DAMON R. TALLEY, P.S.C.

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DAMON R. TALLEY ATTORNEY AT LAW

April 19, 2006

Ms. Beth O'Donnell
Executive Director
Public Service Commission
PO Box 615
Frankfort, KY 40602

RE: PSC Case No. 2006-00065
Oldham County Water District

Dear Ms. O'Donnell;

Enclosed for filing are the original and eight (8) copies of the Oldham County Water District's Response to Commission Staff's Interrogatories and Request for Production of Documents.

Yours truly,
DAMON R. TALLEY, P.S.C.

DAMON R. TALLEY, CO-COUNSEL FOR OLDHAM COUNTY WATER DISTRICT

DRT:ms

Enclosures

cc: Hon. John R. Fendley, Oldham Co. Attorney
Oldham County Water District

6/OCWD/O'Donnell 4-19-06

COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

APPLICATION OF OLDHAM COUNTY WATER WATER DISTRICT FOR A CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY TO CONSTRUCT AN ELEVATED WATER TANK	)))))	CASE NO. 2006-00065

RESPONSE TO COMMISSION STAFF'S INTERROGATORIES AND REQUEST FOR PRODUCTION OF DOCUMENTS

Comes the Applicant, OLDHAM COUNTY WATER DISTRICT (the "District") and for its Response to the Commission Staff's Interrogatories and Request for Production of Documents states as shown on the following pages:

This 19th day of April, 2006.

Respectfully submitted,

DAMON R. TALLEY, P.S.C.

Damon R. Talley

DAMON R. TALLEY, ATTORNEY FOR OLDHAM COUNTY WATER DISTRICT
P. O. BOX 150
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6/OCWD/Response Cover Sheet 4-19-06

Q1. Refer to Oldham District's Application at paragraph 6. For each instance since January 1, 1996, in which Oldham District has restricted customers' water usage due to its inability to store sufficient water to meet customer needs, state the nature of the restrictions imposed, the time period during which Oldham District imposed these restrictions, and the reasons for the insufficiency (e.g., drought conditions, mechanical or system breakdowns).

RESPONSE:

Since January 1, 1996, there have been numerous instances in which Oldham District has requested its customers to voluntarily conserve water and to limit lawn sprinkling and other outdoor use of water. Unfortunately, Oldham District does not maintain a log or keep a complete record of all these instances. Oldham District has made a diligent search of its records and has conducted an online internet search of past Courier-Journal and Oldham Era (local county newspaper) articles concerning water shortages in Oldham County. As a result of these searches, Oldham District can document three (3) major instances in which its customers' water usage was severely curtailed. These instances are: (1) June 2005; (2) July 2004; and (3) September 2002. The specific facts concerning each instance are described below:

A. **June 2005.** This is the only instance in which Oldham District officials can recall issuing a mandatory ban on outdoor and recreational use of water. In all other instances only voluntary conservation measures were instituted.

On Friday, June 24, 2005, Oldham District issued a Water Shortage Alert because its customers were using water faster than the District could refill its storage tanks. Oldham District officials had been closely monitoring the tank levels for the previous several days and the tank levels were getting lower each day. Oldham County and the entire area had experienced several weeks without measurable rainfall and the temperatures were hovering in the 90° range. Therefore, Oldham District issued a Water Shortage Alert and requested its customers to voluntarily conserve water. This plan "backfired." Customer usage increased on Saturday and Sunday. On Monday, June 27, 2005, tank levels were becoming dangerously low so Oldham District declared a Water Shortage Emergency and issued a mandatory ban on non-essential water uses. On the same day, the Oldham County Judge/Executive declared a Local State of Emergency.

Fortunately, it rained; the air temperature cooled; and water consumption dropped. On June 28, 2005, the Oldham County Judge/Executive lifted the Local State of Emergency, effective at 7:00 a.m. on June, 29, 2005. On June 29, 2005, Oldham District lifted its Water Shortage Emergency and replaced it with a Water Shortage Alert. Oldham District continued to request its customers to voluntarily conserve water for several more days. Attached as composite **Exhibit 1-1** are numerous documents and newspaper articles concerning this water shortage incident.

It is important to note that none of Oldham District's wells, pumps, treatment facilities, booster pump stations, storage tanks, transmission lines and distribution lines failed during this critical period of time. Despite the fact that Oldham District was pumping in excess of 6.0 million gallons per day ("MGD") for several days, the tank levels were gradually dropping. The demand placed on the system by its customers was greater than the system output.

B. **July 2004 Storm.** On July 13, 2004, strong winds, heavy rain, and lightning moved through Oldham County and other surrounding areas. The storm caused widespread electric power outages, including the Westport area of Oldham County where Oldham District's water treatment plant and well field are located. Oldham District operated key components of its system on generators at approximately 1/3 of its normal production. Oldham District declared a Water Shortage Alert and requested its customers to voluntarily conserve water. The District records do not indicate the length of time before electricity was restored, but a Water Shortage Emergency was never issued. Attached as part of composite **Exhibit 1-1** is an article that appeared in the Oldham Era which chronicled this event.

C. September 2002. On Tuesday, September 3, 2002, following a Labor Day weekend in which customer water usage approached 6 MGD, Oldham District declared a Water Shortage Alert and requested voluntary conservation by those

customers residing in areas south of I-71. On Monday, September 9, 2004, the Water Shortage Alert was expanded to include Oldham District's entire service area. The Water Shortage Alerts were issued because customer usage had exceeded the water production and transmission capacity of Oldham District's system. Without the customers' water conservation efforts, the levels in some of the tanks would have become dangerously low.

Once again, mother nature solved the problem with rainfall and cooler weather. No Water Shortage Emergency was declared and no mandatory restrictions were implemented. Oldham District officials do not recall the length of time its customers were asked to conserve water. They estimate the period of time to be approximately two (2) weeks. This instance was reported in both the Courier-Journal and the Oldham Era. See composite **Exhibit 1-1**.

WITNESS: Phillip Ward, Superintendent, OCWD

EXHIBIT 1-1

NEWSPAPER ARTICLES

Media Advisory

For Immediate Release **Contact: Judge-Executive Kinser**

Oldham County Judge-Executive Mary Ellen Kinser has declared a Local State of Emergency for Oldham County in conjunction with the Water Emergency Mandatory Conservation order issued by the Oldham County Water District. The state of emergency will exist through July 3rd, 2005 or until there is sufficient reserve to provide necessary fire flow protection in all water tanks.

Without the mandatory conservation the situation could worsen and cause disruption of service and possibly a boil water advisory. If a boil water advisory were to occur it would adversely impact a significant number of businesses and place any immune deficient residents of Oldham County such as infants, seniors, and chemo therapy patients at greater risk.

According to the Water District, the heaviest water consumption area is in the Centerfield area. The conservation order is mandatory, and pertains to all the area of Oldham County served by the Oldham County Water District and LaGrange Utilities. This means no outside watering of lawns or gardens, no car washing, no filling or topping off of swimming pools.

This does not affect customers served by Louisville Water, Henry County or Shelby County Water Districts.

In addition, outdoor open burning of any type is prohibited county wide, due to fire hazard and reduced water supply for the duration of this emergency.

Prior to this emergency, as Judge Executive, I placed funding for an additional 24" main for Oldham County Water District as a top priority we were successful in acquiring that funding. Engineering for this project had begun prior to the current situation. Additional water main, additional wells,

and a 2 million gallon water tank in the Buckner area are also planned which will work to alleviate this situation in the future.
If people will abide by the mandatory conservation of water it is our hope to lift the declaration of emergency by Monday July 4th.

It is important that the community understands the seriousness of the situation so that the conservation restrictions are unchallenged.

Thank you for doing your part for the community.

Mary Ellen Kinser

Oldham County Judge-Executive

502-222-9357 FAX 502-222-3210
MEKINSER@OLDHAMCOUNTY.NET

100 West Jefferson Street
LaGrange, Kentucky 40031

June 27th, 2005

WHEREAS, on 6/27/2005 a Oldham County Water District issued a mandatory emergency water conservation order in the areas served by the Oldham County Water District, Oldham, Kentucky; and including the areas served by LaGrange Utilities Commission, and

WHEREAS, the water emergency directly effects the safety and health of those persons served by the Oldham County Water District and the LaGrange Water district; and

WHEREAS, lack of conservation of water resources could escalate and cause disruptions of service and business; and

WHEREAS, this situation creates a considerable hardship for the citizens of Oldham County; and

WHEREAS, local government has the responsibility to protect the public health, safety and welfare, and to mitigate the effects of such events.

NOW, THEREFORE, I (Mary Ellen Kinser, Oldham County Judge/Executive, by the authority vested in me by KRS 39A.100(2), do hereby declare that a State of Emergency exists in Oldham County for the period starting immediately and extending through July 3rd, 2005, and direct that:

1. The local Emergency Operations Plan shall be fully executed;

2. The Oldham County Emergency Management Director shall direct the Oldham County Emergency Management Agency to provide such assistance as can be delivered from available local resources and shall coordinate all agencies of local government to provide assistance to Oldham County;

3. All agencies of Oldham County shall cooperate to the fullest extent with Oldham County Emergency Management Agency and Oldham County Water District and shall provide such assistance as may be required for response to this emergency.

4. For the duration of this state of emergency the following conservation measures shall be enforced in the areas served by Oldham County Water District and LaGrange Utilities:

a. No outside watering of lawns and gardens.
b. No car washing.
c. No filling or topping off of swimming pools.

5. For the duration of this state of emergency, the following restrictions shall be enforced countywide:
a. No open burning of any type county wide.

6. Under this State of Emergency, as provided in KRS 39A.100 (2) and 45A.380(1)(7) Judge/Executive can waive procedures and formalities otherwise required by the law pertaining to: a) performance of public work, b) entering into contracts, c) incurring obligations, d) employment of permanent and temporary workers, e) utilization of volunteer workers, f) rental of equipment, g) appropriation and expenditure of public funds.

Mary Ellen Kinser, Judge/Executive
Oldham County, Kentucky

Ann B. Brown
Ann Brown, County Clerk
Oldham County

William Baker

From: "Phillip Ward" <phillpward@insightbb.com>
To: "william" <williambaker@insightbb.com>
Sent: Wednesday, June 29, 2005 10:16
Subject: Media Advisory 06282005

Media Advisory June 28, 2005

For Immediate Release **Contact: Judge-Executive Kinser**

Effective 7:00 AM June 29th, 2005.

Oldham County Judge-Executive Mary Ellen Kinser has lifted the Local State of Emergency because adequate fire flow capacity has been restored because of the community's commendable participation in the conservation measures.

However, the Oldham County Water district retains the authority and finds it necessary to continue to enforce certain mandatory water conservation measures to ensure general service and fire protection availability.

We are requesting that when the Water District lifts its mandatory conservation measures, county residents and businesses will continue to exercise voluntary water conservation.

The portion of the declaration prohibiting all outdoor open burning has also been lifted and the county reverts to the previous rules on open burning as set forth by the Division of Air Quality and the EPA for ozone non-attainment areas. This allows outdoor cooking and a limited number of agricultural or silvicultural burning. The non-attainment rules prohibit all other open burning until September 30th.

Thank you for doing your part for the community.

Oldham County Water District
P.O. box 51
Buckner Kentucky 40010
R. Phillip Ward

June 29, 2005

The Oldham County Water District is lifting our mandatory conservation of water temporarily.

We ask that everyone be aware of their water consumption to prevent another mandatory conservation.

Please restrain form irrigation practices as much as possible.

Do watering as much as possible with watering and sprinkler cans.

Don't turn on lawn sprinklers and just leave them running.

Don't water lawns overnight.

If sprinkling lawn is a must please only water for a couple hours per day.

Oldham County Water District
P.O. Box 51 Buckner KY

July 1, 2005

To: Kellie Burton

PUBLIC SERVICE ANNOUNCEMENT:
PLEASE ANNOUNCE PERIODICALLY OVER THE AIR ON WAMZ AND WHAS RADIO JULY 2ND THROUGH JULY 4TH.

THE OLDHAM COUNTY WATER DISTRICT REQUESTS CONTINUED OUTDOOR WATER CONSERVATION EFFORTS FROM OUR CUSTOMERS. PLEASE CONTINUE TO BE WATER WISE. THANK YOU FROM OLDHAM COUNTY WATER DISTRICT.

THANK YOU,

PHILLIP WARD,
SUPERINTENDENT
OLDHAM COUNTY WATER DISTRICT
502-222-1690

Courier-Journal

Estimated printed pages: 4

June 28, 2005
Section: NEWS
Edition: METRO
Page: 01B

Heat saps Oldham water supply

Andrea Uhde

Adam Sichko
STAFF

County emergency rules prohibit all outdoor use

Andrea Uhde and Adam Sichko

The Courier-Journal

Oldham County declared a water emergency yesterday, and the water situation is even more severe in Lexington and Eastern Kentucky, the National Weather Service said.

Oldham County Water District customers who sprinkle their lawns or wash their cars could be fined or have their water cut off under conservation rules that took effect yesterday.

The county's pipelines cannot supply water fast enough and tanks are at their lowest in years - with barely enough water to douse a major fire, said William Baker , assistant superintendent of the Oldham County Water District.

"If the tank gets low and there could be some fire, there'd be no fire protection," Baker said.

The district's 8,000 customers should not water lawns, fill swimming pools or wash cars until the county gets about an inch of rain, Baker said.

Today's forecast for Louisville is a 50 percent chance of rain - but that doesn't guarantee everyone in the area will get precipitation, said Rick

Lasher , a meteorologist with the weather service in the city . "Certainly, it's not a widespread event," Lasher said. "It's more of a hit-or-miss thing. You just hope you're in the area that gets it."

Louisville has had only 1.48 inches of rain this month and is almost 2.4 inches below normal for the year - with most of the shortage occurring this month. Lexington and Eastern Kentucky are drier than that.

"That's more like 5 inches below normal for the year," Lasher said. "Oldham would be heading toward that."

The Louisville Water Co. pumped a record 204 million gallons of water Saturday, 4million more than the previous high for one day. But the company's customers have nothing to fear for the moment, said Vince Guenthner , manager of government affairs for Louisville metro government, which owns the water company.

The utility has all the water it needs and is not asking any customers to conserve , Guenthner said.

But many water companies have asked for conservation. Others, like Madison County Utilities, have imposed mandatory limits. Residents of Richmond can use water outdoors only on Tuesdays and Thursdays through July10.

North Shelby Water Co. has voluntary restrictions, but they apply every day.

"We would hope that if we get some response from this conservation effort, probably in a week or so we'd be able to lift it," said company manager Darrell Dees .

"We've had really good luck in the past with this effort," said Dees, whose company has recorded its driest June since 1982. "People have responded well."

In Oldham County, employees set to work yesterday enforcing emergency restrictions.

Six water district workers spent the day alerting customers. They turned off sprinklers at several houses, leaving fliers on doors to explain the situation, Baker said.

People still using water outdoors could be fined or have their water cut off starting today, he said. He said the fine could be $10 for every 1,000 gallons over the household's average usage.

Ellen Guest 's underground sprinkler system was running Monday when a water district employee broke the news that her begonias and purple petunias will have to stay thirsty.

Guest's LaGrange property is full of hanging plants, banana trees and lush shrubs she planted last spring. She has been watering them several days a week.

"I'm gonna turn it off and keep it off," Guest said. "They might die - some of them - but I'll replant."

Water use crept up during several dry, humid days last week. By Friday, the Oldham water district was urging customers to conserve, but over the p ast few days, customers used about 6 million gallons daily - about 2 million more than normal, Baker said.

On Monday, Oldham County Judge-Executive Mary Ellen Kinser declared an emergency. She said she hopes to lift the water-use restrictions by Monday.

Oldham has these problems because it doesn't have enough pipelines and wells, Baker said.

"We just can't keep up," he said. "They are still using all the water and more than we can get there."

In the p ast few years, the county has installed a main from Westport - the source - to Centerfield, and the county has added three tanks, he said.

Kinser said an additional main, more wells and a 2 million-gallon tank in Buckner are in the works and will alleviate problems.

"The problem that's hitting us as hard is the growth, the new homes and people putting the sod out," Baker said. "But you got to have drinking water before you worry about grass."

INDIANA

Indiana hasn't had measurable rainfall since June 16 . The last time the state went 11 days without measurable rainfall was September 2003.

With a holiday weekend approaching, fire officials said that they are concerned that fireworks could spawn brushfires in parts of the state.

"That is a major concern," said Pam Bright, a spokeswoman for the state fire marshal's office.

People in the northern part of Evansville have been asked not to use any unnecessary water, said Duane Gilles of American Water, which manages the city's system.

The conservation plan will be in effect for at least two more weeks, Gilles said.

Indianapolis Water officials asked Marion County residents to stop watering their lawns after usage set a record over the weekend.

So far this month, the state has recorded five days that hit the 90-degree mark, with three of those in a row.

The last time Indiana had three consecutive 90-degree days was in June 1996, according to data from the weather service. The longest period without measurable rainfall was in 1964 - 27 days.

The Associated Press contributed to this story. The reporters can be contacted at auhde@courier-journal.com and asichko@courier-journal.com.

Water shortage leads to local state of emergency, conservation order

By Danielle Komis

The showers at the Oldham County Aquatic Center have been roped off by bright pink tape and residents have had to put away their sprinklers in light of a mandatory water conservation order that has prompted a local state of emergency.

The order, issued by the Oldham County Water District, prohibits residents served by the district and La Grange Utilities from using water for outdoor purposes such as watering lawns or gardens, washing cars or filling or topping off swimming pools. However, residents may water plants using a bucket or watering can.

Phil Ward, superintendent of the Oldham County Water District, said that the district does not like issuing the mandatory bans because it puts a strain on residents and workers. The first conservation order, issued on Friday, was voluntary, but became mandatory when water levels did not rise.

"That was our next step that we had to do for the benefit of all," he said.

Ward said a voluntary ban has been effective in the past, but he is unsure why it did not work this time. If the situation were to worsen, the county might have to go to a boil water advisory, which would be a major disruption for businesses, especially restaurants.

"We don't want to go there because people will really be out for a week or so," he said.

Water district employees have been patrolling after hours to ensure that the ban is not being violated. Those found in violation may have their water temporarily shut off or may be fined $10 per every 1,000 gallons of water over the household's average use, Ward said.

"That's a last resort," Ward said. "We really don't want to ... we're not out for blood." As of Tuesday, Ward was unaware if any citations had been issued.

Ward attributed the shortage to a recent dry spell along with increased outdoor watering, as well as the water district simply not being able to keep

up with the demands of a rapidly growing county.

"They (developers) can develop a lot quicker than we can," Ward said, adding that it takes 18 months to build a new water tank main, which would help meet demand.

Engineers are currently working on plans to make a new water main, additional wells and a 2 million-gallon water tank in Buckner. Finding a place for the tank was difficult, Ward said, because many residents object to having a water tank near their property. It took two years and six site proposals before the current site was decided upon. Water district officials hope the new projects will help double the district's current capacity in three to five years, he said.

"Once that is finished it should take care of the problem," he said.

Bill Caldwell, environmental control supervisor in the Water Quantity Management Section of the Kentucky Division of Water, said the water shortage, which also affects nearby Bullitt, Spencer and Shelby counties, is largely due to high demand rather than low water source.

"We're not running out of water at the source, we're just maxing out our capacity," he said.

Yet an "unusually hot" dry spell so early in the year does not help the area, Caldwell said, especially at a time when people are trying to get their gardens and yards started.

According to the Kentucky Division of Water's Web site, the Bluegrass Region -- which includes Oldham County -- has had only 42 percent of normal precipitation in the last 30 days. Precipitation is below normal across the state, though the Bluegrass Region has the least amount, according to the site. Oldham County is defined in the Bluegrass Region by the Palmer Drought Index, which is compiled weekly by the Central Region Climate Prediction Center.

In addition to the local state of emergency, Oldham County Judge-Executive Mary Ellen Kinser also issued a countywide outdoor open burning ban due to fire hazard and reduced water supply. The county hopes to lift the ban by July 3.

Water levels were already beginning to increase after 24 hours of the

mandatory conservation, Ward said, and if all goes well, the ban could be lifted by Friday. Originally, the county had hoped to lift the ban by Monday.

However, Ward said he still encourages people to continue to voluntarily conserve water once the mandatory ban is lifted or water levels could return to dangerously low levels.

But for now, residents are dealing with the issue.

Laura Feese, director at the Oldham County Aquatic Center, said she had to close the sand volleyball courts and the showers since patrons must shower before re-entering the pool from the courts. Feese said she doesn't think the water conservation regulations are too much to ask of anyone, so people handle it well.

"I think they all get it," Feese said. "I don't think those are great sacrifices."

E-mail us about this story: oldhamnews@oldhamera.com.

Year-round conservation necessary

The pages of the Oldham Era are often filled with talk about growth and its effects on the daily lives of Oldham County residents. It seems that the stress of growth on our roads, sewers and schools are first and foremost in our minds as more people move to Oldham County.

But as we found out last week, there is another facet of infrastructure that is feeling the stress of growth - though we might not notice it as much until we turn on the faucet or water our lawns.

Last week, a mandatory water conservation order halted all outdoor water usage in Oldham County. The ban was lifted Wednesday.

Phil Ward, superintendent of the Oldham County Water District, said the shortage was due to a combination of a recent dry spell and increased outdoor watering, in addition to the difficulty faced by the water district in keeping up with demand in the face of development.

The district is working hard to meet those demands, constructing a new water main, additional wells and a 2 million-gallon water tank in Buckner. Ward hopes the new projects will double the district's capacity in three to five years.

While it's great to see our water district working diligently to make our water problems a thing of the past, residents need to be educated about water conservation and informed of a possible shortage before it's too late. But each resident of Oldham County has to take some responsibility as well.

