MAI-2017-6

UNITED STATES
DEPARTMENT OF LABOR
MINE SAFETY AND HEALTH ADMINISTRATION
Metal and Nonmetal Mine Safety and Health

REPORT OF INVESTIGATION

Surface Facility
Dimensional Granite Mine

Fatal Falling, Rolling or Sliding Rock Material Accident
July 20, 2017

Blue Sky Quarry #2
Blue Sky Quarries
Carlton, Oglethorpe County, Georgia
Mine I.D. No. 09-01147

Accident Investigators

James (Mike) Hollis
Supervisory Mine Safety and Health Inspector

Danny Williams
Mine Safety and Health Inspector

Originating Office

Mine Safety and Health Administration
Southeastern District
1030 London Drive, Suite 400
Birmingham, AL 35211
Samuel K. Pierce, District Manager

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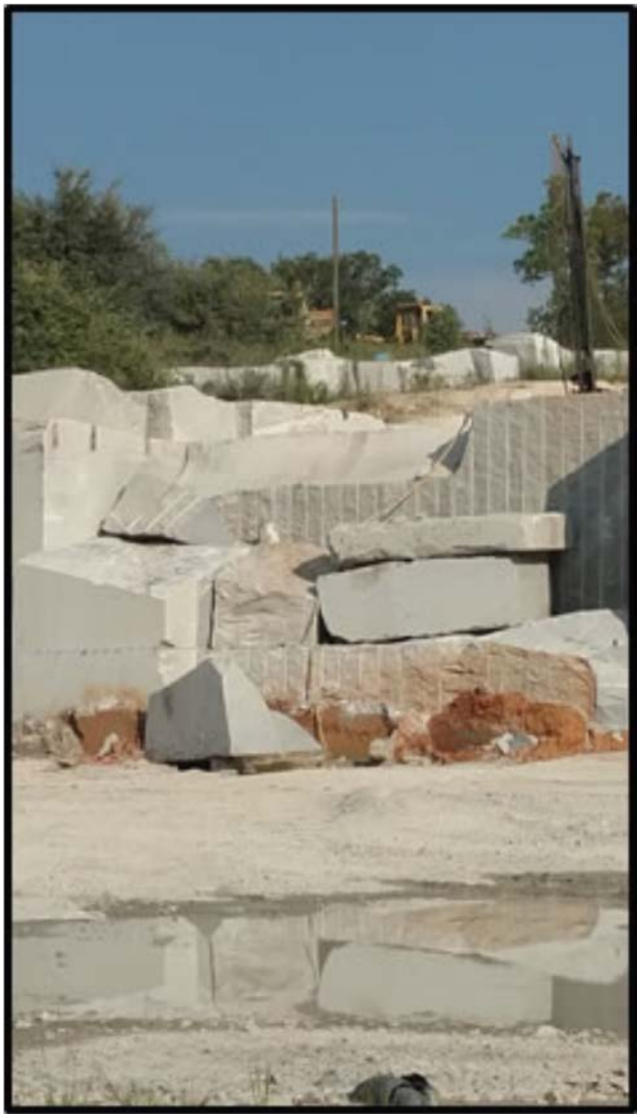

OVERVIEW

Matthew W. Kantala IV, ledge man, age 36, was fatally injured on July 20, 2017, while performing secondary breakage operations on a block of granite. A large piece of granite broke loose and knocked Kantala off a ledge to the mine floor approximately 10 feet below. The large piece of granite hit the ledge and broke into three pieces. One of the pieces, weighing an estimated six tons, fell on Kantala.

The accident occurred because the mine operator: (1) did not block material during secondary breakage operations to prevent movement; (2) did not make sure miners were using fall protection; and (3) did not conduct an adequate workplace examination – by not identifying a prominent geological anomaly in the granite and not promptly initiating appropriate action to correct such condition.

GENERAL INFORMATION

The Blue Sky Quarry #2 is a surface granite mining operation located in Carlton, Oglethorpe County, Georgia. The mine operation's manager is Randy Rice. The mine operates five days per week with one eight-hour shift per day, and employs nine people.

The granite is drilled and diamond sawed into large blocks and then sized using a drill/wedge procedure. This procedure consists of drilling 3/4-inch holes approximately 12-16 inches apart in the rock face with a small jackhammer drill (plug drill), then driving 3/4-inch wedges that are 5 inches long into the holes. A hammer is used to drive the wedges in until the rock fractures. This creates a block about 5 feet tall by 5 feet deep and approximately 5-8 feet long. The block of rock is then transported to an on-site saw shop and further sized for shipping, primarily to the northeastern part of the United States, for use as curbing material.

The Mine Safety and Health Administration (MSHA) completed the last regular inspection at this operation on May 2, 2017.

DESCRIPTION OF THE ACCIDENT

Matthew W. Kantala IV, a ledge man at Blue Sky Quarry #2, reported to work on July 20, 2017, at his normal starting time of 6:00 a.m. At approximately 6:15 a.m., Arturo Metorio, operator/foreman, instructed Kantala on which ledge to work. Metorio proceeded with operating a front-end loader in another area of the mine while Kantala proceeded to the working area where the accident occurred.

