1 Water System Impact Analysis

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December 4, 2012

Town of Wellesley Planning Board

RE: A&M Project # 1917-01
Wellesley Country Club
Pool Replacement and Renovation Project
Water System Impact Analysis

Allen & Major Associates Inc. (A&M) is pleased to submit this summary regarding the potential impacts on the municipal water system.

The proposed project is the replacement of the existing pool building, pool, and supporting structures. The current building is approximately 2,250 square feet. The existing pool area is approximately 3,400 square feet comprised of a larger lap pool and smaller kiddie pool area.

Upon completion of the work, the pool building will have a floor area of 8,380 square feet based on a footprint area of 6,190 s.f. The pool area will be increased to a total footprint of nearly 7,000 s.f.

The anticipated water usage is based on the sewage generation rates as published in the Massachusetts Department of Environmental Protection Sewer Connection regulations 314 CMR 7.15. Where a use was not listed in 314 CMR 7.15, sewage flows were estimated using the State Environmental Code (Title 5) in 310 CMR 15.203. Water usage is estimated by using half of the sewage flow values and adding 10% to the project sewage values to account for water consumption.

The water analysis is based on the following sewer generation classifications:

Country Club, dining room seat, snack bar, or lunch room:	10 gallons per day per seat
Country Club, lockers and showers:	20 gallons per day per locker

General Notes:
Note: 314 CMR 7.00 Sewer Extension and Connection Permit Program flows are not available (or are the same as 310 CMR 15.00 flows) for all uses.

The proposed build out shall include:

33 snack bar seats	@ 10 GPD per seat	=	330 GPD
46 men's lockers	@ 20 GPD per locker	=	920 GPD
46 women's lockers	@ 20 GPD per locker	=	920 GPD
Total sewer flow		=	2,170 GPD

The operation and maintenance of the pool will also require routine backwashing of the filtration system. The backwashing is anticipated to occur twice per month (during the operating season) and will produce

4,000 gallons per backwash. This average daily flow increases the sewer generation 266 gallons per day resulting in a total sewage flow of 2,436 gallons per day.

With an estimated daily flow of 2,436 gallons per day, the average water demand becomes 1,340 gallons per day. Potential maximum demand is based on three times the average daily demand and is 4,020 gallons per day.

The numbers presented above represent the full build out of the pool facility. However, the numbers should be adjusted to reflect the current baseline usage and backwashing of the pool. The current pool building provides 40 lockers for patron use (800 gallons per day). The current backwash operation occurs weekly and generates 1,600 gallons in two 800 gallon doses (229 gallons per day). The total current sewer flow is 1,029 GPD. The proposed total flow of 2,436 GPD represents an increase of 1,407 GPD over current usage.

The increase in average water usage is 774 GPD. The potential maximum demand increase is 2,322 gallons

Water service to the pool building will be based on an existing 6" service line that provides water to the tennis facility. A tap with gate valves will be constructed. The 6" water service is connected to the 12" water main located in Wellesley Avenue. Final layout of the water system will be coordinated with the water department.

A hydrant flow test was conducted on October 24, 2012 with the Wellesley Water Department to confirm adequate flow exists for the project. The hydrant was located at the intersection of Forest Street and Wellesley Avenue. The flow rate was measured at 961 gallons per minute at a static pressure of 78 pounds per square inch and a residual pressure of 75 pounds per square inch. This flow rate will be acceptable to service the building without the need for a fire pump. Flow test results are attached.

In 2005, when the Clubhouse project was proposed, the same hydrant was tested and yielded a flow rate of 840 gallons per minute (gpm) at a static pressure of 80 pounds per square inch and a residual pressure of 70 pounds per square inch. The resultant flow calculation is 2,200 gpm at 20 psi.
A new fire hydrant is proposed in the vicinity of the turf care facility and is shown on the Proposed Utility Plan.

As calculated, the project may use 2,436 gallons per day and should not have a negative impact on the municipal system. The actual water usage should fall well below the 2,436 gallons per day as calculated.

