



**US Army Corps
of Engineers** ®
Fort Worth District

Public Notice

Applicant: Kiewit Infrastructure South Company

Project No.: SWF-2021-00360

Date: July 6, 2022

Purpose

The purpose of this public notice is to inform you of a proposal for work in which you might be interested. It is also to solicit your comments and information to better enable us to make a reasonable decision on factors affecting the public interest. We hope you will participate in this process.

Regulatory Program

Since its early history, the U.S. Army Corps of Engineers has played an important role in the development of the nation's water resources. Originally, this involved construction of harbor fortifications and coastal defenses. Later duties included the improvement of waterways to provide avenues of commerce. An important part of our mission today is the protection of the nation's waterways through the administration of the U.S. Army Corps of Engineers Regulatory Program.

Section 10

The U.S. Army Corps of Engineers is directed by Congress under Section 10 of the Rivers and Harbors Act of 1899 (33 USC 403) to regulate *all work or structures in or affecting the course, condition or capacity of navigable waters of the United States*. The intent of this law is to protect the navigable capacity of waters important to interstate commerce.

Section 404

The U.S. Army Corps of Engineers is directed by Congress under Section 404 of the Clean Water Act (33 USC 1344) to regulate the *discharge of dredged and fill material into all waters of the United States, including wetlands*. The intent of the law is to protect the nation's waters from the indiscriminate discharge of material capable of causing pollution and to restore and maintain their chemical, physical and biological integrity.

Contact

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PUBLIC NOTICE

U.S. ARMY CORPS OF ENGINEERS, FORT WORTH DISTRICT

SUBJECT: Application for a Department of the Army Permit under Section 404 of the Clean Water Act (CWA) to discharge dredged or fill material into waters of the United States associated with a quarry operation to extract material for aggregate production in Palo Pinto County, Texas.

APPLICANT: Kiewit Infrastructure South Company
C/O Ms. Brittany Conrady
13119 Old Denton Road
Fort Worth, Texas 76177

APPLICATION NUMBER: SWF-2021-00360

DATE ISSUED: July 6, 2022

LOCATION: 16245 North U.S. Highway 281, Santo, Palo Pinto, Texas. The approximate NAD coordinates are 32.590592°, -98.104887°. The 7.5-minute USGS quadrangle map is Lipan. The USGS Hydrologic Unit Code is 120602011106 (Dobbs Valley-Brazos River). See Exhibits 1 and 2 for the project location.

OTHER AGENCY AUTHORIZATIONS: State Water Quality Certification

PROJECT DESCRIPTION: The applicant proposes to utilize an undeveloped, 300-acre site as a quarry for aggregate production. The operation would require plant equipment, stockpiling of materials, and support facilities (e.g., office, equipment maintenance facility). Aggregate material would be extracted by using phased mining, which includes the removal of soil and rock above the desired layer of limestone, followed by removal of the exposed limestone. Aggregate material would be processed by using a crushing plant to produce the desired size and specification of material. **NOTE:** None of the following proposed impacts to waters of the United States have been confirmed or evaluated by the Corps. The applicant has designed the project as a phased mining operation that would result in a loss of waters of the United States to include 0.05 acres (AC) of non-forested wetland, 1.45 AC of (impounded) open water, 294 linear feet (LF) of intermittent stream (0.05 AC), and 16,017 LF of ephemeral stream (2.08 AC).

PURPOSE AND NEED: See Enclosure for the applicant's purpose and need. Note: The USACE has not evaluated the purpose and need prepared by the applicant.

ALTERNATIVES: See Enclosure for the applicant's alternatives analysis. Note: The USACE has not evaluated the alternatives analysis prepared by the applicant.

MITIGATION: To offset unavoidable adverse impacts to waters of the United States, the applicant proposes to purchase appropriate stream mitigation bank credits from a USACE-approved mitigation bank and / or utilize permittee responsible mitigation by restoring applicable streams upon completion of mining activities. Note: To date, the applicant has not provided the USACE with a mitigation plan for evaluation.

PUBLIC INTEREST REVIEW FACTORS: This application will be reviewed in accordance with 33 CFR 320.332, the Regulatory Program of the USACE, and other pertinent laws, regulations, and executive orders. Our evaluation will also follow the guidelines published by the U. S. Environmental Protection Agency pursuant to Section 404 (b)(1) of the CWA. The decision whether to issue a permit will be based on an evaluation of the probable impact, including cumulative impact, of the proposed activity on the public interest. That decision will reflect the national concerns for both protection and utilization of important resources. The benefits which reasonably may be expected to accrue from the proposal must be balanced against its reasonably foreseeable detriments. All factors which may be relevant to the proposal will be considered, including its cumulative effects. Among the factors addressed are conservation, economics, aesthetics, general environmental concerns, wetlands, historic properties, fish and wildlife values, flood hazards, floodplain values, land use, navigation, shore erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food and fiber production, mineral needs, considerations of property ownership, and, in general, the needs and welfare of the people.

The USACE is soliciting comments from the public; federal, state, and local agencies and officials; Indian Tribes; and other interested parties in order to consider and evaluate the impacts of this proposed activity. Any comments received will be considered by the USACE in determining whether to issue, issue with modifications, or conditions, or deny a permit for this proposal. To make this decision, comments are used to assess impacts on endangered species, historic properties, water quality, general environmental effects, and the other public interest factors listed above. Comments are used in the preparation of an Environmental Assessment and/or an Environmental Impact Statement pursuant to the National Environmental Policy Act. Comments are also used to determine the need for a public hearing and to determine the overall public interest of the proposed activity.

STATE WATER QUALITY CERTIFICATION: This proposed project will trigger a review under Section 401 of the CWA. The Texas Commission on Environmental Quality (TCEQ) will review this application under Section 401 of the CWA in accordance with Title 30, Texas Administrative Code Section 279.1-13 to determine if the work would comply with State water quality standards. The applicant will contact TCEQ and will initiate the Section 401 CWA process by submitting a pre-filing meeting request. If you have comments or questions on the proposed project's State water quality certification, please contact 401certs@tceq.texas.gov. You may also find information on the Section 401 process [here](#) and [here](#).

ENDANGERED AND THREATENED SPECIES: The USACE has reviewed the U.S. Fish and Wildlife Service's latest published version of endangered and threatened species to determine if any may occur in the project area. The proposed project would be in Palo Pinto County where

the following species are listed as either threatened or endangered: piping plover (*Charadrius melodus*), red knot (*Calidris canutus rufa*), golden-cheeked warbler (*Setophaga chrysoparia*), whooping crane (*Grus americana*). There are no designated critical habitats within the proposed project location. The Corps has not evaluated whether or not the proposed project would result in an effect on any of the aforementioned species.

NATIONAL REGISTER OF HISTORIC PLACES: The USACE will consider the impact of the proposed project on cultural resources listed, or eligible for listing, in the National Register of Historic Places (NRHP). Cultural resources include prehistoric and historic archeological sites, and areas or structures of cultural interest that occur in the permit area. The USACE, in consultation with the Texas Historical Commission, will determine if the proposed project would affect such resources.

FLOODPLAIN MANAGEMENT: The USACE is sending a copy of this public notice to the local floodplain administrator. In accordance with 44 CFR part 60 (Flood Plain Management Regulations Criteria for Land Management and Use), the floodplain administrators of participating communities are required to review all proposed development to determine if a floodplain development permit is required and maintain records of such review.

