

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

REPORT OF INVESTIGATION

Surface Nonmetal Mine  
(Sand and Gravel)

Fatal Falling Material Accident  
September 21, 2006

Ketchikan Ready Mix Crusher  
Ketchikan Ready Mix & Quarry Inc.  
Ketchikan, Ketchikan Gateway, Alaska  
Mine ID No. 50-00345

Investigators

Donald S. Horn  
Supervisory Mine Safety and Health Inspector

Ronald L. Eastwood  
Mine Safety and Health Inspector

Melvin K. Palmer  
Mine Safety and Health Specialist

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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Victim was under the assembly when it fell

## OVERVIEW

Leonard L. Dick, operator/welder, age 59, was fatally injured on September 21, 2006, when he was pinned under a boom extension and clamshell bucket assembly. Dick was lying under the assembly cutting steel bracing plates. When the final plate was cut free, the boom extension fell on him.

The accident occurred because no procedures were utilized to block the components against hazardous motion.

This death occurred on a mine site that had been closed for six months. The victim worked for the construction company that operated this mine intermittently. An investigation of this accident was conducted, and on June 27, 2007, a legal review of the facts concluded that the Mine Safety and Health Administration had jurisdiction at this accident site.

## GENERAL INFORMATION

Ketchikan Ready Mix Crusher, a portable crushing/screening plant, owned and operated by Ketchikan Ready Mix & Quarry, Inc., was located in Ketchikan, Ketchikan Gateway, Alaska. The principal operating official was Loren E. Enright, vice-president. This portable plant operated on an intermittent basis at various sites, depending on the location of construction projects. One or two persons were normally assigned to operate this portable plant.

Ketchikan Ready Mix Inc., (Ketchikan) primarily conducted general construction work. Their office and repair shop was located on North Tongass Highway. A concrete batch plant was located adjacent to the office/repair shop.

Ketchikan had an agreement with the owner of the adjoining property that permitted them to mine material on an as needed basis. Ketchikan operated a portable crusher and extracted material intermittently from a pit on this property to provide aggregate primarily to their concrete plant. Ketchikan had not mined or processed material from this pit since March 2006.

Leonard L. Dick (victim) had performed duties as a crusher operator when Ketchikan processed mine material on this site. When the crusher was not operated, Dick operated mobile equipment and performed mechanical and maintenance tasks related to the company's construction business.

The last regular inspection of this portable operation was completed on September 22, 2005.

## DESCRIPTION OF ACCIDENT

On the day of the accident, Leonard L. Dick, reported to work at the construction office site at 7:00 a.m., his normal starting time. Michael Lattin, construction shop foreman, assigned Dick to perform repairs to equipment used in the construction business.

In the afternoon, Dick informed a co-worker that he was going to the mine property to work on a clamshell bucket assembly. Loren Enright, vice president, had instructed Dick to remove the bracing plates on the clamshell bucket assembly on the previous day while visiting the mine site.

Dick's task entailed cutting four steel plates, which were welded around the connecting point (one per side) of the bucket and the extension boom. After cutting off three of the plates, he was positioned under the assembly pivot point cutting the final plate. When Dick cut the final plate, the assembly fell on him, resulting in fatal crushing injuries. There were no witnesses to the accident.

Dick was discovered by a co-worker about 4:00 p.m. Emergency medical services arrived at 4:06 p.m. and Dick was pronounced dead at the scene. The cause of death was attributed to multiple blunt force trauma.

## INVESTIGATION OF THE ACCIDENT

MSHA was notified of the accident at 9:20 p.m., on September 22, 2006, by a telephone call from Steve Standley, Alaska Occupational Safety and Health (AKOSH) area supervisor, to D. Scott Horn, supervisory mine safety and health inspector. An investigation was started the same day.

MSHA's accident investigation team traveled to the mine, conducted a physical inspection of the accident site, interviewed employees and reviewed documents and work procedures relevant to the accident. MSHA conducted the investigation with the assistance of mine management and company employees.

## DISCUSSION

### Location of the Accident

The accident occurred on the inactive mine site located adjacent to the company's offices. The ground was level, hard packed, and wet.

### Clamshell Bucket Assembly

Ketchikan purchased the used clamshell bucket assembly about two months prior to the accident and had not used it at any of their work sites. Since the assembly was not a standard manufactured unit, no manufacturer make or model was available. The assembly consisted of an approximately 2-1/2 cubic yard clamshell bucket connected to a 12-inch diameter by 9 feet 2-inch steel boom extension. The assembly had a pivot point where the boom and bucket connected. This pivot point had been welded solid with 15-inch by 13-inch steel plates, one on each side. The victim was using an oxygen/acetylene torch to remove the plates at the time of the accident.

