

BOARD OF COUNTY COMMISSIONERS OF DOUGLAS COUNTY, KANSAS

WEDNESDAY, OCTOBER 10, 2018

4:00 p.m.

CONSENT AGENDA

- (1) (a) Consider approval of Commission Orders;

REGULAR AGENDA

- (2) [Presentation on Space Needs Study \(Gould Evans\)](#)
- (3) (a) Consider approval of Accounts Payable (if necessary)
 - (b) Appointments
 - (c) Board of Zoning Appeals (1) positions 10/17
 - (d) Building Code of Appeals Board (2) positions 12/16
 - (e) Community Corrections Advisory Board (1) position open (edu); (1) 08/31/18
 - (f) Fire District No. 2 (2) positions
 - (g) JAAA Advisory Council (2) position
 - (h) JAAA Board of Directors (1) position
 - (i) Joint Economic Development Council (2) positions
 - (j) Lawrence-Douglas County Advocacy Council on Aging (2) open positions
 - (k) MPO Bicycle Advisory Committee (1) position
 - (l) Mental Health Board (1) position 04/18
 - (m) Property Crimes Compensation Board (1) position
 - (n) Senior Resource Center (1) position 12/31/18
 - (c) Public Comment
 - (d) Miscellaneous

RECESS

RECONVENE

6:00 p.m.

- (4) Mental Health Ballot Initiative presentation (Bob Tryanski) - Backup to follow
- (5) [CUP-18-00299](#): Consider a Conditional Use Permit for Big Springs Quarry, approximately 1,049 acres located at 2 N 1700 Rd. and parcels to the north, east, and south. Submitted by Mid-States Ventures LLC, for Mid-States Ventures LLC, Nancy J Hughes, James R Meek, Thomas R Meek, and Bonnie M Nichols, Trustee, property owners of record. Mary Miller is the Planner.
- (6) Adjourn

WEDNESDAY, OCTOBER 17, 2018

- Proclamation for "Domestic Violence Awareness Month" (Will Averill)
- CJCC update presentation (Robert Bieniecki)
- Follow up on Jail Population presentation from September 5, 2018 – Undersheriff Gary Bunting (No backup)
- Extension request for a Conditional Use Permit, CUP-17-00215, for a new 190 ft self-supporting wireless telecommunications facility (tower), located at 2138 N 1000 Rd. Submitted by MW Towers LLC for F. Dwane Richardson & Valerie Richardson, property owners of record. (Approved by the Board of County Commissioners on 8/16/17) Sandra Day is the Planner.

FRIDAY, OCTOBER 19, 2018

-12:00-2:00 p.m. - The Lawrence – Douglas County Planning Commission annual orientation with City and County Commissioners in attendance.

WEDNESDAY, OCTOBER 24, 2018

-KDOT presentation concerning status of SLT from Route 438 to US-59 highway and Supplemental Environmental Impact Statement process (Keith Browning)

WEDNESDAY, OCTOBER 31, 2018 – light or cancelled

WEDNESDAY, NOVEMBER 7, 2018

WEDNESDAY, NOVEMBER 7, 2018

WEDNESDAY, NOVEMBER 14, 2018

THURSDAY, NOVEMBER 15, 2018

-9:00 a.m. – Election Canvass

***Note:** The Douglas County Commission meets regularly on Wednesdays at 4:00 P.M. for administrative items and/or 6:00 P.M. for public items at the Douglas County Courthouse. Specific regular meeting dates that are not listed above have not been cancelled unless specifically noted on this schedule.*

DOUGLAS COUNTY, KANSAS

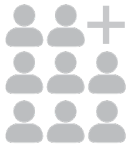
Space Needs Study

10.05.2018

OVERVIEW + UPDATE

WHY?

The Space Needs Study evaluated:



+



+



+



+



SPACE

accommodations
for current and
future staff

DESIGN

how to utilize current
real estate to meet
today's needs

SAFETY

understand perceived
issues of access in and
around historic courthouse

CHANGE

address space vacated by
police moving to the new
Police Headquarters

PARKING

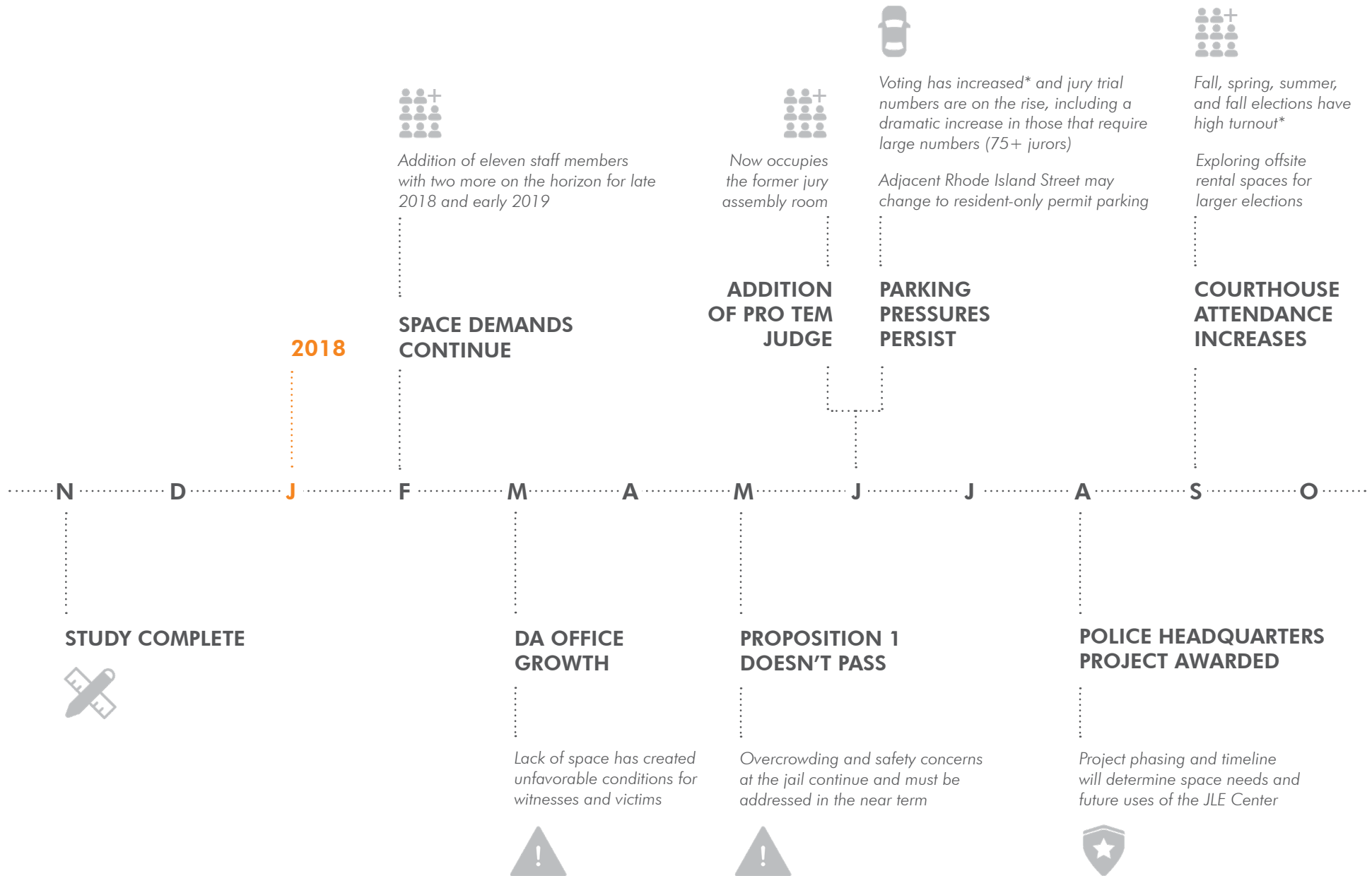
understand
universal parking
concerns

in order to determine the County's **needs and opportunities**
for their downtown properties.

OUTCOMES + FINDINGS

1. Through department interviews, touring your facilities, reviewing existing drawings, meeting with the Historic Resources Commission, and many discussions, one thing is clear — **the problem is complex**.
2. Your downtown buildings are out of room resulting in **immediate space needs**.
3. Current solutions to space needs are **reactive** thus result in **less-than-ideal solutions** including leasing costs and staff not being co-located.
4. A **master plan is recommended** and would provide you with a solution and implementation strategy aligning with your goals.

WHAT'S CHANGED SINCE?



* Voter turnout for recent elections includes: 17,400 for the Fall 2017 City School Primary; 26,000 for the Spring 2018 Mail Ballot Election; and 20,800 the August 2018 Primary.

WHAT DOES THIS MEAN?

The Douglas County Space Needs Study outlined fundamental concerns, but we may need to revisit the 2017 findings to understand the past year’s impact. Following this needed update, we still **advise you to move forward to a masterplan process.**

2017: EXAMPLE STUDY FINDINGS

2018: POTENTIAL NEW QUESTIONS

Need for 16,000 to 24,000 GSF more space by 2027.	—————>	Have changes occurred in what is planned to move out of the JLE Center into the new Police Headquarters, e.g., evidence and records?
Need for more meeting rooms and elections prep space at the County Courthouse.	—————>	Should elections be relocated from the County Courthouse to accommodate the increase in voting?
Immediate need for new division and courtroom for 80 and a new judge at the JLE Center.	—————>	Although this need has not been met, has it evolved?
Immediate need for additional space for the rapid growth of the DA.	—————>	How have the types of cases over the last year impacted the DA’s needs?

THE MASTERPLAN PROCESS

A masterplan will provide you with a holistic solution and implementation strategy.

It will allow you to **proactively manage growth**, avoid reactive decisions that are inadequate* and costly**, and provide employees and citizen users with modern civic facilities.

SAMPLE QUESTIONS

PHASE 1: 2018–2019

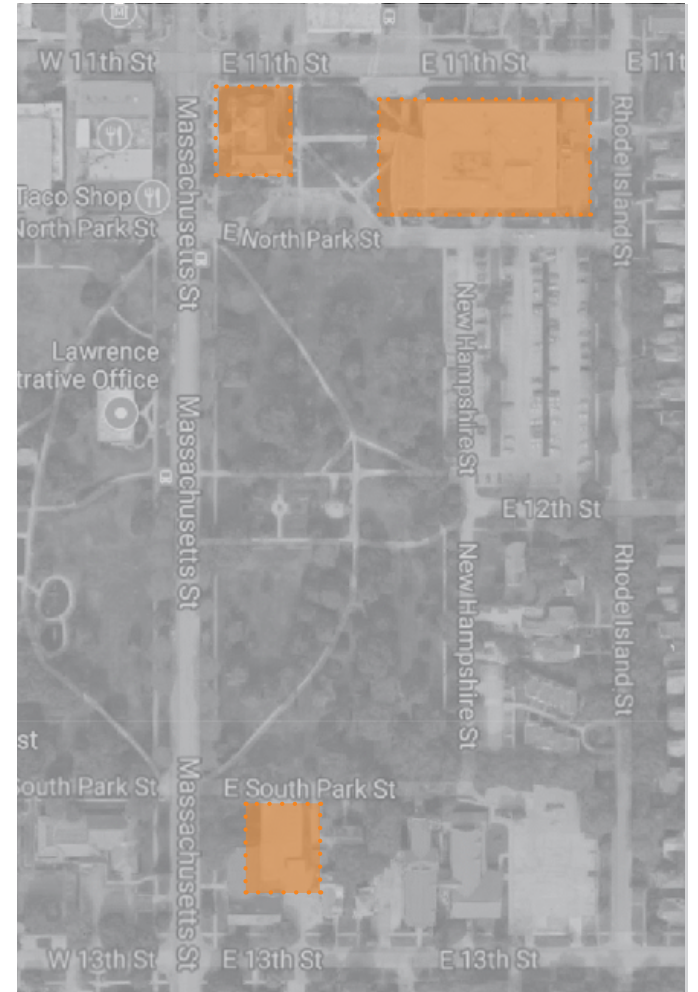
Will the City or County move into the vacated police department?
Where can we lease space?
Who could move into leased space?
What should we do with the “old” public works?
What would remodeled Courthouse and JLE look like?

PHASE 2: 2020–2022

How are we comparing to growth projections?
Do we need to modify our masterplan?
How to phase JLE and Courthouse renovations?
What would a new building at the “old” public works solve?

PHASE 3: 2023–2027

How are we comparing to growth projections?
Do we need to modify our masterplan?
How quickly should we finish JLE and Courthouse renovations?
Has the police move impacted our masterplan?

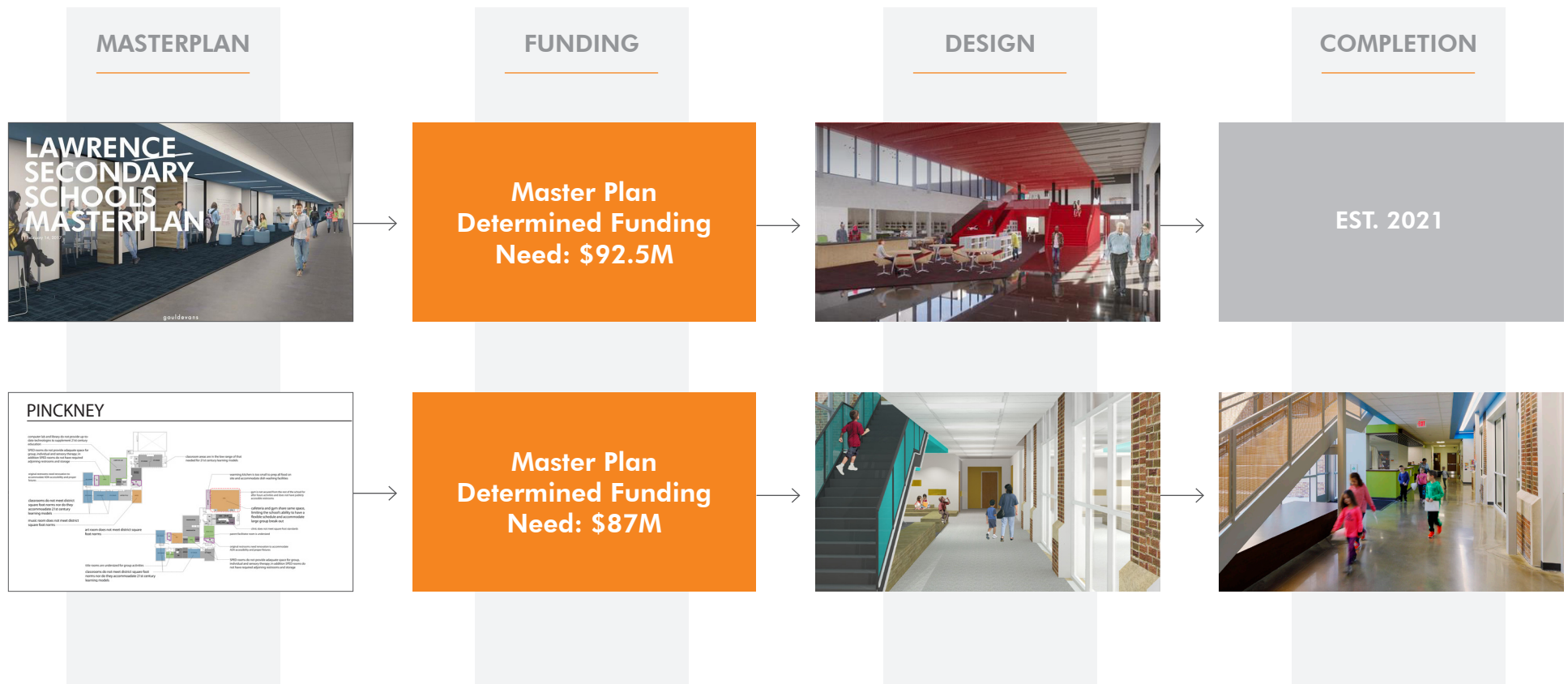


* E.g., reallocating the District Attorney’s upstairs lobby and conference room to accommodate workspace for new hires.

** E.g., renting temporary space offsite.

EXAMPLE: LAWRENCE PUBLIC SCHOOLS

A masterplan process and deliverable will provide you with: the research and studies to gain **confidence in the plan**; a tool to **communicate your needs** to the community; a transparent process to **validate these needs**; and the **starting point for design** work.



**PLANNING COMMISSION REPORT
Regular Agenda – Public Hearing Item**

PC Staff Report
08/22/18

**ITEM NO. 3 : CONDITIONAL USE PERMIT FOR BIG SPRINGS QUARRY; 2 N.
1700 ROAD (MKM)**

CUP-18-00299: Consider a Conditional Use Permit for Big Springs Quarry, approximately 1,049 acres located at 2 N. 1700 Rd. and parcels to the north, east, and south. Submitted by Mid-States Ventures LLC, for Mid-States Ventures LLC, Nancy J Hughes, James R Meek, Thomas R Meek, and Bonnie M Nichols, Trustee, property owners of record.

STAFF RECOMMENDATION: The Conditional Use Permit application includes a change in the area encompassed in the CUP, and revised restrictions/conditions of use. Staff recommends approval of the CUP application based on the findings of fact listed in this report subject to the revised restrictions/conditions of use provided in Attachment A.

Attachments:

- Attachment A – Current Restrictions of Use and Conditions of Approval
- Attachment B – Letters of recommendation
- Attachment C – Quarry Operations and Property Values
- Attachment D – Reclamation Awards
- Attachment E – Site Exhibit

Reason for Request:

Applicant's response: *"This request is twofold: To extend the life of the existing Conditional Use Permits (CUP) that expire 12/19/2020 (CUP No. 3500 and No. 3853) and a request to expand the quarry."*

KEY POINTS

- The request consists of several requested revisions to the Conditional Use Permit. Each request will be reviewed individually in the staff report.
- The CUP is currently regulated by 22 restrictions of use which were applied to the original permit. In addition, subsequent conditions or restrictions have been established with each revision or amendment to the original CUP. Revised restrictions of use and conditions of operation are proposed with this application. The proposed restrictions of use and conditions of approval are provided at the end of this report and the current restrictions and conditions are included in Attachment A. Changes recommended to the restrictions and conditions are the removal of those which have been met and no longer apply, modification or removal of some, and a few conditions have been added.
- Key changes being proposed with this CUP are a change in the area within the CUP and a new 30 year time frame.

Public Communications

Property owners in the area, Michele and Robert Best, visited the Planning Office to discuss the application and their concerns. They own property to the south of Phase 6 (Purple phase on the proposed plan). They have plans to build a new house on the northern portion of their property, near the southern boundary of Phase 6, but don't want to build until quarrying is complete on Phase 6/Purple. They indicated that they are not opposed to the expansion of the quarry or the extension of the time frame but would like to see a condition that quarrying would not stop in Phase 6 but would continue until materials are depleted; by the end of the current CUP (December 2020). The applicant indicated they intend to continue quarrying in Phase 6 and have no intentions to stop or move to another location as long as there is a market demand. They've agreed to the addition of a condition on the CUP requiring them to keep quarrying Phase 6 until it is complete.

Several letters of recommendation were provided to the Planning Office. These are included with this report as Attachment D.

Project Summary

The current CUP for Big Springs Quarry contains approximately 800 acres. Several phases of the quarry have been quarried and reclaimed. Phases 1, 1A, 2, and 3 are complete and Phase 6 is currently being quarried. The applicant is proposing the addition of approximately 569 acres and the removal of the areas that have been quarried and reclaimed from the CUP. A new 30 year timeframe has been requested to allow time for quarrying of this area. Other changes being proposed with this conditional use permit application include an increase in the area that can be open at a time from 30 acres to 40 acres due to the larger equipment that is used today than when the CUP was originally approved in 1992; and changes to the restrictions/conditions of use.

A similar application was submitted in 2008, a few years after Mid-States Materials became the operator of the quarry. At that time, compliance issues were discovered that had occurred under the previous operator. Mid-States agreed to withdraw the application at that time and entered into a consent decree to resolve the compliance issues. Compliance with the consent decree was evaluated and a memo was provided to the County Commission on March 9, 2011 indicating that the quarry was in compliance with these requirements.

Quarry/CUP area (Figure 1)

Currently approved	800 acres
Area that has been quarried and reclaimed	440 acres
Area to be quarried	360 acres
Area to be added	569 acres
Plant site	40 acres
Area of proposed Quarry/CUP	969 acres*
*The area is less than listed in the CUP application due to fact that legal descriptions are written to the centerline of the road, but City/County GIS maps note only the area out of the road right-of-way.	

ASSOCIATED CASES

- Conditional Use Permit (CUP-7-2-90) approved by Board of County Commissioners on Dec. 19, 1990 for Martin Marietta Aggregates to operate a 720 acre limestone quarry.
- Conditional Use Permit (CUP-6-6-92) approved by the Board of County Commissioners on Sept. 16, 1992 to include an additional 80 acre tract (Phase I-A) in the overall quarry operation. A condition of approval was that no future requests to expand the size of the quarry site would be allowed.
- Revision to the original CUP (CUP-7-2-90) was approved by the Board of County Commissioners on March 17, 1993 to allow the addition of a shop maintenance facility on the site.
- Conditional Use Permit (CUP-12-09-06) approved by the Board of County Commissioners on July 16, 2007 to allow the transfer of operator to Mid-States Materials and a revision to the landscaping plan.
- Conditional Use Permit (CUP-07-05-08) for expansion of quarry and other changes. This CUP was withdrawn and the applicant entered into a consent decree with the County Commission to resolve previous compliance issues. (Staff memo confirming compliance with the consent decree was provided to County Commission on March 9, 2011.)
- Conditional Use Permit (CUP-13-00126) to allow phasing to occur in any sequence. As a result quarrying moved from Phase 3 to Phase 6 and left Phases 4 and 5 to be completed later. The current CUP uses colors to designate the phases so that sequencing can be determined as quarrying progresses.

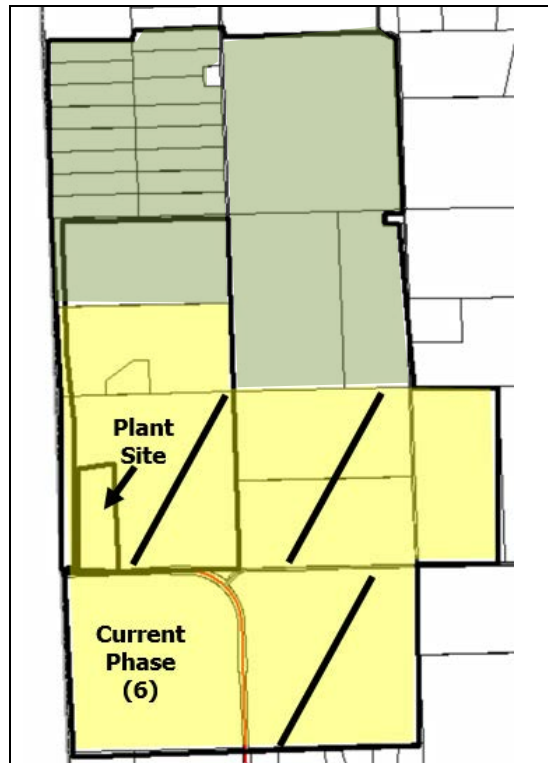


Figure 1. Areas of quarry.

- Yellow: currently approved.
- Struck through: quarrying and reclamation complete
- Green: proposed new area.

OTHER ACTION REQUIRED

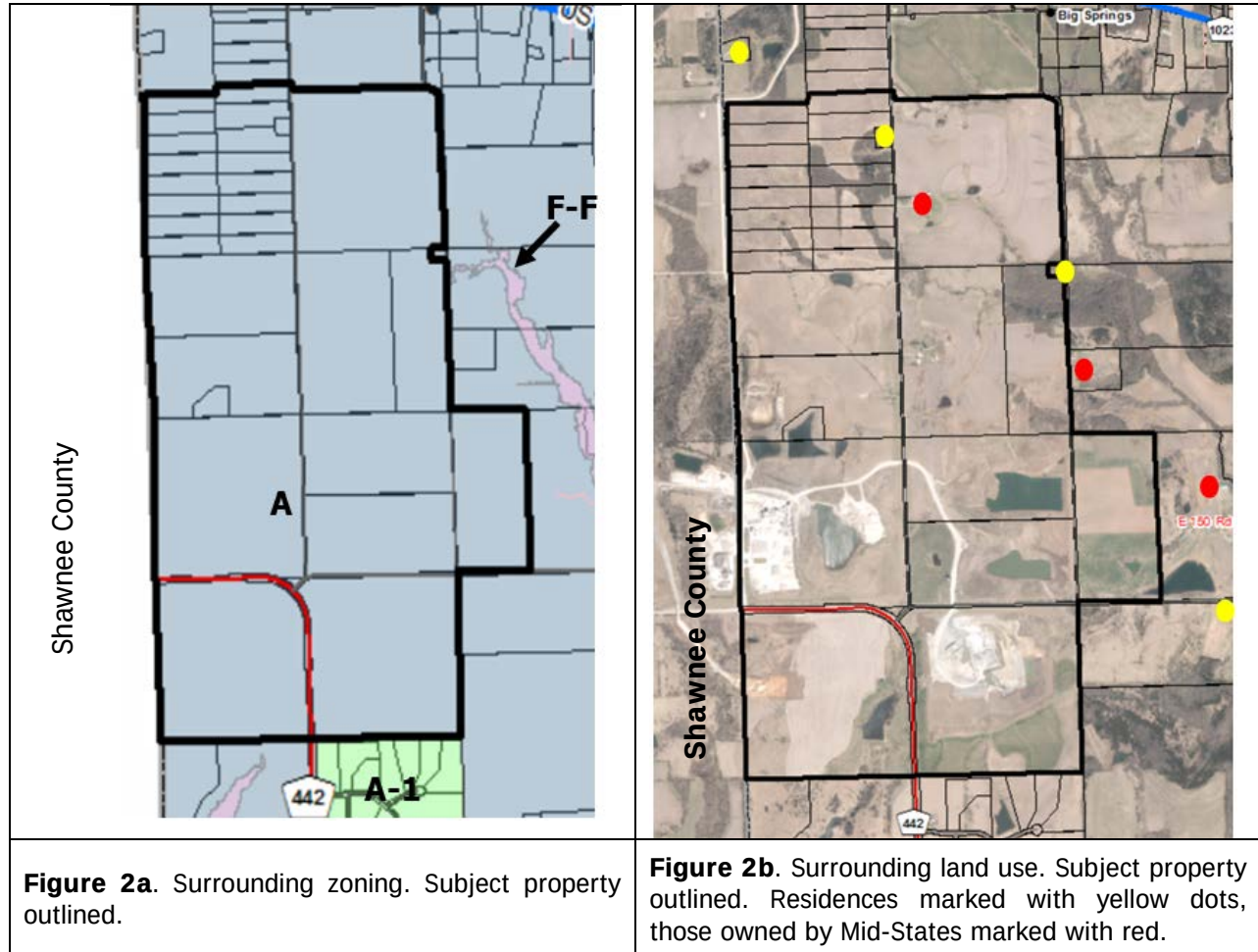
- Consideration of the CUP request by the Board of County Commissioners.
- If the Board of County Commissioners approved the CUP, issuance of a permit for the CUP by the Zoning and Codes Office when all conditions of approval have been met.

GENERAL INFORMATION

Current Zoning and Land Use: A (Agricultural) District and F-F (Floodway Fringe) Overlay district; Limestone Quarry, *Mining and Excavation*, permitted with a Conditional Use Permit and agricultural uses on portions not being quarried.

Surrounding Zoning and Land Use: To the west: The property abuts the Douglas/Shawnee County Line to the west and the quarry extends westward into Shawnee County. Agriculture, rural residences and woodland are located west of the proposed expansion.

To the north, east, and south: A (Agricultural District) with F-F (Floodway Fringe Overlay District) to the south and east; agricultural uses and scattered rural residences. An undeveloped platted rural subdivision is located south of the completed Phase 3 of quarry property.
(Figure 2)



I. ZONING AND USES OF PROPERTY NEARBY

The quarry extends across the county line and is also located within Shawnee County. The surrounding area consists primarily of agricultural land uses; however, there are rural residences scattered throughout the area. Figure 2b shows the location of these residences, and identifies those that are owned by Mid-States. There are nearby residences in Shawnee County as well. Notice of the public hearing for this CUP at the Planning Commission was mailed to property owners within Shawnee County and the CUP was provided to the Shawnee County Planning Office for comments. At the time this report was written, no comments had been provided from Shawnee County residents or the Shawnee County Planning Office.

Staff Finding – Most of the land in the area is zoned and used for agriculture. However, there are residential land uses nearby which should be considered when establishing setbacks and restrictions of use. The applicant is proposing a 500 foot setback from all residences (not owned by Mid-States), in addition to other setbacks measured from the phase property line. These setbacks will be discussed later in this report. With proper setbacks and conditions restricting

the use, the continuation and expansion of the quarry should be compatible with the existing nearby zoning districts and land uses.

II. CHARACTER OF THE AREA

Big Springs Quarry is located on the west boundary of Douglas County, and extends into Shawnee County. (Figure 3) This is primarily an agricultural area with scattered residential uses. A platted subdivision which has not been developed is located just south of Phase 3, which was recently completed.

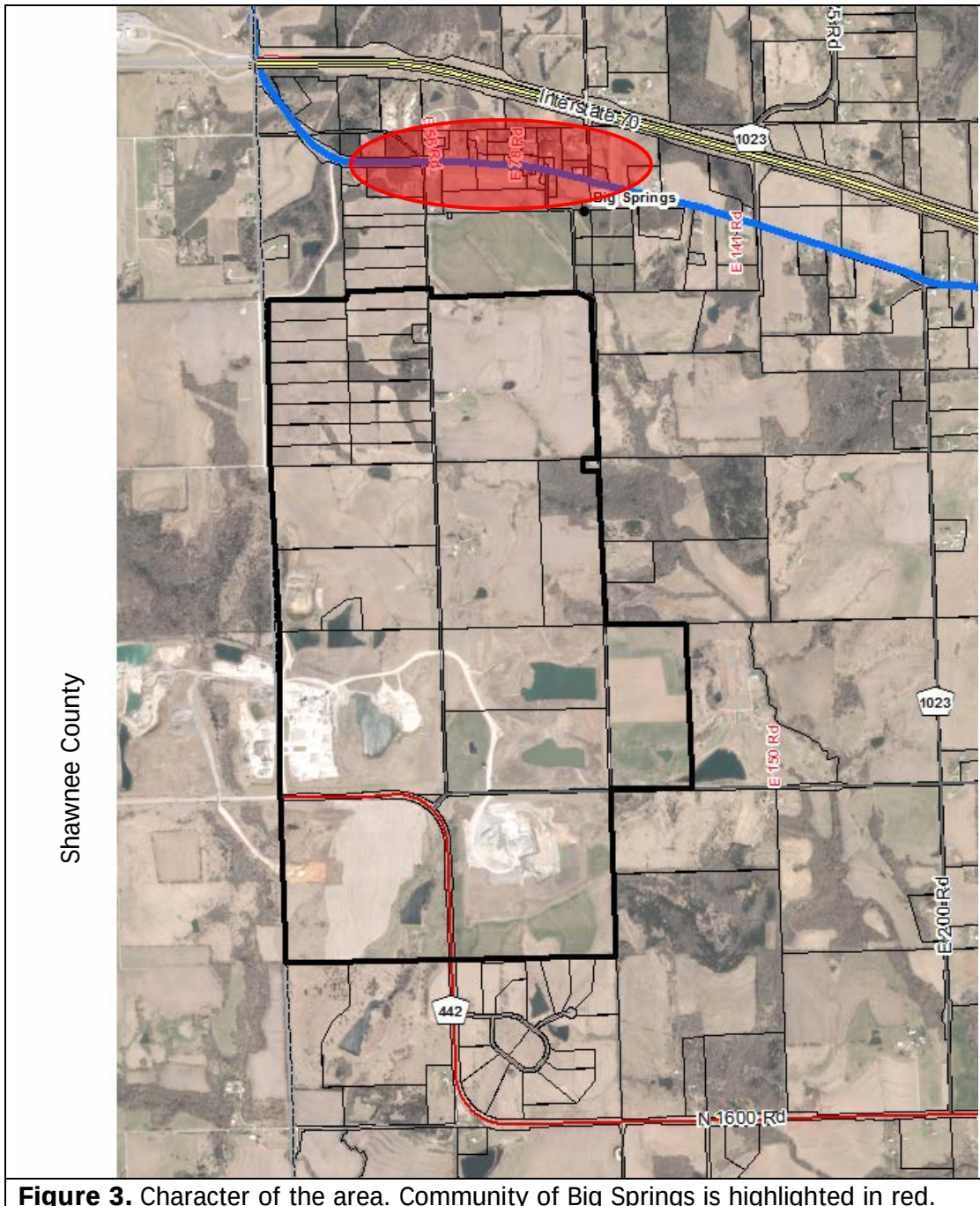


Figure 3. Character of the area. Community of Big Springs is highlighted in red.

Access to the plant site is taken from County Route 442 for local deliveries; all other access is taken from the main access point on Highway 40 to the north. This access point is west of the community of Big Springs. The acreage being added to the quarry with this conditional use

permit will move the northern boundary of the quarry closer to Big Springs. A portion of Big Springs is zoned B2 (General Business) and is developed with uses permitted in that district. Other uses in the community include a church and residences. Mid-States purchased several parcels adjacent to the quarry to provide a buffer between the quarrying activity and properties owned by others. (Figure 4)

The quarry has been operating in the area since the 1990's and is a feature of the area. As phases are completed and reclaimed they are returned to a state suitable for agriculture. These parcels could be used for any use permitted in the A Zoning District.

Staff Finding – The quarry is located in a rural area with predominately agricultural land uses and scattered farm/rural residences. The principal land use is agricultural grassland and row crops.

The character of the area has not changed much in the past 30 years. The expansion of the quarry will allow quarrying activity closer to the community of Big Springs and the extension of the time frame will allow the quarry to remain in the area for another 30 years. As the character of the area has not changed much since the original CUP was approved, the proposed CUP should be compatible with the existing uses provided measures, such as setbacks, pre-blast surveys, and drainage studies, are provided to mitigate potential impacts on nearby residences and wells.

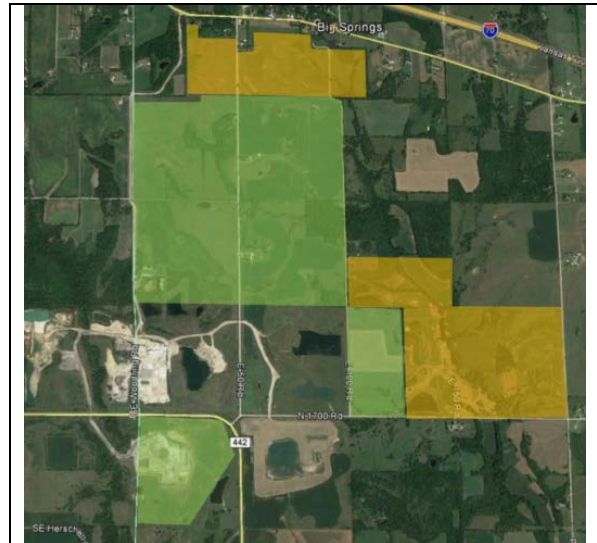


Figure 4. Properties adjacent to Big Springs Quarry which Mid-States has purchased or is buying on contract shown in yellow. Property within the quarry that is owned by Mid-States is shown in green.

III. SUITABILITY OF SUBJECT PROPERTY FOR THE USES TO WHICH IT HAS BEEN RESTRICTED

Applicant's response:

"The current land is zoned agricultural and it is suitable for that purpose. However, it is much more valuable for what lays underneath the surface. This is one of the richest mineral deposits of limestone to be found in Douglas County. Once the limestone has been mined, the land will be reclaimed back to agriculture. Reclamation will be completed in phases. Some of this land has already been reclaimed and Mid-States Materials, LLC ("Mid-States") won the 2012, 2014, and the 2018 Governor's Mined Land Reclamation Award for these phases. These awards were presented for returning the land back to its natural state with the added value of significant water features."

The property is well suited for agricultural uses and the phases that are not currently being quarried will continue to be used for agriculture. The quarried and reclaimed phases have been returned to a state suitable for agricultural land uses and are currently being used for agriculture. The property, due to the reserves of limestone and the infrastructure put in place for previous quarrying activity approved with earlier Conditional Use Permits, is also well suited for the proposed quarry use.

Staff Finding – A Conditional Use Permit does not change the base, underlying zoning. The suitability of the property for agricultural or rural residential use will not be altered. This

property is suitable for the uses permitted in the A (Agricultural) Zoning District and will continue to be used for agriculture before and after quarrying. The property, due to the reserves of limestone and the infrastructure put in place for previous quarrying activity approved with earlier Conditional Use Permits, is also well suited for the proposed quarry use.

IV. LENGTH OF TIME SUBJECT PROPERTY HAS REMAINED VACANT AS ZONED

Staff Finding – County Zoning Regulations were adopted in 1966; this property has been zoned “A (Agricultural)” since that adoption. The property was used for agricultural purposes until the approval of a Conditional Use Permit, CUP-7-2-90, in 1992 for a quarry.