SOLICITATION OF COMMENTS: The public notice is being distributed to all known interested persons in order to assist in developing fact upon which a decision by the USACE may be based. For accuracy and completeness of the record, all data in support of or in opposition to the proposed work should be submitted in writing setting forth sufficient detail to furnish a clear understanding of the reasons for support or opposition.

PUBLIC HEARING: Prior to the close of the comment period any person may make a written request for a public hearing setting forth the particular reasons for the request. The District Engineer will determine whether the issues raised are substantial and should be considered in his permit decision. If a public hearing is warranted, all known interested persons will be notified of the time, date, and location.

CLOSE OF COMMENT PERIOD: All comments pertaining to this Public Notice must reach this office on or before August 5, 2022, which is the close of the comment period. Extensions of the comment period may be granted for valid reasons provided a written request is received by the limiting date. If no comments are received by that date, it will be considered that there are no objections. Comments should be submitted to U.S. Army Corps of Engineers, Fort Worth District, Regulatory Division, Permits Branch by emailing CESWF-Permits@usace.army.mil, and please reference the SWF Project Number in the email subject line. Requests for additional information should be submitted to Mr. Brian Bartels by using email, brian.c.bartels@usace.army.mil. Telephone inquiries should be directed to 817-886-1742. Please note that names and addresses of those who submit comments in response to this public notice may be made publicly available.

DISTRICT ENGINEER
FORT WORTH DISTRICT
CORPS OF ENGINEERS

Enclosure, 12 pages

Exhibits, 6 pages

Enclosure
Grindstone Quarry (SWF-2021-00360)
Alternatives Analysis
May 2022

Need and Purpose

According to the Texas House Interim Study Committee on Aggregate Production Operations report to the Texas House of Representatives, submitted to record January 2021, rapid economic growth has necessitated the need for increased aggregate production across the State of Texas. 15% growth was reported from 2000-2019 and is expected to accelerate to 55% growth rate between 2019 and 2050. Due to this rapid growth, the demand for locally sourced aggregates to fill the infrastructure, commercial, and housing needs, balanced with the difficulty in transporting aggregate products, has resulted in a demand for quarrying operations across the State of Texas. There is a demonstrated need for quarrying operations.

Palo Pinto County Texas is also experiencing population growth, albeit at a slower rate than the rest of the State but is currently has grown 4% between 2000 and 2010, according to the US Census.

In late 2020, the Applicant began pursuing a major infrastructure project with the Texas Department of Transportation (TxDOT), called the Southeast Connector, located in Fort Worth, Texas. The Applicant was selected to deliver the Southeast Connector design-build project. The Southeast Connector project is a design-build project in the TxDOT Fort Worth District consisting of approximately 16.6 miles of non-tolled improvements to I-20 from Forest Hill Drive to Park Springs Boulevard, to I-820 from I-20 to Brentwood Stair Road, and to US 287 from Bishop Street to Sublett Road. The project components include the design, construction and maintenance of the roadways. This project would have a massive demand for materials; about 700,000 tons of hot mix asphalt, and over 950,000 cubic yards of concrete paving, both which will require high quality aggregates to produce. The Southeast Connector project will require 3.8 million tons of rock. The Southeast Connector project is projected to start in 2023.

The Applicant is proposing to utilize the site as a quarry for aggregate production. The aggregate production operation would require plant equipment, stockpiling of materials, and support facilities (office, equipment maintenance facility).

The purpose of the project is to create a quarry for aggregate production. Specifically, the proposed quarry site needs to have the following attributes:

- Be available for purchase/acquisition
- Be located within a 60-mile haul route radius from Fort Worth, Texas
- Be located where direct access to a highway occurs to allow for safe material transportation with large trucks
- Be located within an area near Fort Worth, Texas with documented limestone mineral deposits
- Be at a location that can be permitted by the TCEQ through their quarry permit process
- Contain limestone bedrock that can be mined in addition to sand to be able to create a variety of materials (including sand)
- Be at least 200 acres in size to allow for a strip ratio of 1:1

As referenced in the permit submittal cover letter, an aquatic resources delineation was performed on the proposed site when the Navigable Waters Protection Rule was effective. Based on Kimley-Horn's analysis, the project would not have required a Department of the Army Permit under the Navigable Waters Protection Rule; however, during the review of a No Permit Required Letter request, the Navigable Waters Protection Rule was vacated.

The preferred alternative consists of undeveloped land totaling approximately 300 in size and is located within a 60-mile haul route of Fort Worth, Texas. The proposed project would include an entrance off of US Highway 281.

Scope of the Market

The total scope of the aggregate market is serving the Fort Worth area and the Southeast Connector project specifically, but also future growth and development in the rest of the Dallas-Fort Worth Metroplex. Closer to the proposed project, continued development in Weatherford, Palo Pinto County, and the surrounding areas is also projected to continue. While the Southeast Connector project will require 3.8 million tons of rock, the demand for additional projects discussed below has not been evaluated at this time.

