

UNITED STATES
DEPARTMENT OF LABOR
MINE SAFETY AND HEALTH ADMINISTRATION

REPORT OF INVESTIGATION

Surface Mine
(Construction Sand and Gravel)

Fatal Machinery Accident
August 26, 2020

Portable 1
Chilton Logging Inc.
Woodland, Cowlitz County, Washington
Mine I.D. No. 45-03806

Accident Investigators

Joel Dozier
Mine Safety and Health Inspector

Jed McGinnis
Mine Safety and Health Inspector

Curtis Roth
Assistant District Manager

Originating Office
Mine Safety and Health Administration
Western Region / Vacaville District
991 Nut Tree Road, Vacaville, California 95687
James M. Peck, District Manager

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OVERVIEW

On August 26, 2020, at 12:30 p.m., Bobbie D. Skillett died when the right side hopper extension of the jaw crusher fell on him. He was a 52-year-old Crusher Foreman with more than 23 years of mining experience, including approximately four weeks of experience with Chilton Logging Inc. Skillett was preparing the jaw crusher for transport by removing both wedges that held the right side hopper extension in a raised position.

The accident occurred because the mine operator did not: 1) have a training plan; 2) provide newly hired experienced miner training; 3) establish and follow safe procedures to lower the hopper extension of the jaw crusher; and 4) ensure that a competent person performed a workplace examination before work began.

GENERAL INFORMATION

Weyerhaeuser Company owns the property where this mine is located. The mine is a source of stone used for building roads to access timber development and harvesting operations. Weyerhaeuser Company hired McCallum Rock Drilling to drill and blast the stone and they hired Chilton Logging Inc. to crush and screen the stone. Chilton Logging Inc., located in Cowlitz County, Washington, employs two miners and operates one 10-hour shift, five days per week. Chilton Logging Inc. uses a track mounted jaw crusher and a track mounted cone crusher to crush raw stone. Weyerhaeuser hired KRC Construction to haul the crushed stone for use on their logging roads.

The principal officers for Chilton Logging Inc. at the time of the accident were:

Craig Chilton.....Owner
Josh Chilton Vice President
Robin Chilton.....Co-Owner

The mine operator did not notify MSHA when mining activities began in July 2020, as required by MSHA standards. Therefore, no MSHA inspections of this operation had occurred prior to the accident. This mine did not report operating hours in 2019 and therefore did not record a non-fatal days lost (NFDL) incident rate. The national NFDL incident rate for mines of this type in 2019 was 1.47. It is important to note that on May 23, 2020, MSHA had posted on its website a reminder to the metal and nonmetal mining community of the requirement in 30 CFR 56.1000 to notify the Agency of commencement of mining activities. MSHA issued a non-contributory citation for a violation of 30 CFR 56.1000 for failure to notify the nearest MSHA district office before starting operations.

DESCRIPTION OF THE ACCIDENT

On August 26, 2020, Skillett and Craig Buck, Equipment Operator, arrived at the mine site at 5:00 a.m. and began the process of moving the Terex-Finlay jaw crusher and other equipment to another mine site. After some preparation and maintenance work, the miners were ready to lower the left side, right side, and rear hopper extensions on the jaw crusher. The miners removed both rear wedges that held the rear hopper extension in the raised position and used the hydraulic control levers to lower it. Next, the miners intended to lower the right side hopper extension, which was held in the raised position by two side wedges. These wedges were too high for the miners to reach, so Buck moved a Caterpillar hydraulic excavator adjacent to the jaw crusher for use as an access platform. Buck then positioned himself near the hydraulic control levers that raise and lower the right side hopper extension while Skillett positioned himself on top of the engine compartment of the hydraulic excavator. Skillett removed one side wedge from the right side hopper extension and used a 16-pound hammer to remove the second side wedge, when the right side hopper extension suddenly fell onto him (see Appendix A).