### Weather Conditions

The weather conditions on the day of the accident were overcast and rainy with temperatures of 60 degrees Fahrenheit.

### Experience and Training

Leonard L. Dick had nine years of experience as a welder and miner, all with Ketchikan Ready Mix, Inc. He was trained 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 policies, standards, and controls were inadequate. Procedures failed to ensure that the victim had properly blocked the equipment against motion to prevent it from pivoting and falling.

*Corrective Action:* Management should develop and implement formal procedures to ensure that persons block machinery or equipment before they perform maintenance and repair work.

### CONCLUSION

The accident occurred because the assembly was not adequately blocked against hazardous motion.

### ENFORCEMENT ACTION

Order No. 6384701 was issued on September 22, 2006, under provisions of section 103 (k) of the Mine Act:

A fatal accident occurred at this operation on September 21, 2006, when a welder/operator was cutting off four steel plates used for structural support on a clam shell extension assembly. This order is issued to assure the safety of all persons at this operation. It prohibits all activity in and around the clam shell area until MSHA has determined that it is safe to resume normal mining operations in the area. The mine operator will obtain prior approval from an authorized representative for all actions to recover and/or restore operations to the affected area.

This order was terminated on September 26, 2006. The conditions that contributed to the accident have been corrected and normal mining operations can resume.

Citation No. 6392849 was issued on August 8, 2007, under provisions of section 104 (a) of the Mine Act for a violation of 30 CFR 56.14105:

A fatal accident occurred at this operation on September 21, 2006, when a welder/operator was performing repairs by cutting structural support plates off a clamshell extension assembly. The victim was lying under the pivot point of the assembly. When he cut the final plate free, the boom extension and bucket dropped and pinned him. No effort was made to block or support the assembly against hazardous motion while the repairs were taking place. Blocking materials were available in the immediate area.

Approved by:

  
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Arthur L. Ellis, District Manager

Date: 09/26/07

Appendix A

**Persons Participating in the Investigation**

**Ketchikan Ready Mix & Quarry Inc.**

Loren E. Enright ..... vice president

**Mine Safety and Health Administration**

Donald S. Horn ..... supervisory mine inspector

Ronald L. Eastwood ..... mine safety and health inspector

Melvin K. Palmer ..... mine safety and health specialist

## Appendix B

Victim Information:															
1. Name of Injured/Ill Employee: <i>Leonard L. Dick</i>		2. Sex: <i>M</i>	3. Victim's Age: <i>59</i>	4. Last Four Digits of SSN:	5. Degree of Injury: <i>01 Fatal</i>										
Date(MM/DD/YY) and Time(24 Hr.) Of Death: <i>a. Date: 09/21/2006 b. Time: 16:04</i>				7. Date and Time Started: <i>a. Date: 09/21/2006 b. Time: 15:45</i>											
Regular Job Title: <i>104 Operator/Welder</i>			9. Work Activity when Injured: <i>039 Cutting Plates off Clamshell Assembly</i>			10. Was this work activity part of regular job?									
						Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>									
1. Experience a. This	Years	Weeks	Days	b. Regular	Years	Weeks	Days	c. This	Years	Weeks	Days	d. Total	Years	Weeks	Days
Work Activity:	<i>9</i>	<i>16</i>	<i>4</i>	Job Title:	<i>9</i>	<i>16</i>	<i>4</i>	Mine:	<i>9</i>	<i>16</i>	<i>4</i>	Mining:	<i>9</i>	<i>16</i>	<i>4</i>
2. What Directly Inflicted Injury or Illness? <i>127 Clamshell Bucket Assembly</i>								13. Nature of Injury or Illness: <i>170 Crushing injuries to Chest</i>							
4. Training Deficiencies:															
Hazard:     New/Newly-Employed Experienced Miner:     Annual:     Task:															
5. Company of Employment: (If different from production operator) <i>Operator</i>															
Independent Contractor ID: (if applicable)															
3. On-site Emergency Medical Treatment:															
Not Applicable: <input checked="" type="checkbox"/> First-Aid:     CPR:     EMT:     Medical Professional:     None:															
7. Part 50 Document Control Number: (form 7000-1)										18. Union Affiliation of Victim: <i>9999 None (No Union Affiliation)</i>					

Victim Information: