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Chesterfield Fire Department Chesterfield, New Hampshire

Rural Water Supply Operations Seminar
2-hr Water Supply Drill
October 19, 2025
Summary Report

The Purpose

- The purpose of the seminar and drill was to review the basics of rural water supply operations and to practice water supply operations in a non-hydranted setting.
- The drill also allowed mutual aid companies to work together in a real-life training situation.



The Seminar



- The 2-day seminar started with a 4-hour classroom session to review the basics of rural water supply operations.
- The review session was held at the Chesterfield fire station.
- Once the classroom part was over, the seminar continued with 8 hours of practical work on fill-site and dump site operations.
- The program concluded with the 2-hr ISO tanker shuttle exercise and program review.
- Seminar participants were from Cheshire County and the surrounding area.

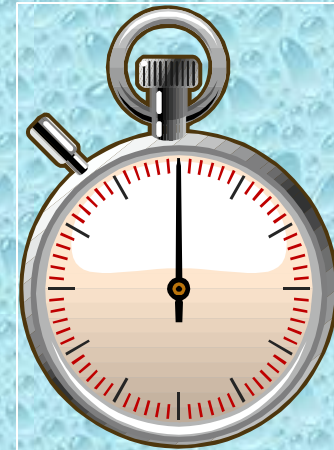
The 2-hour Water Supply Drill

- The tanker shuttle drill was held on October 19th at the Chesterfield fire station.
- The drill attempted to replicate the 2-hour Water Supply Delivery Test used by ISO in their evaluation of fire department water supply capabilities.
- While ISO no longer uses the physical demonstration of water supply delivery, the 2-hour test is still a reasonable standard by which fire departments can compare their water supply operations.
- *ISO now uses computer modeling to predict tanker shuttle flow capabilities.*



The ISO Test

- The ISO 2-hour Water Supply Delivery Test has three critical time segments:
 - 0:00 to 5:00 minutes
 - 5:01 to 15:00 minutes
 - 15:01 to 120:00 minutes



ISO Test *0:00 to 5:00 Minutes*

- A drill location is selected and the units due to respond on the first-alarm assignment are dispatched.
- Time starts when the first engine arrives on the scene and comes to a complete stop.
- There is no requirement to flow water during the first 5 minutes, but the crew must be prepared to flow water once the 5-minute mark is reached.



ISO Test *5:01 to 15:00 minutes*



- At the 5-minute mark, a flow of at least 250 gpm must be started - and it must be sustained.
- During the next 10-minutes, crews can work to further develop their water supply and increase their flow, however...
- At the 15-minute mark (5+10), whatever amount of water is flowing at that time must be maintained for the remainder of the 2-hour test.

ISO Test *15:01 to 120:00 minutes*

- Once the 15-minute mark has been reached, the remainder of the 2-hour test is really just about ***sustaining*** the flow.
- The ISO test includes the simulation of automatic mutual aid response and allows additional water supply units to arrive and assist in the delivery process as would happen on a real incident.
- The real advantage of the ISO test is that it gives a fire department the chance to see where improvements can be made in their water supply delivery process.



It is one thing to say that your fire department can deliver 500 gpm for two hours – it is another thing to prove it in a real-life drill scenario!

Water Supply Drill Participants

Participants				
Department	Unit	Pump Size	Tank Size	Dump Tank
West Chesterfield	Engine 1	1250 gpm	1000 gal	NA
Chesterfield	Engine 2	1500 gpm	1250 gal	NA
Chesterfield	Engine 1	1250 gpm	2000 gal	1500/2500 gal
Westmoreland	Tanker 1	500 gpm	2000 gal	2100 gal
Surry	Engine 2	1500 gpm	1500 gal	1500 gal
Vernon	Tanker 1	1500 gpm	2500 gal	2500 gal
Walpole	Tanker 1	500 gpm	2500 gal	2500 gal
Spofford	Tanker 1	1500 gpm	2500 gal	2500 gal
Dummerston	Engine 2	1500 gpm	1000 gal	NA
Hinsdale	Engine 1	1500 gpm	2000 gal	2000 gal

- The participants for the drill were from several different fire departments in the Cheshire County region and the water hauling apparatus was representative of the type of water supply support that would respond to a structure fire in the Chesterfield area.*

The Drill Begins



The drill started with crews executing a rural hitch operation using a 4" jumbo wye appliance. Chesterfield Engine 1 arrived on the scene and supplied the rural hitch which was feeding a ground monitor. The monitor acted as the attack pumper for the drill.

Rural Hitch Operations



Water flow was started at the 3-minute mark and shortly thereafter, Chesterfield Engine 2 arrived in the scene in preparation for the transition to a dump tank operation.

