

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

REPORT OF INVESTIGATION

**Surface Nonmetal Mine
(Sand & Gravel)**

**Fatal Falling Material Accident
January 6, 2009**

**Matich Corporation
Redlands Rock Plant
Redlands, San Bernardino County, California
Mine I.D. No. 04-05614**

Investigators

**Rickie D. Dance
Mine Safety and Health Inspector**

**Chad D. Hilde
Mine Safety and Health Inspector**

**Isabel R. Williams
Mine Safety and Health Specialist**

**LeeAnn Shinavski, PE
Civil Engineer**

**Originating Office
Mine Safety and Health Administration
Western District
2060 Peabody Road, Suite 610
Vacaville, California 95687
Arthur L. Ellis, District Manager**

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This illustrates the position of the man lift and skid steer loader at the time of the accident.

OVERVIEW

Joseph A. Lerma Jr., journeyman heavy equipment operator, age 41, was injured on January 6, 2009, while operating a skid steer loader underneath a belt conveyor that was being dismantled. Two coworkers were in an elevated man lift cutting braces from the leg supports of the belt conveyor support structure. A 12-foot by 4-inch piece of steel box tubing fell into the cab of the skid steer loader as it approached the work area, striking Lerma. He was hospitalized and died on January 9, 2009.

The accident occurred because management failed to establish procedures to ensure that persons could safely dismantle the belt conveyor support system. A risk assessment to ensure all hazards were identified and controls were used to protect persons was not conducted. Persons were not trained on hazards and safe work procedures before performing the task. Persons were permitted to work underneath the belt conveyor support structure while braces were being cut above them.

GENERAL INFORMATION

Redlands Rock Plant, a surface sand and gravel operation, owned and operated by Matich Corporation, was located in Redlands, San Bernardino County, California. The principal operating official was Oscar Reade, operations superintendent. The mine operated one 8-hour shift per day, five days a week. Total mine employment was four persons.

Sand and gravel was mined from a pit with a front-end loader and loaded into a plant where it was crushed, screened, and stockpiled. Finished products were sold for use as construction aggregate.

The last regular inspection at this operation was completed on November 7, 2008.

DESCRIPTION OF THE ACCIDENT

On the day of the accident, Joseph A. Lerma Jr., reported for work at 7:00 a.m., his normal starting time. Prior to the start of the shift, Oscar Reade met with Marvin Gisler, shift foreman, to discuss the day's work. Gisler then assigned Lerma; Jorge Cervantes, heavy duty repairman; and Robert Shell, loader operator, to prepare the new crusher site.

About 1:30 p.m, Gisler reassigned the crew to continue dismantling the belt conveyor support structure in the pit. He decided to remove the leg braces and clear the dirt from the footings of the structure to facilitate the work.

Gisler operated a man lift from the on-board controls to position Cervantes so he could use a torch to cut the braces. Cervantes cut the west side Y-brace and it fell to the ground. Lerma and Shell arrived about 2:00 p.m. Gisler instructed Lerma to use the skid steer loader to clear material from the footings to expose an I-beam and footer. As Lerma operated the skid steer, Shell used a shovel to locate an I-beam. Gisler then instructed Lerma to remain in the skid steer loader and stay between the legs of the belt conveyor structure.

Gisler repositioned the man lift so Cervantes could cut the short piece of the Y-brace on the east side of the structure. Cervantes cut the bottom of the brace. About 2:30 p.m., Cervantes cut the top of the brace and it fell directly into the cab of the skid steer loader and struck Lerma as his skid steer loader approached the structure.

Shell saw Lerma fall forward in his seat. Shell ran to help Lerma and saw that he was leaning on the hand controls, making the skid steer loader surge. Shell pulled the keys to stop the machine. He initiated first aid to Lerma. Gisler called for emergency

medical services(EMS). EMS arrived at the scene and transported Lerma to a local hospital. Lerma died on January 9, 2009, from injuries sustained in the accident.

INVESTIGATION OF THE ACCIDENT

On the day of the accident, the Mine Safety and Health Administration (MSHA) was notified of the accident at 2:35 p.m., by a telephone call from Michael Potenciano, safety officer, to Kevin Hirsh, supervisory mine safety and health inspector. An investigation was started the same day.

An order was issued under the provisions of Section 103(k) of the Mine Act to ensure the safety of the miners. MSHA's accident investigation team traveled to the mine, made a physical inspection at the accident scene, interviewed employees, and reviewed conditions and work procedures relevant to the accident. MSHA conducted the investigation with the assistance of mine management, employees, and the California Division of Occupational Safety and Health (Cal/OSHA).

DISCUSSION

Location of the Accident

The accident occurred in an area located near the bottom of the North side pit. The ground condition in the immediate area of the accident was level, firm, and dry.

