FAI-6872878-1

UNITED STATES
DEPARTMENT OF LABOR
MINE SAFETY AND HEALTH ADMINISTRATION

REPORT OF INVESTIGATION

Surface
(Construction Sand and Gravel)

Fatal Engulfment Accident
September 28, 2022

Spanish Springs
Pyramid Materials, Inc
Sparks, Washoe County, Nevada
ID No. 26-00803

Accident Investigator

Benjamin Burns
Mine Safety and Health Inspector

Originating Office
Mine Safety and Health Administration
Vacaville District
991 Nut Tree Road
Vacaville, CA 95687
Gary Hebel, District Manager

TABLE OF CONTENTS

OVERVIEW

On September 28, 2022, at approximately 10:40 a.m., Daniel Duarte, a 35 year-old front-end loader operator with nearly four years of mining experience, died while trying to remove a blockage in the FF2 feed chute. Duarte was standing above the feed chute, close to the toe of a stockpile, when the stockpile slid, burying Duarte beneath several feet of aggregate.

The accident occurred because the mine operator did not: 1) provide task training for clearing blockages from the feeder, 2) perform a workplace examination before beginning work in the secondary plant stockpile feed area, and 3) trim the stockpile to prevent hazards.

GENERAL INFORMATION

Pyramid Materials, Inc owns and operates the Spanish Springs mine. The mine is a surface construction sand and gravel mine located in Sparks, Washoe County, Nevada. The mine employs 37 miners and operates three overlapping ten-hour shifts, five to six days per week. The mine excavates aggregate in the pit area using an excavator and front-end loader to load aggregate into haul trucks. The haul trucks then transport the material to the primary plant. From the primary plant, a belt conveyor stacks the material on the secondary plant stockpile. Underground feeders draw the material from the stockpile onto a belt conveyor to the secondary plant. After the material travels through the secondary plant, belt conveyors either stockpile or transport material to the tertiary plant. The mine operator sells the aggregate to customers in the construction industry.

The principal management official at the Spanish Springs mine at the time of the accident was:

Thomas Herschbach	Regional Operations Manager

The Mine Safety and Health Administration (MSHA) completed the last regular safety and health inspection at this mine on August 9, 2022. The 2021 non-fatal days lost incident rate for Spanish Springs was zero, compared to the national average of 0.91 for mines of this type.

DESCRIPTION OF THE ACCIDENT

On September 28, 2022, at 5:30 a.m., Duarte started his shift. Jacob Dills, Lead Plant Operator, held a meeting on what the crew would be doing for the day. After the meeting, Duarte performed a pre-operational inspection on his front-end loader and drove it to the plant area where he loaded haul trucks until approximately 8:30 a.m. The secondary plant was receiving material from stockpiles through underground feeders, and an equipment operator monitored the secondary plant feed to ensure material was flowing to the secondary plant.

At approximately 8:40 a.m., Duarte drove his front-end loader to the secondary plant stockpile feed area to monitor the secondary plant feed as part of his regular duties. Both Milton Castillo, Plant Operator, who was in the plant's control tower, and Duarte noticed that the aggregate fines stockpile (stockpile) was not feeding normally. Duarte used his front-end loader to excavate the stockpile above the FF2 feed chute and expose the feeder. According to interviews, the investigator determined that at approximately 10:30 a.m., Duarte entered the area on foot with a metal bar, intending to clear the feeder, when a section of the stockpile slid down and engulfed him.

Before the accident, Gaylan Dunn, Plant Operator, and Duarte walked to the stockpile area where Dunn told Duarte the stockpile did not look good. He told Duarte they needed to leave and then turned around and began walking away. Duarte lagged behind and when Dunn, who was within about 50 feet of the stockpile, turned back to look, he saw the stockpile engulf Duarte. Dunn radioed for help while trying to uncover Duarte by hand. Several minutes passed until Dills; Castillo; Scott Meyers, Superintendent; and Edwin Baca, Plant Operator, arrived to help uncover Duarte. Baca used the front-end loader Duarte had been operating to dig some material to recover Duarte. At 10:46 a.m., Dills called 911. The miners uncovered Duarte and began cardiopulmonary resuscitation. At 10:58 a.m., the Truckee Meadows Fire and Rescue arrived at the accident scene. Shortly after, the Sparks Fire Department arrived on scene to assist in the recovery. Due to the loose material on the sides of the stockpile, the fire and rescue personnel installed wood panels as shoring to provide safe access to recover Duarte. At 11:07 a.m., Duarte was recovered and transported to the Renown Medical Center, where Mary Ferguson, M.D., pronounced Duarte dead.