Approximately 20 minutes later, Metorio saw Kantala going to the office area. Kantala told Metorio he was going to retrieve the small plug drill. Approximately 20 minutes after speaking with the victim, Metorio observed Kantala walking to another area of the mine and returning with a larger jackhammer. Metorio did not speak with Kantala at that point. The larger jackhammer is primarily used to break the shale cap rock overlying the granite and is not typically used in the secondary breakage process.

Approximately 20 minutes later, Metorio observed another miner, Gumercindo Hernandez, running toward him. Hernandez told Metorio he heard a loud crack and a slide in the area Kantala was working and went to see what had happened. Hernandez told Metorio that he saw Kantala lying on the mine floor with a large rock on top of him.

Metorio went to the area at the northeast corner of the pit and saw Kantala lying on the mine floor under a large granite rock. Metorio got the attention of Tracy Harris, drill operator, who is trained in first-aid, to come to the site. Harris checked for a pulse and did not find one. Harris stayed with Kantala until emergency medical services (EMS) arrived. An employee called EMS at approximately 10:15 a.m., and emergency services arrived on site at approximately 10:28 a.m. Workers recovered the victim's body at approximately 1:35 p.m. The cause of death was attributed to crushing injuries.

INVESTIGATION OF THE ACCIDENT

Randy Rice, Manager, called the Department of Labor's National Contact Center (DOLNCC) at 10:53 a.m. on July 20, 2017. The DOLNCC contacted Mike Evans, Safety Specialist, Southeastern District. Upon arrival at the mine site, an investigator issued an order pursuant to Section 103(k) of the Federal Mine Safety & Health Act of 1977, as amended.

MSHA's accident investigation team conducted a physical inspection of the accident scene, interviewed employees, reviewed training documentation, and examined work procedures relevant to the accident. Mine management assisted in the investigation.

DISCUSSION

Weather

Weather was not a factor. The skies were clear with no rain, and there was a high temperature of approximately 95 degrees Fahrenheit on the day of the accident.

Training and Work Experience

The victim was an experienced miner (ledge man) who performed this work at this mine for 1 year, 35 weeks. He previously worked at other mining operations performing similar duties. A representative of MSHA's Educational Field and Small Mine Services conducted an in-depth review of the victim's training records. MSHA determined that training records were in compliance with training requirements.

Elberton Granite

This intrusion of granite is referred to as Elberton Granite in this geographical area. The Elberton Granite has an approximate size of 35 miles long and 6 miles wide. The entire area is not solid granite, but there are individual deposits, or "bodies" of granite, within the area. Granite is plentiful on the surface in the area around Blue Sky Quarry #2.

Work Procedures

Investigators determined that Kantala was on a ledge in front of the large piece of granite breaking it into smaller blocks. He drilled a 1-1/4-inch diameter hole and used an 8-inch wedge to perform the secondary breakage instead of using the normal method for secondary breakage described above.

Anomaly

A prominent anomaly is present in the rock formation. This anomaly is an interface between two bands of granite that likely formed at different times and/or cooled at different rates, and creates a plane of weakness within the granite. The anomaly typically allows for breakage in the horizontal plane. Mine management was aware of this anomaly, but did not identify it during workplace examinations so that corrective actions could be taken.

A large section of granite sloughed off at the anomaly because it was not blocked to prevent movement which would endanger persons in the work area. This section of granite was approximately 18-20 feet long and 5 feet thick. While standing on some stacked rock that had been placed on the work bench, the victim was driving wedges into a block of granite in an attempt to break it loose. A piece of granite weighing six tons fell and pushed the victim from the work bench onto the mine floor, approximately 10 feet below. The victim was wearing a fall protection harness, but it was not secured to an anchor and therefore was not protective.

ROOT CAUSE ANALYSIS

Investigators conducted a root cause analysis and identified the following root causes:

- *Root Cause:* The mine operator did not block material to prevent movement during secondary breakage operations.

  Corrective Action: The mine operator purchased new equipment and trained miners in a newly developed plan with procedures for different methods of secondary breakage. This plan addresses and requires the prevention of movement of material.

- *Root Cause:* The mine operator did not assure that miners used fall protection where there was a danger of falling.

  Corrective Action: The mine operator purchased new equipment and trained miners in a newly developed plan with procedures for different methods of secondary breakage. This plan addresses and requires the use of fall protection.

- *Root Cause:* The mine operator did not conduct adequate workplace examinations.

  Corrective Action: The mine operator trained miners in a newly developed plan with procedures for different methods of secondary breakage. This plan addresses workplace examinations and actions to be taken to address any hazardous conditions found.

CONCLUSION

Matthew W. Kantala IV was fatally injured while performing secondary breakage operations when a large section of granite rock fell, knocked him to the mine floor, and a portion of the granite fell on top of him. The accident occurred because the mine operator did not: (1) block material during secondary breakage operations to prevent movement; (2) make sure miners were using fall protection; and (3) conduct adequate workplace examinations –the operator failed to identify a prominent geological anomaly in the granite and failed to take prompt, appropriate action to correct such condition.

