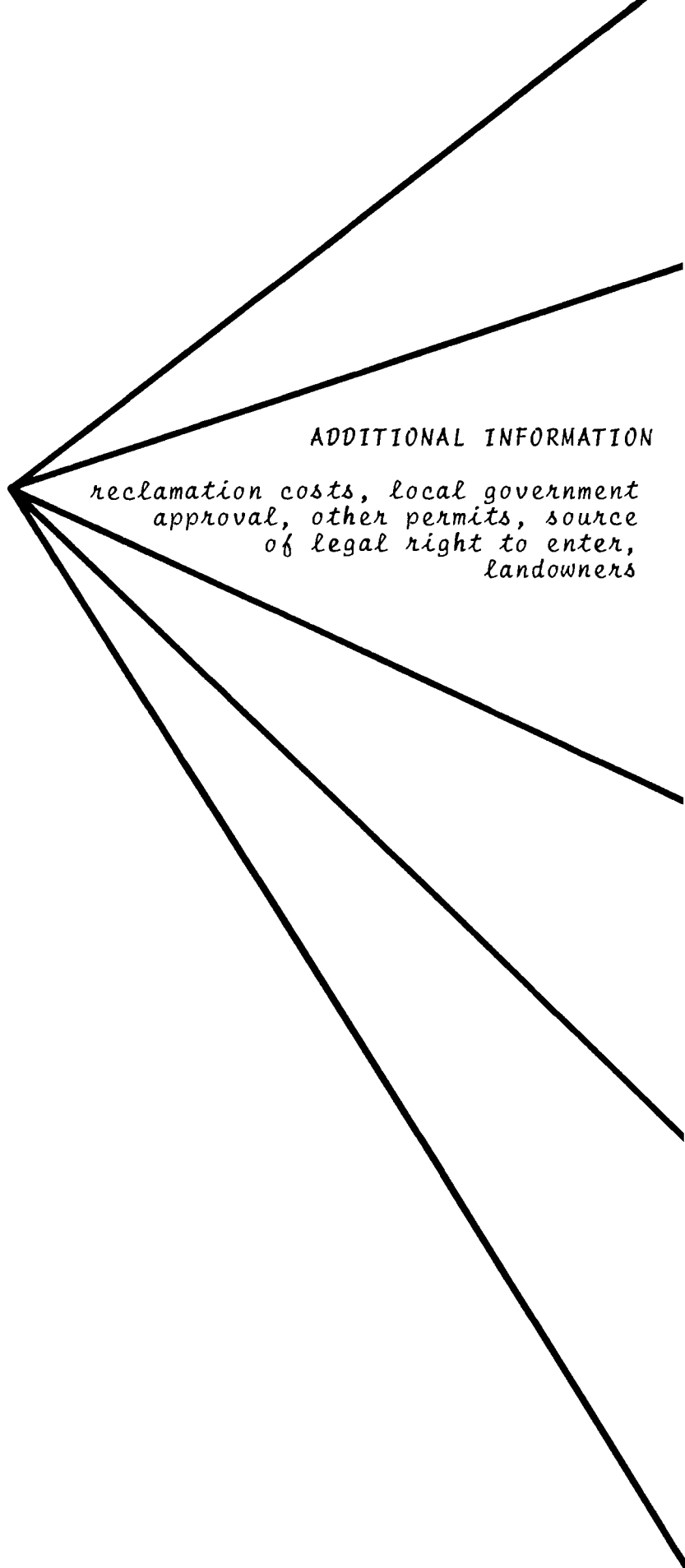
EXHIBIT K

CLIMATE

Information was downloaded from the Climatology Data-base at Colorado State University. The average Daily temperature is 53.5 degrees and the average precipitations amount is 11.87 inches per year. The Pueblo Reservoir Station is the closest data collection station to this property (14.75 miles NE). The data in the table is for the years 1997-2010 most recent published.

Station data Latitude - 38°16" Longitude -104°43' Elevation - 4560 Feet

MONTHLY MEAN TEMPERATURE. (F)													
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
AVERAGE	33.4	35.3	43.6	50.8	61.3	70.9	77.5	74.6	66.0	53.2	42.0	33.3	53.5
MAXIMUM	37.9	42.3	48.1	55.5	63.9	76.0	80.6	78.0	70.6	57.3	47.7	37.9	54.6
YEAR	2006	1999	2007	2006	2006	2002	2003	2007	2010	2010	1999	2003	1999
MINIMUM	22.8	30.3	39.1	45.6	58.2	66.8	72.1	69.0	61.5	47.2	34.4	27.1	51.9
YEAR	2007	2003	1998	1997	2001	2003	2004	2004	2006	2009	1997	2009	2004
YEARS OF RECORD	13	14	14	14	14	14	14	13	14	13	13	13	11
MONTHLY MEAN MAXIMUM TEMPERATURE. (F)													
AVERAGE	49.0	50.8	60.0	67.2	78.2	88.2	94.2	90.7	83.3	70.2	58.0	48.4	69.9
MAXIMUM	54.1	59.0	65.6	73.2	81.2	94.1	99.7	95.2	89.6	76.2	66.1	56.7	71.2
YEAR	2003	1999	2004	2006	2000	2002	2003	2000	2010	2003	1999	2003	2003
MINIMUM	38.0	43.0	55.7	60.8	74.7	83.2	90.0	86.5	76.9	60.8	49.0	40.4	68.1
YEAR	2007	2010	2001	1997	2010	2003	2004	2004	2006	2009	2000	2009	1997
YEARS OF RECORD	13	14	14	14	14	14	14	13	14	13	13	13	11
MONTHLY MEAN MINIMUM TEMPERATURE. (F)													
AVERAGE	17.8	19.7	27.2	34.4	44.4	53.6	60.4	58.4	48.7	36.1	26.0	18.1	37.2
MAXIMUM	22.5	25.5	31.4	38.2	48.7	59.1	63.0	62.5	51.6	41.0	30.3	21.5	38.6
YEAR	2006	1999	2007	2003	2009	2006	2010	2007	2010	2010	2006	2006	2006
MINIMUM	7.5	14.9	21.1	30.4	40.2	48.9	54.2	51.4	43.6	32.4	19.3	13.9	34.8
AR	2007	2002	2002	1997	2001	2004	2004	2004	2003	2002	1997	2009	2004
YEARS OF RECORD	13	14	14	14	14	14	14	13	14	13	13	13	11
TOTAL MONTHLY PRECIPITATION. (IN)													
AVERAGE	0.31	0.30	0.95	1.92	1.29	0.96	1.81	2.57	0.68	0.92	0.39	0.32	11.87
MAXIMUM	0.83	0.86	2.71	6.48	5.09	1.65	4.92	6.26	1.50	2.39	2.54	0.95	16.87
YEAR	2004	2010	2000	1999	2007	2007	2006	1997	2006	2006	1997	2006	1997
MINIMUM	0.02	0.00	0.08	0.09	0.16	0.20	0.37	0.35	0.13	0.02	0.01	0.04	4.22
YEAR	2003	1999	2002	2002	2004	2006	2005	2002	2010	2003	2005	2003	2002
YEARS OF RECORD	13	14	14	14	14	14	14	13	14	13	13	13	11
TOTAL MONTHLY SNOWFALL. (IN)													
AVERAGE	2.50	0.70	1.20	0.40	0.00	0.00	0.00	0.00	0.00	0.60	0.90	4.20	11.50
MAXIMUM	10.10	4.40	5.00	5.70	0.00	0.00	0.00	0.00	0.00	8.20	5.00	25.70	25.70
YEAR	2007	2010	1999	2010	2010	2010	2010	2010	2010	1997	1997	1998	1998
MINIMUM	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
YEAR	2003	2009	2007	2010	2010	2010	2010	2010	2010	2010	2010	2003	2003
YEARS OF RECORD	13	13	13	13	14	14	14	14	13	14	13	13	11



ADDITIONAL INFORMATION

reclamation costs, local government
approval, other permits, source
of legal right to enter,
landowners

EXHIBIT L

RECLAMATION COSTS

This reclamation cost estimate is based on the assumption that no more than 40.0 acres will need some form of reclamation at any one time. Of this 40 acres, approximately 30.0 acres would be stripped, active mining and processing areas and the remaining 10.0 acres would be, partially reclaimed area. This is based on a worse case scenario i.e., at a time when the greatest area will need some form of reclamation as shown on **Map Exhibit C-1 Mining Plan Map**. The plan allows for 1570 linear feet of bank sloping to grade the mining face from near vertical to 3h to 1v as proposed in the **Reclamation Plan**. The mining face has 3 zones of which one, the sandstone layer (zone 2) will remain near vertical since it is stable in that configuration. The other 2 zones are unconsolidated material with the top most (zone 1) being topsoil and overburden and the clay layer (zone 3). Zones 1 sloping will be done using a cut/fill (1.0 cy/lft) method where the upper part is dozed into the lower part. In zone 3 a backfill method (5.0 cy/lft) will be used by either pushing material up against the working face or backfilling against the face to create the 3h to 1v slope.

In Zone 1 the volume of dirt needed to do the cut/fill sloping is based on a depth of 9 feet or 1570 cyd/lft and in Zone 3 backfilling is based on a clay seam average depth of 10 feet or 7,850 cyd/lft. Included is a cost to place 6 inches of overburden root zone on the seedbed, 24,200 yards, and replace an average of 6 inches of topsoil or 24,200 cubic yards of topsoil on the 40 acres disturbed. The revegetation cost figure includes fertilizer, grass seed, mulch and drilling costs.

A 627C Cat motor scraper will be used to place the root zone, resoil the area and place backfill material in Zone 3. A 140G Cat motor grader will be used to shape the seedbed, the slopes and the resoiled areas. We have included the cost to reduce the working face highwall in Zone 1 using a D8U Cat dozer from near vertical to 3:1 if mining ends prematurely. The table below outlines the various areas of disturbance under this scenario. These figures are then used in the calculations for the bond amount.

ACTIVITY	TOTAL	SOIL DEPTH
NEEDS RESOILING	30.0 AC	6"
ROOT ZONE PLACEMENT	30.0 AC.	6"
NEEDS SEEDING	30.0 AC	
GRADING SEEDBED	30.0 AC	
RESOIL @ 6"	24,200 CY	
ROOT ZONE @ 6'	24,200 CY	
CUT/FILL	1,570 CY	
BACKFILL SLOPING	7,850 CY	
SECONDARY REVEGETATION	25%	

ESTIMATED UNIT COSTS FOR RECLAMATION ITEMS:

UNIT COST

1. Revegetation includes grass seed mix, mulch
and fertilizer and labor to drill \$650.00 /AC.**
2. Re-spreading soil and/or growth media & root zone material
with **627-E Motor Scraper, Haul distance less than 1600** 0.570 /YD³
3. Grade and shape, **140G motor grader** \$59.54 /AC
4. Cut/fill working face, D-6T Dozer 0.531 /YD³
5. Backfill side slopes, **627-E Motor Scraper, Haul distance less
than 1600** 0.570 /YD³

RECLAMATION COSTS

- | | |
|---|-------------|
| 1. Revegetation, 40.00 ac @ \$650.00/ac | \$19,500.00 |
| 2. Resoiling, 24,200 yd ³ x 1.12 @ 0.57¢/yd ³ | 15,457.26 |
| 3. Root zone construction, 24,200 yd ³ x 1.12 @
0.57¢/yd ³ | 15,457.26 |
| 4. Grading and shaping 30.00 ac. @ \$59.54/ac | 1,786.08 |
| 5. Cut/fill working face, 1570 yd ³ @ 53.1¢/yd ³ | 833.97 |
| 6. Backfilling slopes, 7,850 yd ³ @ 53.1¢/yd ³ | 4476.81 |
| 7. Secondary revegetation 30.0 ac x 25% x
\$650.00/ac | 4,875.00 |
| 8. Weed Control per year | 5,000.00 |
| Net Total | \$67,386.38 |
| 9. Indirect costs | |
| Mobilization | 8,069.03 |
| Insurance, Bond, & Profit | 9,110.64 |
| Administration costs | 4,228.30 |
| TOTAL ESTIMATE | \$88,794.35 |

RECOMMEND BOND BE SET AT \$88,800.00**Current bond amount \$83,00.00**

Equipment listed in this estimate is used for the calculations and similar types may be used in the actual reclamation activities at the mine.

Source of figured using, Cat Handbook #38 and rental costs from Means for 83% efficiency, for eastern Colorado

Exhibit M

OTHER PERMIT AND LICENSES

1. An Air Pollution permit# 101/0257/001 covers the mine operation. The contractor that does the processing has permits for his equipment.
2. A Special Use Permit from Pueblo County may be necessary prior to operations commencing on some of the new parts of the mine. The existing area and an additional 165.2 acres± is covered by a Pueblo County Exemption date 9/7/77. This are is shown on **Map Exhibit C**. If needed the necessary permit will be obtained prior to entering those areas outside the exemption area.
3. This is a open pit operation where ground water will not be exposed. A substitute water supply plan (SWSP) is not needed. Stormwater that accumulates after a storm event is release within 72 hours of the end of the storm.
4. A dredge fill permit (404) is not required at this time because waters of the U.S. will not be impacted. If it is determined a 404 permit is needed to mine parts of the site it will be obtained prior to mining commencing in those areas.
5. CDPE Permit # COG-501796, from the CDPHE-WQCD, is in place to cover any stormwater discharges. The corresponding Stormwater Management Plan (SWMP) is also in place. Both will need amended/updated to cover the new area.

Exhibit N - SOURCE OF LEGAL RIGHT TO ENTER

This Exhibit contains copies of the clay leases that covers part of the permit area. They are the Hanratty Lease #1 for the south end and the Hanratty Lease #2 covering the north end. Both of the Hanratty leases are shown on the ownership map in **Exhibit O**. Also included are affidavits from Summit Brick and Tile Company and J A T Investments, LLC. providing Summit Brick and Tile Company has the right to enter the property they own and to mine them under leases. Some of this information may already be in the Divisions records.

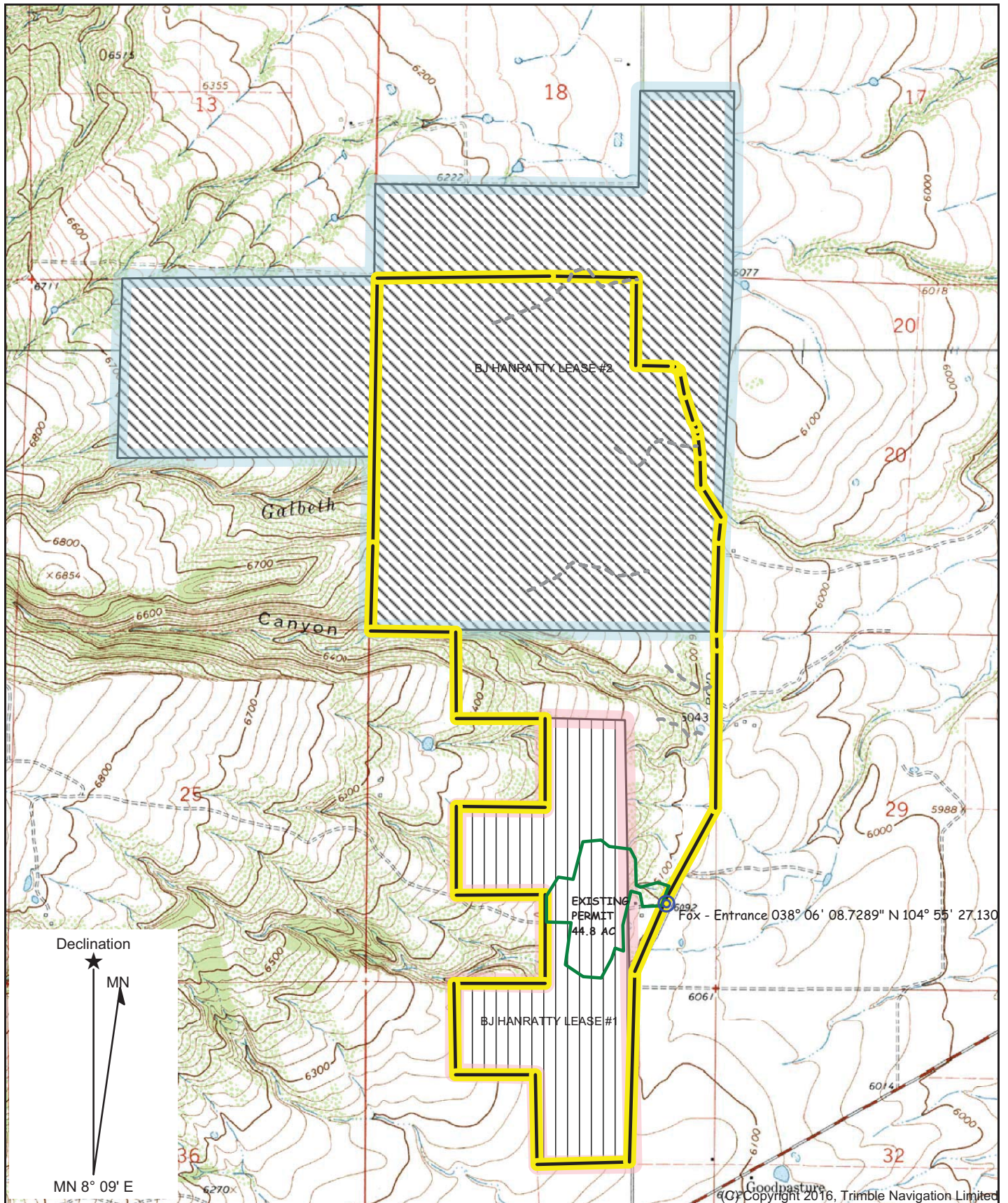
Figure N-1 Hanratty lease map

Hanratty Lease #1

Hanratty Lease #2

JAT Investments, LLC. - Affidavit & Figure - 2 map

Summit Brick and Tile Company - Affidavit & Figure N-3 map



Name: BEULAH (CO)
 Date: 06/21/17
 Scale: 1 inch = 2,000 ft.

Summit Brick & Tile Company
 Fox No. 1 Clay PitE
 FIGURE N-1 - Hanratty Lease areas

GENERAL REFRACTORIES COMPANY
PHILADELPHIA, PA., 19102

HOLDING: Lease

CODE: CO-PUE-302L

STATE: Colorado

COUNTY: Pueblo

SECTION: 30 & 31

TOWNSHIP: 22 S

RANGE: 67 W

ACREAGE: 280 Acres

GRANTOR OR LESSOR:

James T. & Leta Hanratty to
Rudolph C. Valenta (See below)

TITLE

SEARCHED:

ABSTRACTED:

INSURED:

TYPE OF DEED:

DATE OF INSTRUMENT: Jan. 31, 1955

RECORDED: D. BK. 1287 Pg. 100

PRICE:

DATE: Jan. 3, 1956

LEASE TERM: Indefinite

ROYALTY

MINIMUM:

RECOVERABLE:

PRODUCTION:

PER TON for fire clay

Advance royalties to be paid at the beginning of each lease year rather than at the end of the lease year.

PROSPECTED: Yes

ESTIMATED RECOVERABLE TONNAGE:

REMARKS:

Assignment of above lease by Rudolph C. Valenta to General Refractories Company dated Feb. 11, 1955 is attached to the original lease and made a part thereof and recorded therewith.

DESCRIPTION:

JAMES T. & LETA HANRATTY LEASE

The Southwest quarter of the Northeast quarter; the Northwest quarter of the Southeast quarter; the Northeast quarter of the Southwest quarter and the Southwest quarter of the Southeast quarter; all in Section 30, Township 22 South, Range 67 West.

Also the West one half of the Northeast quarter and the Northeast quarter of the Northwest quarter of Section 31, Township 22 South, Range 67 West.