Belt Conveyor System

In 2007, the belt conveyor system was erected to transport crushed rock from the bottom of the pit to the top for additional processing and/or storage. Two weeks prior to the accident, the belt conveyor and crusher were dismantled and relocated to another area of the pit. The belts, rollers, drives, and the steel support structures for several conveyor sections had been removed. The miners were in the process of dismantling the remaining support structure at the time of the accident. The support structure was to be removed last because it required the use of a larger crane, but management decided to use the man lift to keep the project moving. The structural steel was being removed in individual sections for reuse.

Belt Conveyor Support Structure

The belt conveyor support structure supported the elevated conveyor over a distance of 51.5 feet. The structure was 40 feet high, 16 feet wide, and oriented in a north-south direction. It was fabricated of steel beams, structural tubing, and angles. Structural

support was provided by fixed intermediate vertical bents, referred to by management as legs. The legs were reinforced with horizontal and diagonal cross bracing. The structure had three sets of legs. At the top, structural tubing spanned between each set of legs to support the former conveyor deck. At mid-height range of 12 feet to 32 feet, Y-bracing spanned between two of the sets of legs to resist lateral movement. The legs were anchored in the ground with concrete footers.

The support structure appeared to be structurally sound and in stable condition. The steel showed no evidence of significant corrosion on the tubing or weld connections, except for minor surface rust. Several of the legs appeared to be slightly bowed or twisted from previously stockpiled material at a height of approximately 20 feet from the ground level. At the time of the accident, about 2 feet of material remained at the base of the structure. The concrete footers and the ground beneath them appeared to be stable.

The steel tubing that struck the victim was the shorter component of the Y-bracing. This member was oriented perpendicular to the continuous leg. The square tubing was 11 feet 10 inches long and 4-inch x 4-inch x 0.5-inch in cross-section with a computed weight of 256 pounds. It fell from a height of 32 feet above ground level.

Weather

The weather on the day of the accident was reported to be clear, 68 degrees Fahrenheit, with calm winds. Weather was not considered to be a factor in the accident.

Skid Steer Loader

The skid steer loader involved in the accident was manufactured by Case, model 1835C. This was a rubber tired model with a gross weight of 5,040 pounds. The attached bucket had a 10.1 cubic feet capacity. When the hand controls were moved to the neutral position the skid steer loader stopped. The stopping distance was tested and found to be in normal operating range. The machine had a seatbelt and seat bar restraining device. The skid steer appeared to be in good operating condition and had no noticeable new marks or damage. The skid steer loader was inspected and no defects were found.

Man Lift

The man lift involved in the accident was manufactured by Genie, model number S-60. It had a 66-foot maximum working height, a 50-foot 10-inch maximum horizontal reach, and was equipped with over ride sensors in the event of an overreach. When the overreach sensor had been tripped, the onboard controls would disengage and the man lift could only be operated from the off board controls from the ground. The onboard controls consisted of a dead man foot pedal and two joy stick hand controls. The dead man foot pedal had to be depressed to mobilize the equipment. One joystick control

was for hoisting, extending, and articulating the boom. The other joystick control was for steering and tramming.

The manlift was also equipped with a steel 8-foot by 3-foot articulating self-leveling basket. The basket's capacity was rated at 500 pounds maximum. The man lift had solid fill tires that would not deflate for greater stability. The man lift was inspected and no defects were found.

Training and Experience

Joe A. Lerma Jr., heavy equipment operator, had 3 years 8 months of mining experience all at this mine. He had not received task training in accordance with 30 CFR, Part 46.

Marvin R. Gisler, shift foreman, had 4 years 4 months of mining experience all at this mine. He had not received task training in accordance with 30 CFR, Part 46.

Jorge Cervantes, heavy duty repairman, had 4 years 4 months of mining experience all at this mine. He had not received task training in accordance with 30 CFR, Part 46.

Robert Shell, loader operator, had 7 months of mining experience all at this mine. He had not received task training in accordance with 30 CFR, Part 46.

ROOT CAUSE ANALYSIS

A root cause analysis was conducted and the following root cause was identified:

Root Cause: Management failed to establish policies and procedures to ensure that persons could safely dismantle the belt conveyor support system. A risk assessment to determine potential hazards and to establish safe work procedures was not conducted prior to performing the task.

Corrective Action: Management should establish policies and procedures to ensure that persons could safely dismantle the belt conveyor support system. A risk assessment should be conducted to identify and correct hazards associated with the task to be performed. All persons performing the work should be trained regarding the established policies and procedures.

CONCLUSION

The accident occurred because management failed to establish procedures to ensure that persons could safely dismantle the belt conveyor support system. A risk

assessment to ensure all hazards were identified and controls were used to protect persons was not conducted. Persons were not trained on hazards and safe work procedures before performing the task. Persons were permitted to work underneath the belt conveyor support structure while braces were being cut above them.

ENFORCEMENT ACTIONS

Order No. 6440866 was issued on January 9, 2009, under the provisions of Section 103(k) of the Mine Act:

An accident has occurred at this operation on January 6, 2009 that resulted in death on January 9, 2009. The accident occurred during demolition of the old pit belt line. This order is being issued to assure the safety of all persons at this operation. It prohibits all activity at the accident scene including the Case model 1835C skid steer loader, co # 14117, Genie S-60 man lift, co # 10117 and all the old conveyor support structures, until MSHA has determined that it is safe to resume normal mining operations in the area. The mine operator shall obtain prior approval from an authorized representative for all actions to recover and/or restore operations.