Water is the most crucial and important substance on earth, and clean, plentiful water is necessary for any community to develop and grow. When Mother Nature isn't reimbursing us for our water usage and we're having a dry summer, it's up to each of us to learn to conserve water when it's so crucial. During these times of clear skies and little rain, we need to realize that every drop of water is important, and needs to be saved for its most beneficial use.

While many Oldham Countians rely on tap water for watering their yards and filling their pools, others need it for drinking water - for these residents, the water that flows from our taps is much more important.

So next time you're thinking about watering your lawn, filling up your pool or giving your car that extra mid-week wash, think about how that water might be better spent.

And maybe if you give her a few days, Mother Nature will send a nice summer shower to remedy the problem for all of us.

Storm causes widespread damage, power outages

By Nathaniel Kissel

The Oldham County Water District is asking residents to conserve water following severe weather that hit the region Tuesday night.

"We're asking people to conserve water as best as they possibly can," said Phil Ward, superintendent of the water district.

Strong winds, torrential rain and lightning moved through Oldham and surrounding counties Tuesday, causing widespread power outages.

Officials at LG&E could not be reached for comment by press time. However, a recorded message estimated that 86,000 customers were still without power Wednesday morning.

Ward said Wednesday morning that power is out and generators are running at several facilities in Westport, including the treatment plant and pumps at the area's wells. Ward said the Westport area is "the heart of the whole operation."

Because the district is running on generators, Ward said the district is only able to pump about one-third of the water it normally does.

District officials have advised La Grange Utilities to to shut down car washes, and are asking people to avoid all outside watering. Ward said he is even advising residents not to wash their clothes right now unless it is absolutely necessary.

Ward said Wednesday morning that district officials could not get an answer from LG&E, and have no idea when power will be back on at the wells. Ward said even after power is restored, it could take up to a day to get the water supply back to normal levels.

Residents should listen to the radio and watch television news broadcasts for updates, Ward said.

Deputy Judge Executive Jim Morse, who serves as emergency services director for Oldham County, said Tuesday's weather caused fallen wires and trees in many areas of the county. Morse said the most significant damage was along U.S. 42 east of Goshen and to the east of Ky. 393 to the Henry

and Trimble County lines.

Morse said the county did not declare a state of emergency, but was in emergency operations mode. He estimated Wednesday morning that 30 percent of the county was still without power at that time. Morse estimated that number was probably closer to 50 percent during Tuesday night's storm.

Morse said he was not aware of any significant injuries, but said there was a rescue effort on U.S. 42 where a vehicle was trapped under power lines.

U.S. 42 between Bohannon and Tobacco Road was still closed Wednesday because of downed wires, Morse said, and sections of Ky. 524, Buckeye Lane and Brownsboro Alternate also remained closed Wednesday.

Morse said the county's emergency resources responded well to the storm. He said at least half of the county road department employees worked through the night, with the remainder of department members joining them Wednesday morning. Morse said the fire departments also did a great deal of emergency road clearing. He said both Oldham County Police and the Oldham County Sheriff's Department had two shifts working Tuesday night, and a significant number of La Grange Police officers worked as well.

"We had an excellent emergency response," Morse said. "And we had people doing things they normally wouldn't be doing."

E-mail us about this story at: nkissel@oldhamera.com.

September 4, 2002
Section: NEWS
Edition: MET;METRO
Page: 02B

OLDHAM COUNTY

ELLIS LESLIE

Customers south of I-71 asked to cut **water** use

Alert aims to meet fire-protection needs

LESLIE ELLIS

lellis@courier-journal.com

The Courier-Journal

Oldham County Water District customers who live south of Interstate 71 are being asked to conserve **water** to ensure adequate supply and pressure for fire protection.

District officials issued the conservation alert after **water** use skyrocketed as homeowners increased reliance on lawn sprinklers during the dry summer. Use recently jumped to more than 5.6 million gallo

per day for the entire system, up from the typical 3.5 million to 3.8 million gallons.

More than 4,300 customers are affected by the conservation alert.

The storage and pipeline capacities in the area south of I-71 aren't sufficient to handle the peak dema use for extended periods.

``We have the **water** we just can't get it there fast enough with the size lines that we have,'' district Superintendent Phil Ward said. ``People are crushing us with sprinklers.''

Ward said unless people cut back on **water** use, the district may be forced to impose mandatory restrictions and place a surcharge on **water** used above each customer's average consumption.

The district suggests these conservation measures:

Keep watering to a minimum. Use a soaker hose or spot irrigate. Use watering cans for trees, shrubs a flowers.

Avoid watering during peak usage times - from 6 to 10 a.m. and from 4 to 10 p.m.

Use a bucket to wash cars don't let the hose run unnecessarily.

Since dry conditions are expected to continue, the request for voluntary conservation will remain in eff for the rest of the growing season.

After the alert was issued Friday, Ward said the district saw a drop in use over the weekend, indicatin that people are making an effort to conserve.

To relieve future **water-shortage** problems, the district is installing larger waterlines and new tanks tha will provide an additional 900,000 gallons of storage.

A new **water** main to the existing Centerfield tank near Lockwood Estates subdivision will be built by t middle of next summer. New storage tanks at Ballardsville and at Payton Lane and Osage Road shou be finished by the end of next year.

The district draws its **water** from wells fed by aquifers near the Ohio River in the Westport area.

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Courier-Journal

Estimated printed pages: 3

September 10, 2002
Section: NEWS
Edition: MET;METRO
Page: 02B

OLDHAM COUNTY; Water officials urge more voluntary conservation

ELLIS LESLIE

LESLIE ELLIS

lellis@courier-journal.com

The Courier-Journal

Faced with a deepening drought and high water usage, the Oldham County Water District is expanding its conservation alert to include customers north of Interstate 71.

When the alert was issued last week, only customers south of I-71 were asked to cut back on water consumption, which has skyrocketed as homeowners nursed their lawns and landscaping through the dry summer.

The district has about 6,000 customers and serves twothirds of the county.

Use had jumped to as high as 5.7 million gallons a day for the entire system, up from the typical 3.5 million to 3.8 million gallons.

And the district didn't get as good a response from the area south of I-71 as it had hoped for, said district board chairman James Hall. Now increased watering by residents north of I-71 is taxing the system, draining tanks and causing pressure and supply problems in some neighborhoods.

Storage facilities in that area can no longer meet the peak demand, Hall said.

Letters asking customers north of I-71 to conserve water will go out tomorrow or Thursday. The district is asking customers to keep watering to a minimum and use a soaker hose or spot irrigation instead of sprinklers. It

urges using watering cans for trees, shrubs and flowers.

It also is asking them to avoid watering during peak times, from 6 to 10 a.m. and from 4 to 10 p.m.

District officials have said that unless people cut back on water use, the district may be forced to impose mandatory restrictions and place a surcharge on water used above each customer's average consumption.

Residents in the Old Taylor Place subdivision on U.S. 42 at the far end of the Oldham water district's distribution system struggled to cope with unusually low pressure last week.

On Saturday, it got so bad that some residents, including Richard White and his family, didn't have water to take showers or flush toilets.

Pressure did improve Sunday, White said, and was nearly back to normal yesterday morning.

To preserve water supplies, the Oldham district on Saturday stopped supplying water to Goshen Utilities, now owned by the Louisville Water Co., ``until things ease up,'' Hall said.

Goshen, which pulls much of its water from wells along the Ohio River, supplements its supplies with wholesale water from the Oldham district.

Louisville Water Co. spokeswoman Barbara Crow said the utility had received a handful of complaints about low pressure from the Goshen area since Saturday.

North Oldham Fire Chief Rick Albers said he is aware of the pressure problems. The department's contingency plan for fighting fires in low-pressure areas includes using tanker trucks.

The Oldham water district is working to improve pressure generally in the U.S. 42 corridor and plans to install a booster station near Ky. 393.

The district also ``desperately needs'' a 1 million-gallon storage tank on U.S. 42, Hall said. But earlier this summer, the tank was dropped from a capital improvement project that still includes new transmission lines and storage tanks to serve the fast-growing southern portion of the county.

The tank was dropped as part of a settlement in a dispute before the Public Service Commission that involved a rate case and its construction plans. Some residents argued the tank was primarily for the Dynegy power plant in Buckner. District officials denied that.

The district still wants to build the tank and continues to explore possible sites.

Water district expands alert

The Oldham County Water District on Monday, Sept. 9, expanded the water conservation alert issued last week to include the northern part of the county. La Grange and Buckner are also included.

Residents are being asked to limit irrigation, especially on weekends. If it is mandatory, the district asked that watering be done with soaker hoses or buckets outside peak hours of 6 n 10 a.m. and 4 n 10 p.m.

Residents are also being asked to keep car washing to a minimum, and to use buckets to wash instead of letting a hose run.

The La Grange Utility Commission is also asking customers to conserve water on a voluntary basis because it purchases water from the Oldham County Water District, Utilities Director Russ Rose said.

Q2. List and describe each customer complaint received since January 1, 1996 which related to Oldham District's "inability to store enough water to meet [customers'] needs."

RESPONSE:

Almost all of the customer complaints received by Oldham District were either telephone calls or e-mail messages which have been deleted. Oldham District does not maintain a complete log of the telephone calls. Most of the telephone calls should be more appropriately classified as "inquiries" rather than "complaints". After a diligent search of its records, however, Oldham District has found a written letter from Frank R. Fain, III dated June 27, 2005 and a few e-mail messages from Oldham District replying to customer inquiries. These documents are attached hereto as composite **Exhibit 2-1**.

WITNESS: Phillip Ward, Superintendent, OCWD
DeLois Banister, Office & Accounting Manager, OCWD

EXHIBIT 2-1

CUSTOMER COMPLAINTS

June 27, 2005

Frank R. Fain III
2525 Eastwood Circle
Crestwood, KY 40014

Oldham County Water District
3707 West Highway 146
Buckner, KY 40010

Gentlemen:

WHAS radio reported today that there is now a mandatory water conservation order in Oldham County issued by your office prohibiting watering plants, washing cars, topping off swimming pools, etc. due to hot and dry conditions.

In August 2002 I received a letter from your office on the subject of "voluntary" reduction of water usage due to hot and dry conditions. In that letter you advised "We plan to relieve these water shortage problems during 'peak' demand times in the future by installing a new water main to the Centerfield tank which serves your area. We will also construct a new water main from the Centerfield tank to a new and larger tank in Ballardsville. In addition, we will construct a new tank at a location on Payton Lane…" All of these improvements have been completed.

My question is, WHY IS THERE A WATER SHORTAGE?

Is this a situation where development in Oldham County has out paced water service capacity? If so, I would recommend you share that information with the Planning Commission and the Board of Education.

I pay substantial property taxes on my home in Oldham County based on a healthy assessment. A significant part of the value of my property is represented by my landscaping (turf, bushes, trees and flowers). I would like to think I could keep them all alive, if for no other reason, to preserve my healthy assessment. I have no school age children, the police seldom visit my neighborhood and our subdivision roads are relatively new. In other words, I depend on few services provided by Oldham County in spite of my substantial tax payments. One service I do depend on is water. Can you understand my disappointment?

Would you respond to my question about development and water capacity?

Sincerely,

Frank R. Fain III

cc: Magistrate Duane Murner
8502 Todds Point Road
Crestwood, KY 40014

Judge Mary Ellen Kinser
Oldham County Judge/Executive
100 West Jefferson Street
LaGrange, KY 40031

De Lois Banister

From: "De Lois Banister" <dbanister@insightbb.com>
To: <the_clarks@bellsouth.net>
Sent: Thursday, June 30, 2005 8:17 AM
Subject: water

The mandatory order has been lifted, However we are asking that our customer conserve water where possible. The customer base is using water faster than we can pump it to our tanks. Thanks OCWD

De Lois Banister

From: "De Lois Banister" <dbanister@insightbb.com>
To: <rapsonr@insightbb.com>
Sent: Thursday, June 30, 2005 8:28 AM
Subject: Oldham Co Water

We did all we could to inform our customer about the water conserve order. We do not serve our own web sight but have it served by an out side service. It would not have been changed in time to get the word out. All local TV stations carried the news and are keeping people informed as possible. The mandatory order has been lifted but we are still asking that our customers conserve. The customer base is using water faster than we can pump it to our tanks.

Thanks, OCWD

De Lois Banister

From: "De Lois Banister" <dbanister@insightbb.com>
To: <lsteve3@bellsouth.net>
Sent: Thursday, July 07, 2005 10:06 AM
Subject: Water

Since the water emergency happened so abruptly the only way to communicate was by TV and New paper. We did not have a water shortage as such. The Customers were using the water stored in our tanks faster than we could pump it back into them. This created a situation that could only be corrected by conservation of water and allowing time for us to fill the tanks. We are still asking that customers use water wisely and conserve as they can. As long as we have time to recoup we can supply water.

De Lois Banister

From: "De Lois Banister" <dbanister@insightbb.com>
To: <wete3@hotmail.com>
Sent: Friday, July 08, 2005 9:51 AM
Subject: water

We appreciate your suggestion however since we do not serve our websight in house we must contact our contractor to up-date it. Then again when it is lifted and this is added cost. It also does not assure us that the info will be up-date in time. Since this occured so abruptly we felt that the media was the fastes way to let people know. The water conservation was not a shortage as such. The customers were using the water faster than we could pump it back into our tanks. We are in the process of up-grading our infrastructure but this takes time. We are now asking our customers to be conservitive and mindful of this situation. Again we thank you and hope that we get some rain soon.

Q3. Provide the preliminary and final versions of all engineering reports that Oldham District prepared or commissioned for the proposed water storage tank.

RESPONSE:

The Oldham District did not prepare nor commission any preliminary or final engineering reports for the proposed Highway 146 Water Tank.

WITNESS: Phillip Ward, Superintendent, OCWD

Q4. At paragraph 6 of its Application, Oldham District states that its "storage capacity deficiency has been ascertained by the Public Service Commission as well."

a. Provide all documents that support this statement.

RESPONSE:

Oldham District does not have any documents to support the statement that the Commission has ascertained that Oldham District has a storage capacity deficiency.

b. State whether, in light of the Commission's Order of March 15, 2006, in Case No. 2005-00340, Oldham District still maintains that the Commission had found that the water district suffers from a capacity deficiency.

RESPONSE:

No. Although the Commission has determined that Oldham District meets the minimum, average daily usage storage requirements, the Highway 146 Tank is still needed to enable Oldham District to provide adequate water service to its customers during periods of hot, dry conditions.

WITNESS: William D. Baker, Sr. Assistant Superintendent, OCWD

Q5. Provide the minutes of the meetings of Oldham District's Board of Commissioners held since January 1, 2001 in which construction of the proposed water storage tank is discussed.

RESPONSE:

Attached as composite **Exhibit 5-1** is a copy of the minutes of the various meetings at which a motion was made concerning the proposed Highway 146 Tank or in which the minutes reflected any discussion about the Tank. Oldham District's minutes rarely include discussion items. The minutes are primarily a record of the motions made and whether the motions passed or failed. Nevertheless, the Commissioners have discussed the proposed Highway 146 Tank at almost every meeting for the past 18 to 24 months. At different meetings, the proposed tank was referred to by using various descriptive names, including the following:

Highway 146 Tank
146 Tank
Dynegy Tank
Dynegy/KSR Tank

All these different names refer to the same tank.

WITNESS: Phillip Ward, Superintendent, OCWD

EXHIBIT 5-1

MINUTES

OLDHAM COUNTY WATER DISTRICT
REGULAR MEETING
TUESDAY, JANUARY 4, 2005

On the above date, a Regular meeting of the Commissioners of the Oldham County Water District was held at the Water District Offices in Buckner, Kentucky.

The meeting was called to order at 7:04 p.m. by Gus Daeuble.

Those present:

COMMISSIONERS	ALSO IN ATTENDANCE:
Gus Daeuble, Chairman	Brayton Bowen
Mel Milburn	Larry Kapester
Vincent Attardi	Bill Baker
Forrest Ewen	Phillip Ward
Robert Durbin	Brad Montgomery
	DeLois Bannister

Motion No. 1

Motion by Mel Milburn, seconded by Robert Durbin to accept the minutes of the previous meeting as submitted. Motion passed.

The Commissioners discussed the status of the Industrial Park Tank painting project; the status of the Wellfield delineation project; the Dynegy/KSR tank site; and the realignment of the OCWD/ LaGrange Utilities boundaries project.

The Commissioners heard a presentation by Brayton Bowen concerning Human Resources consulting services by the Howland Group.

No actions were taken by the Commissioners.

Motion No. 2

Motion by Mel Milburn, seconded by Robert Durbin, to adjourn until the next regularly scheduled meeting. Motion passed.

The Board adjourned at 10:10 PM.

RESPECTFULLY SUBMITTED:

FORREST EWEN, SECRETARY

APPROVED:

GUS DAEUBLE, CHAIRMAN

ROBERT DURBIN, TREASURER

VINCENT ATTARDI, COMMISSIONER

MEL MILBURN, COMMISSIONER

OLDHAM COUNTY WATER DISTRICT
REGULAR MEETING
TUESDAY, JUNE 7, 2005

On the above date, a Regular meeting of the Commissioners of the Oldham County Water District was held at the Water District Offices in Buckner, Kentucky.

The meeting was called to order at 7:05 p.m. by Gus Daeuble.

Those present:

COMMISSIONERS	ALSO IN ATTENDANCE:
Gus Daeuble, Chairman	Phillip Ward
Robert Durbin	Bill Baker
Mel Milburn	Jim McNulty
Forrest Ewen	Fred Marsh
	Larry Kapester
	DeLois Bannister
	Steve Volgesburg

Motion No. 1

Motion by Mel Milburn, seconded by Robert Durbin to accept the minutes of the previous meeting as submitted. Motion passed.

Motion No. 2

Motion by Forrest Ewen, seconded by Robert Durbin, to continue the existing Seico Engineering contract for the design of the Highway 146 Water Tank; the redesign of the tank at an adjoining site to be done at an hourly rate, but not to exceed $20,000 dollars. It is noted that the design fees associated with the original site have been exhausted. Motion passed.

Motion No. 3

Motion by Mel Milburn, seconded by Forrest Ewen, to authorize GRW Engineers to investigate the requirements of a 1,000,000 gallon raised tank at the OCWD Woodlawn site; the study to include the need for new water supply line (s) along Highway 146 and Commerce Parkway. Motion passed.

Motion No. 4

Motion by Forrest Ewen, seconded by Robert Durbin to adjourn to Executive Session as authorized by KRS 61.810, which allows for the discussion of personnel, real estate acquisition, or legal matters. Motion passed. The Board adjourned to executive session at 10:20 PM

The Board returned from Executive session at 12:27 AM.

Motion No. 5

Motion by Robert Durbin, seconded by Mel Milburn, to set the budgeted total overall salary increases for 2005/2006 for non-exempt employees at 3.5%Individual salary adjustments to be determined by the OCWD supervisory staff.

Motion No. 5

Motion by Mel Milburn, seconded by Robert Durbin to set the Salaried Employees' 2005 increase as follows:

Phillip Ward	*$65757.00*
Bill Baker	$60280.00
Larry Kapester	$59228.37
DeLois Bannister	$47469.00

Motion passed.

Motion No. 7

Motion by Mel Milburn, seconded by Robert Durbin, to adjourn until the next regularly scheduled meeting. Motion passed.
The Board adjourned at 12:27 AM.

RESPECTFULLY SUBMITTED:

FORREST EWEN, SECRETARY

APPROVED:

GUS DAEUBLE, CHAIRMAN

ROBERT DURBIN, TREASURER

VINCENT ATTARDI, COMMISSIONER

MEL MILBURN, COMMISSIONER

OLDHAM COUNTY WATER DISTRICT
REGULAR MEETING
TUESDAY, JULY 5, 2005

On the above date, a Regular meeting of the Commissioners of the Oldham County Water District was held at the Water District Offices in Buckner, Kentucky.

The meeting was called to order at 7:04 p.m. by Gus Daeuble.

Those present:

COMMISSIONERS
Gus Daeuble, Chairman
Vincent Attardi
Robert Durbin
Mel Milburn
Forrest Ewen

ALSO IN ATTENDANCE:
Nan Hunter
Jeff Workings
Paul Placker
Jim McNulty
Fred Marsh
Jim York
Wanda York
Brad Montgomery
PHILLIP WARD
BILL BAKER
DELOISE BANNISTER
LARRY KAPLSTER

Motion No. 1

Motion by Mel Milburn, seconded by Robert Durbin to accept the minutes of the previous meeting as submitted. Motion passed.

Motion No. 2

Motion by Forrest Ewen, seconded by Vincent Attardi, to authorize Seico/Strand Engineers to proceed with the design of the "Dynegy" Tank. Motion passed.

Motion No. 3

Motion by Forrest Ewen, seconded by Robert Durbin, to adjourn to Executive Session, in accordance with KRS 61.810-1-C. Motion passed.

The Board adjourned to Executive Session at 8:22 pm and returned from Executive Session at 8:41 pm.

Motion No. 4

Motion by Mel Milburn, seconded by Robert Durbin to accept GRW Engineers contract for the design of multiple projects and to proceed with the well designs, the water main design, and the water treatment plant design. Motion passed.

Motion No. 5

Motion by Vincent Attardi, seconded by Robert Durbin, to authorize Superintendent Ward to notify Phoenix Tank that the OCWD will establish the start of the "Liquidated Damages" as of 7/6/05. This is in keeping with the terms of the contract and as noted in the OCWD letter of 6/05. The OCWD also notices Phoenix Tank that the contract for painting the Industrial Park Tank will be terminated for failure to complete the work in the contract time if the entire project is not finished by July 20, 2005. Motion passed.

Motion No. 6

Motion by Mel Milburn, seconded by Vincent Attardi to authorize GRW Engineers to start the design for the replacement of the Woodlawn Tank with a larger capacity elevated tank. Motion passed.

Motion No. 7

Motion by Robert Durbin, seconded by Mel Milburn, to adjourn to Executive Session, in accordance with KRS 61.810-1-C. Motion passed.

