Federal Railroad Administration
Office of Safety
Headquarters Assigned
Accident Investigation Report
HQ-2007-68

CSX Transportation (CSX)
Richmond, Virginia
November 1, 2007

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-2007-68

1.Name of Railroad Operating Train #1: CSX Transportation Intermodal [CSXT]	1a. Alphabetic Code: CSXT	1b. Railroad Accident/Incident No.: 000038695
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: CSX Transportation Intermodal [CSXT]	4a. Alphabetic Code: CSXT	4b. Railroad Accident/Incident No.: 000038695
5. U.S. DOT_AAR Grade Crossing Identification Number:	6. Date of Accident/Incident: Month 11 Day 01 Year 2007	7. Time of Accident/Incident: 06:45:00 ☑ 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: 01

9. Cars Carrying HAZMAT	10. HAZMAT Cars Damaged/Derailed	11. Cars Releasing HAZMAT	12. People Evacuated	13. Division
0	0	0	0	Huntington East

14. Nearest City/Town	15. Milepost (to nearest tenth)	16. State Abbr	16. State Code	17. County
Richmond	CAB-8.6	N/A	VA	HENRICO

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	1	1	1

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
Main Line	3	47.8	3

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	N/A	T71628

29. Speed (recorded speed, if available) R - Recorded E - Estimated	Code	30. Trailing Tons (gross tonnage, excluding power units)
17 MPH	N/A	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)				
e	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)	CSXT 39099	10	yes
(2) Causing (if mechanical cause reported)	CSXT 39099	10	yes

33. 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

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	2	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	100	0	0	0	0
(2) Total Derailed	19	0	0	0	0

37. Equipment Damage This Consist	38. Track, Signal, Way, & Structure Damage	39. Primary Cause Code	40. Contributing Cause Code
$340,888.00	$55,000.00	E51C	N/A

Number of Crew Members

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

Length of Time on Duty

45. Engineer/Operator	46. Conductor
Hrs 9 Mi 57	Hrs 9 Mi 57

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

50. EOT Device? 1. Yes 2. No	51. Was EOT Device Properly Armed? 1. Yes 2. No
1	1

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	Code
N/A MPH	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)	N/A	N/A	N/A
(2) Causing (if mechanical cause reported)	N/A	N/A	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	63. Cars	Loaded a. Freight	Loaded b. Pass.	Empty c. Freight	Empty d. Pass.	e. Caboose
(1) Total in Train	N/A	N/A	N/A	N/A	N/A	(1) Total in Equipment Consist	N/A	N/A	N/A	N/A	N/A
(2) Total Derailed	N/A	N/A	N/A	N/A	N/A	(2) Total Derailed	N/A	N/A	N/A	N/A	N/A

64. Equipment Damage This Consist: N/A

65. Track, Signal, Way, & Structure Damage: N/A

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
N/A	N/A	N/A	N/A

Length of Time on Duty

72. Engineer/Operator: Hrs N/A Mi N/A

73. Conductor: Hrs N/A Mi N/A

Casualties to:	74. Railroad Employees	75. Train Passengers	76. Other
Fatal	N/A	N/A	N/A
Nonfatal	N/A	N/A	N/A

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 N/A

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)	N/A	N/A	N/A
(2) Causing (if mechanical cause reported)	N/A	N/A	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	90. Cars	Loaded a. Freight	Loaded b. Pass.	Empty c. Freight	Empty d. Pass.	e. Caboose
(1) Total in Train	N/A	N/A	N/A	N/A	N/A	(1) Total in Equipment Consist	N/A	N/A	N/A	N/A	N/A
(2) Total Derailed	N/A	N/A	N/A	N/A	N/A	(2) Total Derailed	N/A	N/A	N/A	N/A	N/A

91. Equipment Damage This Consist: N/A

92. Track, Signal, Way, & Structure Damage: N/A

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
N/A	N/A	N/A	N/A

Length of Time on Duty

99. Engineer/Operator: Hrs N/A Mi N/A

100. Conductor: Hrs N/A Mi N/A

Casualties to:	101. Railroad Employees	102. Train	103. Other
Fatal	N/A	N/A	N/A
Nonfatal	N/A	N/A	N/A

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. Code: 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): N/A

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

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

Rail Equipment Involved

111. Equipment Code: 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): N/A

112. Position of Car Unit in: N/A

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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 N/A	117. Whistle 1. Yes 2. No 3. Unknown	Code N/A
Code(s)	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