V. EXTENT TO WHICH REMOVAL OF RESTRICTIONS WILL DETRIMENTALLY AFFECT NEARBY PROPERTY

Applicant's Response:

“This site has been a quarry site since at least 1992. Due to the stringent precautions MSM takes with regards to developing the quarry, the nearby property owners will notice little difference. MSM has worked hard to create substantial buffers between the quarry and the surrounding neighborhoods. MSM has purchased or leased several properties that will not be quarried, but located in between the quarry and the surrounding neighbors. Additionally, Mid-States Ventures, LLC in 2018 purchased the 308 acre Lone Oak property located to the southeast of the quarry to create a sizable buffer. The Lone Oak property itself is not viable as a quarry, so no expansion will take place on this property.”

Section 19-01 of the County Zoning Regulations recognize that “*certain uses may be desirable when located in the community, but that these uses may be incompatible with other uses permitted in a district...when found to be in the interest of the public health, safety, morals and general welfare of the community may be permitted, except as otherwise specified in any district from which they are prohibited.*” The proposed use falls under Use No. 5, *Mining and Excavation*, listed in Section 19-4 Conditional Uses Enumerated, of the *Douglas County Zoning Regulations*.

Mining is an activity which can have a significant impact off-site. Increasing the borders of the quarry could have a negative impact on residences in the area. This area is sparsely populated; however, there are residences located near the proposed borders of the pink, blue and orange phases. The applicant is proposing a 500 foot setback for mining and blasting from these residences (Figure 5) and is setting aside areas of woodland adjacent to the parcels that are adjacent to the quarry itself to act as a vegetated buffer. The property owners of these residences have not contacted the Planning Office regarding the proposed changes to the CUP. The property within and north of the proposed pink phase was divided into 10 acre parcels under the 10 acre exemption in 2006, but was not developed. Mid-States is purchasing these parcels within the quarry boundary on contract as well as some of the parcels to the north of the pink phase, to provide a buffer area.

Staff Finding – The proposal requests the expansion of the quarry's boundary to the north and an increase in quarry area to approximately 1,049 acres as well as a 30 year extension to the time frame. This expansion and extension of time frame could have a negative impact on nearby residences. The new quarry area is located to the north, away from the platted residential subdivision to the south. 500 foot setbacks are proposed along the new borders for existing residences that are not owned by Mid-States. Limits on hours of operation and hours of blasting will be set to minimize the impact of noise and traffic associated with the quarry; as

noted in the attachments to this report. These measures and the other restrictions/conditions of use should mitigate the impact of the quarry on nearby land uses.

VI. RELATIVE GAIN TO THE PUBLIC HEALTH, SAFETY AND WELFARE BY THE DESTRUCTION OF THE VALUE OF THE PETITIONER'S PROPERTY AS COMPARED TO THE HARDSHIP IMPOSED UPON THE INDIVIDUAL LANDOWNERS

Applicant's Response:

"The public gain is an inexpensive reliable supply of construction grade limestone aggregate that serves two of the five most populous counties in the state of Kansas. The Quarry has been in existence for over thirty-six years, thus any hardship imposed upon the individual landowners has already been factored and accounted for in the intervening years. The surrounding properties are appreciating at a rapid rate over the last three years according to the Douglas County Appraiser's website. (As an example, one property went from \$126,970 to \$144,030 from 2016 to 2018. Name withheld but information can be given upon request.) These appraisals are reflective of the market. The public gain far outweighs any hardship being imposed upon individual landowners"

Evaluation of the relative gain weighs the benefits to the community-at-large vs. the benefit of the owners of the subject property.

Approval of the extension in the time limit for the Conditional Use Permit would permit the quarry to operate for 30 years after the County Commission's approval rather than through December of 2020, as currently permitted. The addition of land to the north would move the quarry activities nearer to the community of Big Springs. The applicant has proposed a wide setback area to mitigate the impact on the nearby residences and purchased land adjacent to the quarry, where possible, to provide an additional buffer.

Expanding the area and extending the time frame for quarrying would permit the quarry to utilize more of the available limestone deposits; however, it would also increase the length of time the neighboring property owners are impacted by the quarrying activity.

Restriction of Use No. VII(d) of the original CUP states, *"No more than 30 acres may be open, mined and extracted from at any one time on the quarry site, exclusive of the plant site."* The applicant indicated that the request to have a larger mining activity area (40 acres) permitted to be opened at one time would provide the maneuvering room necessary for large equipment and would accommodate the mining activities necessary to reach the lower levels. The materials are located in shelves, with limestone for concrete located nearer the surface and limestone for road rock at a deeper level. The applicant indicated that a larger area was necessary for operating at this lower level. Increasing the area permitted to be open at a time would increase operating capacity and efficiency.

Staff Finding – The extension of the 30 year timeframe for the quarry would provide predictability for the neighbors, rather than approving a shorter time frame and then processing extension requests as the deadline approaches if quarrying is not complete. The increase in area would allow the quarry to utilize additional limestone reserves; however, the impact on the area north of the quarry would increase as mining activities would be closer. Mid-States purchased several parcels to the north of the quarry to provide a wider buffer between the

quarry and Big Springs. Appropriate setbacks and conditions should be applied to mitigate the impact of the quarrying activities as much as possible.

The increase in the area that can be open and mined from would be beneficial for the operator allowing them more room for the vehicles and more mining area for the extraction of the lower lying resources; and may allow quarrying to progress more quickly.

VII. CONFORMANCE WITH THE COMPREHENSIVE PLAN

Applicant's Response—

"The Horizon 2020 Comprehensive Plan, dated 08/08/2017 Amendment, provides the following text (Pg. 7-1 – 7.2, only relevant bullet points are cited) concerning industrial uses:

STRATEGIES: INDUSTRIAL AND EMPLOYMENT-RELATED LAND USE

- *The principal strategies for the identification, development, and maintenance of industrial and employment-related areas are:*
 - o *Increase the number and diversity of jobs available to the citizens of Douglas County to stabilize the future employment base and generate additional wealth in the community.*
 - o *Identify an adequate amount of available land in a number of locations in Douglas County to meet diverse industrial and business related development needs.*
 - o *Increase community involvement in economic development activities, by partnering with the local business community and area educational institutions to bring new technology and investment to the region for the purpose of meeting the economic development job growth goal of securing twenty thousand new jobs in Douglas County by 2020.*
 - o *Protect, enhance, and retain existing industrial-related land use areas serving the community.*
 - o *Continue to address the needs of existing businesses and industries to ensure their retention in the community and to help facilitate expansion plans of those businesses and industries for the future.*

The Big Springs quarry is the hub for all of MSM's quarries located in a three state region. All ticketing for every individual truck that rolls out of over twenty different quarries goes through the Big Springs Control Center. There are thirty (30) employees on-site and up to sixty (60) positions created in the trucking industry. All of the bullet points listed above are strong considerations for renewing and expanding this CUP. This quarry is located on agriculturally zoned land located far from any population centers. These two considerations are among the best possible factors in locating a quarry. It is clear that this quarry is consistent with the Horizon 2020 Comprehensive Plan."

An evaluation of the conformance of a conditional use permit request with the comprehensive plan is based on the strategies, goals, policies and recommendations contained within *Horizon 2020*. The comprehensive plan does not directly address conditional use permits; however, the plan does refer to the character of the rural portions of the county, areas outside the Urban Growth Area: *"Agricultural uses should continue to be the predominant land use within the areas of the county beyond the designated urban growth/service areas (rural areas). Uses permitted in the rural area should continue to be limited to those which are compatible with*

agricultural production and uses.....Residential development should be limited in these areas so that new development does not unnecessarily remove productive land from agricultural use.” (pages 5-6, *Horizon 2020*) The quarry use is compliant with the comprehensive plan in that it is a temporary use and the reclamation plan ensures that the land is returned to a rural state and would be suitable for agricultural uses.

The Resource Management section of Chapter 16 of the Comprehensive Plan, the Environment Chapter, notes: *This section encourages the responsible use of marketable natural resources within Douglas County through property extraction and reclamation methods. They are essential to sustainable development activity, primarily in the form of low cost raw materials, such as sand, gravel, timber, oil, gas, and stone, etc.”* (Page 16-21 *Horizon 2020*)

Staff Finding – *Horizon 2020* does not directly address the issuances of CUPs but the use of the property as a quarry is in compliance with the recommendation on page 5-6 of the plan that land not be removed from agricultural production. The quarry will remove land from agricultural production for a time, but reclamation is required, which will return the property to a state that is suitable for agricultural uses. The CUP request is compliant with the recommendations regarding industrial and employment-related operations in Chapter 7, and with the establishment of appropriate extraction and reclamation measures, with recommendations regarding resource management in Chapter 16.

STAFF REVIEW

This CUP includes requests to revise the restrictions of use. Some of the significant changes proposed are: the expansion and revision of the quarry area; an increase in the area permitted to be open and mined at one time; and an extension of the time limit for the CUP.

CUP-7-2-90 was approved on December 19, 1990 for the operation of a 720 acre limestone quarry with a 30 year time limit. An additional 80 acres, Phase I-A, was permitted in 1992. A shop building was permitted through a revision to CUP-7-2-90 in 1994.

RESTRICTIONS OF USE AND CONDITIONS OF APPROVAL

The current CUP contains 22 original restrictions of use, 5 conditions which were added in 1992 with the 80 acre increase in area, 5 additional restrictions which were added in 1993 with the addition of the shop building, 6 restrictions which were added with the change of operator in 2007, conditions were also added that were specific to the consent decree in 2008 and to the change in phasing scheduling in 2013. Many of these restrictions and conditions have been met and no longer apply. The applicant is proposing a revised set of conditions. The following is a summary of the proposed restrictions/conditions of use:

1. Setbacks: New setbacks are being proposed. These are illustrated in the site exhibit, Attachment G.
 - a. A 100 foot setback is proposed along the road rights-of-way with the exception of the Purple Phase (current Phase 6) which has a 260 foot setback from the roadway and a 400 foot setback from the southern property line. The setbacks shown for the Purple Phase are not being revised with this proposal.
 - b. Residential Setbacks: A 500 foot setback is being provided for each residence near the quarry. In addition, a natural setback area will be provided where stands of trees are located in the area (shown on Pink and Orange Phases) *This is an additional setback from the original CUP as there were no specific setbacks applied for residences. The natural area setbacks should be dimensioned on the exhibit.*

- c. Setbacks for the Green Phase (former Phase 4) are revised with this CUP. The setback on the east is revised from 150 foot to 100 foot. This is due to the fact that Mid-States is the owner of the property to the east. The setback on the southern edge of the Green Phase (Phase 4) is increased from 500 feet to 700 feet.
2. Hours of Operation: the application requests the following changes to the hours of operation:
 - a. Extend hours for the sale and removal of rock to 6:00 PM Monday through Friday (currently ends at 5:30 PM) and adds Saturday morning hours of 7:00 AM to noon. *Various hours of operation have been set for different quarries within the county. A similar quarry in the county has operating hours to 9 PM Monday through Saturday for the sale and removal of rock. As no comments have been received regarding these extended hours, and the expanded sales times could result in increased production, staff would recommend approval of the increased hours.*
 - b. Extend hours for production and extraction from 5:30 PM to 6:00 PM.
3. Personal Property Bond: The requirement that the applicant post a \$10,000 bond to cover damages to personal property which resulted from blasting or quarrying activities is proposed to be replaced with a requirement that the applicant maintain a \$1,000,000 liability insurance. Certificates of insurance would be provided to the Zoning and Codes Department on a yearly basis.
4. Pre-blast Survey: The revised conditions clarify that a pre-blast survey can be conducted prior to quarrying beginning in a phase. Staff recommends adding information regarding how the operator will notify property owners that quarrying will begin in a phase and what studies/surveys are available prior to quarrying.
5. Site Access and Road Restrictions: The original condition dealt with several options for the haul road. As the haul road has been installed, this condition has been reduced.
6. Conditions added with expansion of quarry in 1992: When an 80 acre expansion was approved in 1992 conditions prohibiting the request of another expansion were approved. These conditions are being removed with this proposal.
7. Conditions added with approval of shop facility in 1993: Several of these conditions were regarding the construction of the building. The condition limiting the use of the shop to maintenance of equipment/vehicles used on the site will be kept.
8. Conditions added with the transfer of operator in 2006: The elevation 1042 was set as the maximum excavation depth possible before a hydrologic study is required. This elevation limit is retained.

Other conditions were related to compliance issues at the time. These are not being included.

9. Condition regarding the sequencing of phasing added in 2013 is no longer needed as the phases are denoted with colors rather than numbers. The operation plan should include a phasing plan; however, this could be changed with future operation plans.

10. Condition regarding quarrying of Phase 6 (Purple Phase) added in response to neighboring property owner's concerns.

Staff's recommended restrictions of use and conditions of approval are provided at the conclusion of this report.

The following is a review of the major changes being proposed with this CUP:

REQUEST 1. EXTENSION OF TIME LIMIT TO 2050.

The CUP was approved in 1990 with a 30 year time limit; expiring in December of 2020. Assigning a time frame to the CUP serves to notify the public that this will be a long term use, which provides some predictability in making future plans. However, the time needed to deplete reserves depends in part on the amount of reserves available, the amount of time the quarry is mined, and market demand. It should be understood that the time frame is not a set deadline, but a notice that quarrying may occur until that date and an extension may be requested at that date if quarrying is not complete.

As limestone reserves are available in this area, the site is currently used as a quarry, and infrastructure is in place (haul roads), the quarry operator has complied with the conditions and restrictions of the current CUP, and conditions and restrictions will be applied to mitigate potential impacts of the quarry, staff recommends approval of the 30 year timeframe to the term of this CUP.

2. CHANGE IN PROPERTY WITHIN THE CUP AND INCREASE IN ACREAGE OF THE QUARRY.

Condition No. 2 of the conditions of approval which were approved with CUP-6-6-92 stated that *"No additional requests be made by Martin Marietta and/or its heirs during the remainder of Conditional Use Permit No. 3500 and No. 3853 (which expires December 19, 2020) to expand the size of the quarry site."* And Condition of Approval No. 5 states that *"Proposed Phase 1-A shall be the only permitted incremental expansion of the quarry CUP."* The County Counselor noted that this is a condition applied to the Conditional Use Permit by the Board of County Commissioners. He noted that, as with other conditions, it can be revised with the submittal and approval of a conditional use permit amendment or a new conditional use permit.

In this case a new conditional use permit application was submitted. As limestone reserves are available, if the request to expand the quarry boundary meets the approval criteria for a conditional use permit, it is staff's opinion that the condition should not be carried over to the new conditional use permit.

Staff recommends approval of the change of area included in the quarry subject to the following conditions: 1) a survey of nearby wells shall be completed prior to quarrying commencing in any phase to establish the water levels in the adjacent wells and to set the depth at which mining can occur. If any mining is to occur below 1042, Mid-States must cause a hydrologic study to be completed and 2) submittal of an operation plan which illustrates that the amount of limestone available in the quarry with the additional acreage to the north could be mined by the end of the term of this CUP, with average market demand.

INCREASE IN AREA TO BE OPEN AND MINED FROM

Paragraph (d) in Restriction of Use No. VII states that *"No more than 30 acres may be open, mined and extracted from at any one time on the quarry site, exclusive of the plant site."* The applicant is requesting that this restriction be revised to permit 40 acres to be open at one time.

The applicant indicated that the request to have a larger mining activity area (40 acres) opened at one time would provide the maneuvering room necessary for large equipment and would accommodate the mining activities necessary to reach the lower levels. The materials are located in shelves, with limestone for concrete located nearer the surface and limestone for road rock at a deeper level. The applicant indicated that a larger area is necessary for operating at this lower level. Increasing the area permitted to be open at a time would increase operating capacity and efficiency.

The Reclamation and Operation Strategies listed in the Best Management Practices for Reclaiming Surface Mines states that *“Mining the slope to the final contours reduces reclamation costs by eliminating some of the earthwork necessary for final reclamation. This can result in reclamation being completed earlier, the performance security being reduced, and operating costs being lower in the long run.”* The extra mining area should allow the quarrying activity to be done at a slope which would prevent the formation of high-walls and could aid in the reclamation process.

The increase in area to be openly mined would be beneficial for the operator in allowing them more room for the vehicles, more mining area for the extraction of the lower lying resources, and may allow quarrying to progress more quickly. In addition the larger area may allow the quarrying activity to be done at a slope which could aid in the reclamation process.

RESTRICTIONS AND CONDITIONS OF USE:

- 1) Setbacks
Purple Phase (former phase 6)
 - 400 foot setback along the south perimeter
 - 260 foot setback along County Route 442
 - Triangular area in the southeast corner a corner of which is 1,800 feet north of the south property line along the setback line of County Road 442 / E. 50 Road and another corner of which is 1,100 feet west of the right-of-the way of County Road 442/E. 50 road along the south setback line.
Green Phase (*former Phase 4*):
 - 100 foot setback to the north and 700 foot setback to the south sides
 - 100 foot setback on the east side
Pink Phase
 - 100 foot along north property line
Blue Phase
 - 100 foot along east property line
Orange Phase
 - 100 foot along east property line
All Phases—
 - 100 foot setback from the property line along the east side of the private haul road.
 - 100 foot setback from the property line along E. 50 Road and E. 100 Road
 - 500 foot residential setback (residences existing at the time of CUP approval)
- 2) Operation Restrictions
 - a. Methods shall be adopted to minimize dust in stage area as well as along the haul roads.
 - b. Quarry hours of operation shall be restricted to:
 - i. sale and removal of rock: 6 a.m. – 6 p.m., Monday- Friday; 7 a.m. – 12:00 p.m. Saturday
 - ii. Production and extraction: 6 a.m. – 10 p.m., Monday – Thursday; 6 a.m. – 6:00 p.m., Friday
 - iii. Blasting: 1 p.m. – 5 p.m., Monday – Friday
 - iv. No quarry operations shall take place on holidays observed by the State of Kansas: (New Year's Day; Memorial Day; Independence Day; Labor Day; Thanksgiving Day: the day immediately following Thanksgiving Day, and Christmas Day.

Activities occurring after these hours: In the event of an emergency or other situation that requires quarrying, or sell of product after these hours, the request must be

provided to the Board of County Commissioners prior to the after hours activity commencing.

- c. No more than 40 acres may be open, mined and extracted from at any one time on the quarry site, exclusive of the plant site. No more than 10 acres shall be open, mined and extracted from in a subsequent phase until reclamation is complete on the previous phase.

3) Fencing

The entire site shall be fenced with a five-strand barbed wire fence. Fencing shall be maintained by the operator. A security gate and fence shall be placed/maintained at the entrance to the quarrying site across the main haul road. The fence shall be signed periodically (minimum of 500 feet intervals) stating: "Mid-States Materials No Trespassing"

4) Berms

- a. All setbacks along roadways shall contain berms to screen operations. Berms are to be 6 to 8 feet high (8 feet maximum), built at a 3 to 1 slope and vegetated.
- b. Topsoil removed from each phase will be used to construct the berms. Berms shall be constructed as quarrying progresses in each phase.

5) Blasting

- a. Blasting shall be set only in sequential delays; no single delay to be over 150 lbs. of explosives.
- b. No fly-rock shall leave the property.
- c. Prior to each blast, the operator shall contact adjoining neighbors who request individual notice of each blast. A signaling system, siren, horn, or other signaling system, shall be used to alert people in the neighboring vicinity before each blast takes place.
- d. No explosives will be set in the ground overnight unguarded.

6) Monitoring Blasting

- a. Operator shall contact with independent seismology firm to monitor blasts at the commencement of quarrying operations, at each residence within ½ mile of the blast site to assure that the blast design will not be harmful to any structures or wells and that all associated vibrations are below currently recognized safety levels. A report on the monitoring of initial blasting shall be made available to owners of the residences and such report shall include a full frequency analysis of vibrations.
- b. After the initial blasting, operator shall contract for a continuous monitoring program commencing with the start of continuous regular blasting by an independent seismology firm at stations chosen by the seismology firm. A monthly report, which analyzes the impacts of daily blasting, will be available at operator's offices for inspection. Residents may request positioning of the seismograph to measure the impact at their property; provided, however, the applicant shall not be required to conduct tests in excess of those it determines, based on professional advice of its independent seismology firm, will provide adequate seismic readings at resident's

properties. Any resident desiring to appeal the decision of the applicant concerning this condition may appeal it to the Douglas County Public Works Director who may order seismic tests at such locations as it deems appropriate under the circumstances at the expense of the operator.

- c. The operator shall comply with the NFPA 495 Kansas Explosive Materials Code regulations regulated by the Office of the State Fire Marshall.

7) Air and Water Quality

The quarry operator shall adhere to air quality standards of KDHE, not to exceed 20% of opacity more than 1 time in a one year period as observed by KDHE observers over a 5 minute period.

8) Other Regulatory Restrictions

All applicable regulations of EPA, KDHE, and Kansas Department of Agriculture, and other applicable agencies shall be adhered to and subsequent revisions to these regulations shall apply.

9) Noise and Light Pollution

Vehicles used in plant operation (extraction & production) after 6:00 PM shall be equipped with manufactured lighting in addition to a back-up audible signal alarm.

Permanent outdoor lighting in the quarry, including the plant area, mining area, and haul roads, shall be shielded and directed down with a solid screen to prevent light pollution beyond the site boundaries.

10) Reclamation Bond

Mid-States shall be responsible for reclamation of all quarried land.

- a. A performance bond in the amount of \$100,000.00 with sufficient sureties shall be secured to cover reclamation activities for the plant site in the Facility Area. The Bond shall be filed with the Douglas County Clerk's Office.

This performance bond shall remain in place for the entire life of the permit and shall not be subject to release until the plant site has been fully reclaimed and certification thereof shall have been made by the Douglas County Commission.

- b. In addition to the bond required under paragraph (a), above, a performance bond in the amount of \$400,000.00 with sufficient sureties shall be secured for the first site excavated for extraction purposes in Phase I other than at the plant site and shall be filed with the Douglas County Clerk's Office prior to the commencing of any excavation (including the stripping of top soil) other than at the designated plant site. This bond shall be for an excavation area no larger than 10 acres open at one time and shall remain in place until certified by the Douglas County Commission that reclamation has been completed at the site for which it was obtained.
- c. For each additional 10 acre site excavated for extraction purposes in any phase of the quarry operations during the term of the CUP, a performance bond in the amount of \$400,000.00 with sufficient sureties for additional excavation for extraction purposes shall be secured and shall be filed with the Douglas County Clerk's Office prior to the commencing of any such additional excavation (including the stripping of top soil). These bonds shall each be for areas no larger than 10

acres open at one time per excavation and shall remain in place until certified by the Douglas County Commission that reclamation has been completed at each site.

- d. Each of the bonds described above also shall carry provisions which provide additional coverage for any other quarry operations that are carried on at the quarry site during the pendency of the bond until release of the bonds.
- 11) Insurance
- The operator shall carry liability insurance in the amount of \$1,000,000.00. Certificates of insurance shall be submitted to the Zoning and Codes Department on an annual basis.
- 12) Operation Report and Plan
- a. Prior to the issuance of the CUP permit and every 5 years thereafter, the operator shall submit a detailed report and plan of quarrying operations to the Planning Office.
 - b. The plan shall show the phases of quarrying; location of stockpile area; estimated volume of material being extracted; and a detailed monitoring and management plan for the areas undergoing reclamation.
- 13) Reclamation and Review
- a. The quarry shall utilize sequential reclamation. With the exception of the first cut in a phase, overburden within a cut shall be placed in the previous cut thereby removing the need to stockpile large amounts of overburden.
 - b. Detailed reclamation plans shall be submitted for each phase of the reclamation process for review and recommendation by the Planning staff and approval by the County Commission. The Detailed Reclamation Plan shall be submitted and approved prior to opening of a quarry phase.
 - c. The detailed reclamation plans would include a site plan showing elevations, cross-sections, and the proposed plan for revegetation of the area.
 - d. The property shall be reclaimed to a to a state that is compatible with the surrounding area with regard to slopes, and plant and animal life supported by the established ecosystem.
 - e. Terraced areas shall be shaped to blend with the existing, adjoining contours. The land must be graded to final contours as shown on the approved reclamation plan, top-soil, which had been used to construct the berms of each quarry phase shall be removed as areas are reclaimed and the topsoil shall be spread over the land area and seeding of appropriate native plants must occur. It is not necessary for vegetation to be established before moving fully to the next phase.
- 14) Studies/Surveys Required Prior to Opening New Phase
- a. Pre-Blast Survey. A pre-blast survey (by an independent seismology firm or structural engineer approved by the applicant and the owners of existing structures within one-half mile of the quarry site) shall be offered to the property owners and conducted, if the property owners request, prior to operating in each phase.

(Notice shall be mailed, by certified mail, to all property owners within one-half mile of the phase to be quarried, at least 1 month prior to the beginning of that phase, indicating that a new phase is about to be quarried and letting the property owner know about the pre-blast survey.)

b. Hydrologic Study

The quantity/quality of water in the wells within one-half mile of each quarry phase shall be documented prior to the commencement of quarrying operations in that phase. A study shall be done, at the operator's expense, for all wells within ½ mile of each phase (with property owner consent). Notice shall be provided to all property owners within one-half mile of the phase boundary as noted in Condition 13a.

This study is intended to provide an inventory of area residential and stock wells and determine their capacities and current volumes/levels of operation; and to determine the impact of quarrying, per phase, based on the depth of mining proposed. If mining is proposed at a depth lower than 1042 or the local water table, the County Engineer may require a hydrologic study to analyze the impact on area wells.

c. Drainage Study

Prior to work progressing in each phase of the quarrying operation, a detailed grading plan showing site runoff and its relationship to the adjoining properties shall be submitted to the Planning Office for review and approval prior to work progressing in each phase.

15) Site Access and Road Restrictions

- a. Except for vehicles traveling to and from the site on 45th Street in Shawnee County, the principal access to the site for transport truck traffic and hauling of rock shall be restricted to the use of U.S. Highway 40 from the direct haul route north of the proposed quarry. (The haul road is currently in place and the intersection with Highway 40 was designed in accordance with KDOT requirements.)

Any other haul route options must first be approved by the Douglas County Commission.

- b. Except for local deliveries of rock from the quarry site, Route 442 shall not be used by transport trucks to travel to and from the east. The operator shall post signs and adopt appropriate restrictions on the quarry site, including restrictions on sale of rock where necessary, to ensure strict compliance with this restriction by all transport trucks.

In the event the Board of County Commissioners determines, after due notice and hearing, that such restrictions have proven ineffective in prohibiting transport trucks which originate from or travel to the quarry site from using Route 442 east of the quarry entrance in violation of this restriction, the Board may order such improvements to Route 442 as it deems necessary, including, but not limited to, appropriate shouldering, surfacing, and signing, and assess such costs to the applicant which shall be paid in a timely manner. In the alternative, the Board may order the operator to cease operation or order such steps as the Board deems necessary under this CUP.

- c. No township roads shall be used as access to the quarry.
 - d. Restrictions which shall be posted at the entrance to the plant, regarding vehicles hauling from the site are to include:
 - no flatbed trucks without sides or tailgates;
 - tailgates shall be in place and in an upright position; and
 - all trucks leaving the site must be covered by a tied-down tarp.
 - e. Operator is responsible for spillage and cleanup of aggregate within one mile of the plant site, which includes the intersection of the access road to the north and U.S. Highway 40. The failure by the applicant to clean up spilled aggregate of such roads within a reasonable period of time shall be grounds for action under Section XVII, Inspection/Violation/Revocation.
 - f. The operator will not allow trucks to exceed State of Kansas legal weight limits or legally posted weight limits since different truck configurations have different legal weight limits.
 - g. Weight limitations shall be posted on appropriate roads adjacent to the quarry.
 - h. Access points across township roads between phases of operation require prior review and authorization from the Douglas County Public Works Director. Access is restricted to one point of crossing per phase as shown on the operation plan. Road crossings between the phases of the site shall be maintained by operator at all times.
 - i. During the term of this Conditional Use Permit, the applicant shall not request the vacation of any township roads in the vicinity of the site.
- 16) Transfer of Operator
Because the operator's track record is an important consideration, a change in the quarry operator shall require the conditional use permit to come back to the Planning Commission for review and to the County Commission for reapproval.
- 17) Sanitary Landfill
The property shall not be used or requested for use as a sanitary landfill within the life of this conditional use permit.
- 18) Shop Facility
Repair and maintenance activities shall be limited to service of vehicles and equipment in use at this specific quarry location.
- 19) Inspection/Violation/Revocation
The Douglas County Commission, or the appointed representative(s) thereof, shall have the right, without advance notice, to enter the premises and inspect any aspect of the quarry operation for compliance with the conditions of this permit. Upon entering the premises, the County shall first request an escort by the applicant's representatives.

Further, the Douglas County Commission, or the appointed representative(s) thereof, shall be authorized to:

- a. Order the stoppage of any operation occurring without a permit or in violation of the terms of this permit.
 - b. Order the operator or its agents and employees to adopt such remedial measures as are necessary to comply with the terms of this CUP. In such cases, the operator shall be given no more than ninety (90) days to rectify any condition of noncompliance.
 - c. Order the immediate suspension of operations if, after due notice and an opportunity to be heard before the County Commission, it is determined by the Board of County Commissioners that the permitted operation is causing, or can reasonably be expected to cause, a significant, imminent danger or threat to the health, safety or welfare of the public or to the environmental quality of the surrounding area.
 - d. In cases such as those described in Paragraph (C) that do not pose an imminent threat to the public health, safety and welfare, the operator shall be given no more than 90 days to rectify the condition. If the condition has not been rectified, the County Commission, after due notice and hearing, may order the suspension of operations and suspend or revoke part or all of the CUP.
 - e. If the operator or the agents or employees thereof, fail to comply with a lawful order under this section, or violate any of the restrictions of use enumerated for this permit, the County Commission, after due notice and an opportunity for a hearing, may suspend or revoke part or all of the CUP.
- 20) The timeframe for completion of any phase is dependent on the market demand; however, the operator agrees to continuously quarry Phase 6 (within the limits of the CUP restrictions) so that Phase 6 will be completed as soon as possible

CUP-7-2-90 RESTRICTIONS OF USE
(As Amended 9-16-92 by County Commission)

I. SETBACKS

Operations setbacks vary around perimeter of the site based on the Exhibit prepared by Brian Kubota for Martin Marietta [and amended in Exhibit "B", as orally revised on 8/26/92, *reflects revised language added in approval of CUP-6-6-92*]. The setbacks shown are and shall be:

- * 50' blasting/mining setback - along the west perimeter of Phases I and V; & along the north perimeter of Phases I, I-A and V;
- * 400' blasting/mining setback - along the west and south perimeters of Phase VI;
- * 160' mining and
260' blasting setbacks - along County Road #442;
- * 100' mining/blasting setback - along Township Roads 050E, 1700N & 100E;
- * 100' mining and
150' blasting setbacks - along the east side of Phase IV;
- * 200' mining and
500' blasting setbacks - along the east side of Phase III, the north & south sides of Phase IV, and along a portion of the east side of Phase V near the NE corner across from the Wulfkuhle residence;
- * 700' blasting/mining setback - along the south perimeter of Phase III; and the area southeast of a line which is 100' northeast of and parallel to the pipeline in Phase III and all of the area to the southeast of the pipeline;
- * a triangular area in the southeast corner of Phase VI, a corner of which is 1,800' north of the south property line of Phase VI along the setback line of County Road #442 and another corner of which is 1,100' west of the right-of-way of County Road #442 along the south setback line of Phase VI; and
- * in the northeast corner of Phase I-A, a rectangular tract the south side of which is 500' south of the north property line of Phase I-A and the west side of which is 500' west of the right-of-way of County Road 100E.

II. OPERATIONS RESTRICTIONS

Methods shall be adopted to minimize dust in staging area as well as along the haul roads.

Quarry operations shall be restricted to:

- a) sale and removal of rock: 6AM - 5:30PM, Monday - Friday;
- b) production and extraction: 6AM - 10PM, Monday - Thursday;
6AM - 5:30PM, Friday;
- c) blasting: 1PM - 5PM, Monday - Friday;
- d) provided, however, that no quarry operations shall take place on the following holidays or the days on which such holidays are observed by Kansas state

government: New Year's Day; Memorial Day; Independence Day; Labor Day; Thanksgiving Day; the day immediately following Thanksgiving Day; and Christmas Day.

III. FENCING

The entire site shall be fenced. All existing fencing shall be maintained by the applicant in at least its existing condition and in compliance with the fence laws of Kansas. Where additional fencing is installed by the applicant in compliance with this restriction, it shall consist of a five-strand barbed wire fence and thereafter shall be maintained in compliance with the fence laws of Kansas. Within sixty (60) days after the approval of this conditional use permit, the applicant shall enter into an agreement in which it agrees to maintain all partition fences along adjoining tracts and to indemnify and hold harmless the owners and occupants of said tracts of land from any liability arising from the failure to maintain said fencing as required herein and by the fence laws of Kansas. In the event any livestock is determined to be on the quarry site, the applicant's representatives shall assist the owner thereof or the owner's representative in retrieving the livestock and the applicant shall shut down any operations as necessary to complete the retrieval process.

A security gate and fence shall be placed at the entrance to the quarrying site across the main haul road.

The fence shall be signed periodically along each perimeter stating:

- a) the operator's name, business address and phone number;
- b) Conditional Use Permit Number; and
- c) NO TRESPASSING.

IV. BLASTING

Blasting shall be set only in sequential delays; no single delay to be over 150 lbs. of explosives. All fly-rock shall be removed from adjacent property immediately after a blast. Prior to each blast the applicant shall contact adjoining neighbors who request individual notice of each blast. Further, a signaling system shall be used to alert people in the neighboring vicinity before each blast takes place. Finally, the applicant shall observe the blasting safety precautions described in the paragraph on page 17 of the August 22, 1990 minutes of the Lawrence-Douglas County Metropolitan Planning Commission, beginning with the sentence: "Security is of the utmost importance to the mining operator."

V. AIR QUALITY

The quarry operator shall adhere to air quality standards of KDHE, not to exceed 20% of opacity more than 1 time in a one year period as observed by KDHE observers over a 5 minute period.

VI. OTHER REGULATORY RESTRICTIONS

All applicable regulations of EPA, KDHE, Ks. State Bd. of Agriculture - DWR, and other applicable agencies shall be adhered to and subsequent revisions to these regulations shall apply.

VII. PERFORMANCE BOND FOR RECLAMATION

- (a) A performance bond in the amount of \$100,000.00 with sufficient sureties shall be secured to cover reclamation activities for the plant site as designated on Phase I and shall be filed with the Douglas County Clerk's Office prior to the commencing of any site preparation activities or any other work being done pursuant to the CUP. This performance bond shall remain in place for the entire life of the permit and shall not be subject to release until the plant site has been fully reclaimed and certification thereof shall have been made by the Douglas County Commission.
- (b) In addition to the bond required under paragraph (a) above, a performance bond in the amount of \$400,000.00 with sufficient sureties shall be secured for the first site excavated for extraction purposes in Phase I other than at the plant site and shall be filed with the Douglas County Clerk's Office prior to the commencing of any excavation (including the stripping of top soil) other than at the designated plant site. This bond shall be for an excavation area no larger than 10 acres open at one time and shall remain in place until certified by the Douglas County Commission that reclamation has been completed at the site for which it was obtained.
- (c) For each additional 10 acre site excavated for extraction purposes in any Phase of the quarry operations during the term of the CUP, a performance bond in the amount of \$400,000.00 with sufficient sureties for additional excavation for extraction purposes shall be secured and shall be filed with the Douglas County Clerk's Office prior to the commencing of any such additional excavation (including the stripping of top soil). These bonds shall each be for areas no larger than 10 acres open at one time per excavation and shall remain in place until certified by the Douglas County Commission that reclamation has been completed at each site.
- (d) No more than 30 acres may be open, mined and extracted from at any one time on the quarry site, exclusive of the plant site. No more than 10 acres shall be open, mined and extracted from in a subsequent phase until reclamation is complete on the previous phase. Each of the bonds described above also shall carry provisions which provide additional coverage for any other quarry operations that are carried on at the quarry site during the pendency of the bond until release of the bonds.

VIII. RECLAMATION AND REVIEW

The first year of operation, and every 5 years thereafter, the applicants shall submit a detailed report and plan of quarrying operations to the Planning Office and to the Douglas County Public Works Director indicating the phases of quarry operation; location of stockpile area; estimated volume of material being extracted; and a detailed monitoring and management plan for the areas undergoing reclamation. The Monitoring and Management Plan for the Reclamation Process shall include:

Detailed reclamation plans shall be submitted for each phase of the reclamation process for review and recommendation by the Planning staff and approval by the County Commission. The Phase I plan shall be submitted prior to opening of quarrying activities in Phase II, and each subsequent reclamation plan be submitted prior to the opening of the following phase of quarrying activity. The property shall be reclaimed to a state similar to the existing state (or better) with reference to general topography, percent

slope, and plant and animal life supported by the established ecosystem. [Refer to PC minutes, 9/26/90, pp. 3 & 4.]

IX. PRE-BLAST SURVEY AND HYDROLOGIC STUDY

A pre-blast survey (by an independent seismology firm approved by the applicant and the owners of existing structures within one-half mile of the quarry site) shall be conducted, if the property owners request it, for existing structures within one-half mile of the quarry site to document existing conditions and determine the quantity/quality of water in the wells. The cost of such survey shall be paid by the applicant. Both the property owners and Martin Marietta shall be provided copies of the survey performed to retain for their records.

