PROPERTY INSURANCE ASSOCIATION OF LOUISIANA

WATER HAULING GUIDELINES

NOTE: Effective immediately, Fire Departments in Louisiana who receive credit for water hauling will receive their credit through a "Virtual Shuttle" process. This process involves demonstrations of capabilities via various timed drills conducted in a safe location. A computer model is then used to calculate probable rates of delivery.

REQUIREMENTS

At no time will apparatus be required to make a timed cycle from the test site, to the fill site, and back again, and at no time will response time from fire stations to test sites be measured.

When conducting the various drills associated with the Virtual Shuttle process, different personnel must be used for each drill location.

SAFETY

The most important consideration during a water hauling demonstration is safety. Provisions must be made to safely control traffic on all public roads used in the demonstration. PIAL does not advise, suggest, encourage, urge, recommend, or endorse violating any traffic laws during demonstrations.

All fire departments participating in the demonstration must make specific arrangements maintaining fire protection throughout their respective response area. The demonstration will stopped if any participating department is alerted to an emergency requiring their immediate response.

GENERAL INFORMATION

PIAL uses NFPA 1142 as its source document in developing the computer model that allows us to calculate probable rates of delivery for water hauling operations as follows:

The following are two primary factors to be considered in the development of tank water supplies:

1. The amount of water carried on initial responding units. This factor is determined by the apparatus owned by the department that is housed at the fire station nearest the fire site, and apparatus response records for incidents occurring during the graded year.
2. The amount of water that can be continuously delivered after initial response. The maximum continuous flow capability at the fire scene is calculated as follows:

$$Q = \frac{V}{A + T_1 + T_2 + B} \times k$$

where:

Q = maximum continuous flow capability (gpm)

V = tank volume of the mobile water supply apparatus (gallons)

A = time (min) for the mobile water supply apparatus to drive 200 ft, dump water into a drop tank, and return 200 ft to starting point.

T1 = time (min) for the mobile water supply apparatus to travel from fire to water source

T2 = time (min for the same mobile water supply apparatus to travel from water source back to the fire

B = time (min for the mobile water supply apparatus to drive 200 ft, fill mobile water supply at a water source, and return 200 ft to starting point

K = 1.0 for vacuum/pressure mobile water supply apparatus; 0.9 for all other mobile water supply apparatus due to spillage, underfilling, and incomplete unloading

The dumping time *(A)* and filling time *(B)* for the formula should be determined by drill and by close study of water sources. Equipment does not have to be operated under emergency conditions to obtain travel time *(T)*, which is calculated using the following equation:

$$T = 0.65 + XD$$

where

T = time (min) of an average one-way trip travel

X = average speed factor = 60/average speed (PIAL uses an X Factor of 1.3)

D = one-way distance (miles)

The factor 0.65 represents an acceleration/deceleration constant developed by the Rand Corporation.

When fire departments do not provide their own dump times, PIAL will use NFPA 1142, Annex C, Table C.6 to calculate each apparatus's emptying time and then add 2 minutes for apparatus maneuvering time at the dump site.

When fire departments do not provide their own fill times, PIAL will use the following procedure to determine fill rate then add 2 minutes for apparatus maneuvering time at the fill site.

1. When fill sites include a hydrant free-flowing to fill relay tankers the free-flow rate of the hydrant will be measured using a pitot gauge.
2. When fill sites include a hydrant with a pumper connected to increase pressure, the calculated flow rate at 20 psi residual pressure is calculated as follows:

$$Q_R = Q_F \times \frac{h_r^{0.54}}{h_f^{0.54}}$$

where:

Q_R = flow predicted at desired residual pressure

Q_F = total flow measured during test

h_r = pressure drop to desired residual pressure

h_f = pressure drop measured during test

3. When fill sites include a drafting source, PIAL assumes uses the average flow rate capabilities of the pumper(s) used at that site.

DEMONSTRATIONS REQUIRED:

Two scenarios are offered. For the first, PIAL makes various assumptions. Fire departments that accept these assumptions need only to demonstrate their ability to set up their fire-scene and begin flowing water at a rate of 250 gpm within five minutes of arrival of the first fire fighting apparatus. This drill will be witnessed and timed by the PIAL Field Representative and should be conducted as follows:

1. From a starting point 200' away, the fire site pumper and other "time zero" apparatus as defined on the shuttle line-up form will pull into the fire scene.
2. On-scene personnel will set-up portable tanks, dump water into the tanks, establish a draft to supply the fire-site pumper and begin pumping water at a rate of at least 250 gpm.
3. Successful completion of this drill will result in award of water hauling credit at the rate calculated by using the computer model.