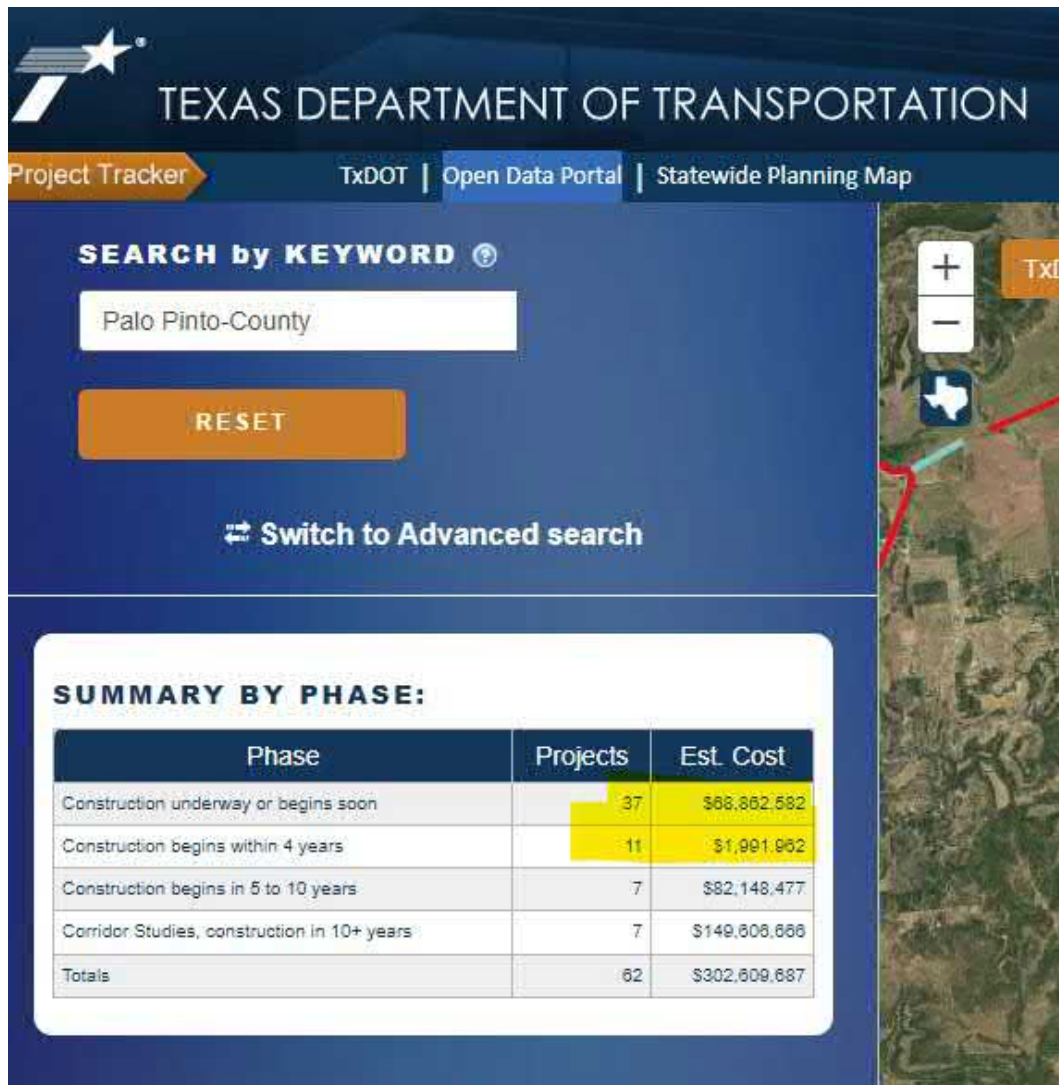
Applicable Projects

Specific to Palo Pinto County, at least two major projects that would require aggregate are anticipated to occur within the initial life of the mine:

- TxDOT is evaluating widening Highway 281, which is adjacent to the proposed project site.
- The Palo Pinto County Municipal Water District No. 1 is proposing to develop the Turkey Peak Reservoir northwest of Santo, Texas adjacent to the Palo Pinto Creek Reservoir. This project would require the construction of an earthen dam to supply drinking water to the area. This project was projected to start in 2020 and will likely be started within the first five years of the life of the quarry.

In addition to the projects listed above, according to TxDOT there is almost \$70 million worth of work spread over 48 projects that are planned to take place in Palo Pinto County in the next four years. Almost all of these projects will require various aggregate products which are planned to be produced at the Grindstone Quarry. Some of these different products are various sizes of riprap material used for erosion control, sized aggregate for asphalt and concrete use, base course material which is used as an underlayment under the asphalt or concrete and fine material used for pipe bedding. The figure below shows the TxDOT project tracker.

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The Applicant intends to bid on these projects. Whether the Applicant is awarded these projects or not, the Applicant would propose to supply the aggregates necessary for these projects.

Additionally, the Palo Pinto County Department of Public Works informed the Applicant of the need for aggregate sources for their regularly scheduled maintenance and upkeep of County roads, bridges, and streets. Future aggregate demand is anticipated due to additional funding from the 2021 Infrastructure Investment and Jobs Act, which is projected to add almost \$27.5 billion in highway and bridge funding over the next five years to the State of Texas ([TEXAS Infrastructure-Investment-and-Jobs-Act-State-Fact-Sheet.pdf \(whitehouse.gov\)](#)).

Population Growth

The projected population growth in the area of the project will result in the need for more infrastructure that will require more aggregate that the proposed project can provide.

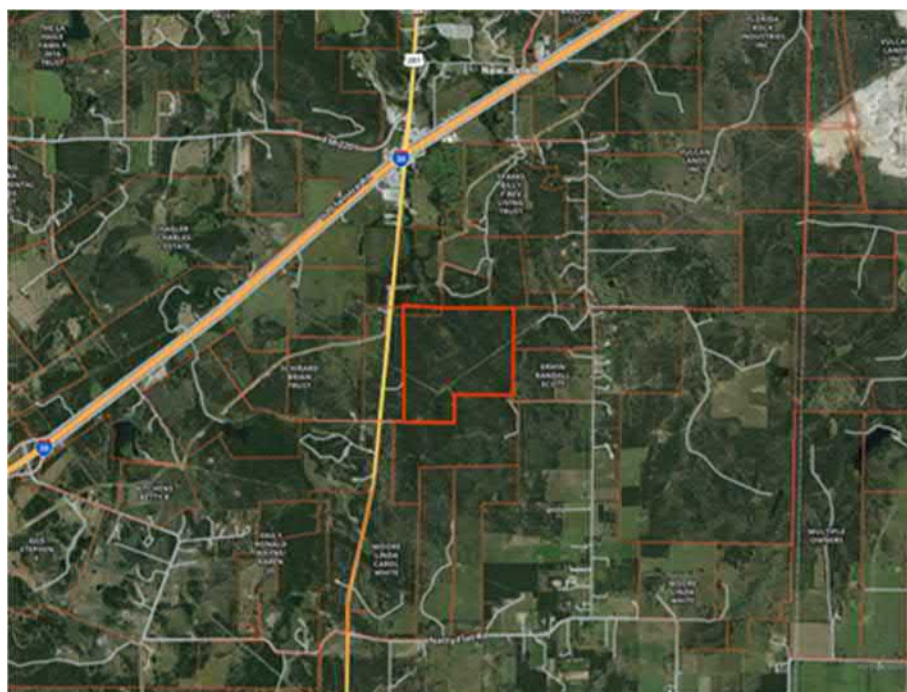
According to the City of Fort Worth, the population is projected to grow from 918,915 people to 1,000,000 by the year 2028, representing growth of almost 9% ([01-population-trends-final-2022.pdf \(fortworthtexas.gov\)](#)). Additional data from Cushman and Wakefield shows that the Dallas-Fort Worth Metroplex is projected to see a population growth of 17.9% from 2020-2029 ([Fort Worth's population is booming \(spectrumlocalnews.com\)](#)). The proposed project site location

was selected as it is the closest area to Fort Worth with the specific type of deposit of aggregate (limestone) with a sufficient enough land size to support the development needed. Other areas were considered; however, the distance was much greater than the proposed site.

ALTERNATIVES:

No Action Alternative: Under the No Action Alternative, a quarry that would provide aggregate for the Southeast Connector Project and necessary materials for growth and associated development within Palo Pinto County would occur while avoiding impacts to jurisdictional waters. As documented in this alternatives analysis, no offsite or onsite alternatives that were analyzed are practicable that would allow for the construction of a quarry while avoiding impacts to jurisdictional waters. Therefore, in this scenario a No Action Alternative would assume that no quarry development would occur. In this situation, the demand for aggregate within a 60-mile haul route radius of Fort Worth, Texas would remain unmet, and the need and purpose of the proposed project would not be met. Therefore, the No Action Alternative is not practicable.

Offsite Alternatives: The Applicant is interested in the 60-mile haul route radius from Fort Worth because of a demonstrated need for aggregate to support the Southeast Connector project and growth and development in Palo Pinto County, as documented above. Additionally, other large projects that would require aggregate are proposed within the first five year life of the mine. The Applicant made a much wider scope search relative to overall parcel availability, than what is summarized below. From this initial analysis, two offsite locations (Red River Property and Brazos Property) were identified as potentially available in an overall context. The Red River Property is located in Sivelles Bend, Texas and is currently operating as a sand quarrying operation. The Brazos Property is located on the banks of the Brazos River north/northeast of the intersection of I-20 and US Highway 281, in Santo, Palo Pinto County, Texas. Other parcels located within the area of documented limestone deposits within Palo Pinto County with access to a highway were evaluated. The figure below shows the parcels within the area within Palo Pinto County proximate to highways within documented limestone deposit zones. The Preferred Alternative site has a bolded outline.



Waters of the U.S. Screening/Review

Prior to performing a detailed practicability analysis, the Applicant estimated potential impacts on aquatic resources at each of the Offsite Alternative sites. It is estimated that quarrying activities on the Red River Property would have resulted in impacts to waters of the U.S. It is estimated that quarrying activities on the Brazos Property would have resulted in direct impacts to the Brazos River and apparent open waters onsite that could be as much as three to five acres.