A hydrologic study of the site shall be completed at the applicant's expense prior to any quarrying operation:

- (a) to provide an inventory of area residential and stock wells and determine their capacities and current volumes/levels of operation; and,
- (b) to determine the impact of quarrying, per phase, based on the depth of mining proposed on the existing water tables which serve these wells.

X. DRAINAGE STUDY

Prior to work progressing in each phase of the quarrying operation, a detailed grading plan showing site runoff and its relationship to the adjoining properties shall be submitted to the Planning Office for review and approval prior to work progressing in each phase.

XI. SITE ACCESS AND ROAD RESTRICTIONS

(a) Except for vehicles traveling to and from the site on 45th Street in Shawnee County, the principal access to the site for transport truck traffic and hauling of rock shall be restricted to the use of U.S. Highway 40 from a direct route north of the proposed quarry. The northern access to U.S. Highway 40 shall be accomplished by either a purely private road connecting the site with U.S. Highway 40 or by the extension of Woodring Road to the site and the improvement of Woodring Road and 29th Street in accordance with AASHTO and MUTCD standards. The U.S. 40 intersection improvement for either alternative shall be in accordance with KDOT requirements. The Douglas County Commission prefers the private road alternative, and nothing herein shall be construed as a commitment by the Commission to exercise its powers of eminent domain to extend and improve Woodring Road and 29th Street.

If the applicant chooses the Woodring Road/29th Street alternative, the applicant may be required to acquire all rights-of-way deemed necessary for the project by the Director of Public Works/County Engineer and convey such property interests to Douglas County and Shawnee County without cost to the counties. The cost of all public improvements to Woodring Road and 29th Street, including, but not limited to, engineering services, utility relocation, and construction, shall be paid by the applicant. Douglas County, at its option, may provide construction engineering services and such other services deemed appropriate by the County Commission in connection with the project, and the total direct and indirect cost of such services shall be paid by the applicant. Further, the applicant shall enter into a maintenance agreement with Douglas County to properly maintain the improved public roadway in a manner acceptable to the Director of Public Works/County Engineer.

The northern access to U.S. 40 shall be constructed and available for use no later than twelve (12) months from the date rock crushing activity begins on the proposed CUP site. The County Commission may extend this deadline for a fixed period of time upon a documented showing by the applicant of an unreasonable delay caused by either Douglas County or the Kansas Department of Transportation.

If the composition of the private road alternative described above includes an aggregate surface, "year round" dust control along the roadway shall be maintained by the applicant. If a public road is constructed by the applicant for gaining access to U.S. 40, it shall contain a hard surface of either concrete or bituminous asphalt in accordance with AASHTO standards.

(b) Improvements to Douglas County Route 442 and the on-going maintenance of such improvements shall include the construction or overlay at the quarry entrance on Route 442 and 45th Street (where necessary) of through lanes, acceleration/deceleration lanes (on the north side) and a left turn lane (for traffic approaching from the west in Shawnee County) with shouldering, all in accordance with AASHTO and MUTCD standards. The work shall be planned, permitted and completed within one year of the date on which the CUP is approved. The applicant shall be financially responsible for the cost of such improvements, including, but not limited to, right-of-way acquisition, engineering, and construction. Douglas County, at its option, may provide construction engineering services in connection with such improvement project, and the total direct and indirect cost thereof shall be paid by the applicant.

Except for local deliveries of rock from the quarry site, Route 442 shall not be used by transport trucks to travel to and from the east. The applicant shall post signs and adopt appropriate restrictions on the quarry site, including restrictions on sale of rock where necessary, to ensure strict compliance with this restriction by all transport trucks. In the event the Board of County Commissioners determines, after due notice and hearing, that such restrictions have proven ineffective in prohibiting transport trucks which originate from or travel to the quarry site from using Route 442 east of the quarry entrance in violation of this restriction, the Board may order such improvements to Route 442 as it deems necessary, including, but not limited to, appropriate shouldering, surfacing and signing, and assess such costs to the applicant which shall be paid in a timely manner. In the alternative, the Board may order the applicant to cease operation or order such steps as the Board deems necessary under Section XVII, Inspection/Violation/Revocation.

(c) No township roads shall be used as access to the quarry.

(d) Restrictions which shall be posted at the entrance to the plant, regarding vehicles hauling from the site, are to include:

- no flat bed trucks without sides or tailgates;
- tailgates in place and upright position; and
- all trucks leaving the site must be covered by a tied-down tarp.

(e) Martin Marietta shall be responsible for spillage and clean up of aggregate within one mile of the plant site. This includes the intersection of access road to the north and U.S. Highway 40. The failure by the applicant to clean up spilled aggregate of such roads within a reasonable period of time shall be grounds for action under Section XVII, Inspection/Violation/Revocation.

(f) Weight limitations shall be posted on appropriate roads adjacent to the quarry.

(g) Access points across township roads between phases of operation require prior review and authorization from the Douglas County Public Works Director. Access is restricted to one point of crossing per phase as shown on the applicant's submittal. Access crossings between the phases of the site shall be maintained by applicant at all times.

- (h) During the term of this Conditional Use Permit, the applicant shall not request the vacation of any township roads in the vicinity of the site.

XII. NOISE AND LIGHT POLLUTION

Vehicles used in plant operation (extraction & production) after 6PM shall be equipped with a strobe light in addition to the back-up (audible) signal alarm. During hours when it is permissible to use only a strobe light, the audible signal shall be turned off.

Permanent outdoor lighting at the plant area, mining area, and haul roads shall be shielded and directed down with a solid screen to prevent light pollution beyond the site boundaries. Lighting is restricted to low pressure, sodium.

XIII. PERIMETER SETBACK EXCEPTIONS

The perimeter setback along the west shall be eliminated at the time adjoining property in Shawnee County is actively quarried and if the operation is under the same operator. The perimeter setback adjoining any neighboring property shall be modified to a lesser distance than set forth in I, above, down to a minimum of 50' mining/blasting setback, upon filing with the Douglas County Commission of a duly notarized statement by the beneficial owner of such neighboring property evidencing said owner's agreement to modification of the setback; provided that no such modification shall be permitted along the northern boundary of Phase IV or Phase I-A, unless such a statement is filed by all landowners owning property north of and within 1,300' of the northern boundary of Phase IV and the East 1,000' of the northern boundary of Phase I-A. *[language revised as approved September 16, 1992]*

XIV. DEVELOPER'S TRACK RECORD

Because the developer's track record is an important consideration, a change in the quarry operator shall require the Conditional Use Permit to come back to the Planning Commission for review and to the County Commission for reapproval.

XV. FUTURE USE OF THE SITE

The property shall not be used or requested for use as a sanitary landfill within the life of this Conditional Use Permit.

XVI. MONITORING BLASTS

Martin Marietta shall contract with an independent seismology firm to monitor blasts at the commencement of quarrying operations at each residence within 1/2 mile of the blast site to assure that the blast design will not be harmful to any structures or wells and that all associated vibrations are below currently recognized safety levels. A report on the monitoring of initial blasting shall be made available to owners of the residences and such report shall include a full frequency analysis of vibrations.

After the initial blasting, Martin Marietta shall contract for a continuous monitoring program commencing with the start of continuous regular blasting by an independent seismology firm

at stations chosen by the seismology firm. A monthly report which analyzes the impacts of daily blasting will be available at Martin Marietta's offices for inspection. Residents may request positioning of the seismograph to measure the impact at their property; provided, however, the applicant shall not be required to conduct tests in excess of those it determines, based on the professional advice of its independent seismology firm, will provide adequate seismic readings at residents' properties. Any resident desiring to appeal the decision of the applicant concerning this condition may appeal it to the County Commission which may order seismic tests at such locations as it deems appropriate under the circumstances at the expense of Martin Marietta.

XVII. INSPECTION/VIOLATION/REVOCATION

The Douglas County Commission, or the appointed representative(s) thereof, shall have the right, without advance notice, to enter the premises and inspect any aspect of the quarry operation for compliance with the conditions of this permit. Upon entering the premises, the County shall first request an escort by the applicant's representatives. If no escort is available, the inspection may proceed immediately.

Further, the Douglas County Commission, or the appointed representative(s) thereof, shall be authorized to:

- (a) Order the stoppage of any operation occurring without a permit or in violation of the terms of this permit.
- (b) Order the applicant or its agents and employees to adopt such remedial measures as are necessary to comply with the terms of this permit. In such cases, the applicant shall be given no more than ninety (90) days to rectify any condition of noncompliance.
- (c) Order the immediate suspension of operations if, after due notice and an opportunity to be heard before the County Commission, it is determined by the Board of County Commissioners that the permitted operation is causing, or can reasonably be expected to cause, a significant, imminent danger or threat to the health, safety or welfare of the public or to the environmental quality of the surrounding area.
- (d) In cases such as those described in paragraph (c) that do not pose an imminent threat to the public health, safety and welfare, the applicant shall be given no more than (90) days to rectify the condition. If the condition has not been rectified, the County Commission, after due notice and hearing, may order the suspension of operations and suspend or revoke part or all of the Conditional Use Permit.
- (e) If the applicant, or the agents or employees thereof, fail to comply with a lawful order under this section, or violate any of the restrictions of use enumerated for this permit, the County Commission, after due notice and an opportunity for a hearing, may suspend or revoke part or all of the Conditional Use Permit.

XVIII. BOND TO COVER DAMAGES TO PERSONAL PROPERTY

The applicant shall post with the Douglas County Clerk a cash bond in the amount of \$10,000 to defray the cost of any damages to the personal property of the occupants of residences within one (1) mile of the quarry site perimeter which the Board of County Commissioners, after due notice and hearing, in its judgement determines are due to the activities of the

applicant, its agents or employees. Such cash bond shall be maintained at the \$10,000 level by the applicant during the term of this CUP, and the bond amount shall be refunded to the applicant without interest upon the completion of the 30 year CUP term. Any award or denial of award by the County Commission shall be subject to appeal to the district court.

XIX. INCORPORATION BY REFERENCE

All of the terms, conditions, plans and restrictions contained in the applicant's bound application submittal and the Planning staff August 22, 1990 report to the Planning Commission, entitled "Reclamation: The Process and the Plan," are hereby incorporated by reference as a condition and restriction on this Conditional Use Permit. In any instance in which there is a conflict between the terms of these restrictions and the bound submittal or Planning staff report, these restrictions shall control.

XX. ACKNOWLEDGEMENT

By the signatures of its authorized agents, the applicant acknowledges and agrees to be bound by the provisions of this Conditional Use Permit.

XXI. LANDSCAPING

Landscaping along the road right-of-way are permitted to be clustered in groups which are 200' on center and approximately 40' - 50' between cluster groups. Trees and shrubs are to be shown on the revised landscape plan dated 30 January 1991.

Landscaping shall be phased in accordance with the approved landscape plan which shows three landscape phases. Landscape phase one and two: are along County Rds. 442, 050E, 100E, and 1700N (between 050E and 100E). Planting for these phases of the quarrying operation will be completed by Spring 1993 (which is during the mining operations Phase 1); the third and final landscape phase is along the north side of County Road 1700N, east of County Rd. 100E. This final landscape phase will be activated by the completion of the mining operations Phase 2. [This planting is adjacent to mining operations Phase 4.]

(Approved by Board of County Commissioners of Douglas County, KS on February 27, 1991.)

XXII. ADDITIONAL REQUIREMENTS

Rock extracted from the permitted site shall not be transported to and crushed in Shawnee County during the term of this permit. No more than one portable rock crushing plant shall be operated on the site and its use shall be restricted to the plant site in Phase I. The applicant shall cease the use of the portable rock crushing plant by no later than December 31, 1993. If the "state-of-the-art" permanent, enclosed rock crushing plant proposed by the applicant is not constructed by January 1, 1996, this Conditional Use Permit shall be null and void; provided, however, the County Commission may grant an extension to this deadline upon a documented showing that any delay was beyond the applicant's control.

CONDITIONS OF APPROVAL CUP-6-6-92
Approved September 16, 1992

1. 22 restrictions of use approved by the County Commission as revised on February 27, 1991 for Conditional Use Permit No. 3500; *[revised language provided above]*
2. No additional requests be made by Martin Marietta and/or its heirs during the remainder of Conditional Use Permit No. 3500 and No. 3853 (which expires December 19, 2020) to expand the size of the quarry site;
3. Restriction I - SETBACKS and Restriction XIII - PERIMETER SETBACK EXCEPTIONS shall be modified to reflect the additional setbacks as proposed in Exhibit B-1, dated August 26, 1992, and the additional language as proposed in Exhibit C, dated August 26, 1992; *[revised language provided above]*
4. An amended Proposed Operations Plan shall be submitted which includes the additional acreage; AND
5. Proposed Phase 1-A shall be the only permitted incremental expansion of the quarry CUP.

Added with 1993 approval
of Shop

PC Item 3
Attachment A, Pg 10

1. All repair and maintenance activities shall occur in the enclosed shop facility;
2. Repair and maintenance activities shall be limited to service of vehicles and equipment in use at this specific quarry location;
3. Specific landscape improvements associated with the new structures shall be submitted for review by the Planning Staff prior to issuance of building permits;
4. Acquisition Douglas County Health Department permits prior to issuance of building permits for the proposed structures; and
5. Submittal of a revised site plan, to be approved by Planning Staff, indicating the placement of the shop facility near the office/scale house or at an elevation approximately 50' lower than the current ground elevation at the proposed location.

Added w/ 2006
transfer of operator

PC Item 3
Attachment A, Pg. 11

CONDITIONS OF APPROVAL

1. Upon completion of quarry operations of Phase 2, Mid-States shall return the topsoil that is currently located on the approximately ¼ mile boundary between Phase 1A and Phase 2, and, after the topsoil is returned, reconstruct a 5-strand barb-wire fence along the line of the former interior fence between Phase 1A and Phase 2. Upon completion of quarry operations of Phase 5, Mid-States shall reconstruct a 5-strand barb-wire fence along the approximately ½ mile line of the former interior fence between Phase 1 and Phase 5. All of the foregoing fencing shall be in accordance with the requirements of the CUP.
2. Mid-States shall be responsible for reclamation of all quarried land. Prior to commencing quarry operations, Mid-States shall file one or more performance bonds, to ensure reclamation of the Quarry in accordance with the CUP, with the Douglas County Clerk in the initial amount totaling \$1,300,000, and keep the performance bond in effect for the remaining life of the CUP, in such amounts and with such sureties as required by Section VII of the CUP Restrictions of Use. Only upon Mid-States' filing of such performance bonds, will Douglas County release the current performance bonds on file.
3. If Mid-States desires to excavate deeper than elevation 1042 in any Phase, Mid-States must cause a hydrologic study to be completed in accordance with Section IX of the CUP Restrictions of Use, prior to such excavation.
4. The landscaping provisions contained in Section XXI of the CUP Restrictions of Use is varied such that neither Martin Marietta nor Mid-States has an obligation to replant previously planted landscaping which subsequently died, provided, however, that the following landscaping shall be planted:

Area I (South side of Phase I)

On berm on north side of County Road 442 from entry gate to E50:
6 sets of 4 Austrian Pines and 3 Hackberry, total of 42 trees

Area II (Southeast corner of Phase I & Northwest corner of Phase III)

Add to both sides of E50 entry:
4 sets of 3 Austrian Pines and 2 Hackberry, total of 20 trees

Area III (East side of Phase I)

West side of E50 South of haul road crossing, 500 ft. offset from crossing:
4 sets of 3 Austrian Pines and 2 Hackberry, total of 20 trees

Area IV (East side of Phase V)

West side of E50 North of haul road crossing, 500 ft. offset from crossing:
5 sets of 3 Austrian Pines and 2 Hackberry, total of 25 trees

Area V (Northeast corner of Phase III)

Short section on South side West of E100 Rd, approximately 450':
3 sets of 3 Austrian Pines and 2 Hackberry, total of 15 trees

Area VI (East side of Phase II)

West side of E100 Rd. after berm is removed, North approximately 1300':
4 sets of 3 Austrian Pines and 2 Hackberry, total of 20 trees

Area VII (Northwest corner of Phase IV)**East side of E100 Rd.:****3 sets of 3 Austrian Pines and 2 Hackberry, total of 15 trees.**

The foregoing landscaping shall be planted to incorporate existing trees and, with the exception of the landscaping outlined in Area VI, all landscaping shall be planted on or before December 31, 2007. The landscaping outlined in Area VI shall be planted as soon as practicable, but no later than December 31 of the year in which the berm is removed.

In addition, an agreement shall be obtained with a professional landscaping company for maintenance, including irrigation, of the landscaping for a term of 12 months following planting, and the Zoning & Codes Department shall be provided a copy of such agreement on or before December 31, 2007.

In the event that the landscaping identified above is not planted or evidence of the 12-month maintenance agreement is not supplied on or before the dates specified, Mid-States shall be in material non-compliance with the CUP Restrictions of Use and, upon written notice from the Zoning & Codes Department, shall immediately cease all quarrying and sale activities at the Quarry until such non-compliance is remedied to the satisfaction of the Zoning & Codes Department.

5. Mid-States shall submit its first reclamation report and plan of quarrying operation to the Planning Office and Douglas County Public Works Director by July 31, 2010, to comply with the requirement of Section VIII of the CUP Restriction of Use. The Planning Office will review and make recommendations and submit a report to the County Commission for approval. Every five (5) years thereafter, Mid-States will submit the detailed report required by Section VIII.
6. This Approval to Transfer CUP is supplemental to, and shall become a part of, the CUP. Mid-States and its operation of the Quarry shall be subject to the above requirements and all of the previously approved Conditions of Approval and Restrictions of Use, the same as if the CUP was originally granted to Mid-States, and Mid-States shall sign below to confirm its agreement and understanding of these requirements. Section XIV of the CUP shall continue to apply in the event Mid-States subsequently desires to transfer ownership or operational authority of the Quarry to another person or entity, and references in this Approval to Transfer CUP to Martin Marietta or Mid-States shall apply to the new Quarry owner or operator, as the context requires. This Approval to Transfer CUP shall not prevent the Board or the County Zoning & Codes Department from taking enforcement action in the event that it is later determined that the Quarry is not in compliance with the CUP Restrictions of Use and Conditions of Approval, as amended.

CUP-13-00126, BIG SPRINGS QUARRY REVISED PHASING SEQUENCING, WAS APPROVED BY THE BOARD OF COUNTY COMMISSIONERS ON JUNE 5, 2013 SUBJECT TO THE FOLLOWING CONDITION:

The remaining phases of the quarry, 4, 5, and 6, may occur in any sequence provided that the reclamation review provisions of Condition 8 would still apply; and that nothing herein shall change any phasing requirement in any other portion of the Conditional Use Permit.

CONSTRUCTION &
AGGREGATE
PRODUCTS, INC.

5700 Park Avenue
Des Moines, Iowa 50321-1207
(515)243-5857
Fax (515)243-6131
(800)388-5857
www.capiowa.com

August 6, 2018

Lawrence-Douglas County Metropolitan Planning Commission
City Hall
PO Box 708
Lawrence, KS 66044

To whom it may concern,

Please accept this letter as my personal and professional endorsement of Mid-States Materials, LLC in their attempt to get a Conditional Use Permit. We have been in business with Mid-States for 15 years. In all that time, we have found them to be a great business partner. They are an important customer to us and if they are not allowed to continue the quarry, we would suffer a great loss to our bottom line.

Mid-States has great people to work with and I have developed a good working relationship with their people. They invest in their business by buying the best machinery and supplies and always pay on time. We urge you to approve the CUP so that Mid-States can continue with the quarry.

Sincerely,



Dana Raley
Vice President
Construction & Aggregate Products



G.W. VAN KEPPEL COMPANY

1801 N. 9th Street PO Box 2923 Kansas City, Kansas 66101

AGGREGATE EQUIPMENT DIVISION

August 3, 2018

Lawrence-Douglas County Metropolitan Planning Commission
City Hall
P.O. Box 708
Lawrence, KS 66044

I am writing this letter of recommendation on behalf of Mid-States Materials. For the past seven years our company has been working with the Big Springs Quarry, a part of Mid-States Materials. G. W. Van Keppel has been involved in the aggregate industry since we were founded back in 1926. We provide equipment and services to the industry. G. W. Van Keppel currently operates in 8 different states working with hundreds of rock quarries. Mid-States Materials stands out as one of the leaders in the industry. Mid-States Materials has always put safety first for our employees visiting any of their locations. The Big Springs location has helped grow the surrounding markets. The Big Springs quarry helps provide quality products and a good value to the industry. Driving through many of their sites, you can see the continued effort they put into the reclamation work. The sites are always clean and welcoming. We are proud to have them as a partner in the aggregate industry.

Sincerely,

Ben Schmidtlein

Kansas Sales Manager

G. W. Van Keppel Co.

August 6, 2018

Lawrence-Douglas County Metropolitan Planning Commission
City Hall
PO Box 708
Lawrence, KS 66044

To whom it may concern,

I buy my agricultural lime from Mid-States Materials. Ag lime is incredibly important to farming as it reduces soil acidity, provides calcium and magnesium for plants, and improves water penetration. I have been buying ag lime from Mid-States for years. Ag lime can only be manufactured at limestone quarries. This is the only quarry in southeast Douglas County and practically all of Shawnee County. I am supportive of Mid-States CUP application, as they are a great asset for agriculture in this area.

We urge you to approve the CUP application so that Mid-States can continue making ag lime for Kansas farmers.

Sincerely,

A handwritten signature in cursive script, appearing to read "Dennis Taylor".

August 1, 2018

**In Re: Letter of Recommendation for
Mid-States Materials, LLC
P.O. Box 236
Topeka, Kansas 66601**

To whom it may concern,

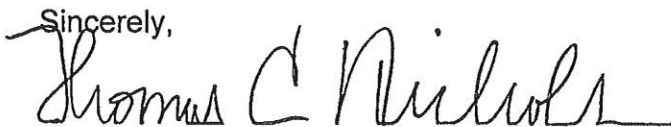
Mid-States Materials, LLC has leased our property to conduct aggregate quarry operations for several years. It is my pleasure to write this letter of recommendation for Mid-States Materials, LLC, in recognition of their outstanding work at our site.

Management is friendly and communicates with us regularly about activities at the quarry. Royalty payments are timely. The site is always properly maintained and professionally operated.

Many times, reclamation activities are the primary basis for the public when judging the overall success of mining within Kansas.

The reclamation work that has been completed on our property is well beyond that required by regulations and demonstrates Mid-States Materials' commitment to practice environmental stewardship at an elevated level.

Sincerely,

A handwritten signature in black ink, appearing to read "Thomas C. Nichols". The signature is fluid and cursive, with the first name "Thomas" being more legible than the last name "Nichols".

Thomas C. Nichols
On Behalf of the Nichols Family
Big Springs Quarry



August 2, 2018

City of Lawrence
Lawrence Douglas County Metropolitan Planning Office
6 East 6th Street
Lawrence, Kansas 66044

Re: Big Springs Quarry Conditional Use Permit / Mid-States Materials

To Whom It May Concern:

I have been associated with Mid-States Materials, LLC since 2008 working with the company in a Risk Management capacity. Truss has provided insurance and risk management services for Mid-States Materials over the past decade and the company's commitment to public, employee and environmental safety would be considered "Best In-Class" for the aggregate industry. I have been in the aggregate business for over 30 years and Mid-States Materials pledge to providing top quality products to the marketplace is second to none.

In fact, the company's 2019 Preliminary Worker's Compensation Experience Modification is .72. When you compare Mid-State Materials to other companies in the same industry, their total worker's compensation losses were \$13,172 annually, compared to the industry average of \$132,888 annually. Simplistically their losses were 10% of what is expected for someone of the same size in the aggregate production business. This is a direct result of the companies drive towards a quality product and a safe working environment that benefits both employees and the general public.

Mid-States Materials is a perfect example of a locally owned small business that is doing things the right way for the benefit of all. I could not be more proud of my affiliation with the company, their employees and their shareholders.

Best Regards,

Chandler Cullor
President
TRUSS



August 6, 2018

Lawrence-Douglas County Metropolitan Planning Commission
City Hall
PO Box 708
Lawrence, KS 66044

To Whom It May Concern,

Please accept this letter of recommendation for Mid-States Materials. Mid-States Materials has been a great business partner and customer of Foley Equipment for many years. In working with Mid-States Materials, we have found their staff to be professional and honest. They are a company built on integrity, reliability and loyalty.

Mid-States provides high quality products and that are of great value to the construction market place. Foley Equipment provides much of the equipment they current use in their operations. Therefore, Foley Equipment and our employees would benefit from Mid-States Materials continuing these operations.

Sincerely,

Matt McNett
Vice President - Service & Power Solutions
Foley Equipment

www.foleyeq.com

KANSAS

Chanute
501 W. 35th Pkwy.
Chanute, KS 66720
(620) 431-3600

Colby
205 E. Horton Ave.
Colby, KS 67701
(785) 462-3913

Concordia
1805 Lincoln St.
Concordia, KS 66901
(785) 243-1960

Dodge City
1600 E. Wyatt Earp Blvd.
Dodge City, KS 67801
(620) 225-4121

Great Bend
701 E. Tenth St.
Great Bend, KS 67530
(620) 792-5246

Liberal
1701 E. 5th St.
Liberal, KS 67901
(620) 626-6555

Manhattan
5104 Skyway Dr.
Manhattan, KS 66503
(785) 537-2101

Olathe
15854 S. 169 Hwy.
Olathe, KS 66062
(913) 393-0303

Salina
2225 N. Ohio St.
Salina, KS 67401
(785) 825-4661

Topeka
1737 SW 42nd St.
Topeka, KS 66609
(785) 266-5770

Wichita
1550 S. West St.
Wichita, KS 67213
(316) 943-4211

MISSOURI

Kansas City
5701 E. 87th Street
Kansas City, MO 64132
(816) 753-5300

Sedalia
1040 Sedalia Road
Sedalia, MO 65301
(660) 829-7400

St. Joseph
3619 Pear Street
St. Joseph, MO 64503
(816) 233-2516

Lawrence-Douglas County Metropolitan Planning Commission
City Hall
PO Box 708
Lawrence, KS 66044

July 27th, 2018

To whom it may concern,

Please accept this letter as my personal and professional endorsement of Mid-States Materials, LLC in their attempt to get a Conditional Use Permit for the Big Springs Quarry. I have been in business with Mid-States for over 10 years. In all that time, I have found them to be a great business partner. They are my main customer base and if they are not allowed to continue the quarry, I would suffer a great loss to my bottom line.

Mid-States has great people to work with and I have developed a good working relationship with their people. They invest in their business by buying the best machinery and supplies and always pay on time. We urge you to approve the CUP so that Mid-States can continue with the quarry.

Sincerely,

A handwritten signature in black ink, appearing to read 'Jason Rowe', with a stylized flourish at the end.

Jason Rowe

Rowe's Mobile Service



Fastenal Company
100 SE Monroe
Topeka, KS 66603
785-232-1098

August 3, 2018

Lawrence-Douglas County Metropolitan Planning Commission
City Hall
P.O. Box 708
Lawrence, KS 66044

To whom it may concern,

Please accept my personal and professional recommendation to approve Mid-State Materials, LLC for their Conditional Use Permit at the Big Springs Quarry. Fastenal has maintained a great business relationship with Mid-State Materials, LLC since May 2004. Throughout the years Mid-State Materials, LLC has grown to be a key customer for Fastenal. As an industrial supplier Mid-States Materials, LLC and their employees are known to purchase the best available products to maintain a high standard of excellence. We urge you to approve Mid-State Materials, LLC for the Conditional Use Permit at the Big Springs Quarry so they can continue to provide for the people.

Sincerely,

Darian Brosa
General Manager
P: 785-232-1098
dbrosa@fastenal.com



August 2, 2018

Lawrence-Douglas County Metropolitan Planning Commission
City Hall
P.O. Box 708
Lawrence, Ks 66044

To whom it may concern,

Please accept this letter as my personal and professional endorsement of Mid-States Materials, LLC in their attempt to obtain a Conditional Use Permit at the Big Springs Quarry. Pomp's Tire Service has conducted business with Mid-States Materials for the last 10 years. Mid-States has been a great business partner throughout those 10 years and they are a very important and loyal customer. Pomp's Tire Service would suffer greatly if they are not able to continue to run operations at the Big Springs Quarry.

It has always been a pleasure doing business with all the employees of Mid-States and we have built a great working relationship. Over the years it's been obvious that Mid-States purchases the best available products, supplies and equipment. Mid-States has always been on time with their payments to Pomp's Tire Service and their communication is above and beyond. We urge you to approve the Conditional Use Permit so that Mid-States can continue to operate at the Big Springs Quarry and we can continue to conduct business with them.

Sincerely,

Jeromy Jones
Pomp's Tire Service
Regional OTR Sales
P: 816-808-0718
jjones@pompstire.com



Buckley Powder Co.
A Dyno Nobel Distributor

42 Inverness Drive East Englewood, Colorado 80112 USA Telephone: 303 790 7007 Fax: 303 790 7033

PC Item 3
Attachment B Pg 10

DYNO
Dyno Nobel

August 2, 2018

Lawrence-Douglas County Metropolitan Planning Commission
City Hall
PO Box 708
Lawrence, KS 66044

To whom it may concern,

I urge you to approve Mid-States Materials, LLC request for Conditional Use Permit at the Big Springs Quarry. We have been in business with Mid-States Materials since their formation. In all that time, we have found them to be a great business partner and trustworthy member of the community. The ownership, management and employees have always conducted themselves with a high level of professionalism and integrity. Mid-States Materials has grown their business through both good and bad economic environments but their approach has not varied. The management and the employees always do their best to not just adhere but to exceed all safety and environmental regulations, which is evident in the state and national awards they have won.

Aggregates are a fundamental ingredient required for a modern sustainable society. Without aggregates our economy suffers and deteriorates. As a proud member of the aggregate producing industry, Mid-States Materials has provided a service and product used by every citizen of Douglas County in either the homes they live in, the roads they drive on, the roads food and other goods are shipped on, or the shops, schools and hospitals they visit.

The employees of Buckley Powder Company and I urge you to approve the CUP so that Mid-States Materials can continue with their efforts to help the community they serve.

Sincerely,

Philip H. Porter
General Manager
Buckley Powder Co.



August 1, 2018

Lawrence Douglas County
Metropolitan Planning Office
6 East 6th Street
P.O. Box 708
Lawrence, KS 66044

My name is Craig Stromgren. I am the President and owner of Safety Consulting, Inc. and Safety Supplies, Inc. in Topeka, Kansas.

I have been doing business with Mid-States Materials for the last 10 years in a role of inspecting their quarries for insurance purposes, as a consultant and as a safety trainer. We also source a lot of their safety supplies and work closely with their three on staff Environmental, Health and Safety Professionals. We have inspected their quarries which includes an evaluation of the safety and health of their employees and the public if they are on site. We have also completed some of their MSHA required 8-hour refresher training during the winter months. I have always found them to be very open to us completing a thorough examination of their premises. They have always taking things very seriously and fixed things in a timely fashion if items were noted. Mid-States has brought our company in to evaluate risk management situations and ask for our opinion. I would look at this as a proactive approach.

I would recommend Mid-States Materials be granted a new permit knowing that they care about the land around them, the people around them and they will do what is required by the local, state and federal regulations, but go above and beyond in some of these areas.

Sincerely,

Craig S. Stromgren
President

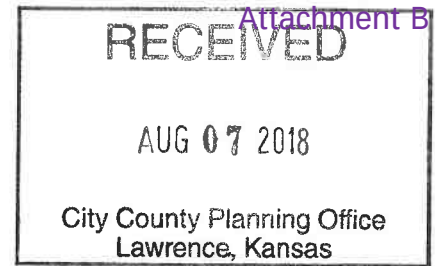
Are you committed? We have been for over 40 years.

EMAIL: sci@safetyconsultinginc.com

4111 NW 16th Street ~ Topeka, Kansas 66618-2860 • PHONE: 785.234.1005 ~ FAX: 785.234.1010

August 6, 2018

Lawrence-Douglas County Metropolitan Planning Commission
City Hall
PO Box 708
Lawrence, KS 66044



To whom it may concern,

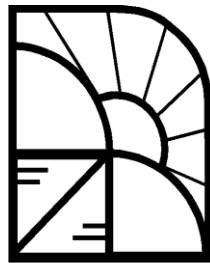
I buy my agricultural lime from Mid-States Materials. Ag lime is incredibly important to farming as it reduces soil acidity, provides calcium and magnesium for plants, and improves water penetration. I have been buying ag lime from Mid-States for 20 years. Ag lime can only be manufactured at limestone quarries. This is the only quarry in southeast Douglas County and practically all of Shawnee County. I am supportive of Mid-States CUP application, as they are a great asset for agriculture in this area.

We urge you to approve the CUP application so that Mid-States can continue making ag lime for Kansas farmers.

Sincerely,

20-30 years

Bill Murr



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Phoenix Center Policy Paper Number 53:

***Quarry Operations and Property Values:
Revisiting Old and Investigating New Empirical Evidence***

George S. Ford, PhD
R. Alan Seals, PhD

(March 2018)

Phoenix Center Policy Paper No. 53
Quarry Operations and Property Values:
Revisiting Old and Investigating New Empirical Evidence

George S. Ford, PhD[†]
R. Alan Seals, PhD^{*}

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Abstract: A large literature exists on the impact of disamenities, such as landfills and airports, on home prices. Less frequently analyzed is the effect of rock quarries on property values, and what little evidence is available is dated and conflicting. This question of price effects is a policy relevant one, with one study in particular used frequently to support “not in my backyard” campaigns against new quarry sites. In this POLICY PAPER, we revisit the literature and conduct a new analysis of the price effects of quarries, estimating the effect of quarries on home prices with data from four locations across the United States and a wide range of econometric specifications and robustness checks along with a variety of temporal circumstances from the lead-up to quarry installation to subsequent operational periods. We find no compelling statistical evidence that either the anticipation of, or the ongoing operation of, rock quarries negatively impact home prices. Our study likewise highlights a number of shortcomings in the empirical methodologies generally used to estimate the effect of disamenities on real estate prices. First and foremost, many existing studies are naïve as to the empirical conditions necessary to identify a causal relationship and do not establish credible strategies to estimate the counter-factual outcome. Second, the inclusion of “distance to the site” regressors in hedonic models is shown to be an unreliable statistical method. Using the method of randomized inference, the null hypothesis of “no effect” of placebo quarries is rejected in as much as 93% of simulations.

[†] Chief Economist, Phoenix Center for Advanced Legal & Economic Public Policy Studies. The views expressed in this paper are the authors’ alone and do not represent the views of the Phoenix Center or its staff.

^{*} Adjunct Fellow, Phoenix Center for Advanced Legal & Economic Public Policy Studies; Associate Professor of Economics and Director of Graduate Studies – Auburn University.

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I. Background

Odds are that underneath your feet is a construction material made of sand, crushed stone, and gravel. These construction materials are an essential ingredient into nearly every construction project, from residential housing, office buildings, retail outlets, entertainment structures, to the roads that connect them.¹ Sand, rock and gravel are literally the foundation of economic development, but their extraction process can generate dust, noise, vibration, and truck traffic. While modern technologies and methods have greatly reduced quarries' impact, the environmental and economic consequences of quarry operations receive considerable attention, often in the form of "not in my backyard" (or "NIMBY") campaigns opposing quarry expansions or new sites. Choosing a quarry site is a delicate task. While a quarry may be best located far from residential density on NIMBY concerns, it also needs to be near the final point of demand due to its high transportation cost. Quarries must balance the need to be both "near" and "far," so they are typically found on the outskirts of cities and towns.

A key NIMBY complaint in the siting and expansion of quarries is the effect of the operations on nearby home values. According to Census data, housing amounts to about 70% of the average American's net wealth, so naturally homeowners are sensitive to any adverse effect, real or imagined, on property values.² Despite NIMBY opposition, nearly all the evidence on quarry operations finds no price effect. Frequently mentioned studies include Rabianski and Carn (1987) and Dorrian and Cook (1996), both of which find no relationship between appreciation rates of property values near to and far from quarries.³ An

¹ 2014 *Minerals Yearbook, Construction Sand and Gravel*, U.S. Geological Survey (2014) at p. 1 (available at: https://minerals.usgs.gov/minerals/pubs/commodity/sand_&_gravel/construction/myb1-2014-sandc.pdf) ("Construction sand and gravel is a traditional basic building material and is one of the earliest materials used by humans for dwellings and later for outdoor areas such as paths, roadways, and other constructs. Despite the relatively low, but increasing, unit value of its basic products, the construction sand and gravel industry is a major contributor to and an indicator of the economic well-being of the Nation").

² *Wealth, Asset Ownership, & Debt of Households Detailed Tables: 2013*, U.S. Census Bureau (2017) (available at: <https://www.census.gov/data/tables/2013/demo/wealth/wealth-asset-ownership.html>).