John Mayfield, Equipment Operator, heard a scream and looked over to see Buck trying to lift the right side hopper extension off Skillett. Mayfield ran over to help Buck, but they were unable to lift the hopper extension. Mayfield called Lee Cook, Equipment Operator, who trammed a KRC hydraulic excavator to the accident site. They used a chain attached to the bucket of the KRC excavator to lift the hopper extension off Skillett. Mayfield called 911 and drove to the end of the paved road to guide the Cowlitz County Fire District # 5 rescue crew to the accident site. The Fire Chief called for a helicopter to transport Skillet to the hospital. Once the helicopter arrived, the flight crew consulted with Jared Casey, Firefighter/Paramedic, who decided that further life-saving efforts were not feasible. Rebecca Fieken, Cowlitz County Deputy Coroner, pronounced Skillett dead at the accident site at 1:19 p.m.

INVESTIGATION OF THE ACCIDENT

On August 26, 2020, at 2:17 p.m., Steve Biederbeck, Safety Compliance Officer for the Washington State Department of Labor and Industries, contacted Gary Hebel, Assistant District Manager, and informed him that a fatal accident occurred at a crushing operation on

Weyerhaeuser Company property. Hebel contacted Randy Cardwell, Supervisory Mine Safety and Health Inspector, who dispatched Jed McGinnis, Mine Safety and Health Inspector, to the mine site. McGinnis arrived at the mine site at 5:00 p.m. and issued a 103(k) order to ensure the safety of the miners and to preserve the evidence.

On August 27, 2020, Ronald Jacobsen, Supervisory Mine Safety and Health Inspector, dispatched Joel Dozier, Mine Safety and Health Inspector, to the mine site. Dozier arrived at the mine site at 1:30 p.m. Curtis Roth, Assistant District Manager, arrived at the mine on August 28, 2020 at 12:00 p.m. The investigators examined the accident site and conducted interviews to determine the cause of the accident. See Appendix B for a list of persons who participated in the accident investigation.

DISCUSSION

Location of Accident

The mine is 4.5 miles from Kalama, Washington. The staging area where the miners were preparing the jaw crusher for transport is approximately 1 mile off China Garden Road and 0.1 mile from the mine pit.

Weather

On the day of the accident, it was sunny and 75 degrees Fahrenheit, with a nine mile per hour wind. Investigators determined that weather was not a factor in the accident.

Equipment Involved

A Terex-Finlay J-1175 track-mounted jaw crusher and a Caterpillar 330B excavator were involved in the accident.

The Terex-Finlay J-1175 jaw crusher has three hopper extensions (left side, right side, and rear) that miners place in raised positions during normal mining operations to increase the capacity of the hopper that feeds material into the jaw crusher. Miners use hydraulic control levers to activate hydraulic cylinders that raise and lower the hopper extensions into the desired positions.

When setting up the jaw crusher for operation, miners use the hydraulic control levers to raise the hopper extensions into the desired positions and then use hammers to install steel wedges to secure the hopper extensions in place. When dismantling the jaw crusher for transportation, miners first remove the steel wedges. At this point, the hydraulic cylinders are still holding the hopper extensions in the raised positions. Next, miners use the hydraulic control levers to lower the hopper extensions into the desired positions.

On the day of the accident, a hydraulic cylinder was not attached to the right side hopper extension. A metal wrist pin, which normally holds these components together, was missing (see Appendix C). Therefore, when Skillett removed the second of the two side wedges from the right side hopper extension, the hydraulic cylinder did not hold the hopper extension in the raised position. Instead, the right side hopper extension fell onto Skillett, crushing him against the top of the hydraulic excavator.

Manufacturer's Procedure

To reduce the size of the jaw crusher for transportation to different mine sites, miners must lower the three hopper extensions (left side, right side, and rear). According to the Terex-Finlay Operator's Manual, the procedure for lowering the three hopper extensions is as follows:

- 1) remove both side wedges from the left side hopper extension;
- 2) remove both side wedges from the right side hopper extension;
- 3) remove both rear wedges from the rear hopper extension;
- 4) use the hydraulic control levers to lower the rear hopper extension;
- 5) use the hydraulic control levers to lower the left side hopper extension; and
- 6) use the hydraulic control levers to lower the right side hopper extension.