In addition to this drill, the PIAL Field representative will visually verify that all equipment required to establish desired fill sites, jet-siphons, etc… is on hand and serviceable.

Assumptions made for use in scenario one include:

1. The average time to set up a fire-site, not including dumping water, drafting, and pumping, is 3.5 minutes. The starting point for all associated apparatus is 200' from the set-up point.
2. The average time to maneuver a tanker into the fire-site from a starting point 200' from the dump tank, then to secure it and maneuver it 200' away after dumping is 2 minutes.
3. The average time to set-up a fill site is 4 minutes.
4. The average time required to pull a tanker into the fill site from 200' away, connect fill hoses to the tanker, then to secure it and pull it 200' away from the fill site is 1.5 minutes.

The second scenario is used for departments who do not accept PIAL's assumptions. Fire departments seeking credit under this scenario must demonstrate five capabilities:

1. Set up a fire-site pumper and begin pumping water at a rate of 250 gpm within five (5) minutes of arrival of the first fire fighting apparatus.
2. Set up portable on-site water storage systems.
3. Dump relay tankers of varying capacity and configuration.
4. Set up fill sites.
5. Fill relay tankers.

Fire-Site Set-up:

At no time will PIAL measure the time required for responding apparatus to reach the test site from the station where it is housed.

PIAL assumes that a typical fire department can establish fire-site set-up within 4 minutes of arrival of the first firefighting apparatus. This includes completing all actions required to begin pumping from draft at a rate of at least 250 gpm. This assumption does not include the time required to prime the pump and begin drafting from the portable pond. Departments that don't wish to accept this assumption may submit their own times obtained through carefully conducted drills prior to arrival of the PIAL Field Representative.

During the field demonstration, the evaluator will record and validate the times provided for completing the following actions:

1. From a starting point 200' away, the fire site pumper will pull into the test site, personnel will remove 100' of 2.5" hose and begin pumping at a minimum rate of 250 gpm. Hose may be re-loaded onto the apparatus after completion of this drill. This is the only drill conducted during the test that must be completed within 5 minutes. ***This is a pass/fail drill***.
2. From a starting point 200' away, apparatus carrying the portable pond will pull into the test site and the equipment will be off-loaded and set up including connection to the fire-site pumper in preparation for drafting. Although this drill is timed, there are no pass/fail criteria. PIAL's assumption is that portable ponds can be set-up and configured for use within 3.5 minutes.

3. If multiple portable ponds are to be used, separate drills will be conducted for each. Connection of second and subsequent tanks will include establishing the means of transferring water between tanks if needed. No water will be placed into the portable pond(s) during these timed drills. Although this drill is timed, there are no pass/fail criteria. PIAL's assumption is that additional portable ponds can be set-up and configured for use within 3.5 minutes.
4. ***If the department accepts the PIAL's assumptions, they do not need to perform the 3 drills outlined above during their rating.*** In lieu of these drills, PIAL will witness the department's ability to roll in the pumper, tanker and apparatus carrying the portable pond from 200' away, at the times outlined on their Water Hauling Line-up as they are scheduled to arrive. They may then fill the pond with water from the first arriving tanker(s), establish a draft with the fire-site pumper, and begin pumping at a rate of at least 250 gpm using their deck gun, portable monitor, or other discharge outlet on their pumper. ***This must be accomplished within 5 minutes and is a pass/fail drill.*** If the portable pond is not on scene prior to the 5-minute point, the department must begin flowing prior to 5 minutes using water on hand and continue flowing until the portable pond has arrived, been set up, and the flow switched from the initial source to the draft source. There can be no interruption or reduction in the discharge rate during this process. After the flow from the portable pond is established, the fire site set-up drill is completed. The time required to perform this function is not recorded and does not determine success or failure. ***However, the ability to switch from internal or nurse tanker supply to the draft source without interruption is a pass/fail item.***

Tanker Dumping:

PIAL assumes it takes an average of 2 minutes to maneuver relay tankers into and out of the fire site. This time is added to the calculated time to dump each tanker based on its capacity and dump chute size as defined in NFPA 1142. Departments that don't wish to accept this assumption may provide their own times obtained through carefully conducted drills as outlined above prior to arrival of the PIAL Field representative. Times provided by the fire department will be spot-checked during the PIAL rating using the following procedure:

1. From a starting point 200' from a portable pond (already set up), each relay tanker will travel, one at a time, into the fire site, be positioned by ground personnel and dumped into the portable pond.
2. When empty, the relay tanker will travel 200' from the portable pond at which time the drill for that tanker is completed and the time required to complete the drill is recorded.
3. Although this drill is timed, there are no pass/fail criteria.

