Federal Railroad Administration
Office of Safety
Headquarters Assigned
Accident Investigation Report
HQ-2008-43

CSX Transportation (CSX)
New Haven, CT
April 17, 2008

Note that 49 U.S.C. §20903 provides that no part of an accident or incident report made by the Secretary of Transportation/Federal Railroad Administration under 49 U.S.C. §20902 may be used in a civil action for damages resulting from a matter mentioned in the report.

DEPARTMENT OF TRANSPORTATION
FEDERAL RAILROAD ADMINISTRATION

FRA FACTUAL RAILROAD ACCIDENT REPORT

FRA File # HQ-2008-43

1.Name of Railroad Operating Train #1: CSX Transportation [CSX]	1a. Alphabetic Code: CSX	1b. Railroad Accident/Incident No.: 45633
2.Name of Railroad Operating Train #2: N/A	2a. Alphabetic Code: N/A	2b. Railroad Accident/Incident No.: N/A
3.Name of Railroad Operating Train #3: N/A	3a. Alphabetic Code: N/A	3b. Railroad Accident/Incident No.: N/A
4.Name of Railroad Responsible for Track Maintenance: H KREVIT & COMPANY, INC.	4a. Alphabetic Code: HK	4b. Railroad Accident/Incident No.: 45633
5. U.S. DOT_AAR Grade Crossing Identification Number:	6. Date of Accident/Incident: Month 03 | Day 17 | Year 2008	7. Time of Accident/Incident: 09:41:00 ☑ AM ☐ PM

8. Type of Accident/Indicent *(single entry in code box)*: 1. Derailment; 2. Head on collision; 3. Rear end collision; 4. Side collision; 5. Raking collision; 6. Broken Train collision; 7. Hwy-rail crossing; 8. RR grade crossing; 9. Obstruction; 10. Explosion-detonation; 11. Fire/violent rupture; 12. Other impacts; 13. Other *(describe in narrative)* — Code: 13

9. Cars Carrying HAZMAT	10. HAZMAT Cars Damaged/Derailed	11. Cars Releasing HAZMAT	12. People Evacuated	13. Division
8	1	1	0	New England Division

14. Nearest City/Town	15. Milepost *(to nearest tenth)*	16. State Abbr	16. State Code	17. County
New Haven	0	N/A	CT	NEW HAVEN

18. Temperature (F) *(specify if minus)*	19. Visibility *(single entry)* 1. Dawn 2. Day 3.Dusk 4.Dark — Code	20. Weather (single entry) 1. Clear 2. Cloudy 3. Rain 4. Fog 5.Sleet 6.Snow — Code	21. Type of Track 1. Main 2. Yard 3. Siding 4. Industry — Code
50 F	2	1	4

22. Track Name/Number	23. FRA Track Class (1-9, X) — Code	24. Annual Track Density *(gross tons in millions)*	25. Time Table Direction 1. North 2. South 3. East 4. West — Code
Kavitez Track	N/A	N/A	1

OPERATING TRAIN #1

26. Type of Equipment Consist *(single entry)* 1. Freight train 2. Passenger train 3. Commuter train 4. Work train 5. Single car 6. Cut of cars 7. Yard/switching 8. Light loco(s). 9. Maint./inspect.car — A. Spec. MoW Equip. Code	27. Was Equipment Attended? 1. Yes 2. No — Code	28. Train Number/Symbol
1	1	B747

29. Speed *(recorded speed, if available)* R - Recorded E - Estimated: 5 MPH — Code: E

30. Trailing Tons *(gross tonnage, excluding power units)*: N/A

31. Method(s) of Operation *(enter code(s) that apply)*: a. ATCS; b. Auto train control; c. Auto train stop; d. Cab; e. Traffic; f. Interlocking; g. Automatic block; h. Current of traffic; i. Time table/train orders; j.Track warrant control; k. Direct traffic control; l.Yard limits; m.Special instructions; n. Other than main track; o. Positive train control; p. Other *(Specify in narrative)*

Code(s): g | N/A | N/A | N/A | N/A

31a. Remotely Controlled Locomotive? 0 = Not a remotely controlled; 1 = Remote control portable; 2 = Remote control tower; 3 = Remote control transmitter - more than one remote control transmitter: 0

32. Principal Car/Unit	a. Initial and Number	b. Position in Train	c. Loaded *(yes/no)*
(1) First involved *(derailed, struck, etc)*	PROX 82980	9	yes
(2) Causing *(if mechanical cause reported)*	0	0	N/A