The Board adjourned to Executive Session at 10:15 pm and returned from Executive Session at 11 pm.

Motion No. 8

Motion by Robert Durbin, seconded by Forrest Ewen to contribute $528.00 for a Veterinarian Bill related to an accidental death of dogs on OCWD property. Motion passed.

IN FAVOR	OPPOSED
G. Daeuble	V. Attardi
R. Durbin	
M. Milburn	
F. Ewen	

Motion No. 9

Motion by Mel Milburn, seconded by Vincent Attardi, to adjourn until the next regularly scheduled meeting. Motion passed.
The Board adjourned at 12:03 AM.

RESPECTFULLY SUBMITTED:

FORREST EWEN, SECRETARY

APPROVED:

GUS DAEUBLE, CHAIRMAN

ROBERT DURBIN, TREASURER

VINCENT ATTARDI, COMMISSIONER

MEL MILBURN, COMMISSIONER

OLDHAM COUNTY WATER DISTRICT
REGULAR MEETING
TUESDAY, AUGUST 2, 2005

On the above date, a Regular meeting of the Commissioners of the Oldham County Water District was held at the Water District Offices in Buckner, Kentucky.

The meeting was called to order at 7:00 p.m. by Gus Daeuble.

Those present:

COMMISSIONERS	ALSO IN ATTENDANCE:
Gus Daeuble, Chairman	Bill Baker
Vincent Attardi	Phillip Ward
Robert Durbin	Larry Kapester
Mel Milburn	Jim McNulty
Forrest Ewen	DeLois Bannister
	Shanna Slone
	Brad Montgomery
	Steve Volgesburg

Motion No. 1

Motion by Mel Milburn, seconded by Robert Durbin to accept the minutes of the previous meeting with corrections; add staff members present at the meeting: Phillip Ward, Bill Baker, DeLois Bannister, Larry Kapester. Motion passed.

Motion No. 2

Motion by Robert Durbin, seconded by Mel Milburn, to accept the minutes of the previous meeting Executive Session with corrections; add staff members present at the meeting: Phillip Ward, Bill Baker, DeLois Bannister, Larry Kapester. The amount of the second offer for the Roederer Property was also corrected. Motion passed.

Motion No. 3

Motion by Mel Milburn, seconded by Vincent Attardi, to approve the Strand Engineering plans for the Dynegy Tank, subject to review and approval by OCWD staff. Motion passed.

Motion No. 4

Motion by Mel Milburn, seconded by Vincent Attardi, to move the regularly scheduled September meeting to September 13, 2005, at 7:00 PM, at the OCWD office. Motion passed

Motion No. 5

Motion by Vincent Attardi, seconded by Robert Durbin, to have a special meeting of the OCWD Commissioners at 9:00 AM on September 10, 2005, at the OCWD offices to review the Draft of the Proposed facilities Plan. Motion passed.

Motion No. 6

Motion by Mel Milburn, seconded by Robert Durbin, to accept Scott-Klausing & Company for the feasibility study for a new office building/renovation project and to authorize Phillip Ward to negotiate the fee for the study. Motion passed.

Motion No. 7

Motion by Mel Milburn, seconded by Robert Durbin, to authorize the OCWD staff to open two safety deposit boxes at PNC, based on standard PNC Bank resolution and authorization procedures. Motion passed.

Motion No. 8

Motion by Mel Milburn, seconded by Robert Durbin, to adjourn until the special meeting authorized in Motion 4. Motion passed.
The Board adjourned at 11:05 PM.

RESPECTFULLY SUBMITTED:

FORREST EWEN, SECRETARY

APPROVED:

GUS DAEUBLE, CHAIRMAN

ROBERT DURBIN, TREASURER

VINCENT ATTARDI, COMMISSIONER

MEL MILBURN, COMMISSIONER

OLDHAM COUNTY WATER DISTRICT
REGULAR MEETING
TUESDAY, OCTOBER 4, 2005

On the above date, a Regular meeting of the Commissioners of the Oldham County Water District was held at the Water District Offices in Buckner, Kentucky.

The meeting was called to order at 7:03 p.m. by Gus Daeuble.

Those present:

COMMISSIONERS	***ALSO IN ATTENDANCE:***
Gus Daeuble, Chairman	Bill Baker
Vincent Attardi	Phillip Ward
Robert Durbin	Larry Kapesser
Mel Milburn	Brad Montgomery
Forrest Ewen	DeLois Bannister
	Joshua Gedney
	Jim McNulty

Motion No. 1

Motion by Mel Milburn, seconded by Vincent Attardi to accept the minutes as submitted. Motion passed.

The Commissioners noted that the existing Seico / Strand contract for the design of the Highway 146 water tank would continue as indicated in the Seico / Strand letter of September 27. 2005.

Motion No. 2

Motion by Mel Milburn, seconded by Robert Durbin, to have Wyatt, Tarrant and Combs, Attorneys notify OCEDA and Oldham County Planning and Zoning of the OCWD requirement for exclusive water line easements for the construction of water lines. Motion passed with one abstention. Forrest Ewen abstained.

Motion No. 3

Motion by Mel Milburn, seconded by Vincent Attardi, to adjourn until the next regularly scheduled meeting. Motion passed.
The Board adjourned at 11:10 PM.

RESPECTFULLY SUBMITTED:

FORREST EWEN, SECRETARY

APPROVED:

GUS DAEUBLE, CHAIRMAN

ROBERT DURBIN, TREASURER

VINCENT ATTARDI, COMMISSIONER

MEL MILBURN, COMMISSIONER

OLDHAM COUNTY WATER DISTRICT
REGULAR MEETING
TUESDAY, DECEMBER 6, 2005

On the above date, a Regular meeting of the Commissioners of the Oldham County Water District was held at the Water District Offices in Buckner, Kentucky.

The meeting was called to order at 6:58 p.m. by Gus Daeuble.

Those present:

COMMISSIONERS	***ALSO IN ATTENDANCE:***
Gus Daeuble, Chairman	Bill Baker
Vincent Attardi	Phillip Ward
Mel Milburn	Larry Kappesser
Forrest Ewen	DeLois Banister
	Joshua Gedney
	Jim McNulty
	Gary Allen
	Brad Montgomery
	Fred Erdhman

Motion No. 1

Motion by Vincent Attardi, seconded by Mel Milburn to accept the minutes as submitted. Motion passed.

Motion No. 2

Motion by Mel Milburn, seconded by Forrest Ewen, to accept Caldwell Tank's bid for the construction of the Hwy 146 Water Tank; in the amount of $2,158,000.00, subject to review of the contract by OCWD attorney and approval of a KIA loan. Motion passed.

Motion No. 3

Motion by Forrest Ewen, seconded by Vincent Attardi, to authorize Gus Daeuble to act as the OCWD agent/representative for the execution of a KIA loan application; in accordance with resolution WX21185030 and certificate WX21185030. (Resolution and certificate copies attached to minutes.) Motion passed.

Motion No. 4

Motion by Mel Milburn, seconded by Vincent Attardi to accept a bid from Public Entity Insurance, in the amount of $29,241.58 for general liability in 2006. Motion passed.

Motion No. 5

Motion by Mel Milburn, seconded by Vincent Attardi to accept a bid from Perkins Eastside for one small Dodge pick-up truck, one full-sized Dodge pick-up, one Dodge SUV, and from Tri-County Ford for 1 full-size Ford pick-up truck. Motion passed.

Motion No. 6

Motion by Mel Milburn, seconded by Forrest Ewen to authorize a salary increase of $500.00 for Brad Crum and for Koby Bottorff; both passed test for Class III operators license. Motion passed.

Motion No. 7

Motion by Forrest Ewen, seconded by Mel Milburn to authorize Christmas bonus payments for OCWD employees in the amounts of $450.00 per person for employees with at least 1 year of service and $225.00 per person for employees with less than 1 year service. Motion passed.

Motion No. 8

Motion by Mel Milburn, seconded by Vincent Attardi to reschedule the next regular meeting from January 3, 2006 to January 10, 2006. Motion passed.

Motion No. 9

Motion by Vincent Attardi, seconded by Mel Milburn to schedule a special meeting on January 24, 2006 for the purpose of discussion on the report on the OCWD office expansion. Motion passed.

Motion No. 10

Motion by Forrest Ewen, seconded by Mel Milburn to adjourn until the rescheduled meeting on January 10, 2006. Motion passed.

The Board adjourned at 10:20 PM.

RESPECTFULLY SUBMITTED:

FORREST EWEN, SECRETARY

APPROVED:

GUS DAEUBLE, CHAIRMAN

ROBERT DURBIN, TREASURER

VINCENT ATTARDI, COMMISSIONER

MEL MILBURN, COMMISSIONER

OLDHAM COUNTY WATER DISTRICT
REGULAR MEETING
TUESDAY, March 7, 2006

On the above date, a Regular meeting of the Commissioners of the Oldham County Water District was held at the Water District Offices in Buckner, Kentucky.

The meeting was called to order at 7:03 p.m. by Forrest Ewen.

Those present:

COMMISSIONERS	ALSO IN ATTENDANCE:
Forrest Ewen, Chairman	Phillip Ward
Vincent Attardi	Bill Baker
Gus Daeuble	Larry Kappesser
Mel Milburn	DeLois Banister
Robert Durbin	Gary Allen
	Brad Montgomery
	Steve Vogelsberg
	Scott Canfield
	Jim McNulty

Motion No. 1

Motion by Gus Daeuble, seconded by Mel Milburn to accept the minutes as submitted. Motion passed.

Motion No. 2

Motion by Gus Daeuble, seconded by Bob Durbin, to allow Phillip proceed with the Hwy 146 Tank as soon as we receive the certificate of need from the Public Service Commission. Motion passed.

Motion No. 3

Motion by Vincent Attardi, seconded by Mel Milburn, pay the $10,375 tap on fee to the Oldham Co Sewer District.
Motion passed.

Motion No. 4

Motion by Mel Milburn, seconded by Gus Daeuble to start condemnation on the Kettner property in Westport as soon as possible. Motion passed.

Motion No. 5

Motion by Mel Milburn, seconded by Gus Daeuble to start condemnation on the Campisano property in Westport as soon as possible. Motion passed.

Motion No. 6

Motion by Gus Daeuble, seconded by Bob Durbin, to adjourn until the next scheduled meeting on April 4, 2006 at 7 PM. Motion passed.

The Board adjourned at 9:30 PM.

RESPECTFULLY SUBMITTED:

MEL MILBURN, SECRETARY

APPROVED:

FORREST EWEN, CHAIRMAN

VINCENT ATTARDI, TREASURER

GUS DAEUBLE, COMMISSIONER

ROBERT DURBIN, COMMISSIONER

Q6. Provide all internal memorandums, electronic mail messages, and correspondence in which Oldham District discusses the proposed water storage tank.

RESPONSE:

Attached as composite **Exhibit 6-1** are the requested documents.

WITNESS: Phillip Ward, Superintendent, OCWD

EXHIBIT 6-1

CORRESPONDENCE AND MEMORANDUMS

STRAND
ASSOCIATES, INC.®
ENGINEERS

SIECO DIVISION

629 Washington Street
P.O. Box 407
Columbus, IN 47202
Phone: 812-372-9911
Fax: 812-372-7190

Strand Associates, Inc.
Madison, WI
Joliet, IL
Louisville, KY

Division Offices
PEH
Lexington, KY
SIECO
Columbus, IN
Lancaster, OH
TAI
Mobile, AL

www.strand.com

July 16, 2004

Mr. Phillip Ward, Superintendent
Oldham County Water District
3711 West Highway 146
P. O. Box 51
Buckner, KY 40010

Re: Highway 146 Tank

Dear Mr. Ward:

This letter will provide information for the Board as requested at the July 6, 2004 Board meeting pertaining to the State Highway 146 tank site. Since the July Board meeting, I have reviewed the status of the preliminary plans that were initiated in 1999 to arrive at a proposed engineering fee for their completion.

1. The existing plans prepared in 1999 have details for a leg tank and the site plan is based on pre 1999 contours that have been altered by the power plant construction. Our staff will field verify the current site contours to produce an accurate tank height. I estimate the plans to be 40% complete at this time due to the required changes.

2. I spoke with Mr. Mike Riley, P.E. with the Division of Water about switching to the State Highway 146 site for the next tank to construct. He responded that the plans would be reviewed as a new project independent of the U.S. 42 tank plans previously submitted. An extended simulation to show the expected water turnover in the proposed tank is necessary for review. He thought a permit could be issued in two (2) weeks if all the information is complete. If the U.S. 42 tank site is not constructed within one (1) year of permit time, a letter should be sent to the Division of Water requesting a time extension.

3. A general cost estimate for a 2,000,000 gallon composite tank was requested from Caldwell Tank of Louisville. They verbally reported an estimated construction cost of $1,900,000 for a 165 feet high tank needed for a 995 overflow. We will use a construction cost estimate of $2,000,000 to include additional site improvements and piping.

4. The engineering fee is proposed to be based on our contract dated 6/1/99 for this project containing a fee of 6.18%. We generally break the fee down such that 70% goes toward design, 10% toward bidding and negotiating, and 20% toward

contract administration. The design fee would be reduced by 40% to allow for the portion of the project previously completed as follows:

Engineering Design	(70%)	$ 86,520	($2,000,000 Construction x 6.18% x 70%)
40% Completed	-	$ 34,608	($86,520 x 40%)
Remaining Design		$ 51,912	
Bidding	(10%)	$ 12,360	($2,000,000 x 6.18% x 10%)
Contract Administration	(20%)	$ 24,720	($2,000,000 x 6.18% x 20%)
Total Engineering Cost		$ 88,992	

I estimate that plans can be finalized within three (3) weeks of notice to proceed from the Oldham County Water District if updated photography can be obtained. The proposed fee does not include construction observation services.

If there are any questions please call me at 812-372-9911.

Sincerely,

STRAND ASSOCIATES, INC.

James E. McNulty, LPG

STRAND ASSOCIATES, INC.
ENGINEERS

629 Washington Street
Columbus, IN 47201
Phone: 812-372-9911
Fax: 812-372-7190

Office Locations

Madison, WI
Joliet, IL
Louisville, KY
Lexington, KY
Mobile, AL
Columbus, IN
Lancaster, OH
Indianapolis, IN
Milwaukee, WI

www.strand.com

April 5, 2005

Mr. Phillip Ward, Superintendent
Oldham County Water District
P. O. Box 51
3711 W. Highway 146
Bucker, KY 40010

Re: Dynegy Tank Site

Dear Mr. Ward:

As a result of our meeting with Dynegy on March 15, 2005, I wanted to review the pros and cons of each of the three potential locations on the Dynegy site.

Site #1 – Current one acre site in center of Dynegy site.

Pros

1. This site is already owned by Oldham County Water and surveyed.
2. The plans have been nearly completed.
3. The water main is constructed to use the site.
4. There is an easement to the crossing that has been removed.

Cons

1. The railroad crossing has been removed requiring a new crossing to be constructed and maintained at the expense of Oldham County Water District.
2. Construction access would have to come over the railroad crossing that has a steep grade.
3. The site is very close to the Dynegy storage building and the Dynegy access road would go through the tank site.
4. There is space for only one tank.

Site #2 – East Side of Dynegy Site

Pros

1. The site has been staked out and Dynegy has agreed verbally to allow Oldham County Water District to use the site.
2. There is room for (two) 2 tanks on the site.
3. The elevation is similar or slightly higher than the central site.

4. An access road could be constructed to the south.

Cons

1. The former railroad crossing at this location has been removed.
2. Construction access may have to come over the new railroad crossing that would have a steep grade.
3. Oldham County Water would have to pay for the new crossing construction and maintenance.
4. An access road to the south through the power line easement would be expensive to construction and would have to be about 2,000 feet long.

Site #3 – West Side of Dynegy

Pros

1. The site has an existing railroad crossing that is fairly flat for equipment access. The railroad has performed maintenance on the crossing recently.
2. The site has an existing access drive.
3. The site is near the existing water main.
4. There is room for two (2) tanks.

Cons

1. The site is lower in elevation than either of the other two sites by 10 to 15 feet that will increase construction costs.
2. Trees may have to be removed for construction.
3. The site has not been surveyed.
4. The Dynegy management has not yet given approval to allowing the site to be used by Oldham County Water District.
5. The railroad crossing could be removed by the railroad if allowed by the county.
6. There remains some concern by Dynegy regarding tank overflow draining to the pond on the Dynegy site.

I spoke with the Dynegy Plant Manager, James Eisenman, on Tuesday, April 5, and he is waiting on information from his corporate staff. He will contact us when he has more information.

At this time, Strand Associates recommends that Oldham County Water District proceed with the west site topographic and boundary survey if the site is approved by Dynegy. A geotechnical investigation should also proceed as soon as possible to expedite the project. If the west site is not approved by Dynegy, we recommend proceeding with the eastern site (Site #2) along with construction of a new crossing.

OLDHAM COUNTY WATER DISTRICT
SUMMARY OF SYSTEM
STORAGE AND DEMAND
JUNE 2005

Used Average Day Peak Month (June 2005) For Demand

Average Demand, including LaGrange and Reformatory		5,065,033

Existing Usable Storage

Liberty Lane Elevated	150,000 Gal.
Morgan Road Standpipe Top 30'	265,000 Gal.
U.S. 425 (Horse Park) Standpipe Top 30'	87,000 Gal.
Buckner Industrial Park Elevated	250,000 Gal.
Centerfield Elevated	500,000 Gal.
Moody Lane Elevated	100,000 Gal.
Osage	750,000 Gal.
Ballardsville	250,000 Gal.
Total Existing Usable Storage	2,352,000 Gal.

Minimum One (1) Day Recommended Storage	5,065,033 Gal.
Amount of Deficiency	2,713,033 Gal.
2005 Improvements Proposed Storage	
Kentucky Highway 146 Elevated	2,000,000 Gal.
Total Storage (Existing and Proposed)	4,352,000 Gal.
Minimum One (1) Day Recommended	5,065,033 Gal.
Storage Below Minimum	713,033 Gal.

Note: The demand for the City of LaGrange and the Reformatory were considered for required storage.

STRAND
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June 7, 2005

Mr. Phillip Ward, Superintendent
Oldham County Water District
P. O. Box 51
3711 W. Highway 146
Bucker, KY 40010

Re: S.R. 146 Design Fee

Dear Mr. Ward:

As you know, Strand Associates has been working with the Oldham County Water District and Dynegy Operating Company in an attempt to negotiate a new site for the S.R. 146 Tank. The proposed tank site has changed three times since Strand Associates nearly completed the design on the original site. The changes have involved numerous meetings with Dynegy and CSX Railroad to work out site access and railroad crossing issues that have exhausted the design budget of $51,912.00. The design budget had been reduced by 40% to give the Water District credit for preliminary design work completed in 2001.

At this time, geotechnical and topographic work is proceeding on the site on the west boundary of the Dynegy site. The Dynegy management is considering the Water District's request to allow this site to be exchanged for the original tank site. Strand Associates is prepared to modify the tank plans and specifications once again for this site and requests approval to exceed the design fee by up to $20,000 to cover additional meetings and changes. We propose to invoice the Water District on an hourly basis plus expenses at our current rates according to the terms of our existing general services agreement.

I trust you will find this request acceptable given the unusual nature of this tank location. Please call me if you have any questions.

Sincerely,

STRAND ASSOCIATES, INC.

James E. McNulty, LPG

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August 1, 2005

Mr. Phillip Ward, Superintendent
Oldham County Water District
P.O. Box 51
Buckner, Kentucky 40010

Re: August 2nd Update

Dear Mr. Ward:

At the August 2nd Board Meeting, Strand Associates, Inc. will present completed plans and specifications for the SR 146 tank on the Dynegy site. The enclosed letter will be sent to the Division of Water upon your approval. The plans should also be sent to Dynegy for review and comment. The plans have the following features to address some of their concerns:

1. A high level alarm will be installed by the OCWD that will be connected to the Greenhaven Booster to shut down the booster before an overflow occurs.

2. A second water sensor in the overflow pipe will activate a chemical feed pump to dechlorinate the overflow water in the unlikely event an overflow occurs.

3. The water sensor in the overflow pipe may also be linked to the telemetry to shut down the Greenhaven Booster.

4. A detention basin will be constructed with a normally open discharge that will detain any overflow by discharging through a 6-inch pipe. This will allow more time for dechlorination and control the discharge to protect the Dynegy pond. By shutting a valve on the detention basin, it can be used to completely retain an overflow for a short period of time.

We have supplied an updated site plan to Greenbaum Associates to conduct additional geotechnical investigations in the area of the proposed lagoon and alternate areas to confirm the depth to bedrock.

We will continue to work with OCWD and Dynegy to arrive at a plan that is acceptable for both parties as the budget will allow. A construction permit should be provided by the Division of Water in about 30 days. This will complete the major design work for this tank unless the site changes. A bid date will be established after a construction permit is issued and Dynegy transfers rights to the property.

Please let me know if there are any other projects where Strand Associates, Inc. may be of service.

Sincerely,

STRAND ASSOCIATES, INC.

James E. McNulty, LPG

c: James West, PE

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August 2, 2005

Ms. Lissa Doss
Natural Resources & Environmental Protection
Department of Environmental Protection
Division of Water – Plan Review Section
Drinking Water Branch
Frankfort Office Park
14 Reilly Road
Frankfort, Kentucky 40601

Re: Oldham County Water District
Kentucky Highway 146 Tank

Dear Ms. Doss:

Enclosed for the above referenced project are the following:

- Water Line Submittal Checklist
- 4 Copies of the Drawings and Specifications
- 1 Copy of the Summary of System Storage and Demand
- 1 Copy of the 24-hour hydraulic grade calculated for the tank connected to the proposed 24-inch main.

