



Some Points to Ponder When Setting-up Dump-site Operations

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Water supply operations in non-hydranted areas generally require the transport of water either via a tanker shuttle or via a pumper relay. When using a tanker shuttle operation, one of the most important phases of that operation is the set-up of a dump-site. A dump-site normally involves the use of a portable dump tank for water storage and an engine to draft and pump that water to the fire scene.

With the decision to go to a dumpsite operation there comes a number of critical items or actions that truly affect the success of the overall operation. The following list presents some of these points for consideration and discussion – they are listed in no priority order – just stuff to think about before the time actually comes to set-up that dump-site for real!

Know the fire flow demand. If it has yet to be determined, prompt the incident commander to declare one. How can you supply water from a dump-site if you don't know how much is needed? If no one answers you after repeated attempts – pick a value and get started. A 500 gpm will cover most three-line attack operations at residential fires (attack line, back-up line, and RIT line)

Get an operational (tactical) radio channel so that water supply operations can be conducted without interfering with fire attack communications.



Be sure that someone is appointed as being in-charge of the water supply function in the command structure. Call it what you want – just be sure someone is handling that function and be sure that the incident commander knows who is serving in that capacity.

DO NOT STOP SUPPORTING THE FIRE ATTACK OPERATION – EVER!!!

Too many buildings have become black ash holes because everyone stopped supporting the fire attack in order to try and get a dump-site set-up. Someone has to get water to the fire attack engine(s) and if a dump-site is not operational yet – you have to figure out some way to get water to those folks trying to fight the fire. This is where volume pumps are worth their money on tankers. Tankers that can pump-off their water into supply lines are very helpful when trying to buy time while setting up dump tanks.

When placing the first dump tank, place it while thinking about where you will place the second one. Once that first tank is down and full of water, no one will be able to move it! So, get it right the first time. When placing the second tank, think about where the third tank will go.

Drains

Be sure that dump tank drains are tied tightly before filling the tank with water. A recommended practice is to tie-up the drain on the inside of the tank rather than on the outside of the tank. By tying the drain up on the inside of the tank, the water pressure holds the drain closed. When tied up on the outside of the tank the water pressure will often force open the drain.



Tarp

Before placing a dump tank, place a heavy duty tarp underneath the tank to help protect the tank's fabric from punctures caused by ground surface debris. Many departments use a canvas tarp – which at first looks way too heavy and overkill. However, keep in mind that a 3,000-gallon dump tank holds about 12 tons of water. While this whole tarp thing is certainly not an emergent issue – it is just good practice for the longevity of your dump tank.

Diamond v. Square?

Ford v. Chevy? Smoothbore v. Fog? The decision to set up dump tanks in a diamond arrangement or square arrangement rests solely with the person in charge of the dump site. Traditionally, the diamond arrangement has been used to accommodate tankers that must off-load their water from the rear. Whereas, the square arrangement has been used when all side-dumping tankers are expected.



One of the benefits of using the diamond shape is that it can accommodate both rear and side dumping tankers - however, there are some drawbacks. First is space. The longest dimension of a square tank is its diagonal. For example, a 10' by 10' tank has a 14' diagonal. The length of this diagonal is important when space is limited on roadways. A square tank placed on a diagonal can easily exceed the width of a roadway travel lane. On many rural roads, you block a lane with a tank and your operation is done! A second, but less critical issue with dump tanks set on the diagonal is that the shape provides a very limited target for side-dumping tankers. The bottom line on tank placement is to know what type of tankers are coming to your call and set-up the site to best accommodate those tankers whenever possible. Remember, that it only takes one rear-dumping tanker trying to position at a square set-up to mess up your entire water supply operation.



More Than One Dump Tank

When setting up more than one dump tank there are a couple of things to consider. First, as stated previously, if given the choice use the largest dump tank immediately available. Second, consider how you will place the tank. Unless space is at a premium, it is always helpful to at least have a walkway between the two tanks so that personnel

can manage any equipment problems in the tanks. When setting up multiple dump tanks and expecting the arrival of large capacity tankers, it can be helpful to space out the tanks and span them using roof ladders. Third and most importantly, consider how you will transfer water between multiple tanks. The most common method is to use some type of jet siphon attached to a section of hard suction hose. Obviously, the goal is to transfer the water from the auxiliary tank(s) to the primary tank (the one that the engine is drafting from) at a rate greater than or equal to the fire flow rate. A final word about using multiple dump tanks. When setting up three or more tanks, the goal is to only transfer the water once between tanks before it is drafted and sent to the fire scene. Therefore, the ideal set-up for a 3-tank operation is to draft out of the center tank and use jet siphons to transfer water into the center tank from the adjacent tanks.



Jet-Siphons

Jet siphoning uses a fairly simple principle that allows a relatively small flow of water to help move a much larger flow of water. However, when jet siphons are being run from the same pumper that is drafting and supply water to the fire scene, one must be aware that some of that pumper's pump capacity

is being used up running the jet siphons. For example, say that a 1250 gpm pumper is drafting and also running two, 100 gpm jet siphons. When those two jet siphons are in use, that pumper only has 1050 gpm available to meet the fire flow demand. Of course, this goes back to old school pumps training

where they taught you that you always put the largest capacity pumper at the water source – this is one reason why! At several recent, large-scale water supply drills, a second pumper was used at the dumpsite just to run the jet siphons. In both cases, once flows exceeded 1000 gpm, that second pumper was engaged and truly made a difference on the drafting pumper's ability to move water.



In closing, other than having NO water at all, nothing can be more frustrating than to have a whole bunch of water that just can't get to the fire scene because the dump-site operation is all "messed-up". Most everyone in the rural fire service has been there at one time or another and knows that sinking feeling as the building burns down (or up) while thousands of gallons of water sit idle several hundred feet away waiting to get pumped. The set-

up and operation of a dump-site is one of the most important actions taken on the scene of fire emergencies in non-hydranted areas – don't take it lightly!

For questions or more information about dump-site operations, contact Mark Davis at MDavis@gotbigwater.com