³ A.M. Dorrian and C.G. Cook, *Do Rock Quarry Operations Affect Appreciation Rates of Residential Real Estate*, Working Paper (1996); J. Rabianski and N. Carn, *Impact of Rock Quarry* (Footnote Continued. . . .)

even earlier study conducted for the U.S. Bureau of Mines in 1981 also found no consistent relationship between quarry operations and the prices of nearby homes.⁴ There are a number of consulting reports on the question, and none report price attenuation attributable to a quarry.⁵

Opposition to quarries based on home valuations relies universally on a report by Professor Patricia Hite (2006).⁶ This brief, 250-word study (hereinafter the “*Hite Report*”) analyzes data from a few thousand homes sales (apparently in the mid-to-late 1990s) around a single quarry in Delaware, Ohio. Using an unconventional regression model and data on transactions occurring decades after the quarry opened, the *Hite Report* finds a positive relationship between home prices and distance from the quarry. Based on that evidence, the *Hite Report* concludes that quarries reduce home values. Yet, the *Hite Report*’s methods and data do not support a causal interpretation.

As economic development marches on, new quarries will be required to satisfy the demand for basic building materials. In light of the mostly dated and conflicting evidence on the effect of quarries on housing prices, this POLICY PAPER offers new evidence, and a review of old evidence, on the relationship between housing prices and rock quarries. First, given its frequent use by NIMBY opposition to quarries, we revisit the *Hite Report*, analyzing home sales data

Operations on Value of Nearby Housing, Prepared for the Davidson Mineral Properties (August 25, 1987).

⁴ M. Radnor, D. Hofler, *et al.*, *Social, Economic and Legal Consequences of Blasting in Strip Mines and Quarries*, U.S. Bureau of Mines (May 1981) (available at: <http://www.cdc.gov/niosh/nioshtic-2/10006499.html>).

⁵ See, e.g., *Study of Impact of Proposed Quarry on The Real Estate Values of Surrounding Residential Property in Raymond, New Hampshire*, Crafts Appraisal Associates Ltd. (April, 2009) (“The evidence does however suggest that the overall marketplace does not react to an influence such as a quarry with a measurable negative reaction as it relates to sale price.”); *Martin Marietta New Design Quarry: Analysis of Effect on Real Estate Values*, Stagg Resources Consultants, Inc. (November 17, 2008); *A Property Valuation Report: Affect [sic] of Sand and Gravel Mines on Property Values*, Banks and Gesso, LLC (October 2002); *Impacts of Rock Quarries on Residential Property Values in Jefferson County, Colorado*, Banks and Gesso, LLC (May 1998); R.J. McKown, *Analysis of Proposed Sand & Gravel Quarry: Granite Falls, WA*, Schueler, McKown & Keenan, Inc. (September 25, 1995).

⁶ D. Hite, *Summary of Analysis: Impact of an Operational Gravel Pit on House Values: Delaware County, Ohio*, Working Paper (2006). We assign the date “2006” as is conventional, but that year is merely the recording stamp date on the document when it was filed in some type of proceeding. We do not know whether a more detailed analysis was provided at some point. We have never seen such a document cited and were unable to locate it.

around the same Delaware-Ohio quarry. Despite replicating both the location and methods of the *Hite Report*, our regression analysis finds that prices *fall* — not rise — as distance from the quarry increases. This result conflicts with that appearing in the *Hite Report*, so we look for more evidence by analyzing data on homes sales near a quarry outside of Murfreesboro, Tennessee, over the same time interval. Again, we find prices *fall* as distance from the quarry increases.

We are reluctant, however, to claim this evidence implies quarries raise home prices. Rather, we conclude, based on the method of randomized inference and other tests, that the *Hite Report's* method is unreliable. Using a simulation of pseudo-treatments, we find that the null hypothesis that home prices rise or fall in distance from a *randomly selected location* is rejected in no less than 67% of cases at the 10% nominal significance level. Estimating price-distance relationships, especially without explicitly considering selection bias, is a highly-unreliable statistical procedure. The nature of real estate markets do not permit the effect of quarries to be identified with such naïve empirical tests.

Second, using data on home sales near a relatively new quarry in Gurley, Alabama, we augment the Hite-style analysis with a difference-in-differences estimator, which quantifies the price-distance relationship both before-and-after operations begin. By exploiting the timing of the quarry buildout and the location of home sales with respect to the quarry, we can credibly identify a causal relationship, at least in theory. Unlike the analysis for Delaware and Murfreesboro, home prices rises in distance from the Gurley quarry site, but do so *before* the quarry becomes operational. After operations begin in 2013, the positive effect of distance is attenuated, again suggesting a positive effect of quarries on housing values.

One critique of our Gurley analysis is that market participants shift price forecasts downward in response to the prospect of a quarry so that the deleterious effects of the quarry could be realized before the quarry opens. Quarry site approvals normally take a decade or so, providing ample time for anticipatory responses to valuation fears. To address this concern, we analyze transactions near a recently approved quarry in Madera County, California. Using a difference-in-differences estimator in conjunction with Coarsened Exact Matching, we test for the anticipatory effect of the proposed quarry on nearby housing prices located along the major roadways serving the site. We find no evidence the quarry reduced housing prices. If anything, relative home prices rose near the quarry site.

While our evidence suggests that quarries do not reduce, but may increase, home prices, our analysis suggests more than anything that the identification of

the effect of quarries on prices is a very difficult problem, facing many conceptual and practical obstacles. We do not resolve all these difficulties. That said, we can conclude the evidence strongly implies the *Hite Report* and its methods are unreliable. Further analysis is, as usual, encouraged.

This paper is outlined as follows. First, we discuss the empirical requirements of quantifying a plausibly causal relationship between property values and quarry operations. Second, we revisit the *Hite Report*, estimating the price-distance relationship for the same quarry in Delaware, Ohio, and replicating the analysis for a quarry near Murfreesboro, Tennessee. Using a simulation method, we demonstrate the futility of estimating the price effects of quarries using the method proposed in the *Hite Report*. Third, we turn to the estimation of causal effects using the difference-in-differences estimator for quarry sites in Gurley, Alabama, and Madera County, California. Across multiple methods, we find, if anything, that home prices near quarries rise, not fall. In all, however, we believe our analysis best supports the hypothesis of “no effect” of quarries, or the announcement of quarries, on home prices. Conclusions are provided in the final section.

II. Empirical Framework

Disamenities such as landfills, airports, windfarms and prisons may plausibly reduce the prices of nearby homes. Such effects have been widely studied.⁷ Modern empirical methods for observational data based on the Rubin Causal Model, however, suggest that much of the work may offer biased estimates of such disamenities because much it looks only at prices after the “treatment,” making it difficult to address selection bias.⁸ To conclude that a disamenity reduces home values, the researcher’s interest must be in the *causal effect* of an amenity or disamenity on property values. Using only post-treatment prices is problematic since the locations of amenities and disamenities are not randomly selected, and

⁷ Other disamenities that may affect property values, airports and waste disposal, are frequently opposed by homeowners. See, e.g., J.P. Nelson, *Airport and Property Values: A Survey of Recent Evidence*, 14 JOURNAL OF TRANSPORT ECONOMICS AND POLICY 37-52 (1980) (available at: http://www.bath.ac.uk/e-journals/jtep/pdf/Volume_XIV_No_1_37-52.pdf); J.B. Braden, X. Feng, and D. Won, *Waste Sites and Property Values: A Meta-Analysis*, 50 ENVIRONMENTAL AND RESOURCE ECONOMICS 175-201 (2011).

⁸ Excellent resources on the modern methods of causal inference for economic analysis include G.W. Imbens and J.M. Wooldridge, *Recent Developments in the Econometrics of Program Evaluation*, 47 JOURNAL OF ECONOMIC LITERATURE 5-86 (2009); J.D. Angrist and J. Pischke, *MOSTLY HARMLESS ECONOMETRICS: AN EMPIRICIST’S COMPANION* (2008); and J.D. Angrist and J. Pischke, *MASTERING ‘METRICS: THE PATH FROM CAUSE TO EFFECT* (2015).

disamenities are typically located away from residential density to minimize impact and to placate NIMBY resistance.

The non-random selection of a quarry site greatly complicates the quantification of a quarry on housing prices due to selection bias. Finding that housing prices rise at increased distance from a quarry may merely reflect the economics of site choice (i.e., real estate is cheaper per unit in less densely populated areas on the outskirts of town) rather than any causal effect on property values. Also and consequently, empirical work may be frustrated by the lack of housing density near the site, rendering small sample sizes, which may, in turn, lead to the undue influence of outliers. Many quarries, especially new ones, have almost no housing within a mile or two of the site (the typical distance within which negative effects are claimed), as shown in the maps provided in the Appendices. And, given the lengthy approval process, if a quarry does affect housing prices, then such effects may occur prior to operations by an “announcement effect.” In conducting empirical work on quarries and housing prices, the researcher must address, and deal with the theoretical and empirical consequences of, the non-random nature of site location.

A. *Quantifying the Effect of a Quarry on Housing Prices*

Resistance to new quarry sites (or the expansions of old ones) based on property values rests exclusively on the *Hite Report*. In that report, the effect on prices is quantified by comparing the mean, quality-adjusted transactions prices around the quarry outside of Delaware, Ohio, as the home’s distance from the quarry increases. This “experiment,” however, has little hope of accurately measuring the effect of quarries on home prices.

To better grasp the nature of the problem, let there be two types of residential locations: (1) locations proximate to and potentially affected by quarry operations (labeled N , for “near”); and (2) locations distant from and entirely unaffected by quarry operations (labeled F , for “far”). Also, let there be two periods: the period prior to ($t = 0$) and after ($t = 1$) the initiation of quarry operations. For now, assume the approval process is instantaneous and that the quality and type of homes in the two locations are very similar (or, that such differences can be accounted for by statistical methods).

Prior to quarry operations homes sell for the average price P_0^N if near the future location of the quarry and P_0^F otherwise. (A numerical example is provided later.) For various reasons, these prices need not be equal. After quarry operations begin, the average, quality-adjusted prices for houses are P_1^N and P_1^F . The

differences in the prices across time ($P_1 - P_0$) are δ^N and δ^F . Other things constant, the effect of the quarry operations can be measured as,

$$\Delta = \delta^N - \delta^F = (P_1^N - P_0^N) - (P_1^F - P_0^F), \quad (1)$$

where Δ is the difference-in-differences (“DiD”) estimator.⁹ The DiD estimator looks for a difference in outcomes after the treatment that is difference than the differences in outcomes before the treatment (thus, explaining the term difference-in-differences). Under certain conditions, the DiD estimator plausibly measures the causal effect of the quarry.

Many studies of the effect of amenities or disamenities on housing values looks only at the difference between *near* and *far* locations in the *post-treatment* period, or the difference in P_1^N and P_1^F (or δ_1). This post-treatment approach is the one used in the *Hite Report*, where all the data is from sales decades after the quarry operations began. If, however, there is a difference in prices before the quarry operations begin, this post-operations difference is clearly not a measure of the effect of proximity to the quarry. A numerical example may prove helpful.

B. A Numerical Example

Before a quarry opens, assume the average, quality-adjusted price for a home near the quarry site is \$80,000, but the average price is \$100,000 for homes far from the future quarry site. Thus, there is a \$20,000 or 20% difference in prices prior to quarry operations, perhaps reflecting the lack of locational rents for homes far from residential density. Plainly, since quarry operations have not begun, this difference cannot be attributed to the quarry. In fact, the quarry site may have been chosen because of the lower property values or lack of residential housing in the area.

As a benchmark case, say that the quarry operations once initiated have *no effect* on property values and the sales prices of homes are unchanged after quarry operations begin (\$80,000 and \$100,000, respectively). If a researcher were to

⁹ See, e.g., B.D. Meyer, *Natural and Quasi-Experiments in Economics*, 13 JOURNAL OF BUSINESS & ECONOMIC STATISTICS 151-161 (1995); J.D. Angrist and A.B. Krueger, *Empirical Strategies in Labor Economics*, in HANDBOOK OF LABOR ECONOMICS Vol. 3A (eds., O. Ashenfelter and D. Card) (1999); S. Galiani, P. Gertler, and E. Schargrodsky, *Water for Life: The Impact of the Privatization of Water Services on Child Mortality*, 113 JOURNAL OF POLITICAL ECONOMY 83-123 (2005); D. Card, *The Impact of the Mariel Boatlift on the Miami Labor Market*, 13 INDUSTRIAL AND LABOR RELATIONS REVIEW 245-257 (1990).

simply compare prices based on distance from the quarry after operations begin, then a difference of 20% would be found. Yet, that difference existed prior to the quarry's opening, and thus the quarry did not *cause* that difference, implying any causal claim made about that difference is mistaken. The truth (by assumption) is that the quarry had *no effect*. The DiD estimator (Δ) is, in fact, zero, correctly identifying the causal effect of the quarry $[= (80,000 - 80,000) - (100,000 - 100,000)]$.

Assume instead that the quarry does reduce prices for nearby homes. Let the post-quarry average prices be \$70,000 near and \$100,000 far from the quarry, other things constant.¹⁰ Prices near the quarry fall by \$10,000 and those far from the quarry are unchanged. The DiD estimator accurately quantifies the effect of the quarry, which is a \$10,000 reduction in value $[= (70,000 - 80,000) - (100,000 - 100,000)]$. Looking at data after the quarry operations begin, alternately, which is the *Hite Report's* approach, would find an effect size of \$30,000 $[= 70,000 - 100,000]$, or three times the true effect. Selection bias accounts for the \$20,000 error in the estimated effect.

Ideally, then, to properly identify the causal effect of a quarry operation, the researcher must observe prices both before and after the quarry may reasonably be expected to affect housing prices (among other considerations such as the similarity in pricing trends prior to the treatment). The analysis of transactions occurring well after the quarry opens offers little hope for quantifying the effect of the quarry, absent unique circumstances. Certainly, the empirical demands are considerable, and the identification of the causal effect must be explicitly set forth and proper empirical methods applied.

C. Key Assumptions for Estimating Causal Effects

With regard to the location of homes and quarries, we do not have the luxury of experimental data. Rather, the data is observational and the data generation process occurs over many decades. The observational nature of the data is crucial: quarry site and housing locations are non-random and not independent of economic activity near the site or each other. Thus, research on the price effects of quarry sites must pay careful attention to selection bias, which is caused by the non-random process by which sites are chosen to avoid residential density but still

¹⁰ For instance, a large condominium complex may have built near the quarry. The researcher must adjust for the difference in average prices resulting from this changing mix of household types).

(Footnote Continued. . . .)

remain close to the point of demand for aggregates (i.e., sand, stone and gravel). Thus, the “treatment” and “outcome” are related through observed and potentially unobserved factors.¹¹

As explained by Imbens and Wooldridge (2009), when estimating the causal treatment effect in observational studies the researcher must be alert to two key concepts stemming from selection bias: (1) unconfoundedness (or the conditional independence assumption) and (2) covariate overlap (or common support).¹² Unconfoundedness implies that, conditional on observed covariates X , the treatment assignment probabilities are independent of potential outcomes. If we have a sufficiently rich set of observable covariates, then regression analysis including the variables X leads to valid estimates of causal effects. Since the X must be observed to be included in the regression model, this approach is often referred to as *selection on observables*. It is difficult to know and impossible to test whether the observed and included X are sufficient to guarantee unconfoundedness (so the regression error and treatment are uncorrelated), though some guidance is available through pseudo-treatment tests (as applied later).

The conditional independence assumption (or *unconfoundedness*) implies that the observed factors included in the statistical analysis fully account for all the differences in the types of homes sold both near and far from the quarry (or other site of interest).¹³ In quantifying the effect of education on income, for instance, it is not enough to simply compare the incomes of persons with and without a college education. Work ethic, for instance, affects both the probability that a person will obtain a college degree and his or her future income. A hard-working person may earn a higher income even without a college education. If work ethic cannot be observed, then a comparison of average incomes across those with and without a college degree does not measure the true value of a degree. The difference is a positively biased estimate of the payoff of education.

¹¹ In regression analysis, this problem appears as a correlation between the regression residual and the treatment variable.

¹² *Supra* n. 8.

¹³ That is, the regression model includes all the regressors needed to make the conditional *near* and *far* prices equal prior to the treatment.

(Footnote Continued. . . .)

The second factor to consider for the measurement of the causal effect is covariate overlap, which Imbens and Wooldridge (2009) observe is, after unconfoundedness, the “main problem facing the analyst.”¹⁴ This condition implies that the support of the conditional distribution of X for the control group overlaps completely with the conditional distribution of X for the treatment group. That is, the covariate distributions for the treated and untreated groups are sufficiently alike, thereby lending credibility to the extrapolations inherent to regression analysis between groups. If the characteristics of untreated observations (homes *far from* the quarry) are very different from the treated observations (homes *near to* the quarry), then the projections from the controls to the treated units will be a poor one.

Say, for instance, that a sample used to assess the effect of an experimental cancer treatment includes only persons over 65 years old in the experimental treatment group (or simply treatment group) and only persons below 45 years old in the non- treatment group (or control group). The purpose of the control group is not simply a counterweight to the treatment group. Rather, the control group measures the outcomes for the treated group if that group did not receive the treatment. To fix ideas, what we actually want to estimate is what would the treatment group have looked like had they not been treated, which is the sole purpose of a control group. It is unreasonable to expect, we believe, that the survival outcomes of 45 year-old persons provides an approximation of survival outcomes of persons 65 years and over that did not receive the experimental treatment. To extrapolate this discussion to the case of housing values, if the control group includes almost all homes in a golf course community with swimming pools and the treatment group—the properties near some dis-amenity—includes mostly one-bedroom condominiums, then the difference in sale prices between the two is a nearly meaningless statistic. Regression models are powerful tools, but they cannot make up for such large differences in characteristics across treatment and control groups (even if observable and included in the regression model as explanatory variables), which is important given that the control group is being “projected” onto the treatment group.

A number of statistical techniques are used to address confoundedness and covariate imbalance in observational studies. In a housing study, for instance, a researcher may choose the control group by finding a group of homes comparable to the treatment group—that is, similar square footage, amenities, lot sizes—from a population of homes unaffected by the treatment. This approach, which we

¹⁴ Imbens and Wooldridge, *supra* n. 8 at 43.

employ here, ensures that the characteristics of homes in the treatment and control groups are sufficiently similar, adding credibility to the control group as a suitable “stand in” for the treatment group if it had not received the treatment.

The *Hite Report* is silent on both of these key assumptions, and there is good reason to suspect the analysis fails on both counts. All the pricing data is for home sales occurring long after the quarry operation began and the regression model is quite basic, so the experiment is almost certainly plagued with selection bias. As for covariate overlap, from what few descriptive statistics are provided in the *Hite Report* we observe that the range of home prices within 0.5 miles of the quarry has a minimum of \$80.1 and a maximum of \$178.9 (in thousands). In contrast, the range of prices for homes further from the quarry is \$60 to \$798.6. This difference in the maximum prices is sizable, suggesting that the homes near the quarry may be very much unlike those far from the quarry, thus risking biased results of the effect of distance.

III. Revisiting the *Hite Report*

In NIMBY campaigns challenging quarry development, the *Hite Report* is the sole empirical analysis supporting the claim that quarries reduce housing prices. Subsequent works by Erickcek (2006), the Center for Spatial Economics (2009), Smith (2014), among others, conduct no new empirical analysis, choosing instead to extrapolate the *Hite Report*’s results to different locations (a questionable practice on its own).¹⁵

¹⁵ G.A. Erickcek, *An Assessment of the Economic Impact of the Proposed Stoneco Gravel Mine Operation on Richland Township*, W.E. Upjohn Institute for Employment Research (August 15, 2006) (available at: <http://www.stopthequarry.ca/documents/US%20Study%20on%20the%20impact%20of%20pits%20quarries%20on%20home%20prices.pdf>); *The Potential Financial Impacts of the Proposed Rockfort Quarry*, Center for Spatial Economics (February 26, 2009) (available at: http://wcwrpc.org/FinancialImpacts_RockfortQuarryCanada.pdf); G. Smith, *Economic Costs and Benefits of the Proposed Austin Quarry in Madera County*, Report (October 23, 2014) (available at: <http://www.noaustinquarry.org/wp-content/uploads/2016/08/Austin-Quarry-Economics-Report.pdf>). Other works relying on the *Hite Report* (directly or indirectly) include, e.g., M. Conklin, et al., *The Quarry Proposed by St. Marys Cement Inc. for a Location Near Carlisle, Ontario Should Not be Permitted: Proponents’ Brief*, 5 STUDIES BY UNDERGRADUATE RESEARCHERS AT GUELPH (2011) (available at: <https://journal.lib.uoguelph.ca/index.php/surg/article/view/1338/2345>); *Business Suirvey and Economic Assessment of Locating a Quarry and Asphalt and Cement Plants within Aeortech Park*, Group ATN Consulting, Inc. (October 13, 2014) (available at: http://stopthefallriverquarry.com/wp-content/uploads/2015/10/GATN_Aerotech_Park_FINAL_Report_Oct_13_2015-2.pdf); M.A. Sale,

(Footnote Continued. . . .)

This uniform reliance on the *Hite Report* is somewhat surprising. On the face of it, the report is a seven-page document consisting of 1.5 pages of double spaced text (about 250 words) along with a few tables and figures. It is more an “abstract” than it is a “study.” Moreover, even a brief review of the *Hite Report* points to a number of serious problems that should give any researcher pause. First, there are almost no details regarding model specification and few details on the data used. Not even descriptive statistics are provided. Second, the choice of model specification is entirely ad hoc, treating nearly identical variables (distance) differently with respect to functional form and using a non-standard and unnecessary estimation procedure. Such inconsistent, unconventional and inconvenient choices are symptomatic of ends-driven analysis. Third, no explanation is provided as to how the chosen model and analysis of transactions occurring decades after the quarry operations began might identify the effect of *that particular* quarry (or any new quarry) on housing prices. Selection bias is clearly a concern, but it is neither mentioned nor addressed. Fourth, no analysis is provided to suggest that the homes near the quarry are sufficiently similar to those distant from the quarry to provide reliable estimates of the effect of distance (i.e., covariate overlap). Comparing prices of the homes in rural areas on the outskirts of town to those near the local university risks confusing the vagaries of real estate development with the impact of the quarry.

Setting aside the question of causality for the moment, whether the relationship estimated in the *Hite Report* can be replicated is an important first step in evaluating the report’s credibility and the suitability of the methods used to answer this policy-relevant empirical question. To that end, we collect data on home sales within five-miles of the same quarry in Delaware, Ohio, evaluated in the *Hite Report*.¹⁶ It appears the data from the *Hite Report* was from the 1990’s (though it is impossible to be certain given the lack of detail), so we collect data on

Quarry Bad for Area, THE NEWS & ADVANCE (September 28, 2008) (available at: http://www.newsadvance.com/opinion/editorials/letters-to-the-editor-for-sunday-september/article_ca388ca4-14c7-534b-9b17-1b78d1cecc40.html).

¹⁶ Data is obtained from www.agentpro247.com. For all our analysis, we limit the prices to greater than \$25,000 and less than \$1,000,000, and look only at the “full” sales of single-family homes not in distress. The National Lime & Stone Quarry near Delaware, Ohio, is located near Latitude 40.281005 and Longitude -83.135828.

(Footnote Continued. . . .)

sales over the ten-year period 1998 through 2007.¹⁷ These data appear to immediately follow that used in the *Hite Report* but precedes the housing market crash in 2008 and the broader economic malaise that followed.¹⁸ For further analysis, we also collect data on sales near a quarry outside of Murfreesboro, Tennessee, over the same ten-year period.

A. A Review of Empirical Methods

To reproduce the *Hite Report's* analysis, we obtain transactions prices on 2,114 single-family homes between 1998 through 2007 that are located within five miles of the National Lime & Stone Quarry near Delaware, Ohio. Using latitude and longitude coordinates, distance from each home to the center the quarry (D) is calculated. Other explanatory variables used the *Hite Report* include, for each transaction, the sale date ($DATE$), the distance to Delaware City (DDC), the house-to-lot size ($H2L$), the number of bathrooms ($BATH$), and the number of total rooms ($TOTR$). We measure the sale date as the year of sale; the *Hite Report* does not indicate how the sale date is measured.¹⁹

The regression model of the *Hite Report* takes the following general form,

$$p_{it} = \exp(\delta_1 \ln D_i + \beta_0 + \sum_{j=1}^k \beta_j X_{j,i}) + \varepsilon_{i,t}, \quad (2)$$

where p_{it} is the transaction price (in thousands) for home i at time t , $\ln D$ is the natural log of distance from the quarry (in miles), and X_j are the k regressors listed above (with coefficients β_j as coefficients).²⁰ For reasons unexplained in the *Hite Report*, only the distance from the quarry is transformed by the natural log

¹⁷ See also D. Hite, *The Impact of the Ajax Mine on Property Values*, ARMCHAIRMayor.CA (March 5, 2015) (available at: <https://armchairmayor.ca/2015/03/05/letter-the-impact-of-the-ajax-mine-on-property-values>) (stating that the analysis was completed in 1996-1998).

¹⁸ Our data source does not offer data in the early-to-mid 1990s, so we cannot replicate the same time period as the *Hite Report*. We are trying to obtain such data for further analysis.

¹⁹ It is preferred to measure $DATE$ as a fixed effects, as this specification requires prices to rise monotonically over time.

²⁰ The variables in the model are listed at *Hite Report*, *supra* n. 6 at p. 3. A similar specification is used in D. Hite, *A Hedonic Model of Environmental Justice*, Working Paper (February 14, 2006) (available at: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=884233).

transformation; distance from the city center (DCC) and the other regressors are not transformed. The specification seems purely ad hoc.

Equation (2) is non-linear in the parameters and must be estimated by Non-Linear Least Squares (“NLS”). This specification is highly irregular in econometric practice. Normally, hedonic models of housing prices are estimated by Ordinary Least Squares (“OLS”). A regression model quite similar to Equation (2) and very common in hedonic analysis is,

$$\ln p_{i,t} = \delta_1 \ln D_i + \beta_0 + \sum_{j=2}^k \beta_j X_{j,i} + v_{i,t}, \quad (3)$$

where the dependent variable is the natural log of price and where the X s might be transformed to logs as well.²¹ While Equation (3) is typical of hedonic price functions, we are unable to find the estimation of Equation (2) anywhere in the literature. In fact, we were unable to locate a single instance where even the author of the *Hite Report* estimates a hedonic price function using Equation (2), but plenty of instances where Equation (3) is used.²² As detailed later, a test of functional form can inform us as to whether the natural log transformation of the dependent variable is a better approach and infinitely more common.

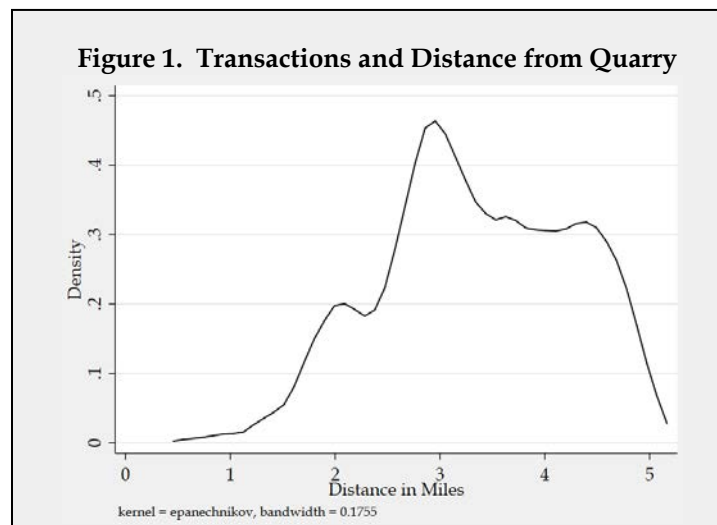
²¹ Note that Equation (3) is not simply the log transformation of Equation (2) because of the additive error term in Equation (2).

²² See, e.g., D. Hite, W.S. Chern, F. Hitzhusen and A. Randall, *Property Value Impacts of an Environmental Disamenity*, 22 JOURNAL OF REAL ESTATE FINANCE AND ECONOMICS 185-202 (2010) (draft available at: <https://ssrn.com/abstract=290292>); D. Hite, A. Jauregui, B. Sohngen, and G. Traxler, *Open Space at the Rural-Urban Fringe: A Joint Spatial Hedonic Model of Developed and Undeveloped Land Values*, Working Paper (November 1, 2006) (available at: <https://ssrn.com/abstract=916964>); D.M. Brasington and D. Hite, *A Mixed Index Approach to Identifying Hedonic Price Models*, 38 REGIONAL SCIENCE AND URBAN ECONOMICS 271-284 2008 (August 5, 2006) (available at: <https://ssrn.com/abstract=928252>); E. Affuso, C. de Parisot, C. Ho, and D. Hite, *The Impact of Hazardous Wastes on Property Values: The Effect of Lead Pollution*, 22 URBANI IZZIV 117-126 (2010) (available at: <https://ssrn.com/abstract=1427544>); D. Hite, *Factors Influencing Convergence of Survey and Market-Based Values of an Environmental Disamenity*, Mississippi State University Agricultural Economics Working Paper No. 2001-011 (November 29, 2001) (available at: <https://ssrn.com/abstract=292447>); C. Ho and D. Hite, *Economic Impact of Environmental Health Risks on House Values in Southeast Region: A County-Level Analysis*, Working Paper (2005) (available at: <https://ssrn.com/abstract=839211>); D. Hite, *A Hedonic Model of Environmental Justice*, Working Paper (February 14, 2006) (available at: <https://ssrn.com/abstract=884233>).

The coefficient of primary interest in the *Hite Report* is δ_1 , which measures the percent change in the transaction price for a percentage change in distance from the quarry (D), but only *after* the quarry operations began (see Eq. 1). In this specification (and also for Eq. 3), this elasticity is constant across the full range of distance. With data on 2,812 sales, the *Hite Report* estimates the coefficient δ_1 to be 0.125, where the positive sign indicates the average sale price of homes is higher the further away the homes are from the quarry (statistically significant at the 1% level). The *Hite Report* concludes, as do subsequent reports that adopt the result, that this positive coefficient implies quarries reduce the price of nearby homes. As detailed above, the positive sign on the coefficient δ_1 cannot reasonably be interpreted in this manner since the data is for sales occurring long after quarry operations began, among other concerns.

B. National Lime & Stone Quarry in Delaware, Ohio

Replication is the essence of science. Even if the estimated price-distance relationship from Equation (2) lacks a causal interpretation, it is worth evaluating whether the *Hite Report's* findings can be confirmed. We do so by estimating Equation (2) using data on 2,114 transactions in the same area over the period 1998-2007. Figure 1 offers the kernel density of the distribution of transactions by distance from the quarry. The thinness of the market very near the quarry is plain to see, which is also apparent from a map of the area surrounding the quarry (see Appendix 1).



Regression results from Equation (2) are summarized in the first column of Table 1, along with descriptive statistics for the full sample and the sample divided

into homes closer to the quarry than two miles and those further than that distance. The model has a Pseudo-R² of 0.25, which is very close to that reported in the *Hite Report* (0.254).²³ Five of the seven estimated coefficients (including the constant term) are statistically different from zero at the 1% level or better.

Table 1. Regression Results and Descriptive Statistics
National Quarry near Delaware, Ohio

	Coef (t-stat)	Mean (St. Dev)	N = 0 Mean (St. Dev)	N = 1 Mean (St. Dev)
lnD (δ_1)	-0.1413*** (-4.00)	1.166 (0.304)	1.227 (0.230)	0.518 (0.224)
DATE	0.0450*** (11.13)	2002.7 (2.952)	2002.5 (2.969)	2004.4 (2.125)
DDC	0.0409*** (5.92)	2.876 (2.139)	2.859 (2.207)	3.050 (1.207)
H2L	-0.102 (-0.81)	0.1498 (0.1110)	0.148 (0.111)	0.1668 (0.102)
BATH	0.0419 (1.09)	1.806 (0.584)	1.788 (0.597)	1.995 (0.384)
TOTR	0.1398*** (7.59)	5.099 (1.016)	5.065 (1.031)	5.099 (1.016)
Constant	-85.71*** (-10.57)	...	...	...
Pseudo-R ²	0.250			
Obs.	2,114	2,114	1,930	184
Statistical Significance: *** 1%, ** 5%, * 10%				

Despite using exactly the same regression model and data on sales around the same quarry, we find that the transaction prices of homes *decrease* (not increase) as the distance from the quarry increases. The negative coefficient (-0.141) is similar in size *but different in sign* from that found in the *Hite Report* (0.125) and is statistically significant at the 1% level. The estimated coefficient implies a 1% increase in distance reduces home average, quality-adjusted home prices by about 0.14%. Since the coefficient is less than unity, the price-distance relationship is subject to diminishing marginal returns.²⁴ Figure 2 illustrates the relationship

²³ The Pseudo-R² is the squared correlation coefficient between the predicted value of the regression and the dependent variable.

²⁴ For any fixed change in mileage, the percentage change falls as distance increases.

between sale prices and distance from the quarry, revealing sizable reductions in average prices as distance from the quarry increases.



Table 2 summarizes the average predicted prices and price effects at varying distances from the quarry. Interpretation of the table is straightforward. A home sold 3 miles from the quarry will have a price 22% lower than that of a home sold within 0.5 miles of the quarry, or 16% lower than the average home sold within 1.5 miles of the quarry. At two miles, the differences are 18% and 11%; at five miles, the differences are 28% and 22%. These are sizable effects.

Table 2. Home Values by Distance from Quarry

	<i>Distance in Miles from Quarry</i>							
	0.5	1.0	1.5	2.0	2.5	3	4.0	5.0
Avg. Price ('000)	169.8	153.9	145.4	139.6	135.2	131.8	126.5	122.6
Reduced Value (from 0.5 miles)	...	-9%	-14%	-18%	-20%	-22%	-25%	-28%
Reduced Value (from 1.5 miles)	...	...	...	-11%	-14%	-16%	-19%	-22%

These estimates and their predicted effect on prices are based on the estimation method (Eq. 2) used in the *Hite Report*. There are other equation specifications and estimation methods that are more consistent with standard practice in the analysis of housing prices (hedonics). In order to assess the robustness of the result, we offer alternative analyses below.

1. *Alternative Estimation Approaches*

As discussed above, Equation (2) is a non-standard method to estimate the relationship of interest. Normally, a researcher would avoid the non-linear Equation (2) and use the natural log of price to estimate Equation (3) by OLS. Statistical testing (such as the Box-Cox test of functional form) may be used to evaluate whether the linear or log-form of the dependent variable is preferred.²⁵ Other advantages of Equation (3) over Equation (2) is that the linear equation is amenable to estimation by Median Regression (“MReg”) and Robust Regression (“RReg”), both of which are less sensitive to outliers in the data than is NLS or OLS.²⁶ Outliers are common in home sales data, so it is sensible to evaluate the effect on the estimates by these alternative estimation procedures, especially when the results are used in a policy relevant setting that may have significant financial implications.²⁷ We summarize the results from both methods.

Modern research on housing prices increasingly accounts for the spatial nature of real estate markets using new spatial methods.²⁸ We estimate the price-distance

²⁵ W.E. Griffiths, R.C. Hill and G.G. Judge, *LEARNING AND PRACTICING ECONOMETRICS* (1993) at pp. 345-7.

²⁶ See, e.g., R. Koenker, *QUANTILE REGRESSION* (2005); B.S. Cade and B.R. Noon, *A Gentle Introduction to Quantile Regression*, 1 *FRONTIERS IN ECOLOGY AND THE ENVIRONMENT* 412-420 (2004) (available at: <http://www.econ.uiuc.edu/~roger/research/rq/QReco.pdf>); O.O. John, *Robustness of Quantile Regression to Outliers*, 3 *AMERICAN JOURNAL OF APPLIED MATHEMATICS AND STATISTICS* 86-88 (2015); P.J. Rousseeux and A.M. Leroy, *ROBUST REGRESSION AND OUTLIER DETECTION* (2005); R. Andersen, *MODERN METHODS FOR ROBUST REGRESSION* (2008); T.P. Ryan, *MODERN REGRESSION METHODS* (2008).

²⁷ C. Janssen, B. Söderberg and J. Zhou, *Robust Estimation of Hedonic Models of Price and Income for Investment Property*, 19 *JOURNAL OF PROPERTY INVESTMENT & FINANCE* 342-360 (2001); S.C. Bourassa, E. Cantoni and M. Hoesli, *Robust Hedonic Price Indexes*, 9 *INTERNATIONAL JOURNAL OF HOUSING MARKETS AND ANALYSIS* 47-65 (2016).