Fill-site Set-up:

At no time will apparatus be required to make a timed cycle from the test site, to the fill site, and back again.

PIAL assumes it takes an average of 4 minutes to establish a fill site and complete all actions necessary to begin filling relay tankers. Departments that don't wish to accept this assumption may provide their own times obtained through carefully conducted drills conducted prior to arrival of the PIAL Field representative.

These times will be spot-checked during the PIAL rating using the following procedure:

1. From a starting point 200' away, personnel or apparatus will travel to the fill point and prepare to fill relay tankers.
2. The time required to complete the drill is recorded.
3. Although this drill is timed, there are no pass/fail criteria.

Tanker Filling:

PIAL assumes it takes an average of 1.5 minutes travel from a point 200' from the fill site and to secure the tanker then travel to a point 200' from the fill site after filling. This is added to the time to fill the tanker based on the configuration of the fill site.

1. From a starting point 200' away, each relay tanker, one at a time, will pull into the fill point, be filled, and then travel 200' from the fill point.
2. The time required to complete this drill will be measured and recorded.
3. Although this drill is timed, there are no pass/fail criteria.

The water supply location(s) may be any distance from the demonstration site. PIAL's

model calculates the distance at a default value of 1 mile (2-mile round trip). Criteria for creditable water sources are:

1. The water supply location(s) must be readily accessible at all times. Drafting sites, dry hydrants and ground storage tanks must be properly maintained, inspected and tested at least annually. Records of these tests must be available for review.
2. A water supply location on private property must be readily accessible at all times and a letter of authorization to use the water supply signed by the property owner must be on file with department being graded.
3. Drafting locations and dry hydrants must conform to general requirements of NFPA including appropriate signage.
4. No credit will be given for any procedure that may contaminate a domestic water supply or result in any type of pollution.

All apparatus used in the demonstration must be under the ownership or control of the respective department. All equipment involved in the demonstration must be located at the test site prior to starting the demonstration. PIAL will make a visual inspection of all apparatus that the department being graded expects to use during water hauling operations. This may be done at the stations where the apparatus is housed or at a central location as determined by the department being rated. All units must be roadworthy. All units must have radio communications with each other. All units must be equipped with standard emergency warning devices. (Non-owned apparatus utilized in the demonstration will be suitable and available at all times. A written contractual agreement with the owner is required.) All equipment used in the demonstration must remain on the vehicles until the test begins. Travel distances are provided by the fire department and spot-checked by PIAL and are as measured along the shortest practicable all weather road over which the responding departments equipment may readily travel

MUTUAL AID

Mutual aid equipment may participate in the demonstration subject to a signed mutual aid agreement on record. Each department participating as mutual aid must provide records of water hauling training within past twelve (12) months in conjunction with the department being graded.

PROTECTED PROPERTIES

Properties receiving a protected fire insurance rate must:

1. Be located within the boundaries of the graded area.
2. Be located within seven road miles from a recognized responding fire station.

INSTRUCTIONS FOR COMPLETING WATER HAULING FORMS

There are 3 forms and a minimum of 2 drawings that are used in applying for Virtual Water Hauling credit.

The Line-Up Form:

This form is required of all departments regardless of their acceptance of PIAL's assumptions. Much of this form is identical to previously used forms. The PIAL Field Representative will determine the starting manpower, but the fire department needs to provide all other data. Note that on the line for each apparatus listed, there are additional columns. In the "Purpose" column, please identify the role of that apparatus. Choices are Fire-Site Pumper (FSP), Supply-Site Pumper (SSP), Relay Tanker (RT), Static Supply (a tanker that never goes to the fill site), or Support.

In addition, for Fire-Site Pumpers, or Relay Tankers that must pump their water into the dump tank, their pump capacity is needed. For apparatus carrying dump tanks, the capacity of those tanks is needed. For Relay Tankers, the size of the discharge or dump chute is needed. To assist PIAL in determining how to enter these apparatus into the computer model, a drawing of the test site and fill sites is required. This drawing may be hand-drawn and should show available dump and fill positions.