This tank is designed to provide system storage at the Industrial Park at Buckner, Kentucky. The tank is needed to help correct system storage deficiencies. The Oldham County Water District has a construction permit for a 1,000,000 gallon tank on U.S. 42. However, the Water District wishes to construct a new 2,000,000 gallon tank at this growing industrial site to meet anticipated system demand in the central and southern parts of the system prior to constructing a tank on the U.S. 42 site.

The proposed tank is designed to be served by an existing 24-inch D.I. main. The Oldham County Water District tanks float on a static water level of 990 feet. The overflow for this proposed tank is 995 feet. An extended simulation for the proposed tank is attached demonstrating that the tank volume will cycle in 72 hours with proper operation of the Green Haven Booster and control settings at the Centerfield tank that will remain the control tank.

Construction	$2,000,000
Engineering	90,000
Total Estimated	$2,090,000

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This data is being submitted to assist you with your review for issuance of a construction permit.

If you have any questions, comments, or need additional data, please contact me.

Sincerely,

STRAND ASSOCIATES, INC.

James E. McNulty, LPG
Project Manager

Enclosures

c: Phillip Ward, Superintendent, Oldham County Water District
Correspondence File

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August 16, 2005

Ms. Lissa Doss
Natural Resources & Environmental Protection
Department of Environmental Protection
Division of Water – Plan Review Section
Drinking Water Branch
Frankfort Office Park
14 Reilly Road
Frankfort, Kentucky 40601

Re: Oldham County Water District
Kentucky Highway 146 Tank

Dear Ms. Doss:

Enclosed for the above referenced project are the following:

- Water Line Submittal Checklist
- 4 Copies of the Drawings and Specifications
- 1 Copy of the Summary of System Storage and Demand
- 1 Copy of the 24-hour hydraulic grade calculated for the tank connected to the proposed 24-inch main.

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The proposed tank is designed to be served by an existing 24-inch D.I. main. The Oldham County Water District tanks float on a static water level of 990 feet. The overflow for this proposed tank is 995 feet. An extended simulation for the proposed tank is attached demonstrating that the tank volume will cycle in 72 hours with proper operation of the Green Haven Booster and control settings at the Centerfield tank that will remain the control tank.

Construction	$2,000,000
Engineering	90,000
Total Estimated	$2,090,000

This data is being submitted to assist you with your review for issuance of a construction permit.

If you have any questions, comments, or need additional data, please contact me.

Sincerely,

STRAND ASSOCIATES, INC.

James E. McNulty, LPG
Project Manager

Enclosures

c: Phillip Ward, Superintendent, Oldham County Water District
Correspondence File

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August 17, 2005

Mr. Phillip Ward, Superintendent
Oldham County water District
P. O. Box 51
Buckner, KY 40010

Re: Kentucky Highway 146 Water Storage Tank

Dear Phillip:

Per your request, enclosed is a computer disc with Drawings No. 3, 4, 5, and 6 for the above referenced project.

These are for your use to negotiate with Bluegrass Generation Company LLC (Dynergy).

If we can be of further assistance, please contact us at (812) 372-9911.

Sincerely,

STRAND ASSOCIATES, INC.

James M. West, P.E.

cc: Jim McNulty, Strand Associates, Inc.
Project File
Correspondence File

JMW:ac\S4-102.014 Ward Letter 8.17.05.doc

September 12, 2005

Mr. Phillip Ward, Superintendent
Oldham County Water District
P.O. Box 51
Buckner, Kentucky 40010

Re: September Board Meeting Update

Dear Mr. Ward:

As you know, the Kentucky Division of Works has approved the S.R. 146 Tank Plans. The final step will be to obtain a release of the site from Dynegy. We will set a bid date and obtain a wage scale after the site is obtained. The water district should also consider the desired color for the tank bowl and any special lettering requests before we go to bidding.

At this time, there is no activity on the Highway 393 relocation or the Schroeder Construction arbitration. Strand Associates, Inc., would like to serve the Oldham County Water District in any way we can with the many projects we had identified for the future.

As always, please do not hesitate to contact Fred Marsh or me if we can assist you in any way.

Sincerely,

STRAND ASSOCIATES, INC.

James E. McNulty, L.P.G.

c: Correspondence File
Project File

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Cincinnati, OH

www.strand.com

December 6, 2005

Mr. Phillip Ward
Oldham County Water District
3711 W. Highway 146
Buckner, KY 40010

Re: December Board Meeting Update

Dear Mr. Ward:

This letter will serve to update the Board regarding work performed by Strand Associates in November. As you know, the Water District opened bids for the Highway 146 tank. A copy of the bid tabulation is provided for your review. Strand Associates has received the bids and find that Caldwell Tanks in Louisville is the apparent low bidder. At this time, Strand recommends that the Water District's attorney review copies of the bids.

Provided the attorney finds the bids acceptable, we recommend the bid be awarded to Caldwell Tanks, pending final site acquisition and award of the project grant through KIA.

It has been learned that since the grant for this project was originally approved in 2003, the fee for resident project representative will be held to the 2003 Rural Development fee schedule, which is considerably less than the most current 2005 Rural development fee schedule. I will elaborate more at the meeting since this impacts Strand's ability to adequately observe the construction of this important project.

I look forward to the Board meeting and appreciate the opportunity to serve the Water District.,

Sincerely,

STRAND ASSOCIATES, INC.

James E. McNulty, LPG

Attachment

JEM:ac\S:\@SIECO\101--150\102\013\Wrd\Ward Letter 12.6.05.doc

Bids Received: 1:30 PM, November 22, 2005

STRAND ASSOCIATES, INC.
629 Washington Street
Columbus, IN 47201

2005 IMPROVEMENTS KENTUCKY HIGHWAY 146 TANK
CONTRACT 1-2005
OLDHAM COUNTY WATER DISTRICT

BID TABULATION BREAKDOWN

No.	Description	Quantity	Unit	Caldwell Tanks 4000 Tower Road Louisville, Kentucky 40219 Unit Price	Caldwell Tanks Total Price	Pittsburgh Tank & Tower Company 1329 Highway 41 North Sebree, Kentucky 42455 Unit Price	Pittsburgh Tank & Tower Company Total Price	CB&I Constructors, Inc. 14109 South Route 59 Plainfield, Illinois 60544 Unit Price	CB&I Constructors, Inc. Total Price	Landmark 1665 Harmon Road Fort WOrth, Texas 76177 Unit Price	Landmark Total Price
1.	Foundation and Tank Design and Shop Drawings	1		$ 150,000.00	$ 150,000.00	$ 20,000.00	$ 20,000.00	$ 25,000.00	$ 25,000.00	$ 200,000.00	$ 200,000.00
2.	Tank Foundation	1		$ 200,000.00	$ 200,000.00	$ 350,000.00	$ 350,000.00	$ 161,400.00	$ 161,400.00	$ 350,000.00	$ 350,000.00
3.	Tank Fabrication	1		$ 600,000.00	$ 600,000.00	$ 894,290.00	$ 894,290.00	$ 101,000.00	$ 101,000.00	$ 200,000.00	$ 200,000.00
4.	Tank Erection	1		$ 893,000.00	$ 893,000.00	$ 704,500.00	$ 704,500.00	$ 1,767,000.00	$ 1,767,000.00	$ 1,405,000.00	$ 1,405,000.00
5.	Tank Painting	1		$ 122,000.00	$ 122,000.00	$ 100,000.00	$ 100,000.00	$ 153,000.00	$ 153,000.00	$ 150,000.00	$ 150,000.00
6.	Tank Disinfection	1		$ 1,000.00	$ 1,000.00	$ 500.00	$ 500.00	$ 3,000.00	$ 3,000.00	$ 2,000.00	$ 2,000.00
7.	Site Work, Excluding Access Drive, Site Piping and Fencing	1		$ 33,000.00	$ 33,000.00	$ 25,000.00	$ 25,000.00	$ 41,500.00	$ 41,500.00	$ 8,000.00	$ 8,000.00
8.	Site Fencing and Gate(s)	1		$ 21,000.00	$ 21,000.00	$ 20,000.00	$ 20,000.00	$ 37,600.00	$ 37,600.00	$ 15,000.00	$ 15,000.00
9.	Access Drive	1		$ 4,000.00	$ 4,000.00	$ 10,000.00	$ 10,000.00	$ 9,000.00	$ 9,000.00	$ 5,000.00	$ 5,000.00
10.	Electrical Work	1		$ 10,000.00	$ 10,000.00	$ 15,000.00	$ 15,000.00	$ 12,000.00	$ 12,000.00	$ 10,000.00	$ 10,000.00
11.	Site Piping	1		$ 120,000.00	$ 120,000.00	$ 150,000.00	$ 150,000.00	$ 133,500.00	$ 133,500.00	$ 140,000.00	$ 140,000.00
12.	Sodium Bisulfide Chemical Feed Equipment	1		$ 4,000.00	$ 4,000.00	$ 5,000.00	$ 5,000.00	$ 6,000.00	$ 6,000.00	$ 5,000.00	$ 5,000.00
ENGINEER'S COMPUTED TOTAL ITEMS NO. 1 THROUGH 12*					$ 2,158,000.00		$ 2,294,290.00		$ 2,450,000.00		$ 2,490,000.00
CONTRACTOR'S COMPUTED TOTAL ITEMS NO. 1 THROUGH 12					$ 2,158,000.00		$ 2,294,290.00		$ 2,450,000.00		$ 2,490,000.00

* CONTRACTOR'S COMPUTED TOTAL

Reviewed by James M. West
James M. West, P.E.

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Q7. Refer to Oldham District's Application at paragraph 7.

a. Describe the current status of Oldham District's efforts to finance the remaining $1,550,000 of the total construction cost. This response should include the anticipated terms of any loan (e.g., length, interest rate).

RESPONSE: The total project cost for the Highway 146 Tank Project (the "Project") is actually more than the amount stated in the Application. The total Project cost is $2,354,891 and is itemized as follows:

PROJECT COST

Construction (Actual Bid)	$ 2,158,000.
Engineering	88,992.
Contingency (5%)	107,900.
TOTAL	**$ 2,354,892.**

The sources of funds for the Project are itemized as follows:

SOURCES OF FUNDS

Interim Construction Loan	$ 1,000,000.
KIA Tobacco Development Grant	450,000.
Water District Reserve Funds	904,892.
TOTAL	**$ 2,354,892.**

Oldham District has received a commitment from two (2) different banks to provide an interim, construction loan in the amount of $1,000,000. See the letter from The Bank-Oldham County dated December 1, 2005 attached hereto as **Exhibit 7-1** and the Summary of Terms and Conditions from PNC Bank dated November 30, 2005 attached hereto as **Exhibit 7-2**. Attached hereto as **Exhibit 7-3** is the May 28, 2003 letter from the Kentucky Infrastructure Authority ("KIA")

verifying the existence of the $450,000 Tobacco Development Fund Grant. The Oldham District also has adequate funds in an unrestricted reserve construction account to pay the balance of the Project costs. (See **Exhibit 7-4** attached hereto.)

Oldham District plans to use the KIA Grant and its reserve funds to pay the initial Project costs. When these funds are exhausted, it will start utilizing the interim loan which it will obtain from either The Bank-Oldham County or from PNC Bank. The term of the construction loan will be no more than 18 months. The interest rate and other loan terms are shown in **Exhibits 7-1** and **7-2**.

b. State the date when Oldham District expects to have final plans for financing the remainder of the total construction cost.

RESPONSE:

Oldham District is in the process of designing and arranging financing for other system improvements. The District is also in the process of preparing a rate increase application. A rate increase is needed independent of this Project and the other planned improvements. Oldham District plans to combine the permanent financing of this Project with the permanent financing for the other planned system improvements. The permanent financing will probably be obtained from one of three (3) sources: (1) KIA; (2) Kentucky Rural Water Finance Corporation; or (3) Revenue Bonds issued by Oldham District.

Oldham District plans to combine its application for: (1) a Certificate of Convenience and Necessity to construct the other planned system improvements; (2) a rate increase; and (3) authority to issue securities or incur long term debt pursuant to KRS 278.300. It could be as long as nine (9) months to one (1) year before the combined application is filed. The timing will be dictated primarily by the availability of funding and easement acquisitions.

c. Explain why the Commission should issue a certificate for the proposed water storage tank if Oldham District has yet to finalize plans for payment of the total construction cost.

RESPONSE:

Oldham District has already finalized its plans for payment of the Project cost. See the Response to Questions 7a and 7b. The Highway 146 Tank is urgently needed to enable the District to provide adequate water service during periods of hot, dry conditions when customer demands are highest. The Tank will also enable the District to serve the anticipated growth in the central pressure zone where the Highway 146 Tank will be located.

WITNESS: Phillip Ward, Superintendent, OCWD
DeLois Banister, Office & Accounting Manager, OCWD

EXHIBIT 7-1

THE BANK
OLDHAM COUNTY
P.O. Box 500 • LaGrange, KY 40031
502/222-2100

December 1, 2005

Oldham County Water District
Ms. Delores Banister
PO Box 51
Buckner, Ky. 40010

Dear Ms. Banister:

Per our recent discussion, the following is the proposed terms for the $1,000,000.00 Line of Credit to be used to build a new water tower in LaGrange. Please be advised that this is a term sheet and not a commitment to lend as the request would need to be formally approved if the terms meet with your satisfaction. Thank you for allowing The Bank-Oldham County to provide this term sheet.

Borrower:	Oldham County Water District
Amount:	$1,000,000.00
Term:	12 months
Payment:	Interest only monthly, principal due at Maturity
Rate:	Variable at 75% of Wall Street Journal Prime Rate. The rate today would be 5.25% (Prime is 7.0%). A fixed rate option is available but would be set three days before closing. If the loan were to close today the fixed rate would be 5.5%
Collateral:	Oldham County Water Plant located in Westport
Bank Fees:	None

Ms. Banister, Thank you for your allowing The Bank-Oldham County to provide the water district with its financial services. If you have any questions or need further clarification, please don't hesitate to call.

Sincerely,

Alexander G. Babey
Executive Vice President
502-222-8458

EXHIBIT 7-2

SUMMARY OF TERMS AND CONDITIONS

Oldham County Water District
November 30, 2005

Borrower:	Oldham County Water District
Bank:	PNC Bank NATIONAL ASSOCIATION ("Bank")
Credit Facility:	$1,000,000 Tax-Exempt Non-Revolving Construction Loan
Use of Proceeds:	Construction of new water tower
Term:	18 months maximum. (Upon maturity, Borrower will have option to finance the outstanding balance over a maximum period of fifteen years.)
Repayment:	Interest payable monthly; all outstanding principal and interest due at maturity
Interest Rate:	A floating rate of 52% of the Prime Rate during construction period. The rate will adjust whenever Prime changes. Prime Rate is currently 7.00%; Borrower's rate would be 3.64%. This rate assumes that this is a tax-exempt, "bank qualified" transaction. During construction period, Borrower may draw on loan as funds are needed to pay related expenses.
Collateral:	Assignment of revenues of Oldham County Water District
Guarantors:	NA
Deposit Relationship:	Borrower must maintain primary depository relationship with PNC Bank.
Bank Closing Fees:	None.
Expenses:	All costs and expenses incurred by the Bank as a result of this transaction/closing shall be reimbursed to the Bank by the Borrower. These would include all legal fees, environmental and appraisal fees as applicable.
Construction Monitoring:	Bank may require some form of construction monitoring which would include, but not necessarily be limited to, submission of invoices to be reviewed by Bank prior to draws on the loan.
Reporting Requirements:	Borrower will provide the Bank with audited financial statements on an annual basis:

Subject To:

1) An enforceability and tax opinion provided by Borrower's legal counsel confirming that this transaction was properly executed and satisfied all requirements of the Kentucky bond laws including all necessary documentation designating the borrowing as a tax-exempt, bank qualified obligation under Regulation 265(b)(3) of the Internal Revenue Code of 1986, as amended.

2) Formal credit approval by Bank.

Confidentiality Statement: The information contained in this term sheet is proprietary and confidential. This material is intended only for use by the party to which it is provided, and may be shared only with the employees and advisors of such party who agree to maintain the confidentiality of this material.

This Summary of Terms and Conditions is not a commitment or an offer to lend and does not create any obligation on the part of the Bank. The Bank will not be deemed to extend any commitment to the Borrower unless and until a formal commitment letter is issued. This outline is only a brief description of the principal terms of suggested facilities and is intended for discussion purposes only.

Kentucky Infrastructure Authority
375 Versailles Road
Frankfort, Kentucky 40601-3646
Telephone (502) 573-0260 Telefax (502) 573-0157

May 28, 2003

EXHIBIT 7-3

Ms. DeLois Banister
Project Administrator for WX21185030
Oldham County Water District
3707 W. Hwy 146, P.O. Box 40010
Buckner, Kentucky 40010

Re: Tobacco Development Fund (TDF) Grant Award
WX21185030, Oldham County, in the Amount of $450,000.00
Oldham County Water District - Storage Tank

Dear Ms. Banister:

As the designated Project Administrator for your Project, you will be working closely with the Kentucky Infrastructure Authority (the Authority) to assure that all grant documentation is completed in a timely manner.

Attached is the Grant Assistance Agreement (the Agreement), which details all requirements for securing funds for the Project. Use the document in the format presented. In the Agreement, opportunity is afforded to secure up to 50% of planning and design fees prior to project bidding, if needed. As soon as the Agreement is fully executed and all requirements have been met, 85% of the grant will be advanced to the Grantee. The final 15% of funds will be released after the project has been completed and the Authority has **returned** a fully executed Certificate of Completion (Exhibit 9) to the Grantee.

We look forward to working with you in the coming months to provide for the timely implementation of your project. A short training session regarding the program will be scheduled in the near future.

Your contact with the Authority throughout this process will be Ms. Suzanne Johnson-Anderson. Please do not hesitate to contact Ms. Anderson by phone at (502)573-0260 or email at Suzanne.Anderson@mail.state.ky.us for any assistance.

Sincerely,

Roger Recktenwald

Attachments

c: Mr. Phillip Ward, Oldham County Water District
Water Service Coordinator, KIPDA ADD
Ms. Suzanne Johnson-Anderson, Kentucky Infrastructure Authority

THE BANK OLDHAM COUNTY
Oldham County's only locally owned independent bank

515 South First Street
P.O. Box 500
LaGrange, KY 40031-0500
Fax (502) 222-3266

6317 West Highway 146
P.O. Box 1178
Crestwood, KY 40014
Fax (502) 243-9215

12889 West Hwy 42
P.O. Box 988
Prospect, KY 40059-0988
Fax (502) 292-2327

Anchorage Plaza
P.O. Box 585
Pewee Valley, KY 40056
Fax (502) 222-8420

(502) 222-2100
Touch Tone Banker 800-811-8137 • www.thebankoc.com

EXHIBIT 7-4

OLDHAM COUNTY WATER DISTRICT
CONSTRUCTION ACCOUNT
PO BOX 51
BUCKNER KY 40010-0051

FINANCIAL SERVICES STATEMENT

Statement Date: **02/28/2006** Enclosures: **(1)(1)** Account No.: **2000229** Page: **1**

INTEREST CHECKING SUMMARY

Type : **REG** **Status :** **Active**

Category	Number	Amount
Balance Forward From 01/31/06		983,114.46
Deposits	1	56,500.00 +
Checks		0.00
Interest Added This Statement		463.65 +
Ending Balance On 02/28/06		1,040,078.11

Annual Percentage Yield Earned	**0.60 %**
Interest Paid This Year	**980.52**
Interest Paid Last Year	**6,400.30**
Average Balance (Collected)	**1,007,328.74 +**

ALL CREDIT ACTIVITY

Date	Type	Amount	Date	Type	Amount	Date	Type	Amount
02/17/06	Deposit	56,500.00						

Date	Description	Amount
02/28/06	INTEREST PAID	463.65

DAILY BALANCE SUMMARY

Beginning Ledger Balance on 01/31/06 was 983,114.46

Date	Balance	Date	Balance	Date	Balance
02/17/06	1,039,614.46	02/28/06	1,040,078.11		

This Statement Cycle Reflects 28 Days

*** CHECK OUT OUR NEW 8 MONTH CERTIFICATE OF DEPOSIT ***
THE RATE FOR THIS CERTIFICATE IS 3.45% AND THE APY IS 3.50%

Member FDIC

Q8. Refer to Oldham District's Application at paragraph 7. State whether, if Oldham District finances the remaining portion of the total construction cost with a loan, Oldham District will require a rate adjustment.

RESPONSE:

The Oldham District needs a rate increase independent of the long-term debt service requirements for the Highway 146 Tank Project. **See the Response to Question 7a and 7b.** The commission Staff is assisting Oldham District in the preparation of the rate increase application. See the September 2, 2005 letter from the Commission which is attached hereto as **Exhibit 8-1**.

WITNESS: DeLois Banister, Office & Accounting Manager, OCWD

Ernie Fletcher
Governor

LaJuana S. Wilcher, Secretary
Environmental and Public
Protection Cabinet

Christopher L. Lilly
Commissioner
Department of Public Protection

Commonwealth of Kentucky
Public Service Commission
211 Sower Blvd.
P.O. Box 615
Frankfort, Kentucky 40602-0615
Telephone: (502) 564-3940
Fax: (502) 564-3460

Mark David Goss
Chairman

Teresa J. Hill
Vice Chairman

Gregory Coker
Commissioner

EXHIBIT 8-1

September 2, 2005

DeLois Banister
Accounting/Office Manager
Oldham County Water District
P. O. Box 51
Buckner, KY 40010

Dear Ms. Banister;

Commission Staff acknowledges receipt of your attorney's letter of August 22, 2005 in which he requests assistance for Oldham County Water District ("Oldham County"). This is to confirm that Staff will provide the requested rate case assistance.

The following documents and records should be made available at the time of the limited financial review. If any of the following items do not apply to your utility, please disregard.

