

1 Problem

What	Problem(s)	Chemical leak, asphyxiation
When	Date	November 15, 2014
	Time	~ 3:15 a.m.
	Different, unusual, unique	Workers not wearing full safety equipment?; valve failure; persistent maintenance issues
Where	Facility, site	La Porte, Texas
	Unit, area, equipment	Crop pesticide manufacturing unit
	Task being performed	Shut down for 5 days before accident

Impact to the Goals

Safety	Four workers killed
	Potential risk to public
Environmental	23,000 lbs methyl mercaptan released
Customer Service	?
Regulatory	CSB investigation
Production/ Schedule	?
Property/ Equipment	?
Labor/ Time	?

Frequency	Plant has reported 3 previous accidents with major injuries, evacuations & property damage in the last 5 years
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Timeline

Time	Description
~3:00 AM	Leak of methyl mercaptan
~3:15 AM	Victim notifies wife of incident & that workers were trapped Victim attempts rescue
4:13 AM	Shift supervisor calls 911 to report emergency
6:17 AM	Hazardous materials crew air monitoring detects nothing toxic in the air
~7:00 AM	Non-medically trained personnel respond; note employees are likely fatalities
~8:00 AM	Unit barricaded for investigation
8:00 AM	Reverse 911 system used to inform residents of odor
~12:00 PM	Incident scene deemed safe to enter
1:30 PM	Fatalities confirmed by medical examiner

Cause Mapping is a Root Cause Analysis method that captures basic cause-and-effect relationships supported with evidence.

CAUSE MAPPING

Problem Solving • Incident Investigation • Root Cause Analysis

- Step 1 **Problem** What's the Problem?
- Step 2 **Analysis** Why did it happen?
- Step 3 **Solutions** What will be done?

For a free copy of our Root Cause Analysis Template in Microsoft Excel, used to create this page, visit our web site.



Investigate Problems. Prevent Problems.
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WORKERS ASPHYXIATED IN CHEMICAL RELEASE

Cause Map

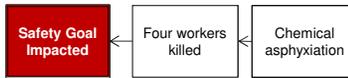
Response Delayed, but May Not Have Been Able to Save Workers

In the early morning hours of November 15, 2014, a release of methyl mercaptan resulted in the deaths of four employees at a plant in Texas that manufactures pesticides. The investigation into the source of the leak is still ongoing, though persistent maintenance problems had been reported in the plant, which was shut down five days prior to the incident.

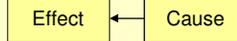
2 Analysis

Cause Map

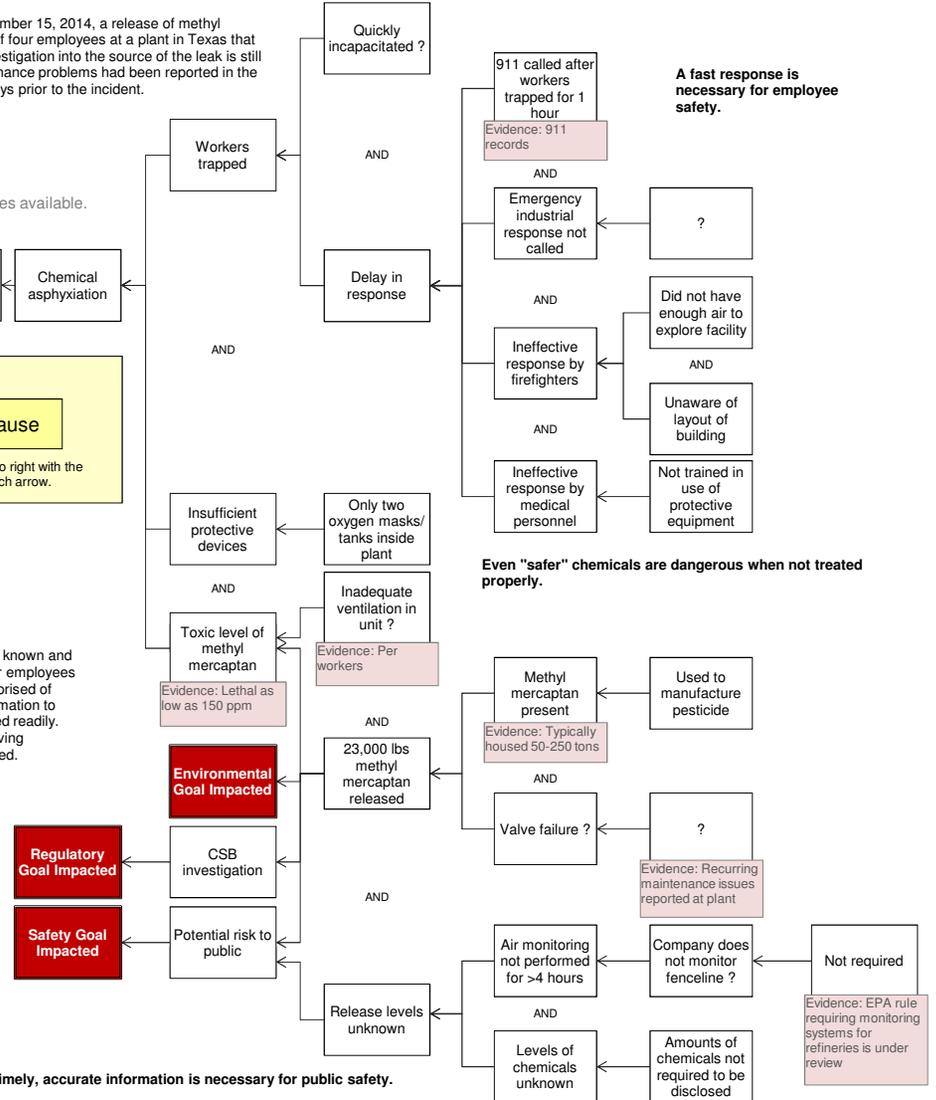
Add detail as information becomes available.



Why?



NOTE: Read the Cause Map from left to right with the phrase "Was Caused By" in place of each arrow.



A fast response is necessary for employee safety.

Even "safer" chemicals are dangerous when not treated properly.

Providing timely, accurate information is necessary for public safety.