The rest of the form is the same as previous forms and are self-explanatory.

Attached you will find one completed Sample Form and several blank forms. You may make additional copies as needed.

The Fill Time Form:

This form is not used for departments choosing to accept PIAL's assumptions regarding fill times. The Fill-Time Form serves to record both fill site set-up times and tanker filling times and provides information for our calculation of fill rates for each relay tanker. This may be determined by conducting the drill described above and recording the times, or by using the opposite of the weighing method described above…weigh the tanker (less

than full), fill it for one minute, then weigh it again and do the math the same way you did for determining the dump rate above.

The Dump Time Form:

This form is not used for departments choosing to accept PIAL's assumptions regarding dump times. The Dump Time Form provides information for our calculation of dump rates for each relay tanker. There are two ways to do this, and it's up to each fire department to decide which to use. The first method is the drill described above where apparatus are moved 200', dumped, and then moved 200 feet again and the time recorded. The second method is more involved and requires weighing the tanker while full, dumping it for a known period of time (1, 2, or 3 minutes depending on the size of the tanker), weighing the tanker again, and then doing the math. Guidance for this method can be obtained in NFPA 1142, Annex C.

Fire-Site Drawing:

A drawing depicting the proposed fire-site is required. This drawing may be computer generated or hand drawn. An example is attached to these guidelines.

Fill-Site Drawing:

A drawing depicting each proposed fill-site is required. This drawing may be computer generated or hand drawn. An example is attached to these guidelines.

WATER HAULING DISTANCE TIME TABLE

Miles	Time	Miles	Time	Miles	Time	Miles	Time
0.1	0.8	4.3	6.2	8.5	11.7	12.7	17.2
0.2	0.9	4.4	6.4	8.6	11.8	12.8	17.3
0.3	1.0	4.5	6.5	8.7	12.0	12.9	17.4
0.4	1.2	4.6	6.6	8.8	12.1	13.0	17.6
0.5	1.3	4.7	6.8	8.9	12.2	13.1	17.7
0.6	1.4	4.8	6.9	9.0	12.4	13.2	17.8
0.7	1.6	4.9	7.0	9.1	12.5	13.3	17.9
0.8	1.7	5.0	7.2	9.2	12.6	13.4	18.1
0.9	1.8	5.1	7.3	9.3	12.7	13.5	18.2
1.0	2.0	5.2	7.4	9.4	12.9	13.6	18.3
1.1	2.1	5.3	7.5	9.5	13.0	13.7	18.5
1.2	2.2	5.4	7.7	9.6	13.1	13.8	18.6
1.3	2.3	5.5	7.8	9.7	13.3	13.9	18.7
1.4	2.5	5.6	7.9	9.8	13.4	14.0	18.9
1.5	2.6	5.7	8.1	9.9	13.5	14.1	19.0
1.6	2.7	5.8	8.2	10.0	13.7	14.2	19.1
1.7	2.9	5.9	8.3	10.1	13.8	14.3	19.2
1.8	3.0	6.0	8.4	10.2	13.9	14.4	19.4
1.9	3.1	6.1	8.6	10.3	14.0	14.5	19.5
2.0	3.3	6.2	8.7	10.4	14.2	14.6	19.6
2.1	3.4	6.3	8.8	10.5	14.3	14.7	19.8
2.2	3.5	6.4	9.0	10.6	14.4	14.8	19.9
2.3	3.6	6.5	9.1	10.7	14.6	14.9	20.0
2.4	3.8	6.6	9.2	10.8	14.7	15.0	20.2
2.5	3.9	6.7	9.4	10.9	14.8	15.1	20.3
2.6	4.0	6.8	9.5	11.0	15.0	15.2	20.4
2.7	4.2	6.9	9.6	11.1	15.1	15.3	20.5
2.8	4.3	7.0	9.7	11.2	15.2	15.4	20.7
2.9	4.4	7.1	9.9	11.3	15.3	15.5	20.8
3.0	4.6	7.2	10.0	11.4	15.5	15.6	20.9
3.1	4.7	7.3	10.1	11.5	15.6	15.7	21.1
3.2	4.8	7.4	10.3	11.6	15.7	15.8	21.2
3.3	4.9	7.5	10.4	11.7	15.9	15.9	21.3
3.4	5.1	7.6	10.5	11.8	16.0	16.0	21.5
3.5	5.2	7.7	10.7	11.9	16.1	16.1	21.6
3.6	5.3	7.8	10.8	12.0	16.3	16.2	21.7
3.7	5.5	7.9	10.9	12.1	16.4	16.3	21.8
3.8	5.6	8.0	11.1	12.2	16.5	16.4	22.0
3.9	5.7	8.1	11.2	12.3	16.6	16.5	22.1
4.0	5.9	8.2	11.3	12.4	16.8	16.6	22.2
4.1	6.0	8.3	11.4	12.5	16.9	16.7	22.4
4.2	6.1	8.4	11.6	12.6	17.0	16.8	22.5