- General Ledger, Cash Receipts, and Cash Disbursements Journals for the calendar year 2004.
- Invoices for expenditures paid during the calendar year 2004, six months preceding the calendar year 2004, and all subsequent months up to the current date.
- Minutes of Commissioners or Board of Directors Meetings.
- Copies of the Accountant's workpapers and year-end adjusting journal entries.
- Computation of all taxes assessed against the Utility (Official returns/forms if available).
- Schedule of employees, including job duties, length of employment, 2004 salary, date of pay increases and current salary.
- Schedule of insurance coverage, including type of coverage, annual premiums, effective dates, etc.
- Schedule of short and long-term debt instruments, including amortization schedules.

- Schedule of investments and current interest rates.
- All contracts and agreements, (i.e., purchased water contracts, leases, rental agreements, routine maintenance, etc).
- Customer usage by customer by month for 2004 in an Microsoft Excel spreadsheet.
- Billing adjustments for 2004 in gallons and dollars.

I will be contacting you within 2 weeks to schedule the limited field review. If you have any questions regarding this letter, you may contact me at (502) 564-3940, Extension 274.

Sincerely,

Mark C. Frost
Division of Financial Analysis

Q9. Provide the bids and bid tabulations for the proposed water storage project.

RESPONSE:

The certified bid tabulations are attached as **Exhibit 9-1**.

WITNESS: James M. West, P.E., Strand Associates, Inc.

Bids Received: 1:30 PM, November 22, 2005

STRAND ASSOCIATES, INC.
629 Washington Street
Columbus, IN 47201

2005 IMPROVEMENTS KENTUCKY HIGHWAY 146 TANK
CONTRACT 1-2005
OLDHAM COUNTY WATER DISTRICT

BID TABULATION BREAKDOWN

				Caldwell Tanks 4000 Tower Road Louisville, Kentucky 40219		Pittsburgh Tank & Tower Company 1329 Highway 41 North Sebree, Kentucky 42455		CB&I Constructors, Inc. 14109 South Route 59 Plainfield, Illinois 60544		Landmark 1665 Harmon Road Fort WOrth, Texas 76177	
No.	Description	Quantity	Unit	Unit Price	Total Price	Unit Price	Total Price	Unit Price	Total Price	Unit Price	Total Price
1.	Foundation and Tank Design and Shop Drawings	1		$ 150,000.00	$ 150,000.00	$ 20,000.00	$ 20,000.00	$ 25,000.00	$ 25,000.00	$ 200,000.00	$ 200,000.00
2.	Tank Foundation	1		$ 200,000.00	$ 200,000.00	$ 350,000.00	$ 350,000.00	$ 161,400.00	$ 161,400.00	$ 350,000.00	$ 350,000.00
3.	Tank Fabrication	1		$ 600,000.00	$ 600,000.00	$ 894,290.00	$ 894,290.00	$ 101,000.00	$ 101,000.00	$ 200,000.00	$ 200,000.00
4.	Tank Erection	1		$ 893,000.00	$ 893,000.00	$ 704,500.00	$ 704,500.00	$ 1,767,000.00	$ 1,767,000.00	$ 1,405,000.00	$ 1,405,000.00
5.	Tank Painting	1		$ 122,000.00	$ 122,000.00	$ 100,000.00	$ 100,000.00	$ 153,000.00	$ 153,000.00	$ 150,000.00	$ 150,000.00
6.	Tank Disinfection	1		$ 1,000.00	$ 1,000.00	$ 500.00	$ 500.00	$ 3,000.00	$ 3,000.00	$ 2,000.00	$ 2,000.00
7.	Site Work, Excluding Access Drive, Site Piping and Fencing	1		$ 33,000.00	$ 33,000.00	$ 25,000.00	$ 25,000.00	$ 41,500.00	$ 41,500.00	$ 8,000.00	$ 8,000.00
8.	Site Fencing and Gate(s)	1		$ 21,000.00	$ 21,000.00	$ 20,000.00	$ 20,000.00	$ 37,600.00	$ 37,600.00	$ 15,000.00	$ 15,000.00
9.	Access Drive	1		$ 4,000.00	$ 4,000.00	$ 10,000.00	$ 10,000.00	$ 9,000.00	$ 9,000.00	$ 5,000.00	$ 5,000.00
10.	Electrical Work	1		$ 10,000.00	$ 10,000.00	$ 15,000.00	$ 15,000.00	$ 12,000.00	$ 12,000.00	$ 10,000.00	$ 10,000.00
11.	Site Piping	1		$ 120,000.00	$ 120,000.00	$ 150,000.00	$ 150,000.00	$ 133,500.00	$ 133,500.00	$ 140,000.00	$ 140,000.00
12.	Sodium Bisulfide Chemical Feed Equipment	1		$ 4,000.00	$ 4,000.00	$ 5,000.00	$ 5,000.00	$ 6,000.00	$ 6,000.00	$ 5,000.00	$ 5,000.00
ENGINEER'S COMPUTED TOTAL ITEMS NO. 1 THROUGH 12*					$ 2,158,000.00		$ 2,294,290.00		$ 2,450,000.00		$ 2,490,000.00
CONTRACTOR'S COMPUTED TOTAL ITEMS NO. 1 THROUGH 12					$ 2,158,000.00		$ 2,294,290.00		$ 2,450,000.00		$ 2,490,000.00

* CONTRACTOR'S COMPUTED TOTAL

Reviewed by James M. West
James M. West, P.E.
12/6/05

STATE OF KENTUCKY
JAMES M. WEST
12349
LICENSED PROFESSIONAL ENGINEER

EXHIBIT 9-1

R:\Wordp\Bid Tabs\2005\Oldhmam County Water District.1-2005.xls

Q10. a. Provide all hydraulic analyses that Oldham District has conducted in developing its plans for the proposed water storage tank.

b. Provide a hydraulic analysis that addresses the facility that Oldham District proposes to construct and its effect on Oldham District's existing distribution system. This hydraulic analysis shall include a simulation of an average daily demand on Oldham District's distribution system and a peak demand that assumes maximum usage by all wholesale, residential and commercial customers.

RESPONSE:

A map of the Oldham County Water District ("OCWD") distribution system is attached as **Exhibit 10-1**. The map depicts the relative location of the water tanks, pump stations, and other primary components of the distribution system.

The OCWD is currently experiencing peak day demands well in excess of 6.0 MGD. See the response to Question 13 for information on the available storage in relation to the demand and the demand distribution.

Last year, the OCWD experienced a drought during the summer months and had difficulty maintaining water levels in its existing storage facilities. A mandatory water conservation order had to be issued. This summer will be more of a challenge with the growth that OCWD has experienced and is continuing to experience (approximately 4% per year).

It should be noted that the proposed Highway 146 Tank (the "146 Tank") is part of a comprehensive capital improvement program that is designed to operate the OCWD system more efficiently while maintaining system requirements relative to storage and fire protection. This is accomplished with the proposed 146 Tank by increasing the storage in the system to meet system requirements and by stabilizing the hydraulic grade line in the central pressure zone. A hydraulic model of OCWD's entire distribution system was created and calibrated by GRW Engineers, Inc. ("GRW"). An extended period simulation ("EPS") was run to show typical daily demand patterns. The EPS was run for these situations:

Average System Demand	- Without 146 Tank	(**EXHIBIT 10-2**)
Average System Demand	- With 146 Tank	(**EXHIBIT 10-2**)
Peak System Demand	- Without 146 Tank	(**EXHIBIT 10-3**)
Peak System Demand	- With 146 Tank	(**EXHIBIT 10-3**)

The results are presented below.

AVERAGE DEMANDS:

The first graph shown in Exhibit 10-2 shows the water level in the five tanks that are in the elevation 990 pressure zone (Pressure Zone No. 5) during a 1-day period. Pressure Zone No. 5 is the central pressure zone for OCWD and is the zone where the 146 tank will be located. The daily demand used in the model was equal to the average daily pumpage in 2003 (3.63 MGD). During average demands, the tanks all fill and drain throughout the day.

The second graph shown in **Exhibit 10-2** shows the water levels in the same five tanks, plus the addition of the proposed 146 Tank. The daily demand is again equal to the average daily pumpage in 2003 (3.63 MGD). The proposed 146 Tank is now the control tank and pumps at Greenhaven are controlled by the level in the 146 Tank. The tanks are all filling and draining throughout the day. In this case, the pressures are around 1 psi greater than without the 146 Tank. It should be noted that the "turnover" in the proposed tank is adequate to prevent water quality problems in this low demand scenario. It should continue to be noted that the addition of the 146 Tank is part of a comprehensive capital improvement plan for the entire OCWD system. This program also includes the construction of larger mains which will reduce friction loss between these tanks and will allow all the tanks to float at the same hydraulic grade without the continued need for booster pump stations.

PEAK DEMANDS:

The first graph shown in **Exhibit 10-3** shows the water levels in the five tanks that are in the 990 pressure zone (Pressure Zone No. 5), during a 7-day period. The daily demand used in this model was equal to the estimated peak daily pumpage during a similar period to the drought experienced during the summer of 2005 (6.2 MGD). The two tanks, which are closest to the water plant, refill daily.

The three tanks, which are furthest from the water plant, do not refill and empty by the end of the 4th day.

The second graph shown in **Exhibit 10-3** shows the water levels in the same five tanks, plus the addition of the proposed 146 Tank. The daily demand is again equal to the peak daily pumpage during the drought summer of 2005 (6.2 MGD). The two tanks, which are closest to the water plant, refill daily. The three tanks, which are furthest from the water plant, do not refill. However, with the addition of the proposed 146 Tank, the tanks do not actually empty and their levels stay higher than without the 146 Tank.

An additional benefit is the impact of this new tank on the operation of the Greenhaven Booster Pump Station. As the situation currently exists, the hydraulic grade line in Pressure Zone No. 5 is too low for proper operation of the pumps at Greenhaven. Currently, the pumps operate too far to the right on the curve. This has resulted in premature deterioration and catastrophic failure of these pumps. The operation of the Allen Lane Booster Pump Station and the 1.5 Tank further depresses the hydraulic grade line in this pressure zone and exacerbates the problem. The addition of the 146 Tank will increase and stabilize the hydraulic grade line in Pressure Zone No. 5. This will push the operating point at Greenhaven back to the left on the pump curve and into a better operating condition. The 146 Tank will also stabilize the suction pressure to the Allen Lane

Booster Pump Station. The full benefit of this impact will not be realized until the Capital Improvement Program is fully implemented.

Finally, it should continue to be emphasized that the 146 Tank is only a small component of an overall Capital Improvement Program designed to address needs of the OCWD system over the next 20 years. The full benefit of this Tank is not realized unless it is considered as part of this overall program under future conditions when the system is stressed (i.e. – peak demands and/or fire flow occurrences).

The addition of the 146 Tank also increases the pressures throughout the distribution system by an average of 2.5 psi. See the attached Excel data sheets (**Exhibits 10-4 through 10-7**) for pressures at different nodes throughout the system with and without the 146 Tank.

CONCLUSION:

Under current demand conditions, the benefits of the proposed 146 Tank are most greatly apparent as the system demands increase. The 146 Tank provides a buffer during these high demand periods while still maintaining adequate turnover during periods of lower demand.

WITNESS: Brad Montgomery, P. E., GRW Engineers, Inc.

EXHIBIT 10-1

EXISTING WATER DISTRIBUTION SYSTEM

0 3,500 7,000
Feet

Water Tank Legend

1. -- 1.5 Million Gallon
2. -- Ballardsville
3. -- Centerfield
4. -- Greenhaven (2)
5. -- Industrial
6. -- KPI
7. -- Liberty
8. -- Moody Lane
9. -- Osage
10. -- Woodlawn (2)
11. -- Zhale Smith

Water Pump Station Legend

1. -- Allen Lane
2. -- 1.5 / Industrial
3. -- Greenhaven
4. -- Water Treatment Plant
5. -- Old State Road
6. -- KSR
7. -- Liberty

OCWD Treatment Plant

Explanation

Water Tank

Pump Station

Junction Node

Water Pipe

DIAMETER

- 3 inch
- 4 inch
- 6 inch
- 8 inch
- 10 inch
- 12 inch
- 14 inch
- 16 inch
- 24 inch
- Road
- OCWD Service Area
- LaGrange Utilities Service Area
- Areas of Oldham County not Serviced by OCWD

GRW Engineers, Inc.

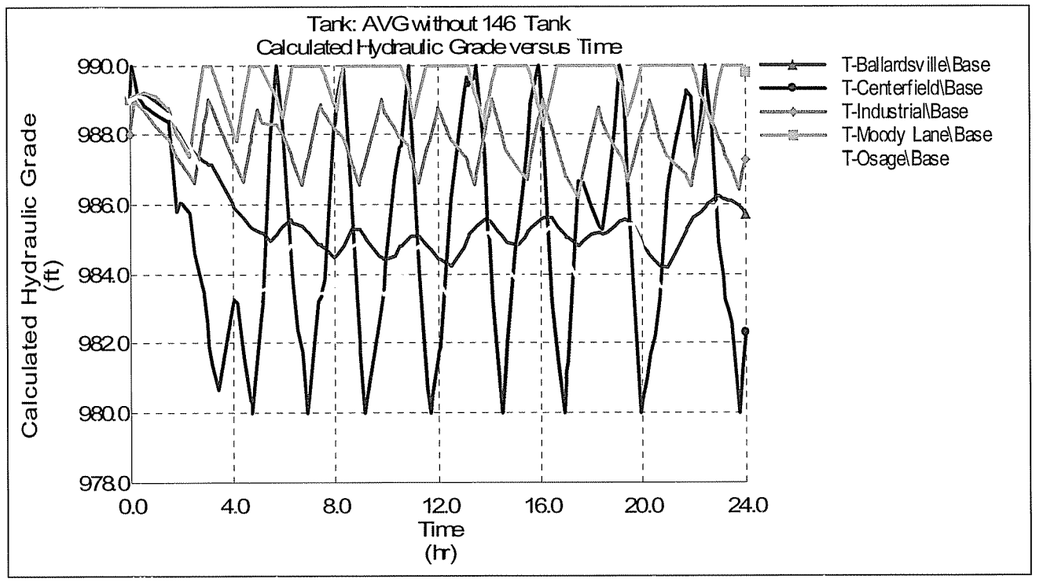
Oldham County Water District

Existing Water Distribution System

EXHIBIT 10-1

j:\3236\reports\ustmx\plange.mxd, by EM - 09/07/05

EXHIBIT 10-2


Tank: AVG without 146 Tank
Calculated Hydraulic Grade versus Time
Calculated Hydraulic Grade (ft)
990.0
988.0
986.0
984.0
982.0
980.0
978.0
0.0
4.0
8.0
12.0
16.0
20.0
24.0
Time (hr)
T-Ballardsville\Base
T-Centerfield\Base
T-Industrial\Base
T-Moody Lane\Base
T-Osage\Base

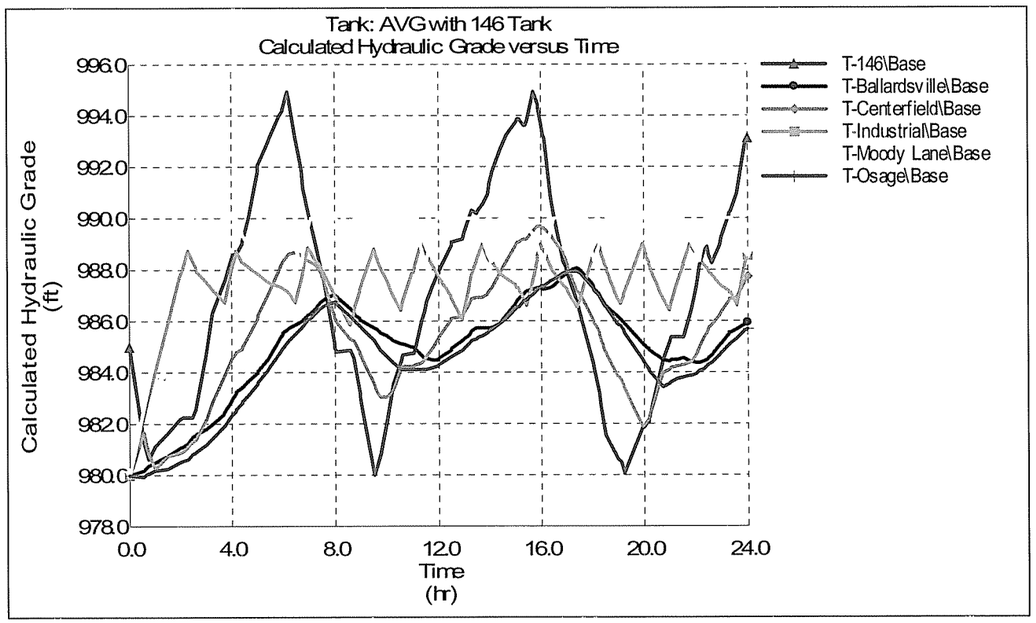
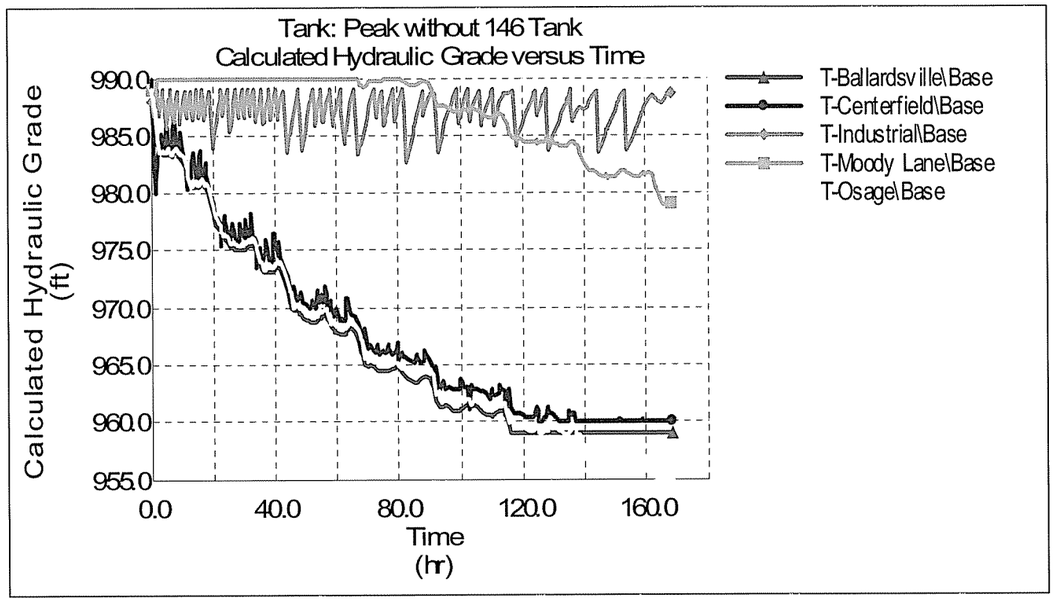
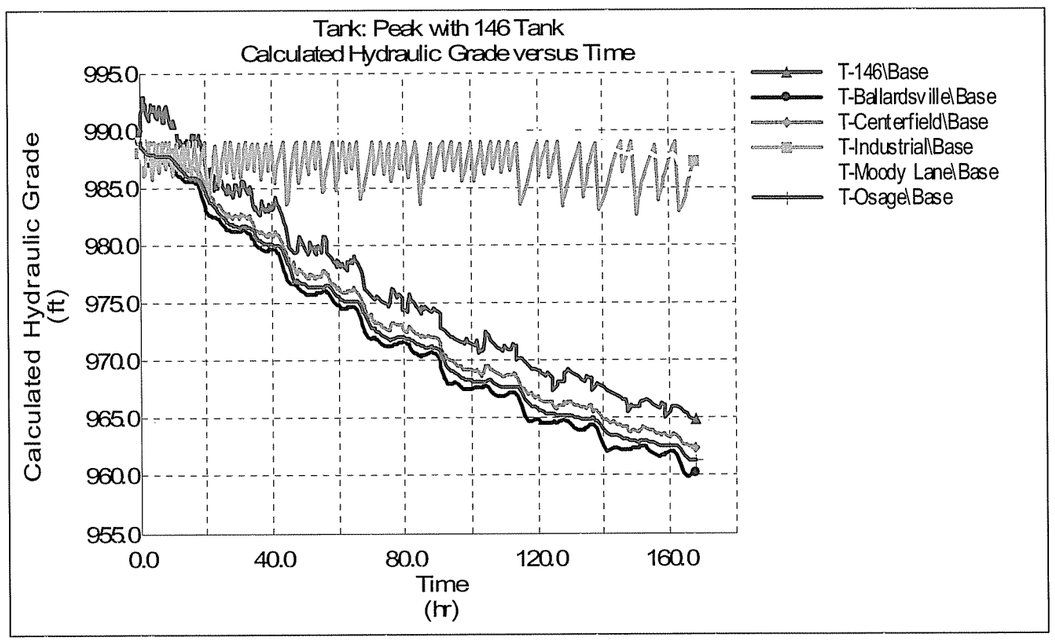

Tank: AVG with 146 Tank
Calculated Hydraulic Grade versus Time
Calculated Hydraulic Grade (ft)
996.0
994.0
992.0
990.0
988.0
986.0
984.0
982.0
980.0
978.0
0.0
4.0
8.0
12.0
16.0
20.0
24.0
Time (hr)
T-146\Base
T-Ballardsville\Base
T-Centerfield\Base
T-Industrial\Base
T-Moody Lane\Base
T-Osage\Base

EXHIBIT 10-3


Tank: Peak without 146 Tank
Calculated Hydraulic Grade versus Time
Calculated Hydraulic Grade (ft)
990.0
985.0
980.0
975.0
970.0
965.0
960.0
955.0
0.0
40.0
80.0
120.0
160.0
Time (hr)
T-Ballardsville\Base
T-Centerfield\Base
T-Industrial\Base
T-Moody Lane\Base
T-Osage\Base