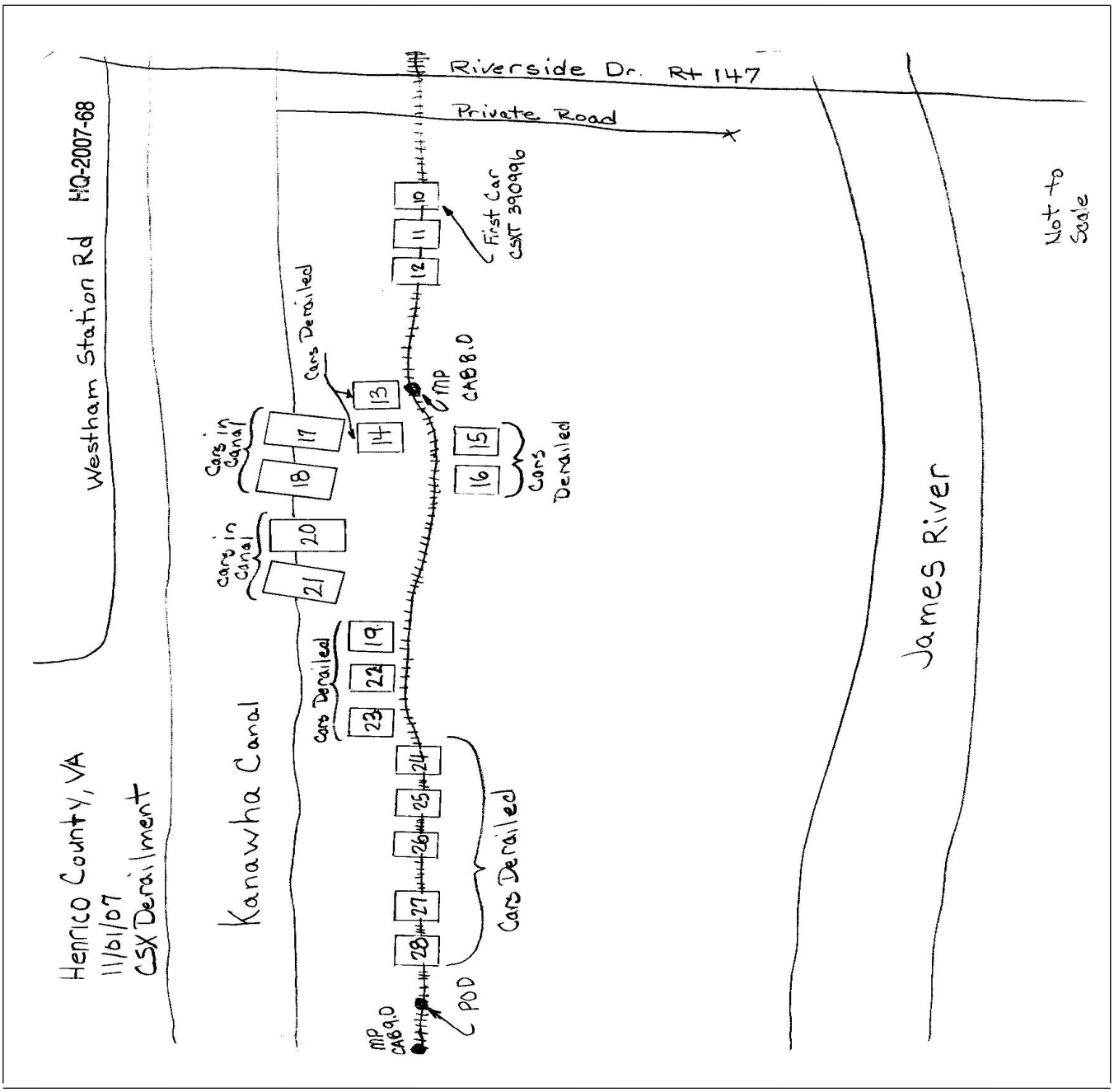
121. Age N/A	122. Driver's Gender 1. Male 2. Female	Code N/A	123. Driver Drove Behind or in Front of and Struck or was Struck by Second Train 1. Yes 2. No 3. Unknown	Code N/A	124. Driver 1. Drove around or thru the Gate 2. Stopped and then Proceeded 3. Did not Stop 4. Stopped on Crossing 5. Other (specify 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	N/A	N/A	130. Highway Vehicle Property Damage (est. dollar damage)	N/A	131. Total Number of Highway-Rail Crossing Users (include driver)	N/A

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

On November 1, 2007 at 6:45 AM in Henrico County, VA, approximately 1/2 mile southwest of the Richmond, VA city line an eastbound CSX freight train (T716-28) had 19 cars, out of a 100 car train, loaded with coal derail account a broken axle. There were no hazardous materials, no fire and no evacuations. The derailment occurred on the Huntington East Division, Rivanna Subdivision at CSX Milepost CAB 7.7 with the train stopping at CSX Milepost CAB 8.79. There were no injuries to the train crew. Total estimated monetary damages: Track: $55,000, Equipment: $340,888.

At the time of the incident it was dawn and clear with no discernible wind. The temperature was 50 degrees.

The probable cause of the accident was a broken axle on hopper car CSXT 390996.