33. If railroad employee(s) tested for drug/alcohol use, enter the number that were positive in the appropriate box.

Alcohol	Drugs
0	N/A

34. Was this consist transporting passengers? (Y/N): N

35. Locomotive Units	a. Head End	Mid Train b. Manual	Mid Train c. Remote	Rear End d. Manual	Rear End c. Remote
(1) Total in Train	1	0	0	0	0
(2) Total Derailed	0	0	0	0	0

36. Cars	Loaded a. Freight	Loaded b. Pass.	Empty c. Freight	Empty d. Pass.	e. Caboose
(1) Total in Equipment Consist	4	0	4	0	0
(2) Total Derailed	0	0	0	0	0

37. Equipment Damage — This Consist: $0.00

38. Track, Signal, Way, & Structure Damage: $0.00

39. Primary Cause Code: H304

40. Contributing Cause Code: H999

Number of Crew Members

41. Engineer/ Operators	42. Firemen	43. Conductors	44. Brakemen
1	0	2	0

Length of Time on Duty

45. Engineer/Operator: Hrs 2 Mi 41

46. Conductor: Hrs 2 Mi 41

Casualties to:	47. Railroad Employees	48. Train Passengers	49. Other
Fatal	0	0	0
Nonfatal	2	0	13

50. EOT Device? 1. Yes 2. No — N/A

51. Was EOT Device Properly Armed? 1. Yes 2. No — N/A

52. Caboose Occupied by Crew? 1. Yes 2. No — N/A

OPERATING TRAIN #2

53. Type of Equipment Consist *(single entry)* 1. Freight train 2. Passenger train 3. Commuter train 4. Work train 5. Single car 6. Cut of cars 7. Yard/switching 8. Light loco(s). 9. Maint./inspect.car — A. Spec. MoW Equip. Code	54. Was Equipment Attended? 1. Yes 2. No — Code	55. Train Number/Symbol
N/A	N/A	N/A

56. Speed *(recorded speed, if available)* R - Recorded E - Estimated: 0 MPH — Code: N/A

58. Method(s) of Operation *(enter code(s) that apply)*: a. ATCS; b. Auto train control; g. Automatic block; h. Current of traffic; m.Special instructions; n. Other than main track

58a. Remotely Controlled Locomotive? 0 = Not a remotely controlled; 1 = Remote control portable

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57. Trailing Tons *(gross tonnage, excluding power units)* N/A

c. Auto train stop; d. Cab; e. Traffic; f. Interlocking; i. Time table/train orders; j.Track warrant control; k. Direct traffic control; l.Yard limits; o. Positive train control; p. Other *(Specify in narrative)* Code(s): N/A N/A N/A N/A N/A

2 = Remote control tower
3 = Remote control transmitter - more than one remote control transmitter: N/A

59. Principal Car/Unit	a. Initial and Number	b. Position in Train	c. Loaded *(yes/no)*
(1) First involved *(derailed, struck, etc)*	0	0	N/A
(2) Causing *(if mechanical cause reported)*	0	0	N/A

60. If railroad employee(s) tested for drug/alcohol use, enter the number that were positive in the appropriate box.

Alcohol	Drugs
N/A	N/A

61. Was this consist transporting passengers? (Y/N) N/A

62. Locomotive Units	a. Head End	Mid Train b. Manual	Mid Train c. Remote	Rear End d. Manual	Rear End c. Remote
(1) Total in Train	0	0	0	0	0
(2) Total Derailed	0	0	0	0	0

63. Cars	Loaded a. Freight	Loaded b. Pass.	Empty c. Freight	Empty d. Pass.	e. Caboose
(1) Total in Equipment Consist	0	0	0	0	0
(2) Total Derailed	0	0	0	0	0

64. Equipment Damage This Consist: $0.00

65. Track, Signal, Way, & Structure Damage: $0.00

66. Primary Cause Code: N/A

67. Contributing Cause Code: N/A

Number of Crew Members

68. Engineer/ Operators	69. Firemen	70. Conductors	71. Brakemen
0	0	0	0

Length of Time on Duty

72. Engineer/Operator: Hrs 0 Mi 0

73. Conductor: Hrs 0 Mi 0

Casualties to:	74. Railroad Employees	75. Train Passengers	76. Other
Fatal	0	0	0
Nonfatal	0	0	0