Tank: Peak with 146 Tank
Calculated Hydraulic Grade versus Time
Calculated Hydraulic Grade (ft)
995.0
990.0
985.0
980.0
975.0
970.0
965.0
960.0
955.0
0.0
40.0
80.0
120.0
160.0
Time (hr)
T-146\Base
T-Ballardsville\Base
T-Centerfield\Base
T-Industrial\Base
T-Moody Lane\Base
T-Osage\Base

Average without 146 tank						
Label	Elevation (ft)	Base Flow (gpm)	Demand (Calculated) (gpm)	Calculated Hydraulic Grade (ft)	Pressure (psi)	Pressure Head (ft)
J-1	740	4.99	3.24	979.28	103.73	239.28
J-2	470	1.64	1.07	481.15	4.83	11.15
J-3	440	3.42	2.22	898.06	198.58	458.06
J-4	470	1.64	1.07	809.06	146.99	339.06
J-5	685	3.42	2.22	898.05	92.36	213.05
J-6	670	1.06	0.69	896.82	98.33	226.82
J-7	630	3.42	2.22	896.82	115.67	266.82
J-8	675	3.42	2.22	896.82	96.16	221.82
J-9	700	3.61	2.35	896.82	85.33	196.82
J-10	480	1.64	1.07	808.16	142.26	328.16
J-12	480	1.26	0.82	808.16	142.26	328.16
J-13	715	3.42	2.22	896.85	78.84	181.85
J-14	720	3.42	2.22	896.85	76.67	176.85
J-15	670	3.42	2.22	896.83	98.33	226.83
J-16	690	3.42	2.22	896.83	89.67	206.83
J-17	680	3.42	2.22	896.84	94	216.84
J-18	670	3.42	2.22	898.04	98.86	228.04
J-19	700	3.42	2.22	898.04	85.86	198.04
J-20	480	1.64	1.07	631.05	65.48	151.05
J-21	775	3.42	2.22	899.97	54.18	124.97
J-22	760	1.5	0.97	902.35	61.71	142.35
J-23	770	2.79	1.81	902.35	57.38	132.35
J-24	710	1.83	1.19	965.39	110.72	255.39
J-25	760	0.81	0.52	978.25	94.61	218.25
J-26	825	3.56	2.31	979.12	66.81	154.12
J-27	815	3.75	2.43	979.12	71.15	164.12
J-28	835	2.31	1.5	979.39	62.59	144.39
J-29	730	3.35	2.18	976.16	106.71	246.16
J-30	479	1.64	1.07	631.05	65.92	152.05
J-31	730	2.21	1.44	976.16	106.71	246.16
J-32	700	2.83	1.84	977.21	120.18	277.21
J-33	685	0.81	0.52	977.21	126.68	292.21
J-34	835	1.56	1.01	978.66	62.28	143.66
J-35	800	3.74	2.43	978.65	77.45	178.65
J-36	815	2.18	1.42	1,011.59	85.23	196.59
J-37	815	2.07	1.35	979.08	71.13	164.08
J-38	780	3.13	2.04	922.18	61.64	142.18
J-39	735	4.66	3.03	897.86	70.61	162.86
J-40	479	1.64	1.07	631.05	65.92	152.05
J-41	725	1.77	1.15	897.87	74.94	172.87
J-42	700	0.76	0.5	897.57	85.65	197.57
J-43	660	1.48	0.96	896.93	102.71	236.93
J-44	690	1.77	1.15	896.93	89.71	206.93
J-45	750	8.67	5.64	898.88	64.54	148.88
J-46	710	1.77	1.15	898.9	81.89	188.9
J-47	720	2.42	1.57	899.67	77.89	179.67
J-48	690	2.17	1.41	899.67	90.9	209.67
J-49	720	2.49	1.62	901.23	78.57	181.23
J-50	480	1.64	1.07	631.05	65.48	151.05
J-51	700	2.25	1.46	912.27	92.02	212.27
J-52	715	2.89	1.88	912.27	85.52	197.27
J-53	700	0.92	0.6	968.98	116.61	268.98
J-54	730	1.77	1.15	968.98	103.6	238.98
J-55	785	2.78	1.8	978.30	83.8	193.3
J-56	765	1.77	1.15	978.30	92.47	213.3
J-57	740	3.15	2.05	971.63	100.42	231.63
J-58	790	1.77	1.15	971.64	78.74	181.64
J-59	795	4.54	2.95	964.33	73.41	169.33
J-60	450	1.26	0.82	631.05	78.49	181.05
J-61	798	1.61	1.05	1,003.70	89.17	205.7
J-62	800	0.71	0.46	1,003.70	88.31	203.7
J-63	795	0.58	0.37	1,003.72	90.49	208.72
J-64	810	2.12	1.38	1,003.72	83.98	193.72
J-65	720	0.83	0.54	1,002.04	122.27	282.04
J-66	705	2.39	1.56	1,002.04	128.77	297.04
J-67	700	4.78	3.1	1,004.42	131.97	304.42
J-68	780	0.6	0.39	992.84	92.27	212.84
J-69	650	5.53	3.6	896.93	107.05	246.93
J-70	453	1.26	0.82	808.15	153.96	355.15
J-71	750	2.26	1.47	969.82	95.3	219.82
J-72	750	2.26	1.47	963.83	92.7	213.83
J-73	720	1.82	1.18	969.72	108.26	249.72
J-74	755	2.26	1.47	969.72	93.08	214.72
J-75	730	2.95	1.92	974.37	105.94	244.37
J-76	740	2.26	1.47	974.37	101.6	234.37
J-77	775	2.26	1.47	965.39	82.54	190.39
J-78	810	2.26	1.47	964.7	67.06	154.7
J-79	750	4.99	3.24	979.28	99.4	229.28
J-80	755	4.99	3.24	979.29	97.23	224.29
J-81	860	2.81	1.82	979.09	51.63	119.09
J-82	850	2.81	1.82	979.12	55.97	129.12
J-83	770	2.81	1.82	979.22	90.7	209.22

Average without 146 tank						
Label	Elevation (ft)	Base Flow (gpm)	Demand (Calculated) (gpm)	Calculated Hydraulic Grade (ft)	Pressure (psi)	Pressure Head (ft)
J-84	760	3.75	2.43	978.66	94.79	218.66
J-85	760	3.75	2.43	978.21	94.6	218.21
J-86	745	2.24	1.46	976.7	100.45	231.7
J-87	810	2.1	1.36	979.08	73.3	169.08
J-88	790	2.1	1.36	979.08	81.97	189.08
J-89	820	2.1	1.36	978.91	68.89	158.91
J-90	790	2.1	1.36	978.91	81.9	188.91
J-91	795	2.95	1.92	977.93	79.3	182.93
J-92	795	2.95	1.92	979.84	80.13	184.84
J-93	770	2.95	1.92	978.03	90.19	208.03
J-94	800	2.95	1.92	978.03	77.18	178.03
J-95	800	2.95	1.92	978.04	77.18	178.04
J-96	810	2.95	1.92	978.04	72.85	168.04
J-97	715	2.21	1.44	976.24	113.25	261.24
J-98	720	2.21	1.44	976.19	111.06	256.19
J-99	710	2.21	1.44	976.14	115.38	266.14
J-100	507	1.26	0.82	808.15	130.55	301.15
J-101	690	2.21	1.44	976.14	124.05	286.14
J-102	715	2.21	1.44	976.14	113.21	261.14
J-103	625	2.49	1.62	977.16	152.67	352.16
J-104	690	2.49	1.62	977.16	124.49	287.16
J-105	750	2.49	1.62	977.17	98.48	227.17
J-106	740	2.49	1.62	977.18	102.82	237.18
J-107	690	2.49	1.62	977.19	124.5	287.19
J-108	675	2.49	1.62	977.19	131.01	302.19
J-109	720	3.49	2.27	977.13	111.47	257.13
J-110	510	1.07	0.7	808.15	129.25	298.15
J-111	695	3.49	2.27	977.35	122.41	282.35
J-112	715	3.49	2.27	977.36	113.74	262.36
J-113	675	3.49	2.27	977.14	130.98	302.14
J-114	690	3.49	2.27	977.17	124.49	287.17
J-115	640	3.49	2.27	977.14	146.15	337.14
J-116	750	3.49	2.27	977.21	98.5	227.21
J-117	710	3.49	2.27	977.21	115.84	267.21
J-118	730	3.49	2.27	977.21	107.17	247.21
J-119	815	1.45	0.94	979.44	71.29	164.44
J-120	580	1.07	0.7	808.15	98.91	228.15
J-121	725	1.45	0.94	979.44	110.3	254.44
J-122	740	1.45	0.94	979.44	103.8	239.44
J-123	800	1.45	0.94	979.42	77.78	179.42
J-124	810	1.45	0.94	979.42	73.45	169.42
J-125	820	1.45	0.94	979.42	69.11	159.42
J-126	770	1.45	0.94	979.42	90.79	209.42
J-127	785	1.45	0.94	979.42	84.29	194.42
J-128	825	1.45	0.94	979.43	66.95	154.43
J-129	750	1.45	0.94	979.44	99.47	229.44
J-130	760	1.77	1.15	799.97	17.33	39.97
J-131	810	1.45	0.94	979.43	73.45	169.43
J-132	755	1.77	1.15	799.98	19.5	44.98
J-133	815	1.45	0.94	979.43	71.28	164.43
J-134	800	3.08	2.01	1,035.53	102.11	235.53
J-135	790	3.08	2.01	1,034.14	105.84	244.14
J-136	770	3.08	2.01	1,028.04	111.87	258.04
J-137	715	3.42	2.22	899.78	80.1	184.78
J-138	715	3.42	2.22	898.96	79.75	183.96
J-139	705	3.42	2.22	898.9	84.06	193.9
J-140	760	1.77	1.15	984.12	97.16	224.12
J-141	500	3.42	2.22	898.78	172.88	398.78
J-142	760	3.42	2.22	899.98	60.68	139.98
J-143	670	3.42	2.22	896.82	98.33	226.82
J-144	685	3.42	2.22	896.83	91.83	211.83
J-145	680	3.42	2.22	896.83	94	216.83
J-146	690	3.42	2.22	896.83	89.67	206.83
J-147	775	2.39	1.56	1,000.11	97.59	225.11
J-148	760	2.39	1.56	998.52	103.4	238.52
J-149	735	2.39	1.56	1,004.10	116.66	269.1
J-150	760	1.77	1.15	983.57	96.92	223.57
J-151	760	1.42	0.92	1,004.37	105.94	244.37
J-152	840	1.42	0.92	1,004.37	71.26	164.37
J-153	830	1.42	0.92	1,004.37	75.59	174.37
J-154	840	1.42	0.92	1,004.37	71.26	164.37
J-155	888	1.47	0.96	979.85	39.82	91.85
J-156	855	1.07	0.7	1,003.69	64.46	148.69
J-157	782	1.26	0.82	1,003.69	96.11	221.69
J-158	770	3.42	2.22	899.97	56.34	129.97
J-159	750	3.42	2.22	899.97	65.01	149.97
J-160	778	1.77	1.15	977.50	86.49	199.5
J-161	745	1.77	1.15	898.23	66.43	153.23
J-162	675	1.77	1.15	922.1	107.12	247.1
J-163	675	2.49	1.62	922.11	107.13	247.11
J-164	665	2.49	1.62	922.1	111.46	257.1
J-165	742	1.63	1.06	969.46	98.61	227.46

Average without 146 tank						
Label	Elevation (ft)	Base Flow (gpm)	Demand (Calculated) (gpm)	Calculated Hydraulic Grade (ft)	Pressure (psi)	Pressure Head (ft)
J-166	835	0.71	0.46	1,003.69	73.13	168.69
J-167	860	2.12	1.38	1,003.90	62.38	143.9
J-168	810	2.12	1.38	1,003.90	84.06	193.9
J-169	780	0.71	0.46	1,003.68	96.97	223.68
J-170	797	1.77	1.15	973.18	76.38	176.18
J-171	840	0.71	0.46	1,003.69	70.96	163.69
J-172	845	0	0	965.57	52.27	120.57
J-173	855	0	0	937.00	35.55	82
J-174	825	2.28	1.48	979.96	67.18	154.96
J-175	820	3.75	2.43	980.17	69.43	160.17
J-176	780	1.47	0.96	980.02	86.71	200.02
J-177	765	0	0	901.2	59.04	136.2
J-178	850	1.63	1.06	1,035.97	80.62	185.97
J-179	780	1.63	1.06	1,035.97	110.97	255.97
J-180	822	1.63	1.06	969.46	63.93	147.46
J-181	760	1.63	1.06	1,035.97	119.64	275.97
J-186	800	1.56	1.01	977.64	77.01	177.64
J-187	715	2.49	1.62	977.16	113.65	262.16
J-188	690	2.49	1.62	977.16	124.49	287.16
J-189	750	1.63	1.06	1,029.42	121.13	279.42
J-190	822	1.63	1.06	969.22	63.82	147.22
J-191	790	1.63	1.06	1,041.74	109.13	251.74
J-192	810	1.63	1.06	1,041.74	100.46	231.74
J-193	780	1.63	1.06	1,035.98	110.97	255.98
J-194	820	1.89	1.23	1,011.40	82.97	191.4
J-195	820	1.89	1.23	1,011.42	82.98	191.42
J-196	820	1.89	1.23	1,011.40	82.97	191.4
J-200	797	0.96	0.63	967.48	73.91	170.48
J-203	810	1.63	1.06	1,010.46	86.91	200.46
J-204	822	0	0	1,011.43	82.12	189.43
J-205	818	0	0	1,011.43	83.86	193.43
J-206	785	0	0	967.62	79.17	182.62
J-207	805	0	0	967.63	70.5	162.63
J-208	800	3.08	2.01	926.35	54.78	126.35
J-209	820	0	0	965.68	63.15	145.68
J-210	850	0	0	962.91	48.95	112.91
J-211	820	0	0	966.32	63.43	146.32
J-212	785	0	0	967.80	79.25	182.8
J-213	750	0	0	953.78	88.34	203.78
J-220	864	0	0	931.79	29.39	67.79
J-230	864	0	0	914.86	22.05	50.86
J-237	785	0	0	953.94	73.24	168.94
J-239	842	0	0	979.37	59.55	137.37
J-240	780	1.77	1.15	974.23	84.2	194.23
J-241	838	0	0	979.43	61.31	141.43
J-242	850	0	0	980.29	56.48	130.29
J-243	842	0	0	980.57	60.07	138.57
J-244	910	305.36	198.48	984.98	32.5	74.98
J-245	878	0	0	902.03	10.42	24.03
J-250	783	1.77	1.15	949.73	72.28	166.73
J-257	760	1.13	0.74	979.27	95.06	219.27
J-258	683	1.94	1.26	942.9	112.67	259.9
J-260	736	1.94	1.26	927.59	83.06	191.59
J-263	820	0	0	979.99	69.36	159.99
J-264	820	0	0	979.71	69.24	159.71
J-266	790	0.25	0.16	977.65	81.35	187.65
J-270	715	1.94	1.26	922.77	90.07	207.77
J-280	715	1.94	1.26	920.63	89.15	205.63
J-288	746	1.94	1.26	913.13	72.45	167.13
J-290	746	0.83	0.54	912.28	72.09	166.28
J-294	845	1.11	0.72	979.23	58.19	134.23
J-295	825	1.94	1.26	906.54	35.35	81.54
J-300	820	1.94	1.26	905.07	36.88	85.07
J-310	810	0	0	902.2	39.97	92.2
J-330	803	1.77	1.15	961.60	68.76	158.6
J-336	840	160.62	104.41	983.87	62.37	143.87
J-340	810	4.54	2.95	960.12	65.08	150.12
J-345	710	0	0	898.48	81.71	188.48
J-346	810	0	0	963.02	66.34	153.02
J-347	890	0	0	984.96	41.17	94.96
J-348	710	0	0	898.89	81.89	188.89
J-349	710	0	0	898.21	81.59	188.21
J-350	730	1.51	0.98	911.28	78.59	181.28
J-351	710	0	0	898.24	81.6	188.24
J-352	810	1.52	0.99	913.13	44.71	103.13
J-353	760	0	0	1,004.26	105.89	244.26
J-360	730	1.51	0.98	1,013.34	122.84	283.34
J-362	830	0	0	1,004.35	75.59	174.35
J-370	739	1.51	0.98	1,012.32	118.49	273.32
J-376	725	0	0	1,001.44	119.84	276.44
J-377	720	0	0	999.43	121.14	279.43
J-378	770	0	0	1,009.35	103.76	239.35

Average without 146 tank						
Label	Elevation (ft)	Base Flow (gpm)	Demand (Calculated) (gpm)	Calculated Hydraulic Grade (ft)	Pressure (psi)	Pressure Head (ft)
J-379	810	0	0	994.21	79.86	184.21
J-380	680	2.12	1.38	1,012.32	144.07	332.32
J-381	760	0	0	968.27	90.29	208.27
J-382	780	2.12	1.38	1,012.32	100.71	232.32
J-383	785	0	0	969.59	80.02	184.59
J-384	800	0	0	979.09	77.64	179.09
J-387	710	0	0	970.98	113.14	260.98
J-388	795	0	0	969.08	75.47	174.08
J-389	800	0	0	968.84	73.2	168.84
J-390	790	2.12	1.38	1,008.68	94.8	218.68
J-391	835	0	0	965.89	56.74	130.89
J-392	700	0	0	925.67	97.83	225.67
J-400	805	3.94	2.56	1,008.66	88.29	203.66
J-410	850	3.94	2.56	1,008.65	68.78	158.65
J-420	819	1.42	0.92	1,004.37	80.36	185.37
J-430	753	126.2	82.03	1,004.24	108.92	251.24
J-440	819	2.12	1.38	1,004.26	80.32	185.26
J-450	770	2.12	1.38	1,004.10	101.49	234.1
J-460	810	2.12	1.38	1,004.08	84.14	194.08
J-470	750	2.12	1.38	1,004.08	110.15	254.08
J-480	700	2.39	1.56	1,004.08	131.83	304.08
J-490	783	2.12	1.38	1,003.92	95.77	220.92
J-500	790	2.12	1.38	1,003.90	92.73	213.9
J-510	850	2.12	1.38	1,003.90	66.72	153.9
J-520	740	2.12	1.38	1,003.84	114.38	263.84
J-530	838	2.12	1.38	1,003.76	71.86	165.76
J-540	730	2.12	1.38	1,003.71	118.66	273.71
J-550	780	0.71	0.46	1,003.70	96.98	223.7
J-560	893	0.71	0.46	1,003.69	47.98	110.69
J-570	813	0.71	0.46	1,003.69	82.67	190.69
J-580	813	0.71	0.46	1,003.69	82.67	190.69
J-590	890	0.71	0.46	1,003.69	49.28	113.69
J-600	850	0.71	0.46	1,003.68	66.62	153.68
J-610	870	0.71	0.46	1,003.68	57.95	133.68
J-620	901	0.71	0.46	1,003.68	44.51	102.68
J-630	896	0.71	0.46	1,003.68	46.68	107.68
J-640	740	2.12	1.38	1,003.78	114.35	263.78
J-650	800	2.12	1.38	1,002.98	88	202.98
J-660	775	2.12	1.38	1,002.98	98.83	227.98
J-670	725	2.39	1.56	1,001.73	119.97	276.73
J-680	729	42.42	27.58	1,001.70	118.22	272.7
J-690	725	2.39	1.56	1,000.82	119.57	275.82
J-700	725	1.2	0.78	998.01	118.35	273.01
J-710	750	2.39	1.56	987.71	103.05	237.71
J-720	848	1.26	0.82	980.45	57.42	132.45
J-730	848	1.26	0.82	980.23	57.32	132.23
J-740	829	1.26	0.82	980.23	65.56	151.23
J-750	789	1.26	0.82	980.21	82.89	191.21
J-760	621	1.07	0.7	980.2	155.72	359.2
J-770	789	1.26	0.82	980.2	82.89	191.2
J-780	705	1.26	0.82	980.2	119.3	275.2
J-790	772	1.26	0.82	980.19	90.26	208.19
J-800	730	1.26	0.82	980.19	108.46	250.19
J-810	700	1.07	0.7	1,001.11	130.54	301.11
J-820	700	1.07	0.7	1,002.16	130.99	302.16
J-830	700	1.07	0.7	1,002.69	131.22	302.69
J-840	705	1.07	0.7	1,003.70	129.49	298.7
J-850	710	1.07	0.7	1,003.70	127.32	293.7
J-860	800	1.07	0.7	1,003.69	88.3	203.69
J-870	800	1.07	0.7	1,003.68	88.3	203.68
J-880	829	1.07	0.7	1,003.68	75.73	174.68
J-890	750	1.07	0.7	1,003.68	109.98	253.68
J-900	710	2.39	1.56	1,005.72	128.2	295.72
J-910	700	2.39	1.56	1,005.41	132.4	305.41
J-920	700	2.39	1.56	1,004.42	131.97	304.42
J-930	750	1.51	0.98	1,011.18	113.23	261.18
J-940	760	1.51	0.98	1,012.54	109.48	252.54
J-950	816	1.51	0.98	1,012.53	85.2	196.53
J-960	810	1.51	0.98	1,012.52	87.8	202.52
J-970	805	1.51	0.98	1,012.52	89.96	207.52
J-980	650	1.51	0.98	1,012.52	157.16	362.52
J-990	791	1.51	0.98	1,012.52	96.03	221.52
J-1000	600	1.51	0.98	1,012.52	178.83	412.52
J-1010	750	1.51	0.98	1,012.52	113.81	262.52
J-1020	773	1.77	1.15	925.20	65.98	152.2
J-1030	766	1.77	1.15	906.55	60.93	140.55
J-1040	766	5.01	3.25	902.93	59.36	136.93
J-1050	761	1.77	1.15	900.03	60.27	139.03
J-1060	770	2.28	1.48	899.97	56.34	129.97
J-1070	770	3.42	2.22	899.97	56.34	129.97
J-1080	766	1.91	1.24	902.35	59.11	136.35
J-1090	704	1.77	1.15	900.4	85.15	196.4