INVESTIGATION OF THE ACCIDENT

On September 28, 2022, at 1:04 p.m., Aaron Autsen, Corporate Safety Manager, called the Department of Labor National Contact Center (DOLNCC) to report the accident. The DOLNCC contacted James Fitch, Supervisory Safety Specialist, who contacted Gary Hebel, District

Manager. Hebel contacted William Whitby and Mathew Johnson, Supervisory Mine Safety and Health Inspectors. Whitby contacted Herschbach and issued an order under the provisions of Section 103(j) of the Mine Act to assure the safety of the miners and preservation of evidence, and sent Amber Gonzalez, Mine Safety and Health Inspector, to the mine. At 3:00 p.m., Gonzalez arrived at the mine and secured the scene. Johnson sent Benjamin Burns, Mine Safety and Health Inspector, to the mine and assigned him as the accident investigator.

On September 29, 2022, at 7:35 a.m., Burns arrived at the mine and modified the 103(j) order to a 103(k) order. Burns and Rickie Stevens, Mine Inspector for the State of Nevada Division of Industrial Relations Mine Safety & Training Section, conducted an examination of the accident scene, interviewed miners and management, and reviewed conditions and work procedures relevant to the accident. See Appendix A for a list of persons who participated in the investigation.

DISCUSSION

Location of the Accident

The accident occurred at the secondary plant stockpile feed area, at the aggregate fines stockpile above the FF2 feed chute (see Appendix B).

Weather

The weather at the time of the accident was 83 degrees Fahrenheit with clear skies and winds at 22 miles per hour. The investigator determined that weather did not contribute to the accident.

Work Practices for Clearing Blockages

According to interviews, the clay and moisture content of the material increased blockages above the feeders from once per week to several times per day. Dills and Duarte had previously cleared blockages with a metal bar while standing above the FF2 feed chute after removing material from the stockpile with a front-end loader to expose the feeder. Miners also stated that this was a common practice. The mine operator did not have an established procedure for safely clearing blockages from the feeder.

Training and Experience

Duarte had nearly four years of mining experience, all at the Spanish Springs mine as a front-end loader operator. Michael Tromble, Supervisory Mine Safety and Health Training Specialist, reviewed training records and determined that Duarte received annual refresher training and task training on the front-end loader in accordance with MSHA Part 46 training regulations. The mine operator did not provide task training to Duarte for clearing blockages from the feeder, which was part of Duarte's regular duties. The investigator determined that the lack of task training contributed to the accident.

Examinations

The aggregate fines stockpile had become larger than normal due to an increase of fine material from the pit and primary plant. Although the primary plant was not operating on the day of the accident, there was sufficient material in the stockpile from the primary plant to operate the secondary plant. The investigator measured the stockpile at 21 feet high on the east side and 28

feet high on the west side (see Appendix C). The slopes of the stockpile were nearly vertical. Based on interviews and a review of examination records, the investigator determined that the mine operator did not conduct a workplace examination of the secondary plant stockpile feed area before work began in that area. Miners stated that they regularly did not conduct workplace examinations and Scott Meyers, Superintendent, stated that management was not reviewing the workplace examination records. An adequate workplace examination would have identified the large, over-steepened stockpile. The investigator determined that not performing a workplace examination contributed to the accident. The investigator also determined that not trimming the stockpile to prevent hazards contributed to the accident.

ROOT CAUSE ANALYSIS

The accident investigator conducted an analysis to identify the underlying causes of the accident. The investigator identified the following root causes, and the mine operator implemented the corresponding corrective actions to prevent a recurrence.

1. Root Cause: The mine operator did not provide task training for clearing blockages from the feeder.

   Corrective Action: The mine operator developed and implemented a new written Code of Safe Practice (COSP) that includes a procedure for safely clearing blockages from the feeder. The mine operator trained miners who will perform this task on the new COSP.

2. Root Cause: The mine operator did not perform a workplace examination before beginning work in the secondary plant stockpile feed area.

   Corrective Action: The mine operator developed and implemented a new written procedure for conducting workplace examinations, including new forms to document the examinations. The mine operator trained miners who will conduct workplace examinations on the new procedure.

3. Root Cause: The mine operator did not trim the stockpile to prevent hazards.

   Corrective Action: The mine operator developed and implemented a new written COSP that includes working around feeders, identifying engulfment hazards, and trimming stockpiles. The mine operator trained miners who will work around the feeders and stockpiles on the new COSP.

CONCLUSION

On September 28, 2022, at approximately 10:40 a.m., Daniel Duarte, a 35 year-old front-end loader operator with nearly four years of mining experience, died while trying to remove a blockage in the FF2 feed chute. Duarte was standing above the feed chute, close to the toe of a stockpile, when the stockpile slid, burying Duarte beneath several feet of aggregate.