77. EOT Device? 1. Yes 2. No N/A

78. Was EOT Device Properly Armed? 1. Yes 2. No N/A

79. Caboose Occupied by Crew? 1. Yes 2. No N/A

OPERATING TRAIN #3

80. Type of Equipment Consist *(single entry)*: 1. Freight train; 2. Passenger train; 3. Commuter train; 4. Work train; 5. Single car; 6. Cut of cars; 7. Yard/switching; 8. Light loco(s); 9. Maint./inspect.car; A. Spec. MoW Equip. Code: N/A

81. Was Equipment Attended? 1. Yes 2. No Code: N/A

82. Train Number/Symbol: N/A

83. Speed *(recorded speed, if available)* Code: R - Recorded; E - Estimated N/A MPH 0

84. Trailing Tons *(gross tonnage, excluding power units)* N/A

85. Method(s) of Operation *(enter code(s) that apply)*: a. ATCS; b. Auto train control; c. Auto train stop; d. Cab; e. Traffic; f. Interlocking; g. Automatic block; h. Current of traffic; i. Time table/train orders; j.Track warrant control; k. Direct traffic control; l.Yard limits; m.Special instructions; n. Other than main track; o. Positive train control; p. Other *(Specify in narrative)* Code(s): N/A N/A N/A N/A N/A

85a. Remotely Controlled Locomotive?
0 = Not a remotely controlled
1 = Remote control portable
2 = Remote control tower
3 = Remote control transmitter - more than one remote control transmitter: N/A

86. Principal Car/Unit	a. Initial and Number	b. Position in Train	c. Loaded *(yes/no)*
(1) First involved *(derailed, struck, etc)*	0	0	N/A
(2) Causing *(if mechanical cause reported)*	0	0	N/A

87. If railroad employee(s) tested for drug/alcohol use, enter the number that were positive in the appropriate box.

Alcohol	Drugs
N/A	N/A

88. Was this consist transporting passengers? (Y/N) N/A

89. Locomotive Units	a. Head End	Mid Train b. Manual	Mid Train c. Remote	Rear End d. Manual	Rear End c. Remote
(1) Total in Train	0	0	0	0	0
(2) Total Derailed	0	0	0	0	0

90. Cars	Loaded a. Freight	Loaded b. Pass.	Empty c. Freight	Empty d. Pass.	e. Caboose
(1) Total in Equipment Consist	0	0	0	0	0
(2) Total Derailed	0	0	0	0	0

91. Equipment Damage This Consist: $0.00

92. Track, Signal, Way, & Structure Damage: $0.00

93. Primary Cause Code: N/A

94. Contributing Cause Code: N/A

Number of Crew Members

95. Engineer/ Operators	96. Firemen	97. Conductors	98. Brakemen
0	0	0	0

Length of Time on Duty

99. Engineer/Operator: Hrs 0 Mi 0

100. Conductor: Hrs 0 Mi 0

Casualties to:	101. Railroad Employees	102. Train	103. Other
Fatal	0	0	0
Nonfatal	0	0	0

104. EOT 1. Yes 2. No N/A

105. Was EOT Device Properly 1. Yes 2. No N/A

106. Caboose Occupied by Crew? 1. Yes 2. No N/A

Highway User Involved

107. A. Auto; B. Truck; C. Truck-Trailer.; D. Pick-Up Truck; E. Van; F. Bus; G. School Bus; H. Motorcycle; J. Other Motor Vehicle; K. Pedestrian; M. Other *(spec. in narrative)* Code: N/A

108. Vehicle Speed *(est. MPH at impact)* N/A

109. *geographical)* 1.North 2.South 3.East 4.West Code: N/A

Rail Equipment Involved

111. Equipment 1.Train *(units pulling)*; 2.Train *(units pushing)*; 3.Train *(standing)*; 4.Car(s) *(moving)*; 5.Car(s) *(standing)*; 6.Light Loco(s) *(moving)*; 7.Light(s) *(standing)*; 8.Other *(specify in narrative)* Code: N/A

112. Position of Car Unit in 0

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110. Position 1.Stalled on Crossing 2.Stopped on Crossing 3.Moving Over Crossing 4. Trapped	Code N/A	113. Circumstance 1. Rail Equipment Struck Highway User 2. Rail Equipment Struck by Highway User	Code N/A
114a. Was the highway user and/or rail equipment involved in the impact transporting hazardous materials? 1. Highway User 2. Rail Equipment 3. Both 4. Neither	Code N/A	114b. Was there a hazardous materials release 1. Highway User 2. Rail Equipment 3. Both 4. Neither	Code N/A
114c. State here the name and quantity of the hazardous materials released, if any. N/A			