²⁸ Including papers by the *Hite Report's* author. See, e.g., D.M. Brasington and D. Hite, *Demand for Environmental Quality: A Spatial Hedonic Analysis*, 35 *REGIONAL SCIENCE AND URBAN ECONOMICS* 57-82 (2005) (draft available at: <https://ssrn.com/abstract=491244>); see also J.M. Mueller and J.B. Loomis, *Spatial Dependence in Hedonic Property Models: Do Different Corrections for Spatial Dependence Result in Economically Significant Differences in Estimated Prices?*, 33 *JOURNAL OF AGRICULTURAL AND RESOURCE ECONOMICS* 212-231 (2008) (available at: <http://ageconsearch.umn.edu/bitstream/42459/2/MuellerLoomis.pdf>); L. Osland, *An Application of Spatial Econometrics in Relation to Hedonic House Price Modeling*, 32 *JOURNAL OF REAL ESTATE*

(Footnote Continued. . . .)

relationship using a Spatial Regression Model (“SReg”). To do so, a spatial weighting matrix (W) is computed and spatially-weighted lags of the dependent and independent variables are included in the regression as well as an adjustment for autocorrelated errors.²⁹

Table 3. Alternative Estimation Methods
National Quarry near Delaware, Ohio

	<i>OLS</i>	<i>MReg</i>	<i>RReg</i>	<i>SReg</i>	<i>OLS-CEM</i>
	Coef (t-stat)	Coef (t-stat)	Coef (t-stat)	Coef (t-stat)	Coef (t-stat)
<i>lnD</i>	-0.2726*** (-7.31)	-0.2021*** (-14.21)	-0.1220*** (-5.59)	-0.1558 *** (-2.65)	-0.147*** (-3.00)
<i>DATE</i>	0.0433*** (12.45)	0.0342*** (15.76)	0.0367*** (16.58)	0.0440*** (12.86)	0.0453*** (6.30)
<i>DDC</i>	0.0273*** (3.90)	0.0460*** (8.64)	0.0551*** (15.00)	0.0679*** (5.09)	0.0483*** (3.31)
<i>H2L</i>	0.0794 (0.68)	-0.1131 (-1.47)	-0.2591*** (-3.74)	-0.1779 (-1.48)	0.1812 (0.94)
<i>BATH</i>	0.0485 (1.46)	0.0997*** (5.41)	0.1499*** (7.94)	0.0166 (0.56)	-0.0092 (-0.10)
<i>TOTR</i>	0.1540*** (8.97)	0.1523*** (14.00)	0.1508*** (14.12)	0.1497*** (9.11)	0.2047*** (6.44)
Constant	-82.47*** (-11.82)	-64.31*** (-14.80)	-69.52*** (-15.67)	-77.07*** (-11.25)	-86.77*** (-6.02)
Spatial Terms (χ^2)				242.3***	
Pseudo-R ²	0.246	0.216	0.243	0.265	0.214
Obs.	2,114	2,114	2,114	2,114	1,461
Statistical Significance: *** 1%, ** 5%, * 10%					

RESEARCH 289-320 (2010) (available at:
http://pages.jh.edu/jrer/papers/pdf/past/vol32n03/03.289_320.pdf).

²⁹ D.M. Drukker, H. Peng, I.R. Prucha, and R. Raciborski, *Creating and Managing Spatial-Weighting matrices with the spmat Command*, 13 STATA JOURNAL 242-286 (2013); D.M. Brasington and D. Hite, *Demand for Environmental Quality: A Spatial Hedonic Analysis*, 35 REGIONAL SCIENCE AND URBAN ECONOMICS 57-82 (2005) (draft available at: <https://ssrn.com/abstract=491244>). We truncate the distance at 0.5 miles.

(Footnote Continued. . . .)

Results for the alternative estimation methods are summarized in Table 3.³⁰ Across all four alternatives, the price-distance relationship is negative and statistically different from zero at the 1% level or better. Plainly, the negative price-distance relationship is robust to estimation method. The price-distance elasticity is a good bit larger for OLS and MReg, but similar to that estimated by Equation (2) for both the RReg and SReg methods (in the full sample). Note that more of the regressors are statistically significant in MReg and RReg, suggesting these estimation alternatives are worth consideration.

2. Coarsened Exact Matching

Thus far, we have paid no attention to whether homes near the quarry are like those far from the quarry (i.e., covariate overlap). What evidence is available in the *Hite Report* suggests that in her sample the types of homes sold near the quarry may have been very different than those sold at a distance from it. While distance from the quarry is a continuous variable, we can consider covariate overlap by comparing the characteristics of homes near to and those far from the quarry, using a two-mile cutoff. In Table 1, we do observe some meaningful differences between homes within two miles of the quarry and those further away especially in the year sold and the number of bathrooms and total rooms.³¹ To ensure we are comparing like homes, we apply Coarsened Exact Matching (“CEM”) to the data and match on these three variables.³² All 184 transactions within two miles of the quarry are matched to 1,277 (of 1,930) homes further than

³⁰ The Box-Cox test statistic for the Delaware County data is 64.1, which is statistically significant at better than the 1% level. The test statistic is distributed $\chi^2(1)$ with a critical value of 2.71 at the 10% level. The natural log transformation, consistent with Equation (3), is preferred to the specification estimated in the *Hite Report*. Or, we might say the problem is not so much in the estimation by NLS rather than OLS but that the natural log transformation of the dependent variable is the better specification.

³¹ Standardized differences (the absolute value of the means difference divided by the square root of the summed variances) are used. See Imbens and Wooldridge, *supra* n. 8 at p. 24. The rule of thumb for a large difference is a standardized difference exceeding 0.25. For the DATE variable, the standardized difference is 0.51, and about 0.30 for bathrooms and total rooms.

³² S.M. Iacus, G. King, G. Porro, *Causal Inference without Balance Checking: Coarsened Exact Matching*, Working Paper (June 26, 2008) (available at: <https://ssrn.com/abstract=1152391>), later published *Causal Inference without Balance Checking: Coarsened Exact Matching*, 20 POLITICAL ANALYSIS 1-24 (2012) (available at: https://gking.harvard.edu/files/political_analysis-2011-iacus-pan_mpr013.pdf).

(Footnote Continued. . . .)

two miles from the quarry. The weights created by the CEM procedure are then used to estimate Equation (3) by weighted OLS.

Results for the CEM-weighted regression are reported in the final column of Table 3. The estimated coefficients are comparable in most respects to the other models.³³ Most significantly, the price-distance relationship remains negative (-0.147) and statistically different from zero. While we do not present the results in the table, we note that when estimated using the non-linear Equation (2) with CEM-weighted data the price-distance relationship is negative (-0.053) but not statistically significant, a difference we will return to later.

C. Rogers Group Quarry near Murfreesboro, Tennessee

It is reasonable to expect that the relationship of home prices to distance from a quarry might vary by location. Earlier research suggests this is so in other contexts.³⁴ To further evaluate the results reported in the *Hite Report*, we collect data on home sales around the Rogers Group Quarry near Murfreesboro, Tennessee.³⁵ Transaction data is again collected for years 1998 through 2007 and the sample includes 2,311 transactions. Given differences in data availability, we replace the total number of rooms with square footage (*SQFT*). Distance from the city center (*DCC*) is measured from Murfreesboro. We apply the same methods as before, estimating Equation (2) by NLS and then Equation (3) by OLS, MReg, RReg, and SReg. Results are summarized in Table 4. We do not observe large differences between the characteristics of home sold near to and far from the quarry, so we do not apply CEM for this quarry.

³³ CEM-weighting often alters the coefficients and their significant levels since the data is better matched.

³⁴ See *supra* n. 7 and citations therein.

³⁵ The quarry is located at coordinates: 35.884699, -86.530625.

Table 4. Regression Results and Descriptive Statistics
Rogers Quarry near Murfreesboro, Tennessee

	NLS Coef (t-stat)	OLS Coef (t-stat)	MReg Coef (t-stat)	RReg Coef (t-stat)	SReg Coef (t-stat)
lnD	-0.0655*** (-4.99)	-0.0383*** (-2.63)	-0.0320*** (-3.01)	-0.0327*** (-3.78)	-0.0222 (-0.72)
DATE	0.0522*** (27.09)	0.0443*** (20.36)	0.0407*** (31.73)	0.0404*** (35.55)	0.0444 (23.05)
DDC	-0.0035* (1.85)	-0.0006 (-0.26)	-0.0007 (-0.44)	-0.0011 (-0.84)	-0.0012 (-0.15)
H2L	-0.6590 (-1.11)	0.6404 (0.42)	-2.170*** (-4.47)	-2.676*** (-5.84)	0.3311 (0.42)
BATH	0.1395*** (17.65)	0.1666*** (13.44)	0.1811*** (24.06)	0.1759*** (28.87)	0.1344*** (12.17)
SQFT	0.00026*** (17.40)	0.00021*** (5.82)	0.00032*** (25.01)	0.00033*** (29.27)	0.00018*** (9.10)
Constant	-100.3*** (-17.40)	-84.59*** (-19.52)	-77.57*** (-30.57)	-76.87*** (-33.79)	-77.84*** (-20.17)
Spatial Terms (χ^2)					385.2***
Pseudo-R ²	0.692	0.590	0.529	0.678	0.605
Obs.	2,311	2,311	2,311	2,311	2,311
Statistical Significance: *** 1%, ** 5%, * 10%					

The fit the regressions (R^2 is around 0.60) is much higher than for the Delaware data, but the negative coefficients on distance are seen again. For the NLS model, the price-distance relationship is -0.0655 and the coefficient is statistically different from zero at better than the 1% level. Across the alternative specifications and estimation methods, the price-distance relationship is consistently negative and statistically different from zero, save one exception. Only in spatial regression is the price-distance relationship not statistically significant, though the coefficient is negative and similarly sized to the other models.

Additional evidence also leads to questions about the negative views of quarries. If quarries were a disamenity, then we might expect people to avoid living around them. Figures 3A-3C in Appendix 3 demonstrate population movements for Rutherford County, Tennessee, with emphasis on the Rogers Group quarry. Population is measured using U.S. Census Bureau population data for years 1990, 2000, and 2010. These figures show population density increasing

dramatically over this time period in the same census block as the Rogers Group quarry. These population movements toward the quarry in conjunction with the econometric results further indicate the Murfreesboro quarry is not a great disamenity, if a disamenity at all.

D. *Randomized Inference and the Implausibility of the Model*

Our analyses of home prices near the quarries in Delaware, Ohio, and Murfreesboro, Tennessee, find a negative and statistically significant relationship between home prices and distance from a rock quarry in most specifications and estimation methods. Consequently, we find no evidence that supports the findings of the *Hite Report*, despite using the same model and, in one instance, the same quarry from that earlier study. We fear, however, that these estimated relationships are mainly the consequence of the *Hite Report's* poor experimental design than they are a measure of any real effect of the quarry. Indeed, we question whether the quantification of the effect of a disamenity or amenity can be plausibly estimated by a price-distance relationship. In Delaware County, for instance, it is not hard to find a statistically-significant price-distance relationship (using Eq. 2) from just about anywhere: the Church of the Nazarene off Highway 101 ($\delta_1 = -0.058$, $t = -2.79$); The Greater Gouda gourmet grocery on North Sandusky Road ($\delta_1 = 0.268$, $t = 6.92$); and the Foot & Ankle Wellness Center off South Hook Road ($\delta_1 = -0.043$, $t = -2.99$).

Given patterns in real estate development, it seems plausible that a positive or negative price-distance relationship would be observed from almost any location. A sensible way to evaluate the reliability of the distance-based hedonic regressions is to apply the method of randomized inference (a type of pseudo-treatment).³⁶ In this procedure, the location of a “disamenity” or “amenity” is randomly chosen in the geographic area under study. Given the random assignment of location, we might expect the price-distance relationship to be statistically significant in proportion to the alpha-level of the statistical test (say, a 10% significance level) due to random variation. That is, a valid statistical test conducted at the 10% level

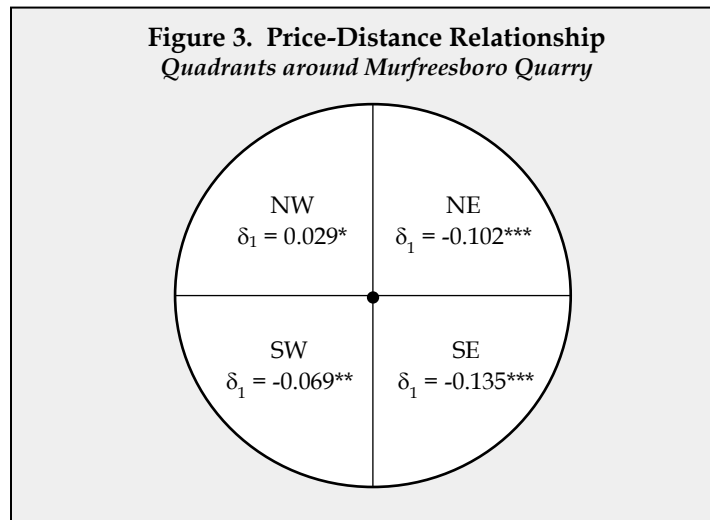
³⁶ R.A. Fisher, *THE DESIGN OF EXPERIMENTS* (1935); P.R. Rosenbaum, *OBSERVATIONAL STUDIES* (2002); M.D. Cattaneo, B.R. Frandsen, and R. Titiunik, *Randomization Inference in the Regression Discontinuity Design: An Application to Party Advantages in the U.S. Senate*, 3 *JOURNAL OF CAUSAL INFERENCE* 1-24 (2015); T. Fujiwara and L. Wantchekon, *Can Informed Public Deliberation Overcome Clientelism? Experimental Evidence from Benin*, 5 *AMERICAN ECONOMIC JOURNAL: APPLIED ECONOMICS* 241-255 (2013).

will reject the null hypothesis 10% of the time even if the null is true (e.g., Type I error).

We conduct such tests using the following simulation. First, a random location (latitude, longitude) within the Delaware area is chosen (see Appendix 4 for an illustration of the process). Second, the distances from this location to all home sales is computed. Third, we replace in the regression model the variable measuring distance from the quarry (D) with this alternate distance measure (D'). Fourth, we estimate a regression of price on the same variables as above, obtaining the coefficient, t-statistic and its probability on δ_1 . Fifth, this process is repeated 1,000 times. Finally, from these 1,000 simulations, we can compute how often the null hypothesis of “no effect” is rejected.

At the threshold significance level of 10%, the null hypothesis is rejected in a whopping 67% of the simulations for the data from Delaware County, sometimes with positive and sometimes negative coefficients. Conducting the same simulation for Murfreesboro, the rejection rate is an even larger 93%. Given the random selection of locations in the simulation, this result is a powerful indictment against the sort of model employed in the *Hite Report*. A researcher may pick just about any location and find a statistically-significant price-distance relationship. We conclude based on this analysis that the addition of a distance variable to a hedonic model in an effort to identify the effect of a quarry on home prices is a poor experimental design with grossly inaccurate inference tests, especially when using asymptotic critical values for hypothesis testing and only data on post-operation transactions. In fact, we suspect many of the hedonic studies using distance from disamenities may be similarly unable to identify an effect of interest, but leave that question to future research.

Another problem with estimating the price-distance relationship is that unlike square footage, distance from a quarry is not unidimensional but occurs on a coordinate plane. A house may be located to the east or to the west, to the north or to the south, of a quarry, and moving closer to or away from the town center, a university, a landfill, or any other site that may influence prices. To see this, we divide the transaction data near Murfreesboro into four quadrants around the quarry (northeast, northwest, southeast, and southwest) and estimate a price-distance relationship unique to each quadrant (using Eq. 2). Results are summarized in Figure 3.



From Figure 3, we see that the price-distance relationships are not equal across quadrants but rather differ substantially by the direction of the movement away from the quarry. From Table 4, we know that the average price-distance relationship from this quarry is negative (and statistically significant). Yet, from Figure 3, we see that the price-distance relationship is positive in the Northwest quadrant, but negative in all other quadrants. All the estimated price-distance relationships are statistically different from zero at the 10% level or better. It appears, therefore, that there is no “price-distance relationship” but many “price-distance relationships” from any given site. We believe these results are more evidence of the spurious nature of the price-distance relationship estimated using hedonic models of housing prices.

In light of our randomized inference procedure and additional evidence, we conclude, for now, that the type of model and experimental design used in the *Hite Report* is entirely unsuited to the task of identifying the price impact of quarries. Our results from replication efforts, which consistently find a negative price-distance relationship, are no less implicated by the defect than those of the *Hite Report*. Identifying the effects of quarries on housing prices requires a different experimental design, and careful attention to selection bias, covariate overlap, and the numerous ramifications of thin markets around the site. We attempt to offer some better evidence below.

E. *Spurious Regression and the Search for Results*

In light of the evidence that a statistically significant price-distance relationship is found for no less than seven-out-of-ten randomly chosen locations,

we conclude the *Hite Report*'s experimental design is incapable of quantifying the effect of quarries on house prices. The results from such models are spurious. Consequently, we expect that the price-distance relationship will be sometimes positive, sometimes negative, sometimes statistically significant and sometimes not for any given quarry. Statistical significance is the flip of a coin heavily weighted toward the rejection of the null hypothesis. Our analysis also shows that the choice of estimation method may alter the estimated coefficient and its significance, a common trait of spurious regression.

The fact different quarries and different estimation methods produce different results advises caution in conducting and assessing such studies, especially in a policy-relevant context when economic development is at stake. Inference errors may be inadvertent, or an advocate may exploit the spurious nature of the relationship by searching for a location, model specification, and time period to produce an outcome supporting a favored policy position. We can demonstrate the risks of such an ends-driven search by looking at more recent data for Delaware, Ohio, using data on prices for the five-year period 2012 through 2016 (1,429 transactions). The models and variables are measured in the same way as above.

Table 5 summarizes the results from a few estimation methods. For expositional purposes, we present only on the price-distance relationship. Using the unconventional Equation (2) from the *Hite Report*, we find that the price-distance relationship for this period is positive – a statistically significant result (by asymptotic convention). The result is opposite of that estimated for the data from the 1998-2007 period, even though the location is the same. Without any constraint on the choice of time period to analyze, an unscrupulous advocate is free to choose data from different periods in search of results to support his or her position.

Table 5. Results Delaware Quarry, Years '12-16

	NLS	OLS	MReg	RReg	SReg
	Coef	Coef	Coef	Coef	Coef
	(t-stat)	(t-stat)	(t-stat)	(t-stat)	(t-stat)
lnD	0.1285*** (3.45)	0.0192 (0.52)	-0.0065 (-0.32)	0.0412 (1.63)	0.0780 (1.10)
Spatial Terms (χ^2)					41.28***
Pseudo-R ²	0.392	0.332	0.263	0.377	0.347
Obs.	1,429	1,429	1,429	1,429	1,429
Statistical Significance: *** 1%, ** 5%, * 10%					

Model selection and variable choice may also be used in an ends-drive search for results. As shown in Table 5, estimating Equation (3), a standard functional form for hedonic regressions, the positive coefficient is now a sixth the size of that estimated by Equation (2) and is no longer statistically different from zero at standard levels.³⁷ Also, Median, Robust and Spatial Regression do not find statistically significant price-distance relationships. In fact, the only model that produces a statistically-significant positive effect is the non-standard regression equation used in the *Hite Report*. Moreover, if we replace the *TOTR* variable with the *SQFT* variable in the NLS model, the price-distance relationship shrinks to 0.02 (one-sixth the size) and the coefficient is no longer statistically significant. Again, a researcher may pick-and-choose model specification, along with time period analyzed and regressors, to obtain a desired result. Skepticism is warranted for any analysis of the price effects of quarries (and amenities or disamenities generally) absent robustness analysis across time and model specifications.

Table 6. Results Delaware Quarry, Years '98-07 & '12-16

	<i>NLS</i>	<i>OLS</i>	<i>MReg</i>	<i>RReg</i>	<i>SReg</i>
	Coef	Coef	Coef	Coef	Coef
	(t-stat)	(t-stat)	(t-stat)	(t-stat)	(t-stat)
<i>lnD</i>	0.10028 (0.11)	-0.1361*** (-5.04)	-0.0963*** (-6.33)	-0.0501*** (-2.89)	-0.1059** (-2.10)
Spatial Terms (χ^2)					41.28***
Pseudo-R ²	0.302	0.262	0.219	0.288	0.151
Obs.	3,543	3,543	3,543	3,543	3,543
Statistical Significance: *** 1%, ** 5%, * 10%					

As another check on robustness (or a lack thereof), we combine the data from 1998-2007 and 2012-2016, excluding those years when the housing market and economy generally were in turmoil (2008-2011). Results on the price-distance relationship are summarized in Table 6. Now, Equation (2) estimated by NLS reports a statistically insignificant (but positive) coefficient for the price-distance relationship. The other estimation methods, however, all confirm the negative and statistically significant relationship consistent with the results in Tables 1 and 3. It appears, therefore, whether or not quarries affect prices hinges on model selection and dates selected, which simply demonstrates the spurious nature of these sorts of experiments. Plainly, care must be given to model selection, and robustness analysis should be thorough and explicit. And, in light of the randomized

³⁷ The Box-Cox test indicates a preference for the transformation ($\chi^2 = 40.7$).

inference and quadrant analysis above, the utility of the price-distance relationship for quantifying the effects of quarries and disamenities should be regarded as defective, at least until further research demonstrates otherwise.

The analyses presented here, we believe, offers compelling evidence that the *Hite Report's* experimental design is a flimsy method, easily manipulated to produce nearly any desired result through the selection of location, model specification, estimation technique, and the time period analyzed. The *Hite Report's* findings cannot be reliably replicated and conflicting results are readily obtained. The spurious nature of the price-distance relationship from such experiments is clearly demonstrated, and the defective approach allows for nearly any result imaginable. Using data long after a quarry opens poses no limits on the selection of time period, enhancing the risk of the exploitation of spurious regression for economic and political advantage.

IV. A Difference-in-Difference Approach

As detailed above, to quantify the effect of a quarry on home prices the researcher ideally needs pricing data both before and after quarry operations begin.³⁸ With this data, statistical analysis can determine how the relationship between price and distance from the quarry *changes* after the quarry opens, thus quantifying, under some well-known assumptions, a plausible causal effect.

There are some potential shortcomings with a simple before-and-after analysis, however. New quarries take years to get approval and normally we expect equity prices to reflect new information quickly, so price effects may precede that event. In this section, we offer two before-and-after analyses of the effect of a quarry on home prices. First, we evaluate pricing activity around the Vulcan quarry in Gurley, Alabama, which began operations in 2013. Gurley is a rural area not far from the city of Huntsville, Alabama. Consistent with the analysis above, we use the general format of the *Hite Report* (and several

³⁸ Another possible identification strategy involves exploiting policy experiments with respect to residential distance from a quarry. For example, if some states required houses to be a certain distance away from a quarry while other states did not, then a credible counter-factual could be constructed allowing the researcher to estimate the effect of quarry distance on home prices. A regression discontinuity design could be used to identify the price-distance relationship if regulations required potential home buyers to be informed of the quarry for homes within a certain distance. Homes just inside and just outside this cut-point would could be used as treatment and control units to identify the causal price-distance relationship.

(Footnote Continued. . . .)

alternatives) to test for a *change* in the price-distance relationship after the quarry opens.

Second, we evaluate the price effects of the contested Austin Quarry in Madera, California, which was approved in 2016.³⁹ Located in the southwest corner of the intersection of Highway 41 and Highway 145, the site is proximate to two subdivisions, one located on Highway 145 and the other on Highway 41. Thus, not only are the subdivisions proximate to the quarry, but both are expected to deal regularly with the quarry's traffic flow. Though first proposed in 2010, media coverage and public protest did not begin until 2013, at which time the new quarry might be expected to affect home prices through an announcement effect.⁴⁰ A control group is chosen using CEM from homes sales in subdivisions not too far from the quarry site but beyond the range of influence. We find no statistically significant effect of the quarry in either model, though in both cases the estimated coefficients indicate, if anything, the quarry raises property values.

A. The Empirical Model

For these analyses, we employ the standard regression model for the DiD estimator. Using a log-linear form common to hedonic regressions, the regression equation is,

$$\ln p_{it} = \Delta T \cdot N_i + \delta_0 N_i + \beta_0 + \sum_{j=2}^k \beta_j X_{j,i} + v_{it} , \quad (4)$$

where T is dummy variable equal to 1.0 after the treatment and N_i is a dummy variable for homes near the quarry site (or a continuous measure of distance from the quarry). The estimated coefficient δ_0 measures the difference in average sale prices for homes near the quarry (or the effect of distance from it) *prior to the treatment*. After the treatment, the difference in price between homes near and far from the quarry is $\Delta + \delta_0$. The difference between the two effects is Δ , which is the DiD estimator, as defined in Equation (1), or $\Delta = \delta_1 - \delta_0$. The t-test on the coefficient

³⁹ J. Rieping, *Controversial Quarry Up for Vote*, MADERA TRIBUTE (July 16, 2016) (available at: <http://www.maderatribune.com/single-post/2016/07/16/Controversial-quarry-up-for-vote>); M.E. Smith, *Austin Quarry Approved in 3-2 Vote*, SIERRA STAR (July 20, 2016) (available at: <http://www.sierrastar.com/latest-news/article90713132.html>).

⁴⁰ Lexus-Nexus search conducted on February 20, 2018. B. Wilkinson, *Concerns Over Truck Traffic on Road*, SIERRA STAR (February 21, 2013).

Δ is, therefore, a direct test of the statistical significance of the effect of a quarry on home prices.

As an alternative, we estimate,

$$\ln p_{it} = \Delta T \cdot N_i + \beta_0 + \sum_{j=2}^k \beta_j X_{j,i} + \lambda_t + v_{it} , \quad (5)$$

where the continuous *DATE* variable is replaced with year fixed effects (λ_t), which is a somewhat standard treatment of time in the DiD regression. Due to collinearity with the fixed effects, the $\delta_0 N$ term is no longer included in the regression, but the interpretation of Δ is unchanged.

For consistency with the earlier analysis, we also estimate the model specification of the *Hite Report*, adding as a regressor the interaction of a treatment dummy variable for years 2013 and later (T). The regression model is,

$$p_{it} = \exp(\delta_0 \ln D_i + \Delta \ln T \cdot D_i + \beta_0 + \sum_{j=2}^k \beta_j X_{j,i}) + \varepsilon_{it} , \quad (6)$$

where the variables are defined the same way as the Murfreesboro analysis (i.e., total rooms is replaced with square footage). The coefficient δ_0 quantifies the price-distance relationship prior to the initiation of quarry operations in 2013. Starting in 2013, the price-distance relationship is measured by $\delta_0 + \Delta = \delta_1$, where Δ measures the *change* in the slope of the price-distance relationship. If the quarry reduces home values near the quarry, then Δ should be positive and statistically significant. Equation (6) is estimated by NLS.

B. *Vulcan Quarry in Gurley, Alabama*

As with the earlier analysis, data is obtained on home sales within a five-mile radius of the quarry location in Gurley, Alabama. The quarry began operations in 2013, and our data spans 2005 through portions of 2017. The sample includes 593 transactions, but we note only 83 are for sales prior to 2013.⁴¹ Since there is no “city

⁴¹ The low samples are likely the consequence of the rural nature of the market and data collection in such areas. We cannot exclude the possibility the sample is peculiar in some respect.

center" in the area, the *DCC* variable is measured as the distance from the WalMart Supercenter in the nearby town of Big Cove.

Table 7. Regression Results and Descriptive Statistics
Vulcan Quarry in Gurley, Alabama

	<i>NLS-Eq. 6</i>	<i>OLS-Eq. 4</i>	<i>OLS-Eq. 5</i>	Mean
	Coef	Coef	Coef	(St. Dev)
	(t-stat)	(t-stat)	(t-stat)	
<i>lnD</i>	0.0876 (0.97)	0.2723*** (3.64)	0.3679** (2.20)	3.445 (0.987)
<i>T·lnD</i>	-0.1205** (-2.41)	-0.0543 (-1.07)	-0.1587 (-0.88)	2.936 (1.50)
<i>DATE</i>	0.0162* (1.67)	0.0191* (1.85)	...	2014.1 (2.30)
<i>DDC</i>	-0.0456*** (-5.85)	-0.0529*** (-5.99)	-0.0512*** (-5.80)	4.484 (2.27)
<i>H2L</i>	-1.2185 (-0.79)	-0.2457 (-0.11)	0.1868 (0.08)	0.063 (0.029)
<i>BATH</i>	0.1752*** (6.92)	0.2672*** (8.84)	0.2655*** (8.71)	2.875 (0.932)
<i>SQFT</i>	2.2E-04*** (5.97)	2.0E-04*** (3.22)	1.9E-04*** (3.11)	2,870.3 (1,139.8)
Constant	-27.99 (-1.43)	-27.57 (-1.32)	10.61*** (36.57)	...
λ_t	No	No	Yes	...
Pseudo-R ²	0.641	0.602	0.608	...
Obs.	593	593	593	593

Statistical Significance: *** 1%, ** 5%, * 10%

Results are summarized in Table 7.⁴² Many of the coefficients are statistically significant and similar to those estimated using the Murfreesboro data. First, for Equation (6) estimated by NLS, we find that housing prices rise as distance from the quarry increases (the coefficient on *lnD* is positive), but this positive effect is observed *prior to the beginning of quarry operations*. After the quarry opens, the positive (though statistically insignificant) price-distance relationship is attenuated; the estimated Δ coefficient is -0.103 and the null hypothesis of “no effect” for the DiD estimator is rejected at the 5% level. Prior to 2013, the price-

⁴² Since we do not observe large differences in the characteristics of homes near to and far from the quarry, we do not apply CEM.

distance elasticity is 0.088 (δ_0), but after 2013 it is -0.033 (δ_1), a small effect that is statistically indistinguishable from zero (F-stat = 0.16, prob = 0.69).

Turning to Equation (4), the price-distance relationship is again positive (and much larger than with NLS) but is now statistically significant prior to the beginning of quarry operations. The Δ coefficient is -0.054, which while negative is no longer statistically different from zero at standard levels. The positive price-distance relationship is attenuated after the quarry began operating, but not to a statistically significant degree. The results are similar for Equation (5). Though not summarized in the table, we note that for MReg and RReg neither of the quarry-distance coefficients is statistically different from zero. The SReg results, also not presented in the table, are not wholly unlike the OLS estimates of Equation (4); the coefficient δ_0 is positive (0.331, $t = 4.45$) and statistically significant, but the Δ coefficient is negative (-0.055, $t = 0.98$) and not statistically different from zero.

The lack of robustness to specification leads us to conclude that the most likely effect of the quarry is no effect at all. Also, we acknowledge that the defects in the *Hite Report's* empirical strategy is as relevant here as before: our randomized inference simulation computes a rejection rate on δ_0 of 65% and for Δ of 67% (at a nominal 10% significance level). While we recognize the limitations of the data and the methods, on whole the results are entirely at odds with the claim that quarries reduce housing prices. If anything, the effect is the opposite.

C. Austin Quarry in Madera County, California

Quarry sites often take years for approval. Our model of the Gurley quarry presumed that prices do not reflect the quarry operations until after the quarry is operational. A reasonable argument may be made, however, that home prices might adjust before the quarry opens when the local population becomes aware of the future quarry site. We consider that possibility now.

The Austin Quarry in Madera, California, was approved in September 2016 despite a substantial NIMBY effort.⁴³ A search of news outlets reveals that public attention to proposed quarry initiated in early 2013 and was very active is

⁴³ M. Smith, *Supervisors Approve Austin Quarry 3-2*, SIERRA STAR (September 12, 2016) (available at: <http://www.sierrastar.com/news/local/article101492412.html>).

(Footnote Continued. . . .)

subsequent years.⁴⁴ Thus, we define the treatment dummy T as having values of one in years after 2013 (and also consider other years). Data is collected for the ten years preceding the treatment date, so the data spans 2007 through 2016.

The Austin Quarry site is well outside of town, but there are two subdivisions proximate (less than three miles) to the site: Bonadelle Rancheros-Madera Ranchos and Bonadelle Rancheros Nine. Both subdivisions abut the major highways (Highways 41 and 145) servicing the quarry site. If any homes are to be affected by the quarry, then these are the most likely candidates, and they represent our treatment group. The dummy variable N takes a value of 1 for these subdivisions (zero otherwise). Visual inspection of the area points to a number of subdivisions in the vicinity that are neither on the major highways serving the site nor within ten miles of the site: Madera Estates, Madera Country Club, Lake Madera Country Club, Chuk Chanse, Valley Lake Ranchos, Madera Acres, Madera Knolls, and Madera Highlands. A control group will be selected from home sales in these subdivisions.

Estimation of the DiD estimator employs Equation (5). Regressors include the age of the home at the sale data (AGE), square footage ($SQFT$), the number of bedrooms (BED) and bathrooms ($BATH$), a dummy variable indicating whether the home a two story home ($STRY$), a dummy variable indicating the presence of a fireplace ($FIRE$), a dummy variable indicating whether the home has a swimming pool ($POOL$). Year fixed effects are included.

⁴⁴ B. Wilkinson, *Concerns Over Truck Traffic on Road*, SIERRA STAR (February 32, 2013); G. Smith, *Economic Costs and Benefits of the Proposed Austin Quarry in Madera County* (October 23, 2014) (available at: <http://www.noaustinquarry.org/wp-content/uploads/2016/08/Austin-Quarry-Economics-Report.pdf>); M.E. Smith, *Progress Continues on Austin Quarry*, SIERRA STAR (February 10, 2016) (available at: <http://www.sierrastar.com/news/article87816032.html>); B. Wilkinson, *Group Opposes Proposed Rock Quarry*, SIERRA STAR (November 12, 2014) (available at: <http://www.sierrastar.com/news/article87802492.html>); D. Joseph, *Quarry Issues Need to be Addressed*, SIERRA STAR (December 3, 2014) (available at: <http://www.sierrastar.com/opinion/article87803072.html>).

Table 8. Descriptive Statistics
Austin Quarry in Madera County, California

Variable	ALL Mean (St.Dev)	N=0 Mean (St.Dev)	N=1 Mean (St.Dev)	Stan. Diff.
<i>AGE</i>	16.13 (12.16)	16.50 (12.22)	15.21 (11.95)	0.075
<i>SQFT</i>	1811.6 (522.7)	1706.7 (490.6)	2072.9 (509.5)	0.518*
<i>BED</i>	3.32 (0.59)	3.27 (0.54)	3.43 (0.70)	0.179
<i>BATH</i>	1.99 (0.68)	1.83 (0.66)	2.38 (0.56)	0.639*
<i>STRY</i>	0.024 (0.15)	0.016 (0.12)	0.043 (0.20)	0.115
<i>FIRE</i>	0.632 (0.48)	0.730 (0.44)	0.390 (0.49)	0.515*
<i>POOL</i>	0.068 (0.25)	0.033 (0.17)	0.159 (0.36)	0.311*
Price	215.4	195.0	266.3	
Price/ <i>SQFT</i>	120.8	116.4	131.9	
Obs.	887	633	254	

Descriptive statistics for the treatment and control pool are provided in Table 8. The homes are similar in some respects, but large standardized differences (> 0.25) are found for square footage, the number of bathrooms, and the presence of a fireplace or pool.⁴⁵ CEM based on *SQFT*, *BATH*, *FIRE*, and *POOL* reduces the standardized differences to acceptable levels for all the regressors. We are able to match 229 of 254 homes in the treated group to 450 of 633 homes in the control pool, for an estimation sample of 679 home sales.

⁴⁵ Imbens and Wooldridge, *supra* n. 8.

Table 9. Regression Results and Descriptive Statistics
Austin Quarry in Madera County, California

	OLS Coef (t-stat)	CEM-OLS Coef (t-stat)	CEM-MReg Coef (t-stat)	SReg Coef (t-stat)
N (δ_0)	0.1166** (2.47)	0.1277** (2.08)	0.1194*** (4.99)	0.1913** (2.11)
$T-N$ (Δ)	0.1663*** (2.95)	0.1005 (1.21)	0.1161*** (3.14)	0.0878 (1.32)
AGE	0.0017 (1.20)	0.0087*** (3.47)	-0.0003 (-0.35)	-0.0055* (-0.35)
$SQFT$	1.7E-04*** (3.40)	1.3E-04** (2.05)	3.0E-04*** (12.68)	2.0 E-04*** (4.39)
BED	0.0349 (0.90)	0.01205*** (2.63)	0.0450** (2.49)	-0.0542 (1.54)
$BATH$	0.0288 (1.08)	-0.0439 (-0.60)	-0.0777*** (-2.60)	-0.0218 (-0.61)
$STRY$	-0.0878 (-0.70)	-0.0408 (-0.33)	0.0043 (0.05)	-0.1378 (-1.29)
$FIRE$	0.0770** (2.43)	0.0650* (1.73)	0.0422*** (2.94)	0.0305 (0.88)
$POOL$	0.1833*** (3.71)	0.1577*** (4.03)	0.0853*** (3.68)	0.2346*** (3.63)
Constant	11.21*** (98.08)	10.92*** (70.30)	11.35*** (20.67)	11.62*** (83.17)
λ_t	Yes	Yes	Yes	Yes
Spatial Terms (χ^2)				27.17***
Pseudo-R ²	0.482	0.491	0.361	0.186
Obs.	887	679	679	887

Statistical Significance: *** 1%, ** 5%, * 10%

Regression results are summarized in Table 9. For comparison purposes and to illustrate the important effects of covariate balance, estimates for both the full and CEM-weighted samples are provided. The models fit the data well for both samples. For the full sample, which we caution does not rely on balanced data, the estimated δ_0 coefficient (0.117) indicates that prices in the treated group were about 12% higher [$\exp(\delta_0) - 1$] in the pre-treatment period. After the treatment, the prices were even higher ($\Delta = 0.166$), a statistically significant result of about an 18% increase. The remaining coefficients are sensibly sized and many are statistically different from zero. A swimming pool, for instance, raises price by about \$38,000.

