

**Methanol Release Report
NRC # 1134510
CTI of North Carolina, Inc.
Wilmington North Carolina**

- a. Date and time of discovery of the release incident
Incident was discovered at 21:15 on 11/29/15. Additional details can be found in the attached timeline.
- b. Date and time of reporting to the National Response Center
NRC was called at 21:40 on 11/29/15. NRC recorded report at 21:43. Additional details can be found in the attached timeline.
- c. We request for the 'Timeline' narrative regarding the incident to include reporting to NC SERC, New Hanover County LEPC and your local Fire Department.
Please see attached timeline.
- d. How was the incident discovered?
During shift change, the operators drove by tank 212 and observed product flowing from tank vents. Additional details can be found in the attached timeline.
- e. Exact or estimated quantity and description of chemicals that were released to the dike, in pounds please. Please include calculations or estimations to arrive at the reported quantity involved.
The chemical released was methanol (CAS #67-56-1), and the quantity was estimated to be 983,123 lbs (148,284 gals).
Please see additional details in section f.
- e. Any photos of affected site of release incident, if available.
Please see Attachment 2.
- f. Detailed description of the abovementioned release incident explaining:
the cause of the release,
On 11/29/15 at 1055, the vessel San Fernando docked at the CTI of North Carolina, Inc. (CTI-NC) berth to discharge an estimated 3.7 million gallons of methanol. The facility has six bulk storage tanks in methanol service. All of the tanks are served by a header that is fed by a single dock line. Of the six tanks on the header, only three tanks were scheduled to receive product from the vessel; tanks 210, 211, and 213. Tanks 210 and 211 were to be completely filled, with the remainder of the product going into 213.

The CTI-NC operator began the process of preparing the three tanks for product receipt after the vessel arrived. As part of the preparation, the operator opened the valves at the methanol header for the tanks that were to receive product, those being tanks 210, 211 and 213. However, the operator failed to check all of the other tank valves on the header, specifically the valve for tank 212, which was open. Subsequently, the receipt line on tank 212 was also open. Transfer operations were initiated, during which product was inadvertently transferred into tank 212. The tank filled with product and overflowed from the roof vents to the surrounding tank field.

An estimated 983,123 lbs (148,285 gallons) of methanol (CAS #67-56-1) were released to the diked containment area surrounding tank 212. The quantity released was estimated based on tank volume readings performed by a third party surveyor, Intertek. The surveyor gauged the discharging vessel, tank 210, tank 211

and tank 213 before and after the product transfer. The amount inadvertently pumped to tank 212 was calculated to be the difference between what was pumped by the vessel and the amount accounted for in tanks 210, 211 and 213.

Tank 212 was not gauged before or after the product transfer since it was not intended to receive any product. A gauge reading had been taken 10 days prior to this event, and, since no transfers had been made from the tank since that reading, this value was used as the starting volume to calculate the release amount. The ending volume was determined to be the height of the tank overflow vents. The amount that overflowed the tank was then calculated to be the amount pumped to tank 212 in excess of its available capacity. To determine start and end time of the overflow, similar calculations were made based on the recorded gauging times.

How many workers or responders were affected (if any),

Twenty-nine Wilmington Fire Department employees responded to the incident. It is not known how many were in the immediate vicinity or downwind of the vapors. All, however, were HAZMAT trained and familiar with the characteristics of the product. Four CTI-NC employees and six SR&R Environmental (CTI-NC's OSRO) employees responded but their exposure was limited to the time prior to the application of Alcohol-Resistant Aqueous Film-Forming Foam (AR-AFFF) on the released methanol. No adverse reactions were reported by any of the responders during or subsequent to the release.

Any offsite community consequences of release and corrective actions implemented afterwards to mitigate the situation and prevent future occurrences.

It is unlikely that the community experienced any consequences as a result of this release. The Wilmington Fire Department applied foam to the released product shortly after arriving onsite to prevent dispersion of vapors. They also shut down traffic on South Front Street from approximately 10pm to 8am the next morning. No adverse reactions were reported during or subsequent to the release.

Other potential consequences could include the contact of methanol with soil and groundwater. Methanol is highly soluble and readily biodegradable. Groundwater flow is away from the surrounding populated areas toward the Cape Fear River. The CTI-NC terminal has an existing, operational groundwater remediation system onsite for previous petroleum contamination. Groundwater is extracted and treated using filtration, air stripping, and carbon adsorption. The treated groundwater is discharged to the Cape Fear River through a NPDES permitted outfall. CTI-NC has developed and implemented a site sampling plan with the involvement of the NCDENR.

Immediate Mitigation Measures Taken

- All operations (specifically product transfer from the vessel) were immediately shut down. All dike valves were checked and the automatic pump on the oil/water separator for the tank field was shut down, thus eliminating the potential for material to be discharged to the Cape Fear River through the terminal's permitted NPDES outfall.
- The local Fire Department was immediately notified. Their first action was to cover the released product with alcohol resistant foam to prevent both incidental ignition and evaporation.
- The nearby public highway was shut down to all traffic.
- SR&R Environmental (CTI-NC's OSRO) was immediately notified. SR&R began recovering the methanol as soon as the foam was applied and it was safe to do so. They continued through the night and into the next morning. Approximately 93,000 gallons of product containing methanol, water, and foam was collected and pumped into a nearby empty tank (114).
- Arrangements with CTI-NC's environmental consultant, Bunnell-Lammons Engineering (BLE), were initiated to develop and implement a sampling plan to determine the extent of contamination and possible remediation approaches.

Continuing Measures to Mitigate and Remediate

- Methanol initially recovered on the night and following morning of the release was pumped to an empty tank (114). The mixture which includes methanol, water, and foam is approximately 66% methanol. Current plans are to recycle this off-specification product through a third-party company to produce windshield wiper fluid.
- All dike field stormwater which has been generated since the release occurred, is being collected due to contact with residual methanol in the soil. The stormwater is being pumped to another empty tank (127) and is being held pending appropriate disposition. Efforts are underway to have the stormwater, which contains approximately 5 percent methanol, treated offsite through a permitted, third-party wastewater treatment facility. Discussions have been initiated with NCDENR to possibly treat and discharge stormwater containing very low levels of methanol through an onsite wastewater treatment unit to the Cape Fear River through the terminal's NPDES permitted outfall.
- CTI-NC has developed and implemented a site sampling plan with the involvement of the NCDENR. Sampling of soil and groundwater has already been completed by our environmental consultant, BLE. Results from the sampling effort have not yet been received. Data generated from the sampling effort will be used to determine an appropriate path forward for handling the remaining contamination.

Measures Taken to Prevent a Recurrence

- Electronic level monitoring is being evaluated.
- Training is being conducted to refresh all operators and loaders on operational procedures and the importance of no releases or overflows. Training will involve:
 - ◇ strengthening proper valve setup procedures for vessel transfers,
 - ◇ reinforcing gauging procedures to properly account for product transfers as they are occurring,
 - ◇ specifying monitoring of tanks not designated as receiving transfers, and
 - ◇ clarifying proper recording of measurements taken.
- Disciplinary action has been taken to provide consequences for failure to follow procedures and to send a clear message that releases of this nature cannot be tolerated.