Water Hauling Distance Time Table

Miles	Time	Miles	Time	Miles	Time
16.9	22.6	21.3	28.3	25.7	34.1
17.0	22.8	21.4	28.5	25.8	34.2
17.1	22.9	21.5	28.6	25.9	34.3
17.2	23.0	21.6	28.7	26.0	34.5
17.3	23.1	21.7	28.9	26.1	34.6
17.4	23.3	21.8	29.0	26.2	34.7
17.5	23.4	21.9	29.1	26.3	34.8
17.6	23.5	22.0	29.3	26.4	35.0
17.7	23.7	22.1	29.4	26.5	35.1
17.8	23.8	22.2	29.5	26.6	35.2
17.9	23.9	22.3	29.6	26.7	35.4
18.0	24.1	22.4	29.8	26.8	35.5
18.1	24.2	22.5	29.9	26.9	35.6
18.2	24.3	22.6	30.0	27.0	35.8
18.3	24.4	22.7	30.2	27.1	35.9
18.4	24.6	22.8	30.3	27.2	36.0
18.5	24.7	22.9	30.4	27.3	36.1
18.6	24.8	23.0	30.6	27.4	36.3
18.7	25.0	23.1	30.7	27.5	36.4
18.8	25.1	23.2	30.8	27.6	36.5
18.9	25.2	23.3	30.9	27.7	36.7
19.0	25.4	23.4	31.1	27.8	36.8
19.1	25.5	23.5	31.2	27.9	36.9
19.2	25.6	23.6	31.3	28.0	37.1
19.3	25.7	23.7	31.5	28.1	37.2
19.4	25.9	23.8	31.6	28.2	37.3
19.5	26.0	23.9	31.7	28.3	37.4
19.6	26.1	24.0	31.9	28.4	37.6
19.7	26.3	24.1	32.0	28.5	37.7
19.8	26.4	24.2	32.1	28.6	37.8
19.9	26.5	24.3	32.2	28.7	38.0
20.0	26.7	24.4	32.4	28.8	38.1
20.1	26.8	24.5	32.5	28.9	38.2
20.2	26.9	24.6	32.6	29.0	38.4
20.3	27.0	24.7	32.8	29.1	38.5
20.4	27.2	24.8	32.9	29.2	38.6
20.5	27.3	24.9	33.0	29.3	38.7
20.6	27.4	25.0	33.2	29.4	38.9
20.7	27.6	25.1	33.3	29.5	39.0
20.8	27.7	25.2	33.4	29.6	39.1
20.9	27.8	25.3	33.5	29.7	39.3
21.0	28.0	25.4	33.7	29.8	39.4
21.1	28.1	25.5	33.8	29.9	39.5
21.2	28.2	25.6	33.9	30.0	39.7

The travel of apparatus is calculated from the following formula:

T=0.65 + (1.3 x D)
T=Minutes
D=Distance in Miles

Note: Each decimal place under time is equal to 6 seconds. For instance, a time of 12.6 minutes is equal to 12 minutes and 36 seconds.

Property Insurance Association of Louisiana - Virtual Water Hauling Input Form

Fire District: Louisville Fire District
Test Site Location: Miller's Gin
Date: March 24, 2010

Enter Fill Source Location and Type (i.e. Hydrant at 3rd & Elm; Dry Hydrant on Miller's Pond, etc...)					
Fill Site 1:	Brown's Pond	Distance:	1	miles	
Fill Site 2:	Hydrant at Miller's Gin	Distance:	1	miles	
Fill Site 3:	Ground Storage Tank at Station 2	Distance:	1.5	miles	
Fill Site 4:		Distance:		miles	
Fill Site 5:		Distance:		miles	

Arrival of First Aparatus / Time Test Started:			Nozzle	2.25	Inches	
Initial Water Flow Time:			Stop Time:			

Delivery Rates:						
	psi	@ 5 Minutes After Arrival of First Apparatus	=		gpm	
	psi	@ 15 Minutes After Arrival of First Apparatus	=	1000	gpm	

PIAL Certification

Distance from station housing first due apparatus to the test site: 1.5 miles

1st Alarm Manpower: members

By signing below, I am certifying that all requirements for water hauling credit were followed in this demonstration.