Based on this analysis, it appears that quarrying activities on Offsite Alternative Sites 1 (Red River Property) and 2 (Brazos Property) could result in more acreage of impacts to aquatic resources than the Preferred Alternative. Therefore, Offsite Alternative Sites 1 and 2 is not the least environmentally damaging alternative. Given that actual anticipated impacts to waters of the U.S. associated with Offsite Alternative Sites 1 and 3 are unknown, a practicability screening for Offsite Alternatives Sites 1 and 2 performed.

Practicability Screening

Upon completing a preliminary aquatic features desktop analysis for the offsite alternatives, the Applicant developed a practicability screen. Based on the multiple facets of the overall proposed project (quarry), the following selection criteria were utilized to screen Offsite Alternative Sites 1 and 2:

1. Available for purchase/acquisition
2. Located within a 60-mile haul route radius from Fort Worth, Texas
3. Located where direct access to a highway occurs
4. Located within an area near Fort Worth, Texas with documented limestone mineral deposits
5. Be at a location that can be permitted by the TCEQ through their quarry permit process
6. Contain limestone bedrock that can be mined in addition to sand to be able to create a variety of materials (including sand)
7. Be at least 200 acres in size to allow for a strip ratio of 1:1

Table 1, below, is a summary of the selection criteria used to select the Preferred Alternative. Supporting discussion for the criteria that do not pass for each offsite alternative is provided below the table.

Table 1: Offsite Alternative comparison matrix.

Criterion	Factor	Preferred Alternative	Offsite Alt. 1 (Red River Property)	Offsite Alt. 2 (Brazos Property)
Availability	Available for Acquisition	Yes	No	No
		Applicant owns the parcel.	This site was available at the time of market entry; however, it is no longer available for purchase or on the market.	This site was available at the time of market entry; however, it is no longer available for purchase or on the market.
Location		Yes	No	Yes

	Located within 60-mile haul route radius from Fort Worth, Texas	Located within 60-mile haul route from Fort Worth.	Located outside of 60-mile haul route from Fort Worth.	Located within 60-mile haul route from Fort Worth.
	Located where direct access to a highway occurs	Yes	No	Yes
		Site has direct access to Highway 281.	Site does not have direct access to a highway.	Site has direct access to Highway 281.
	Located within an area near Fort Worth with documented limestone mineral deposits	Yes	No	No
		Site is located in the Grindstone Creek Formation (rock unit code IPgr) that consists of shale sandstone and limestone.	Site is not located in a rock unit code that consists of limestone.	Site is not located in a rock unit code that consists of limestone.
	Location that can be permitted by TCEQ through quarry permitting process	Yes	Unknown	No
		Permit application has been submitted to TCEQ; facility qualifies for TPDES General Permit TXG500000 for John Graves Scenic Riverway.	Site is an existing sand quarry; details of quarry activities are unknown however it appears that TCEQ has allowed this quarry activity to occur.	The TPDES General Permit would not authorize a quarry at this location as it is located on the Brazos River, the John Graves Scenic Riverway. Early coordination with TCEQ indicated a quarry permit would not be issued for a quarry on the John Graves Scenic Riverway. Specifically, new quarry operations within 200 feet and 1,500 feet of a John Graves Scenic Riverway waterbody are prohibited.
	Materials Present	Yes	No	No
		Site contains limestone bedrock that will allow creation of a variety of materials, including sand.	Site is only able to generate sand.	Site is only able to generate sand.
Size of Site	At least 200 acres in size	Yes	Yes	Yes
		Site measures 300 acres in size	Site measures greater than 200 acres in size	Site measures 360 acres in size

Based on the practicability screening, Offsite Alternative Sites 1 and 2 do not pass the practicability screening; therefore, they are not practicable alternatives.

Offsite Alternative Sites Failing Selection Criteria

- Available for Acquisition: As of the date of the preparation of this alternatives analysis, Offsite Alternative Sites 1 and 2 are not available for acquisition as they are no longer for sale by the owners.
- Located within 60-Mile Haul Route Radius from Fort Worth: As noted in the interim study report to the Texas House of Representatives, the need is for locally sourced aggregates due to the safety and feasibility of transporting aggregates long distances. A reasonable

haul time was determined to be about 60 miles from Fort Worth. In a study published in the American Journal of Epidemiology, the risk-exposure density of roadway travel is time, divided by distance, multiplied by frequency of travel. By reducing the time in a vehicle to around an hour (60-mile radius), and keeping all other variables the same, the risk-exposure frequency was lowered while still allowing for a large search area. A shorter haul time also reduces the particulates that may be emitted in the trucking process. The EPA estimates 22 lbs. of CO₂ per gallon of diesel burned are deposited into the atmosphere. The typical aggregate hauler gets about 6.2 miles per gallon for highway hauling. Each mile the haul is reduced saves 3.5 lbs. of CO₂ per truck from being deposited into the atmosphere, which is more beneficial to the environment. Offsite Alternative 1 is located beyond the 60-mile haul route radius from Fort Worth. Offsite Alternative 2 is located within the 60-mile haul route radius from Fort Worth.

- Located where Direct Access to a Highway Occurs: Having direct access to a highway was considered as being able to quickly get onto a highway would reduce local truck/haul traffic and would also decrease emissions. Utilizing a highway would avoid heavy trucks traveling through residential neighborhoods and streets and would promote safety for area residents. Offsite Alternative 1 does not have direct access to a highway; however, Offsite Alternative 2 has direct access to Highway 281.
- Located Within an Area Near Fort Worth with Documented Limestone Mineral Deposits: Limestone is the primary aggregate necessary for the Southeast Connector project and other projects in the area (Highway 281 widening, Turkey Peak Reservoir, TxDOT projects). Based on a review of the USGS Texas Geology Map Viewer, Offsite Alternative Sites 1 and 2 are not located in a rock unit code primarily consisting of limestone.
- Location that can be permitted by TCEQ through quarry permitting process: The TCEQ has a permit process for quarries. TCEQ regulates compliance with air, water and waste associated with quarries. Offsite Alternative 1 is an existing sand quarry along the Red River. Details of quarry activities are unknown; however, it appears that TCEQ has allowed this quarry activity to occur. Offsite Alternative 2 is located along the Brazos River, which is part of the John Graves Scenic Riverway. The TPDES General Permit would not authorize a quarry at this location as it is located on the Brazos River, the John Graves Scenic Riverway. Early coordination with TCEQ indicated a quarry permit would not be issued for a quarry on the John Graves Scenic Riverway. Specifically, new quarry operations within 200 feet and 1,500 feet of a John Graves Scenic Riverway waterbody are prohibited.
- Contain Limestone Bedrock that can be Mined in Addition to Sand: A variety of materials are required for the Southeast Connector project and to provide materials to support growth and development within Palo Pinto County. Offsite Alternative Sites 1 and 2 are only able to generate sand and do not have limestone bedrock.