AAA Sprinkler
SINCE 1968

33 Plan Way – Bldg. 3B Warwick, RI 02886
Tel: (401) 732-8886 Fax: (401) 732-8887

Hydrant Flow Test

Wellesley Country Club

Wellesley, MA

Date: 10-24-12

Time: 10:00 am

Present at Test:

Wellesley Water Dept

Nicole Zarella, AAA Sprinkler Co

Hyd. Butt: 2-1/2"

COEF: 0.9

Static: 78 PSI

Residual: 75 PSI

Pitot: 40 PSI

Flow: 961 GPM

Hyd. Condition: good

Main Size: 12"

WATER FLOW TEST SUMMARY SHEET

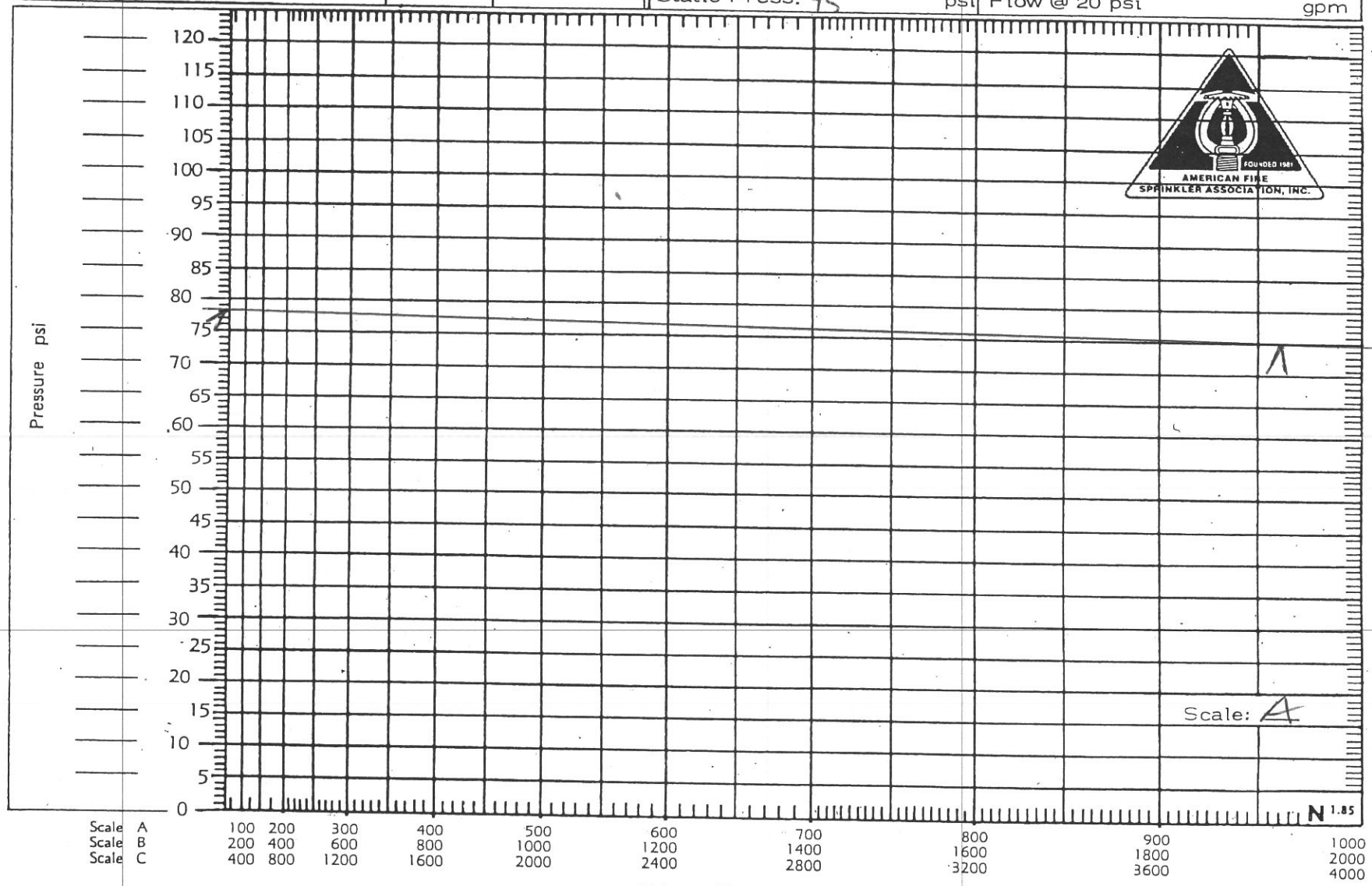
Hydrant No.	Outlet I.D. inches	Pitot Press. psi	Flow gpm	Residual psi
1	2½	40	961	75
2				
3				
	Total Flow			

Date: 10/24/12 Time: 10:00am Cont. No.