This order was terminated on January 20, 2009. Conditions that contributed to the accident no longer exist and normal operations can resume.

Citation No. 6440863 was issued on January 7, 2009, under the provisions of Section 104(d) of the Mine Act for a violation of 30 CFR 56.16010:

An accident occurred at this operation on January 6, 2009, resulting in serious injury to a miner that was operating a skid steer loader underneath an elevated conveyor belt being dismantled. The miner died on January 9, 2009, as a result the injuries sustained in the accident. A coworker and a shift foreman were in an elevated man lift removing a 12-foot piece of 4-inch metal tubing from the leg supports of the conveyor belt frame. When the skid steer loader approached the work area, the tubing fell into the cab of the loader striking the victim. Material should not be dropped from an overhead elevation until the drop area is first cleared of personnel and the area is then either guarded or a suitable warning is given. Management engaged in aggravated conduct constituting more than ordinary negligence in that it was aware the miner was working below and did not take necessary safety precautions to protect persons below. This violation is a unwarrantable failure to comply with a mandatory standard.

This citation was terminated on February 20, 2009. The mine operator established procedures to dismantle the belt conveyor structure. All persons were trained regarding the new procedures.

Order No. 6440864 was issued on January 7, 2009, under provisions of Section 104(g)(1) of the Mine Act for a violation of 30 CFR 46.7(a):

An accident occurred at this operation on January 6, 2009 that resulted in the death of a miner on January 9, 2009. A journeyman operator was operating a skid steer loader underneath an elevated conveyor belt that was being dismantled. A coworker and a shift foreman were in an elevated man lift removing a 12-foot piece of 4-inch metal tubing from the leg supports of the conveyor belt frame. As the skid steer loader approached the work area the tubing fell into the cab of the loader striking the victim. The miners had not been provided task training for the demolition work of this conveyor system.

This order was terminated on February 20, 2009. The mine operator established procedures to dismantle the belt conveyor structure. All persons were trained regarding the new procedures.

Approved by:

Arthur L Ellis, District Manager

Date:

APPENDICES

- A. Persons Participating in the Investigation
- B. Victim Information Sheet

APPENDIX A

Persons Participating in the Investigation

Matich Corporation

Steven M. Kakuska	maintenance supervisor/safety manager
Michael Potenciano	safety officer
Oscar E. Reade	operations superintendent

CAL/OSHA

Lacy M. Pittman	associate safety engineer, mining and tunneling unit
Brian Baudendistel	senior investigator

Mine Safety and Health Administration

Rickie D. Dance	mine safety and health inspector
Chad D. Hilde	mine safety and health inspector
Isabel R. Williams	mine safety and health specialist
LeeAnn Shinavski	civil engineer, P.E.

APPENDIX B

Accident Investigation Data - Victim Information

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



Event Number:

Victim Information: <input type="text" value="1"/>																										
1. Name of Injured/Ill Employee: <i>Josep A. Lerma</i>				2. Sex <i>M</i>		3. Victim's Age <i>41</i>		4. Degree of Injury: <i>01 Fatal</i>																		
5. Date(MM/DD/YY) and Time(24 Hr.) Of Death: <i>a. Date: 01/09/2009 b. Time: 13:38</i>								6. Date and Time Started: <i>a. Date: 01/06/2009 b. Time: 7:00</i>																		
7. Regular Job Title: <i>182 Front end loader operator-surface</i>						8. Work Activity when Injured: <i>053 operating small skid steer loader</i>						9. Was this work activity part of regular job? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>														
10. Experience																										
a. This			b. Regular			c. This			d. Total			Years			Weeks			Days								
Work Activity:			Job Title:			Mine:			Mining:																	
<i>3</i>			<i>32</i>			<i>0</i>			<i>4</i>			<i>0</i>			<i>0</i>			<i>4</i>			<i>0</i>			<i>0</i>		
11. What Directly Inflicted Injury or Illness? <i>084 steel tubing</i>								12. Nature of Injury or Illness: <i>370 blunt force chest and abdominal injuries</i>																		
13. Training Deficiencies																										
Hazard:				New/Newly-Employed				Experienced Miner:				Annual:				Task: <input checked="" type="checkbox"/>										
14. Company of Employment: (if different from production operator) <i>Operator</i>																										
Independent Contractor ID: (if applicable)																										
15. On-site Emergency Medical Treatment																										
Not Applicable: <input type="checkbox"/>				First-Aid: <input type="checkbox"/>				CPR: <input type="checkbox"/>				EMT: <input checked="" type="checkbox"/>				Medical Professional: <input type="checkbox"/>				None: <input type="checkbox"/>						
16. Part 50 Document Control Number: (form 7000-1)																										
17. Union Affiliation of Victim: <i>2501 Int Union Operating Engineers</i>																										