Turning to the CEM-weighted model, the price difference before the treatment is a bit larger ($\delta_0 = 0.128$), and the difference is statistically significant at standard

levels. As in the full sample, the DiD estimator Δ is positive (0.100), but now it is not statistically significant. For the balanced sample, we cannot reject the null hypothesis that the quarry's announcement effect is zero, though the coefficient is relatively large and the t-statistic is much larger than 1.00. In contrast, for the CEM-weighted MReg, prices are higher in the treated area during both the pre-treatment and treatment period, and both coefficients are statistically different from zero at better than the 1% level.

In the final column of Table 9, we summarize the results from SReg using the full sample. The spatial terms are statistically significant at the 1% level. The results are comparable to the others. Prices are higher in the treated area before the treatment, but we do not see a statistically significant change is seen after the treatment. The DiD estimator Δ is positive and relatively large (0.09), but statistically significant only at the 20% level.

Table 10. Regression Results, Annual Treatment Effect
Austin Quarry in Madera County, California

	2013	2014	2015	2016
	Coef	Coef	Coef	Coef
	(t-stat)	(t-stat)	(t-stat)	(t-stat)
<i>T·N</i> (Δ)	0.2721*** (2.65)	0.0018 (0.01)	0.0322 (0.42)	0.3949 (1.41)
Statistical Significance: *** 1%, ** 5%, * 10%				

Finally, we can estimate the Δ coefficient for each year beginning with our chosen treatment date (2013), thereby assessing whether that choice is influencing the estimate.⁴⁶ The results by year are summarized in Table 10. Large positive coefficients are observed in years 2013 and 2016 (the latter close to being statistically significant), and smaller positive coefficients for the other years. These results are consistent with those reported in Table 9.

Notably, we do not estimate a price-distance relationship in these equations. Distance from the quarry site is not a regressor. Unlike the distance-based model, the rejection rates for randomized inference (assigning the homes in the treatment group randomly from those in the sample) are very close to the nominal level of the test (11% rejection rate versus 10% nominal test level). The statistical reliability

⁴⁶ The coefficients are year specific and do not quantify the average after the treatment year, as do the results from Table 9.

of this approach is much superior to the price-distance approach used in the *Hite Report*.

Taken together, we conclude from these results indicate that the effect of the quarry may very well be zero, at least in the form of an announcement effect. If there is any effect, it is positive. Whether or not the quarry will affect prices, either positively or negatively, after operations begin (assuming they do) is unknowable at this time. In light of the evidence presented here and in prior research, the expectation must be that there will be little to no effect on home prices and, if anything, that effect may be positive.

V. Conclusions

We estimate the effect of rock quarries on home prices with data from four quarry locations across the United States, a wide range of econometric specifications and robustness checks, and a variety of temporal circumstances from the lead-up to quarry installation to subsequent operational periods. We find no compelling statistical evidence that either the anticipation of, or the ongoing operation of, rock quarries negatively impact home prices. While our study extends the literature on estimating the effects of “disamenities,” primarily as a critique of existing methods, the empirical problem is difficult and likely requires advanced research methods beyond what we provide here. The primary obstacle to estimating these effects is the lack of data and that lack of data is actually driven by the quarry site selection process, which limits our ability to infer a causal relationship. Thin markets and a subsequent lack of sales data are a serious problem since quarries are today (and typically in the past) located, by design, away from residential density.

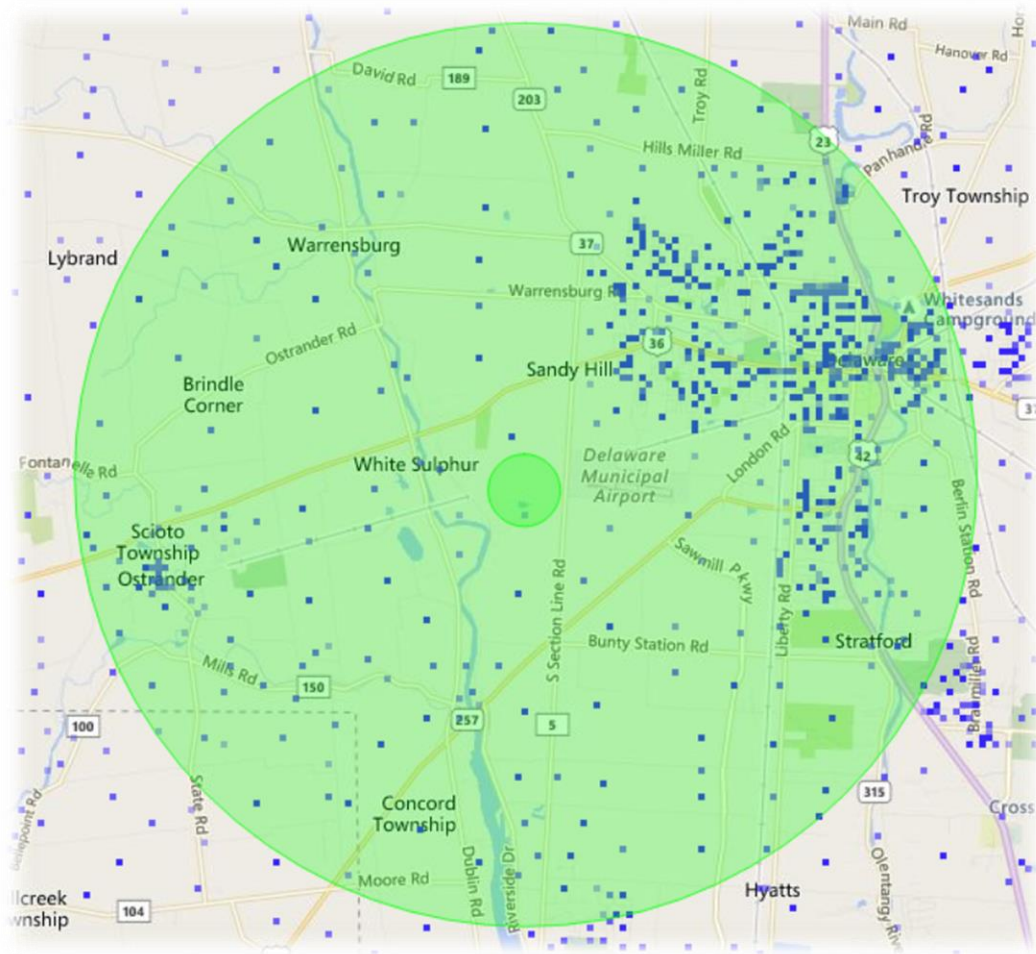
Our study highlights a number of shortcomings in the empirical methodologies generally used to estimate the effect of disamenities on real estate prices. First and foremost, the vast majority of studies do not (or even attempt to) identify the causal effect of disamenities. That is, existing studies are naïve as to the empirical conditions necessary to identify a causal relationship and do not establish credible strategies to estimate the counter-factual outcome—i.e., how the real estate around quarries would have looked, on average, without a landfill or other disamenity. To evaluate the credibility of existing studies and their methodologies, we first employ permutation tests to examine whether or not the existing methodologies yield higher than expected rejection rates of the null hypothesis. We accomplish this by randomly assigning a location in our sample space with a “disamenity” (i.e., a placebo quarry) and then estimate the effect on surrounding home prices. The null hypothesis of “no effect” of the placebo

quarries is rejected in no less than 7 out of 10 simulations, and at a rate as high as 9 out of 10 simulations.

In an attempt to produce a meaningful counter-factual we employ a difference-in-differences estimation strategy which exploits the timing and placement of a quarry. We use this strategy in two different contexts: (1) before and after operations of a quarry in Gurley, Alabama; and (2) before and after local debate (and subsequent approval) of a quarry in Madera County, California. The first exercise estimates the effect of quarry operations on home prices and the second exercise estimates the anticipatory effect of a quarry on home prices. Neither exercise yields evidence of a negative impact on home prices. Given a number of data concerns and model limitations (since our interest is primarily in replication), further research is advised.

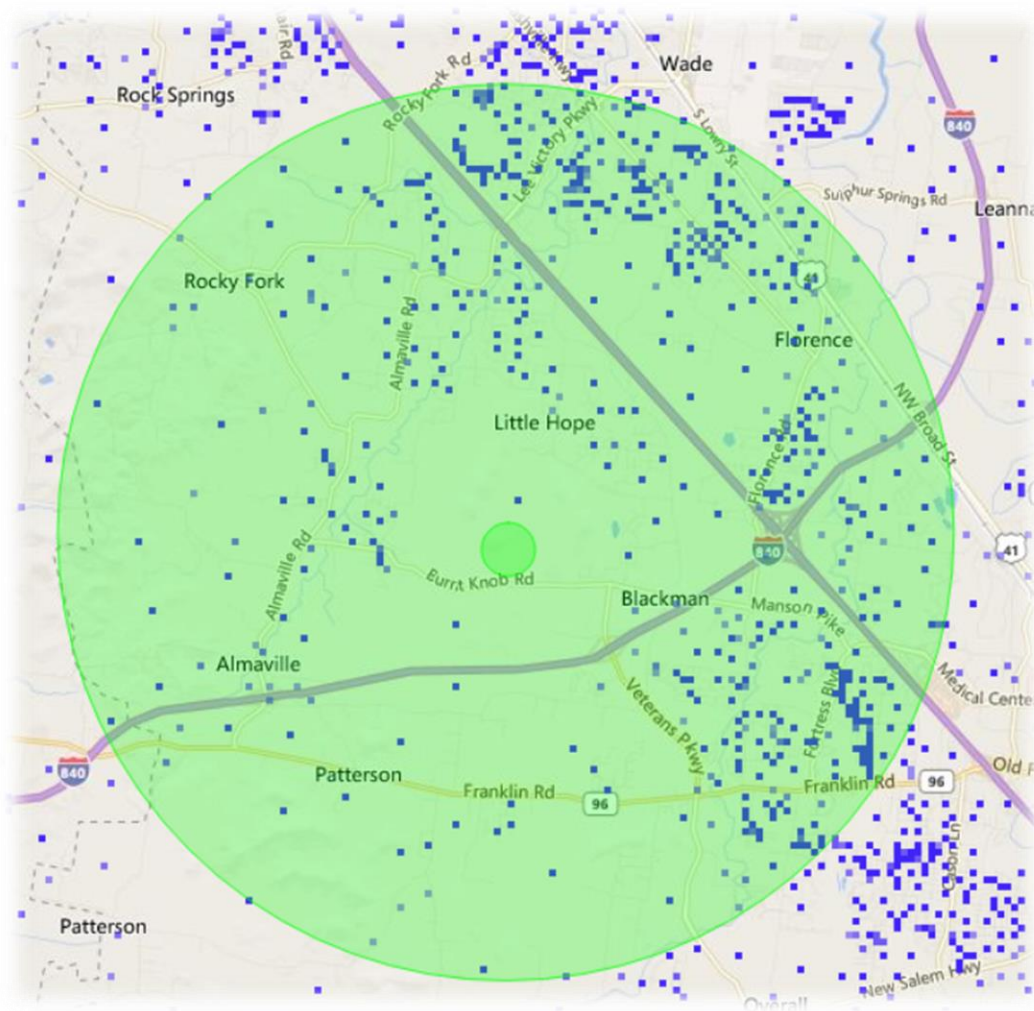
APPENDIX 1. MAP OF NATIONAL LIME & STONE QUARRY NEAR DELAWARE, OHIO

Notes: The small, inner green circle marks the National Lime & Stone Quarry near Delaware, Ohio. The larger green circle is a five-mile radius around the quarry location. The blue dots mark areas of population density using 2010 census data. Map generated using censusviewer.com.



APPENDIX 2. MAP OF ROGERS GROUP QUARRY NEAR MURFREESBORO, TENNESSEE

Notes: The small, inner green circle marks the Rogers Group Quarry near Murfreesboro, Tennessee. The larger green circle is a five-mile radius around the quarry location. The blue dots mark areas of population density using 2010 census data. Map generated using censusviewer.com.



APPENDIX 3. CENSUS BLOCK POPULATION GROWTH NEAR ROGERS GROUP QUARRY NEAR MURFREESBORO, TENNESSEE

Notes: Figures 3A-3C demonstrate population movements for Rutherford County, TN, with emphasis on the Rogers Group quarry. Population is measured using U.S. Census Bureau population data for years 2000, 2010, and 2016. Darker blues imply greater population.

Fig. 3A: Rutherford County, TN, 1990 Population Density

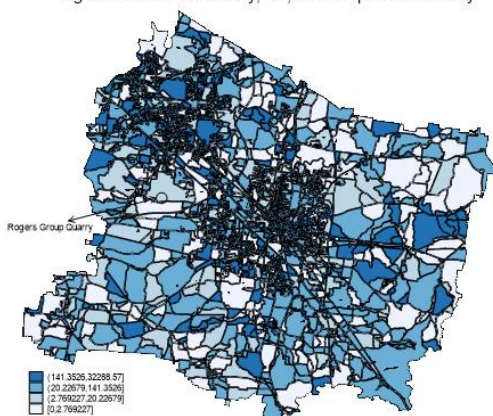


Fig. 3B: Rutherford County, TN 2000 Population Density

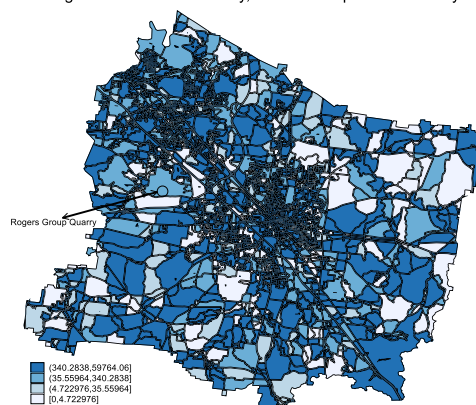
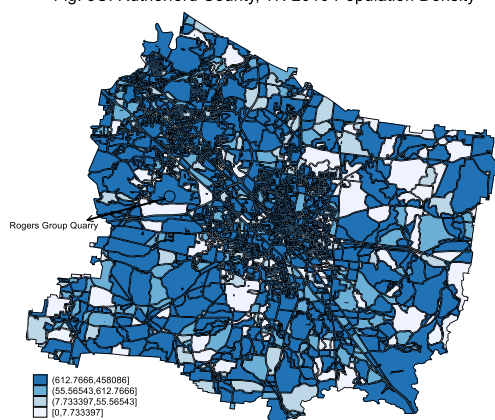
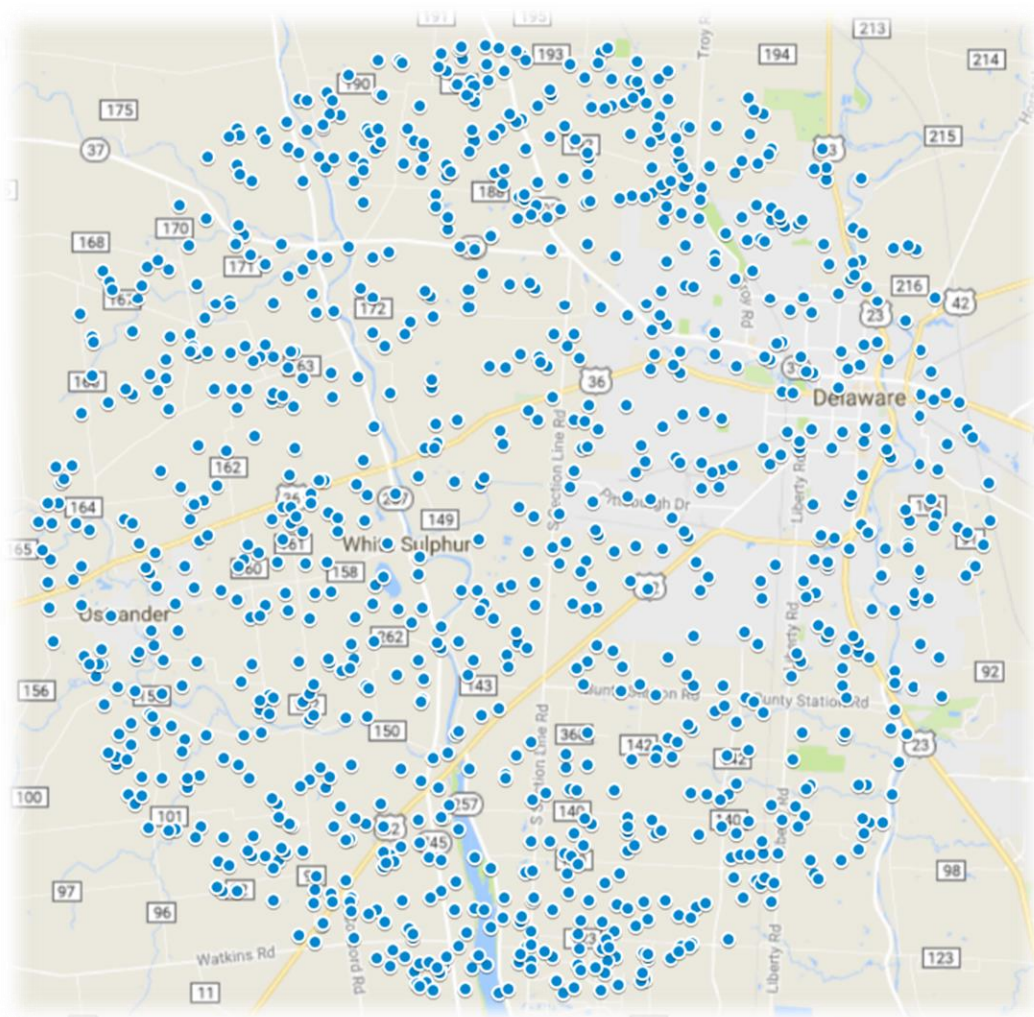


Fig. 3C: Rutherford County, TN 2010 Population Density



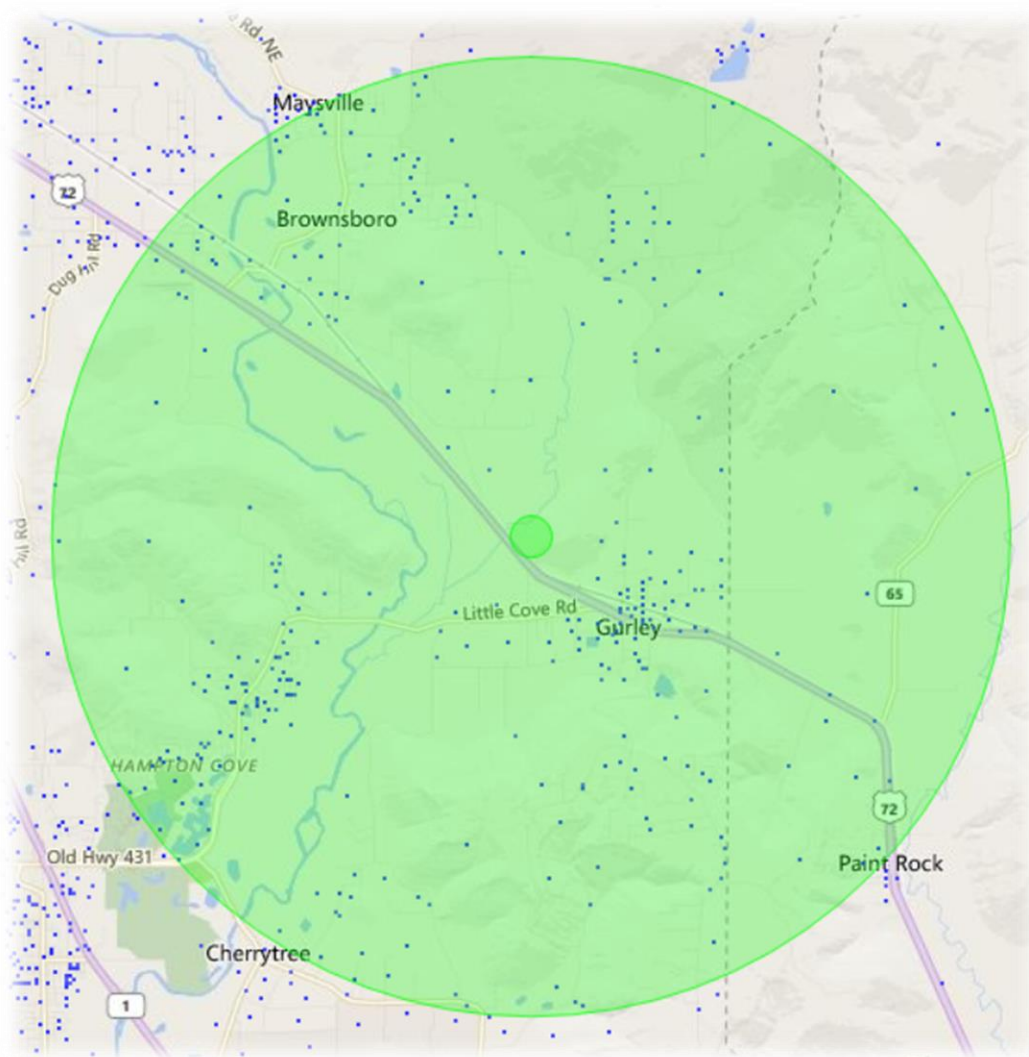
APPENDIX 4. ILLUSTRATIVE MAP OF RANDOM LOCATIONS USED FOR RANDOMIZED INFERENCE ANALYSIS FOR DELAWARE COUNTY

Notes: The blue dots represent the random locations chosen by the randomized inference simulation for Delaware County, Ohio. Map generated using Google maps.



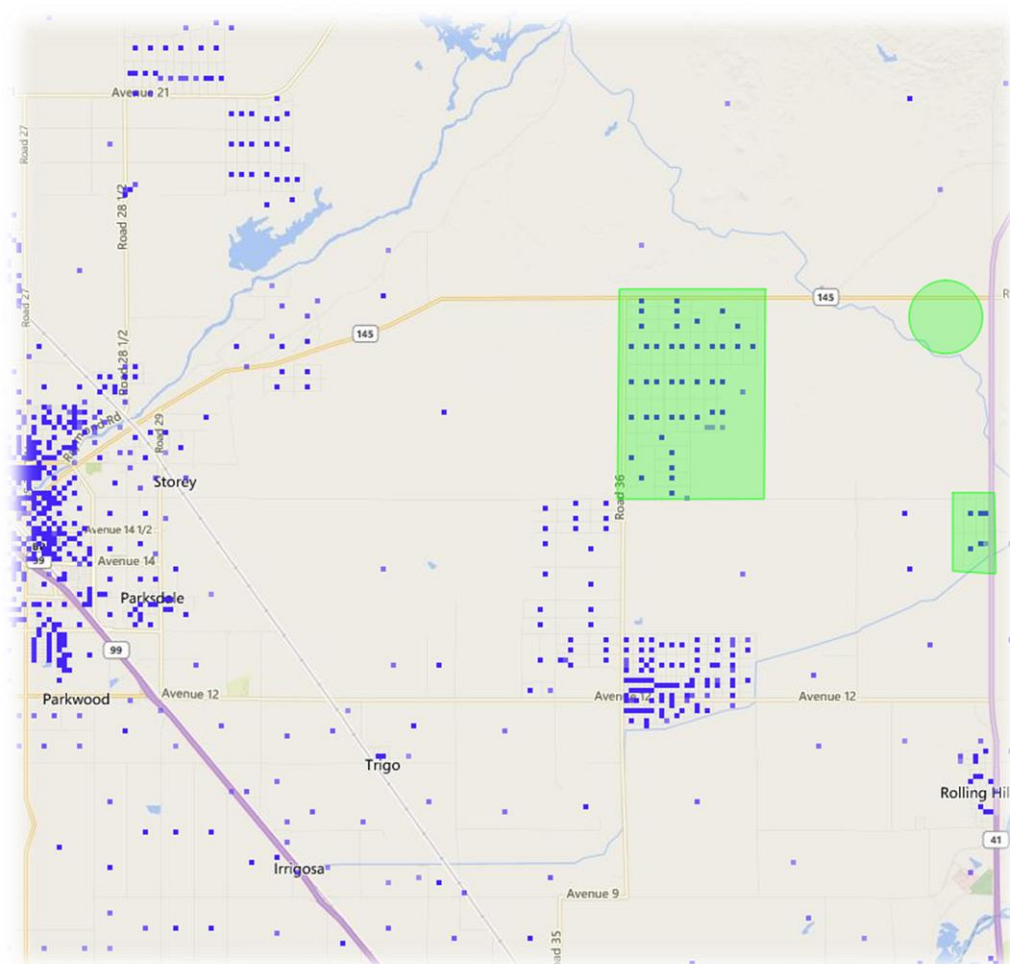
APPENDIX 5. VULCAN QUARRY NEAR GURLEY, ALABAMA

Notes: The small, inner green circle markets the Vulcan Quarry near Gurley, Alabama. The larger green circle is a five-mile radius around the quarry location. The blue dots mark areas of population density using 2010 census data. Map generated using censusviewer.com.



APPENDIX 6. MAP OF AUSTIN QUARRY SITE IN MADERA COUNTY, CALIFORNIA

Notes: The green circle marks the site of the proposed Austin Quarry in Madera County, California. The immediate two areas of population to the South and West of the quarry site – marked in green rectangles – are the “treated” areas. The blue dots mark areas of population density using 2010 census data. The control group is chosen from areas further west and north of Highway 145 toward Madera. Map generated using censusviewer.com.



1320 Research Park Drive
Manhattan, Kansas 66502
(785) 564-6700



PC Item 3
Attachment D Pg 1

900 SW Jackson, Room 456
Topeka, Kansas 66612
(785) 296-3556

Jackie McClaskey, Secretary

Governor Sam Brownback

December 29, 2017

Mr. Eric Bettis
Mid-States Materials, LLC
P.O. Box 236
Topeka, KS 66601-0236

Dear Mr. Bettis:

Your application for reclamation work completed at the Big Springs Quarry site, Phase III, has been selected to receive the Governor's Mined Land Reclamation Award for 2017. The award will be presented at the Kansas Aggregate Producer's Association Annual Convention Awards Luncheon on January 12, 2018. We hope you will be able to attend and receive the award plaque.

In the next few months, I will use the information from your application to write and submit your reclamation work to the National Association of State Land Reclamationists for consideration in the national non-coal award competition.

Congratulations on receiving the award. If you have any questions, please give me a call.

Sincerely,

Scott B. Carlson
Assistant Director
Division of Conservation, Kansas Department of Agriculture
1320 Research Park Drive
Manhattan, KS 66502
785.564.6618
scott.carlson@ks.gov

CC: Cole Anderson, Mid State Materials, LLC



109 SW 9th Street, 2A
Topeka, Kansas 66612-1283

Phone: (785) 296-3600
Fax: (785) 296-6172
Email: doc@kda.ks.gov
www.ksda.gov/doc

Dale A. Rodman, Secretary
Greg A. Foley, Executive Director

Sam Brownback, Governor

September 3, 2013

Mr. Eric Bettis
Manager
Mid-States Materials, LLC
2 North 1700 Road
Lecompton, KS 66050

Dear Mr. Bettis:

Your application for reclamation work completed at the Big Springs Quarry site has been selected to receive the Governor's Mined Land Reclamation Award for 2013. The award will be presented at the Kansas Aggregate Producer's Association Annual Convention Awards Luncheon in January, 2014. We hope you will be able to attend and receive the award plaque.

In the next few months, I will use the information from your application to write and submit your reclamation work to the National Association of State Land Reclamationists for consideration in the national non-coal award competition.

Congratulations on receiving the award. If you have any questions, please give me a call.

Sincerely,

A handwritten signature in black ink, appearing to read "Scott B. Carlson". The signature is fluid and cursive, with a long horizontal stroke extending to the left.

Scott B. Carlson
Mined Land Reclamation Program Manager

SEP 05 2013

Kansas

Department of Agriculture
Division of Conservation

109 SW 9th Street, 2A
Topeka, Kansas 66612-1283

Dale A. Rodman, Secretary
Greg A. Foley, Executive Director

PC Item 3
Attachment D Pg 3

Phone: (785) 296-3600
Fax: (785) 296-6172
Email: doc@kda.ks.gov
www.ksda.gov/doc

Sam Brownback, Governor

November 23, 2011

Mr. Cole Anderson
Environmental, Health and Safety Manger
Mid-States Materials, LLC
2350 NW Waterworks Drive
Topeka, KS 66606

RECEIVED NOV 28 2011

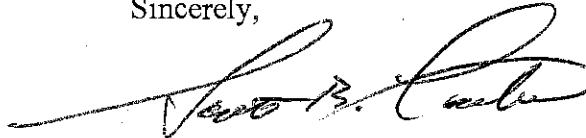
Dear Mr. Anderson:

Your application for reclamation work completed at the Big Springs Quarry site has been selected to receive the Governor's Mined Land Reclamation Award for 2011. The award will be presented at the Kansas Aggregate Producer's Association Annual Convention Awards Luncheon on Friday January 13, 2012, at the Marriott Hotel located at I-435 and Metcalf in Overland Park. We hope Mr. Bettis or yourself will be able to attend and receive the award plaque.

In the next few months, I will use the information from your application to write and submit your reclamation work to the National Association of State Land Reclamationists for consideration in the national non-coal award competition.

Congratulations on receiving the award. If you have any questions, please give me a call.

Sincerely,



Scott B. Carlson
Mined Land Reclamation Program Manager

SBC:clt



NASLR

NATIONAL ASSOCIATION OF STATE LAND RECLAMATIONISTS

Officers		
President Ed Coleman Montana Department of Environmental Quality ecoleman@mt.gov	Vice President Danielle Duhé Louisiana Department of Natural Resources Danielle.Duhe@la.gov	Secretary/Treasurer Jeff Meitrott Pennsylvania Department of Environmental Protection jmeitrott@pa.gov

July 30, 2018

Mr. Cole Andersen
Mid-States Materials, LLC

Sent Via Email

On behalf of the National Association of State Land Reclamationists (NASLR), let me congratulate you on being the 2018 winner of the Outstanding Reclamation Award in the non-coal category. Your state reclamation agency nominated the Big Springs Quarry to NASLR for its impressive reclamation and innovative practices. An award ceremony will be part of our dinner banquet at the upcoming annual conference at the Kingsmill on the James in Williamsburg, Virginia on September 10. The banquet will be held at 6:00 pm at the Kingsmill. You and a guest are invited to attend the banquet as guests of NASLR. If you plan to attend, please contact Jeff Meitrott, NASLR's Secretary/Treasurer, by phone at 814.342.8116 or via email at jmeitrott@pa.gov by August 10 so that he can confirm your attendance for the meal with the hotel. If you are interested in attending the entire conference, information is on our website at www.naslr.org. Registration fees are waived for award winners. Please contact Jeff as soon as possible if you would like to attend the entire conference, so that he can get you registered.

Should you not be able to attend, we will ask a representative from the Kansas Dept. of Agriculture to accept the award on your behalf and they will present it to you after the conference.

Again, congratulations on being a winner and for demonstrating that mined land can be very successfully reclaimed and at the same time providing a mineral resource necessary to our nation.

Sincerely,

Edward L. Coleman
President

Executive Committee		
Simone Rodriguez New York State Department of Environmental Conservation simone.rodriguez@dec.ny.gov	Halina Duda New York State Department of Environmental Conservation halina.duda@dec.ny.gov	Janet Yates Virginia

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Stringtown Quarry's century-old operation is a good neighbor

8 Tips to meet specs
for washed sand

16 Minimize your operation's
environmental impact

OPERATIONS ILLUSTRATED

Therese Dunphy, Editor-in-Chief

Environmentally Friendly Operations

Plan the final land use before beginning to mine at a new site.

Enclosures prevent fugitive dust from escaping the plant.

Use water trucks to minimize dust on unpaved roads.

Use top soil to set up berms and screening material around the plant.

OUR EXPERTS



Brian Gasiorowski, P.E., is a director of land and environment at LafargeHolcim. He has worked at the company for 24 years and has been an environmental professional for 40 years. Gasiorowski has a bachelor's degree in engineering from the University of Michigan and a master's degree in engineering science from the University of Toledo.



Cole Andersen is the ESH manager for Mid-States Materials, LLC. He has a dozen years of experience in the environmental, safety, and health field and has been with Mid-States since 2010. Andersen has a bachelor's degree in safety management, with a minor in security management, from the University of Central Missouri.

Four Focus Areas Reduce Impact

For many aggregate producers, environmental management goals tend to fall into several categories including: water, air, and waste. Taking a proactive approach to these areas — along with the development of a solid reclamation plan — can not only reduce an operation's impact on the environment, but also improve relations with neighbors and regulators. "Quarry operations must always be sensitive to neighbors," says Cole Andersen, ESH manager for Mid-States Materials, LLC. "A good environmental program will not only reduce neighbor complaints, but will show the local, state, and federal inspectors that you are a good operator and demonstrate compliance."

At LafargeHolcim, its environmental management system has been in place and providing consistent guidance to operators for more than 15 years. A combination of good policy, site-specific modifications, and quality training are the drivers of its effectiveness, says Brian Gasiorowski, P.E., director of land and environment. "A real key aim is that we reuse as much of the water as we can," he says. To accomplish that goal, operations are graded and drainage patterns are set up to funnel water to a central point.

If necessary, engineers design sedimentation basins to capture runoff and to filter water for reuse at the operation. For example, sediment basins can be used for slurry water as well as to dewater the pit.

"Air quality is really about dust control," Andersen ex-

plains. "There are two considerations to clean air. Fugitive dust is produced from equipment traveling around the yard. We apply water from the sediment ponds to the quarry yard; that aids in suppressing the fugitive dust. A secondary source for dust emissions is from the crushing equipment used in handling aggregate. We control these emissions by using a dust control water system maintenance plan that applies water during the production process by taking water from the sediment ponds. The water is then introduced back into the sediment ponds for filtering and recycling."

When it comes to managing waste, it's important to look at all aspects of an operation and determine where waste is generated and what type of waste is generated. "We deal with things like used oils, oil filters, and oily rags," Gasiorowski says. "A key for us is making sure we have a designated method of collecting those materials, containerizing those materials, and segregating them from general waste." Universal waste, such as light bulbs and batteries, is also separated from general waste and sent to a designated recycling or disposal facility, he adds.

To ensure operators adhere to guidelines for water, air, and waste handling, internal audits may be helpful. "Regular internal inspections are the best way to make sure your plans are working," Andersen says. "If something is wrong, be diligent in addressing the issue. Don't be afraid to try something new if it doesn't work."

1

Manage water consumption



Minimize water impact by reusing water as much as possible. Make sure the site is properly graded and surface water drainage patterns bring water to a central point. If water contains solids or sedimentation, use sedimentation basins to allow reclaimed water to be used in the process, if possible. When designing the sediment pond, factor in an additional 20 percent volume for sediment accumulation.

2 Dial down the dust



Maintain material in a moist condition so that dust isn't liberated from aggregates. Watering systems on conveyors and enclosed transfer points help reduce dust generation in those areas. If roads are paved, they should be swept. If they are unpaved, they should be watered. Daily inspections allow for adjustments of water sprays as needed.

3 Watch your waste



Review your operation to see what types of waste is generated on a regular basis. Create collection points for items such as used oil, oil filters, and oily rags. Containerize those materials and keep them separate from general waste. Universal waste items such as light bulbs and batteries should also be segregated from general waste and sent to designated recycle or disposal facilities.

4 Plan for the future



From the outset of mining, consider the final use for the property. As topsoil is stripped, use it to berm and screen operations. Seed berms to stabilize them throughout mining processes, then use the topsoil for the final grading during reclamation. Concurrent mining and reclamation processes minimize the work to be performed when the deposit is tapped out.

Brian Gasiorowski, P.E

People are at the heart of any successful environmental management program says Brian Gasiorowski, P.E., director of land and environment at LafargeHolcim. The key, he explains, is gathering a "solid, experienced team of environmental professionals and having them located close to the operations and present on a regular basis."

Within the Aggregates Construction Materials (ACM) business, the company has 225 active facilities, and each environmental manager is responsible for an average of 15 to 20 sites. "They are able to establish a team relationship with the operating staff," Gasiorowski says. "They become an extension of the operations team at the facility."

Each site also has a designated facility manager who completes a daily checklist to ensure that environmental management system objectives are being completed. The facility manager can make daily adjustments — such as changing the pressure or direction of a spray jet — to accomplish the desired effect. Environmental managers regularly visit the sites and verify that environmental expectations are being met.

That approach has paid off. LafargeHolcim's Empire Sand & Gravel operation, based in Eagan, Minn., recently received a National Stone, Sand & Gravel Association Environmental Excellence Gold Award for its efforts.

"Good people on the environmental team and good people on the operations team who are working together effectively and communicating effectively," Gasiorowski explains, "that's really a strong element of how we achieve a high level of environmental performance."

The site's application was developed by the local environmental manager and hit on all the key elements of a strong environmental management system: water, air, and waste. "We are able to collect all the water on site," he says, noting that the site has a well-designed, well-operated water management system. It has sedimentation basins that remove sediment from the water, which is reused in the washing process. Dust control is effectively managed. A well-defined waste management process ensures proper handling of waste. In addition, a solid, long-term reclamation plan is in place for the site.

"When you look at the full package at that operation, it really hits on all cylinders in terms of key elements of an environmental program," he says.

For companies who want to advance their environmental efforts, Gasiorowski suggests participation in state and national trade associations. Both levels of organizations typically have environmental committees where operators can learn from their peers and be kept apprised of regulatory requirements.