Signature

Print Name

Fire Department & Station	Unit Number	Purpose (Fire-Site Pumper, Fill-Site Pumper, Relay Tanker, Static Supply, etc...)	Size of Relay Tanker Dump Chute (10", 6", 4", etc...)	Water Tank Capacity	Pump Capacity (All Pumpers and any relay trucks that dump by pumping)	Capacity of Drop Tank Carried	Alarm		Distance		Communication		Delay Time (A + B)
							First	Second	Miles	Time Factor (A)	Paid / Volunteer (p or v)	Time Factor (B)	
Louisville Station 2	E-1	FSP		1250	1250		x		1.5			0.0	0:00:00
Louisville Station 2	T-21	RT	6	2500		2500	x		1.5			0.0	0:00:00
Louisville Station 2	T-22	RT	10	3000			x		1.5			0.0	0:00:00
Louisville Station 3	T-31	RT	10	2000			x		3.4	3.1		0.0	0:03:06
Louisville Station 1	T-11	RT	10	2000			x		4.1	4.0		0.0	0:04:00
Marltonville Central Fire Station	T-1	RT	10	3000				x	5.0	7.2	p	3.0	0:10:12
Marltonville Station 2	T-2	RT	10	3000				x	11.0	15.0	v	6.0	0:21:00
Fire District 3	T-5	RT		1500	1250			x	13.0	17.6	v	6.0	0:23:36

FILL TIME MEASURED IN MINUTES (TO ONE DECIMAL PLACE)

Community: Louisville Fire District **Date:** March 24, 2010

		Fill Time											
	Tankers:	Louisville T-21				Louisville T-22				Louisville T-31			
Fill Site	Set-up Time	Test 1	Test 2	Test 3	Average	Test 1	Test 2	Test 3	Average	Test 1	Test 2	Test 3	Average
Brown's Pond	3.2	4.9	4.3	5.2	4.8	5.9	6.3	6.1	6.1	4.1	4.3	4.8	4.4
Hydrant at Miller's Gin	4.0	4.3	4.1	4.7	4.4	5.5	5.2	5.9	5.5	4.6	4.2	4.4	4.4
Ground Storage Tank at Station 2	3.8	5.1	4.8	4.6	4.8	5.3	5.1	4.8	5.1	4.9	4.3	4.6	4.6

Fill Site set-up time is the time required to move the fill-site apparatus and personnel 200' and perform all actions required up to discharging water from fill hoses.

Tanker Fill Time is the time required to move each relay tanker 200', fill it to capacity, and drive it 200' from the fill site.

		Fill Time											
	Tankers:	Louisville T-11				Marltonville T-1				Fire District 3, T-5			
Fill Site	Set-up Time	Test 1	Test 2	Test 3	Average	Test 1	Test 2	Test 3	Average	Test 1	Test 2	Test 3	Average
Brown's Pond	3.2	4.1	4.3	4.8	4.4	5.9	6.3	6.1	6.1	5.9	6.3	6.1	6.1
Hydrant at Miller's Gin	4	4.6	4.2	4.4	4.4	5.5	5.2	5.9	5.5	5.5	5.2	5.9	5.5
Ground Storage Tank at Station 2	3.8	4.9	4.3	4.6	4.6	5.3	5.1	4.8	5.1	5.3	5.1	4.8	5.1

Fill Site Set-up Time is the time required to move the fill-site apparatus and personnel 200' and perform all actions required up to discharging water from fill hoses.

Tanker Fill Time is the time required to move each relay tanker 200', fill it to capacity, and drive it 200' from the fill site.