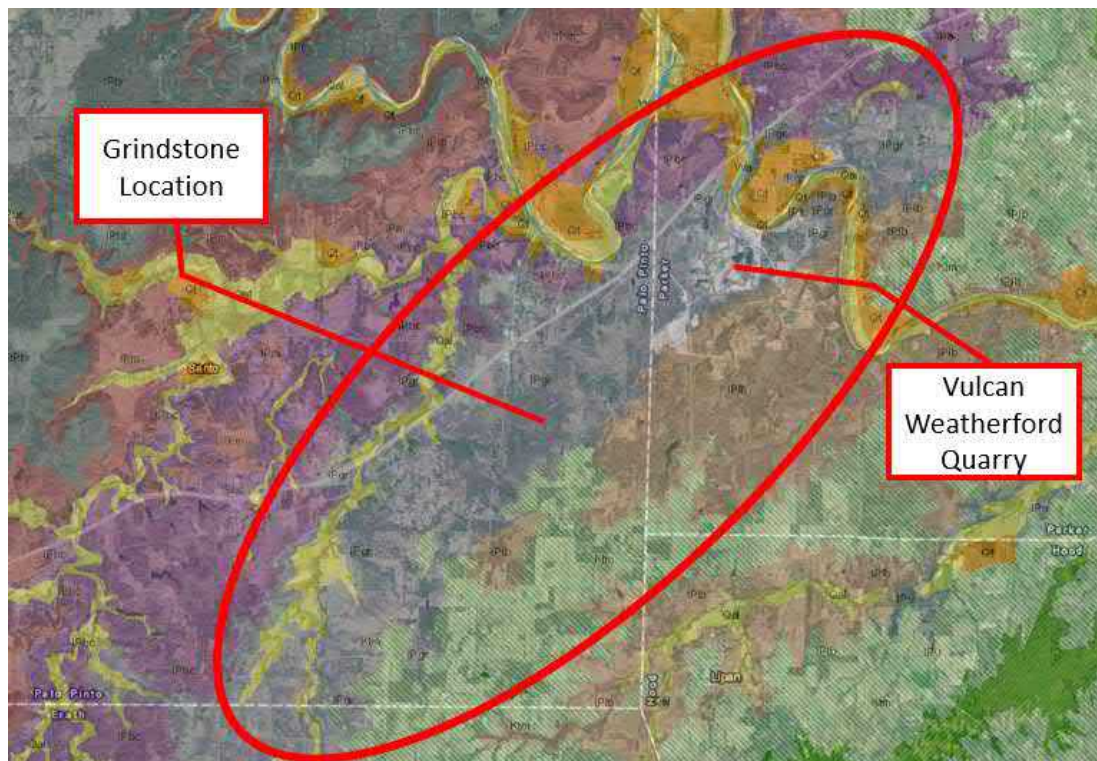
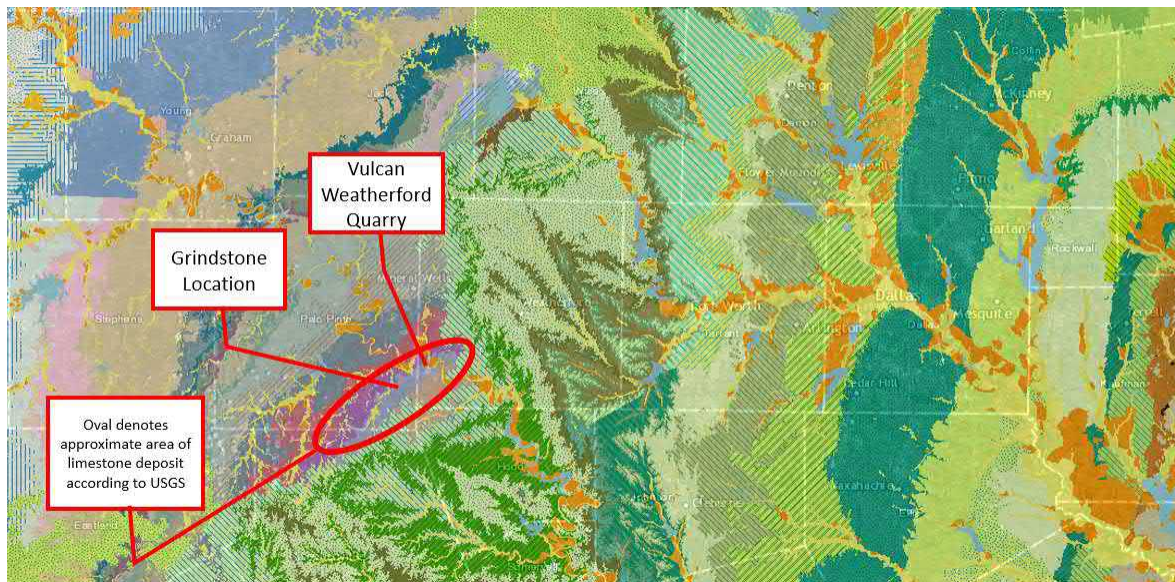
Given that Offsite Alternative Sites 1 and 2 both do not pass all practicability screening factors, they are not the least environmentally damaging practicable alternative (LEDPA).

Justification for the Preferred Alternative

There are several critical items which led to the selection of the Preferred Alternative. The justification for Applicant's preferred site is provided below:

1. The Preferred Alternative is currently owned by the Applicant; therefore, the Preferred Alternative passes the availability criterion.
2. The Preferred Alternative is located within a 60-mile haul route radius from Fort Worth, Texas.

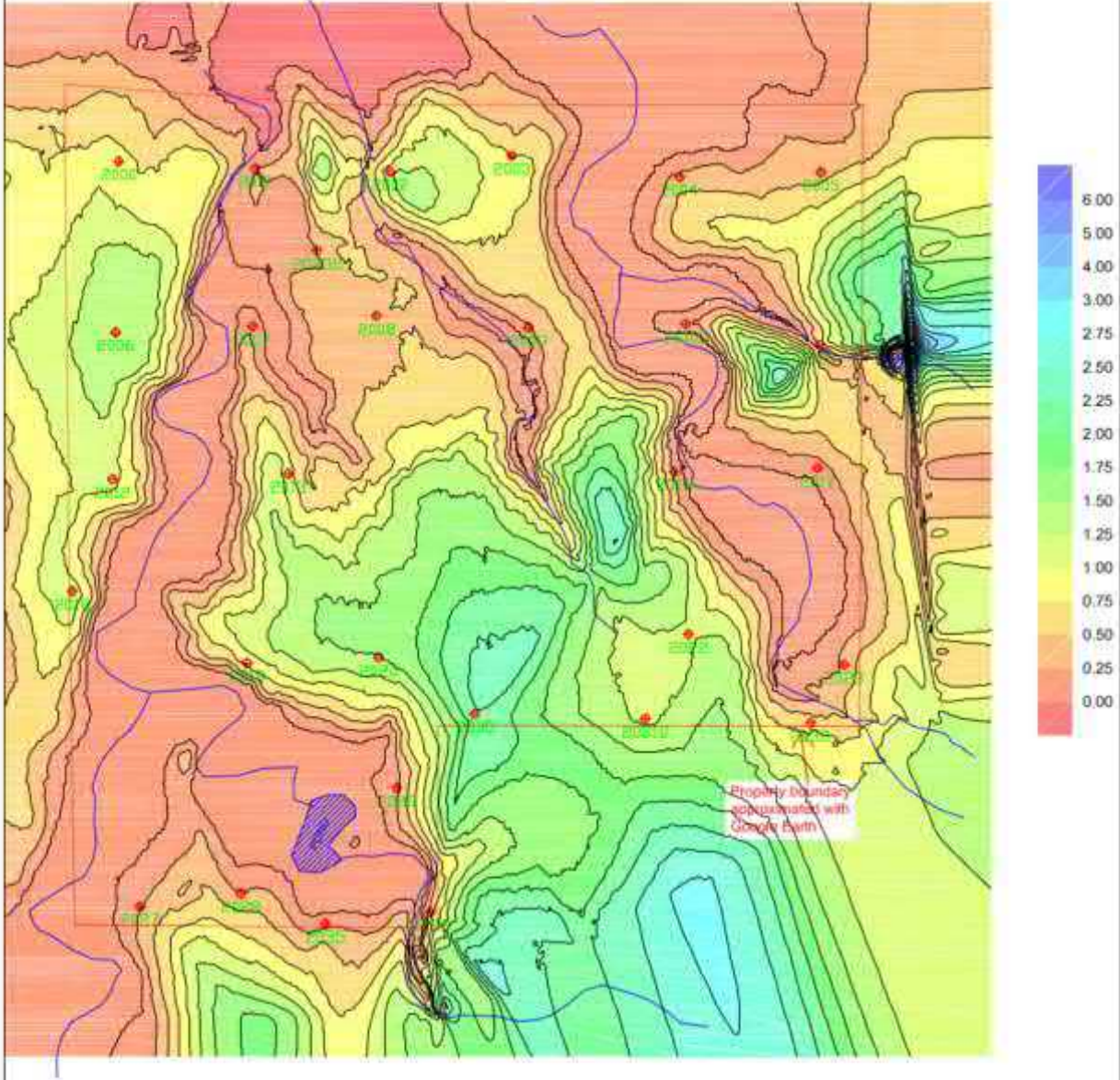
3. The Preferred Alternative has direct access to Highway 281.
4. The Preferred Alternative is located within the Grindstone Creek Geologic Formation (rock unit code IPgr) that consists of shale sandstone and limestone. The figures below show the geological deposits in the Fort Worth area and show the Preferred Alternative site.