State environmental agencies may also be a good source for guidance, particularly those that have an ombudsman program. "In Michigan, for example, they've developed a guidance manual for the aggregates industry," he says. "Sometimes, we're a little bit frightened to interact with government agencies, but if you can find that ombudsman link, you can find very good, useful information."

Cole Andersen

"A good environmental program must be tailored to your operation," says Cole Andersen, ESH manager for Mid-States Materials, LLC. In addition to tailoring environmental aspects of mining, the company also takes a customized approach to reclamation which has helped it win the Governor's Mined Land Award several times over the last eight years.

"The land that we own is reclaimed in such a fashion that fishing and waterfowl are maximized. On our most recent reclamation project on company-owned ground, we planted over 900 trees for quail and pheasant and stocked over 100,000 fish in three different ponds," he says. On leased land, the landowner is embedded into the development of the reclamation plan so the final land use will be one the landowner likes and can enjoy in the future. "The goal in reclamation is to make the ground aesthetically pleasing, but for the land to also have a meaning to future generations."

In addition to owner-driven goals for the land, topography and layout are primary considerations when developing a reclamation plan. "Most of our quarries are surface operations, meaning there will always be a void from mining," Andersen says. "Therefore, we will generally always have a water feature at the end of mining to fill the void. We find that a significant water feature is highly prioritized among Kansas landowners." Once the water feature is addressed, plantings can be used to target future use. For example, some landowners want to row crop their land while others want to maximize conditions conducive to wildlife and game.

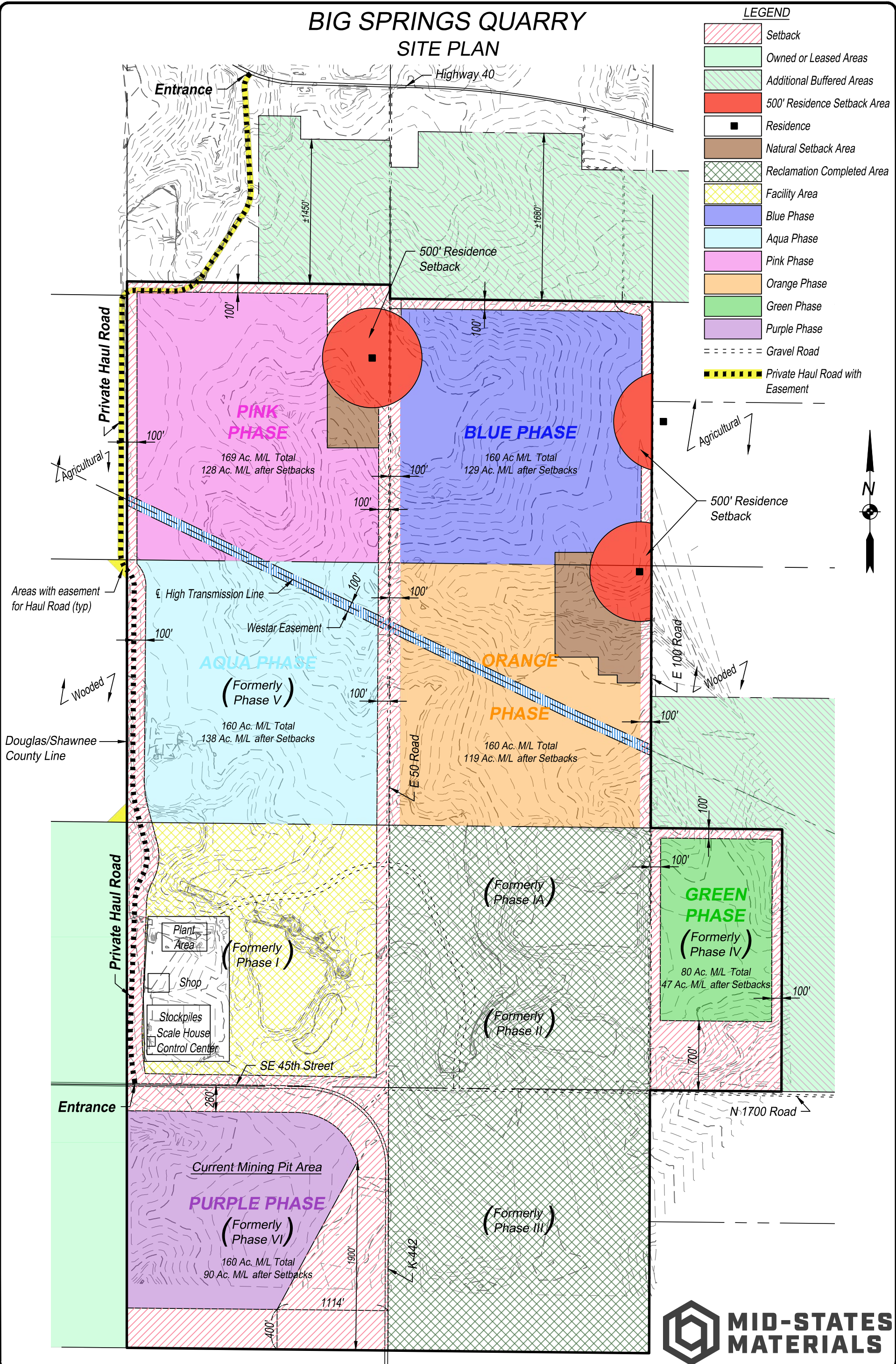
Consider your approach to reclamation from the outset of mining, Andersen advises, noting that Mid-States always strips and saves the topsoil. "We use the topsoil to berm and screen operations around the perimeter of the property. We then seed the berms and save them for the final grading at the end of reclamation.

"Nobody wants to see a large pile of overburden just sitting there. The best process of reclamation for us is to reclaim as we go and stabilize (seed) open areas," he adds. "When the pit is opened up, newly stripped material can be placed behind you. The reclamation process is much easier with this reclaim-as-you-go philosophy."

During the last phase of mining, the water feature will be addressed, but first, Mid-States will perform a drainage study to make sure it doesn't wrongfully displace any downstream neighbors' water rights. "A neighbor will be very unhappy if he has a dry pond due to quarrying activities," Andersen cautions.

Finally, he suggests involving the foreman in the design process. "Having a good plan is one thing, but having a crew and foreman carry out the plan is key. Take pride in your work."

BIG SPRINGS QUARRY SITE PLAN



Schmidt, Beck & Boyd
Engineering, LLC
Drawn By: JEM

Big Springs Quarry

Date: June 18, 2018

Revised: July 17, 2018

2 N 1700 ROAD
LECOMPTON, KANSAS 66050

Not to Scale

Project No.: 18044

FIGURE

1

PLANNING/CUP 06-05-13

The Board considered an amended Conditional Use Permit (CUP-13-00126) to authorize for a revised phasing schedule for Big Springs Quarry, located at 2 N 1700 Road. The application was submitted by Mid-States Ventures, LLC, for Bonnie M. Nichols, Trustee, and Mid-States Materials, LLC, property owners of record. The Big Springs Quarry was approved with Conditional Use Permit CUP-7-2-90. Mary Miller, Lawrence-Douglas County Metropolitan Planning Staff, presented the item.

Miller gave a background presentation on the history of the quarry and then showed maps of the current reclaimed status of the quarry. She discussed the notification process and comments received by surrounding property owners. Concerns received included the owners wanting to be able to anticipate the phasing so they can make decisions on their property based upon quarrying stages. Some felt there should be no amendments to CUPs. On March 27, 2013, the County Commission sent the item back to the Planning Commission, on a 2-1 vote, for consideration of the phase sequencing and to return a recommendation to the County Commission. On May 20, 2013, the Planning Commission forwarded a recommendation to deny the request to revise the phasing for the CUP on an 8-2 vote.

Staff makes no recommendation but provides the following list of options for the Planning Commissioner's recommendation to the Board of County Commissioners based on the following findings of fact, as contained in the staff report:

I. Zoning and uses of property nearby. Nearby property is zoned A (Agricultural) and is used predominately for agricultural purposes. Other uses in the area include scattered farm/rural residences; a platted subdivision which has not yet been developed, zoned A-1 (Suburban Home Residential); and a hunting/shooting facility to the east, permitted as an agricultural use. The quarry extends into Shawnee County to the west which has similar zonings and land uses. (Figure 1) The quarry is an existing use which is compatible with the development in the area with the conditions and restrictions of use applied to the CUP.

II. Character of the area. The quarry is located in a rural area with predominately agricultural land uses and scattered farm/rural residences. A hunting/shooting facility is located nearby; however, the predominate land use is agricultural grassland and row crops. Hwy 40 and Interstate 70 traverse east/west through the area approximately a mile north of the quarry site. The quarry is an existing use which is compatible with the development in the area with the conditions and restrictions of use applied to the CUP. The proposed revised phasing would not alter the quarry's nature so it would remain compatible with the character of the area.

III. Suitability of subject property for the uses to which it has been restricted. A Conditional Use Permit (CUP) does not change the base, underlying zoning. A quarry is a permitted use in the A District when approved through the Conditional Use Permit process. The property is suitable for use as a quarry due to the fact that limestone reserves are present. The request to revise the phasing schedule does not alter the suitability of the property for uses permitted in the A (Agricultural) Zoning District.

IV. Length of time subject property has remained vacant as zoned. County Zoning Regulations were adopted in 1966; this property has been zoned "A (Agricultural)" since that adoption. The Conditional Use Permit for the quarry was approved in 1990. The property is currently being quarried, and has been developed with a rock crushing plant and a shop.

V. Extent to which removal of restrictions will detrimentally affect nearby property. The revised phasing schedule should have no negative impact on nearby properties as there are no physical changes being proposed to the quarrying activity.

VI. Relative gain to the public health, safety and welfare by the destruction of the value of the petitioner's property as compared to the hardship imposed upon the individual landowner. The denial of the request would maintain the original expectation that surrounding land owners may have planned for relative to the use and enjoyment of their own property. The denial of the request would require the operator to proceed in the phasing sequence established with the original application and would prohibit them from coordinating quarrying activities on both sides of the county line. Approval of the request would result in a more efficient means of operation for the southern portion of the quarry. The comparison is between the loss of efficiency for the quarry operator with denial of the request and the loss of predictability for property owners with approval of the request.

VII. Conformance with the comprehensive plan. The conditions and restrictions of use associated with the CUP permitting this quarry ensures the responsible use of a marketable natural resource. The change being proposed will not alter the extraction and reclamation methods and is in conformance with the Comprehensive

Plan.

The following list of options were provided recommended by staff:

- 1) Approve the revised phasing to allow the operator to coordinate quarrying activities between the portions of the quarry on each side of the Douglas County/Shawnee County line.
- 2) Deny the revised phasing to maintain the predictability as to the sequencing of the quarrying operations for the benefit of surrounding property owners.

Gaughan opened the item for public comment.

John Hutton, representing Mid-States, stated in almost 30 years of mining, the topic of phasing has come before the Commission three times. In 1992, the Commission approved the addition of Phase 1A. This resulted in an obvious delay of quarrying and changed the phasing sequence. When the applicant came to planning staff to discuss the submission of a reclamation plan, the subject of phasing order came up. The phasing was never referred to as an amendment. Hutton discussed how there is no time certainty or predictability on when quarrying will take place. In 1992, when the rephrasing was approved, Phase 4 which is located next to Lone Oak had not been mined and 21 years later it still has not been mined. The economy determines how much rock is needed and how fast the phases move along. He said staff can make sure all the conditions are being met during the CUP. Mid-States has gone above the call of duty to meet these conditions. Hutton said his client has spent hundreds of thousands on this quarry and has also received the Governor's Award for reclamation so they must be doing a good job. He stated this is a first class operation and continues to compete against other quarries that are less regulated. Hutton said he feels the neighbors have not explained how the certainty argument impacts their lives on a real basis. The neighbors that have complained have tried to paint this as a big company vs. small neighbor situation but other property owners, like the Nichols, who own some of the quarry land, have rights too and a stake in the outcome.

Flory said he finds nowhere in the documents that a prior Commission established a time table for the completion of the quarrying of the various tracts, and he asked Hutton if that is correct. Hutton responded that is correct, other than the 30-year window. Flory said it is his understanding there is nothing in the CUP that prohibits the applicant from focusing all his quarrying in Shawnee County and suspending his work in Douglas County for five -years, then resuming work in Douglas County. Hutton said that also is correct. Flory said he feels this is important to establish the County has no control over the timing of the mining..

Thellman asked Hutton what his client's expectation in regards to completing of mining by 2020. Hutton stated his client intends to do what they can based upon market forces then make another decision closer to 2020 as to what option he wants to explore with this Board. It makes sense for his client to ask for an extension if the mining is not completed by 2020.

David Henry, 4311 SE 24th Court, Tecumseh, Kansas, said he owns property adjacent to near the quarry north of Phase 5. Henry said there is an 80 acre tract between his property and the actual quarry property. He asked the Board to reject the request to revise the phasing as the revision would delay the mining of Phase 5 and disrupt his retirement relocation to the family farm.

Flory clarified there is 80 acres owned by Mid-States, that is between the CUP border and Henry's property. Henry said "yes" there is a quarter mile between his property and the quarryied property (owned by Mid-States); and at one point there was a request to mine the 80 acres, but the request was later dropped.

David Buffo, representing Lone Oak LLC, said in response to the 1A added phasing in 1992, it is his understanding that was to be the only rephrasing allowed. He feels the request to re-phase in 1992 is different than what is being requested today. That was a request to add land to the quarry. It is his understanding the Board wanted guidance from the Planning Commission on how to proceed giving the public a chance to speak. The Planning Commission responded with an 8-2 vote to deny the applicants request to change the CUP. Buffo asked that the Board follow the guidance given by the Planning Commission. He said there has been a lot of talk about uncertainty and granted we do not know what will happen tomorrow. But when Lone Oak invested in their property they relied upon the CUP to obligate the quarry to move in phases. Buffo said he is not asking Mid-States to change their business, just to proceed in order. He would like a better explanation for why Mid-States wants to skip to Phase 6. He feels a denial will not disrupt their business and asked the Board to uphold the CUP.

Bart Christian, Lone Oak LLC, stated his home is within 300 feet of the quarry. He said he needs closure. He feels the rephrasing will have a direct peril affect on selling his property. Christian said he has spent hundreds of

thousands of dollars fighting this quarry because he feels they have falsified documentation accepted by the County. He said he would be debt free if he didn't have to fight the quarry. He asked the Board to follow the phasing stated in the CUP.

Robert Best, property owner directly south of Phase 6, asked the Board to deny an amendment to the CUP. Best said when bought his property he looked at the CUP documents to assure there would be no landfill issue. He knew a quarry would be there, but he wants Mid-States to follow sequence.

Tony Zemek, Lone Oak LLC, looked at the CUP before buying into the Lone Oak property. He asked for phasing to continue in consecutive order.

Patty O'Conner, property owner directly east of Phase 3, said quarrying has been going on for 20 years. She said she was under the impression the quarry would be quarried in phases in consecutive order. She stated concerns about proper signage locations and the possibility of her cattle wandering onto quarry property due to an open gate. She opposes a change in rephrasing.

Hutton responded to O'Conner's concerns about signage, gates and fencing by telling her to contact Mid-States staff for a resolution. He responded to Buffo's comment that the "rephrasing will not save his client any money." Mid-States wants to mine in Phase 6 and in Shawnee County at the same time using the same road because it is more efficient and more profitable.

Thellman asked if Mid-States moved to Phase 6 would the Nichols will still receive royalties. Hutton said the Nichols own the property in Phase 6 but do not own property in all phases.

Thellman asked if there is a sense of how much time it would take to quarry Phase 4. Hutton said he d s not have an answer.

Gaughan asked Miller to walk him through the conditions of the permit for the phasing. Miller said the order of phasing was not a condition by the Planning Commission or County Commission of the CUP. It was a self-imposed condition incorporated by reference with condition 19 to include everything in the bound application into the conditions. They would start with one and end with six, and there would be six phases.

Flory stated this request was initiated according to what he found in the documents. On February 4 Mid-States provided their notice of intent to quarry Phase 6 following completion of Phase 3 and provided staff their reasons for doing to. It wasn't phrased as a request for amendment or revisions. It was just a notice of intent. Planning Staff notified the Board of County Commissioners of the Mid-States notification request and placed the item on the County agenda for March 6, 2013. At the request of Mr. Buffo, who wanted more time, the Board referred the item to March 27. The Board had a hearing and accepted considerable comment. On a divided vote, the item was sent back to Planning Commission for consideration. Flory said his view at that time was that the item wasn't an issue that needed to go back to the Planning Commission because it wasn't an amendment based on his reading of the documents. It wasn't even a revision of any requirement. If you thoroughly look at the Planning Commission minutes, they voted 8-2 to deny. But there was considerable confusion as to why the Planning Commission even had the item. Flory said he d sn't feel the Board gave the Planning Commission significant direction on what the County Commission wanted them to consider. A couple of the more experienced Commissioners on the Planning Commission stated repeatedly "this is a matter for the Board of County Commissioners." Flory stated he agrees with that statement. The only real question for this Commission and appropriate for consideration is "Would Mid-States commencing quarrying operations in Phase 6 prior to completion of Phase 4 and Phase 5 violate the conditions set out in the Conditional Use Permit without amending the CUP1/2" That is the only question to look at. Flory said after having reviewed the language in the CUP, especially sections 7 and 8, which are the provisions relating to phases of reclamation, his conclusion for "phases" is that the clear intent was not to set out an ordering sequence, but solidify out of the acreage being dedicated to the quarrying operation and being given a CUP, it was necessary that only portions be quarried at any given time and that reclamation of the previously quarried tracks be accomplished so we don't end up with 700 acres of mined territory and get no reclamation. Flory said he feels that is the absolute clear intent of why there were phases. Phases should not have been the term used. Perhaps "tract" was more appropriate. He feels the neighbors have concluded that "phase" means a required numerical sequencing. Flory said he d s not find that language in the CUP. It d s not mandate completion of quarrying in any particular order. What is d s require is submission of detailed reclamation plans and the timely completion of reclamation when moving from one phase to the subsequent phase (as stated in the CUP). The CUP clearly limits the number of acres open for mining and extraction at any one time and establishes clear bonding requirements regarding each tract. Flory stated in his mind that is the clear intent of having Phase 1, 2, 3, 4, 5, 6, tract 1, 2, 3, 4, 5, 6, parcel 1, 2, 3, 4,

5, 6 or whatever we want to call it. The clear intent was the Commission wanted to ensure the process was orderly and most importantly to avoid a large landfill situation being created, that the reclamation was orderly. Flory said it is important to note there is no express requirement the quarrying occur numerically from one to six. The view of the professional planning staff was there is no such requirement which is why they didn't consider it initially as an amendment, or even a revision; just information on what the applicant intended to do. If the Board of County Commissioners in 1990 wanted a certain order for quarrying based upon the map they could have included that. But it is not there. His second concern is the timing. There are no time periods set in the CUP. Flory said that could easily have been included in the CUP, but was not. Flory said in his view, when the government purports to prescribe unlawful activity or to regulate lawful activity, which is the case we have here, the burden is on the government to be clear and unequivocal so the people that are subject to the laws and the regulations do not have to guess what they have to do to comply. There is nothing in this CUP the prohibits Mid-States from quarrying any of the phases or tracts in the order they deem appropriate as long as they comply with all of the reporting, bonding and reclamation requirements which is what we as a governmental agency should be most concerned about. He concluded that the proposed action before the Board d s not violate the CUP and d s not require an amendment and he said he feels this body should take no action.

Gaughan asked Miller how an amendment would be recorded. Miller replied, "it depends." If the Board determines there is nothing to amend there would be a memo in file. If there was an amendment we would amend condition 19 where it says they plan to quarry in phases. The Board would add they intend to quarry sequentially; or staff would revise Condition 19 to say everything would apply and add a special condition that says it is not necessary to phase sequentially.

Flory added the Planning Commission minutes mentioned an actual amendment which changed the number on the phases would be problematic.

Gaughan stated his concern is over the labeling of Tracts versus Phases being worded differently throughout the CUP. He feels in the original Martin Marrietta application there was a clear distinction between the wordings. Somewhere along the way labels were used interchangeably, even using the term "area." Gaughan said as you follow the documents everything disappears except for the term "phase." Gaughan asked if an amendment is required, what it would be. The inclusion of Phase 1A is a change in sequence and not so different then what we are asked to do know.

Miller replied if the decision were made that this is an amendment, you would make a change to Article 19 reflecting the applicant d s not have to quarry in sequential order or set a specific condition which d s establish an order.

Gaughan said there is no phasing requirement but a requirement to review the plan every five years. A plan is a plan. He asked why we would require the review if we never anticipated the plan to change. The applicant adjusts to conditions of the economic environment. He feels we should put a clarification in the language so there is no misunderstanding so we don't have to address this again. Miller said at one time the terms phases, tracts, and areas were all used. But over time, staff has interpreted the wording variations to mean phases.

Thellman said she d s not read the original document as black and white as Commission Flory stated. She feels the original intent of the phases was meant to be sequential. What strikes her more is the wording that Phase 5 is to the north and the last phase is phase 6. She feels that provides the expectation of mining sequentially. She agrees the company has tried hard to be a good neighbor and received an award for superior reclamation work. She senses there should be direction for sequential activity through the quarry. Thellman said she see a neighborhood that has lived through this quarry and expects a light at the end of the tunnel and needs some predictability.

Flory said 2020 is still coming and this whole thing will be a new ballgame. This is up to the Commission now.

Thellman stated she feels people have purchased their land reading the same documents the Board has but with a layid person's eye which appears to have six phases. She interprets that to mean sequential phases. Thellman stated there were other lawyers on the Planning Commission that also wrestled with this dilemma. Her preference is to follow the plan as written. But, it appears the other two Commissioners are willing to move forward with a change in sequence. She noted it appears the Nichols family will be compensated by the quarry for other phases and will not be harmed by following the plan.

Gaughan asked about the language of the five-year plan under condition 8. He read as follows: Reclamation reviewed the first year of operation and every five years thereafter the applicant shall submit a detailed report and plan of operations to the Planning Office indicating the phasing of quarry operation. He asked Miller if the

point of that statement is it could never be reconsidered. Miller replied the reason for that statement is so the Planning office will know where the applicant is in the mining process to that can be tracked. Sometimes quarries set idle for 20 years.

Flory said again his view is it is not an amendment. However if staff feels amending is the best way to handle this there is a legitimate business rational for a relative minor amendment especially in conjunction with the Shawnee County operations that would benefit the entire community economically. If there needs to be an amendment that basically states phasing can be done in any order as long as the County is kept apprised, and they comply with all of the notification prior to commencing quarrying operations in a particular phase, and reclamation prior to the quarrying in a subsequent phase, he said he is willing to vote on an amendment.

Bart Christian stated Shawnee County has quarried 20 years the same as in Douglas County. He feels there will never be closureer if allowed to change the phasing.

Gaughan stated he wants to complete the amendment using the wording Flory suggested. But quarrying still needs to be done phase per phase.

Miller suggested the following wording: The remaining phases of the quarry, 4, 5 and 6 may occur in any sequence provided that the reclamation review provisions of condition 8 would still apply. Flory added that "nothing herein shall change any phasing requirement in any other portion of the Conditional Use Permit."

Thellman asked if there are other operators that will view this as precedence for changing the order of what they are quarrying. Flory responded "no" because this quarry is the most conditioned and regulated quarry in Douglas County, if not the state of Kansas.

Gaughan added this is not the first time the County Commission has allowed reordering of phasing.

Flory asked for clarification that 1A didn't just cause a reordering of the phasing but actually added property to the CUP. Miller stated that is correct.

Gaughan moved to amend approve the CUP amendment, CUP-13-00126, to include the following language: The remaining phases of the quarry, 4, 5 and 6 may occur in any sequence provided that the reclamation review provisions of condition 8 would still apply; and that nothing herein shall change any phasing requirement in any other portion of the Conditional Use Permit.

Before seconding the motion, Flory asked Mr. Hutton and Mr. Buffo if they understand that by making this amendment or change that all other conditions, bonding, reclamation, and everything else in the Conditional Use Permit is applicable to the phases as they occur. Mr. Hutton and Mr. Buffo agreed.

Motion was seconded by Flory and carried 2-1 with Thellman in opposition.

Note: The Board determined if there is a request for a setback change, this would need to be discussed with the County Counselor and brought back to the Board for consideration for an amendment though there is no violation at this time. Staff is to following up with information to the Board. Hutton asked if there is communication or request for a setback that he be notified.

August 17, 2018

Robert and Michele Best
1607 E 50 Road
Lecompton, KS 66050

Dear Douglas County Planning Committee and to whom it may concern,

We appreciate the opportunity to share our perspective on the Conditional Use Permit for Big Springs Quarry; 2 N. 1700 Road. We hope you will understand how our perspective and request is unique to the situation because:

1. Big Springs is currently quarrying next to our residential property at 1607 E 50 Road in Phase 6 (purple)
2. Our history of events in regard to living next to a quarry and having some type of predictability in our lives.

Thank you in advance for taking time to read and reflect upon our letter.

Up front we would like to share our goal in this letter to the Planning Commission of Douglas County Kansas. Our goal is to come to an agreement with the planning committee to support the completion of Phase 6 (purple) within the timeline of the current CUP by December 19, 2020, by adding an agreement into the wording of the new CUP requested by the Big Springs Quarry. Here is a suggestion of an agreement we would like to see that is specific and has a timeline goal.

- **“The timeframe for completion of any phase is dependent on the market demand, however, the operator agrees to continuously mine in Phase 6 [purple] (within the limits of the CUP restrictions and not leave to quarry in another county) so that Phase 6 [purple] could be completed as soon as possible and preferably by or before December 19, 2020.”**

Big Springs by their own wording allude to being a dynamic engine of the local economy, as referenced in their Horizon 2020 Comprehensive Plan, section VII. By not only extending the current time period by 30 years they are also expanding their business to almost 1000 acres. This demonstrates they are forecasting increased business in their near future. For this reason they should be supportive of completing Phase 6 (purple) by 12/19/20.

Here is the history from our perspective of being one of very few Douglas County Tax paying residents that have lived next to Big Springs Quarry since 2010.

- When we purchased this property in 2010 it was our understanding per the CUP and our real-estate paperwork that Mid-States Quarry would be completed in Douglas County by December 19, 2020.
- In May 2013 the Douglas County Planning Committee denied the request to revise phasing of the CUP by a vote of 8-2.
- In June 2013 the Douglas County Commissioners (Flory, Gaughan & Thellman) overruled the Douglas County Planning Committee and approved changing the CUP to allow changes in phasing order.

Discussion points from the June 2013 Douglas County Commissioner meeting:
(separate attachment)

- Thellman said she sees a neighborhood that has lived through this quarry and expects a light at the end of the tunnel and needs some predictability.
- Flory said he finds nowhere in the documents that a prior CUP established a time table for the completion of the quarrying of the various tracts, and he asked Hutton if that is correct. Hutton responded that is correct, other than the 30 year window. Flory said it is his understanding there is nothing in the CUP that prohibits the applicant from pausing all his quarrying in Shawnee County and suspending his work in Douglas County for 5-years, then resuming work in Douglas County. Hutton said that is also correct.
- Although not in the official minutes, Flory stated to Mr Hutton that, "This is the last time, right?" Mr Hutton answered affirmatively.
- Important to note: every single resident that currently lived on the property in discussion was against changing the phasing. We were not in favor because we had plans to build on our property, which we put on hold due to the CUP phase changes in 2013. We thought this would be completed by 2020. Property owners that live outside Douglas County were in favor, but they don't live in Douglas County.

On August 13, 2018, Mary Miller County Planner II, met with us to discuss the current request for Big Springs Quarry Conditional Use Permit. She was very helpful and answered many of our questions. Mary also shared with us that she had visited with Cole Anderson of Big Springs Quarry and he said they were agreeable to a condition that they would continuously mine in Phase 6 (not leave to quarry in another county) so that Phase 6 could be completed as soon as possible. Mr Anderson said he was confident that if the market stays as good as it is now they'll be done with Phase 6 in 2 years. If the market slows, it may take longer. The draft that was shared with us and that is in the requested CUP to date, we feel did not meet our goal of being specific enough to clarify a timeline of completion of Phase 6. We feel the current wording would still leave Big Springs Quarry open to leaving Douglas County and coming back to Phase 6 years later.

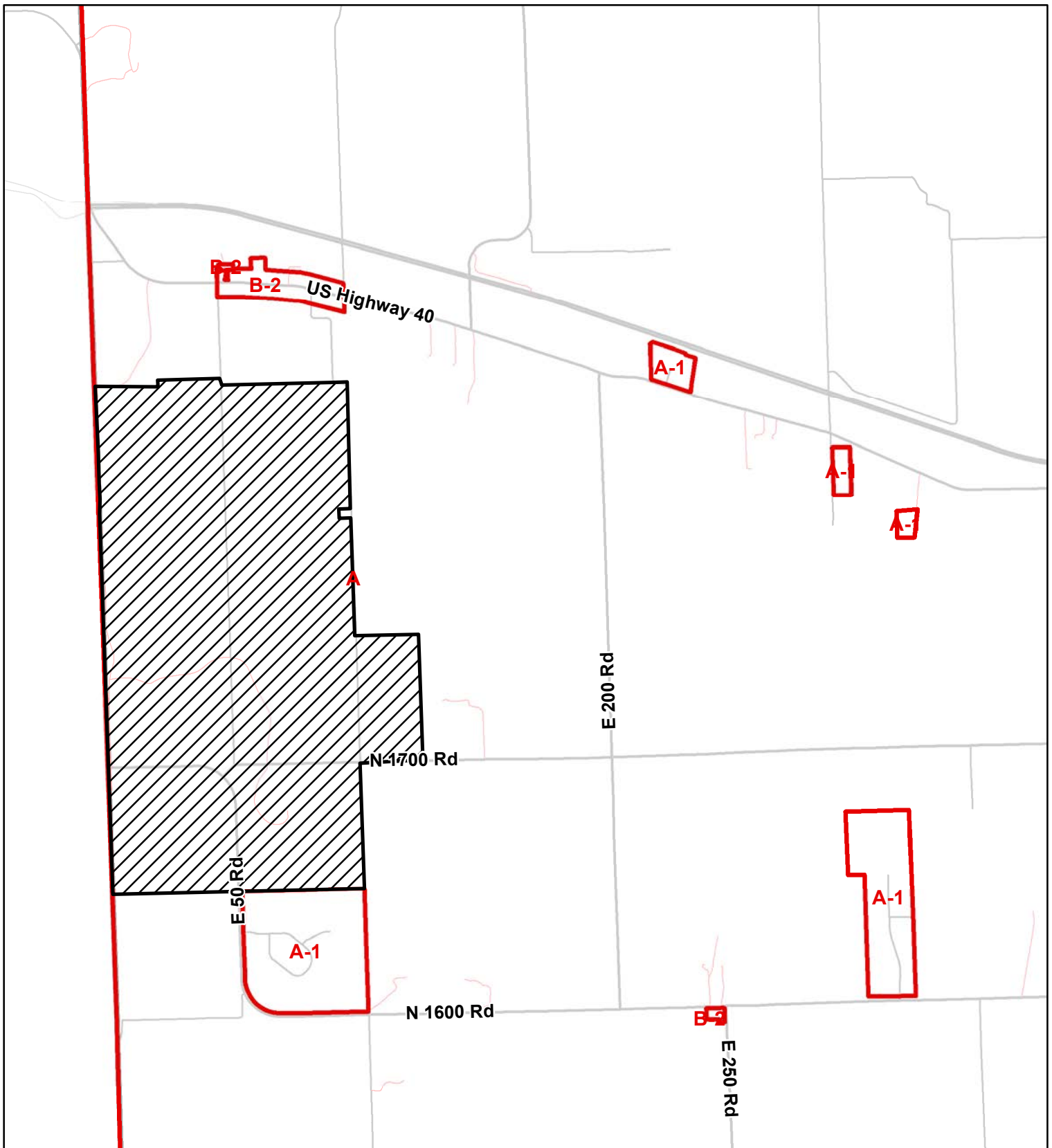
Another concern we have with the consideration of a new Conditional Use Permit for Big Springs Quarry is the following. A family member of one of the current property owners (Mid States LLC) has purchased land directly west of our property and we worry that this could be a quarry CUP change in the future. This is especially worrisome because the quarry can apparently go dormant in Douglas County for years, putting the residents that live there plans in limbo without predictability. What good is a CUP if it doesn't protect the residents living there? This is why the neighbors that have complained have tried to paint this as a big company vs small neighbor situation, because this is what it feels like. Comparing the residents that live in Douglas County to the property owners that don't reside in Douglas County is insulting.

If the intent of Big Springs Quarry was always to extend the CUP, why wasn't this made clear in the current CUP. People like ourselves who were new to the area and purchasing property were misled in their decision to purchase. Our decision to purchase property may have been different if we knew the quarry land had no timeframe of completion.

In conclusion, all we are asking for is for Big Springs Quarry to complete Phase 6 (purple) by December 19, 2020, as originally agreed upon. We have put plans on hold for developing our property, due to uncertainty as of when the Big Springs quarry will complete Phase 6 (purple). We do not feel this is an unreasonable request as tax paying residents seeking predictability and closure in a current CUP.

Sincerely,

Robert & Michele Best



CUP-18-00299: Conditional Use Permit
for Big Springs Quarry, approximately 1,049
acres located at 2 N 1700 Rd. and parcels to the
north, east, and south.

August 17, 2018

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Sincerely,

Robert & Michele Best

PLANNING/CUP 06-05-13

The Board considered an amended Conditional Use Permit (CUP-13-00126) to authorize for a revised phasing schedule for Big Springs Quarry, located at 2 N 1700 Road. The application was submitted by Mid-States Ventures, LLC, for Bonnie M. Nichols, Trustee, and Mid-States Materials, LLC, property owners of record. The Big Springs Quarry was approved with Conditional Use Permit CUP-7-2-90. Mary Miller, Lawrence-Douglas County Metropolitan Planning Staff, presented the item.

Miller gave a background presentation on the history of the quarry and then showed maps of the current reclaimed status of the quarry. She discussed the notification process and comments received by surrounding property owners. Concerns received included the owners wanting to be able to anticipate the phasing so they can make decisions on their property based upon quarrying stages. Some felt there should be no amendments to CUPs. On March 27, 2013, the County Commission sent the item back to the Planning Commission, on a 2-1 vote, for consideration of the phase sequencing and to return a recommendation to the County Commission. On May 20, 2013, the Planning Commission forwarded a recommendation to deny the request to revise the phasing for the CUP on an 8-2 vote.

Staff makes no recommendation but provides the following list of options for the Planning Commissioner's recommendation to the Board of County Commissioners based on the following findings of fact, as contained in the staff report:

I. Zoning and uses of property nearby. Nearby property is zoned A (Agricultural) and is used predominately for agricultural purposes. Other uses in the area include scattered farm/rural residences; a platted subdivision which has not yet been developed, zoned A-1 (Suburban Home Residential); and a hunting/shooting facility to the east, permitted as an agricultural use. The quarry extends into Shawnee County to the west which has similar zonings and land uses. (Figure 1) The quarry is an existing use which is compatible with the development in the area with the conditions and restrictions of use applied to the CUP.

II. Character of the area. The quarry is located in a rural area with predominately agricultural land uses and scattered farm/rural residences. A hunting/shooting facility is located nearby; however, the predominate land use is agricultural grassland and row crops. Hwy 40 and Interstate 70 traverse east/west through the area approximately a mile north of the quarry site. The quarry is an existing use which is compatible with the development in the area with the conditions and restrictions of use applied to the CUP. The proposed revised phasing would not alter the quarry's nature so it would remain compatible with the character of the area.

III. Suitability of subject property for the uses to which it has been restricted. A Conditional Use Permit (CUP) does not change the base, underlying zoning. A quarry is a permitted use in the A District when approved through the Conditional Use Permit process. The property is suitable for use as a quarry due to the fact that limestone reserves are present. The request to revise the phasing schedule does not alter the suitability of the property for uses permitted in the A (Agricultural) Zoning District.

IV. Length of time subject property has remained vacant as zoned. County Zoning Regulations were adopted in 1966; this property has been zoned "A (Agricultural)" since that adoption. The Conditional Use Permit for the quarry was approved in 1990. The property is currently being quarried, and has been developed with a rock crushing plant and a shop.

V. Extent to which removal of restrictions will detrimentally affect nearby property. The revised phasing schedule should have no negative impact on nearby properties as there are no physical changes being proposed to the quarrying activity.

VI. Relative gain to the public health, safety and welfare by the destruction of the value of the petitioner's property as compared to the hardship imposed upon the individual landowner. The denial of the request would maintain the original expectation that surrounding land owners may have planned for relative to the use and enjoyment of their own property. The denial of the request would require the operator to proceed in the phasing sequence established with the original application and would prohibit them from coordinating quarrying activities on both sides of the county line. Approval of the request would result in a more efficient means of operation for the southern portion of the quarry. The comparison is between the loss of efficiency for the quarry operator with denial of the request and the loss of predictability for property owners with approval of the request.

VII. Conformance with the comprehensive plan. The conditions and restrictions of use associated with the CUP permitting this quarry ensures the responsible use of a marketable natural resource. The change being proposed will not alter the extraction and reclamation methods and is in conformance with the Comprehensive

Plan.