GENERAL REFRACTORIES COMPANY
PHILADELPHIA, PA. 19102

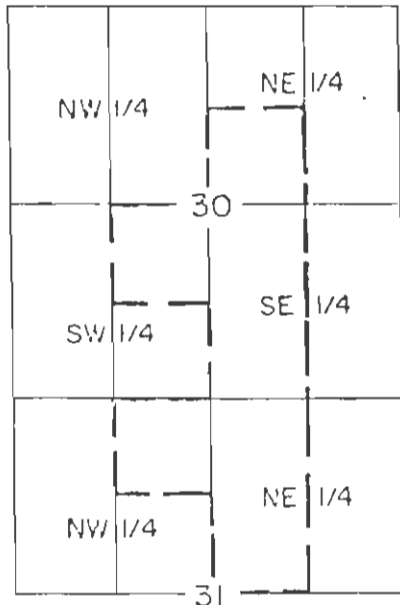
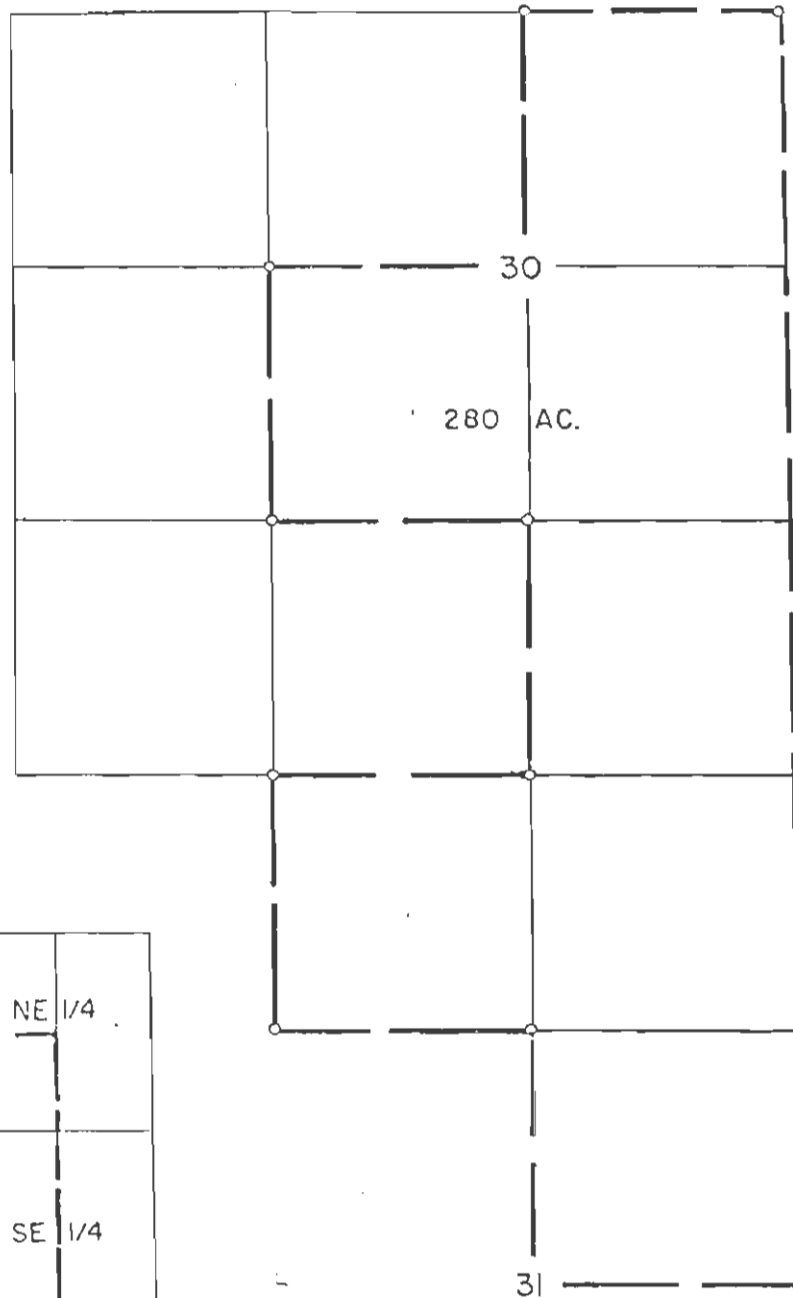
Agreement

CO-PUE-302L

This agreement made and entered into this 13th day of April, 1966, by JAMES P. HANRATTY, also known as JAMES T. HANRATTY, and LETA M. HANRATTY, of the County of Pueblo, State of Colorado, hereinafter referred to as "Lessors", and GENERAL REFRACTORIES COMPANY, a Pennsylvania Corporation, hereinafter referred to as "Lessee",

1. Lessee shall have a right of ingress to and egress from the mining area over and across any property owned by Lessors and shall have the right to build haul roads in the generally accepted method best suited to a strip mining operation.
2. The disposal of over-burden by Lessee shall be in the manner most economical to a strip mining operation.
3. Lessee shall not be responsible for existing water rights, streams, springs, and other water courses that might be affected by drilling, blasting, or disposal of over-burden in connection with the strip mining operation.
4. It is mutually understood and agreed that the closeness of the dwelling and outbuildings to the mining area requires that residents comply with good safety practices and standards by removing themselves from said dwelling, outbuildings and property during periods of blasting, and Lessors assume the responsibility of complying with this paragraph.
5. Lessors will keep all cattle and other livestock and pets at a safe distance from the mining operations, and all tractors, implements and other farm machinery used by Lessors will be removed by Lessors to a safe distance from the mining operation to prevent damage thereto.
6. It is understood and agreed that Lessee will not be liable for any damage to the dwelling or outbuildings located on said property as a result of said mining operations other than to repair the damage so as to restore said dwelling or outbuildings to their present condition. There will be no responsibility to put said structures in new condition, and Lessors agree not to subject Lessee to any claims, demands, nor damage suits except under the terms of this agreement.
7. Lessors agree to indemnify and hold Lessee harmless for all claims, demands, and causes of action of whatsoever kind and nature from third persons arising out of or in connection with said strip mining operation.

N



LOCATION MAP
SCALE: 1" = 1/2 MILE

SW QUARTER OF THE NE QUARTER OF SECTION 30
NW QUARTER OF THE SE QUARTER OF SECTION 30
NE QUARTER OF THE SW QUARTER OF SECTION 30
SW QUARTER OF THE SE QUARTER OF SECTION 30
WEST HALF OF THE NE QUARTER OF SECTION 31
NE QUARTER OF THE NW QUARTER OF SECTION 31

SCALE: 1" = 1000'

SECTIONS 30 & 31, TWP. 22S, RANGE 67W
PUEBLO COUNTY, COLORADO

BY: J. B. [unclear]
REVISED: [unclear]

GENERAL REEFACTORIES
COMPANY

LEASE

SCALE AS NOTED

JAMES T. & LETA HANRATTY

57

PUEBLO COUNTY COLO. DATE MAR. 1966

ASSIGNMENT AND ASSUMPTION AGREEMENT

THIS ASSIGNMENT AND ASSUMPTION AGREEMENT is made and entered into as of the first day of August, 1994 by and between GENERAL REFRACTORIES COMPANY, a Pennsylvania corporation with its principal place of business at 225 City Line Avenue, Bala Cynwyd, Pennsylvania 19004 ("Assignor"), and A.P. GREEN REFRACTORIES, INC., a Delaware corporation with its principal place of business at Green Boulevard, Mexico, Missouri 65265 ("Assignee").

W I T N E S S E T H:

WHEREAS, James T. Hanratty and Leta M. Hanratty (collectively, "Lessor") and Rudolph C. Valenta ("Valenta") entered into a mineral lease dated January 31, 1955 and recorded in Book 1287 Page 100 of the records of the Recorder of Pueblo County, Colorado (the "Mineral Lease"), demising certain premises in Pueblo County, Colorado owned by Lessor, leased to Assignor, and more particularly described in Exhibit A attached hereto and incorporated herein (the "Property") for purposes of exploring, mining and removing therefrom all usable and merchantable fire clay (a copy of which Mineral Lease is attached hereto as Exhibit B and incorporated herein); and

WHEREAS, Valenta assigned all his right, title and interest in and to the Lease to Assignor by an Assignment dated February 11, 1955 and recorded in Book 1287 Page 105 of the records of the Recorder of Pueblo County, Colorado (the "Mineral Lease Assignment") (a copy of which Mineral Lease Assignment is attached hereto as Exhibit C and incorporated herein); and

WHEREAS, Lessor and Assignor amended the Lease pursuant to an Amendment to Mineral Lease dated March 29, 1977 (the "Mineral Lease Amendment") (a copy of which Mineral Lease Amendment is attached hereto as Exhibit D and incorporated herein); and

WHEREAS, Lessor and Assignor entered into an Agreement dated April 13, 1966 regarding the performance of strip mining by Assignor on the Property (the "Strip Mining Agreement") (a copy of which Strip Mining Agreement is attached hereto as Exhibit E and incorporated herein); and

WHEREAS, Lessor and Assignor amended the Strip Mining Agreement pursuant to an Amendment to Agreement dated July 1, 1977 (the "Strip Mining Agreement Amendment") (a copy of which Strip Mining Agreement Amendment is attached hereto as Exhibit F and incorporated herein); and

WHEREAS, the Mineral Lease, the Mineral Lease Assignment, the Mineral Lease Amendment, the Strip Mining Agreement and the Strip Mining Agreement Amendment are hereinafter collectively referred to as the "Lease"; and

WHEREAS, in accordance with and subject to the terms and conditions of that certain Asset Acquisition Agreement dated July 11, 1994 by and among Assignor, Assignee, and certain other parties (the "Acquisition Agreement"), Assignor has agreed to assign to Assignee all of the rights of Assignor under the Lease and Assignee has agreed to assume certain obligations of the Assignor thereunder;

NOW, THEREFORE, in consideration of the foregoing, and for other good and valuable consideration, the receipt and sufficiency of which hereby are acknowledged, the parties hereto agree as follows:

1. Assignor hereby assigns to Assignee all of the Assignor's right, title and interest in, to and under the Lease, together with all of the Assignor's rights in and to the property provided thereunder, including any and all rights and/or options to extend and/or renew the Lease and any security deposits and prepaid rentals made under the Lease, to have and to hold the same unto Assignee, its successors and assigns, from and after the "Effective Date" (as that term is hereinafter defined). Assignee's right, title and interest in, to and under the Lease after the foregoing assignment remains subject to any consents required under the Lease.

2. Assignee hereby accepts this Assignment of the Lease from the Assignor and Assignee hereby assumes all of Assignor's obligations to observe and perform all of the terms, conditions and covenants of the Lease, and all liabilities arising thereunder, to be observed and/or performed by the Assignor as lessee under the Lease, regardless of whether such obligations and liabilities arose prior to or arise after the Effective Date, with the exception of any "Retained Liabilities" (as defined in Section 2.1 of the Acquisition Agreement) pertaining to the Lease.

3. Assignee will hold Assignor harmless and indemnify Assignor against any and all of the obligations and liabilities assumed by Assignee hereunder, and Assignor shall remain liable for, and will hold Assignee harmless and indemnify Assignee against, any "Retained Liabilities", (as defined in Section 2.1 of the Acquisition Agreement) pertaining to the Lease.

4. Assignor represents and warrants to the Assignee that:

(a) the Assignor is not in material default of any term or condition of the Lease, and the Assignor has not received any notice of any material default thereunder which has not been cured or waived; and

(b) no event has occurred or condition exists which would immediately, or with the giving of any notice or lapse of time,

X

constitute a material default of the Lease
with respect to Assignor.

5. This Agreement shall be binding upon and shall inure to the benefit of the parties hereto and their respective successors and assigns. This Agreement may not be amended, modified or terminated orally, but only by an instrument in writing duly executed by all of the parties hereto.

6. The "Effective Date" of this Agreement shall be August 1, 1994.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement as of the date and year first above written.

GENERAL REFRACTORIES COMPANY

By: 
Barry L. Katz, President

A.P. GREEN REFRACTORIES, INC.

By: 
Gary L. Roberts, Treasurer

This instrument was prepared by Christopher B. Reid, Thompson & Mitchell, One Mercantile Center, St. Louis, Missouri 63101.

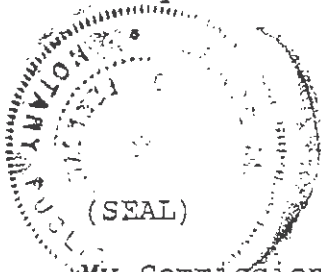
Book: 2888 Page: 760 Chris C. Munoz
Page: 3 of 20 Pueblo Co.Clk.&Rec.

STATE OF PENNSYLVANIA)
COUNTY OF Montgomery)

Book: 2888 Page: 761 Chris C. Munoz
Page: 4 of 20 Pueblo Co.Clk.&Rec.

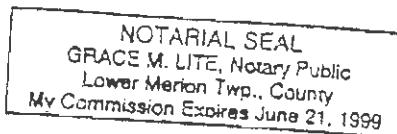
On this 26th day of April, 1996, before me personally appeared Barry L. Katz, to me personally known, who, being by me duly sworn, did say that he is the President of General Refractories Company, a Pennsylvania corporation, and that said instrument was signed on behalf of said corporation by authority of its Board of Directors; and said Gary L. Roberts acknowledged said instrument to be the free act and deed of said corporation.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed my official seal in the County and State aforesaid, the day and year first above written.



Grace M. Lite
Notary Public

My Commission Expires:



STATE OF MISSOURI)
COUNTY OF AUDRAIN)

On this 27th day of March, 1996, before me personally appeared Gary L. Roberts, to me personally known, who, being by me duly sworn, did say that he is the Treasurer of A.P. Green Refractories, Inc., a Delaware corporation, and that said instrument was signed on behalf of said corporation by authority of its Board of Directors; and said Gary L. Roberts acknowledged said instrument to be the free act and deed of said corporation.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed my official seal in the County and State aforesaid, the day and year first above written.



Deborah K. Fierge
Notary Public

My Commission Expires: DEBORAH K. FIERGE
NOTARY PUBLIC, STATE OF MISSOURI
MY COMMISSION EXPIRES 5/8/98
AUDRAIN COUNTY

Co-PDF-007-1000
MINERAL LEASE (Fire Clay Only)

MADE AND ENTERED INTO this 31 day of January A. D. 1955

by and between

James T. Hanratty and Lete M. Hanratty his wife

hereinafter called LESSOR, and Rudolph C. Valenta
P.O.B. 2908, Brentwood, Missouri

WITNESSETH: that the Lessor in consideration of \$1.00 to him now paid
by Lessee, the receipt of which is hereby acknowledged, and for other valuable
consideration, does hereby grant and convey unto Lessee the exclusive right and
privilege to enter upon land of Lessor,, situated in Township,
Pueblo County, State of Colorado

bounded and described as follows:

The Southwest quarter of the Northeast quarter ; the Northwest quarter
of the Southeast quarter ; the Northeast quarter of the Southwest
quarter and the southwest quarter of the Southeast quarter; all in
Section 20, Twp. 22 S. Range 67 W.

Also; the West one-half of the Northeast quarter ; and the Northeast
quarter of the Northwest quarter of Section 31, Twp. 22 S. Range
67 West.

containing 280 acres, more or less, for the purpose of exploring, mining and re-
moving therefrom, all usable and merchantable fire clay.

The above described premises being part of or the same premises which

conveyed to the said Lessor herein by deed dated the day of A. D.
19 , and recorded in the Office for the Recording of Deeds in and for the County
of State of in Deed Book Page

The Lessee to have the right to the possession of so much of the surface
and interior of said land as may be required for the safe, expeditious, and

economical mining and removal of said minerals from said land, and minerals from operations on other lands in the vicinity which may at any time be owned or operated by Lessee, and the right to deposit on and in above described land waste and refuse from the operations on said land; and the right to open drainage ways and the right to discharge mine waters on the surface of said land. Such possession to include grounds for necessary buildings (except dwellings), machinery and fixtures, electric transmission lines, railway tracks, tram-roads, aerial ways, truck or other roads, at most convenient grades; the roadbed on the surface where the tracks shall be made or laid for hauling not to exceed 25 feet in width with necessary additions for cuts and fills. No mining operation shall be carried on within 200 feet of buildings now standing.

The right to mine to include all practical methods now in use, or which may hereafter be used, and the use of improved machinery and fixtures or appliances for said purposes; and the right to strip the surface for, excavate, dig, bore, shaft, quarry and otherwise explore for and mine said minerals, with the right to remove all pillars and supports that may be left in progress of said mining, and all outcrop of said minerals; and Lessee is hereby released from all damages or liability that may be caused to or result to the surface, superincumbent strata, any water supply, or other property, from mining and removal of said minerals covered by this lease, or from the exercise of any of the rights granted to the Lessee, whether said injuries shall be direct or consequential.

The Lessee to have until the first day of January A. D. 19 56 to make explorations and to decide whether the said minerals are of proper quality and in sufficient quantity and are so located as to be profitably mined. Unless the Lessee mails written notice to the Lessor on or before said date of its desire to cancel this lease, this lease shall be considered in force and the rights and privileges granted shall remain in force so long as the Lessee shall continue to mine said minerals or pay the minimum rental or royalty agreed upon; the Lessee to have the right at any time, upon sixty days' notice in writing mailed to Lessor, to abandon said premises and this lease to be thenceforth null and void, except as to royalties or rentals then due and unpaid. Lessee to have the right to remove all machinery, fixtures, buildings and improvements placed or erected by Lessee upon said premises after the payment of said royalties or rentals.

Lessee agrees to pay Lessor as a royalty for said minerals and privileges granted [REDACTED] cents per ton of two thousand pounds for each

~~mined and removed in excess of the to be expected for the advance minimum royalty payments.~~

On failure to pay the rental or royalty due after thirty days' written notice by registered mail to Lessee to pay the same, the Lessor may at his option declare this lease forfeited, and may re-enter and take possession of the premises, and this agreement shall be thenceforth at an end, except as to the collection of rentals then due; the Lessee to have the right to remove all machinery, fixtures, buildings, and improvements placed or erected by Lessee upon said premises, after payment of said rental. Before any forfeiture shall be attempted for any other cause, Lessor shall give Lessee sixty days' notice in writing by registered mail, stating the cause, in order that Lessee may remove the cause if it exists.

All Taxes on improvements made and erected by Lessee to be paid by Lessee; all other taxes shall be paid by Lessor.

The Lessee shall have the right, but not the obligation to pay and discharge any lien which would, when otherwise discharged, invalidate any of the Lessee's rights hereunder, and all such payments by Lessee shall be deducted from payments thereafter due Lessor from Lessee.

The Lessor hereby authorizes all payments to be made to, and all communications and notices directed to James T. Hanratty Post Office address
RR #1 Box 76 , Beula, Colorado
as his agent until further notice. All payments to be made by check, voucher or draft mailed by Lessee.

Lessor hereby covenants that he is lawfully seised of an indefeasible estate in fee in the land herein leased, and that the same is free and clear of all liens and encumbrances; that he has good right to lease the same; and that he will warrant and defend the title unto the Lessee, its successors and assigns, against the claims of all persons whomsoever.

All words herein referring to the Lessor shall be taken to be of such gender and number as the circumstances may require, and if Lessor be more than one person, the provisions hereby shall bind and apply to them jointly and severally.

All grants, covenants and conditions to extend to and bind all parties, their heirs, executors, successors, administrators and assigns.

IN WITNESS WHEREOF and as evidence of their intention to be

bound, the parties hereto have hereunder set their hands and
seals as of the day and year first herein written:

James T. Hamratty (SEAL)
Leta M. Hamratty (SEAL)
Rudolph C. Valenta (SEAL)

(SEAL)

STATE OF Colorado)
COUNTY OF Pueblo) SS

On this 31 day of January A. D. 1955, before me a
Notary Public in and for said County, personally appeared
James T. Hamratty, Leta M. Hamratty and Rudolph C. Valenta.
to me known to be the person named in the foregoing instrument this day pro-
duced to me in said County, and acknowledged that he did sign the same as
free act and deed for the purposes and uses therein set forth and desired the
same to be recorded as such.

IN WITNESS WHEREOF I have hereunto set my hand and official seal this
day and year aforesaid.

W. Reynolds
Notary

Title of Officer

My Commission expires:
My Commission Expires MARCH 14, 1956

STATE OF)
COUNTY OF) SS

On this _____ day of _____ A. D. 19____, before me a
in and for said County, personally appeared

to me known to be the person named in the foregoing instrument this day pro-
duced to me in said County, and acknowledged that he did sign the same as
free act and deed for the purposes and uses therein set forth and desired the
same to be recorded as such.

IN WITNESS WHEREOF I have hereunto set my hand and official seal this
day and year aforesaid.

Title of Officer

My Commission expires:

ASSIGNMENT

FOR VALUE RECEIVED, I do hereby transfer and assign to
General Refractories Company, a Pennsylvania Corporation, its
successors and assigns forever, all my right, title and interest
in and to that certain Mining Lease (fire clay only) executed
by James T. Hanratty and Leta M. Hanratty on January 31, 1955,
and covering the following described property:

S. W. 1/4 of the N. E. 1/4; N. W. 1/4 of the
S. E. 1/4; N. E. 1/4 of the S. W. 1/4 and the
S. W. 1/4 of the S. E. 1/4, all in Section 30,
Township 22 South, Range 67 West,

Also W. 1/2 of the N. E. 1/4; and the N. E. 1/4
of the N. W. 1/4 of Section 31, Township 22 South,
Range 67 West, containing 280 acres more or less.