115. Type Crossing Warning 1.Gates 2.Cantilever FLS 3.Standard FLS 4.Wig Wags 5.Hwy. traffic signals 6.Audible 7.Crossbucks 8.Stop signs 9.Watchman 10.Flagged by crew 11.Other *(spec. in narr.)* 12.None	116. Signaled Crossing *(See instructions for codes)*	Code	117. Whistle Ban 1. Yes 2. No 3. Unknown	Code
Code(s) N/A N/A N/A N/A N/A N/A N/A		N/A		N/A

118. Location of Warning 1. Both Sides 2. Side of Vehicle Approach 3. Opposite Side of Vehicle Approach	Code N/A	119. Crossing Warning with Highway Signals 1. Yes 2. No 3. Unknown	Code N/A	120. Crossing Illuminated by Street Lights or Special Lights 1. Yes 2. No 3. Unknown	Code N/A

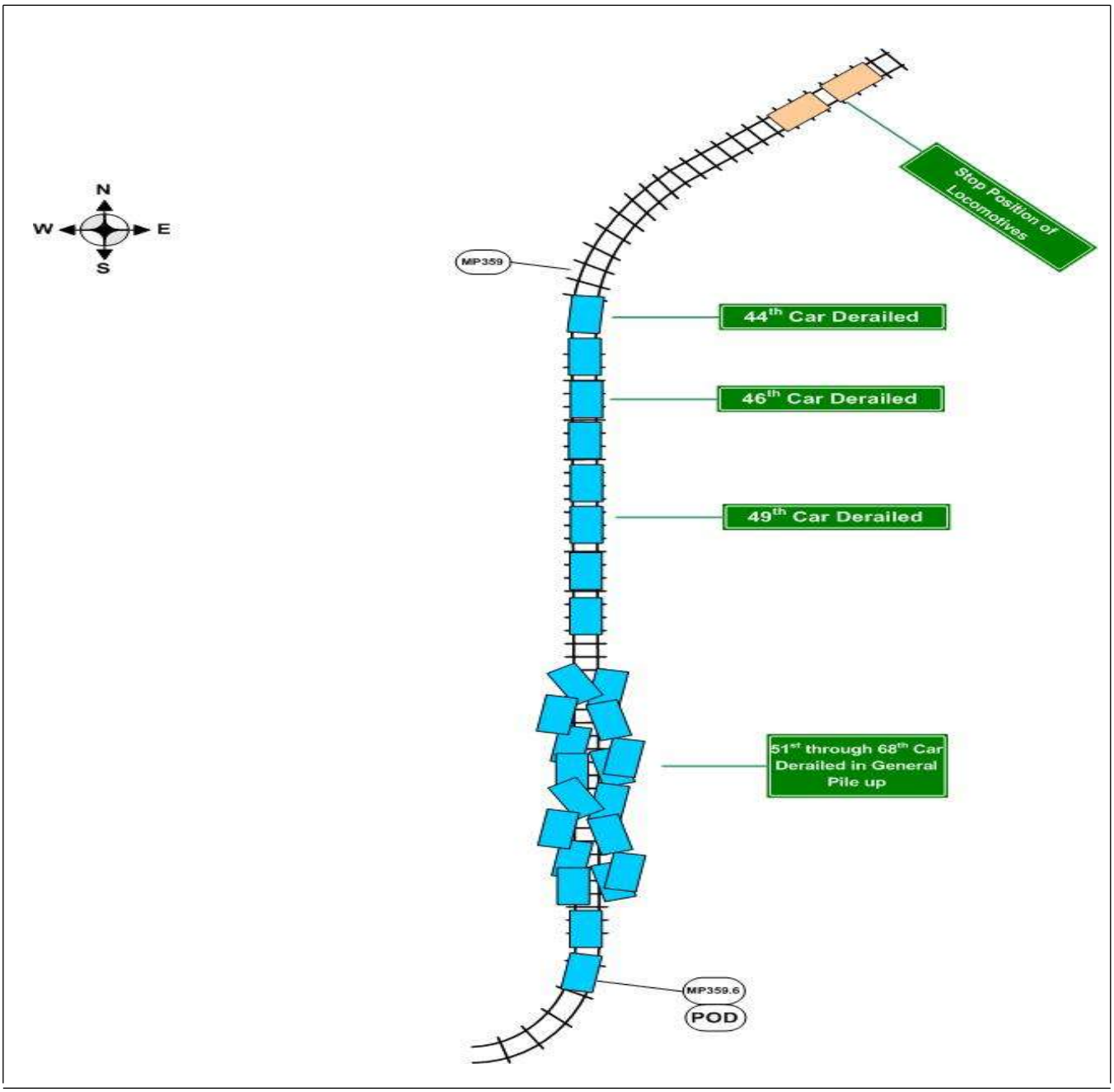
121. Age 0	122. Driver's Gender 1. Male 2. Female	Code N/A	123. Driver Drove Behind or in Front of and Struck or was Struck by Second Train 1. Yes 2. No 3. Unknown	Code N/A	124. Driver 1. Drove around or thru the Gate 2. Stopped and then Proceeded 3. Did not Stop 4. Stopped on Crossing 5. Other *(specify in narrative)*	Code N/A