DUMP TIME MEASURED IN MINUTES (TO ONE DECIMAL PLACE)

Community: Louisville Fire District **Date:** March 24, 2010

Relay Tankers	Dump Time	Dump Time	Dump Time	Average
Louisville Station 2, T-21	3.8	3.4	4.1	3.8
Louisville Station 2, T-22	4.5	4.1	4.2	4.3
Louisville Station 3, T-31	3.1	3.7	3.9	3.6
Louisville Station 1, T-11	3.3	4.5	4.9	4.2
Marltonville Central Fire Station, T-1	3.8	3.4	4.1	3.8
Marltonville Station 2, T-2	4.5	4.1	4.2	4.3
Fire District 3, T-5	3.1	3.7	3.9	3.6
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Dump Time is the time required to move the apparatus 200', dump its contents into a portable pond and then drive it 200' away.

Property Insurance Association of Louisiana - Virtual Water Hauling Input Form

Fire District:
Test Site Location:
Date:

Enter Fill Source Location and Type (i.e. Hydrant at 3rd & Elm; Dry Hydrant on Miller's Pond, etc...)				
Fill Site 1:		Distance:		miles
Fill Site 2:		Distance:		miles
Fill Site 3:		Distance:		miles
Fill Site 4:		Distance:		miles
Fill Site 5:		Distance:		miles

Arrival of First Aparatus / Time Test Started:		Nozzle		Inches	
Initial Water Flow Time:		Stop Time:			

Delivery Rates:		psi	@ 5 Minutes After Arrival of First Apparatus	=		gpm
		psi	@ 15 Minutes After Arrival of First Apparatus	=		gpm

PIAL Certification

Distance from station housing first due apparatus to the test site: miles

1st Alarm Manpower: members

By signing below, I am certifying that all requirements for water hauling credit were followed in this demonstration.

Signature

Print Name

Fire Department & Station	Unit Number	Purpose (Fire-Site Pumper, Fill-Site Pumper, Relay Tanker, Static Supply, etc...)	Size of Relay Tanker Dump Chute (10", 6", 4", etc...)	Water Tank Capacity	Pump Capacity (All Pumpers and any relay trucks that dump by pumping)	Capacity of Drop Tank Carried	Alarm		Distance		Communication		Delay Time (A + B)
							First	Second	Miles	Time Factor (A)	Paid / Volunteer (p or v)	Time Factor (B)	

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Community: _____ **Date:** _____

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	Tankers:												
Fill Site	Set-up Time	Test 1	Test 2	Test 3	Average	Test 1	Test 2	Test 3	Average	Test 1	Test 2	Test 3	Average

Fill Site set-up time is the time required to move the fill-site apparatus and personnel 200' and perform all actions required up to discharging water from fill hoses.

Tanker Fill Time is the time required to move each relay tanker 200', fill it to capacity, and drive it 200' from the fill site.

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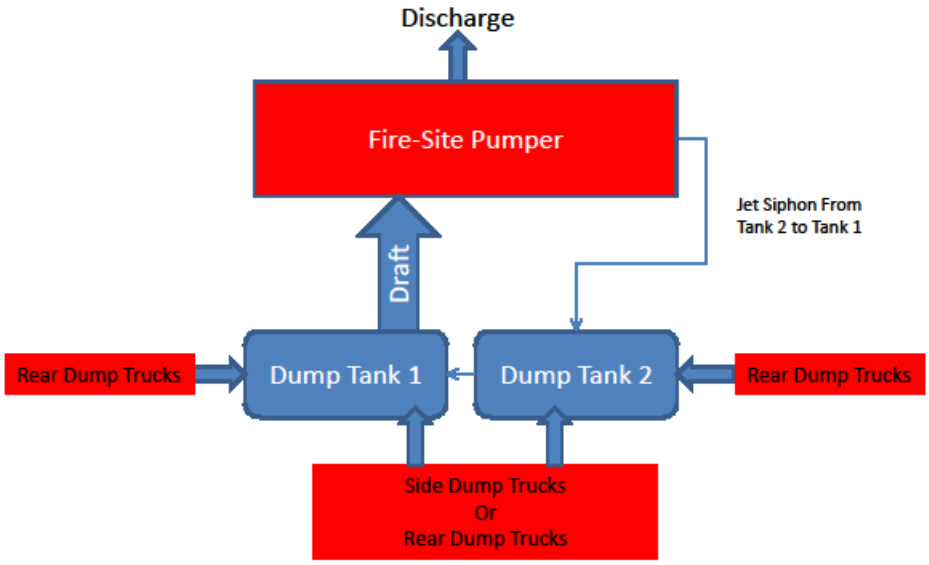

Fill Site Set-up: