**DATE:** August 30, 1995

**FROM:** Minnesota Fatality Assessment and Control Evaluation (MN FACE) Program
Minnesota Department of Health

**SUBJECT:** MN FACE Investigation 95MN03101
Farmer Dies After Being Struck By Silo Blower Pipe Discharge Chute

## SUMMARY

A 64-year-old male farm hand (victim) died of injuries sustained when he was struck by a silo blower pipe discharge chute. The incident occurred on the first day that chopped hay was being put into the silo this year. He was unloading chopped hay from a forage wagon into a power-take-off (PTO) driven silo forage blower. A steel silo blower pipe was permanently attached to a 60-foot tall silo. Attached to the top end of the blower pipe was a "goose neck or discharge chute" that deflected the chopped hay into the silo. The victim was standing near the rear wheels of a tractor that operated the forage blower and a second tractor that was hooked to a forage wagon that was being unloaded. The two tractors were several feet apart and parallel to each other facing the same direction. The farm owner drove another tractor down a farm driveway near the incident site. As he drove past, he heard a loud noise. He looked back and noticed chopped hay being blown into the air from the top of the blower pipe. He stopped his tractor and ran to the area where the victim had been standing between the two tractors. He found the victim on the ground with a severe head injury. The discharge chute was lying across the victim's back and shoulders. Emergency medical personnel were immediately called to the scene and arrived shortly after the incident occurred. The victim was air-lifted from the scene and died while enroute via helicopter to a local medical center. MN FACE investigators concluded that to reduce the likelihood of similar occurrences, the following guidelines should be followed:

- all machine components should be inspected and serviced before each use of the machine.

## INTRODUCTION

On June 13, 1995, MN FACE investigators were notified of a farm work-related fatality that occurred on June 12, 1995. The county sheriff's department was contacted and releasable information obtained. Information obtained included a copy of their report and copies of their photos of the incident site. A site investigation was conducted by a MN FACE investigator on July 12, 1995. During the site investigation, information concerning the incident was provided by the owner of the farm where the incident occurred. Additional information was obtained during a telephone interview with a silo repairman who replaced the equipment involved in this incident.

**INVESTIGATION**

The victim was unloading chopped hay from a forage wagon into a silo forage blower. The incident occurred on the first day that chopped hay was being put into the silo this year. The power-take-off (PTO) driven forage blower was positioned below a silo blower pipe and connected, via an extendable pipe, to the silo blower pipe. A discharge chute was attached to the top end of the blower pipe. The blower pipe and discharge chute were approximately 20 years old. The power-take-off of a 125 horsepower tractor was connected to the forage blower.

The owner of the farm where the incident occurred had owned and operated the farm for seven years. The steel, 9-inch diameter silo blower pipe was permanently attached to the 60-foot tall silo when he purchased the farm. Attached to the top end of the blower pipe was a "goose neck or discharge chute" that deflected the chopped hay into the silo (See Figure 1). The discharge chute was basically a half-circle spout that had an "arc or diameter" of approximately 2 feet and weighed 40-50 pounds. The discharge chute was fastened to the blower pipe with four bolts which held flanges on each piece together.

The victim was unloading the third forage wagon load of chopped hay into the forage blower. He was standing near the rear wheels of both: the tractor that operated the blower and a second tractor that was hooked to the forage wagon (See Figure 2). The two tractors were several feet apart and parallel to each other facing the same direction. The farm owner said that he drove another tractor down a farm driveway that was about 75 feet from the incident site. As he drove past, he heard a loud noise, looked back and noticed chopped hay being blown straight into the air from the top of the blower pipe. He immediately stopped his tractor and ran to the area where the victim had been standing between the two tractors. He found the victim on the ground with the discharge chute partially across the victim's back and shoulders.

Emergency medical personnel were immediately called to the scene and arrived shortly after the incident occurred. The victim was air-lifted from the scene approximately one hour after the incident occurred. He died while enroute via helicopter to a local medical center.

A new discharge chute had been installed before the MN FACE site investigation was conducted. The blower pipe flange was not damaged and the four bolts that held the blower pipe and the discharge chute flanges together were still in the blower pipe flange when the new chute was installed. The discharge chute that struck the victim was not available for inspection at the time of the MN FACE site investigation. As a result, it could not be determined which component of the discharge chute had failed.

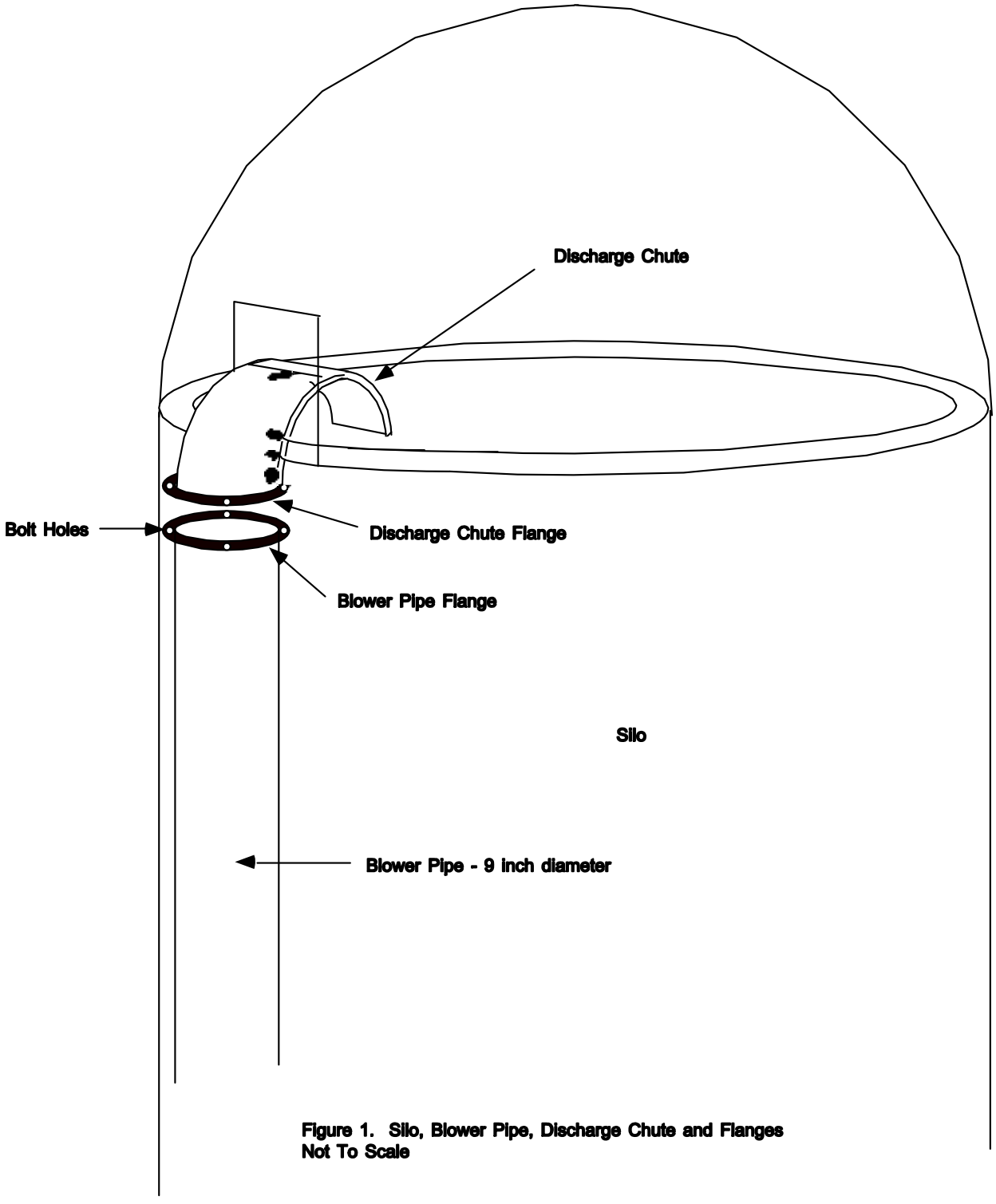


**Figure 1. Silo, Blower Pipe, Discharge Chute and Flanges**
**Not To Scale**

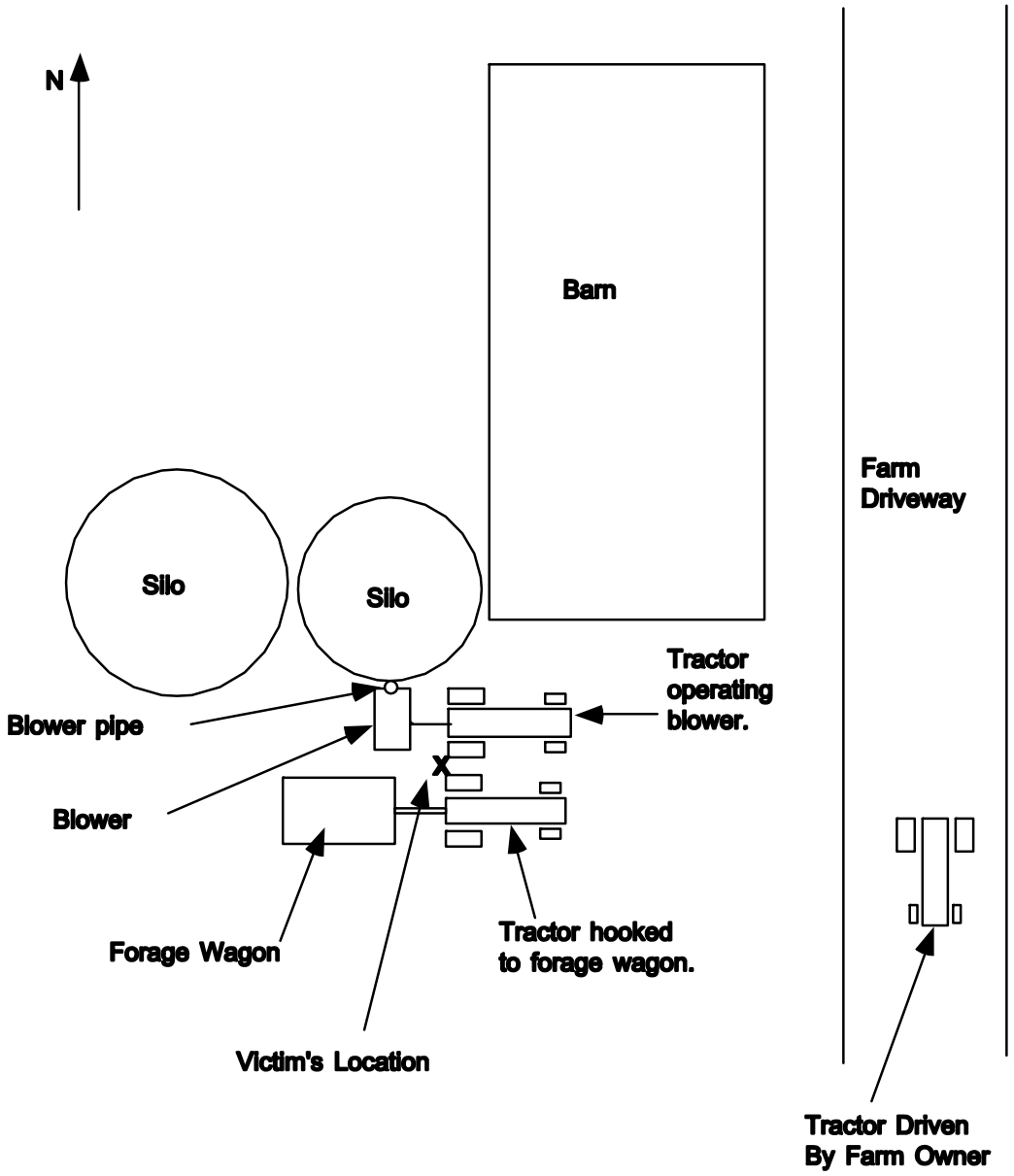


**Figure 2. Farm Building/Silo Site**
**Not To Scale**

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## CAUSE OF DEATH

The cause of death listed on the death certificate was multiple traumatic injuries.

## RECOMMENDATIONS/DISCUSSION

***Recommendation #1:*** All machine components should be inspected and serviced before each use of the machine.

***Discussion:*** Many accidents can be prevented if machines are thoroughly inspected before each use. Each inspection should include an examination of all of the operational components of the machine. In addition, all structural components should be examined for breaks and cracks or other signs of wear. All loose or missing bolts should be tightened and/or replaced to protect the safety of the machine and the operator. When problems are discovered, corrective service, maintenance, adjustments or repairs should be made immediately to keep machines in proper and safe operating condition.

## REFERENCES

1. Agriculture Safety, Fundamentals of Machine Operation, 1987, Deere & Company, Moline, Illinois, Third Edition.

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