On the day of the accident, the miners did not follow the manufacturer's recommended procedure. Instead, they removed both rear wedges first, and then lowered the rear hopper extension. Then, they proceeded to remove both of the side wedges that held the right side hopper extension in the raised position. If they had followed the procedure properly by removing the side wedges before lowering the rear hopper extension, the right side hopper extension (and left side hopper extension) would have been mechanically blocked against motion by the rear hopper extension while they were removing the side wedges (see Appendix D). Thus, the right side hopper extension could not have fallen on Skillet, even though the hydraulic cylinder was not attached to the right side hopper extension.

Examinations

The mine operator did not examine the working place before miners began work for conditions that may adversely affect safety or health. If an examination of the working place had been performed, a competent person would have identified that a hydraulic cylinder was not attached to the right side hopper extension. A metal wrist pin, which normally holds these components together, was missing. A properly connected hydraulic cylinder would have held the right side hopper extension in the raised position after Skillett removed the side wedges.

Training and Experience

Bobbie Skillett had over 23 years of mining experience, including approximately four weeks of experience with Chilton Logging Inc. MSHA determined that Skillett had not received newly hired experienced miner training before beginning work at the mine site. This training would have included instruction on the health and safety aspects of the tasks to be assigned, including the safe work procedures of such tasks.

ROOT CAUSE ANALYSIS

The accident investigation team conducted a root cause analysis to identify the underlying causes of the accident. The team identified the following root causes, and Chilton Logging Inc. implemented the corresponding corrective actions to prevent a recurrence.

- 1) Root Cause: The mine operator did not have a training plan and did not provide newly hired experienced miner training to Skillett when he began working at the mine. This training, if

provided, would have included instruction on the health and safety aspects and safe work procedures for operating the Terex-Finlay jaw crusher.

Corrective Action: The mine operator developed a training plan and provided training for the miners in the safe operation of the jaw crusher, in accordance with the Terex-Finlay jaw crusher operator's manual.

- 2) Root Cause: The mine operator did not conduct a workplace examination before work began.

Corrective Actions: The mine operator designated competent persons and instructed them in hazard identification and correction, and making and maintaining records of the examinations. The mine operator will provide oversight to ensure the competent persons perform and record the workplace examinations, and maintain the records.

- 3) Root Cause: The mine operator did not have policies or procedures to ensure that raised components of equipment were blocked or otherwise secured to prevent accidental lowering.

Corrective Action: The mine operator developed, implemented, and trained miners on a policy to ensure that raised components of equipment are blocked or secured to prevent accidental lowering of the components.

CONCLUSION

On August 26, 2020, at 12:30 p.m., Bobbie D. Skillett died when the right side hopper extension of the jaw crusher fell on him. He was a 52-year-old Crusher Foreman with more than 23 years of mining experience, including approximately four weeks of experience with Chilton Logging Inc. Skillett was preparing the jaw crusher for transport by removing both wedges that held the right side hopper extension in a raised position.

The accident occurred because the mine operator did not: 1) have a training plan; 2) provide newly hired experienced miner training; 3) establish and follow safe procedures to lower the hopper extension of the jaw crusher; and 4) ensure that a competent person performed a workplace examination before work began.

Approved By:

James M. Peck
District Manager

Date

ENFORCEMENT ACTIONS

- 1) A 103(k) Order, No. 9504762, was issued to Chilton Logging Inc. on August 26, 2020:

The mine has experienced a fatality on the Terex-Finlay J1175 jaw crusher, identification number 1PX1175A0MG62454. This order is issued to ensure the safety of any person in the mine until an examination of investigation is made to determine that the equipment is safe to operate. Only those persons selected from company officials, state officials, the miners representative and other persons who are deemed by MSHA to have information relevant to the investigation may enter or remain in the affected area.

- 2) A 104(d)(1) Citation was issued to Chilton Logging Inc. for a violation of 30 CFR 46.6(a)

The mine operator did not have a training plan and did not provide newly hired experienced miner training to the crusher foreman that included instruction on the health and safety aspects of the tasks to be assigned, including the safe work procedures for preparing the Terex-Finlay J-1175 mobile jaw crusher for transport. The crusher foreman did not follow the procedure established in the Terex-Finlay Operator's Manual. Instead, he lowered the rear hopper extension before removing the side wedges on the right side hopper extension. When the crusher foreman removed the second of two side wedges, the right side crusher extension fell on him causing fatal injuries. Mine management engaged in aggravated conduct constituting more than ordinary negligence in that they did not provide the necessary training. This is an unwarrantable failure to comply with a mandatory standard.

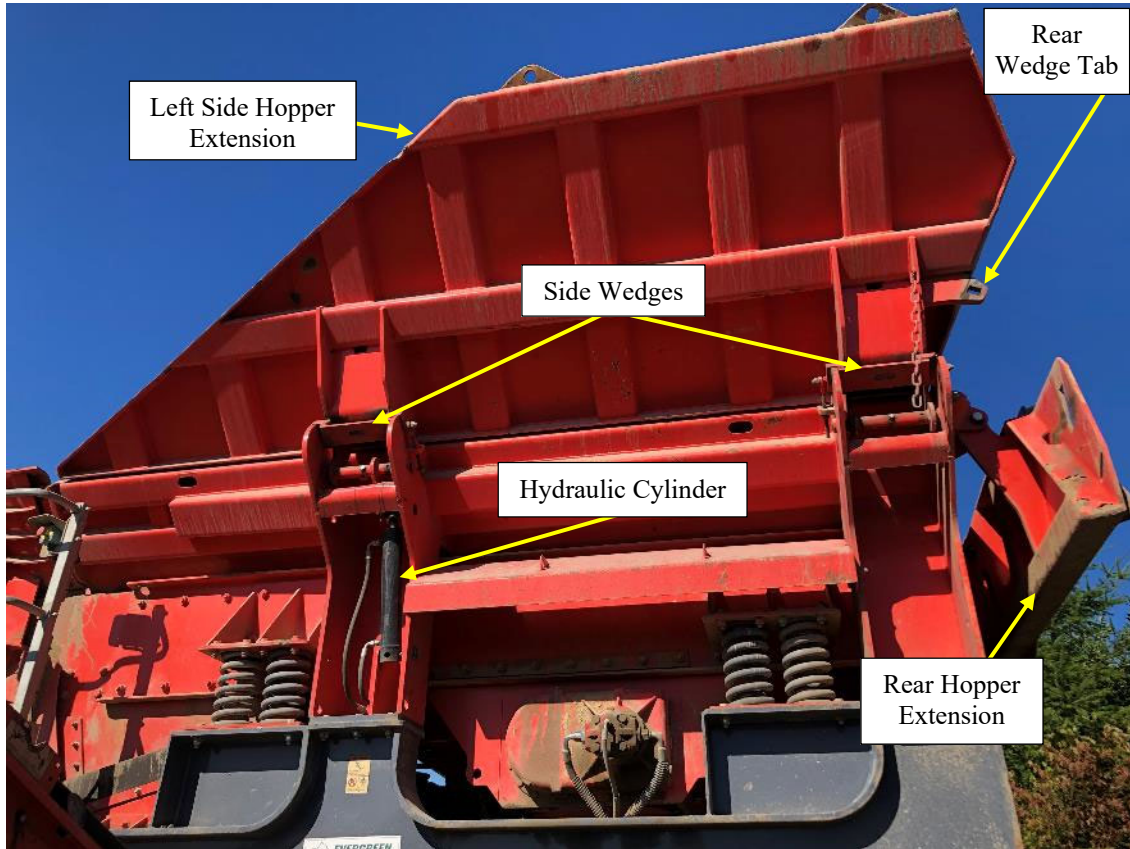
- 3) A 104(d)(1) Order was issued to Chilton Logging Inc. for a violation of 30 CFR 56.14211(b)