125. Driver Passed Highway Vehicle 1. Yes 2. No 3. Unknown	Code N/A	126. View of Track Obscured by *(primary obstruction)* 1. Permanent Structure 2. Standing Railroad Equipment 3. Passing Train 4. Topography 5. Vegetation 6. Highway Vehicle 7. Other *(specify in narrative)* 8. Not obstructed	Code N/A

Casualties to:	Killed	Injured	127. Driver 1. Killed 2.Injured 3. Uninjured	Code N/A	128. Was Driver in the Vehicle? 1. Yes 2. No	Code N/A
129. Highway-Rail Crossing Users	0	0	130. Highway Vehicle Property Damage *(est. dollar damage)*	0	131. Total Number of Highway-Rail Crossing Users *(include driver)*	0

132. Locomotive Auxiliary Lights? 1. Yes 2. No	Code N/A	133. Locomotive Auxiliary Lights Operational? 1. Yes 2. No	Code N/A
134. Locomotive Headlight Illuminated? 1. Yes 2. No	Code N/A	135. Locomotive Audible Warning Sounded? 1. Yes 2. No	Code N/A

136. DRAW A SKETCH OF ACCIDENT AREA INCLUDING ALL TRACKS, SIGNALS, SWITCHES, STRUCTURES, OBJECTS, ETC., INVOLVED.



137. SYNOPSIS OF THE ACCIDENT

SYNOPSIS OF THE INCIDENT:

On April 17, 2008, at 9:41 a.m. Eastern Daylight Time (EDT), a CSX Transportation (CSX) train crew attempted to remove a rail tank car containing Chlorine, a poison gas, that was still connected to unloading devices, from the H. Krevit & Company, Inc. facility in New Haven, Connecticut.

At the time of the incident, the train consisted of one locomotive and nine cars.
The Krevit facility has five unloading stations (spots), numbered one through five starting from the mainline switch. Tank cars were positioned at spots 1, 2, 4 and 5. No cars were positioned at spot 3.

The conductor coupled the air hoses between cars 4 and 5, opened the train line (cut in the air), and released the hand brake from car 5.

The tank car in position 5; PROX 082980, contained Chlorine, a poison gas classed 2.3 and identified as UN 1017, was still connected to unloading devices and was being actively unloaded at this time.

At the time of the incident, it was daylight, clear and approximately 50 degrees Fahrenheit.

The cause of the incident was a failure of the two trainmen to adhere to Krevit's work order and also Krevit's noncompliance with the Hazardous Material Regulations by not posting the required caution sign and device to warn and prevent the crew from coupling to the Chlorine tank car.

138. NARRATIVE

CIRCUMSTANCES PRIOR TO THE ACCIDENT

CSX Yard crew B747 originated in CSX's Cedar Hill train yard located at North Haven, Connecticut where a pre-departure car inspection and air brake test were performed. The train departed on April 17, 2008, with two locomotives, six rail cars (five loaded and one empty) for a total of approximately 475 trailing tons and was approximately 250 feet in length. The distance between the Cedar Hill yard and Krevit's siding is less than three miles. No work was performed en route.

The train crew of Train B747 included an engineer, conductor and assistant conductor. They went on duty at 7:00 a.m. on April 17, 2008, at Cedar Hill yard located in North Haven, Connecticut which is their home terminal. All crew members received the required off duty rest period of more than 12 hours prior to reporting for duty. After the initial job briefing, the crew gathered the outbound cars and departed the train yard southward en route to H. Krevit & Company, Inc. in nearby New Haven. The assistant conductor was assigned to the job to learn the physical characteristics of this customer's facility.