Average without 146 tank						
Label	Elevation (ft)	Base Flow (gpm)	Demand (Calculated) (gpm)	Calculated Hydraulic Grade (ft)	Pressure (psi)	Pressure Head (ft)
J-1100	692	3.42	2.22	898.83	89.67	206.83
J-1110	732	1.77	1.15	898.24	72.07	166.24
J-1120	710	1.77	1.15	898.15	81.57	188.15
J-1130	700	1.77	1.15	898.12	85.89	198.12
J-1140	684	3.42	2.22	898.06	92.8	214.06
J-1150	706	1.77	1.15	897.57	83.05	191.57
J-1160	720	1.77	1.15	896.97	76.72	176.97
J-1170	700	1.77	1.15	896.96	85.39	196.96
J-1180	700	1.77	1.15	896.96	85.39	196.96
J-1190	700	1.77	1.15	896.94	85.38	196.94
J-1200	650	1.19	0.78	896.93	107.05	246.93
J-1210	730	1.77	1.15	896.93	72.37	166.93
J-1220	720	3.42	2.22	896.83	76.66	176.83
J-1230	830	3.08	2.01	1,036.50	89.52	206.5
J-1240	815	3.08	2.01	1,033.35	94.66	218.35
J-1250	830	3.08	2.01	1,034.86	88.81	204.86
J-1260	815	3.08	2.01	1,032.59	94.33	217.59
J-1270	780	0	0	1,028.34	107.66	248.34
J-1280	785	3.08	2.01	1,027.78	105.25	242.78
J-1281	790	2.12	1.38	1,028.28	103.3	238.28
J-1290	720	3.08	2.01	1,028.63	133.8	308.63
J-1300	790	3.08	2.01	1,024.14	101.5	234.14
J-1301	750	3.08	2.01	1,025.91	119.61	275.91
J-1310	790	1.89	1.23	1,023.05	101.03	233.05
J-1315	750	1.89	1.23	1,020.00	117.05	270
J-1320	750	1.89	1.23	1,019.76	116.95	269.76
J-1322	790	1.89	1.23	1,018.31	98.98	228.31
J-1324	800	1.89	1.23	1,018.77	94.84	218.77
J-1330	800	1.89	1.23	1,018.34	94.66	218.34
J-1340	805	1.89	1.23	1,018.35	92.49	213.35
J-1342	805	1.89	1.23	1,018.65	92.62	213.65
J-1350	810	1.89	1.23	1,011.90	87.53	201.9
J-1355	775	3.32	2.16	1,011.81	102.66	236.81
J-1360	740	1.89	1.23	1,011.80	117.83	271.8
J-1370	792	1.67	1.08	1,007.16	93.28	215.16
J-1372	792	1.63	1.06	1,003.89	91.86	211.89
J-1380	800	3.72	2.42	1,011.63	91.75	211.63
J-1390	800	1.63	1.06	926.35	54.77	126.35
J-1400	820	7.64	4.96	926.35	46.11	106.35
J-1410	800	20.44	13.28	925.81	54.54	125.81
J-1420	793	3.08	2.01	925.81	57.58	132.81
J-1430	750	13.13	8.53	917.38	72.56	167.38
J-1440	820	1.63	1.06	926.35	46.11	106.35
J-1450	821	1.63	1.06	940.4	51.76	119.4
J-1460	826	0	0	960.57	58.34	134.57
J-1470	750	1.94	1.26	922.65	74.85	172.65
J-1480	795	1.94	1.26	922.59	55.31	127.59
J-1490	795	1.94	1.26	922.59	55.31	127.59
J-1500	761	1.94	1.26	922.44	69.99	161.44
J-1510	740	1.94	1.26	922.44	79.09	182.44
J-1520	771	2.49	1.62	922.34	65.61	151.34
J-1530	783	2.49	1.62	922.2	60.34	139.2
J-1540	717	2.49	1.62	922.17	88.94	205.17
J-1550	730	2.49	1.62	922.14	83.3	192.14
J-1560	759	2.49	1.62	922.18	70.74	163.18
J-1570	730	9.44	6.13	922.16	83.3	192.16
J-1580	817	2.81	1.82	996.72	77.91	179.72
J-1590	817	9.12	5.93	996.72	77.91	179.72
J-1600	809	64.65	42.02	980.04	74.15	171.04
J-1605	817	1.45	0.94	979.30	70.36	162.3
J-1610	819	0.92	0.6	978.81	69.28	159.81
J-1620	820	1.63	1.06	978.79	68.84	158.79
J-1630	825	1.63	1.06	978.63	66.6	153.63
J-1640	825	1.63	1.06	978.62	66.6	153.62
J-1650	800	1.63	1.06	978.61	77.43	178.61
J-1660	825	1.63	1.06	978.63	66.6	153.63
J-1670	700	1.63	1.06	978.62	120.79	278.62
J-1680	740	1.27	0.82	976.93	102.71	236.93
J-1690	750	1.27	0.82	976.46	98.18	226.46
J-1700	740	1.27	0.82	976.93	102.71	236.93
J-1710	740	1.27	0.82	976.93	102.71	236.93
J-1720	750	1.27	0.82	976.95	98.39	226.95
J-1730	760	1.27	0.82	976.96	94.06	216.96
J-1740	760	1.27	0.82	976.96	94.06	216.96
J-1750	750	1.27	0.82	976.96	98.39	226.96
J-1760	785	1.27	0.82	976.99	83.23	191.99
J-1770	801	1.27	0.82	976.98	76.29	175.98
J-1780	775	1.27	0.82	976.96	87.56	201.96
J-1790	750	1.27	0.82	976.94	98.38	226.94
J-1800	664	1.27	0.82	976.9	135.65	312.9
J-1810	700	1.27	0.82	976.9	120.04	276.9
J-1820	765	1.47	0.96	977.12	91.96	212.12

Average without 146 tank						
Label	Elevation (ft)	Base Flow (gpm)	Demand (Calculated) (gpm)	Calculated Hydraulic Grade (ft)	Pressure (psi)	Pressure Head (ft)
J-1830	765	1.27	0.82	977.11	91.95	212.11
J-1840	720	1.27	0.82	974.97	110.53	254.97
J-1850	705	1.47	0.96	974.97	117.04	269.97
J-1860	720	3.14	2.04	972.27	109.36	252.27
J-1870	740	3.14	2.04	970.75	100.04	230.75
J-1880	775	3.14	2.04	967.15	83.3	192.15
J-1890	775	3.14	2.04	966.01	82.81	191.01
J-1900	780	1.76	1.15	964.03	79.78	184.03
J-1910	750	1.76	1.15	965.2	93.29	215.2
J-1920	745	3.14	2.04	966.65	96.09	221.65
J-1930	755	3.14	2.04	968.57	92.59	213.57
J-1940	791	1.76	1.15	958.2	72.48	167.2
J-1950	775	1.76	1.15	958.19	79.42	183.19
J-1960	750	1.76	1.15	958.19	90.25	208.19
J-1970	725	1.76	1.15	958.18	101.09	233.18
J-1980	750	1.76	1.15	958.17	90.24	208.17
J-1990	765	1.76	1.15	958.16	83.74	193.16
J-2000	775	1.76	1.15	958.17	79.41	183.17
J-2004	785	1.76	1.15	942.95	68.47	157.95
J-2006	785	1.76	1.15	946.28	69.92	161.28
J-2008	753	1.76	1.15	951.27	85.96	198.27
J-2010	772	1.76	1.15	954.73	79.22	182.73
J-2020	800	1.76	1.15	957.45	68.26	157.45
J-2030	832	1.76	1.15	960.63	55.76	128.63
J-2040	825	2.26	1.47	963.91	60.22	138.91
J-2050	800	2.26	1.47	963.82	71.02	163.82
J-2060	792	2.26	1.47	965.59	75.25	173.59
J-2070	780	1.76	1.15	965.39	80.37	185.39
J-2080	725	1.82	1.18	968.76	105.68	243.76
J-2090	725	1.82	1.18	970.93	106.62	245.93
J-2100	843	1.82	1.18	969.05	54.64	126.05
J-2110	851	1.82	1.18	969.99	51.59	118.99
J-2120	775	1.82	1.18	970.35	84.69	195.35
J-2130	851	1.82	1.18	970.85	51.96	119.85
J-2140	790	1.82	1.18	969.83	77.96	179.83
J-2150	780	2.26	1.47	969.82	82.29	189.82
J-2160	852	1.82	1.18	975.98	53.75	123.98
J-2170	825	2.1	1.36	978.83	66.69	153.83
J-2180	760	2.1	1.36	979.33	95.08	219.33
J-2190	820	2.1	1.36	979.65	69.21	159.65
J-2200	860	2.1	1.36	980.07	52.05	120.07
J-2210	860	2.1	1.36	980.37	52.18	120.37
J-2220	860	2.1	1.36	979.65	51.87	119.65
J-2230	850	2.1	1.36	979	55.92	129
J-2240	840	2.05	1.33	980.10	60.74	140.1
J-2250	808	2.05	1.33	980.11	74.61	172.11
J-2260	755	2.05	1.33	980.14	97.6	225.14
J-2270	773	2.05	1.33	980.12	89.79	207.12
J-2280	842	2.05	1.33	980.44	60.02	138.44
J-2290	835	2.05	1.33	980.59	63.12	145.59
J-2300	870	2.05	1.33	980.91	48.08	110.91
J-2310	870	2.05	1.33	981.54	48.36	111.54
J-2320	860	2.05	1.33	1,012.25	66	152.25
J-2330	795	2.05	1.33	1,020.91	97.93	225.91
J-2340	780	0	0	1,022.03	104.93	242.03
J-2342	735	1.63	1.06	1,029.30	127.59	294.3
J-2344	735	1.63	1.06	1,033.66	129.47	298.66
J-2345	750	1.63	1.06	1,037.89	124.8	287.89
J-2346	790	1.63	1.06	1,044.42	110.3	254.42
J-2347	800	1.63	1.06	1,035.97	102.3	235.97
J-2350	750	2.05	1.33	1,020.90	117.44	270.9
J-2360	770	2.05	1.33	1,020.89	108.77	250.89
J-2370	840	2.05	1.33	979.55	60.5	139.55
J-2380	835	2.05	1.33	979.41	62.6	144.41
J-2390	835	2.05	1.33	979.35	62.58	144.35
J-2400	840	2.05	1.33	979.34	60.41	139.34
J-2410	810	2.05	1.33	979.16	73.34	169.16
J-2420	775	2.05	1.33	979.11	88.49	204.11
J-2430	755	2.05	1.33	979.08	97.14	224.08
J-2440	795	2.05	1.33	979.11	79.81	184.11
J-2450	819	2.05	1.33	979.15	69.43	160.15
J-2460	772	2.05	1.33	978.87	89.68	206.87
J-2470	720	2.05	1.33	978.8	112.19	258.8
J-2480	748	2.05	1.33	978.83	100.07	230.83
J-2490	770	1.47	0.96	978.57	90.42	208.57
J-2500	750	1.47	0.96	978.39	99.01	228.39
J-2510	825	1.47	0.96	977.20	65.98	152.2
J-2520	820	1.47	0.96	976.73	67.95	156.73
J-2530	805	2.24	1.46	976.7	74.44	171.7
J-2540	745	1.47	0.96	976.7	100.45	231.7
J-2550	835	2.95	1.92	976.50	61.34	141.5
J-2560	823	2.95	1.92	976.36	66.49	153.36

Average without 146 tank						
Label	Elevation (ft)	Base Flow (gpm)	Demand (Calculated) (gpm)	Calculated Hydraulic Grade (ft)	Pressure (psi)	Pressure Head (ft)
J-2570	800	2.95	1.92	976.07	76.33	176.07
J-2580	855	1.47	0.96	978.40	53.5	123.4
J-2600	850	1.47	0.96	978.14	55.55	128.14
J-2605	850	1.47	0.96	978.54	55.72	128.54
J-2610	860	2.95	1.92	979.84	51.95	119.84
J-2630	805	1.27	0.82	977.65	74.85	172.65
J-2640	840	2.95	1.92	977.84	59.76	137.84
J-2650	750	1.47	0.96	977.58	98.66	227.58
J-2660	840	2.95	1.92	978.16	59.89	138.16
J-2670	802	2.95	1.92	977.93	76.27	175.93
J-2680	802	2.95	1.92	977.84	76.23	175.84
J-2690	745	3.52	2.29	976.95	100.55	231.95
J-2700	730	3.52	2.29	976.94	107.05	246.94
J-2710	790	3.52	2.29	976.95	81.05	186.95
J-2720	730	3.52	2.29	976.94	107.05	246.94
J-2730	750	3.52	2.29	976.94	98.38	226.94
J-2740	762	2.21	1.44	976.94	93.18	214.94
J-2750	700	1.47	0.96	976.92	120.05	276.92
J-2760	790	3.52	2.29	977.79	81.41	187.79
J-2770	740	2.13	1.39	977.76	103.07	237.76
J-2780	780	1.47	0.96	978.40	86.01	198.4
J-2790	790	2.95	1.92	978.4	81.67	188.4
J-2800	780	2.13	1.39	978.4	86.01	198.4
J-2810	800	2.13	1.39	977.19	76.82	177.19
J-2820	790	2.13	1.39	977.19	81.15	187.19
J-2830	822	2.28	1.48	977.17	67.27	155.17
J-2840	825	2.28	1.48	977.16	65.97	152.16
J-2850	745	2.28	1.48	977.16	100.65	232.16
J-2860	820	2.68	1.75	977.16	68.13	157.16
J-2870	810	2.13	1.39	977.2	72.48	167.2
J-2880	790	2.13	1.39	977.21	81.16	187.21
J-2890	789	2.13	1.39	977.21	81.59	188.21
J-2900	772	2.13	1.39	977.22	88.97	205.22
J-2910	765	2.13	1.39	977.22	92	212.22
J-2920	772	2.01	1.31	977.21	88.96	205.21
J-2930	705	2.13	1.39	977.23	118.02	272.23
J-2940	745	2.49	1.62	977.21	100.67	232.21
J-2950	750	2.49	1.62	977.17	98.48	227.17
J-2960	720	2.49	1.62	977.17	111.49	257.17
J-2970	712	2.49	1.62	977.2	114.97	265.2
J-2980	750	2.49	1.62	977.24	98.51	227.24
J-2990	750	2.21	1.44	976.65	98.26	226.65
J-3000	750	2.49	1.62	976.14	98.04	226.14
J-3010	710	3.49	2.27	977.18	115.83	267.18
J-3020	680	3.49	2.27	977.13	128.81	297.13
J-3030	768	3.49	2.27	977.22	90.7	209.22
J-3040	740	1.56	1.01	977.63	103.02	237.63
J-3050	640	1.56	1.01	977.69	146.39	337.69
J-3060	715	3.49	2.27	977.31	113.72	262.31
J-3070	725	3.49	2.27	977.31	109.38	252.31
J-3080	745	3.49	2.27	978.01	101.01	233.01
J-3090	750	3.49	2.27	978.22	98.94	228.22
J-3100	773	3.49	2.27	978.37	89.03	205.37
J-3110	775	3.49	2.27	978.81	88.36	203.81
J-3120	730	2.28	1.48	978.81	107.86	248.81
J-3130	790	3.49	2.27	978.98	81.93	188.98
J-3140	800	3.49	2.27	979.19	77.68	179.19
J-3150	820	2.28	1.48	979.63	69.2	159.63
J-3160	825	2.68	1.75	979.61	67.03	154.61
J-3170	810	2.28	1.48	977.03	72.41	167.03
J-3180	770	2.28	1.48	976.96	89.72	206.96
J-3190	725	2.28	1.48	977.03	109.26	252.03
J-3200	700	2.28	1.48	977.05	120.11	277.05
J-3210	711	1.56	1.01	977.39	115.49	266.39
J-3220	721	2.28	1.48	977.4	111.15	256.4
J-3230	700	1.56	1.01	977.38	120.25	277.38
J-3240	700	1.56	1.01	977.47	120.29	277.47
J-3250	750	1.56	1.01	977.45	98.6	227.45
J-3260	780	1.56	1.01	977.05	85.42	197.05
J-3270	740	1.56	1.01	977.03	102.76	237.03
J-3280	750	1.56	1.01	977.51	98.63	227.51
J-3290	725	1.56	1.01	977.66	109.53	252.66
J-3300	750	1.56	1.01	977.65	98.69	227.65
J-3310	770	1.56	1.01	977.64	90.01	207.64
J-3320	689	1.56	1.01	977.71	125.16	288.71
J-3330	705	1.56	1.01	977.7	118.22	272.7
J-3335	732	1.56	1.01	978.09	106.69	246.09
J-3340	735	1.56	1.01	978.36	105.5	243.36
J-3350	780	1.56	1.01	978.38	86	198.38
J-3360	750	1.56	1.01	978.42	99.02	228.42
J-3370	745	1.56	1.01	978.42	101.19	233.42
J-3380	810	1.56	1.01	978.55	73.07	168.55

Average without 146 tank						
Label	Elevation (ft)	Base Flow (gpm)	Demand (Calculated) (gpm)	Calculated Hydraulic Grade (ft)	Pressure (psi)	Pressure Head (ft)
J-3400	840	1.56	1.01	978.64	60.1	138.64
J-3410	820	2.68	1.75	978.82	68.85	158.82
J-3420	840	2.68	1.75	979.09	60.3	139.09
J-3430	750	2.68	1.75	979.2	99.36	229.2
J-3440	770	2.68	1.75	979.29	90.73	209.29
J-3450	820	2.68	1.75	978.78	68.84	158.78
J-3460	772	2.68	1.75	978.74	89.63	206.74
J-3470	745	2.68	1.75	978.73	101.33	233.73
J-3480	751	1.47	0.96	978.66	98.7	227.66
J-3490	755	1.47	0.96	978.70	96.98	223.7
J-3500	758	1.47	0.96	978.68	95.67	220.68
J-3510	785	1.47	0.96	978.68	83.96	193.68
J-3520	800	1.47	0.96	978.68	77.46	178.68
J-3530	860	1.47	0.96	979.14	51.65	119.14
J-3540	820	1.47	0.96	979.14	68.99	159.14
J-3545	860	3.75	2.43	979.30	51.72	119.3
J-3547	825	3.75	2.43	979.3	66.89	154.3
J-3550	865	3.75	2.43	979.43	49.61	114.43
J-3560	870	3.75	2.43	979.6	47.51	109.6
J-3570	865	3.75	2.43	979.55	49.66	114.55
J-3580	838	1.47	0.96	979.44	61.32	141.44
J-3590	792	1.47	0.96	979.26	81.18	187.26
J-3600	835	1.47	0.96	979.24	62.53	144.24
J-3610	845	1.47	0.96	979.23	58.19	134.23
J-3620	812	3.75	2.43	978.25	72.07	166.25
J-3630	750	3.75	2.43	978.22	98.94	228.22
J-3640	735	3.75	2.43	978.2	105.43	243.2
J-3650	860	3.75	2.43	979.39	51.76	119.39
J-3660	850	3.75	2.43	979.39	56.09	129.39
J-3670	830	3.75	2.43	979.38	64.76	149.38
J-3680	810	3.75	2.43	979.39	73.43	169.39
J-3690	777	3.75	2.43	979.2	87.66	202.2
J-3700	785	3.75	2.43	979.16	84.17	194.16
J-3710	830	3.75	2.43	979.14	64.65	149.14
J-3720	800	3.75	2.43	979.13	77.66	179.13
J-3730	840	3.75	2.43	979.13	60.32	139.13
J-3740	780	3.75	2.43	979.13	86.33	199.13
J-3750	739	2.81	1.82	979.27	104.16	240.27
J-3760	735	4.99	3.24	979.29	105.9	244.29
J-3770	770	2.81	1.82	979.29	90.73	209.29
J-3780	800	2.81	1.82	979.27	77.72	179.27
J-3790	840	3.75	2.43	979.16	60.33	139.16
J-3800	810	3.75	2.43	979.11	73.31	169.11
J-3810	890	3.75	2.43	979.1	38.63	89.1
J-3820	821	0	0	979.14	68.55	158.14
J-3830	840	4.07	2.65	979.13	60.32	139.13
J-3840	871	2.81	1.82	979.12	46.87	108.12
J-3850	850	2.81	1.82	979.09	55.96	129.09
J-3860	842	0	0	979.12	59.44	137.12
J-3870	878	3.75	2.43	985.78	46.72	107.78
J-3880	910	0	0	985.02	32.52	75.02
J-3890	870	1.47	0.96	980.06	47.71	110.06
J-3900	870	1.47	0.96	980.01	47.69	110.01