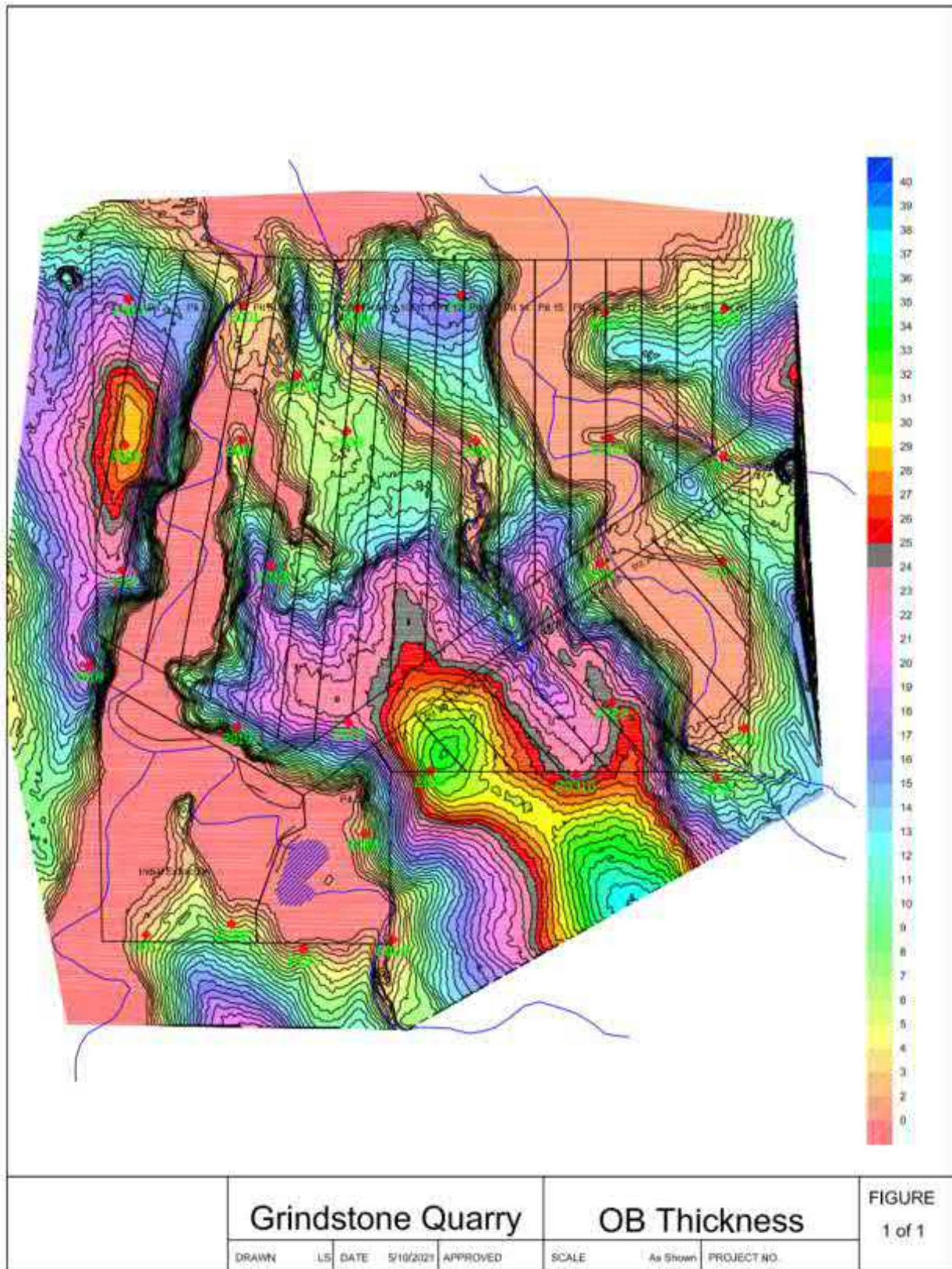
5. The Preferred Alternative is located within an area that requires TCEQ stormwater quarry permitting. A permit application has been submitted to TCEQ and it demonstrates that the proposed facility qualifies for TPDES General Permit TXG500000 for John Graves Scenic Riverway. Other necessary permit requirements including a Restoration Plan and Pollution Prevention Plan have been prepared and submitted to TCEQ for review.

6. The Preferred Alternative site is located in an area that consists of limestone bedrock. Therefore, multiple materials can be created and used for the Southeast Connector project and growth and development in Palo Pinto County, in addition to sand.
7. The Preferred Alternative measures 300 acres in size; therefore, the site has the necessary space for facilities and a strip ratio of 1:1. A strip ratio is the quantity of material that must be wasted (or “stripped”) to access the ore. This was developed for three reasons. A high strip ratio would have a negative environmental impact. Additional stripping requires larger equipment running at longer times, depositing a greater number of pollutants in the air than easily accessible, easily mined ores. Secondly, as mentioned in the purpose and need statement, the quantity of material present was important to meet the needs of the Southeast Connector project, the company, and the local Palo Pinto County market. Based on the strip ratio, the size of site determined to be needed was over 200 acres. Lastly, to avoid noise and visual impacts to nearby properties, as well as adequately situate the site, the property would need to be at least 200 acres in size to accommodate the 10-acre footprint of plant equipment, 10-acre footprint for stockpiled materials, 5-acre footprint for support facilities (office, equipment maintenance facility), with room to mine for materials and leave a buffer around the property to avoid noise, dust, and visual impacts to nearby properties. A strip ratio figure is shown below. An overburden thickness figure is shown below. This figure shows that the least amount of overburden over the limestone on the proposed project site generally lies where the streams identified during the aquatic resources delineation are located. The areas onsite with the least amount of overburden thickness will be mined in order to extract the limestone in manners that are economically feasible.

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Grindstone Quarry					Strip Ratio Ft:Ft			FIGURE 1 of 1
DRAWN	LS	DATE	4/13/2022	APPROVED	SCALE	As Shown	PROJECT NO.	



As discussed above, all practicability screening criteria factors considered are met for the Preferred Alternative. The Offsite Alternatives are not practicable for those reasons provided in the descriptions and in Table 2, above. Given that an alternative needs to fail only one practicability factor to be eliminated from the process, the offsite alternatives would not qualify as the LEDPA.

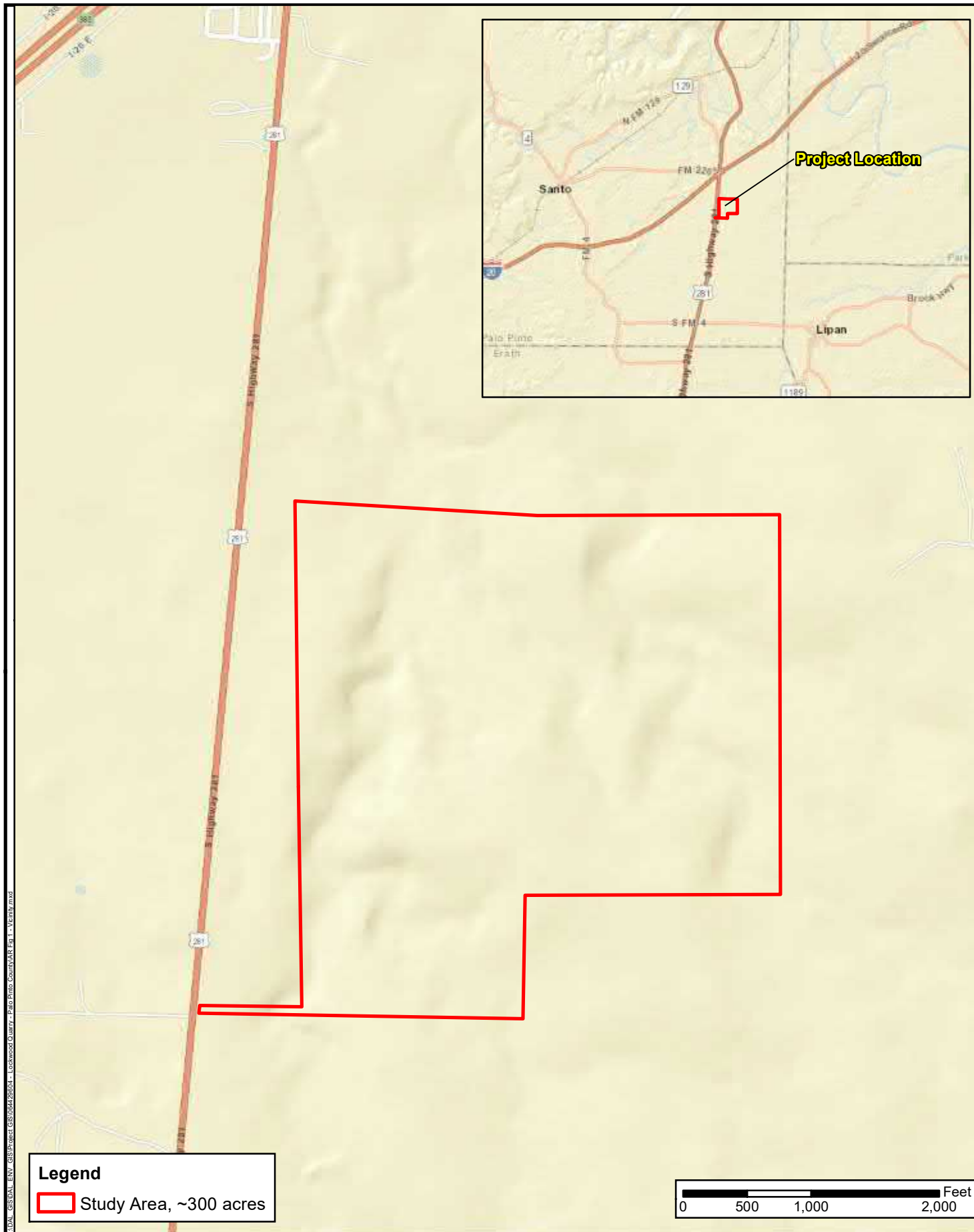
Onsite Alternatives: The Applicant undertook an analysis of alternative onsite designs relative to the Preferred Alternative site to determine the optimal design that would fulfill the project's purpose and need while minimizing adverse impacts to aquatic features to the extent practicable. The project has been designed as a phased mining operation that will require impacts to waters of the U.S. over the first five years of the life of the mine. Impacts associated with subsequent phases of mining activities are unknown at this time; however, if the initial mining activities prove to be successful, additional mining will occur onsite that would likely result in additional impacts to waters of the U.S. A separate permit application will be submitted for additional impacts beyond the initial five-year mining plan. Upon completion of mining activities, some streams will be restored onsite.

The Applicant evaluated an option to mine deeper onsite and avoid impacts to waters of the U.S.; however, the areas onsite with the least amount of overburden thickness must be mined in order to extract the limestone in manners that are economically feasible.