Dump Site Operations



As additional crews arrived tankers supported the rural hitch while work was underway building out a dump tank operation. Around the 8-minute mark the first load of water was dumped into the dump tanks.

Dump Site Operations



Around the 30-minute mark, the transition to dump tank operations was complete and the flow was moved to 500 gpm.

Dump Site Operations



Walpole Tanker 1 was the last tanker to pump the rural hitch and the rig stayed in position until the dump tank operation was confirmed operational.

Dump Site Operations



Around the 70-minute mark flow was still 500 gpm and work was underway to move to a 3-dump tank setup.

Dump Site Operations



Water transfer operations became very important and additional jet siphons were placed in service.

Dump Site Operations



The dump site pumper used a 90-degree suction elbow and an additional suction line (3-inch) to improve drafting operations and create a “single-lane” tank arrangement.

Dump Site Operations



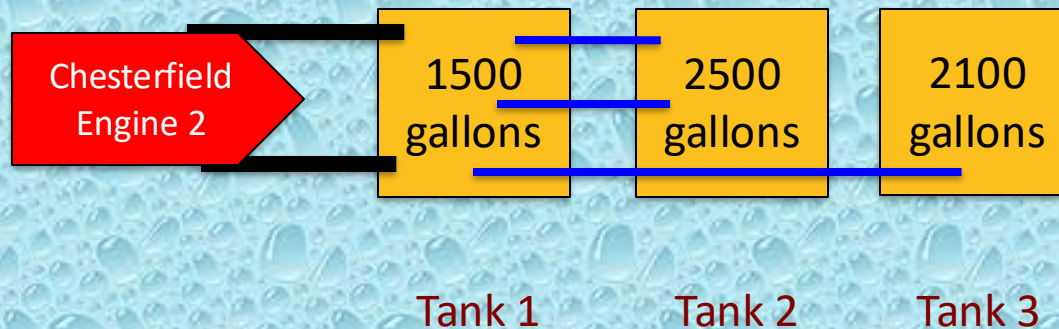
At the 90-minute mark, three dump tanks were in operation and flow was moved to 700 gpm.

Dump Site Operations



A Fol-Da-Tank LDH supply line holder was used for the one tanker that could only pump off its water.

Dump Site Layout



— Suction Hose
— Jet Siphon

The Fill Sites

- For this drill – two fill sites were used – one at a nearby pond and one at a boat launch on Spofford Lake.
- The fill sites provided about a 1.0-mile and 4.0-mile round trip for the units hauling water.
- Both sites had ample water volume to support the drill, and water access was not a problem.
- A 1250 gpm pumper and 1500 gpm pumper were used at the fill sites to load tankers.

Pond Fill Site



West Chesterfield Engine 1 (1250) drafts from the pond and loads tankers using 4-inch LDH.

Pond Fill Site



The crew worked to build out two loading lines so that two tankers could be connected at the same time with one being loaded. Fills rates were just over the 1000 gpm mark.

Lake Fill Site



Dummerstown Engine 2 (1500 gpm) operated the boat launch fill site and loaded tankers using 4-inch LDH.

The Results

- The drill was stopped at the 105-minute mark.
- Water flow was interrupted once during the transition to dump tank operations due to a missing suction gasket.
- An estimated 44,750 gallons of water were flowed through the attack pumper during the drill producing an average flow rate of 439 gpm.
- For the last 15-minutes of the drill a flow of 700 gpm or greater was supplied.

The Lessons Learned

- At this drill, crews chose to use a rural hitch operation to get things started.
- Using the rural hitch gave the crews time to get a dump tank set-up without the added pressure of having to draft and flow water right away.
- A missing suction hose gasket caused a priming issue and loss of water flow; but this was resolved quickly.

The Lessons Learned

- As the flow increased, additional suction lines were added as were additional dump tanks.
- A tanker fill-site needs to run like a NASCAR pit stop. Anything that slows down the loading of tankers is going to reduce the efficiency of the tanker shuttle.
- At this drill, most every tanker loaded using the same fill connection so little time was lost making and breaking fill lines.

The Lessons Learned

- Jet siphons, suction hose, and dump tanks are needed at most every dump tank operation – therefore, it is wise to carry those items on every tanker – as well as adaptors.

Drill Videos

**Be sure to watch videos from
the drill on the
GotBigWater
YouTube Channel.**

Summary

- The drill was a success. For the new folks, they got to see how dump tank operations work.
- For the older, experienced folks, it was a chance to practice their “craft.”
- The success of the drill showed the importance of mutual aid response practices and procedures – and the importance of mutual aid interoperability.
- Many thanks to the Chesterfield Fire Department for sponsoring and hosting the seminar.



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