Cont. Name: AAA Sprinkler Co, Inc

Address: 33 Plan Way Bldg 3B
Warwick, RI 02886

Static Press: 75 psi Flow @ 20 psi gpm



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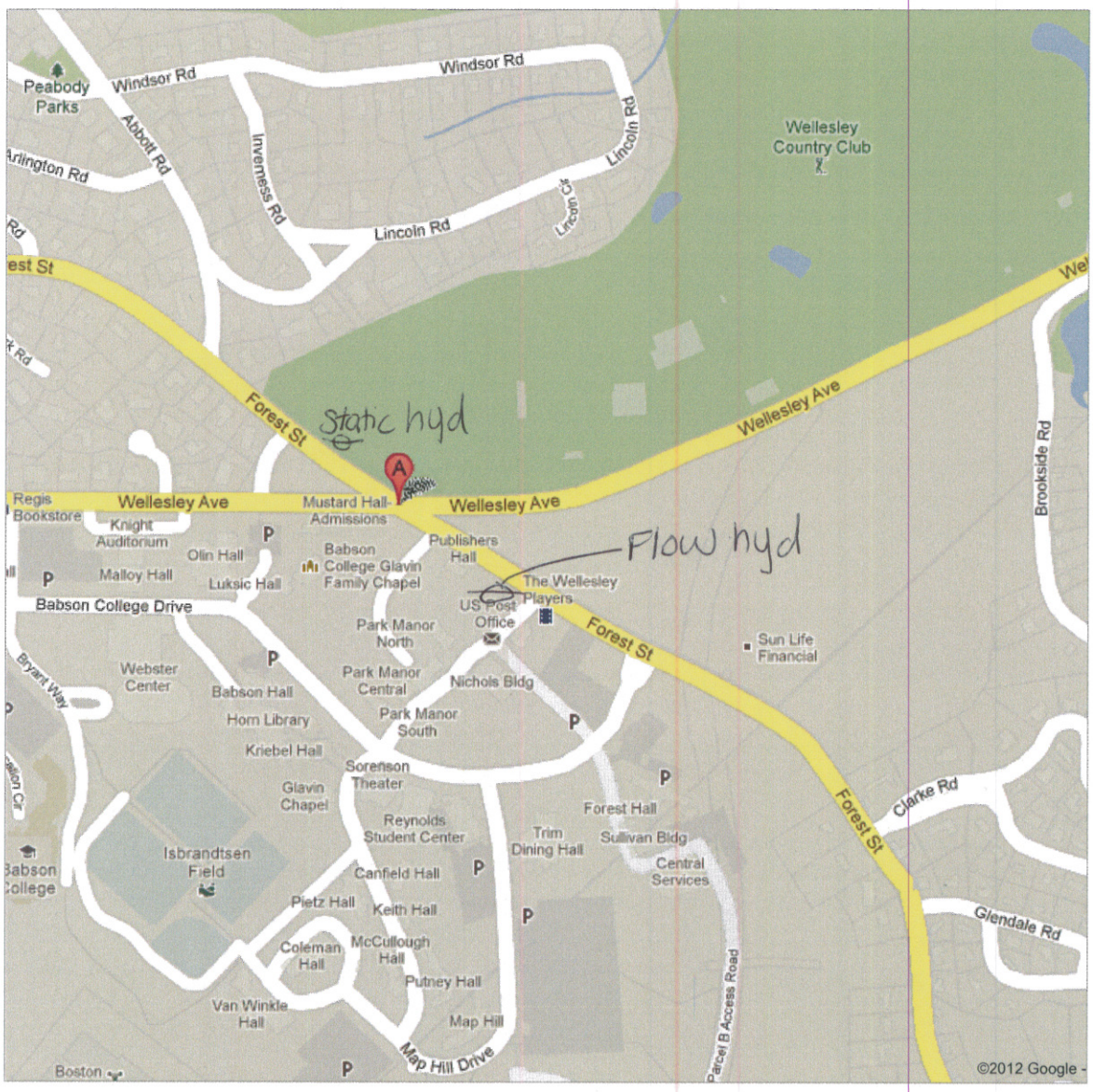
Google

Address **Wellesley Ave & Forest St**
Wellesley, MA 02481

Get Google Maps on your phone
Text the word "GMAPS" to 466453



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Hydrant Flow Test

Wellesley Country Club

Wellesley, MA

Date: 3-8-12

Time: 10:30 am

Present at Test:

Joe Doherty Wellesley Water Dept

Nicole Zarella, AAA Sprinkler Co

Hyd. Butt: 2-1/2"

COEF: 1.0

Static: 110 PSI

Residual: 109 PSI

Pitot: 21 PSI

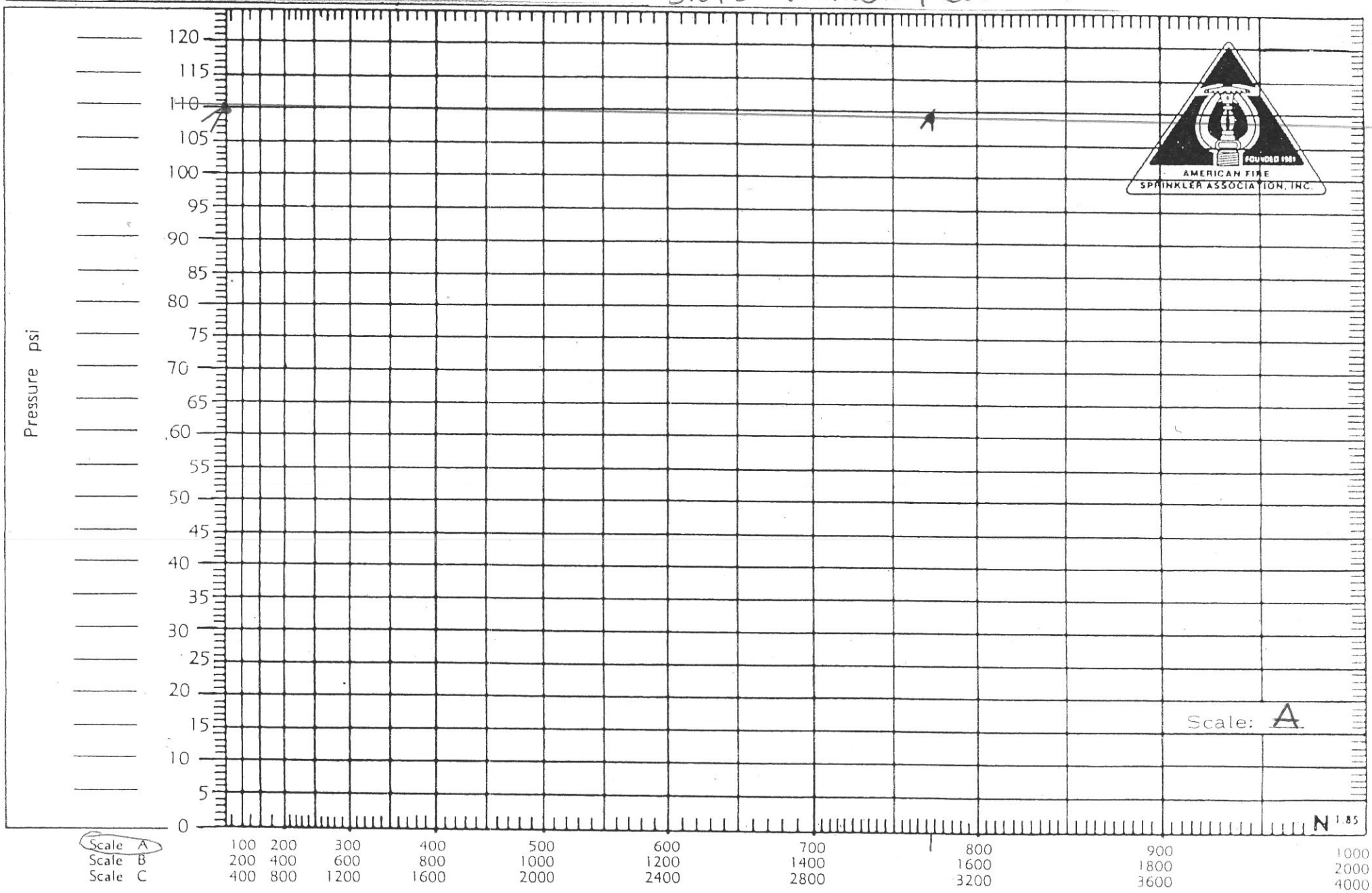
Flow: 773 GPM

Hyd. Condition: good

Main Size: 6"

Static on Flow Hyd: 100 PSI

3/8/12 Wellesley Country Club



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