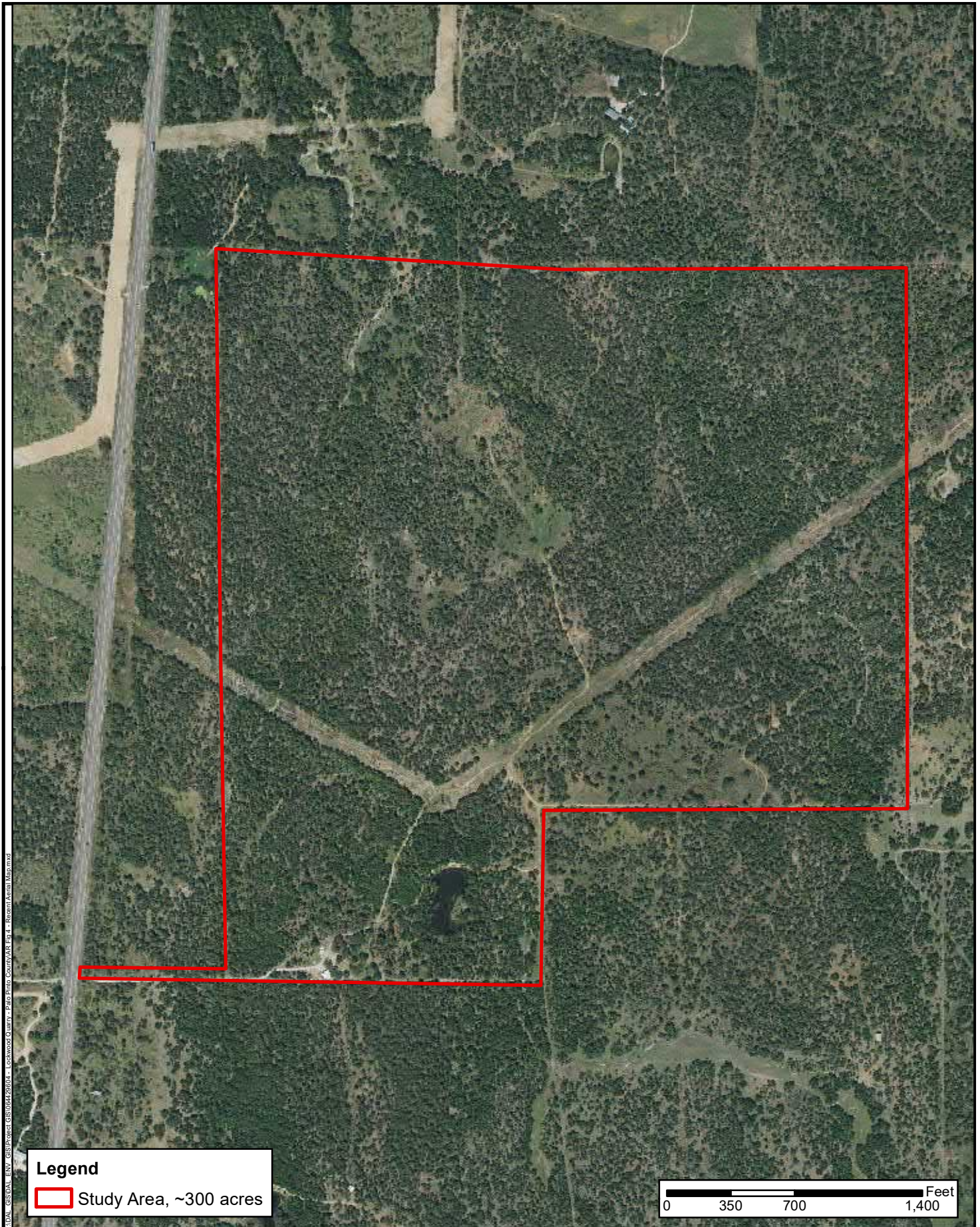
Alternative 1 – Preferred Alternative

The Preferred Alternative is described in the Need and Purpose statement above. Two impact maps are provided (Exhibits 5 and 6). The first shows the anticipated impacts to waters of the U.S. associated with the first five years of the mining activities (Exhibit 5). The second shows the full extent of impacts to waters of the U.S. should the first five years prove to be successful (Exhibit 6).

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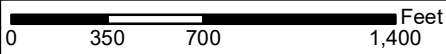


<p>FIGURE</p> <p>1</p>	<p>DATE: 02/14/2022</p> <p>DRAWN: MREA</p> <p>CHECKED: CGH</p> <p>KHA NO.: 064429604</p>	<p>Vicinity Map</p> <p>Source: ESRI</p>	<p>Grindstone Quarry</p> <p>Palo Pinto County, Texas</p>		<p>Kimley»Horn</p> <p><small>This product is for informational purposes and may not have been prepared for or be suitable for legal, engineering, or surveying purposes. It does not represent an on-the-ground survey and represents only the approximate relative location of property boundaries.</small></p>
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Legend

Study Area, ~300 acres



<p>FIGURE</p> <p>2</p>	<p>DATE: 02/14/2022</p> <p>DRAWN: MREA</p> <p>CHECKED: CGH</p> <p>KHA NO.: 064429604</p>	<p>Recent Aerial</p> <p>Source: TNRIS, 2020</p>	<p>Grindstone Quarry</p> <p>Palo Pinto County, Texas</p>		<p>Kimley»Horn</p> <p><small>This product is for informational purposes and may not have been prepared for or be suitable for legal, engineering, or surveying purposes. It does not represent an on-the-ground survey and represents only the approximate relative location of property boundaries.</small></p>
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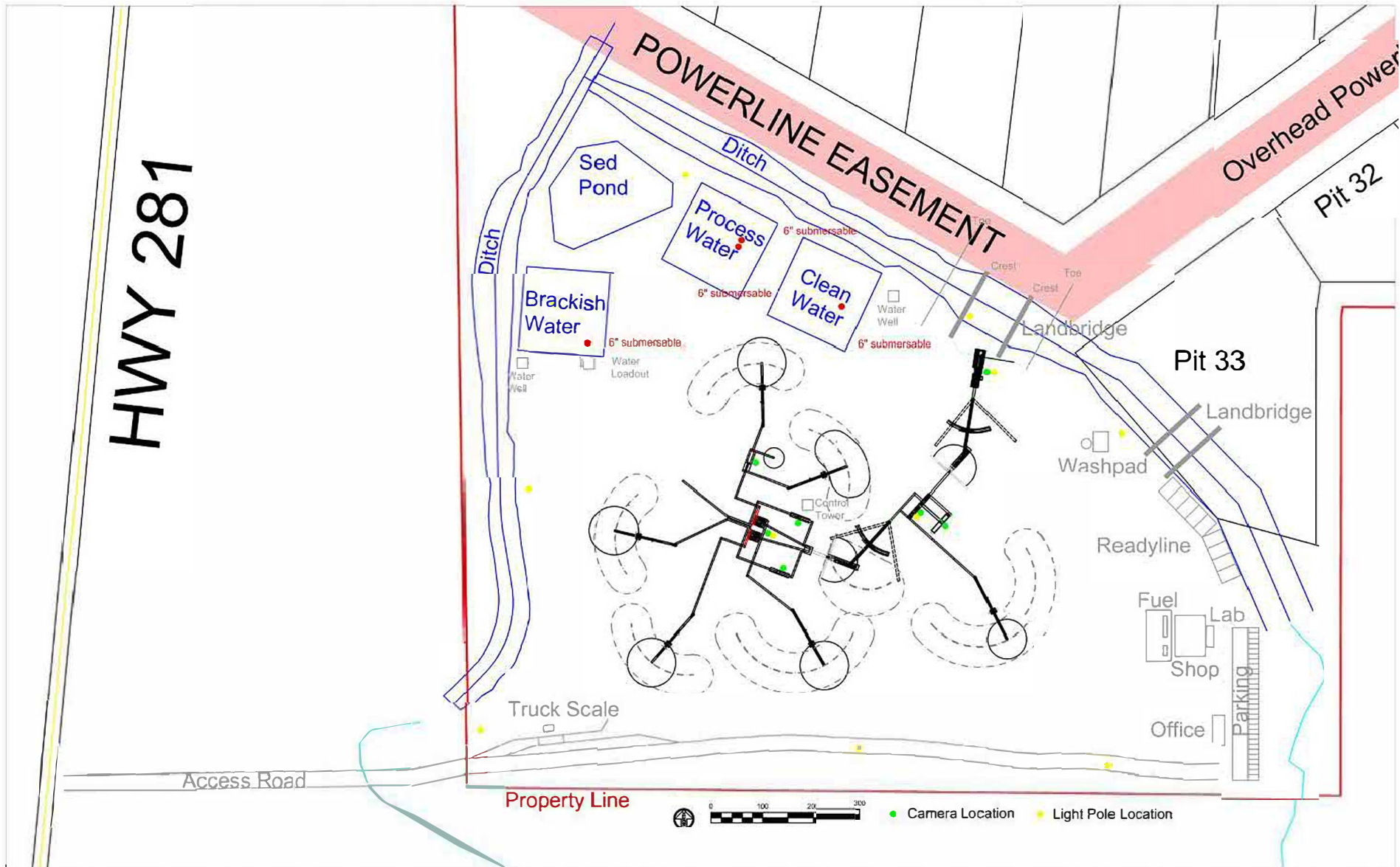
Grindstone Quarry

Life of Mine Cuts

FIGURE
3

DRAWN LS DATE 2/15/2022 APPROVED

SCALE As Shown PROJECT NO.



		Grindstone Quarry			Facilities			FIGURE 1 of 1
		DRAWN	LS	DATE 2/15/2022	APPROVED	SCALE	As Shown	