THE INCIDENT:

At 9:35 a.m., CSX Train B747 arrived at H. Krevit & Company, Inc. Krevit personnel had removed the caution sign and derail device located between the mainline and the first car in the siding (spot 1) prior to the train crew's arrival. By doing this, the crew was free to enter to begin the switching movements to remove and deliver tank cars.
The train crew entered the Krevit track shoving one box car spacer and the four inbound tank cars. The assistant conductor coupled the train into cars located at spots 1 and 2, and then the conductor, who was positioned at the vacant spot 3, radioed the engineer with instructions to shove these two cars to couple into the car spotted at position 4. The conductor then walked to the area between spot 4 and spot 5 and radioed the engineer to shove approximately ten feet to couple into the car in spot 5.

The conductor coupled the air hoses between cars 4 and 5, opened the train line (cut in the air), and released

the hand brake from the car.

The tank car in position 5; PROX 082980, containing Chlorine, a poison gas classed 2.3 and identified as UN 1017, was still connected to unloading devices and was being actively unloaded at this time.

The conductor and the assistant conductor then walked to the end of the track located at the far end of tank car PROX 082980, after passing underneath the unloading apparatus attached to the dome area of the tank car, both men mounted the end platform of the car and radioed the engineer to back out of the siding. The movement began and after approximately 15 feet, the unloading connections were subsequently torn away resulting in a Chlorine plume to begin emitting from the tank car dome.

The conductor and assistant conductor were contaminated before escaping the toxic cloud.
Krevit's alarm system was immediately activated and an evacuation of the plant occurred. Krevit personnel, donning emergency responder equipment, were able to mitigate the unintentional release in about six minutes time. The two train crew members and ten Krevit employees required medical attention and were transported to a local hospital.

ANALYSIS:

The train crew of CSX B747 stated that they had received the Krevit work order from the Cedar Hill yardmaster prior to departure from the CSX train yard. Both employees said they were aware that the car in spot 5 was not to be removed. The crew obviously became distracted during the movement and failed to observe the Krevit work order directives and the physical condition of the Chlorine car in spot 5.

CONCLUSION:

The Krevit work order clearly stated which cars were to be removed and that the car in spot 5 was to stay. The incident would have been prevented if the train crew had adhered to those instructions and failing that had followed CSX's own rules that require observations to ensure that no equipment is fouling the car prior to coupling onto it.

PROBABLE CAUSE:

The CSX train crew of B747 was not the only responsible party in causing this incident. H. Krevit & Company, Inc. personnel violated the Hazardous Material Regulations when they removed the caution sign and derail at the entrance of their siding without ensuring that all unloading connections were removed from all cars and that all closures were secured.

The CSX crew of B747 violated the following Title 49 Code of Federal Regulations:
§174.9 Inspection and Acceptance.

1. At each location where a hazardous material is accepted for transportation or placed in a train, the carrier shall inspect each rail car containing the hazardous material, at ground level, for required markings, labels, placards, secured closures and leakage. This inspection may be performed in conjunction with inspections required under parts 215 and 232 of this title

The H. Krevit & Company, Inc. Personnel violated the following Title 49 Code of Federal Regulations:
§173.31 Use of Tank Cars.

(g) Tank car loading and unloading. When placed for loading or unloading and before unsecuring any closure, a tank car must be protected against movement or coupling as follows:

(1) Each hazmat employee who is responsible for loading or unloading a tank car must secure access to the track to prevent entry by other rail equipment, including motorized service vehicles. Derails, lined and locked switches, portable bumper blocks, or other equipment that provides an equivalent level of security may be used to satisfy this requirement.

(2) Caution signs must be displayed on the track or on the tank cars to warn persons approaching the cars from the open end of the track and must be left up until after all closures are secured and the cars are in proper condition for transportation. The caution signs must be of metal or other durable material, rectangular, at 30.48 cm (12 inches) high by 38.10 cm (15 inches) wide, and bear the word “STOP.” The word “STOP” must appear in letters at least 10.16 cm (4 inches) high. The letters must be white on a blue background. Additional words, such as “Tank Car Connected” or “Crew at Work,” may also appear in white letters under the word “STOP.”

The FRA Investigator forwarded a recommendation to FRA Chief Counsel for civil prosecution against both CSX Transportation and H. Krevit & Company, Inc. for the noncompliance listed and described in this documentation. (HAZARDOUS MATERIALS HMII RDM 08-04.)

The cause of the incident was a failure of the two trainmen to adhere to Krevit’s work order and also Krevit’s noncompliance with the Hazardous Material Regulations by not posting the required caution sign and device to warn and prevent the crew from coupling to the Chlorine tank car.