On August 26, 2020, a crusher foreman was attempting to lower the right side hopper extension to prepare the Terex-Finlay J-1175 mobile jaw crusher for transport. In part, because the metal wrist pin for the hydraulic cylinder on the right side hopper extension was not in place and because the right side hopper extension was not blocked to prevent accidental lowering, the hopper extension fell on the crusher foreman when he removed the last supporting side wedge, causing a fatal injury. The crusher foreman engaged in aggravated conduct constituting more than ordinary negligence in that he did not follow the operator's manual, which would have provided a means to block or mechanically secure the hopper extension to keep it from falling. This violation is an unwarrantable failure to comply with a mandatory standard.

- 4) A 104(d)(1) Order was issued to Chilton Logging Inc. for a violation of 30 CFR 56.18002(a)

The mine operator did not ensure that a workplace examination was conducted before beginning work on the Terex-Finlay J-1175 jaw crusher. In part, because the metal wrist pin for the hydraulic cylinder on the right side hopper extension was missing, the hopper extension fell on the crusher foreman when he removed the last supporting side wedge, causing a fatal injury. A workplace examination conducted by a competent person would have identified the unsafe condition before the accident occurred. The crusher foreman engaged in aggravated conduct constituting more than ordinary negligence in that he did not conduct a workplace examination before beginning work. This violation is an unwarrantable failure to comply with a mandatory standard.

APPENDIX A
Photograph of Hydraulic Cylinder and Side Wedges



Photograph of the Left Side Hopper Extension in the Raised Position and the rear hopper extension in the lowered position. Note the location of the side wedges and hydraulic cylinder.

APPENDIX B
Persons Participating in the Investigation

Chilton Logging Inc.

Craig Chilton..... Owner
Robin Chilton..... Co-Owner
Marlene Thoeny Human Resources Representative
Rachel Walla Safety Consultant
Craig Buck Equipment Operator
Bill Buck Truck Driver

KRC Construction

Lee Cook..... Equipment Operator
John Mayfield Equipment Operator

Washington State Department of Labor and Industries

Steve Biederbeck Safety Compliance Officer
Lance Grove..... Logging Technical Specialist

Weyerhaeuser Company

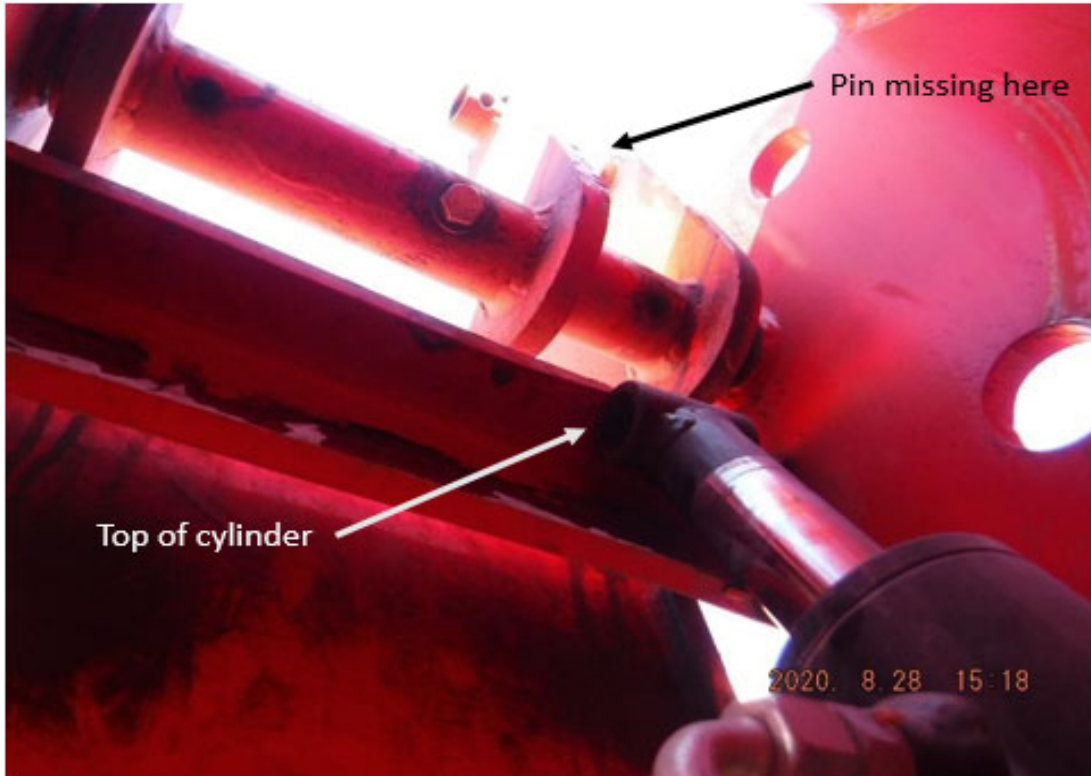
Travis Ridgway..... Region Manager
Erik Lease Region Manager
Luke Durkee..... Area Manager
Justin Thomas Area Manager