138. NARRATIVE

CIRCUMSTANCES PRIOR TO THE ACCIDENT:

CSX Train T71628 was a unit coal train that originated at Quinnimont, West Virginia on October 28, 2007 and received all required FRA inspections at this location. The CSX train crew performed these test and the train was in full compliance with the FRA regulations. The train traveled eastward to Clifton Forge, VA, where the train remained intact. The train did not require an inspection at this location, and there was no plans to add or remove cars while en-route

The crew of CSX Train T71628 East included a certified locomotive engineer and conductor. They first went on duty at 10:45 p.m. EDT, October 31, 2007, at Clifton Forge, VA. This is an interdivisional crew point and both crew members had received the required statutory off duty period prior to reporting for duty.

The assigned coal train consisted of two locomotives(CSX 126 and CSX 326) and 100 hopper cars loaded with coal. The train was 5061 ft long and with 11,500 trailing tons and was equipped with an end-of train (EOTD) device. The train was scheduled to travel to Richmond, VA, a distance of 204 miles. The train received the required Federal freight car safety standard, safety appliance and initial terminal air brake inspection and Class 1 brake test by the CSX train crew at Quinnimont, West Virginia on 10/28/2007. The train then proceed to Clifton Forge, VA , where it was re-crewed. The train and new crew departed Clifton Forge, VA at 11:45 p.m. on October 31, 2007.

As the eastbound train approached the accident area, the locomotive engineer was seated at the controls on the south side of the leading locomotive. The locomotive was traveling east with short hood facing forward. The conductor was seated on the north side of the cab in the leading locomotive.

In this area of the railroad (Ref: CSX Huntington Division, Richmond, VA, Locomotive Engineer Track Charts) from CSX Milepost CAB 9 to CSX Milepost CAB 8, there is a 0.00–0.04 percent descending grade with a 5.3 degree left hand curve followed by a 1.0, 0.38, 6.22, degrees to the left, followed by a tangent of 2500ft beyond.

The CSX -Huntington Division East Timetable No.1 shows the direction of the train is East. The geographic direction is also East. Timetable directions are used throughout this report.

The train was being operated at a recorded speed of 33 mph approaching the incident area. At the time the incident occurred the train was being operated at 33 mph. Both speeds were recorded by the event recorder in the controlling locomotives. The maximum authorized speed for the coal train was 40 mph, as designated in the current CSX timetable No.1.

CONCLUSION:

CSX Train T71628 was operating within prescribed CSX and FRA operating procedures and regulations.

ACCIDENT:

At the time the incident occurred CSX Train T71628 was being operated at 33 mph., according to the event recorder on the controlling locomotive. The engineer was operating the train in number 6 throttle position. The train experienced an emergency application of the train air brakes. The head end of the train came to a stop at about Milepost CAB 7.7 .

The conductor dismounted the lead locomotive and walked westward inspecting the train. He found the 10th through the 28th car derailed, a total of 19 cars, 13 cars in a general pile up, 2 ahead of the pile up and 4 cars in the Kanawha Canal. He called the engineer and informed him of the derailment. The engineer then notified the dispatcher and CSX officials of the derailment.

The FRA Inspectors and CSX Officials discovered the Point of Derailment (POD) to be at CSX Milepost CAB 8.6. The first car derailed was CSXT 390996. This car had a broken axle on the A-End at either the No. three or four position. FRA Inspectors and CSX officials agreed that the wheel was at the L3 position. Distinct marks were found on the south rail which are consistent with a broken axle. The car (CSXT 390966) came to rest at about CSX Milepost CAB 7.7. FRA agrees that this was the probable cause of the derailment

No exceptions were taken with the track conditions, signals or train handling. An FRA inspection of the remaining cars in the train were conducted and no exceptions were noted.

CONCLUSION:

There were no exceptions to Track, S&TC or Train Handling.

ANALYSIS AND CONCLUSION:

CSX Train T71628 was traveling eastward on a single main track at a recorded speed of 33 mph. The train experienced an emergency application of the train air brakes, at which time the train had derailed 19 loaded coal cars. The accident investigation revealed that the 10th car, CSXT 390996, traveled about 1550 ft from the point of derailment, Milepost CAB 8.6 stopped at Milepost 7.7. This caused CSX Train T71628 to separate the train line which initiated an emergency air brake application. The car had past Impact detectors at Milepost CAB 11.2 and 18.3 and there were no indications of a axle/wheel failure.

CONCLUSION:

The carrier was in full compliance with their rules and all applicable Federal Regulations. The FRA investigation and data gathered at the incident site revealed that the derailment was caused by a broken axle on car CSXT 390966. The primary cause code for a broken axle is E51C. The section of the broken wheel set that was recovered was sent to a contract shop for analysis. The FRA Inspector requested a copy of the lab results.

PROBABLE CAUSE:

The FRA investigation revealed that probable cause of the derailment was a broken axle on rail car CSXT

390966.