Dated at Owensville, Missouri, this
11th day of February, 1955.

Rudolph C. Valenta (SEAL)

June P. Valenta (SEAL)

State of Missouri)
County of Gasconade) SS

The foregoing instrument was acknowledged before me this 11th day
of February, 1955, by Rudolph C. Valenta and June P. Valenta, his wife.

Harold C. Michael
Notary Public.

My commission expires: Jan. 9, 1957



CO-PUE-302

AGREEMENT

THIS AGREEMENT made and entered into this 13 day of April, 1966, by JAMES P. HANRATTY, also known as JAMES T. HANRATTY, and LETA M. HANRATTY, of the County of Pueblo, State of Colorado, herein-after referred to as "Lessors", and GENERAL REFRACTORIES COMPANY, a Pennsylvania Corporation, hereinafter referred to as "Lessee",

WITNESSETH:

THAT WHEREAS, a certain Mineral Lease Agreement was entered into by the parties hereto under date of January 31, 1955,

AND WHEREAS, it is the desire of the parties hereto that strip mining operations be commenced as soon as possible on the premises described in said Lease Agreement,

NOW THEREFORE, for and in consideration of the sum of One Dollar (\$1.00) cash in hand paid by each party to the other, the receipt whereof is hereby acknowledged, and as an inducement to Lessee to commence strip mining operations, it is mutually understood and agreed by and between the parties hereto as follows:

1. Lessee shall have a right of ingress to and egress from the mining area over and across any property owned by Lessors and shall have the right to build haul roads in the generally accepted method best suited to a strip mining operation.
2. The disposal of over-burden by Lessee shall be in the manner most economical to a strip mining operation.
3. Lessee shall not be responsible for existing water rights, streams, springs, and other water courses that might be affected by drilling,

blasting, or disposal of over-burden in connection with the strip mining operation.

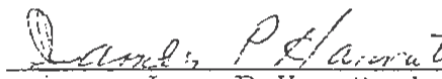
4. It is mutually understood and agreed that the closeness of the dwelling and outbuildings to the mining area requires that residents comply with good safety practices and standards by removing themselves from said dwelling, outbuildings and property during periods of blasting, and Lessors assume the responsibility of complying with this paragraph.

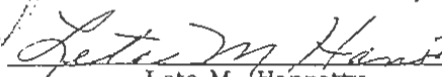
5. Lessors will keep all cattle and other livestock and pets at a safe distance from the mining operation, and all tractors, implements and other farm machinery used by Lessors will be removed by Lessors to a safe distance from the mining operation to prevent damage thereto.

6. It is understood and agreed that Lessee will not be liable for any damage to the dwelling or outbuildings located on said property as a result of said mining operations other than to repair the damage so as to restore said dwelling or outbuildings to their present condition. There will be no responsibility to put said structures in new condition, and Lessors agree not to subject Lessee to any claims, demands, nor damage suits except under the terms of this Agreement.

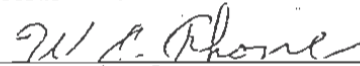
7. Lessors agree to indemnify and hold Lessee harmless for all claims, demands, and causes of action of whatsoever kind and nature from third persons arising out of or in connection with said strip mining operation.

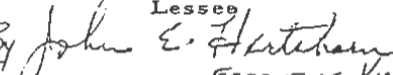
IN WITNESS WHEREOF, the parties hereto have hereunto set their hands and seals the day and year first above written.

 (SEAL)
James P. Hanratty also known
as James T. Hanratty

 (SEAL)
Leta M. Hanratty
Lessors

GENERAL REFRACTORIES COMPANY

By  (SEAL)
Lessee

687 
EXECUTIVE VICE PRESIDENT

AMENDMENT TO MINERAL LEASE

J.P.H. THIS AMENDMENT is made this 29th day of March, 1977
a.-R-a James T. Hanratty
between James T. Hanratty, an individual residing at R.R. #1,
Box 76, Beula, Colorado, hereinafter called Lessor, and
General Refractories Company, a Pennsylvania corporation
with corporate offices located at 50 Monument Road, Bala
Cynwyd, Pennsylvania 19004, hereinafter called Lessee.

W I T N E S S E T H :

WHEREAS, a fire clay Mineral Lease Agreement was
entered on January 31, 1955 between James T. Hanratty and
Leta M. Hanratty, his wife (now deceased) as Lessors and
Rudolph C. Valenta, Lessee, covering the mining of fire
clay on 280 acres located in Pueblo County, Colorado, as
described in the aforesaid lease, and

WHEREAS, on February 11, 1955, Lessee Rudolph C.
Valenta transferred and assigned to General Refractories
Company, a Pennsylvania corporation, and its successors
and assigns forever, all his right, title and interest as
Lessee in the aforesaid Mineral Lease dated January 31, 1955,
and

WHEREAS, the parties to said lease desire to amend
certain terms thereof and add certain provisions thereto.

NOW THEREFORE, in consideration of the mutual prom-
ises contained herein, and intending to be bound hereby,
the parties hereto agree as follows:

X

1. The following provisions shall be added to the Mineral Lease dated January 31, 1955, ^{a.k.a. James P. J.P.H.} between James T. ^{Hanratty} Hanratty, Lessor, and General Refractories Company, Lessee:

"In addition to the right to mine and remove fire clay from the demised premises, Lessee shall also have the right to mine and remove silica rock, in return for which rights Lessee shall pay Lessor a royalty of [REDACTED] for each two thousand pound (2000 lb) ton of merchantable silica rock mined and shipped from the premises. No minimum royalty nor advance payment provisions shall apply to royalty payments for silica rock.

"Royalty payments for said silica rock shall be computed on the basis of transportation weigh bills for each ton of merchantable silica rock shipped by Lessee from the demised premises. Such payments shall be made quarterly on the 25th day of January, April, July and October for all silica rock shipped during the quarters ending December 31st, March 31st, June 30th and September 30th, respectively. The transportation weigh bills and shipment reports contained in Lessee's records shall be open to Lessor's inspection at reasonable times."

2. The designation "Fire clay only" which appears after the title of the aforesaid Mineral Lease dated January 31, 1955 is hereby deleted. The remainder of the sentence on the first page of the aforesaid lease, after the description of the demised premises, shall be amended to read as follows:

X

"Containing 280 acres, more or less, for the purpose of exploring, mining and removing therefrom, all usable and merchantable fire clay and all merchantable silcia rock."

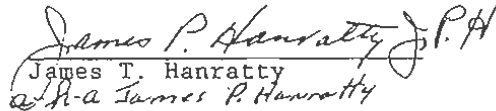
3. All other terms and conditions of the aforesaid Mineral Lease shall remain in full force and effect.

IN WITNESS WHEREOF, the parties hereto have set their hands and seals the date and year aforesaid.

WITNESS





LESSOR


James T. Hanratty
a.k.a James P. Hanratty

ATTEST

LESSEE
GENERAL REFRACTORIES COMPANY

By: 
Lucille N. Campman
Assistant Secretary

By: 
Frank J. Keenan
Vice President

STATE OF COLORADO :
COUNTY OF PUEBLO : SS

Before me, a Notary Public in and for the County
and State aforesaid, personally appeared *James T. Hanratty, J.P.H.*
who, being duly sworn according to law, represents that he
is the person named in the foregoing Amendment to a Mineral
Lease and has executed the same as his free and voluntary
act and deed, and for the uses and purposes therein set forth.

IN TESTIMONY WHEREOF, I have hereunto set my hand and
affixed my notarial seal this 31st day of March, 1977.

My Commission Expires MAR. 27, 1981

Jacqueline E. Barber
NOTARY PUBLIC

COMMONWEALTH OF PENNSYLVANIA :
COUNTY OF MONTGOMERY : SS

Before me, the subscriber, a Notary Public in and
for the Commonwealth and County aforesaid personally appeared
Frank J. Keenan, Vice President of GENERAL REFRACTORIES
COMPANY, to me known to be the person described in the fore-
going Amendment to a Mineral Lease and acknowledged that he
executed the same as his free act and deed.

IN WITNESS WHEREOF, I have hereunto set my hand and
seal this 25th day of July, 1977.

My Commission Expires Mar. 23, 1981

Rita E. Hartman
NOTARY PUBLIC

RITA E. HARTMAN, Notary Public
Lower Merion Twp., Montg. Co.
My Commission Expires March 23, 1981

AMENDMENT TO AGREEMENT

J.P.H. THIS AGREEMENT is made this 1st day of July 1977,
 between James T. Hanratty, an individual residing at R. R. #1,
 Box 76, Beula, Colorado, hereinafter called Lessor, and
 General Refractories Company, a Pennsylvania corporation with
 corporate offices located at 50 Monument Road, Bala-Cynwyd,
 Pennsylvania 19004, hereinafter called Lessee.

W I T N E S S E T H:

WHEREAS, a certain Mineral Lease Agreement was entered
 into by the parties hereto on January 31, 1955, and

WHEREAS, the parties desired to commence strip mining
 operations on the premises described in the aforesaid Lease
 Agreement and entered strip mining agreement on April 13, 1966,
 and

WHEREAS, the parties now desire to amend a certain term
 of the Agreement of April 13, 1966 covering strip mining
 provisions between the parties.

NOW THEREFORE, in consideration of the mutual promises
 contained herein, and intending to be bound hereby, the parties
 hereto agree as follows:

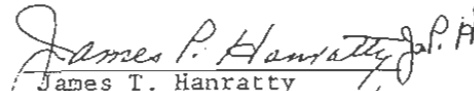
1. In paragraph 7 of the Agreement dated April 13, 1966
 between James P. Hanratty, Lessor, and General Refractories
 Company, Lessee, the words "third persons" are hereby deleted
 and in their stead the words "invited guests" are substituted.
2. All other terms and conditions of the aforesaid
 Mineral Lease shall remain in full force and effect.

IN WITNESS WHEREOF, the parties hereto have set their
hands and seals the date and year aforesaid.


WITNESS:




Lessor


James T. Hanratty
of the James P. Hanratty

ATTEST:


Lucille N. Campman
Assistant Secretary

Lessee
General Refractories Company


Frank J. Keenan
Vice President

STATE OF COLORADO :
COUNTY OF PUEBLO : SS

Before me, a Notary Public in and for the County ^{of La Platte James P. Hanratty J.P.H.} and State aforesaid, personally appeared James T. Hanratty, who, being duly sworn according to law, represents that he is the person named in the foregoing Amendment to Agreement and has executed the same as his free and voluntary act and deed, and for the uses and purposes therein set forth.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed my notarial seal this 1ST day of July, 1977.

My Commission Expires MAR. 27, 1981

Janella E. Barker
NOTARY PUBLIC

COMMONWEALTH OF PENNSYLVANIA :
COUNTY OF MONTGOMERY : SS

Before me, the subscriber, a Notary Public in and for the Commonwealth and County aforesaid personally appeared Frank J. Keenan, Vice President of General Refractories Company, to me known to be the person described in the foregoing Amendment to Agreement and acknowledged that he executed the same as his free act and deed.

IN WITNESS WHEREOF, I have hereunto set my hand and seal this 25th day of July, 1977.

My Commission Expires Mar 23, 1981

Rita E. Hartman
NOTARY PUBLIC
RITA E. HARTMAN, Notary Public
Lower Merion Twp., Monlg. Co.
My Commission Expires March 23, 1981

EXHIBIT E-1

ASSIGNMENT AND ASSUMPTION AGREEMENT

THIS ASSIGNMENT AND ASSUMPTION AGREEMENT is made and entered into as of the 6th day of September, 1996 by and between **A.P. GREEN REFRACTORIES, INC.**, a Delaware corporation with its principal place of business at Green Boulevard, Mexico, Missouri 65265 ("Assignor"), and **LLOYD W. WEIR**, with his principal place of business at 28742 Gale Road, Pueblo, Colorado 81006 ("Assignee").

W I T N E S S E T H:

WHEREAS, James T. Hanratty and Leta M. Hanratty (collectively, "Lessor") and Rudolph C. Valenta ("Valenta") entered into a mineral lease dated January 31, 1955 and recorded in Book 1287 Page 100 of the records of the Recorder of Pueblo County, Colorado (the "Mineral Lease"), demising certain premises in Pueblo County, Colorado owned by Lessor, leased to Valenta, and more particularly described in Exhibit A attached hereto and incorporated herein (the "Property") for purposes of exploring, mining and removing therefrom all usable and merchantable fire clay (a copy of which Mineral Lease is attached hereto as Exhibit B and incorporated herein); and

WHEREAS, Valenta assigned all his right, title and interest in and to the Mineral Lease to General Refractories Company, a Pennsylvania corporation, ("GRC"), by an Assignment dated February 11, 1955 and recorded in Book 1287 Page 105 of the records of the Recorder of Pueblo County, Colorado (the "First Mineral Lease Assignment") (a copy of which First Mineral Lease Assignment is attached hereto as Exhibit C and incorporated herein); and

WHEREAS, Lessor and GRC amended the Lease pursuant to an Amendment to Mineral Lease dated March 29, 1977 (the "Mineral Lease Amendment") (a copy of which Mineral Lease Amendment is attached hereto as Exhibit D and incorporated herein); and

WHEREAS, Lessor and GRC entered into an Agreement dated April 13, 1966 regarding the performance of strip mining by Assignor on the Property (the "Strip Mining Agreement") (a copy of which Strip Mining Agreement is attached hereto as Exhibit E and incorporated herein); and

WHEREAS, Lessor and GRC amended the Strip Mining Agreement pursuant to an Amendment to Agreement dated July 1, 1977 (the "Strip Mining Agreement Amendment") (a copy of which Strip Mining Agreement Amendment is attached hereto as Exhibit F and incorporated herein); and

WHEREAS, GRC assigned all of its right title and interest in and to the Mineral Lease to Assignor by an Assignment dated August 1, 1994 and recorded in Book 2888 at Page 758 of the records of the Clerk and Recorder of Pueblo County, Colorado (the "Second Mineral Lease Assignment"), a copy of which Second Mineral Lease Assignment is attached hereto as Exhibit G and incorporated herein; and

WHEREAS, the Mineral Lease, the First Mineral Lease Assignment, the Mineral Lease Amendment, the Strip Mining Agreement, the Strip Mining Agreement Amendment, and the Second Mineral Lease Assignment are hereinafter collectively referred to as the "Lease"; and



1197199 12/16/1997 10:15A B3065 P881 AGREE

2 of 4 R 21.00 D 0.00 Pueblo Cty Clk & Rec.

WHEREAS, in accordance with and subject to the terms and conditions of that certain Agreement for Purchase and Sale of Assets dated August 26, 1996 between Assignor and Assignee (the "Acquisition Agreement"), Assignor has agreed to assign to Assignee all of the rights of Assignor under the Lease and Assignee has agreed to assume certain obligations of the Assignor thereunder;

NOW, THEREFORE, in consideration of the foregoing, and for other good and valuable consideration, the receipt and sufficiency of which hereby are acknowledged, the parties hereto agree as follows:

1. Assignor hereby assigns to Assignee all of the Assignor's right, title and interest in, to and under the Lease, together with all of the Assignor's rights in and to the property provided thereunder, including any and all rights and/or options to extend and/or renew the Lease and any security deposits and prepaid rentals made under the Lease, to have and to hold the same unto assignee, its successors and assigns, from and after the "Effective date" (as that term is hereinafter defined). Assignee's right, title and interest in, to and under the Lease after the foregoing assignment remains subject to any consents required under the Lease.

2. Assignee hereby accepts this assignment of the Lease from the assignor and Assignee hereby assumes all of Assignor's obligations to observe and perform all of the terms, conditions and covenants of the Lease, and all liabilities arising thereunder, to be observed and/or performed by the Assignor as lessee under the Lease, regardless of whether such obligations and liabilities arose prior to or arise after the Effective Date, including but not limited to certain reclamation obligations described in Paragraph 3 hereafter.

3. Mining Permit No. 77-219 has been issued by the State of Colorado to Assignor with respect to the mine site on the Property known as the Fox No. 1. Certain reclamation obligations with respect to lands affected by said operation are pending, with respect to which Assignor has delivered a Performance Warranty to the Mined Land Reclamation Board in the form of Aetna Casualty Insurety Company Surety Rider for Bond No. 51S100891974 in the amount of \$78,350.00 ("Surety Bond"). Said reclamation obligations shall be specifically assumed by Assignee. In connection therewith, Assignee shall make application to the State of Colorado to approve a Transfer of Permit and Succession of Operator from Assignor to Assignee. Assignee shall pay all fees, enter into such performance warranties, and make and deliver such financial warranties required as necessary to relieve Assignor of all liability in connection with said reclamation obligations and to fully obtain a release and discharge of Assignor's Surety Bond.

4. Assignee will hold assignor harmless and indemnify Assignor against any and all of the obligations and liabilities assumed by Assignee hereunder, and for all costs, liabilities, damage or expense, including without limitation, reasonable attorney's fees incurred by Assignor due to any default of Assignee in performing said obligations and liabilities so assumed.

5. Until Assignor's Surety Bond has been released and discharged, the Lease may not be assigned by Assignee without the express written consent of Assignor, which consent shall not be unreasonably withheld, provided that the proposed assignee specifically assumes, undertakes and is financially capable of undertaking the obligations set forth in paragraph 3 above. Otherwise, this Agreement shall be binding upon and shall inure to the benefit of the parties hereto and their respective permitted successors and permitted assigns. This Agreement may not be amended, modified or terminated orally, but only by an instrument in writing duly executed by all of the parties hereto.

6. The "Effective Date" of this Agreement shall be September 6, 1996.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement as of the date and year first above written.

ATTEST:

[Signature]
SECRETARY

ASSIGNOR:
A.P. GREEN REFRACTORIES, INC.
a Delaware corporation

By: Max C. Aiken
~~Executive~~ Vice President

ASSIGNEE:

By: Lloyd W. Weir
Lloyd W. Weir

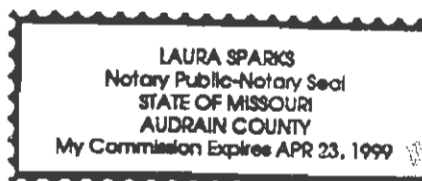
State of MISSOURI)
) ss.
County of Audrain)

Subscribed and sworn to before me this 31st day of August 1996 by Max C. Aiken as Executive Vice President and Michael B. Cook as Secretary of A.P. GREEN REFRACTORIES, INC., a Delaware corporation.

Witness my hand and official seal:

My commission expires: April 23, 1999

Laura Sparks
Notary Public

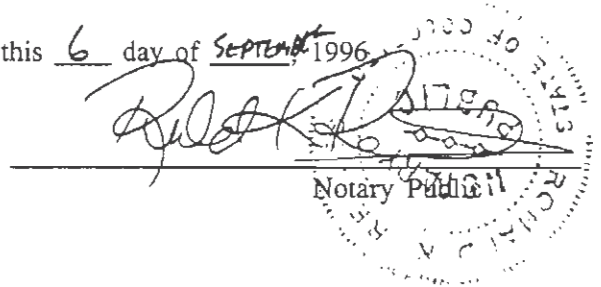


State of COLORADO)
) ss.
County of ~~Pueblo~~)
 DENVER

1197199 12/16/1997 10:15A B3065 P883 AGREE
4 of 4 R 21.00 D 0.00 Pueblo Cty Clk & Rec.

Subscribed and sworn to before me by LLOYD W. WEIR this 6 day of SEPTEMBER, 1996

Witness my hand and official seal:



My commission expires: 9/3/2000

ASSIGNMENT OF LEASE

LLOYD W. WEIR, 28742 Gale Road, Pueblo, CO 81006 (herein referred to as "Weir"), hereby assigns to SUMMIT BRICK & TILE CO., a Colorado corporation, Thirteenth and Erie, P.O. Box 533, Pueblo, Colorado 81002 (herein referred to as "Summit") the following:

All right, title and interest of Lessee under the Lease dated January 31, 1955, by and between James T. Hanratty and Leta M. Hanratty, as Lessor, and Rudolph C. Valenta, as Lessee, for the lease of the following described property: The Southwest quarter of the Northeast quarter; the Northwest quarter of the Southeast quarter; the Northeast quarter of the Southwest quarter and the Southwest quarter of the Southeast quarter; all in Section 30, Township 22 South, Range 67 West; also, the West one-half of the Northeast quarter; and the Northeast quarter of the Northwest quarter of Section 31, Township 22 South, Range 67 West; all right, title and interest of Lessee under the terms of that Agreement relating to the same dated April 13, 1966, by James P. Hanratty, also known by James T. Hanratty and Leta M. Hanratty, as Lessors, and General Refractories Company as Lessee; Amendment to Mineral Lease dated March 29, 1977, amending the above referred to Lease; Amendment to Agreement dated July 1, 1977, amending the above referred to Agreement; Assignment dated August 1, 1994, recorded in Book 2888, at Page 758, of Pueblo County, Colorado records, assigning said Lease; Assignment and Assumption Agreement dated September 6, 1996, assigning said Mineral Lease from A. Green Refractories, Inc. to Weir; and together with all clay, clay stockpiles and clay reserves in, on or under said Real Property on February 1, 1997.

collectively referred to as "Hanratty Lease No. 1".

Weir hereby warrants to Summit that Weir is the owner of all of the right, title and interest of Lessee under the Hanratty Lease No. 1 free of all liens and encumbrances, that during the period of time that Weir has been the Lessee under the Hanratty Lease No. 1, Weir has timely performed the covenants and agreements of Lessee thereunder and has timely paid all amounts due Lessors under the Hanratty Lease No. 1, that to the best of his knowledge said lease is in full force and effect and no default of Lessee exists thereunder, that Weir is the Lessee under the Hanratty Lease No. 1 and has



1197202 12/16/1997 10:15A B3065 P890 ASN
2 of 3 R 16.00 D 0.00 Pueblo Cty Clk & Rec.

full right, title and authority to execute said assignments. Weir will warrant and defend the above assignment and the leasehold interest hereby assigned against all persons or entities claiming any interest in the same.

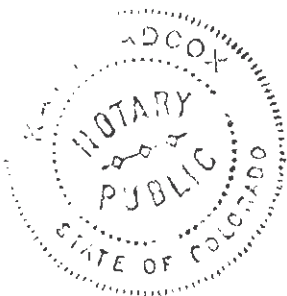
Mining Permit No. 77-219 has been issued by the State of Colorado to A.P. Green Refractories, Inc., a Delaware corporation ("Green") with respect to the mine site on the property lease under the Hanratty Lease No. 1. Certain reclamation obligations with respect to lands affected by said operation are pending, with respect to which Green has delivered a Performance Warranty to the Mined Land Reclamation Board in the form of Aetna Casualty Insurance Company Surety Rider for Bond No. 31S100891974 in the amount of \$78,350.00 ("Surety Bond"). Said reclamation obligations shall be specifically assumed by Summit in connection therewith. Summit has made application to the State of Colorado to approve a Transfer of Permit and Succession of Operator from Green to Summit. Summit shall pay all fees, enter into such performance warranties, and make and deliver such financial warranties required as necessary to relieve Green of all liability in connection with said reclamation obligations and to fully obtain a release and discharge of Green's Surety Bond.

Signed and delivered this 26th day of November, 1997.

Lloyd W. Weir
LLOYD W. WEIR

SUMMIT BRICK & TILE CO.,
a Colorado corporation

By: Joseph C. Welte
Joseph C. Welte,
President



STATE OF COLORADO)
) ss.
COUNTY OF Pueblo)

The foregoing instrument was acknowledged before me this 26th day of November, 1997, by Lloyd W. Weir.

Witness my hand and official seal.

My commission expires: 11/25/2000

Kathy Adcox
Notary Public



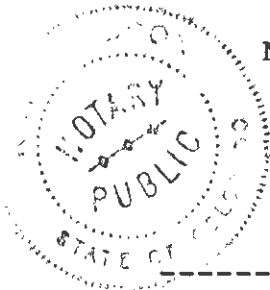
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3 of 3 R 16.00 D 0.00 Pueblo Cty Clk & Rec.

STATE OF COLORADO)
) ss.
COUNTY OF Pueblo)

The foregoing instrument was acknowledged before me
this 26th day of November, 1997, by Joseph C. Welte
as President of Summit Brick & Tile Co., a Colorado
corporation.

Witness my hand and official seal.

My commission expires: 11/25/2000



Kathy Adcox
Notary Public

CONSENT TO ASSIGNMENT

A.P. GREEN REFRACTORIES, INC., a Delaware corporation,
with its principal place of business at Green Boulevard,
Mexico, Missouri 65265, hereby consents to the foregoing
Assignment of Lease.

A.P. GREEN REFRACTORIES, INC.,
a Delaware corporation

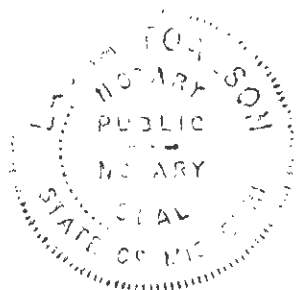
By: [Signature]

STATE OF MISSOURI)
) ss.
COUNTY OF AUDRIAN)

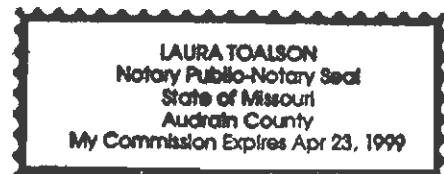
The foregoing instrument was acknowledged before me
this 8th day of December, 1997, by
Michael B. Coover as Secretary of A.P.
Green Refractories, Inc., a Delaware corporation.

Witness my hand and official seal.

My commission expires: April 24, 1999



Laura Toalson
Notary Public



ASSIGNMENT OF PERMITS AND LICENSES/QUITCLAIM

L.W. TRANSFER, INC., a Colorado corporation, and LLOYD W. WEIR, 28742 Gale Road, Pueblo, CO 81006 (herein collectively referred to as "Weir"), hereby assign to SUMMIT BRICK & TILE CO., a Colorado corporation, Thirteenth and Erie, P.O. Box 533, Pueblo, Colorado 81002 (herein referred to as "Summit") the following:

All of Weir's transferable permits or licenses in any way pertaining to the leases assigned by Lloyd W. Weir to Summit by Assignment of Lease and Assignment of Mineral Lease of even date, incorporated herein by reference ("Hanratty Leases"), the real property described in the Hanratty Leases ("Real Property"), the easements and rights of way to and from said Real Property, and the mining operations conducted or to be conducted on said Real Property, including, but not limited to, Colorado Mined Land Reclamation Permit No. M-77-219, Conditional Use Permits or Certificates of Nonconforming Use, Stormwater Discharge Permits (Colorado Discharge Permits), Air Pollution Emission Notices or Permits, and Mine Safety and Health Administration Permits.

Weir hereby sells and quitclaims to Summit all easements and rights of way to and from said Real Property and any interest of Weir in said Real Property.

Signed and delivered this 26 day of November, 1997.

L.W. TRANSFER, INC., a
Colorado corporation

By: Lloyd W. Weir, President
Lloyd W. Weir
LLOYD W. WEIR

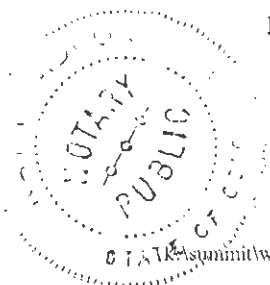
STATE OF COLORADO)
COUNTY OF Pueblo) ss.

The foregoing instrument was acknowledged before me this 26th day of November, 1997, by Lloyd W. Weir, individually and as President of L.W. Transfer, Inc. a Colorado corporation.

Witness my hand and official seal.

My commission expires: 11/25/2000

Kathy Adcox
Notary Public



GENERAL REFRACTORIES COMPANY
PHILADELPHIA, PA., 19102

HOLDING: Lease

CODE: CO-PUE-301L

STATE: Colorado

COUNTY: Pueblo

SECTION: 18, 19 & 24

TOWNSHIP: 22 S

RANGE: 67 W

ACREAGE: 1080 Acres ±

GRANTOR OR LESSOR:

B.J. & Genevieve Hanratty

TITLE

SEARCHED:

ABSTRACTED:

INSURED:

TYPE OF DEED:

DATE OF INSTRUMENT: Jan. 3, 1956

RECORDED: D. BK. 1287 Pg. 109

PRICE:

DATE:

LEASE TERM: Indefinite

ROYALTY

MINIMUM: [REDACTED]

RECOVERABLE:

PRODUCTION: [REDACTED]

PER TON for fire clay

PROSPECTED: Yes

ESTIMATED RECOVERABLE TONNAGE:

REMARKS:

DESCRIPTION:

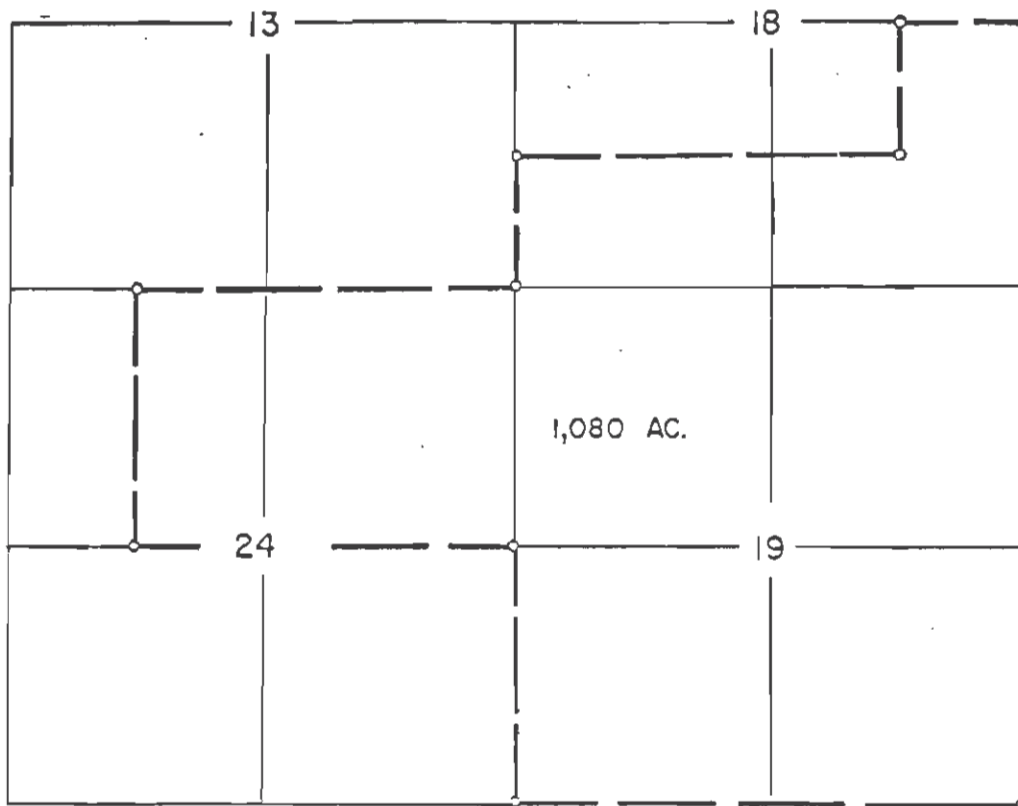
B.J. & GENEVIEVE HANRATTY LEASE

Near Beulah North of James Hanratty Land

All of Section 19, Township 22 S, Range 67 W.

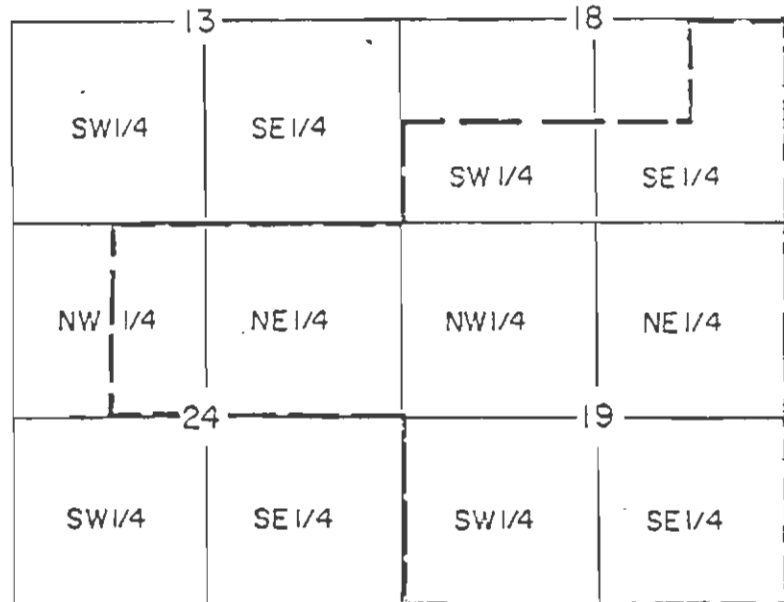
The East one half of the Southeast quarter and the Southwest quarter of the Southeast quarter, and the South one half of the Southwest quarter of Section 18, Township 22, Range 67 West.

The Northeast quarter and the East one half of the Northwest quarter of Section 24, Township 22, Range 68 West.



ALL OF SECTION 19
 EAST HALF OF THE SE QUARTER OF SECTION 18
 SW QUARTER OF THE SE QUARTER OF SECTION 18
 SOUTH HALF OF THE SW QUARTER OF SECTION 13
 EAST HALF OF THE NW QUARTER OF SECTION 24
 NE QUARTER OF SECTION 24

SCALE: 1" = 2000'



LOCATION MAP
 SCALE: 1" = 1/2 MILE

SECTIONS 18 & 19, TWP. 22S, RANGE 67W
 SECTION 24, TWP. 22S, RANGE 68W
 PUEBLO COUNTY, COLORADO

DRAWN BY: _____
 REVISED: _____

GENERAL REFRACTORIES
 COMPANY 86

LEASE AS NOTED
 B.J. & GENEVIEVE HANRATTY

TOWNSHIP 22S
 RANGE 67W
 PUEBLO COLO. MAR 1966

MINERAL LEASE

MADE AND ENTERED INTO this 17 th. day of December, A. D. 19 55.
by and between

B.J. Hanratty and Genevieve Hanratty, his wife
Beulah Star Route, Pueblo, Colorado.

hereinafter called LESSOR, and GENERAL REFRACTORIES COMPANY, a Pennsylvania Corporation having
its Principal Office in Philadelphia, Pennsylvania, hereinafter called LESSEE.

WITNESSETH, that the Lessor in consideration of \$1.00 to him now paid by Lessee, the receipt of which is
hereby acknowledged, and for other valuable consideration, does hereby grant and convey unto Lessee the ex-
clusive right and privilege to enter upon land of Lessor, situated in Pueblo County, State of Colorado Township,
bounded and described as follows:—

All of Section 19, Twp. 22, Range 67 W..

The East one-half of the Southeast quarter, and the Southwest quarter
of the Southeast quarter, and the South one-half of the Southwest quarter
of Section 18, Twp. 22, Range 67 W.,

The Northeast quarter, and the East one-half of the Northwest quarter
of Section 24, Twp. 22, Range 68 W..

and bounded on the North by lands of
on the East by lands of
on the South by lands of
on the West by lands of
containing 1080 acres, more or less, for the purpose of exploring, mining and removing therefrom,
all useable and merchantable fire clay.

The above described premises being part of or the same premises which
conveyed to the said Lessor herein by deed dated the day of A. D.
19 , and recorded in the Office for the Recording of Deeds in and for the County of
and State of in Deed Book No. , Page

The Lessee to have the right to the possession of so much of the surface and interior of said land as may be
required for the safe, expeditious and economical mining and removal of said minerals from said land, and
minerals from operations on other lands in the vicinity which may at any time be owned or operated by Lessee,
and the right to deposit on and in above described land waste and refuse from the operations on said land or
said other lands; and the right to open drainage ways and the right to discharge mine waters on the surface
of said land. Such possession to include grounds for necessary buildings (except dwellings), machinery and fixtures,
electric transmission lines, railway tracks, tram-roads, aerial ways, truck or other roads, at most convenient
grades; the roadbed on the surface where the tracks shall be made or laid for hauling not to exceed 25
feet in width with necessary additions for cuts and fills.

The right to mine to include all practical methods now in use, or which may hereafter be used, and the use of improved machinery and fixtures or appliances for said purposes; and the right to strip the surface for, excavate, dig, bore, shaft, quarry and otherwise explore for and mine said minerals, with the right to remove all pillars and supports that may be left in progress of said mining, and all outcrop of said minerals; and Lessee is hereby released from all damages or liability that may be caused to or result to the surface, superincumbent strata, any water supply, or other property, from mining and removal of said minerals covered by this lease, or from the exercise of any of the rights granted to the Lessee, whether said injuries shall be direct or consequential.

The Lessee to have until the first day of January A. D. 1957 to make explorations and to decide whether the said minerals are of proper quality and in sufficient quantity and are so located as to be profitably mined. Unless the Lessee mails written notice to the Lessor on or before said date of its desire to cancel this lease, this lease shall be considered in force and the rights and privileges granted shall remain in force so long as the Lessee shall continue to mine said minerals or pay the minimum rental or royalty agreed upon; the Lessee to have the right at any time, upon sixty days' notice in writing mailed to Lessor, to abandon said premises and this lease to be thenceforth null and void, except as to royalties or rentals then due and unpaid. Lessee to have the right to remove all machinery, fixtures, buildings and improvements placed or erected by Lessee upon said premises after the payment of said royalties or rentals.

Lessee agrees to pay Lessor as a royalty for said minerals and privileges granted _____ cents per ton of 2,000 pounds for each ton of merchantable Hard Fire Clay, and _____ cents per ton of 2,000 pounds for each ton of merchantable Soft Fire Clay

removed and shipped from premises; payments for which to be made quarterly on or about the 25th day of January, April, July and October for all said minerals removed during the quarters ending December 31st, March 31st, June 30th and September 30th, respectively, from the time that mining operations shall commence thereon; provided that if the royalty for any year after the first of January A. D. 1957, shall not amount to the sum of _____ per year, the Lessee shall pay Lessor at the end of each lease year the amount of said deficit, which shall be an advance payment, and be credited on subsequent royalties for any year or years when royalty shall exceed said sum or sums above mentioned. A lease year under this lease shall be considered as ending December 31st and the first payment covering the minimum royalty for that proportionate part of the lease year from the date this lease becomes effective until the December 31st following shall be made on or about January 25th of the next year; and subsequent payments of any such deficits shall be made on or about January 25th of each year and shall equal the difference between the royalty for minerals removed and shipped during the preceding lease year and the minimum royalty; said minimum royalty shall likewise be proportioned for a part of the lease year on termination of this lease.

IT IS EXPRESSLY UNDERSTOOD AND AGREED that the Lessee shall not be required to pay for any of the said minerals than are actually contained in the leased premises and are merchantable and can be economically mined as determined by the Lessee in its sole judgment. It is further expressly understood and agreed that when Lessee shall have paid for all of such minerals as have not been removed, by the payment of advance minimum royalty or rental as hereinbefore provided, the said advance minimum royalty payments shall be considered as payment for said minerals in place in the leased premises and Lessee shall have the right at any time to remove the minerals so purchased without again paying therefor; and for such purpose Lessee shall have, as to said minerals so purchased, all the mining rights and privileges hereby granted and given until the minerals shall have been actually mined and removed from the leased premises. When Lessee actually mines and removes the minerals it shall tender Lessor a tonnage report quarterly and shall pay Lessor at the rates herein specified for any tonnage mined and removed in excess of the tonnage represented by the advance minimum royalty payments.

On failure to pay the rental or royalty due after thirty days' written notice by registered mail to Lessee to pay the same, the Lessor may at his option declare this lease forfeited, and may re-enter and take possession of the premises, and this agreement shall be thenceforth at an end, except as to the collection of rentals then due; the Lessee to have the right to remove all machinery, fixtures, buildings, and improvements placed or erected by Lessee upon said premises, after payment of said rental. Before any forfeiture shall be attempted for any other cause, Lessor shall give Lessee sixty days' notice in writing by registered mail, stating the cause, in order that Lessee may remove the cause if it exists.

All Taxes on improvements made and erected by Lessee to be paid by Lessee; all other taxes shall be paid by Lessor.

Advance payment of royalties shall be paid in advance at the beginning of each lease year, rather than at the end of each lease year.

50-43160

The Lessee shall have the right, but not the obligation to pay and discharge any lien which would, when otherwise discharged, invalidate any of the Lessee's rights hereunder, and all such payments by Lessee shall be deducted from payments thereafter due Lessor from Lessee.

The Lessor hereby authorizes all payments to be made to, and all communications and notices directed to **B. J. Hanratty** Post Office address Beulah Star Rt. Pueblo, Colo. as his agent until further notice. All payments to be made by check, voucher or draft mailed by Lessee.

Lessor hereby covenants that he is lawfully seized of an indefeasible estate in fee in the land herein leased, and that the same is free and clear of all liens and encumbrances; that he has good right to lease the same; and that he will warrant and defend the title unto the Lessee, its successors and assigns, against the claims of all persons whomsoever.

The Lessor for and in consideration of \$10.00 to him now paid by Lessee, the receipt of which is hereby acknowledged, does hereby grant and convey unto the Lessee the exclusive right and option to purchase the said minerals hereby leased, including all the rights and releases by and under said - / - - - / - 10 / - for the sum of - / - - - / - - - - - The exercise of this option shall be by written notice given by Lessee to Lessor by registered mail to the address hereinafter set forth, and conveyance of said minerals including all the rights and releases shall be by good and sufficient deed to be tendered and delivered upon payment by Lessee of the purchase price to be made within sixty (60) days after the mailing of the said notice.

All words herein referring to the Lessor shall be taken to be of such gender and number as the circumstances may require, and if Lessor be more than one person, the provisions hereby shall bind and apply to them jointly and severally.

All grants, covenants and conditions to extend to and bind all parties, their heirs, executors, successors, administrators and assigns.

IN WITNESS WHEREOF and as evidence of their intention to be bound, the parties hereto have hereunder set their hands and seals as of the day and year first herein written:

Witnesses:

B. J. Hanratty (SEAL)

Genuine Hanratty (SEAL)

(SEAL)

(SEAL)

(SEAL)

(SEAL)

(SEAL)

(SEAL)

(SEAL)

(SEAL)

Attest:



GENERAL REFRACTORIES COMPANY

By *[Signature]* President

STATE OF Colorado COUNTY OF Pueblo
On this 22nd day of December A. D. 1955, before me a
Notary Public in and for said County, personally appeared B. J. Hanratty
and his wife to me known to be the person named in the foregoing
instrument this day produced to me in said County, and acknowledged that they did sign the same as
free act and deed for the purposes and uses therein set forth and desired the same to be recorded as such.
In witness whereof I have hereunto set my hand and official seal this day and year aforesaid.
[Signature]
My Commission expires June 18, 1956 Notary Public
Title of Officer

STATE OF Pennsylvania COUNTY OF Philadelphia
On this 23rd day of December A. D. 1955, before me a
Notary Public in and for said County, personally appeared L. Y. Greene
to me known to be the person named in the foregoing
instrument this day produced to me in said County, and acknowledged that he did sign the same as
free act and deed for the purposes and uses therein set forth and desired the same to be recorded as such.
In witness whereof I have hereunto set my hand and official seal this day and year aforesaid.
[Signature]
My Commission expires January 14, 1956 NOTARY PUBLIC
Title of Officer

STATE OF _____ COUNTY OF _____
On this _____ day of _____ A. D. 19____, before me a
_____ in and for said County, personally appeared _____
to me known to be the person named in the foregoing
instrument this day produced to me in said County, and acknowledged that he did sign the same as
free act and deed for the purposes and uses therein set forth and desired the same to be recorded as such.
In witness whereof I have hereunto set my hand and official seal this day and year aforesaid.
My Commission expires _____
Title of Officer

STATE OF _____ COUNTY OF _____
On this _____ day of _____ A. D. 19____, before me a
_____ in and for said County, personally appeared _____
to me known to be the person named in the foregoing
instrument this day produced to me in said County, and acknowledged that he did sign the same as
free act and deed for the purposes and uses therein set forth and desired the same to be recorded as such.
In witness whereof I have hereunto set my hand and official seal this day and year aforesaid.
My Commission expires _____
Title of Officer

Notary Seal
B. J. Hanratty and Wife
20 of December
General Refractor Co.
STATE OF COLORADO
COUNTY OF PUEBLO
I hereby certify that this instrument was
filed for record in my office at 128-112
at 10 A. M. JAN 3 1956
is and is duly recorded in Book 1287
[Signature]
By [Signature] Deputy
Fees \$ 5.15
General Refractor Co.
Pueblo, Colorado

MINERAL LEASE

MADE AND ENTERED INTO this
by and between

17th

day of Dec. , A. D. 1955.

B.J. Hanratty and Genevieve Hanratty, his wife

Beulah Star Route, Pueblo, Colorado.

hereinafter called LESSOR, and GENERAL REFRACTORIES COMPANY, a Pennsylvania Corporation having its Principal Office in Philadelphia, Pennsylvania, hereinafter called LESSEE.

WITNESSETH, that the Lessor in consideration of \$1.00 to him now paid by Lessee, the receipt of which is hereby acknowledged, and for other valuable consideration, does hereby grant and convey unto Lessee the exclusive right and privilege to enter upon land of Lessor, situated in
Pueblo County, State of Missouri Township,
bounded and described as follows:—

~~XX/~~
All of Section 19, Twp. 22, Range 67.00

The East one-half of the Southeast quarter, and the Southwest quarter of the Southeast quarter, and the South one-half of the Southwest quarter of Sec 18, Twp. 22, Range 67.00

The Northeast quarter, and the East one-half of the Northwest quarter of Section 24, Twp. 22, Range 68.00

and bounded on the North by lands of
on the East by lands of
on the South by lands of
on the West by lands of
containing 1080 acres, more or less, for the purpose of exploring, mining and removing therefrom, all useable and merchantable fire clay.

The above described premises being part of or the same premises which conveyed to the said Lessor herein by deed dated the day of A. D. 19 , and recorded in the Office for the Recording of Deeds in and for the County of and State of in Deed Book No. , Page

The Lessee to have the right to the possession of so much of the surface and interior of said land as may be required for the safe, expeditious, and economical mining and removal of said minerals from said land, and ~~mineral rights for the purpose of mining and removal of said minerals from said land, and~~ and the right to deposit on and in above described land waste and refuse from the operations on said land or said "off-~~ice~~" lands; and the right to open drainage ways and the right to discharge mine waters on the surface of said land. Such possession to include grounds for necessary buildings (except dwellings), machinery and fixtures, electric transmission lines, railway tracks, tram-roads, aerial ways, truck or other roads, at most convenient grades; the roadbed on the surface where the tracks shall be made or laid for hauling not to exceed 25 feet in width with necessary additions for cuts and fills.

The right to mine to include all practical methods now in use, or which may hereafter be used, and the use of improved machinery and fixtures or appliances for said purposes; and the right to strip the surface for, excavate, dig, bore, shaft, quarry and otherwise explore for and mine said minerals, with the right to remove all pillars and supports that may be left in progress of said mining, and all outcrop of said minerals; and Lessee is hereby released from all damages or liability that may be caused to or result to the surface, superincumbent strata, any water supply, or other property, from mining and removal of said minerals covered by this lease, or from the exercise of any of the rights granted to the Lessee, whether said injuries shall be direct or consequential.

The Lessee to have until the first day of JANUARY A. D. 1957, to make explorations and to decide whether the said minerals are of proper quality and in sufficient quantity and are so located as to be profitably mined. Unless the Lessee mails written notice to the Lessor on or before said date of its desire to cancel this lease, this lease shall be considered in force and the rights and privileges granted shall remain in force so long as the Lessee shall continue to mine said minerals or pay the minimum rental or royalty agreed upon; the Lessee to have the right at any time, upon sixty days' notice in writing mailed to Lessor, to abandon said premises and this lease to be thenceforth null and void, except as to royalties or rentals then due and unpaid. Lessee to have the right to remove all machinery, fixtures, buildings and improvements placed or erected by Lessee upon said premises after the payment of said royalties or rentals.

Lessee agrees to pay Lessor as a royalty for said minerals and privileges granted cents per ton of 2000 pounds for each ton of merchantable Hard Fire Clay, and cents per ton of 2000 pounds for each ton of merchantable Soft Fire Clay

removed and shipped from premises; payments for which to be made quarterly on or about the 25th day of January, April, July and October for all said minerals removed during the quarters ending December 31st, March 31st, June 30th and September 30th, respectively, from the time that mining operations shall commence thereon; provided that if the royalty for any year after the first of JANUARY A. D. 1957, shall not amount to the sum of per year, the Lessee shall pay Lessor at the end of each lease year the amount of said deficit, which shall be an advance payment and be credited on subsequent royalties for any year or years when royalty shall exceed said sum or sums above mentioned. A lease year under this lease shall be considered as ending December 31st and the first payment covering the minimum royalty for that proportionate part of the lease year from the date this lease becomes effective until the December 31st following shall be made on or about January 25th of the next year; and subsequent payments or any deficits shall be made on or about January 25th of each year and shall equal the difference between the royalty for minerals removed and shipped during the preceding lease year and the minimum royalty; said minimum royalty shall likewise be proportioned for a part of the lease year on termination of this lease.

~~IT IS HEREBY UNDERSTOOD AND AGREED that the Lessee shall not be required to pay for more of the said minerals than are actually contained in the leased premises and are merchantable and can be economically mined, as determined by the Lessee in its sole judgment. It is further expressly understood and agreed that when Lessee shall have paid for all of such minerals as have not been removed, by the payment of advance minimum royalty or rental as hereinbefore provided, the said advance minimum royalty payments shall be considered as payment for said minerals in place in the leased premises and Lessee shall have the right at any time to remove the minerals so purchased without again paying therefor; and for such purpose Lessee shall have, as to said minerals so purchased, all the mining rights and privileges herein granted and given until the minerals shall have been actually mined and removed from the leased premises. When Lessee actually mines and removes the minerals it shall render Lessor a tonnage report quarterly and shall pay Lessor at the rates herein provided for any tonnage mined and removed in excess of the tonnage represented by the advance minimum royalty payments.~~

On failure to pay the rental or royalty due after thirty days' written notice by registered mail to Lessee to pay the same, the Lessor may at his option declare this lease forfeited, and may re-enter and take possession of the premises, and this agreement shall be thenceforth at an end, except as to the collection of rentals then due; the Lessee to have the right to remove all machinery, fixtures, buildings, and improvements placed or erected by Lessee upon said premises, after payment of said rental. Before any forfeiture shall be attempted for any other cause, Lessor shall give Lessee sixty days' notice in writing by registered mail, stating the cause, in order that Lessee may remove the cause if it exists.

All Taxes on improvements made and erected by Lessee to be paid by Lessee; all other taxes shall be paid by Lessor.

Advance payment of royalties shall ⁹²be paid in advance at the beginning of each lease year, rather than at the end of each lease year.

STATE OF Colorado

COUNTY OF Pueblo

ss:

On this the 17th day of December, A. D., 1956, before me a

Notary public in and for said County, personally appeared Paul Harvey
Genevieve Horvath to me known to be the person named in the foregoing
Instrument this day produced to me in said County, and acknowledged that he did sign the same as
free act and deed for the purposes and uses therein set forth and desired the same to be recorded as such.

In witness whereof I have hereunto set my hand and official seal this day and year aforesaid.

My Commission expires June 18, 1956

Notary Public

Title of Officer

STATE OF

COUNTY OF

ss:

On this the _____ day of _____, A. D., 19____, before me a

in and for said County, personally appeared _____

to me known to be the person named in the foregoing
Instrument this day produced to me in said County, and acknowledged that he did sign the same as
free act and deed for the purposes and uses therein set forth and desired the same to be recorded as such.

In witness whereof I have hereunto set my hand and official seal this day and year aforesaid.

My Commission expires _____

Title of Officer

STATE OF

COUNTY OF

ss:

On this the _____ day of _____, A. D., 19____, before me a

in and for said County, personally appeared _____

to me known to be the person named in the foregoing
Instrument this day produced to me in said County, and acknowledged that he did sign the same as
free act and deed for the purposes and uses therein set forth and desired the same to be recorded as such.

In witness whereof I have hereunto set my hand and official seal this day and year aforesaid.

My Commission expires _____

Title of Officer

STATE OF

COUNTY OF

ss:

On this the _____ day of _____, A. D., 19____, before me a

in and for said County, personally appeared _____

to me known to be the person named in the foregoing
Instrument this day produced to me in said County, and acknowledged that he did sign the same as
free act and deed for the purposes and uses therein set forth and desired the same to be recorded as such.

In witness whereof I have hereunto set my hand and official seal this day and year aforesaid.

My Commission expires _____

Title of Officer

The Lessor hereby authorizes all payments to be made to, and all communications and notices directed to B.J. Hanratty Post Office address Beulah Star Route, Pueblo, Colorado as his agent until further notice. All payments to be made by check, voucher or draft mailed by Lessee.

The Lessor for and by consideration of \$10.00 to him now paid by Lessee, the receipt of which is hereby acknowledged, does hereby grant and convey unto the Lessee the exclusive right and option to purchase the said minerals hereby leased including all the rights and releases hereunder until - / - - - / W / for the sum of . The exercise of this option shall be by written notice given by Lessee to Lessor by registered mail to the address hereinbefore set forth, and conveyance of said minerals including all the rights and releases shall be by good and sufficient deed to be tendered and delivered upon payment by Lessee of the purchase price to be made within sixty (60) days after the mailing of the said notice.

All grants, covenants and conditions to extend to and bind all parties, their heirs, executors, successors, administrators and assigns.

Witnesses:

[illegible]

ASSIGNMENT AND ASSUMPTION AGREEMENT

THIS ASSIGNMENT AND ASSUMPTION AGREEMENT is made and entered into as of the first day of August, 1994 by and between GENERAL REFRACTORIES COMPANY, a Pennsylvania corporation with its principal place of business at 225 City Line Avenue, Bala Cynwyd, Pennsylvania 19004 ("Assignor"), and A.P. GREEN REFRACTORIES, INC., a Delaware corporation with its principal place of business at Green Boulevard, Mexico, Missouri 65265 ("Assignee").

W I T N E S S E T H:

WHEREAS, B.J. Hanratty and Genevieve Hanratty (collectively, "Lessor") and Assignor entered into a mineral lease agreement dated December 17, 1955 and recorded in Book 1287 Page 109 of the records of the Recorder of Pueblo County, Colorado (the "Lease"), demising certain premises in Pueblo County, Colorado owned by Lessor, leased to Assignor, and more particularly described in Exhibit A attached hereto and incorporated herein, for purposes of mining and removing fire clay; and

WHEREAS, in accordance with and subject to the terms and conditions of that certain Asset Acquisition Agreement dated July 11, 1994 by and among Assignor, Assignee, and certain other parties (the "Acquisition Agreement"), Assignor has agreed to assign to Assignee all of the rights of Assignor under the Lease and Assignee has agreed to assume certain obligations of the Assignor thereunder;

NOW, THEREFORE, in consideration of the foregoing, and for other good and valuable consideration, the receipt and sufficiency of which hereby are acknowledged, the parties hereto agree as follows:

1. Assignor hereby assigns to Assignee all of the Assignor's right, title and interest in, to and under the Lease, together with all of the Assignor's rights in and to the property provided thereunder, including any and all rights and/or options to extend and/or renew the Lease and any security deposits and prepaid rentals made under the Lease, to have and to hold the same unto Assignee, its successors and assigns, from and after the "Effective Date" (as that term is hereinafter defined). Assignee's right, title and interest in, to and under the Lease after the foregoing assignment remains subject to any consents required under the Lease.

2. Assignee hereby accepts this Assignment of the Lease from the Assignor and Assignee hereby assumes all of Assignor's obligations to observe and perform all of the terms, conditions and covenants of the Lease, and all liabilities arising thereunder, to be observed and/or performed by the Assignor as lessee under the Lease, regardless of whether such obligations and liabilities arose prior to or arise after the Effective Date, with the exception of any "Retained Liabilities" (as defined in Section 2.1 of the Acquisition Agreement) pertaining to the Lease.

3. Assignee will hold Assignor harmless and indemnify Assignor against any and all of the obligations and liabilities assumed by Assignee hereunder, and Assignor shall remain liable for, and will hold Assignee harmless and indemnify Assignee against, any "Retained Liabilities", (as defined in Section 2.1 of the Acquisition Agreement) pertaining to the Lease.

4. Assignor represents and warrants to the Assignee that:

(a) the Assignor is not in material default of any term or condition of the Lease, and the Assignor has not received any notice of any material default thereunder which has not been cured or waived; and

(b) no event has occurred or condition exists which would immediately, or with the giving of any notice or lapse of time, constitute a material default of the Lease with respect to Assignor.

5. This Agreement shall be binding upon and shall inure to the benefit of the parties hereto and their respective successors and assigns. This Agreement may not be amended, modified or terminated orally, but only by an instrument in writing duly executed by all of the parties hereto.

6. The "Effective Date" of this Agreement shall be August 1, 1994.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement as of the date and year first above written.

GENERAL REFRACTORIES COMPANY

By: Barry L. Katz
Barry L. Katz, President

A.P. GREEN REFRACTORIES, INC.

By: Gary L. Roberts
Gary L. Roberts, Treasurer

This instrument was prepared by Christopher B. Reid, Thompson & Mitchell, One Mercantile Center, St. Louis, Missouri 63101.

STATE OF PENNSYLVANIA)
COUNTY OF Montgomery)

PAID BY THE STATE OF PENNSYLVANIA
TO THE COMMISSIONER OF REVENUE
FOR THE YEAR 1996

On this 24th day of April, 1996, before me personally appeared Barry L. Katz, to me personally known, who, being by me duly sworn, did say that he is the President of General Refractories Company, a Pennsylvania corporation, and that said instrument was signed on behalf of said corporation by authority of its Board of Directors; and said Gary L. Roberts acknowledged said instrument to be the free act and deed of said corporation.

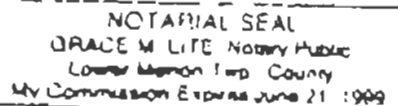
IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed my official seal in the County and State aforesaid, the day and year first above written.



Grace M. Life

Notary Public

My Commission Expires:



STATE OF MISSOURI)
COUNTY OF AUDRAIN)

On this 24th day of April, 1996, before me personally appeared Gary L. Roberts, to me personally known, who, being by me duly sworn, did say that he is the Treasurer of A.P. Green Refractories, Inc., a Delaware corporation, and that said instrument was signed on behalf of said corporation by authority of its Board of Directors; and said Gary L. Roberts acknowledged said instrument to be the free act and deed of said corporation.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed my official seal in the County and State aforesaid, the day and year first above written.



Deborah K. Fierge

Notary Public

My Commission Expires: 8/30/98
DEBORAH K. FIERGE
NOTARY PUBLIC, STATE OF MISSOURI
MY COMMISSION EXPIRES 8/30/98
AUDRAIN COUNTY

EXHIBIT A

All of Section 19, Twp. 22, Range 67 W.

The East one-half of the Southeast quarter, and the Southwest quarter of the Southeast quarter, and the South one-half of the Southwest quarter of Section 18, Twp. 22, Range 67 W.

The Northeast quarter, and the East one-half of the Northwest quarter of Section 24, Twp. 22, Range 68 W.



1197200 12/16/1997 10:15A B3065 P884 AGREE
1 of 3 R 16.00 D 0.00 Pueblo Cty Clk & Rec.

3

EXHIBIT E-2

ASSIGNMENT AND ASSUMPTION AGREEMENT

THIS ASSIGNMENT AND ASSUMPTION AGREEMENT is made and entered into as of the 6th day of September, 1996 by and between A.P. GREEN REFRACTORIES, INC., a Delaware corporation with its principal place of business at Green Boulevard, Mexico, Missouri 65265 ("Assignor"), and LLOYD W. WEIR, with his principal place of business at 28742 Gale Road, Pueblo, Colorado 81006 ("Assignee").

W I T N E S S E T H:

WHEREAS, B.J. Hanratty and Genevieve Hanratty (collectively, "Lessor") and General Refractories Company, a Pennsylvania corporation ("GPC") entered into a mineral lease dated December 17, 1955 and recorded in Book 1287 Page 109 of the records of the Recorder of Pueblo County, Colorado (the "Mineral Lease"), demising certain premises in Pueblo County, Colorado owned by Lessor, leased to GPC, and more particularly described in Exhibit A attached hereto and incorporated herein (the "Property") for purposes of exploring, mining and removing therefrom all usable and merchantable fire clay (a copy of which Mineral Lease is attached hereto as Exhibit B and incorporated herein); and

WHEREAS, GRC assigned all of its right title and interest in and to the Mineral Lease to Assignor by an Assignment dated August 1, 1994 and recorded in Book 2888 at Page 754 of the records of the Clerk and Recorder of Pueblo County, Colorado (the "Mineral Lease Assignment"), a copy of which Mineral Lease Assignment is attached hereto as Exhibit C and incorporated herein; and

WHEREAS, the Mineral Lease and the Mineral Lease Assignment are hereinafter collectively referred to as the "Lease"; and

WHEREAS, in accordance with and subject to the terms and conditions of that certain Agreement for Purchase and Sale of Assets dated August 26, 1996 between Assignor and Assignee (the "Acquisition Agreement"), Assignor has agreed to assign to Assignee all of the rights of Assignor under the Lease and Assignee has agreed to assume certain obligations of the Assignor thereunder;

NOW, THEREFORE, in consideration of the foregoing, and for other good and valuable consideration, the receipt and sufficiency of which hereby are acknowledged, the parties hereto agree as follows:

1. Assignor hereby assigns to Assignee all of the Assignor's right, title and interest in, to and under the Lease, together with all of the Assignor's rights in and to the property provided thereunder, including any and all rights and/or options to extend and/or renew the Lease and any security deposits and prepaid rentals made under the Lease, to have and to hold the same unto assignee, its successors and assigns, from and after the "Effective date" (as that term is hereinafter defined). Assignee's right, title and interest in, to and under the Lease after the foregoing assignment remains subject to any consents required under the Lease.

2. Assignee hereby accepts this assignment of the Lease from the assignor and Assignee hereby assumes all of Assignor's obligations to observe and perform all of the terms, conditions and covenants of the Lease, and all liabilities arising thereunder, to be observed and/or performed by the Assignor as lessee under the Lease, regardless of whether such obligations and liabilities arose prior to or arise after the Effective Date.



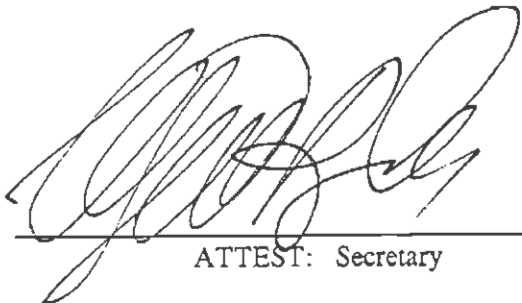
1197200 12/16/1997 10:15A B3065 P885 AGREE
2 of 3 R 16.00 D 0.00 Pueblo Cty Clk & Rec.

3. Assignee will hold assignor harmless and indemnify Assignor against any and all of the obligations and liabilities assumed by Assignee hereunder, and for all costs, liabilities, damage or expense, including without limitation, reasonable attorney's fees incurred by Assignor due to any default of Assignee in performing said obligations and liabilities so assumed.

4. The Lease may not be assigned by Assignee without the express written consent of Assignor, which consent shall not be unreasonably withheld. Otherwise, this Agreement shall be binding upon and shall inure to the benefit of the parties hereto and their respective permitted successors and permitted assigns. This Agreement may not be amended, modified or terminated orally, but only by an instrument in writing duly executed by all of the parties hereto.

5. The "Effective Date" of this Agreement shall be September 6, 1996.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement as of the date and year first above written.

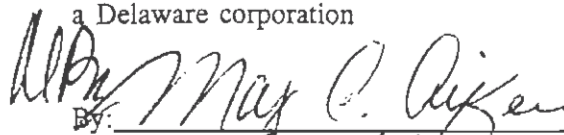


ATTEST: Secretary

ASSIGNOR:

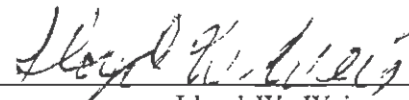
A.P. GREEN REFRACTORIES, INC.

a Delaware corporation

By: 

~~Executive~~ Vice President

ASSIGNEE:

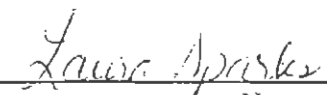


Lloyd W. Weir

State of MISSOURI)
) ss.
County of Audrain)

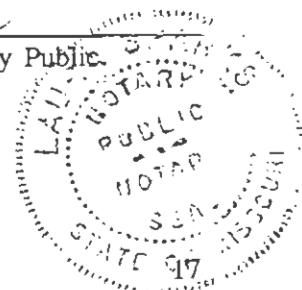
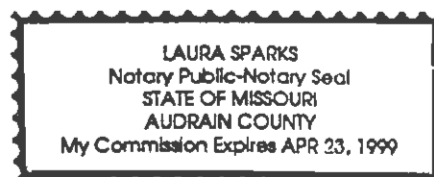
Subscribed and sworn to before me this 27th day of August 1996 by MAX C. Aiken as Executive Vice President and
Michael R. Coover, as Secretary of A.P. GREEN REFRACTORIES, INC., a Delaware corporation.

Witness my hand and official seal:



Notary Public

My commission expires: April 23, 1999

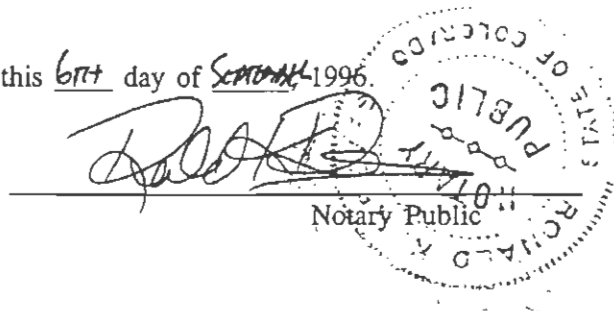


State of COLORADO)
) ss.
County of Pueblo)

1197200 12/16/1997 10:15A B3063 P886 AGREE
3 of 3 R 16.00 D 0.00 Pueblo Cty Clk & Rec.

Subscribed and sworn to before me by LLOYD W. WEIR this 6th day of SEPTEMBER 1996.

Witness my hand and official seal:



My commission expires: 9/3/2000



1197201 12/16/1997 10:15A B3065 P887 ASN
1 of 2 R 11.00 D 0.00 Pueblo Cty Clk & Rec.

ASSIGNMENT OF MINERAL LEASE

LLOYD W. WEIR, 28742 Gale Road, Pueblo, CO 81006 (herein referred to as "Weir"), hereby assigns to SUMMIT BRICK & TILE CO., a Colorado corporation, Thirteenth and Erie, P.O. Box 533, Pueblo, Colorado 81002 (herein referred to as "Summit") the following:

All right, title and interest of Lessee under Mineral Lease dated December 17, 1955, by and between B.J. Hanratty and Genevieve Hanratty, as Lessor, and General Refractories Company, as Lessee, for the lease of the following described real property: All of Section 19, Township 22, Range 67 West; The East one-half of the Southeast quarter, and the Southwest quarter of the Southeast quarter, and the South one-half of the Southwest quarter of Section 18, Township 22, Range 67 West; The Northeast quarter, and the East one-half of the Northwest quarter of Section 24, Township 22, Range 68 West; Assignment and Assumption Agreement dated September 6, 1996, assigning said Mineral Lease from A. Green Refractories, Inc. to Weir; and together with all clay, clay stockpiles and clay reserves in, on or under said Real Property on February 1, 1997.

collectively referred to as "Hanratty Lease No. 2".

Weir hereby warrants to Summit that Weir is the owner of all of the right, title and interest of Lessee under the Hanratty Lease No. 2 free of all liens and encumbrances, that during the period of time that Weir has been the Lessee under the Hanratty Lease No. 2, Weir has timely performed the covenants and agreements of Lessee thereunder and has timely paid all amounts due Lessors under the Hanratty Lease No. 2, that to the best of his knowledge said lease is in full force and effect and no default of Lessee exists thereunder, that Weir is the Lessee under the Hanratty Lease No. 2 and has full right, title and authority to execute said assignments. Weir will warrant and defend the above assignment and the leasehold interest hereby assigned against all persons or entities claiming any interest in the same.

Signed and delivered this 26 day of November, 1997.



LLOYD W. WEIR



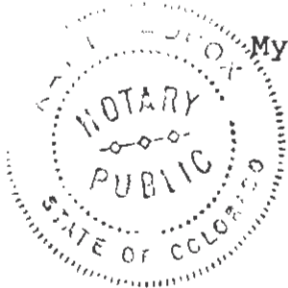
1197201 12/16/1997 10:15A B3065 P888 ASN
2 of 2 R 11.00 D 0.00 Pueblo Cty Clk & Rec.

STATE OF COLORADO)
COUNTY OF Pueblo) ss.

The foregoing instrument was acknowledged before me
this 26th day of November, 1997, by Lloyd W. Weir.

Witness my hand and official seal.

My commission expires: 11/25/2000



Kathy Adcox
Notary Public



1197203 12/16/1997 10:15A B3065 P892 ASN
1 of 1 R 6.00 D 0.00 Pueblo Cty Clk & Rec.

ASSIGNMENT OF PERMITS AND LICENSES/QUITCLAIM

L.W. TRANSFER, INC., a Colorado corporation, and LLOYD W. WEIR, 28742 Gale Road, Pueblo, CO 81006 (herein collectively referred to as "Weir"), hereby assign to SUMMIT BRICK & TILE CO., a Colorado corporation, Thirteenth and Erie, P.O. Box 533, Pueblo, Colorado 81002 (herein referred to as "Summit") the following:

All of Weir's transferable permits or licenses in any way pertaining to the leases assigned by Lloyd W. Weir to Summit by Assignment of Lease and Assignment of Mineral Lease of even date, incorporated herein by reference ("Hanratty Leases"), the real property described in the Hanratty Leases ("Real Property"), the easements and rights of way to and from said Real Property, and the mining operations conducted or to be conducted on said Real Property, including, but not limited to, Colorado Mined Land Reclamation Permit No. M-77-219, Conditional Use Permits or Certificates of Nonconforming Use, Stormwater Discharge Permits (Colorado Discharge Permits), Air Pollution Emission Notices or Permits, and Mine Safety and Health Administration Permits.

Weir hereby sells and quitclaims to Summit all easements and rights of way to and from said Real Property and any interest of Weir in said Real Property.

Signed and delivered this 26th day of November, 1997.

L.W. TRANSFER, INC., a
Colorado corporation

By: Lloyd W. Weir, President
Lloyd W. Weir, President

Lloyd W. Weir
LLOYD W. WEIR

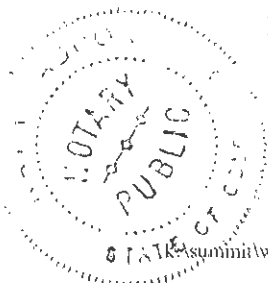
STATE OF COLORADO)
) ss.
COUNTY OF Pueblo)

The foregoing instrument was acknowledged before me this 26th day of November, 1997, by Lloyd W. Weir, individually and as President of L.W. Transfer, Inc. a Colorado corporation.

Witness my hand and official seal.

My commission expires: 11/25/2000

Kathy Adcox
Notary Public



011111summitweirassg.3

ORIGINAL WITH
JAMES (BERNIE) HANRATTY
FILE

3/16/99

HANRATTY LIST

1.	Timothy Joseph Hanratty 5000 Red Creek Springs Rd #63 Pueblo, CO 81005-3120	240 acres	22.4%
2.	James Michael Hanratty Daniel Willard Hanraty Kathleen Mary Rutten Bernard John Hanratty III Joseph David Hanratty 6680 Highway 78 Pueblo, CO 81005	80 acres	7.5%
3.	Daniel W. and Cheryl L. Hanratty Daniel Willard Hanratty 4451 Siloam Road Beulah, CO 81023-9733	280 acres	26.1%
4.	James Michael Hanratty Sally Ann Hanratty 38537 South Rd. Pueblo, CO 81006	278 acres	26%
5.	Peter P. and Magdalena Shiner 2025 Spruce St. Pueblo, CO 81004	40 acres	3.7%
6.	Bernard John Hanratty III James Michael Hanratty 6680 Hightway 78 Pueblo, CO 81005	76.87 acres	7.2%
7.	Kathleen Mary Rutten P.O. Box 27 Beulah, CO 81023	76.03 acres	7.1%

TOTAL ACRES: 1070.9 acres

719-542-8278



FAX 719-542-5243

13th & Erie Streets
P.O. Box 533
Pueblo, Colorado 81002-0533

SENT 11/7/95
TO PROPERTY
OWNERS

January 31, 2000

Daniel W. and Cheryl L. Hanratty
4451 Siloam Road
Beulah, CO 81023-9733

Dear Mr. and Ms. Hanratty:

In 1997 The Summit Pressed Brick and Tile Company purchased from Lloyd W. Weir an Assignment of the Mineral Lease that was originally between B. J. Hanratty and Geneviene Hanratty, as Lessors, and General Refractories Company, as Lessee, covering 1,080 acres near Siloam Road.

Summit obtained an Owner's and Encumbrance Report on the property covered by the lease that indicates that you own a portion of the property covered by the lease, although this report is not guaranteed. The report indicates that you own the following property, comprising approximately 280 acres, and that title is held in the name of Daniel W. and Cheryl L. Hanratty:

NE1/4NE1/4; Section 24, Township 22 South, Range 68;
NW1/4; W1/2NE1/4; Section 19, Township 22 South, Range
67; all West of the 6th P.M

The advance minimum royalties payable under this lease have been paid to B. J. Hanratty, because he is the Lessor. Summit was instructed to pay the royalties to Mr. Hanratty.

Summit is in the process of beginning exploration and testing of this area. Because there are so many different individuals and owners involved in this property at this point, Summit would like to propose an amended or separate Lease Agreement with each group of owners of this property and to provide for a more current royalty rate for clay. In exchange Summit would also like the right to explore for and mine silica sandstone in addition to clay. Generally the

sandstone would have to be removed in order to get to the clay because of the type of deposit in this area.

The current advance minimum royalty rate under the lease is [REDACTED] per year and the current royalty rate is \$.25 per ton for clay. Summit proposes to continue to make the [REDACTED] per year payment to B .J. Hanratty. Summit also propose to make a [REDACTED] advance minimum royalty payment to each group of owners and to provide that the royalty rates would be [REDACTED] per ton for clay and [REDACTED] per ton for silica sandstone. The other lease terms would be fairly similar to the existing lease, but would provide for a period of time for reclamation after any mining or exploration is conducted, and similar provisions. Summit obviously cannot guarantee royalties other than an advance minimum royalty, but hopefully Summit will have conducted exploration and testing fairly soon to determine whether or not a particular parcel appears to have commercial mineral deposits.

Please feel free to contact me concerning this proposal. If the proposals seem acceptable, please send a copy of this letter agreeing to the proposal to Summit in the enclosed self-addressed, stamped envelope and we will send you a proposed amended Lease Agreement. Also, please confirm or correct the ownership information above, and, if the above ownership information is incorrect, please send a copy of your deed.

Thank you for your consideration.

THE SUMMIT PRESSED BRICK
AND TILE COMPANY

By: _____
Joseph C. Welte
President

719-542-8278



FAX 719-542-5243

13th & Erie Streets
P.O. Box 533
Pueblo, Colorado 81002-0533

January 25, 2001

Dear Hanratty family members:

I want to express my condolences to you on the loss on your father last May.

As indicated to you in my letter of January 31, 2000, Summit had been making the minimum royalty payments under the Mineral Lease affecting your property to your father. At this point in time Summit will make proportionate payments of the advanced minimum royalties to each of you based on the proportionate amount of acreage you own to the total acreage covered by the lease. Summit would be happy to make the payments to anyone you all direct if you would prefer, but we would have to have everyone's written agreement on an alternative method of payment.

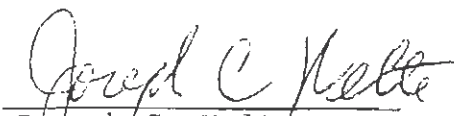
Summit again would be more than willing to propose an amended or separate Lease Agreement for each group of owners on the property, and to provide for a more current royalty rate for clay. As indicated in my letter of January 31, Summit would in exchange like the right to explore for and mine silica sandstone in addition to the clay. The silica sandstone generally has to be removed to get to the clay in this area.

If the proposal for an amended Lease Agreement is acceptable, please advise and we will send you a proposed amended Lease Agreement.

I am enclosing a check for your proportionate share of the minimum royalty based on the enclosed worksheet, which reflects the proportionate ownership according to our records. If the information on the worksheet is incorrect or has changed, please let me know. Also let me know if you have any questions.

THE SUMMIT PRESSED BRICK
AND TILE COMPANY

By:


Joseph C. Welte,
President

1/25/01

HANRATTY ROYALTY WORKSHEET

880 ACRES REMAINING UNDER THE LEASE. 160 ACRES OWNED BY
 SUMMIT BRICK & TILE - 720 ACRES SUBJECT TO [REDACTED] MINIMUM
 ROYALTY

<u>OWNER</u>	<u>ACRES</u>	<u>%</u>	<u>MIN ROYALTY</u>
Daniel W. and Cheryl L. Hanratty 4451 Siloam Road Beulah, CO 81023-9733	280	38.9	\$ [REDACTED]
Timothy Joseph Hanratty 5000 Red Creek Springs Rd. #63 Pueblo, CO 81005-3120	240	33.3	[REDACTED]
James Michael Hanratty Daniel Willard Hanratty Kathleen Mary Rutten Bernard John Hanratty III Joseph David Hanratty 6658 Highway 78 Pueblo, CO 81005	80	11.11	[REDACTED]
Kathleen Mary Rutten 6672 Highway 78 West Pueblo, CO 81005	80	11.11	[REDACTED]
Peter P. and Magdalena Shiner 2025 Spruce St. Pueblo, CO 81004	40	5.6	[REDACTED]
		TOTAL	\$ [REDACTED]

2/12/01

HANRATTY LEASE OWNERSHIP

<u>OWNER</u>	<u>LEGAL DESCRIPTION</u>	<u>ACRES</u>
Daniel W. and Cheryl L. Hanratty 4451 Siloam Road Beulah, CO 81023-9733	NE 1/4 NE 1/4 Sec 24, T22S, R68W; NW 1/4 and E 1/2 NE 1/4, Sec 19, T22S, R67W	280
Dr. Robert Hamilton P.O. Box 38429 Colorado Springs, CO 80937	E 1/2 NW 1/4; W 1/2 NE 1/4 and SE 1/4 NE 1/4, Sec 24, T22S, R68W	200
James Michael Hanratty Daniel Willard Hanratty Kathleen Mary Rutten Bernard John Hanratty III Joseph David Hanratty 6658 Highway 78 Pueblo, CO 81005	E 1/2 SE 1/4 Sec 19, T22S, R67W	80
Kathleen Mary Rutten 6672 Highway 78 West Pueblo, CO 81005	S 1/2 SW 1/4 Sec 19, T22S, R67W	80
Peter P. and Magdalena Shiner 2025 Spruce St. Pueblo, CO 81004	SE 1/4 NE 1/4 Sec 19, T22S, R67W	40
Timothy Joseph Hanratty 5000 Red Creek Springs Rd. #63 Pueblo, CO 81005-3120	NE 1/4 NE 1/4 Sec 19, T22S, R67W	40

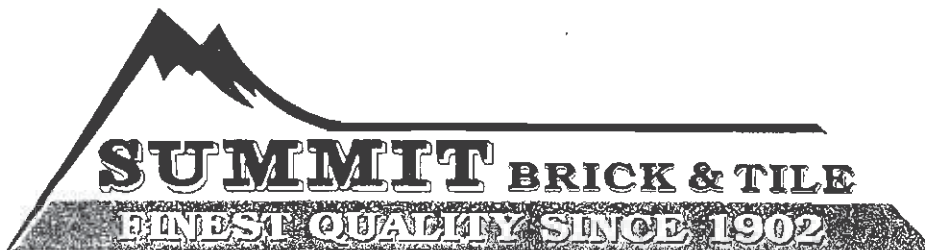
2/12/01

HANRATTY ROYALTY WORKSHEET

880 ACRES REMAINING UNDER THE LEASE. 160 ACRES OWNED BY
SUMMIT BRICK & TILE ~ 720 ACRES SUBJECT TO [REDACTED] MINIMUM
ROYALTY

<u>OWNER</u>	<u>ACRES</u>	<u>%</u>	<u>MIN ROYALTY</u>
Daniel W. and Cheryl L. Hanratty 4451 Siloam Road Beulah, CO 81023-9733	280	38.9	\$ [REDACTED]
Dr. Robert Hamilton P.O. Box 38429 Colorado Springs, CO 80937	200	27.8	[REDACTED]
James Michael Hanratty Daniel Willard Hanratty Kathleen Mary Rutten Bernard John Hanratty III Joseph David Hanratty 6658 Highway 78 Pueblo, CO 81005	80	11.11	[REDACTED]
Kathleen Mary Rutten 6672 Highway 78 West Pueblo, CO 81005	80	11.11	[REDACTED]
Peter P. and Magdalena Shiner 2025 Spruce St. Pueblo, CO 81004	40	5.6	[REDACTED]
Timothy Joseph Hanratty 5000 Red Creek Springs Rd. #63 Pueblo, CO 81005-3120	40	5.6	[REDACTED]
		TOTAL	\$ [REDACTED]

719-542-8278



FAX 719-542-5243

13th & Erie Streets
P.O. Box 533
Pueblo, Colorado 81002-0533

June 6, 2001

Dr. Robert Hamilton
P.O. Box 38429
Colorado Springs, CO 80937

Dear Dr. Hamilton:

I received the letter from Amy Ledbetter dated April 12, 2001 regarding the mineral lease on the property you purchased from Tim Hanratty, along with your check.