The accident occurred because the mine operator did not: 1) provide task training for clearing blockages from the feeder, 2) perform a workplace examination before beginning work in the secondary plant stockpile feed area, and 3) trim the stockpile to prevent hazards.

Approved By:

_____ _____

Gary Hebel Date
District Manager

ENFORCEMENT ACTIONS

1. A 103(k) order was issued to Pyramid Materials, Inc.

   A fatal accident occurred on September 28, 2022, at approximately 10:40 a.m. This order is being issued under the authority of the Federal Mine Safety and Health Act of 1977, under Section 103(k) to insure the safety of all persons at the mine, and requires the operator to obtain the approval of an authorized representative of MSHA of any plan to recover any person in the mine or to recover the mine or affected area. This order prohibits any activity in the affected area. The operator is reminded of the obligation to preserve all evidence that would aid in investigating the cause or causes of the accident in accordance with 30 CFR 50.12.

2. A 104(d)(1) citation was issued to Pyramid Materials, Inc. for a violation of 30 CFR 46.7(a).

   On September 28, 2022, a fatal accident occurred when material from a stockpile engulfed a front-end loader operator. The front-end loader operator was trying to remove a blockage in the FF2 feed chute with a metal bar while standing above the feed chute, close to the toe of the aggregate fines stockpile. The clay and moisture content of the material created blockages above the feeders from once per week to several times per day. A foreman stated that he had previously cleared blockages with a metal bar while standing above the feed chute. Miners also stated that this was a common practice. The mine operator did not have an established procedure for safely clearing blockages from the feeder. The mine operator did not provide task training for clearing blockages from the feeder. The mine operator engaged in aggravated conduct constituting more than ordinary negligence by not providing task training to the front-end loader operator in the task that was part of his regular duties. This violation is an unwarrantable failure to comply with a mandatory standard.

3. A 104(d)(1) order was issued to Pyramid Materials, Inc. for a violation of 30 CFR 56.18002(a).

   On September 28, 2022, a fatal accident occurred when material from a stockpile engulfed a front-end loader operator. The front-end loader operator was trying to remove a blockage in the FF2 feed chute with a metal bar while standing above the feed chute, close to the toe of the aggregate fines stockpile. The aggregate fines stockpile had become larger than normal due to an increase of fine material from the pit and primary plant. The investigator measured the stockpile at 21 feet high on the east side and 28 feet high on the west side. The slopes of the stockpile were nearly vertical. The mine operator did not conduct a workplace examination of the secondary plant stockpile feed area before work began in that area. Miners stated that they regularly did not conduct workplace examinations and the superintendent stated that management was not checking the workplace examinations. The mine operator engaged in aggravated conduct constituting more than ordinary negligence by not conducting a workplace examination to identify the engulfment hazard presented by the large, over-steepened stockpile. This violation is an unwarrantable failure to comply with a mandatory standard.

4. A 104(d)(1) order was issued to Pyramid Materials, Inc. for a violation of 30 CFR 56.9314.

   On September 28, 2022, a fatal accident occurred when material from a stockpile engulfed a front-end loader operator. The front-end loader operator was trying to remove a blockage in the FF2 surge tunnel pan feeder-feed chute with a metal bar while standing above the feed chute, close to the toe of the aggregate fines stockpile. The aggregate fines stockpile had become larger than normal due to an increase of fine material from the pit and primary plant. The investigator measured the stockpile at 21 feet high on the east side and 28 feet high on the west side. The slopes of the stockpile were nearly vertical. The mine operator did not trim the stockpile to prevent hazards. The mine operator engaged in aggravated conduct constituting more than ordinary negligence by exposing the front-end loader operator to an engulfment hazard presented by the large, over-steepened stockpile. This violation is an unwarrantable failure to comply with a mandatory standard.

APPENDIX A – Persons Participating in the Investigation

Pyramid Materials, Inc

Thomas Herschbach	Regional Operations Manager
Paul Mercurio	Director of Operations
David Donnell	External Legal Counsel
Anthony Guerra	Plant Supervisor
Scott Myers	Superintendent
Jacob Dills	Lead Plant Operator
Fernando Benavides	Safety Professional
Michael Ayala	Plant Mechanic
Austin Lancaster	Plant Mechanic
Andrew McBride	Operator/Mechanic
Edwin Baca	Plant Operator
Milton Castillo	Plant Operator
Gaylan Dunn	Plant Operator
Jonathan Lusk	Plant Operator

State of Nevada Division of Industrial Relations Mine Safety & Training Section

Rickie Stevens	Mine Inspector

Mine Safety and Health Administration

Benjamin Burns	Mine Safety and Health Inspector
Michael Tromble	Supervisory Mine Safety and Health Training Specialist

APPENDIX B – Aerial View of Spanish Springs

APPENDIX C – Location of the Accident