ENFORCEMENT ACTIONS

Issued to Blue Sky Quarries Inc. (Mine Operator)

Order No. 8905136 -- issued July 20, 2017, pursuant to Section 103(k) of the Federal Mine Safety & Health Act of 1977:

A fatal accident occurred at this mining operation on July 20, 2017, when a miner was working on the SE corner of the East Quarry. A large block of dimensional stone [granite] came loose, slid toward the miner, forcing him off the ledge and fell on top of the miner at the bottom of the quarry. This order is issued to assure the safety of all persons at this operation. It prohibits all activity at the SE corner of the East Pit area until MSHA has determined that it is safe to resume normal operations in the area. The mine operator shall obtain prior approval from an authorized representative for all actions to recover and /or restore operations to the affected area.

Citation No. 8910427 -- issued pursuant to Section 104(d)(1) of the Federal Mine Safety & Health Act of 1977 for a violation of 30 CFR § 56.3400:

Did not block material to be broken, from movement, during the secondary breakage operation of mining, at this operation contributed to a fatal accident at this mine on July 20, 2017, at approximately 11:20 a.m., when a miner (ledge man) was crushed beneath a large section of a rock face after it had fallen. While standing on some stacked rock that had been placed on the work bench, a miner was driving wedges into a block of granite in an attempt to break it loose. A piece of granite weighing 6 tons fell and pushed the miner from the work bench onto the mine floor, approximately 10 feet below him. This piece of granite then fell on the miner and crushed him, which resulted in fatal injuries. Management engaged in aggravated conduct constituting more than ordinary negligence by failing to block material or insure that persons performing this type of task would not be exposed to danger, before performing secondary breakage operations taking place. This violation is an unwarrantable failure to comply with a mandatory standard.

Citation No. 8910428 -- issued pursuant to Section 104(a) of the Federal Mine Safety & Health Act of 1977 for a violation of 30 CFR § 56.15005:

A miner who was fatally injured at this mine on July 20, 2017, at approximately 11:20 a.m., was not using fall protection. The miner was wearing a safety harness, however, the harness was not attached to an anchor. The provided safety line that is used to attach the safety harness was lying rolled up, next to the tool box on the upper bench.

Order No. 8910429 -- issued pursuant to Section 104(a) of the Federal Mine Safety & Health Act of 1977 for a violation of 30 CFR § 56.18002(a):

Did not conduct an adequate work-place examination of the work area (south-east corner of the pit), at this operation which contributed to a fatal accident on July 20, 2017 at approximately 11:20 a.m. The fatally injured miner was working in an area of the mine that had hazardous anomalies (cracks) running through-out the granite. A work-

place examination did not identify the hazardous condition, the unusual anomalies/cracks, before miners began work in the place and did not promptly initiate appropriate action to correct such condition.

Approved: _____ Date:_____
Samuel K. Pierce
Southeastern District Manager

Appendix A – Persons Participating in the Investigation

Blue Sky Quarry #2

Randy Rice	Manager

Mine Safety and Health Administration

James (Mike) Hollis	Supervisory Mine Safety and Health Inspector
Danny Williams	Mine Safety and Health Inspector

Persons Interviewed

Randy Rice	Manager
Arturo Metorio	Equipment Operator/Foreman
Tracy Harris	Driller
Gumercindo Hernandez	Ledge Man
Edgar Martinez	Ledge Man

Appendix B – Victim Information

Accident Investigation Data - Victim Information
Event Number: 6 7 9 3 2 1 0

U.S. Department of Labor
Mine Safety and Health Administration

Victim Information: 1

1. Name of Injured/Ill Employee:	2. Sex	3. Victim's Age	4. Degree of Injury:
Matthew W. Kantala IV	*M*	*36*	*01 Fatal*

5. Date(MM/DD/YY) and Time(24 Hr.) Of Death:	6. Date and Time Started:
a. Date: 07/20/2017 b.Time: 11:20	*a. Date: 07/20/2017 b.Time: 6:00*

7. Regular Job Title:	8. Work Activity when Injured:	9. Was this work activity part of regular job?
163 Ledge Man	*030 Installing wedge to break granite*	Yes X No

10. Experience	Years	Weeks	Days		Years	Weeks	Days		Years	Weeks	Days		Years	Weeks	Days
a. This Work Activity:	*1*	*35*	*1*	b. Regular Job Title:	*1*	*35*	*1*	c: This Mine:	*1*	*35*	*1*	d. Total Mining:	*1*	*35*	*1*

11. What Directly Inflicted Injury or Illness?	12. Nature of Injury or Illness:
089 Block of granite fell on victim	*170 Crushed by block of granite*

13. Training Deficiencies:
Hazard: | New/Newly-Employed Experienced Miner: | Annual: | Task:

14. Company of Employment: (If different from production operator)
Operator
Independent Contractor ID: (if applicable)

15. On-site Emergency Medical Treatment:
Not Applicable: | First-Aid: | CPR: | EMT: | Medical Professional: | None: X