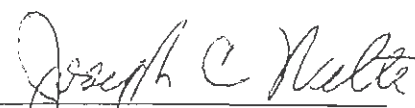
There is an existing Mineral Lease on this property originally entered into between B.J. Hanratty and Genevieve Hanratty, the owners of the property at the time, and General Refractories Company, for clay only, which was recorded in Pueblo County. I enclose a copy of this Mineral Lease. General Refractories Company assigned its interest in the lease to A.P. Green Refractories, Inc., who later assigned it to Lloyd W. Weir. In 1997 Summit Brick & Tile Co. purchased Mr. Weir's interest in this lease. I enclose a copy of the Assignment from Mr. Weir to Summit, which was also recorded in Pueblo County. I can also provide you with copies of the other assignments if you would like them.

I am not familiar with the circumstances concerning your purchase of this property, but the lease and assignments were recorded, and the advance minimum royalties have been paid every year under the lease. Summit Brick & Tile also wrote letters concerning the lease to all the landowners affected by the lease. Summit intends to do further investigation on the potential clay reserves on this property to evaluate which areas appear attractive. However, Summit has a sizable investment in this lease, and at this point in time Summit plans to keep the lease in effect.

I will be happy to discuss this with you. Thank you for your consideration.

THE SUMMIT PRESSED BRICK
AND TILE COMPANY

By:


Joseph C. Welte,
President

1/24/02

HANRATTY LEASE OWNERSHIP

<u>OWNER</u>	<u>LEGAL DESCRIPTION</u>	<u>ACRES</u>
Daniel W. and Cheryl L. Hanratty 4451 Siloam Road Beulah, CO 81023-9733	NW 1/4 and E 1/2 NE 1/4; Sec 19, T22S, R67W;	240
Dr. Robert Hamilton P.O. Box 38429 Colorado Springs, CO 80937	E 1/2 NW 1/4 and NE 1/4; Sec 24, T22S, R68W	240
James Michael Hanratty Daniel Willard Hanratty Kathleen Mary Rutten Bernard John Hanratty III Joseph David Hanratty 6658 Highway 78 Pueblo, CO 81005	E 1/2 SE 1/4 Sec 19, T22S, R67W	80
Kathleen Mary Rutten 6672 Highway 78 West Pueblo, CO 81005	S 1/2 SW 1/4 Sec 19, T22S, R67W	80
Peter P. and Magdalena Shiner 2025 Spruce St. Pueblo, CO 81004	SE 1/4 NE 1/4 Sec 19, T22S, R67W	40
Timothy Joseph Hanratty 5000 Red Creek Springs Rd. #63 Pueblo, CO 81005-3120	NE 1/4 NE 1/4 Sec 19, T22S, R67W	40

719-542-8278



FAX 719-542-5243

13th & Erie Streets
P.O. Box 533
Pueblo, Colorado 81002-0533

January 24, 2003

Dear Hanratty family members and Dr. Hamilton:

I am enclosing a check for your proportionate share of the January 25, 2003 through January 25, 2004, minimum royalty under the Mineral Lease Summit Brick & Tile Co. owns, based on the enclosed worksheet, which reflects the proportionate ownership according to our records. If the information on the worksheet is incorrect or has changed, please let me know. Also let me know if you have any questions.

The Summit Pressed Brick & Tile Company

By: Joseph C. Welte
Joseph C. Welte,
President

1/24/03

HANRATTY LEASE OWNERSHIP

<u>OWNER</u>	<u>LEGAL DESCRIPTION</u>	<u>ACRES</u>
Daniel W. and Cheryl L. Hanratty 4451 Siloam Road Beulah, CO 81023-9733	NW 1/4 and E 1/2 NE 1/4; Sec 19, T22S, R67W;	240
Dr. Robert Hamilton P.O. Box 38429 Colorado Springs, CO 80937	E 1/2 NW 1/4 and NE 1/4; Sec 24, T22S, R68W	240
James Michael Hanratty Daniel Willard Hanratty Kathleen Mary Rutten Bernard John Hanratty III Joseph David Hanratty 6658 Highway 78 Pueblo, CO 81005	E 1/2 SE 1/4 Sec 19, T22S, R67W	80
Kathleen Mary Rutten 6672 Highway 78 West Pueblo, CO 81005	S 1/2 SW 1/4 Sec 19, T22S, R67W	80
Peter P. and Magdalena Shiner 2025 Spruce St. Pueblo, CO 81004	SE 1/4 NE 1/4 Sec 19, T22S, R67W	40
Timothy Joseph Hanratty 5000 Red Creek Springs Rd. #63 Pueblo, CO 81005-3120	NE 1/4 NE 1/4 Sec 19, T22S, R67W	40

2-20-2003

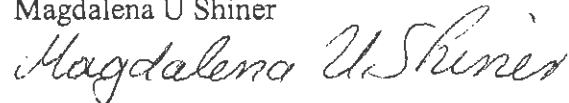
Summit Brick & Tile
PO Box 533
Pueblo, CO 81002

To whom it may concern

We just found out not to long ago that royalty payments were made on the clay rights.

Since this were send to B.J. Hanratty before, we have no objection that his
Son Tim Hanratty receives them now.

Magdalena U Shiner



Peter P Shiner



719-542-8278



FAX 719-542-5243

13th & Erie Streets
P.O. Box 533
Pueblo, Colorado 81002-0533

March 13, 2003

Mr. Tim Hanratty
940 M. Street
Penrose, CO 81240

Dear Tim:

As you are aware, the letter and royalty payments to the Shiners were sent to the wrong address and were not forwarded. We did not find out until this February that the Shiners had not received them.

In accordance with the letter that we received from the Shiners and after my discussion with you, we are sending the royalty payments for 2001 and 2002 to you. Attached is a check for these two years' royalty.

Please call me if you have any questions.

Very truly yours,

A handwritten signature in cursive script, appearing to read "Joe Welte".

Joseph C. Welte

JCW/kac

1/24/2008


HANRATTY LEASE OWNERSHIP

<u>OWNER</u>	<u>LEGAL DESCRIPTION</u>	<u>ACRES</u>
Daniel W. and Cheryl L. Hanratty 4451 Siloam Road Beulah, CO 81023-9733 (\$66.67) ✓	NW 1/4 and E 1/2 NE 1/4; Sec 19, T22S, R67W;	240
Dr. Robert Hamilton P.O. Box 38429 Colorado Springs, CO 80937 (\$66.67) ✓	E 1/2 NW 1/4 and NE 1/4; Sec 24, T22S, R68W	240
Joseph David Hanratty 6658 Highway 78 Pueblo, CO 81005 (\$22.22) ✓	E 1/2 SE 1/4 Sec 19, T22S, R67W	80
Jacob F. Rutten Christopher P. Rutten Julia M. Cray Johanna K. Simon [*Kathleen Mary Rutten] 6672 Highway 78 West Pueblo, CO 81005 *NOTE - HAVE INSTRUCTION TO PAY TO KATHLEEN RUTTEN (\$22.22) ✓	S 1/2 SW 1/4 Sec 19, T22S, R67W	80
**Peter P. and Magdalena Shiner 4600 Siloam Road Beulah, CO 81023 **NOTE - PER LETTER 2-20-03 SHINERS SAID TO PAY ROYALTY TO TIM HANRATTY!	SE 1/4 NE 1/4 Sec 19, T22S, R67W	40
Timothy Joseph Hanratty 940 M. Street Penrose, CO 81240 (\$22.22 - with Shiner interest)	NE 1/4 NE 1/4 Sec 19, T22S, R67W	40

STATE OF COLORADO)
) ss. AFFIDAVIT
COUNTY OF PUEBLO)

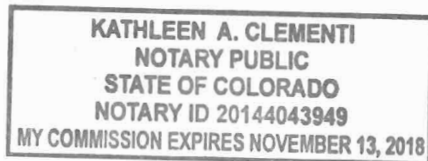
JOSEPH C. WELTE is authorized as the manager, to sign for the J A T Investments LLC. and being first duly sworn upon oath, deposes and says:

1. That the surface rights in and to the property shown on the attached Figure N-2 is owned one hundred percent in fee simple, by J A T Investments LLC..
2. That Summit Brick and Tile Company, a Colorado corporation is empowered under a lease agreement with J A T Investments LLC. to obtain any permits with the Colorado Mined Land Reclamation Board and Local Governments necessary to mine the property.
3. That Summit Brick and Tile Company is legally empowered to enter upon the subject lands and to conduct mining operations for construction and decorative rock and other auxiliary uses under the leases covering said property.



Joseph C. Welte

SUBSCRIBED and sworn to before me this 22nd day of June, 2017, by Joseph C. Welte as the manager of Summit Brick and Tile Company.

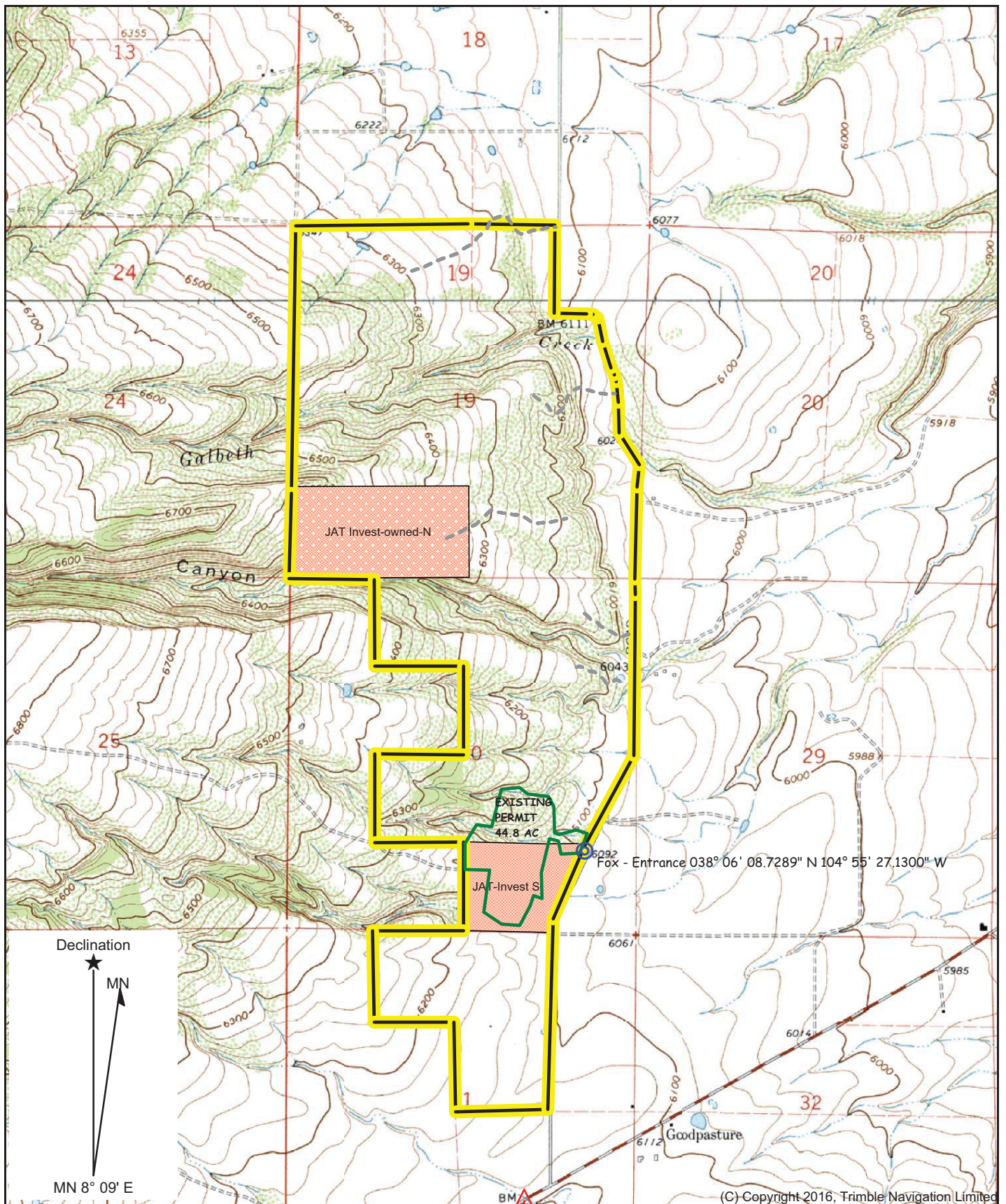


(notarial seal)



Notary Public

November 13, 2018
My commission expires:



Name: BEULAH (CO)
 Date: 06/21/17
 Scale: 1 inch = 2,000 ft.

Summit Brick & Tile Company
 Fox No. 1 Clay Pit
 FIGURE N-2 - JAT Investments, LLC
 Lease areas

STATE OF COLORADO)
) ss. AFFIDAVIT
COUNTY OF PUEBLO)

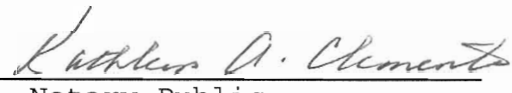
Joseph C. Welte, as Vice President of Summit Brick and Tile Company being first duly sworn upon oath, deposes and says:

1. That Matthew R. Welte is the Chief Operating Officer of Summit Brick and Tile Company and is empowered to sign for the Corporation.
2. That the surface and some mineral rights in and to the property shown on Figure N-3 attached is owned one hundred percent in fee simple, by Summit Brick and Tile Company.
3. That Matthew R. Welte as the Chief Operating Officer is empowered to obtain any permits with the Colorado Mined Land Reclamation Board and Local Governments necessary to mine the property.



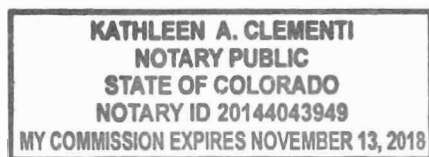
Joseph C. Welte, Vice President

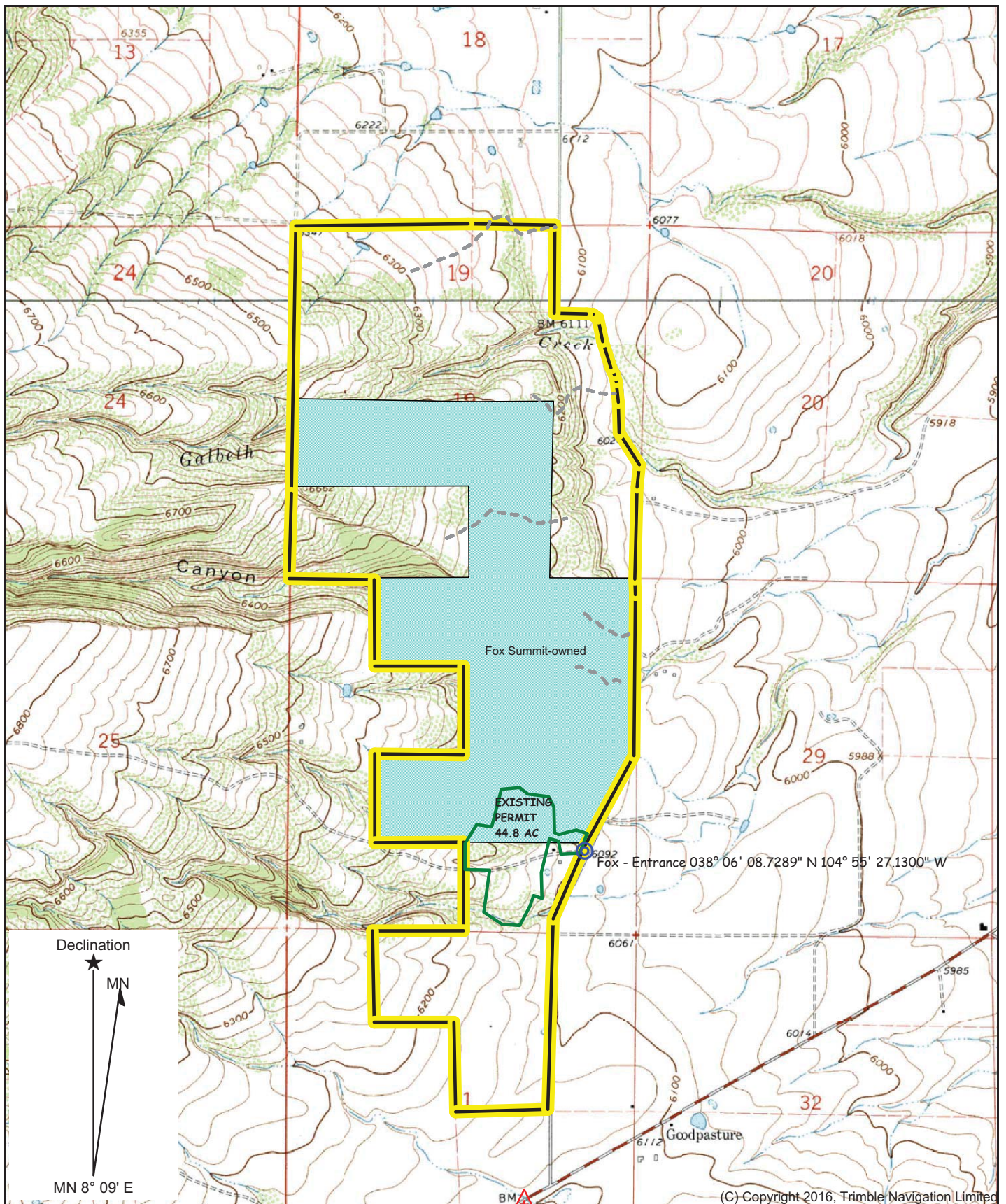
SUBSCRIBED and sworn to before me this 22nd, day of June, 2017, by Joseph C. Welte
as the Vice President of Summit Brick and Tile Company.



Notary Public
November 13, 2018
My commission expires:

(notarial seal)





Name: BEULAH (CO)
 Date: 06/21/17
 Scale: 1 inch = 2,000 ft.

Summit Brick & Tile Company
 Fox No. 1 Clay Pit
 FIGURE N-3 - Summit Brick and Tile
 Ownership

Exhibit O - OWNERS OF RECORD

OWNER OF SURFACE AND SUBSURFACE

Daniel W & Cheryl L Hanratty*
4451 Siloam Rd W
Beulah, CO 81023-9733

Michael J Hanratty*
8080 State Hwy 78 Lot 22
Beulah, CO 81023-9700

Kathleen Rutten*
1201 S La Crosse Ave
Pueblo, CO 81001-4517

Ricky R & Bessie E Langdon*
P.O. Box 243
Beulah, CO 81023-0243

Matthew & Danette Ballard*
4495 Siloam Rd W.
Beulah, CO 81023-9733

Summit Pressed Brick & Tile
CO. & J A T Investments LLC*
P.O. Box 533
Pueblo, CO 81002-0533

Peter P & Magdalena U Shiner*
4600 Siloam Rd W
Beulah, CO 81023-9733

* Note: Covered by 2 leases signed by James T. Hanratty in 1955

OWNERS OF LAND WITHIN 200 FEET OF PERMIT AREA

Dennis Allee, Deana Kasel, &
Donna Levar & Deana Kasel,
Donna Levar & Dennis Allee,
Revocable Trust
7210 State Hwy 78
Pueblo, CO 81005-9610

Constance Demartine &
Timothy Hanratty
940 M St
Penrose, CO 81240-9627

Jeffrey & Mary Ellen Donley
7999 State Highway 78 W
Beulah, CO 81023-9783

Ruth Eden, John & Debora
Losavio, & Robert Eden
61 Drake St
Pueblo, CO 81005-1944

Bernard & Jacquelin Elliott
5421 Siloam Rd W
Beulah, CO 81023-9778

Theresa & Thomas Goodrich
PO Box 217
Kim, CO 81049-0217

Robert S Hamilton
PO Box 38429
Colorado Springs, CO
80937-8429

Alan Laughlin
11271 E Parker Rd
Parker, CO 80138-7801

Kerry P & Debra K McKlem
5020 Siloam Rd W
Beulah, CO 81023-9778

Ronald G & Laura M Miller &
Russell E & Dorothea M Foss
5184 Siloam Rd W
Beulah, CO 81023-9778

Boyd D & Janette L Rider
8185 Even Rd
Beulah, CO 81023-9751

John B Seaman
6 Aberdeen Bluffs
Pueblo, CO 81004-1000

EXHIBIT O**OWNERS OF RECORD (CONT.)**

Bonnie Jo Soltman French
1603 Beaufort St
Laramie, Wy 82072-1932

Shelley Stuart Bullock
1348 S. Fairfax St
Denver, CO 80222-3542

Dorothy Youngren, Trust
8050 State Highway 78 W
Beulah, CO 81023-9607

ROW - EASEMENT HOLDERS WITHIN 200 FEET

San Isabel Electric Association, Inc.
P.O. Box 892
Pueblo, CO 81002

Pueblo County Commissioners
215 10th Street
Pueblo, Colorado 81003

Exhibit P

MUNICIPALITIES WITHIN TWO MILES

The following towns are within two miles of this site.