Mine Safety and Health Administration

Curtis Roth..... Assistant District Manager
Joel Dozier Mine Safety and Health Inspector
Jed McGinnis Mine Safety and Health Inspector

APPENDIX C

Photograph of Disconnected Hydraulic Cylinder



Photograph of the hydraulic cylinder connection for the right side hopper extension. The metal wrist pin was missing and the top of the hydraulic cylinder was not connected to the right side hopper extension at the location labelled “Pin missing here.”

APPENDIX D
Rear and Side Wedge Locations

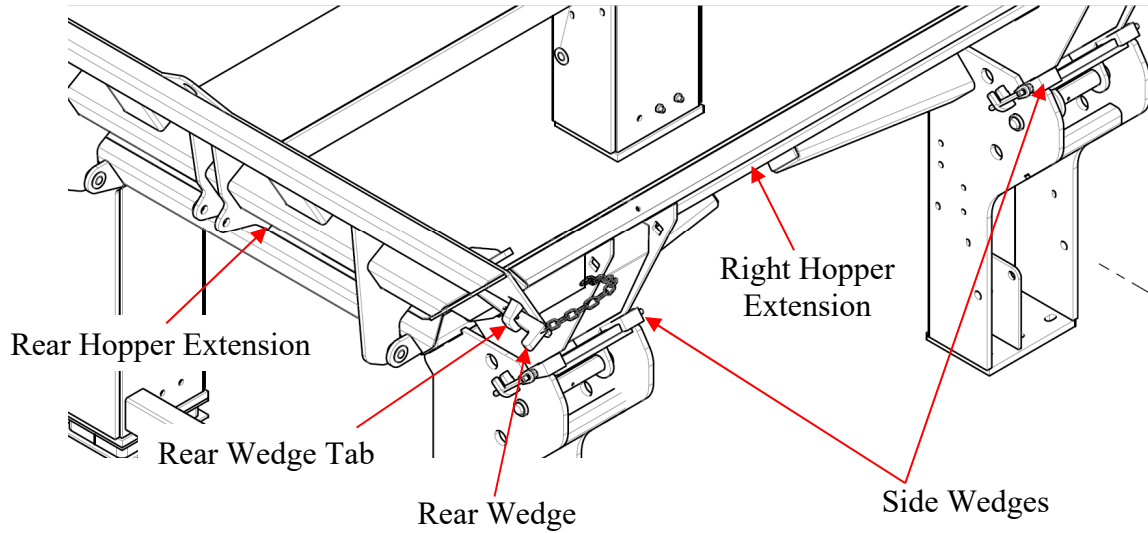


Diagram of the rear and side wedge locations. This view shows the rear and right side of the hopper. The rear wedges hold the rear and side hopper extensions together via the rear wedge tab. The side wedges secure the hopper extensions in the raised position during operation. If the rear wedge tabs are inserted through the openings in the rear hopper extension (right side shown), the left and right hopper extensions are mechanically locked in place and blocked against motion.