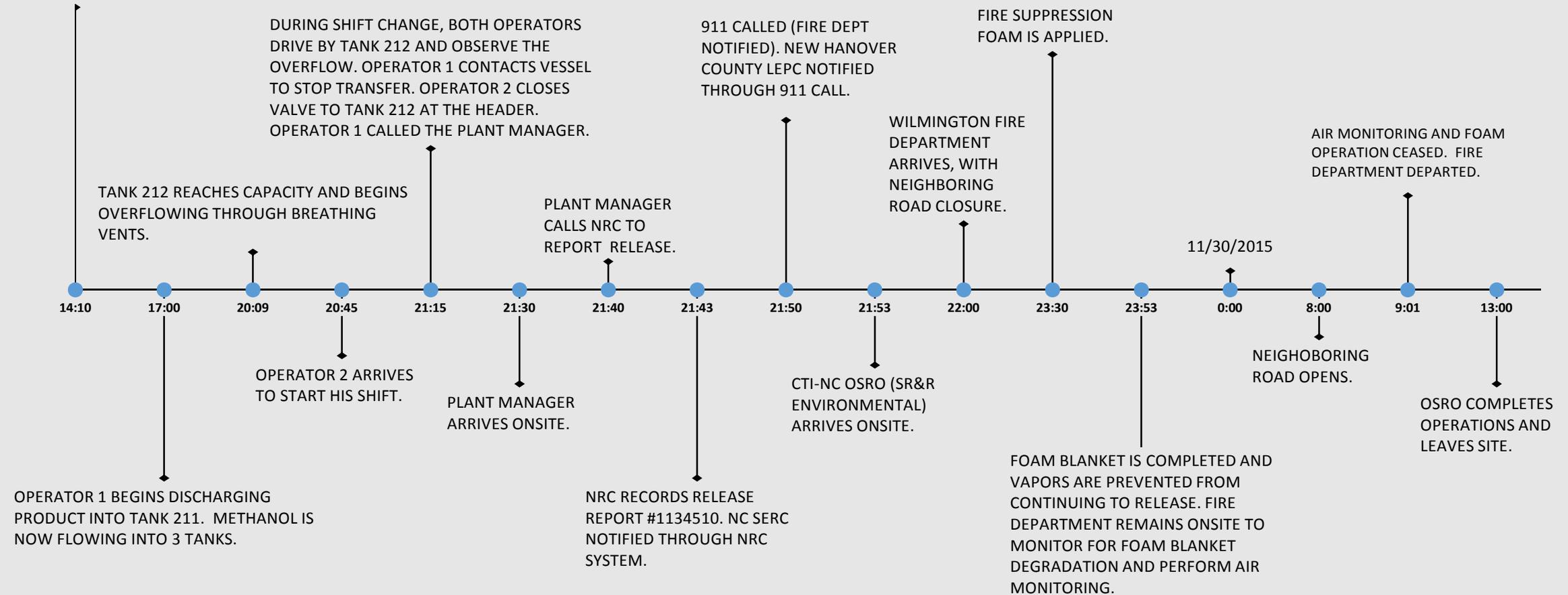
Attachment 1

Methanol Release Timeline

CTI North Carolina, Inc.

11/29/2015 Methanol Release

OPERATOR 1 BEGINS DISCHARGING METHANOL FROM VESSEL INTO TANK 210 AND UNINTENTIONALLY INTO TANK 212. THE HEADER VALVE FOR TANK 212 WAS OPEN FROM A PREVIOUS TRANSFER ALLOWING METHANOL TO DIVERT INTO TANK 212.



Attachment 2

Photos of Impacted Area



REFERENCE:
USGS TOPOGRAPHIC MAP, 7.5 MINUTE SERIES,
WILMINGTON, N.C. QUADRANGLE, 1979.

DRAWN:	ACE	DATE:	08-29-13
CHECKED:	DPO	CAD:	COLWILMTERM-SLM
APPROVED:		JOB NO:	J13-8689-01

IBLE
BUNNELL-LAMMONS ENGINEERING, INC.
6004 PONDERS COURT
GREENVILLE, SOUTH CAROLINA 29615
PHONE: (864)288-1265 FAX: (864)288-4430

SITE LOCATION MAP
COLONIAL WILMINGTON TERMINAL
WILMINGTON, NORTH CAROLINA

FIGURE

1

Approximate Extent of Methanol Release

CTI of North Carolina, Inc.

Legend

- Approximate Extent of Release
- Containment Dike
- Tank 212



Total Spill Area
16,938 sqft

Tank 212



Photo Taken on 11/30/15 at 3:06pm.

White material on ground shows the foot print of the fire suppression foam and thus the footprint of the methanol.