None

**NOTICE OF FILING
FOR COLORADO MINED LAND RECLAMATION PERMIT
FOR REGULAR (112) CONSTRUCTION MATERIALS EXTRACTION OPERATIONS
NOTICE TO THE BOARD OF COUNTY COMMISSIONERS
PUEBLO COUNTY**

Summit Brick & Tile Co. (the "Applicant/Operator") has applied for an amendment to their Fox No 1 Clay Pit regular (112) reclamation permit, Permit # M-1977-219, from the Colorado Mined Land Reclamation Board ("the Board") to conduct an extraction of construction materials operation in Pueblo County. The attached information is being provided to notify you of the location and nature of the proposed operation. The entire application is on file with the Colorado Division of Reclamation, Mining & Safety ("the Division") and the local county clerk and recorders office.

The applicant proposes to reclaim the land as rangeland. Pursuant to C.R.S. 34-32.5-116(4)(m), C.R.S., the Board may confer with the local Board of County Commissioners before approving the post-mining land use. Accordingly, the Board would appreciate your comments on the proposed operation. Please note that, in order to preserve your right to a hearing before the Board on this application, you must submit written comments to the application within twenty (20) days of the date of last publication notice pursuant to Section 34-32.5-112(10), C.R.S.

If you would like to discuss the proposed post-mining land use, or any other issue regarding this application, please contact Division of Reclamation, Mining & Safety, 1313 Sherman St., Room 215, Denver, CO 80203, (303) 866-3567.

Summit Brick & Tile Co.
January 17, 2017

Hand Delivered

EXHIBIT Q

NOTICE TO SOIL CONSERVATION DISTRICT (cont.)

NOTICE OF FILING
FOR COLORADO MINED LAND RECLAMATION PERMIT
FOR REGULAR (112) CONSTRUCTION MATERIALS EXTRACTION OPERATIONS
NOTICE TO THE BOARD OF SUPERVISORS
OF THE LOCAL SOIL CONSERVATION DISTRICT
SOUTH PUEBLO DISTRICT

Summit Brick & Tile Co. (the "Applicant/Operator") has applied for an amendment to their Fox No 1 Clay Pit, a regular (112) reclamation permit from the Colorado Mined Land Reclamation Board ("the Board") to conduct an extraction of construction materials operation in Pueblo County. The attached information is being provided to notify you of the location and nature of the proposed operation. The entire application is on file with the Colorado Division of Reclamation, Mining & Safety ("the Division") and the local county clerk and recorders office.

The applicant proposes to reclaim the land to as rangeland. Pursuant to C.R.S. 34-32.5-116(4)(m), C.R.S., the Board may confer with the Board of the local Soil Conservation District before approving the post-mining land use. Accordingly, the Board would appreciate your comments on the proposed operation. Please note that, in order to preserve your right to a hearing before the Board on this application, you must submit written comments to the application within twenty (20) days of the date of last publication notice pursuant to Section 34-32.5-112(10), C.R.S.

If you would like to discuss the proposed post-mining land use, or any other issue regarding this application, please contact Division of Reclamation, Mining & Safety, 1313 Sherman St., Room 215, Denver, CO 80203, (303) 866-3567.

Summit Brick & Tile Co.
January 17, 2017

Hand Delivered

EXHIBIT R

PROOF OF FILING WITH COUNTY CLERK AND RECORDER

January 17, 2017

Pueblo County Clerk and Recorder
215 10th Street,
Pueblo, Colorado 81003

Re: Amendment of a Mined
Land Reclamation Permit

Dear Sir/Madam:

We are delivering to you here with an amendment to our approved permit application for the Fox No 1 Clay Pit (permit # M-1977-219) operated by Summit Brick & Tile Co. Two copies of the amendment application are on file with the Division of Reclamation, Mining & Safety.

This copy of the amendment application is delivered to you pursuant to 34-32.5-112(9)(a), Colorado Revised Statutes 1995, as amended, which states in part:

.... the applicant shall place a copy of such application for public inspection at the office of the Board and Office of the County Clerk and Recorder of the county in which the affected land is located.

This book must be kept for public review until the amendment has been approved by the Division. In approximately 180 days we will contact you and make arrangements to pickup this copy.

Please acknowledge receipt of the copy of the permit amendment by signing in the appropriate space provided below and returning one copy of this letter to the person delivering the book. This will be submitted to the Division of Reclamation, Mining & Safety to prove the amendment book was delivered to your office.

Yours truly,
ENVIRONMENT, INC.

Stevan L. O'Brian

enclosure

RECEIVED THIS ____ DAY OF _____, 2017, one copy of
an application amendment packet for above referenced mine.

Pueblo County Clerk and Recorder

By _____

EXHIBIT S

PERMANENT AND MAN-MADE STRUCTURES

Listed below are 7 structure owners that have structures covered by the original mining leases. There are 3 owners of structures that are not within 200 feet of the mining operations of this permit. Summit Brick does not need Structure Agreements for these two groups. The Hanratty leases cover mining close to structures on the areas they cover. These lease extend past the 200 foot limit on some of the properties on the north, northeast and northwest permit area

For the final group, those structures within 200 feet of the mining operations that are not included in one of the other groups, we are preparing Structure Agreements for the structures listed in this exhibit. We expect to have them in the next 30 to 60 days. Copies of the completed agreements will be provided to Division when they are received. No mining operations will take place within 200 feet of any structure until an agreement is complete or a Geotechnical Stability analysis is prepared showing they will not be impacted by the mining operations.

Lease agreements cover structures

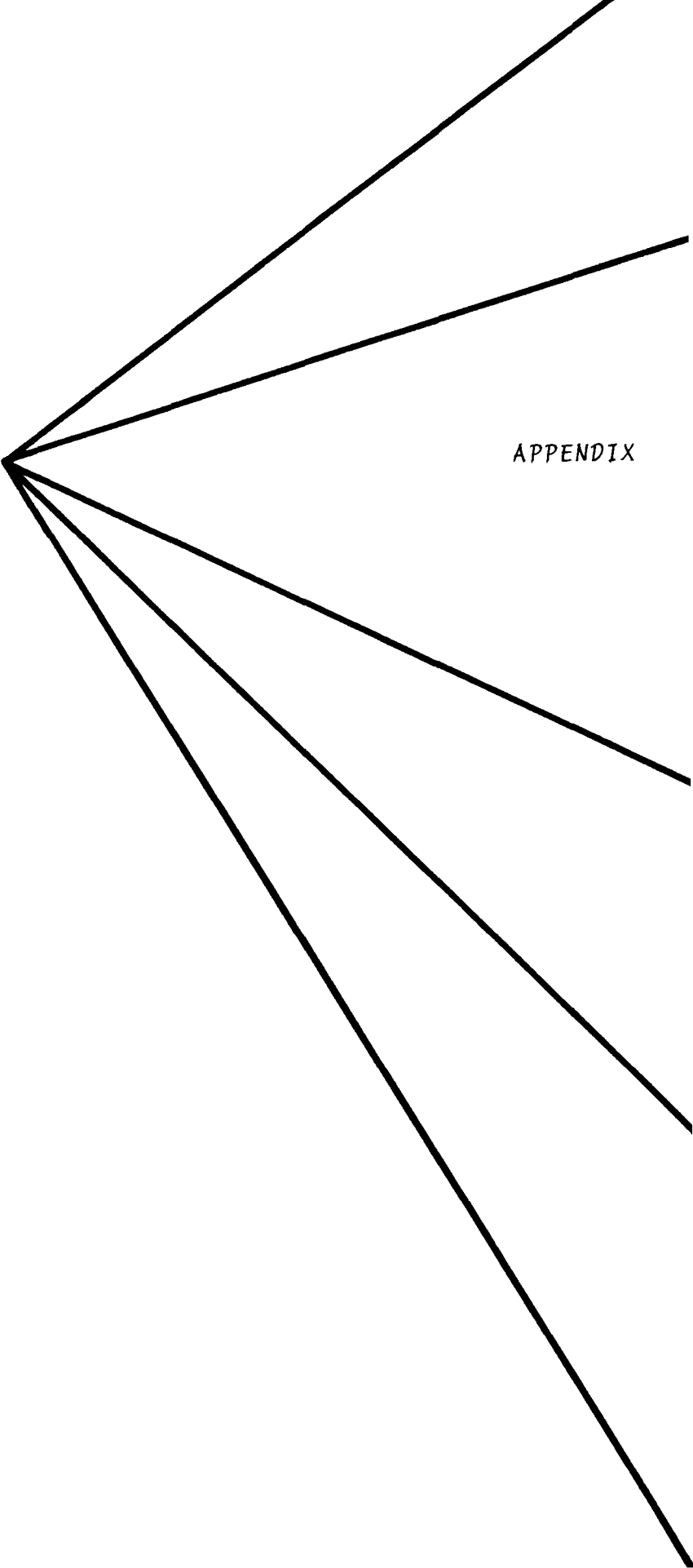
Daniel W & Cheryl L Hanratty - house, out buildings, fences
Matthew & Danette Ballard - house, out buildings, fences, water well
Michael J Hanratty - house, fence, water well
Kathleen Rutten - fence, water well
Summit Pressed Brick & Tile CO. - fences
J A T Investments LLC - house, water well fences
Ricky R & Bessie E Langdon - House, fence, out building, water well
Constance Demartine & Timothy Hanratty - fence
Alan Laughlin- barn, out buildings, fences, water well
Peter P & Magdalena U Shiner - fences
Bonnie Jo Soltman French - fences
Robert S Hamilton - fences

Structures more then 200 feet from mining operations.

Shelley Stuart Bullock - fence
Dorothy Youngren, Trust - fences
Kerry P & Debra K McKlem - fence

Structures within 200 feet of mining operations.

Boyd D & Janette L Rider - fence
Dorothy Youngren, Trust - fences
Jeffrey & Mary Ellen Donley - fence
Theresa & Thomas Goodrich - fence
Ronald G & Laura M Miller & Russell E & Dorothea M Foss - fence
John B Seaman - fence
Deana Kasel, Donna Levar & Dennis Allee, Revocable Trust - fences
Ruth Eden, John & Debora Losavio, & Robert Eden - fences
Bernard & Jacquelin Elliott - House, out buildings, Fences, water well
San Isabel Electric Association, Inc.- powerlines
Pueblo County Commissioners - Siloam Road



APPENDIX

PUBLIC NOTICE

PUBLISHED NOTICE OF APPLICATION AMENDMENT FILING FOR A REGULAR (112) CONSTRUCTION MATERIALS RECLAMATION PERMIT

Summit Brick & Tile Co. has filed an application amendment on their Reclamation Permit with the Colorado Mined Land Reclamation Board under the provisions of the Colorado Mined Land Reclamation Act for the extraction of construction materials. The proposed mine is known as the Fox No 1 Clay Pit and is located in parts of the Parts of the SE $\frac{1}{4}$ NE $\frac{1}{4}$ & NE $\frac{1}{4}$ SE $\frac{1}{4}$, and all of the W $\frac{1}{2}$ NE $\frac{1}{4}$, SE $\frac{1}{4}$ SE $\frac{1}{4}$, W $\frac{1}{2}$ SE $\frac{1}{4}$, N $\frac{1}{2}$ SW $\frac{1}{4}$ & the NW $\frac{1}{4}$ of Section 19; Parts of the NE $\frac{1}{4}$ SE $\frac{1}{4}$, and SE $\frac{1}{4}$ SE $\frac{1}{4}$. And all of the NE $\frac{1}{4}$, W $\frac{1}{2}$ SE $\frac{1}{4}$, NE $\frac{1}{4}$ SW $\frac{1}{4}$, & NE $\frac{1}{4}$ NW $\frac{1}{4}$ of Section 30; and the W $\frac{1}{2}$ NE $\frac{1}{4}$ and NE $\frac{1}{4}$ NW $\frac{1}{4}$, Section 31, T-22-S, R-67-W, 6th P.M., Pueblo County, Colorado.

The mining started in 1956 and the proposed date of completion is December 2116. The proposed future use of the land is rangeland.

Additional information and the tentative decision date may be obtained from the Division of Reclamation, Mining & Safety, 1313 Sherman St., Suite 215, Denver, CO 80203 (303) 866-3567, or at the Pueblo County Clerk and Recorder Office, 215 10th Street, Pueblo, Colorado 81003, or the above named applicant.

Comments must be in writing and must be received by the Division of Reclamation, Mining & Safety by 4:00 p.m. on_____.

Please note that comments related to noise, truck traffic, hours of operation, visual impacts, effects on property values and other social or economic concerns are issues not subject to this Office's jurisdiction. These subjects and similar ones, are typically addressed by your local governments, rather than the Division of Reclamation, Mining & Safety or the Mined Land Reclamation Board.

Summit Brick & Tile Co.
Pueblo, Colorado

First Publication:
Second Publication:
Third Publication:
Last Publication:
Published in:

NOTICE

This site is the location of a construction materials operation. Summit Brick & Tile Co. whose address and phone number is P.O. Box 533, Pueblo, CO 81002, (719) 542-8278, has applied for an amendment to their Reclamation Permit known as the Fox No. 1 Clay Pit (Permit # M-1977-219) with the Colorado Mined Land Reclamation Board. Anyone wishing to comment on the application may view the application at the Pueblo County Clerk and Records office, 215 W.10th St, Pueblo, CO 81003, and should send comments prior to the end of the public comment period to the Division of Reclamation, Mining & Safety, 1313 Sherman St, Room 215, Denver, CO 80203.

Certification:

I, Mark L. Jesik, hereby certify that I posted a sign containing the above notice for the proposed permit area known as the Fox No. 1 Clay Pit, on 6-25-2017.

Mark L. Jesik
Signature

6-25-2017
Date

Environment, Inc.

LARRY E. O'BRIAN
FOUNDER

STEVAN L. O'BRIAN
PRESIDENT
June 23, 2017

7985 VANCE DRIVE, SUITE 205A
ARVADA, COLORADO 80003
303-423-7297
FAX 303-423-7599

Mr. Gilbert Ortiz
Pueblo County Clerk and Recorder
215 10th Street,
Pueblo, Colorado 81003

Re: Amendment of a Mined
Land Reclamation Permit

Dear Mr. Ortiz:

We are delivering to you here with an amendment to our approved permit application for the Fox No 1 Clay Pit (permit # M-1977-219) operated by Summit Brick & Tile Co. Two copies of the amendment application are on file with the Division of Reclamation, Mining & Safety.

This copy of the amendment application is delivered to you pursuant to 34-32.5-112(9)(a), Colorado Revised Statutes 1995, as amended, which states in part:

.... the applicant shall place a copy of such application for public inspection at the office of the Board and Office of the County Clerk and Recorder of the county in which the affected land is located.

This book must be kept for public review until the amendment has been approved by the Division. In approximately 180 days we will contact you and make arrangements to pickup this copy.

Please acknowledge receipt of the copy of the permit amendment by signing in the appropriate space provided below and returning one copy of this letter to the person delivering the book. This will be submitted to the Division of Reclamation, Mining & Safety to prove the amendment book was delivered to your office.

Yours truly,
ENVIRONMENT, INC.


Stevan L. O'Brian

enclosure

RECEIVED THIS 26th DAY OF June, 2017, one copy of
an application amendment packet for above referenced mine.

Pueblo County Clerk and Recorder
By Blanchard 133
Deputy clerk.

Environment, Inc.

LARRY E. O'BRIAN
FOUNDER

STEVEN L. O'BRIAN
PRESIDENT
June 23, 2017

7985 VANCE DRIVE, SUITE 205A
ARVADA, COLORADO 80003
303-423-7297
FAX 303-423-7599

Pueblo County Board of
County Commissioners
215 W. 10th St.
Pueblo, CO 81003

Re: Application for a
Mined Land Reclamation Permit

Dear Commissioners;

We are delivering to you here a Notice of Application and supporting documents for an amendment application we are making for the Fox NO 1 Clay Pit - M-1977-219 that is operated by Summit Brick & Tile Co., pursuant to rule 2.2.2(1), Colorado Mined Land Reclamation Board - Mineral Rules and Regulations.

Please acknowledge receipt of this notice packet by signing in the appropriate space provided below and return a signed copy of this cover letter to the person delivering it. We need to submit this copy to the Division of Reclamation, Mining & Safety as proof of our filing it with you.

Respectfully Submitted,
ENVIRONMENT, INC.



Stevan L. O'Brian
President

enclosure

RECEIVED THIS _____ DAY OF _____, 2017
Pueblo County Board of County Commissioners

By _____

Title _____

26-26-17
Forwarding to
Planning & Development
John Armstrong
Anna Willett

Environment, Inc.

LARRY E. O'BRIAN
FOUNDER

STEVAN L. O'BRIAN
PRESIDENT
June 23, 2017

7985 VANCE DRIVE, SUITE 205A
ARVADA, COLORADO 80003
303-423-7297
FAX 303-423-7599

Board of Supervisors
South Pueblo County Soil
Conservation District
200 S. Santa Fe Ave., 4th Floor
Pueblo, CO 81003

Dear Board Members;

Re: Application amendment for a
Mined Land Reclamation Permit

We are delivering to you here a Notice of Application and supporting documents for an amendment application we are making for the Fox No. 1 Clay Pit, Permit M-1977-219 that is operated by Summit Brick & Tile Co., pursuant to rule 2.2.2(1), Colorado Mined Land Reclamation Board - Mineral Rules and Regulations.

Please acknowledge receipt of this notice packet by signing in the appropriate space provided below and return a signed copy of this cover letter to the person delivering it. We need to submit this copy to the Division of Reclamation, Mining & Safety as proof of our filing it with you.

Respectfully Submitted,
ENVIRONMENT, INC.



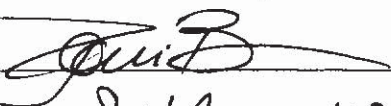
Stevan L. O'Brian
President

enclosure

RECEIVED THIS 26 DAY OF June, 2017
South Pueblo County Soil Conservation District

By

Title


Soil Con. USDA/NRCS

Environment, Inc.

LARRY E. O'BRIAN
FOUNDER

STEVAN L. O'BRIAN
PRESIDENT

7985 VANCE DRIVE, SUITE 205A
ARVADA, COLORADO 80003
303-423-7297
FAX 303-423-7599

June 30, 2017

Mr. Wally Erikson
Division of Reclamation, Mining & Safety
Minerals Section
1313 Sherman Street, Suite 215
Denver, Colorado 80203

RECEIVED

JUN 30 2017

**DIVISION OF RECLAMATION
MINING AND SAFETY**

Dear Wally;

Re: Summit Brick and Tile Company - Fox No 1 Clay Pit
Pueblo County, Colorado - Permit #M-1977-219
112 Permit Amendment Application

Attached are two copies of the amendment application book and map exhibits for the subject sand and gravel mine. The first book contains the original application form with original seals and signatures. Each packet contains copies of the:

- posted NOTICE certification
- Pueblo County Commissioners notice receipt
- South Pueblo SCD notice receipt
- the Clerk and Records office placement receipt

A check #137703 for \$2,229.00 is attached to cover the Application Fee. We have also enclosed an Inert Fill Affidavit and the Authority to Execute Financial Warranty Documents form. Please call me when this application is considered complete so I can begin publication and send the adjoining owners notice letters after the first publication date as required in the rules. I will forward a copy of the adjoining owner Return Receipt cards for the notices as soon as I have them.

Please date stamp the copy of this letter to indicate your receipt of this application, application check and supporting documents and return it to the person delivering the packet.

Yours truly,
Environment, Inc.



Stevan L. O'Brian
President

enclosures

cc: Mike Leidich - Summit Brick and Tile Company
file