The following list of options were provided recommended by staff:

- 1) Approve the revised phasing to allow the operator to coordinate quarrying activities between the portions of the quarry on each side of the Douglas County/Shawnee County line.
- 2) Deny the revised phasing to maintain the predictability as to the sequencing of the quarrying operations for the benefit of surrounding property owners.

Gaughan opened the item for public comment.

John Hutton, representing Mid-States, stated in almost 30 years of mining, the topic of phasing has come before the Commission three times. In 1992, the Commission approved the addition of Phase 1A. This resulted in an obvious delay of quarrying and changed the phasing sequence. When the applicant came to planning staff to discuss the submission of a reclamation plan, the subject of phasing order came up. The phasing was never referred to as an amendment. Hutton discussed how there is no time certainty or predictability on when quarrying will take place. In 1992, when the rephrasing was approved, Phase 4 which is located next to Lone Oak had not been mined and 21 years later it still has not been mined. The economy determines how much rock is needed and how fast the phases move along. He said staff can make sure all the conditions are being met during the CUP. Mid-States has gone above the call of duty to meet these conditions. Hutton said his client has spent hundreds of thousands on this quarry and has also received the Governor's Award for reclamation so they must be doing a good job. He stated this is a first class operation and continues to compete against other quarries that are less regulated. Hutton said he feels the neighbors have not explained how the certainty argument impacts their lives on a real basis. The neighbors that have complained have tried to paint this as a big company vs. small neighbor situation but other property owners, like the Nichols, who own some of the quarry land, have rights too and a stake in the outcome.

Flory said he finds nowhere in the documents that a prior Commission established a time table for the completion of the quarrying of the various tracts, and he asked Hutton if that is correct. Hutton responded that is correct, other than the 30-year window. Flory said it is his understanding there is nothing in the CUP that prohibits the applicant from focusing all his quarrying in Shawnee County and suspending his work in Douglas County for five -years, then resuming work in Douglas County. Hutton said that also is correct. Flory said he feels this is important to establish the County has no control over the timing of the mining..

Thellman asked Hutton what his client's expectation in regards to completing of mining by 2020. Hutton stated his client intends to do what they can based upon market forces then make another decision closer to 2020 as to what option he wants to explore with this Board. It makes sense for his client to ask for an extension if the mining is not completed by 2020.

David Henry, 4311 SE 24th Court, Tecumseh, Kansas, said he owns property adjacent to near the quarry north of Phase 5. Henry said there is an 80 acre tract between his property and the actual quarry property. He asked the Board to reject the request to revise the phasing as the revision would delay the mining of Phase 5 and disrupt his retirement relocation to the family farm.

Flory clarified there is 80 acres owned by Mid-States, that is between the CUP border and Henry's property. Henry said "yes" there is a quarter mile between his property and the quarryied property (owned by Mid-States); and at one point there was a request to mine the 80 acres, but the request was later dropped.

David Buffo, representing Lone Oak LLC, said in response to the 1A added phasing in 1992, it is his understanding that was to be the only rephrasing allowed. He feels the request to re-phase in 1992 is different than what is being requested today. That was a request to add land to the quarry. It is his understanding the Board wanted guidance from the Planning Commission on how to proceed giving the public a chance to speak. The Planning Commission responded with an 8-2 vote to deny the applicants request to change the CUP. Buffo asked that the Board follow the guidance given by the Planning Commission. He said there has been a lot of talk about uncertainty and granted we do not know what will happen tomorrow. But when Lone Oak invested in their property they relied upon the CUP to obligate the quarry to move in phases. Buffo said he is not asking Mid-States to change their business, just to proceed in order. He would like a better explanation for why Mid-States wants to skip to Phase 6. He feels a denial will not disrupt their business and asked the Board to uphold the CUP.

Bart Christian, Lone Oak LLC, stated his home is within 300 feet of the quarry. He said he needs closure. He feels the rephrasing will have a direct peril affect on selling his property. Christian said he has spent hundreds of

thousands of dollars fighting this quarry because he feels they have falsified documentation accepted by the County. He said he would be debt free if he didn't have to fight the quarry. He asked the Board to follow the phasing stated in the CUP.

Robert Best, property owner directly south of Phase 6, asked the Board to deny an amendment to the CUP. Best said when bought his property he looked at the CUP documents to assure there would be no landfill issue. He knew a quarry would be there, but he wants Mid-States to follow sequence.

Tony Zemek, Lone Oak LLC, looked at the CUP before buying into the Lone Oak property. He asked for phasing to continue in consecutive order.

Patty O'Conner, property owner directly east of Phase 3, said quarrying has been going on for 20 years. She said she was under the impression the quarry would be quarried in phases in consecutive order. She stated concerns about proper signage locations and the possibility of her cattle wandering onto quarry property due to an open gate. She opposes a change in rephrasing.

Hutton responded to O'Conner's concerns about signage, gates and fencing by telling her to contact Mid-States staff for a resolution. He responded to Buffo's comment that the "rephrasing will not save his client any money." Mid-States wants to mine in Phase 6 and in Shawnee County at the same time using the same road because it is more efficient and more profitable.

Thellman asked if Mid-States moved to Phase 6 would the Nichols will still receive royalties. Hutton said the Nichols own the property in Phase 6 but do not own property in all phases.

Thellman asked if there is a sense of how much time it would take to quarry Phase 4. Hutton said he d s not have an answer.

Gaughan asked Miller to walk him through the conditions of the permit for the phasing. Miller said the order of phasing was not a condition by the Planning Commission or County Commission of the CUP. It was a self-imposed condition incorporated by reference with condition 19 to include everything in the bound application into the conditions. They would start with one and end with six, and there would be six phases.

Flory stated this request was initiated according to what he found in the documents. On February 4 Mid-States provided their notice of intent to quarry Phase 6 following completion of Phase 3 and provided staff their reasons for doing to. It wasn't phrased as a request for amendment or revisions. It was just a notice of intent. Planning Staff notified the Board of County Commissioners of the Mid-States notification request and placed the item on the County agenda for March 6, 2013. At the request of Mr. Buffo, who wanted more time, the Board referred the item to March 27. The Board had a hearing and accepted considerable comment. On a divided vote, the item was sent back to Planning Commission for consideration. Flory said his view at that time was that the item wasn't an issue that needed to go back to the Planning Commission because it wasn't an amendment based on his reading of the documents. It wasn't even a revision of any requirement. If you thoroughly look at the Planning Commission minutes, they voted 8-2 to deny. But there was considerable confusion as to why the Planning Commission even had the item. Flory said he d sn't feel the Board gave the Planning Commission significant direction on what the County Commission wanted them to consider. A couple of the more experienced Commissioners on the Planning Commission stated repeatedly "this is a matter for the Board of County Commissioners." Flory stated he agrees with that statement. The only real question for this Commission and appropriate for consideration is "Would Mid-States commencing quarrying operations in Phase 6 prior to completion of Phase 4 and Phase 5 violate the conditions set out in the Conditional Use Permit without amending the CUP1/2" That is the only question to look at. Flory said after having reviewed the language in the CUP, especially sections 7 and 8, which are the provisions relating to phases of reclamation, his conclusion for "phases" is that the clear intent was not to set out an ordering sequence, but solidify out of the acreage being dedicated to the quarrying operation and being given a CUP, it was necessary that only portions be quarried at any given time and that reclamation of the previously quarried tracks be accomplished so we don't end up with 700 acres of mined territory and get no reclamation. Flory said he feels that is the absolute clear intent of why there were phases. Phases should not have been the term used. Perhaps "tract" was more appropriate. He feels the neighbors have concluded that "phase" means a required numerical sequencing. Flory said he d s not find that language in the CUP. It d s not mandate completion of quarrying in any particular order. What is d s require is submission of detailed reclamation plans and the timely completion of reclamation when moving from one phase to the subsequent phase (as stated in the CUP). The CUP clearly limits the number of acres open for mining and extraction at any one time and establishes clear bonding requirements regarding each tract. Flory stated in his mind that is the clear intent of having Phase 1, 2, 3, 4, 5, 6, tract 1, 2, 3, 4, 5, 6, parcel 1, 2, 3, 4,

5, 6 or whatever we want to call it. The clear intent was the Commission wanted to ensure the process was orderly and most importantly to avoid a large landfill situation being created, that the reclamation was orderly. Flory said it is important to note there is no express requirement the quarrying occur numerically from one to six. The view of the professional planning staff was there is no such requirement which is why they didn't consider it initially as an amendment, or even a revision; just information on what the applicant intended to do. If the Board of County Commissioners in 1990 wanted a certain order for quarrying based upon the map they could have included that. But it is not there. His second concern is the timing. There are no time periods set in the CUP. Flory said that could easily have been included in the CUP, but was not. Flory said in his view, when the government purports to prescribe unlawful activity or to regulate lawful activity, which is the case we have here, the burden is on the government to be clear and unequivocal so the people that are subject to the laws and the regulations do not have to guess what they have to do to comply. There is nothing in this CUP the prohibits Mid-States from quarrying any of the phases or tracts in the order they deem appropriate as long as they comply with all of the reporting, bonding and reclamation requirements which is what we as a governmental agency should be most concerned about. He concluded that the proposed action before the Board d s not violate the CUP and d s not require an amendment and he said he feels this body should take no action.

Gaughan asked Miller how an amendment would be recorded. Miller replied, "it depends." If the Board determines there is nothing to amend there would be a memo in file. If there was an amendment we would amend condition 19 where it says they plan to quarry in phases. The Board would add they intend to quarry sequentially; or staff would revise Condition 19 to say everything would apply and add a special condition that says it is not necessary to phase sequentially.

Flory added the Planning Commission minutes mentioned an actual amendment which changed the number on the phases would be problematic.

Gaughan stated his concern is over the labeling of Tracts versus Phases being worded differently throughout the CUP. He feels in the original Martin Marrietta application there was a clear distinction between the wordings. Somewhere along the way labels were used interchangeably, even using the term "area." Gaughan said as you follow the documents everything disappears except for the term "phase." Gaughan asked if an amendment is required, what it would be. The inclusion of Phase 1A is a change in sequence and not so different then what we are asked to do know.

Miller replied if the decision were made that this is an amendment, you would make a change to Article 19 reflecting the applicant d s not have to quarry in sequential order or set a specific condition which d s establish an order.

Gaughan said there is no phasing requirement but a requirement to review the plan every five years. A plan is a plan. He asked why we would require the review if we never anticipated the plan to change. The applicant adjusts to conditions of the economic environment. He feels we should put a clarification in the language so there is no misunderstanding so we don't have to address this again. Miller said at one time the terms phases, tracts, and areas were all used. But over time, staff has interpreted the wording variations to mean phases.

Thellman said she d s not read the original document as black and white as Commission Flory stated. She feels the original intent of the phases was meant to be sequential. What strikes her more is the wording that Phase 5 is to the north and the last phase is phase 6. She feels that provides the expectation of mining sequentially. She agrees the company has tried hard to be a good neighbor and received an award for superior reclamation work. She senses there should be direction for sequential activity through the quarry. Thellman said she see a neighborhood that has lived through this quarry and expects a light at the end of the tunnel and needs some predictability.

Flory said 2020 is still coming and this whole thing will be a new ballgame. This is up to the Commission now.

Thellman stated she feels people have purchased their land reading the same documents the Board has but with a layid person's eye which appears to have six phases. She interprets that to mean sequential phases. Thellman stated there were other lawyers on the Planning Commission that also wrestled with this dilemma. Her preference is to follow the plan as written. But, it appears the other two Commissioners are willing to move forward with a change in sequence. She noted it appears the Nichols family will be compensated by the quarry for other phases and will not be harmed by following the plan.

Gaughan asked about the language of the five-year plan under condition 8. He read as follows: Reclamation reviewed the first year of operation and every five years thereafter the applicant shall submit a detailed report and plan of operations to the Planning Office indicating the phasing of quarry operation. He asked Miller if the

point of that statement is it could never be reconsidered. Miller replied the reason for that statement is so the Planning office will know where the applicant is in the mining process to that can be tracked. Sometimes quarries set idle for 20 years.

Flory said again his view is it is not an amendment. However if staff feels amending is the best way to handle this there is a legitimate business rational for a relative minor amendment especially in conjunction with the Shawnee County operations that would benefit the entire community economically. If there needs to be an amendment that basically states phasing can be done in any order as long as the County is kept apprised, and they comply with all of the notification prior to commencing quarrying operations in a particular phase, and reclamation prior to the quarrying in a subsequent phase, he said he is willing to vote on an amendment.

Bart Christian stated Shawnee County has quarried 20 years the same as in Douglas County. He feels there will never be closureer if allowed to change the phasing.

Gaughan stated he wants to complete the amendment using the wording Flory suggested. But quarrying still needs to be done phase per phase.

Miller suggested the following wording: The remaining phases of the quarry, 4, 5 and 6 may occur in any sequence provided that the reclamation review provisions of condition 8 would still apply. Flory added that "nothing herein shall change any phasing requirement in any other portion of the Conditional Use Permit."

Thellman asked if there are other operators that will view this as precedence for changing the order of what they are quarrying. Flory responded "no" because this quarry is the most conditioned and regulated quarry in Douglas County, if not the state of Kansas.

Gaughan added this is not the first time the County Commission has allowed reordering of phasing.

Flory asked for clarification that 1A didn't just cause a reordering of the phasing but actually added property to the CUP. Miller stated that is correct.

Gaughan moved to amend approve the CUP amendment, CUP-13-00126, to include the following language: The remaining phases of the quarry, 4, 5 and 6 may occur in any sequence provided that the reclamation review provisions of condition 8 would still apply; and that nothing herein shall change any phasing requirement in any other portion of the Conditional Use Permit.

Before seconding the motion, Flory asked Mr. Hutton and Mr. Buffo if they understand that by making this amendment or change that all other conditions, bonding, reclamation, and everything else in the Conditional Use Permit is applicable to the phases as they occur. Mr. Hutton and Mr. Buffo agreed.

Motion was seconded by Flory and carried 2-1 with Thellman in opposition.

Note: The Board determined if there is a request for a setback change, this would need to be discussed with the County Counselor and brought back to the Board for consideration for an amendment though there is no violation at this time. Staff is to following up with information to the Board. Hutton asked if there is communication or request for a setback that he be notified.

ITEM NO. 3 CONDITIONAL USE PERMIT FOR BIG SPRINGS QUARRY; 2 N 1700 RD (MKM)

CUP-18-00299: Consider a Conditional Use Permit for Big Springs Quarry, approximately 1,049 acres located at 2 N 1700 Rd. and parcels to the north, east, and south. Submitted by Mid-States Ventures LLC, for Mid-States Ventures LLC, Nancy J Hughes, James R Meek, Thomas R Meek, and Bonnie M Nichols, Trustee, property owners of record.

STAFF PRESENTATION

Ms. Mary Miller presented the item.

APPLICANT PRESENTATION

Mr. Rich Eckert, Mid-States Materials, provided history on the quarry operations and phasing of the project. He provided a slideshow on the overhead. He said Mid-States leaves the land better than they find it. He said he agreed with all of the conditions of approval in the staff report. He said the quarry benefited the regional and local economy. He said he looked at appraised property values of the surrounding properties and property values had increased over the past few years. He showed a promotional video on the overhead.

PUBLIC COMMENT

Mr. Phil Porter, Buckley Powder Company, spoke in favor of Mid-States Materials. He said the Kansas Fire Marshalls Office was the authority having jurisdiction over blasting. He said modern blasting was a science and well thought out. He said Buckley Powder Company has been doing business with Mid-States Materials before the Big Springs Quarry and they were ethical, honest, and good to deal with.

Ms. Michelle Best expressed concern regarding the completion of phase 6.

Mr. Robert Best said he would like phase 6 to have a set time of completion, preferably prior to December 2020.

Mr. Scott Carlson, Kansas Department of Agriculture, provided information on State reclamation requirements. He said the State's requirements were far less than what Douglas County required. He said the State accepts the bonding documents of Douglas County in lieu of a State requirement to get a bond. He said in terms of compliance, Mid-States Materials was always on top of things and incorporate reclamation into their business model. He said Mid-States received an award from the National Association of State Land Reclamations. He said he was proud that there were more winners in the State of Kansas than any other state in the country. He said there were over 900 registered sites in the state of Kansas. He said there was a lot of competition out there and he had seen many operators that did not care about doing the right thing. He said Mid-States knows the importance of community and doing the right thing by the land owners.

Mr. Chad Hasler, employee of Mid-States Materials, said the company places importance on the environment and safety.

Mr. Bill Collins, Capital Trucking, spoke in favor of Mid-States Materials. He said his business had grown thanks to the success of Mid-States.

Mr. Bob Henthorne, retired geologist with the Kansas Department of Transportation (KDOT) and current Project Geologist with Capital Geotechnical Services, said part of his job duties with KDOT was sampling and inspecting rock quarries. He said he inspected Big Springs Quarry for many years and it produces some of the best aggregate product in the area. He said Mid-States Materials took over Big Springs Quarry in 2007 and KDOT sampled it 57 times under the Mid-States Materials ownership and every sample passed the requirements. He felt it was important to keep producing a high quality aggregate product for the area.

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APPLICANT CLOSING COMMENTS

Mr. Eckert said they were committed to finishing phase 6 and they believe they can get it done by the end of 2020. He said the site would be beautiful afterward. He said they made 11 different contacts with neighbors to hear their concerns and address them.

COMMISSION DISCUSSION

Commissioner Willey asked Mr. and Mrs. Best if the contingency of phase 6 being finished first addressed their concerns.

Ms. Best said she felt Mid-States response about finishing phase 6 was weak. She would like to see a timeframe put in place.

Commissioner Willey said the quarry covered two counties. She said the Conditional Use Permit included language about completing phase 6 before moving on. She wondered if the language covered what could or could not be done in Shawnee County.

Ms. Miller said Big Springs could quarry in Shawnee County at any time. She said the concern from the neighbor was that Big Springs would remove the equipment from phase 6 and stop quarrying there and move to Shawnee County. She said one of the Conditional Use Permit conditions was that Big Springs would quarry continuously. She said wording could be added saying that the equipment would not be removed.

Mr. McCullough said it would be difficult for staff to regulate a Conditional Use Permit in another county. He said Mid-States Materials indicated they were committed to the Douglas County side and staying in phase 6. He said there could be some tidying up of the language to say that they won't move out of phase 6 to any of the new phases until phase 6 was complete and reclaimed. He said the quarry was driven by market demand and it would be hard to put a date on it. He said Lawrence does not have authority on a quarry in Shawnee County.

Commissioner Carpenter inquired about the possibility of continuous mining of phase 6. He asked if this was a homogenous bed of limestone or if there were different materials spread throughout the area.

Mr. Cole Anderson, Mid-States Materials, said at the site they were mining three different types of limestone units; Irvine Creek, Rock Bluff, and Ozawkie limestone. He said the main unit they were after was the Irvine creek because it was thickest and highest quality.

Commissioner Carpenter asked if there was anything that was market driven that would prompt Mid-States to move to a different location to quarry a particular material.

Mr. Anderson said it would not make sense to move to a different site to quarry the same rock.

Commissioner Carpenter asked if it was best for the business model to finish the phase.

Mr. Anderson said that was correct. He said Mid-States Materials would not gain anything by moving to another site.

Commissioner Weaver inquired about monitoring of the existing embankment ponds and other stock water structures in the area.

Mr. Eckert said Mid-States either owns or leases almost all them in the area.

Commissioner Weaver asked about the ones outside of their ownership.

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Mr. Eckert said Mid-States would need property owner permission to go onto other property. He said there were not any wells within ½ mile of the quarry. He said the blasting process was a science and there would not be any damage off-site. He said they were fine with the conditional language the Best's proposed. He felt the language was captured in the Conditional Use Permit.

Commissioner Sinclair inquired about the million dollar liability insurance versus a bond.

Mr. Eckert said it was a much greater protection for property damage. He said when a \$10,000 bond is exhausted it would then go into a civil issue. He said the million dollar insurance policy provided greater protection than a bond for the company and property owners. He said quarrying involves explosives on-site so the insurance policy needs to be robust. He said they need an insurance policy that covers more, not less. He said it wouldn't make sense if the insurance policy had a lot of exclusions because then they would have to cover any expense out of pocket.

Commissioner Willey said it seemed like the only difference between the two points of view was the timeframe. She said there seemed to be a good faith effort from Mid-States to stick with the phase until it was finished. She was not in favor of a specific timeframe because the demand could change. She said she did not have a problem with the acreage increase for what was being mined at a particular time since it could help in terms of efficiency. She asked if the hours have always been until 10:00pm.

Mr. Anderson said they have never run past 6:00pm production wise.

Ms. Miller said the stop time was currently 10:00pm.

Commissioner Willey asked if the reference to 1042 was referring to the lowest elevation.

Mr. Anderson nodded.

Commissioner Struckhoff said he appreciated the applicant working with the adjacent residents and the willingness to adopt the language proposed by the Best's in an effort to stick to production in phase 6. He said he did not think a specific timeframe could be put on it since demand was out of their control. He appreciated the reclamation that Mid-States had done to date.

Commissioner Carpenter asked staff about the current Conditional Use Permit condition from 1992 of no future requests to expand the size of the quarry.

Ms. Miller said the quarry had not started yet. She said her guess was that the neighbors thought it might be ongoing. She said she consulted the county counselor and he said all of the conditions could be changed.

Commissioner Carpenter said this request would extend it 30 years beyond the expected completion.

Ms. Miller said there was a 5 year administrative review and Big Springs has to submit plans before moving into every phase. She said there was a lot of ongoing review that did not require public input. She said the timeframe could be renewed.

Commissioner Carpenter said landowners purchase property with the expectation that the quarry would be completed by a certain date. He wondered about predictability.

Ms. Miller said it was a balance. She said they want to use all the limestone. She stated if the Conditional Use Permit expires, a new Conditional Use Permit application would then be submitted. She said that would give false hope to landowners that it was gone so they would make plans and then there would be a new application.

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She said the timeframe language could be more clear to say that it expires in 30 years unless an extension is approved.

Commissioner Struckhoff said the administrative review would collect complaints.

Ms. Miller said administrative reviews are done every 5 years. She said a lot of times staff are on-site more often so those times count as the 5 year reviews. She said the reclamation is checked at the phase completion and operation plans are worked on when they move into a new phase. She said compliance issues go directly to the County Commission.

Mr. McCullough said Mid-States purchased the site with a number of issues that they corrected. He said staff had a high confidence level with this operator. He said quarries were unique and require lots of conditions.

Commissioner Willey asked if the previous Conditional Use Permit would run to the end of 2020 or if this Conditional Use Permit would replace it.

Mr. McCullough said this would replace it.

Ms. Miller said it would go 30 years from the date of approval by County Commission.

Commissioner Sinclair said they had discussed three minor changes to the conditions; adding language stating that phase 6 preferably end on or before December 2020, referencing that the Conditional Use Permit has the possibility to be extended in the future, and the addition of two holidays to the days that the quarry cannot operate.

Commissioner Willey asked the applicant if those were acceptable.

Mr. Eckert said yes.

ACTION TAKEN

Motioned by Commissioner Struckhoff, seconded by Commissioner Paden, to approve the Conditional Use Permit, CUP-18-00299, for Big Springs Quarry, located at 2 N 1700 Rd, based on the findings of fact listed in the staff report, subject to the following revised restrictions/conditions of use:

- 1) Setbacks
Purple Phase (former phase 6)
 - 400 foot setback along the south perimeter
 - 260 foot setback along County Route 442
 - Triangular area in the southeast corner a corner of which is 1,800 feet north of the south property line along the setback line of County Route 442 / E. 50 Road and another corner of which is 1,100 feet west of the right-of-the way of County Route 442 / E. 50 road along the south setback line.

Green Phase (former Phase 4):

- 100 foot setback to the north and 700 foot setback to the south sides
- 100 foot setback on the east side

Pink Phase

- 100 foot along north property line

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Blue Phase

- 100 foot along east property line

Orange Phase

- 100 foot along east property line

All Phases—

- 100 foot setback from the property line along the east side of the private haul road.
- 100 foot setback from the property line along E. 50 Road and E. 100 Road
- 500 foot residential setback (residences existing at the time of CUP approval)

2) Operation Restrictions

a. Methods shall be adopted to minimize dust in stage area as well as along the haul roads.

b. Quarry hours of operation shall be restricted to:

- i. sale and removal of rock: 6 a.m. – 6 p.m., Monday- Friday; 7 a.m. – 12:00 p.m. Saturday
- ii. Production and extraction: 6 a.m. – 10 p.m., Monday – Thursday; 6 a.m. – 6:00 p.m., Friday
- iii. Blasting: 1 p.m. – 5 p.m., Monday – Friday
- iv. No quarry operations shall take place on holidays observed by the State of Kansas: (New Year's Day; Martin Luther King, Jr. Day; Memorial Day; Independence Day; Labor Day; Veterans Day; Thanksgiving Day; the day immediately following Thanksgiving Day, and Christmas Day.

Activities occurring after these hours: In the event of an emergency or other situation that requires quarrying, or sell of product after these hours, the request must be provided to the Board of County Commissioners prior to the after hours activity commencing.

c. No more than 40 acres may be open, mined and extracted from at any one time on the quarry site, exclusive of the plant site. No more than 10 acres shall be open, mined and extracted from in a subsequent phase until reclamation is complete on the previous phase.

3) Fencing

The entire site shall be fenced with a five-strand barbed wire fence. Fencing shall be maintained by the operator. A security gate and fence shall be placed/maintained at the entrance to the quarrying site across the main haul road. The fence shall be signed periodically (minimum of 500 feet intervals) stating: "Mid-States Materials No Trespassing"

4) Berms

- a. All setbacks along roadways shall contain berms to screen operations. Berms are to be 6 to 8 feet high (8 feet maximum), built at a 3 to 1 slope and vegetated.
- b. Topsoil removed from each phase will be used to construct the berms. Berms shall be constructed as quarrying progresses in each phase.

5) Blasting

- a. Blasting shall be set only in sequential delays; no single delay to be over 150 lbs. of explosives.

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- b. No fly-rock shall leave the property.
- c. Prior to each blast, the operator shall contact adjoining neighbors who request individual notice of each blast. A signaling system, siren, horn, or other signaling system, shall be used to alert people in the neighboring vicinity before each blast takes place.
- d. No explosives will be set in the ground overnight unguarded.

6) Monitoring Blasting

- a. Operator shall contact with independent seismology firm to monitor blasts at the commencement of quarrying operations, at each residence within ½ mile of the blast site to assure that the blast design will not be harmful to any structures or wells and that all associated vibrations are below currently recognized safety levels. A report on the monitoring of initial blasting shall be made available to owners of the residences and such report shall include a full frequency analysis of vibrations.
- b. After the initial blasting, operator shall contract for a continuous monitoring program commencing with the start of continuous regular blasting by an independent seismology firm at stations chosen by the seismology firm. A monthly report, which analyzes the impacts of daily blasting, will be available at operator's offices for inspection. Residents may request positioning of the seismograph to measure the impact at their property; provided, however, the applicant shall not be required to conduct tests in excess of those it determines, based on professional advice of its independent seismology firm, will provide adequate seismic readings at resident's properties. Any resident desiring to appeal the decision of the applicant concerning this condition may appeal it to the Douglas County Public Works Director who may order seismic tests at such locations as it deems appropriate under the circumstances at the expense of the operator.
- c. The operator shall comply with the NFPA 495 Kansas Explosive Materials Code regulations regulated by the Office of the State Fire Marshall.

7) Air and Water Quality

The quarry operator shall adhere to air quality standards of KDHE, not to exceed 20% of opacity more than 1 time in a one year period as observed by KDHE observers over a 5 minute period.

8) Other Regulatory Restrictions

All applicable regulations of EPA, KDHE, and Kansas Department of Agriculture, and other applicable agencies shall be adhered to and subsequent revisions to these regulations shall apply.

9) Noise and Light Pollution

Vehicles used in plant operation (extraction & production) after 6:00 PM shall be equipped with manufactured lighting in addition to a back-up audible signal alarm.

Permanent outdoor lighting in the quarry, including the plant area, mining area, and haul roads, shall be shielded and directed down with a solid screen to prevent light pollution beyond the site boundaries.

10) Reclamation Bond

Mid-States shall be responsible for reclamation of all quarried land.

- a. A performance bond in the amount of \$100,000.00 with sufficient sureties shall be secured to cover reclamation activities for the plant site in the Facility Area. The Bond shall be filed with the Douglas County Clerk's Office.

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This performance bond shall remain in place for the entire life of the permit and shall not be subject to release until the plant site has been fully reclaimed and certification thereof shall have been made by the Douglas County Commission.

- b. In addition to the bond required under paragraph (a), above, a performance bond in the amount of \$400,000.00 with sufficient sureties shall be secured for the first site excavated for extraction purposes in Phase I other than at the plant site and shall be filed with the Douglas County Clerk's Office prior to the commencing of any excavation (including the stripping of top soil) other than at the designated plant site. This bond shall be for an excavation area no larger than 10 acres open at one time and shall remain in place until certified by the Douglas County Commission that reclamation has been completed at the site for which it was obtained.
- c. For each additional 10 acre site excavated for extraction purposes in any phase of the quarry operations during the term of the CUP, a performance bond in the amount of \$400,000.00 with sufficient sureties for additional excavation for extraction purposes shall be secured and shall be filed with the Douglas County Clerk's Office prior to the commencing of any such additional excavation (including the stripping of top soil). These bonds shall each be for areas no larger than 10 acres open at one time per excavation and shall remain in place until certified by the Douglas County Commission that reclamation has been completed at each site.
- d. Each of the bonds described above also shall carry provisions which provide additional coverage for any other quarry operations that are carried on at the quarry site during the pendency of the bond until release of the bonds.

11) Insurance

The operator shall carry liability insurance in the amount of \$1,000,000.00. Certificates of insurance shall be submitted to the Zoning and Codes Department on an annual basis.

12) Operation Report and Plan

- a. Prior to the issuance of the CUP permit and every 5 years thereafter, the operator shall submit a detailed report and plan of quarrying operations to the Planning Office.
- b. The plan shall show the phases of quarrying; location of stockpile area; estimated volume of material being extracted; and a detailed monitoring and management plan for the areas undergoing reclamation.

13) Reclamation and Review

- a. The quarry shall utilize sequential reclamation. With the exception of the first cut in a phase, overburden within a cut shall be placed in the previous cut thereby removing the need to stockpile large amounts of overburden.
- b. Detailed reclamation plans shall be submitted for each phase of the reclamation process for review and recommendation by the Planning staff and approval by the County Commission. The Detailed Reclamation Plan shall be submitted and approved prior to opening of a quarry phase.
- c. The detailed reclamation plans would include a site plan showing elevations, cross-sections, and the proposed plan for revegetation of the area.
- d. The property shall be reclaimed to a state that is compatible with the surrounding area with regard to slopes, and plant and animal life supported by the established ecosystem.

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- e. Terraced areas shall be shaped to blend with the existing, adjoining contours. The land must be graded to final contours as shown on the approved reclamation plan, top-soil, which had been used to construct the berms of each quarry phase shall be removed as areas are reclaimed and the topsoil shall be spread over the land area and seeding of appropriate native plants must occur. It is not necessary for vegetation to be established before moving fully to the next phase.

14) Studies/Surveys Required Prior to Opening New Phase

- a. Pre-Blast Survey. A pre-blast survey (by an independent seismology firm or structural engineer approved by the applicant and the owners of existing structures within one-half mile of the quarry site) shall be offered to the property owners and conducted, if the property owners request, prior to operating in each phase.

(Notice shall be mailed, by certified mail, to all property owners within one-half mile of the phase to be quarried, at least 1 month prior to the beginning of that phase, indicating that a new phase is about to be quarried and letting the property owner know about the pre-blast survey.)

- b. Hydrologic Study

The quantity/quality of water in the wells within one-half mile of each quarry phase shall be documented prior to the commencement of quarrying operations in that phase. A study shall be done, at the operator's expense, for all wells within ½ mile of each phase (with property owner consent). Notice shall be provided to all property owners within one-half mile of the phase boundary as noted in Condition 13a.

This study is intended to provide an inventory of area residential and stock wells and determine their capacities and current volumes/levels of operation; and to determine the impact of quarrying, per phase, based on the depth of mining proposed. If mining is proposed at a depth lower than 1042 or the local water table, the County Engineer may require a hydrologic study to analyze the impact on area wells.

- c. Drainage Study

Prior to work progressing in each phase of the quarrying operation, a detailed grading plan showing site runoff and its relationship to the adjoining properties shall be submitted to the Planning Office for review and approval prior to work progressing in each phase.

15) Site Access and Road Restrictions

- a. Except for vehicles traveling to and from the site on 45th Street in Shawnee County, the principal access to the site for transport truck traffic and hauling of rock shall be restricted to the use of U.S. Highway 40 from the direct haul route north of the proposed quarry. (The haul road is currently in place and the intersection with Highway 40 was designed in accordance with KDOT requirements.)

Any other haul route options must first be approved by the Douglas County Commission.

- b. Except for local deliveries of rock from the quarry site, Route 442 shall not be used by transport trucks to travel to and from the east. The operator shall post signs and adopt appropriate restrictions on the quarry site, including restrictions on sale of rock where necessary, to ensure strict compliance with this restriction by all transport trucks.

In the event the Board of County Commissioners determines, after due notice and hearing, that such restrictions have proven ineffective in prohibiting transport trucks which originate from or travel to the quarry site from using Route 442 east of the quarry entrance in violation of this restriction, the Board may order such improvements to Route 442 as it deems necessary,

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including, but not limited to, appropriate shouldering, surfacing, and signing, and assess such costs to the applicant which shall be paid in a timely manner. In the alternative, the Board may order the operator to cease operation or order such steps as the Board deems necessary under this CUP.

- c. No township roads shall be used as access to the quarry.
 - d. Restrictions which shall be posted at the entrance to the plant, regarding vehicles hauling from the site are to include:
 - no flatbed trucks without sides or tailgates;
 - tailgates shall be in place and in an upright position; and
 - all trucks leaving the site must be covered by a tied-down tarp.
 - e. Operator is responsible for spillage and cleanup of aggregate within one mile of the plant site, which includes the intersection of the access road to the north and U.S. Highway 40. The failure by the applicant to clean up spilled aggregate of such roads within a reasonable period of time shall be grounds for action under Section XVII, Inspection/Violation/Revocation.
 - f. The operator will not allow trucks to exceed State of Kansas legal weight limits or legally posted weight limits since different truck configurations have different legal weight limits.
 - g. Weight limitations shall be posted on appropriate roads adjacent to the quarry.
 - h. Access points across township roads between phases of operation require prior review and authorization from the Douglas County Public Works Director. Access is restricted to one point of crossing per phase as shown on the operation plan. Road crossings between the phases of the site shall be maintained by operator at all times.
 - i. During the term of this Conditional Use Permit, the applicant shall not request the vacation of any township roads in the vicinity of the site.
- 16) Transfer of Operator
Because the operator's track record is an important consideration, a change in the quarry operator shall require the conditional use permit to come back to the Planning Commission for review and to the County Commission for reapproval.
- 17) Sanitary Landfill
The property shall not be used or requested for use as a sanitary landfill within the life of this conditional use permit.
- 18) Shop Facility
Repair and maintenance activities shall be limited to service of vehicles and equipment in use at this specific quarry location.
- 19) Inspection/Violation/Revocation
The Douglas County Commission, or the appointed representative(s) thereof, shall have the right, without advance notice, to enter the premises and inspect any aspect of the quarry operation for compliance with the conditions of this permit. Upon entering the premises, the County shall first request an escort by the applicant's representatives.

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Further, the Douglas County Commission, or the appointed representative(s) thereof, shall be authorized to:

- a. Order the stoppage of any operation occurring without a permit or in violation of the terms of this permit.
 - b. Order the operator or its agents and employees to adopt such remedial measures as are necessary to comply with the terms of this CUP. In such cases, the operator shall be given no more than ninety (90) days to rectify any condition of noncompliance.
 - c. Order the immediate suspension of operations if, after due notice and an opportunity to be heard before the County Commission, it is determined by the Board of County Commissioners that the permitted operation is causing, or can reasonably be expected to cause, a significant, imminent danger or threat to the health, safety or welfare of the public or to the environmental quality of the surrounding area.
 - d. In cases such as those described in Paragraph (C) that do not pose an imminent threat to the public health, safety and welfare, the operator shall be given no more than 90 days to rectify the condition. If the condition has not been rectified, the County Commission, after due notice and hearing, may order the suspension of operations and suspend or revoke part or all of the CUP.
 - e. If the operator or the agents or employees thereof, fail to comply with a lawful order under this section, or violate any of the restrictions of use enumerated for this permit, the County Commission, after due notice and an opportunity for a hearing, may suspend or revoke part or all of the CUP.
- 20) The timeframe for completion of any phase is dependent on the market demand; however, the operator agrees to continuously quarry Phase 6 (within the limits of the CUP restrictions) so that Phase 6 will be completed as soon as possible, preferably by or before December 19, 2020.
- 21) The CUP approval is valid for 30 years from the date of approval by the Board of County Commissioners (date) and shall expire at that time unless an application for renewal, submitted prior to the expiration date, is approved by the County Commission.

Unanimously approved 8-0. Commissioners Butler, Carpenter, Carttar, Paden, Sinclair, Struckhoff, Weaver, Willey voted in favor.

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