Average Day with 146 tank						
Label	Elevation (ft)	Base Flow (gpm)	Demand (Calculated) (gpm)	Calculated Hydraulic Grade (ft)	Pressure (psi)	Pressure Head (ft)
J-1	740	4.99	3.24	979.39	103.78	239.39
J-2	470	1.64	1.07	481.15	4.83	11.15
J-3	440	3.42	2.22	898.83	198.91	458.83
J-4	470	1.64	1.07	809.07	147	339.07
J-5	685	3.42	2.22	898.82	92.7	213.82
J-6	670	1.06	0.69	897.59	98.67	227.59
J-7	630	3.42	2.22	897.59	116.01	267.59
J-8	675	3.42	2.22	897.6	96.5	222.6
J-9	700	3.61	2.35	897.6	85.66	197.6
J-10	480	1.64	1.07	808.17	142.27	328.17
J-12	480	1.26	0.82	808.17	142.27	328.17
J-13	715	3.42	2.22	897.63	79.17	182.63
J-14	720	3.42	2.22	897.63	77	177.63
J-15	670	3.42	2.22	897.6	98.67	227.6
J-16	690	3.42	2.22	897.61	90	207.61
J-17	680	3.42	2.22	897.61	94.34	217.61
J-18	670	3.42	2.22	898.82	99.2	228.82
J-19	700	3.42	2.22	898.82	86.19	198.82
J-20	480	1.64	1.07	631.05	65.48	151.05
J-21	775	3.42	2.22	899.98	54.18	124.98
J-22	760	1.5	0.97	903.12	62.05	143.12
J-23	770	2.79	1.81	903.13	57.71	133.13
J-24	710	1.83	1.19	967.62	111.68	257.62
J-25	760	0.81	0.52	978.28	94.63	218.28
J-26	825	3.56	2.31	979.15	66.83	154.15
J-27	815	3.75	2.43	979.15	71.16	164.15
J-28	835	2.31	1.5	979.43	62.61	144.43
J-29	730	3.35	2.18	976.49	106.86	246.49
J-30	479	1.64	1.07	631.05	65.92	152.05
J-31	730	2.21	1.44	976.49	106.86	246.49
J-32	700	2.83	1.84	977.45	120.28	277.45
J-33	685	0.81	0.52	977.47	126.79	292.47
J-34	835	1.56	1.01	978.77	62.33	143.77
J-35	800	3.74	2.43	978.77	77.5	178.77
J-36	815	2.18	1.42	1,011.59	85.23	196.59
J-37	815	2.07	1.35	979.2	71.19	164.2
J-38	780	3.13	2.04	925.79	63.2	145.79
J-39	735	4.66	3.03	898.64	70.94	163.64
J-40	479	1.64	1.07	631.05	65.92	152.05
J-41	725	1.77	1.15	898.64	75.28	173.64
J-42	700	0.76	0.5	898.34	85.99	198.34
J-43	660	1.48	0.96	897.71	103.05	237.71
J-44	690	1.77	1.15	897.71	90.05	207.71
J-45	750	8.67	5.64	899.65	64.88	149.65
J-46	710	1.77	1.15	899.68	82.23	189.68
J-47	720	2.42	1.57	900.45	78.23	180.45
J-48	690	2.17	1.41	900.45	91.23	210.45
J-49	720	2.49	1.62	902	78.9	182
J-50	480	1.64	1.07	631.05	65.48	151.05
J-51	700	2.25	1.46	914.72	93.09	214.72
J-52	715	2.89	1.88	914.72	86.58	199.72
J-53	700	0.92	0.6	981.84	122.18	281.84
J-54	730	1.77	1.15	981.84	109.18	251.84
J-55	785	2.78	1.80	992.89	90.13	207.89
J-56	765	1.77	1.15	992.89	98.8	227.89
J-57	740	3.15	2.05	986.28	106.77	246.28
J-58	790	1.77	1.15	986.28	85.09	196.28
J-59	795	4.54	2.95	978.34	79.48	183.34
J-60	450	1.26	0.82	631.05	78.49	181.05
J-61	798	1.61	1.05	1,006.77	90.51	208.77
J-62	800	0.71	0.46	1,006.77	89.64	206.77
J-63	795	0.58	0.37	1,006.80	91.82	211.8
J-64	810	2.12	1.38	1,006.80	85.32	196.8
J-65	720	0.83	0.54	1,004.89	123.51	284.89
J-66	705	2.39	1.56	1,004.89	130.01	299.89
J-67	700	4.78	3.1	1,007.53	133.32	307.53
J-68	780	0.6	0.39	994.5	92.99	214.5
J-69	650	5.53	3.6	897.71	107.39	247.71
J-70	453	1.26	0.82	808.17	153.97	355.17
J-71	750	2.26	1.47	971.42	95.99	221.42
J-72	750	2.26	1.47	966.3	93.77	216.3
J-73	720	1.82	1.18	971.27	108.93	251.27
J-74	755	2.26	1.47	971.26	93.76	216.26
J-75	730	2.95	1.92	975.19	106.3	245.19
J-76	740	2.26	1.47	975.19	101.96	235.19
J-77	775	2.26	1.47	967.62	83.5	192.62
J-78	810	2.26	1.47	967.04	68.08	157.04
J-79	750	4.99	3.24	979.38	99.44	229.38
J-80	755	4.99	3.24	979.4	97.28	224.4
J-81	860	2.81	1.82	979.18	51.67	119.18
J-82	850	2.81	1.82	979.2	56.01	129.2
J-83	770	2.81	1.82	979.31	90.74	209.31

Average Day with 146 tank						
Label	Elevation (ft)	Base Flow (gpm)	Demand (Calculated) (gpm)	Calculated Hydraulic Grade (ft)	Pressure (psi)	Pressure Head (ft)
J-84	760	3.75	2.43	978.69	94.81	218.69
J-85	760	3.75	2.43	978.24	94.61	218.24
J-86	745	2.24	1.46	977.11	100.62	232.11
J-87	810	2.1	1.36	979.49	73.48	169.49
J-88	790	2.1	1.36	979.49	82.15	189.49
J-89	820	2.1	1.36	979.34	69.08	159.34
J-90	790	2.1	1.36	979.34	82.08	189.34
J-91	795	2.95	1.92	978.23	79.43	183.23
J-92	795	2.95	1.92	980.01	80.2	185.01
J-93	770	2.95	1.92	978.33	90.31	208.33
J-94	800	2.95	1.92	978.33	77.31	178.33
J-95	800	2.95	1.92	978.33	77.31	178.33
J-96	810	2.95	1.92	978.33	72.98	168.33
J-97	715	2.21	1.44	976.57	113.39	261.57
J-98	720	2.21	1.44	976.52	111.21	256.52
J-99	710	2.21	1.44	976.47	115.52	266.47
J-100	507	1.26	0.82	808.17	130.56	301.17
J-101	690	2.21	1.44	976.47	124.19	286.47
J-102	715	2.21	1.44	976.47	113.35	261.47
J-103	625	2.49	1.62	977.42	152.78	352.42
J-104	690	2.49	1.62	977.42	124.6	287.42
J-105	750	2.49	1.62	977.43	98.59	227.43
J-106	740	2.49	1.62	977.44	102.93	237.44
J-107	690	2.49	1.62	977.46	124.62	287.46
J-108	675	2.49	1.62	977.46	131.12	302.46
J-109	720	3.49	2.27	977.38	111.58	257.38
J-110	510	1.07	0.7	808.16	129.26	298.16
J-111	695	3.49	2.27	977.58	122.5	282.58
J-112	715	3.49	2.27	977.59	113.84	262.59
J-113	675	3.49	2.27	977.38	131.09	302.38
J-114	690	3.49	2.27	977.42	124.6	287.42
J-115	640	3.49	2.27	977.38	146.26	337.38
J-116	750	3.49	2.27	977.45	98.6	227.45
J-117	710	3.49	2.27	977.45	115.95	267.45
J-118	730	3.49	2.27	977.45	107.27	247.45
J-119	815	1.45	0.94	979.51	71.32	164.51
J-120	580	1.07	0.7	808.16	98.91	228.16
J-121	725	1.45	0.94	979.51	110.34	254.51
J-122	740	1.45	0.94	979.51	103.83	239.51
J-123	800	1.45	0.94	979.5	77.82	179.5
J-124	810	1.45	0.94	979.5	73.48	169.5
J-125	820	1.45	0.94	979.5	69.15	159.5
J-126	770	1.45	0.94	979.5	90.82	209.5
J-127	785	1.45	0.94	979.5	84.32	194.5
J-128	825	1.45	0.94	979.51	66.98	154.51
J-129	750	1.45	0.94	979.51	99.5	229.51
J-130	760	1.77	1.15	799.99	17.33	39.99
J-131	810	1.45	0.94	979.51	73.48	169.51
J-132	755	1.77	1.15	799.99	19.5	44.99
J-133	815	1.45	0.94	979.51	71.32	164.51
J-134	800	3.08	2.01	1,035.53	102.11	235.53
J-135	790	3.08	2.01	1,034.14	105.84	244.14
J-136	770	3.08	2.01	1,028.05	111.87	258.05
J-137	715	3.42	2.22	900.55	80.44	185.55
J-138	715	3.42	2.22	899.74	80.09	184.74
J-139	705	3.42	2.22	899.68	84.4	194.68
J-140	760	1.77	1.15	998.35	103.33	238.35
J-141	500	3.42	2.22	899.56	173.22	399.56
J-142	760	3.42	2.22	899.98	60.69	139.98
J-143	670	3.42	2.22	897.6	98.67	227.6
J-144	685	3.42	2.22	897.6	92.17	212.6
J-145	680	3.42	2.22	897.61	94.34	217.61
J-146	690	3.42	2.22	897.61	90	207.61
J-147	775	2.39	1.56	1,002.67	98.7	227.67
J-148	760	2.39	1.56	1,000.91	104.44	240.91
J-149	735	2.39	1.56	1,007.12	117.97	272.12
J-150	760	1.77	1.15	997.84	103.11	237.84
J-151	760	1.42	0.92	1,007.53	107.31	247.53
J-152	840	1.42	0.92	1,007.53	72.63	167.53
J-153	830	1.42	0.92	1,007.53	76.96	177.53
J-154	840	1.42	0.92	1,007.53	72.63	167.53
J-155	888	1.47	0.96	980.03	39.89	92.03
J-156	855	1.07	0.7	1,006.67	65.75	151.67
J-157	782	1.26	0.82	1,006.66	97.4	224.66
J-158	770	3.42	2.22	899.98	56.35	129.98
J-159	750	3.42	2.22	899.97	65.02	149.97
J-160	778	1.77	1.15	992.03	92.79	214.03
J-161	745	1.77	1.15	899.01	66.77	154.01
J-162	675	1.77	1.15	925.72	108.69	250.72
J-163	675	2.49	1.62	925.72	108.69	250.72
J-164	665	2.49	1.62	925.72	113.03	260.72
J-165	742	1.63	1.06	985.32	105.48	243.32

Average Day with 146 tank						
Label	Elevation (ft)	Base Flow (gpm)	Demand (Calculated) (gpm)	Calculated Hydraulic Grade (ft)	Pressure (psi)	Pressure Head (ft)
J-166	835	0.71	0.46	1,006.76	74.46	171.76
J-167	860	2.12	1.38	1,006.99	63.72	146.99
J-168	810	2.12	1.38	1,006.99	85.4	196.99
J-169	780	0.71	0.46	1,006.76	98.3	226.76
J-170	797	1.77	1.15	987.96	82.78	190.96
J-171	840	0.71	0.46	1,006.76	72.29	166.76
J-172	845	0	0	982.65	59.68	137.65
J-173	855	0	0	947.88	40.27	92.88
J-174	825	2.28	1.48	980.01	67.2	155.01
J-175	820	3.75	2.43	980.19	69.44	160.19
J-176	780	1.47	0.96	980.06	86.73	200.06
J-177	765	0	0	901.2	59.04	136.2
J-178	850	1.63	1.06	1,039.22	82.03	189.22
J-179	780	1.63	1.06	1,039.22	112.38	259.22
J-180	822	1.63	1.06	985.32	70.8	163.32
J-181	760	1.63	1.06	1,039.22	121.05	279.22
J-186	800	1.56	1.01	977.81	77.08	177.81
J-187	715	2.49	1.62	977.42	113.76	262.42
J-188	690	2.49	1.62	977.42	124.6	287.42
J-189	750	1.63	1.06	1,032.28	122.37	282.28
J-190	822	1.63	1.06	985.15	70.73	163.15
J-191	790	1.63	1.06	1,045.33	110.69	255.33
J-192	810	1.63	1.06	1,045.33	102.02	235.33
J-193	780	1.63	1.06	1,039.23	112.38	259.23
J-194	820	1.89	1.23	1,011.40	82.97	191.4
J-195	820	1.89	1.23	1,011.42	82.98	191.42
J-196	820	1.89	1.23	1,011.40	82.98	191.4
J-200	797	0.96	0.63	983.92	81.03	186.92
J-203	810	1.63	1.06	1,010.47	86.91	200.47
J-204	822	0	0.00	1,011.43	82.12	189.43
J-205	818	0	0.00	1,011.43	83.86	193.43
J-206	785	0	0	984.15	86.33	199.15
J-207	805	0	0	984.16	77.67	179.16
J-208	800	3.08	2.01	930.29	56.48	130.29
J-209	820	0	0	983	70.66	163
J-210	850	0	0	978.96	55.91	128.96
J-211	820	0	0	984.39	71.27	164.39
J-212	785	0	0	983.91	86.23	198.91
J-213	750	0	0	957.92	90.14	207.92
J-220	864	0	0	940.83	33.31	76.83
J-230	864	0	0	918.78	23.75	54.78
J-237	785	0	0	958.05	75.02	173.05
J-239	842	0	0	979.4	59.57	137.4
J-240	780	1.77	1.15	988.11	90.22	208.11
J-241	838	0	0	979.46	61.33	141.46
J-242	850	0	0	980.32	56.5	130.32
J-243	842	0	0	980.6	60.08	138.6
J-244	910	305.36	198.48	984.98	32.51	74.98
J-245	878	0	0	902.04	10.42	24.04
J-250	783	1.77	1.15	958.82	76.22	175.82
J-257	760	1.13	0.74	979.3	95.07	219.3
J-258	683	1.94	1.26	950.6	116.01	267.6
J-260	736	1.94	1.26	932.18	85.05	196.18
J-263	820	0	0	980	69.36	160
J-264	820	0	0	979.74	69.25	159.74
J-266	790	0.25	0.16	992.18	87.65	202.18
J-270	715	1.94	1.26	926.38	91.64	211.38
J-280	715	1.94	1.26	923.8	90.52	208.8
J-288	746	1.94	1.26	914.73	73.15	168.73
J-290	746	0.83	0.54	913.7	72.7	167.7
J-294	845	1.11	0.72	979.26	58.21	134.26
J-295	825	1.94	1.26	906.85	35.48	81.85
J-300	820	1.94	1.26	905.08	36.89	85.08
J-310	810	0	0	902.2	39.97	92.2
J-330	803	1.77	1.15	975.38	74.73	172.38
J-336	840	160.62	104.41	983.94	62.4	143.94
J-340	810	4.54	2.95	973.77	71	163.77
J-345	710	0	0	899.26	82.05	189.26
J-346	810	0	0.00	976.91	72.36	166.91
J-347	890	0	0	985.04	41.2	95.04
J-348	710	0	0	899.67	82.23	189.67
J-349	710	0	0	898.98	81.93	188.98
J-350	730	1.51	0.98	920.65	82.65	190.65
J-351	710	0	0	899.01	81.94	189.01
J-352	810	1.52	0.99	914.73	45.4	104.73
J-353	760	0	0	1,007.42	107.26	247.42
J-360	730	1.51	0.98	1,017.26	124.53	287.26
J-362	830	0	0	1,007.51	76.96	177.51
J-370	739	1.51	0.98	1,016.15	120.15	277.15
J-376	725	0	0	1,004.22	121.05	279.22
J-377	720	0	0.00	1,001.94	122.22	281.94
J-378	770	0	0.00	1,012.89	105.3	242.89

Average Day with 146 tank						
Label	Elevation (ft)	Base Flow (gpm)	Demand (Calculated) (gpm)	Calculated Hydraulic Grade (ft)	Pressure (psi)	Pressure Head (ft)
J-379	810	0	0.00	994.21	79.86	184.21
J-380	680	2.12	1.38	1,016.15	145.73	336.15
J-381	760	0	0	983.76	97	223.76
J-382	780	2.12	1.38	1,016.15	102.37	236.15
J-383	785	0	0	983.33	85.98	198.33
J-384	800	0	0	979.17	77.67	179.17
J-387	710	0	0.00	986.40	119.82	276.4
J-388	795	0	0	985.05	82.39	190.05
J-389	800	0	0	985.15	80.27	185.15
J-390	790	2.12	1.38	1,012.21	96.33	222.21
J-391	835	0	0	982.89	64.11	147.89
J-392	700	0	0	929.88	99.66	229.88
J-400	805	3.94	2.56	1,012.19	89.82	207.19
J-410	850	3.94	2.56	1,012.18	70.31	162.18
J-420	819	1.42	0.92	1,007.53	81.73	188.53
J-430	753	126.2	82.03	1,007.40	110.29	254.4
J-440	819	2.12	1.38	1,007.41	81.68	188.41
J-450	770	2.12	1.38	1,007.22	102.84	237.22
J-460	810	2.12	1.38	1,007.20	85.49	197.2
J-470	750	2.12	1.38	1,007.20	111.5	257.2
J-480	700	2.39	1.56	1,007.20	133.18	307.2
J-490	783	2.12	1.38	1,007.01	97.11	224.01
J-500	790	2.12	1.38	1,006.99	94.07	216.99
J-510	850	2.12	1.38	1,006.99	68.06	156.99
J-520	740	2.12	1.38	1,006.91	115.71	266.91
J-530	838	2.12	1.38	1,006.83	73.19	168.83
J-540	730	2.12	1.38	1,006.79	119.99	276.79
J-550	780	0.71	0.46	1,006.78	98.31	226.78
J-560	893	0.71	0.46	1,006.76	49.32	113.76
J-570	813	0.71	0.46	1,006.76	84	193.76
J-580	813	0.71	0.46	1,006.76	84	193.76
J-590	890	0.71	0.46	1,006.76	50.62	116.76
J-600	850	0.71	0.46	1,006.76	67.96	156.76
J-610	870	0.71	0.46	1,006.76	59.29	136.76
J-620	901	0.71	0.46	1,006.76	45.85	105.76
J-630	896	0.71	0.46	1,006.76	48.01	110.76
J-640	740	2.12	1.38	1,006.84	115.68	266.84
J-650	800	2.12	1.38	1,005.95	89.28	205.95
J-660	775	2.12	1.38	1,005.95	100.12	230.95
J-670	725	2.39	1.56	1,004.55	121.19	279.55
J-680	729	42.42	27.58	1,004.52	119.44	275.52
J-690	725	2.39	1.56	1,003.52	120.74	278.52
J-700	725	1.2	0.78	1,000.32	119.36	275.32
J-710	750	2.39	1.56	988.7	103.48	238.7
J-720	848	1.26	0.82	980.51	57.45	132.51
J-730	848	1.26	0.82	980.26	57.34	132.26
J-740	829	1.26	0.82	980.26	65.57	151.26
J-750	789	1.26	0.82	980.24	82.91	191.24
J-760	621	1.07	0.70	980.23	155.73	359.23
J-770	789	1.26	0.82	980.23	82.9	191.23
J-780	705	1.26	0.82	980.23	119.32	275.23
J-790	772	1.26	0.82	980.22	90.27	208.22
J-800	730	1.26	0.82	980.22	108.48	250.22
J-810	700	1.07	0.7	1,003.78	131.7	303.78
J-820	700	1.07	0.7	1,004.96	132.2	304.96
J-830	700	1.07	0.7	1,005.55	132.46	305.55
J-840	705	1.07	0.7	1,006.67	130.78	301.67
J-850	710	1.07	0.7	1,006.67	128.61	296.67
J-860	800	1.07	0.7	1,006.66	89.59	206.66
J-870	800	1.07	0.7	1,006.66	89.59	206.66
J-880	829	1.07	0.70	1,006.66	77.02	177.66
J-890	750	1.07	0.7	1,006.66	111.27	256.66
J-900	710	2.39	1.56	1,008.92	129.59	298.92
J-910	700	2.39	1.56	1,008.59	133.78	308.59
J-920	700	2.39	1.56	1,007.53	133.32	307.53
J-930	750	1.51	0.98	1,014.89	114.84	264.89
J-940	760	1.51	0.98	1,016.38	111.15	256.38
J-950	816	1.51	0.98	1,016.37	86.87	200.37
J-960	810	1.51	0.98	1,016.36	89.46	206.36
J-970	805	1.51	0.98	1,016.36	91.63	211.36
J-980	650	1.51	0.98	1,016.36	158.82	366.36
J-990	791	1.51	0.98	1,016.36	97.7	225.36
J-1000	600	1.51	0.98	1,016.36	180.5	416.36
J-1010	750	1.51	0.98	1,016.36	115.47	266.36
J-1020	773	1.77	1.15	929.95	68.04	156.95
J-1030	766	1.77	1.15	907.98	61.55	141.98
J-1040	766	5.01	3.25	903.71	59.7	137.71
J-1050	761	1.77	1.15	900.04	60.28	139.04
J-1060	770	2.28	1.48	899.98	56.35	129.98
J-1070	770	3.42	2.22	899.98	56.35	129.98
J-1080	766	1.91	1.24	903.13	59.45	137.13
J-1090	704	1.77	1.15	901.18	85.48	197.18

Average Day with 146 tank						
Label	Elevation (ft)	Base Flow (gpm)	Demand (Calculated) (gpm)	Calculated Hydraulic Grade (ft)	Pressure (psi)	Pressure Head (ft)
J-1100	692	3.42	2.22	899.61	90	207.61
J-1110	732	1.77	1.15	899.01	72.4	167.01
J-1120	710	1.77	1.15	898.93	81.9	188.93
J-1130	700	1.77	1.15	898.89	86.22	198.89
J-1140	684	3.42	2.22	898.83	93.13	214.83
J-1150	706	1.77	1.15	898.34	83.38	192.34
J-1160	720	1.77	1.15	897.74	77.06	177.74
J-1170	700	1.77	1.15	897.73	85.72	197.73
J-1180	700	1.77	1.15	897.73	85.72	197.73
J-1190	700	1.77	1.15	897.72	85.71	197.72
J-1200	650	1.19	0.78	897.71	107.39	247.71
J-1210	730	1.77	1.15	897.7	72.7	167.7
J-1220	720	3.42	2.22	897.61	77	177.61
J-1230	830	3.08	2.01	1,036.50	89.52	206.5
J-1240	815	3.08	2.01	1,033.35	94.66	218.35
J-1250	830	3.08	2.01	1,034.86	88.81	204.86
J-1260	815	3.08	2.01	1,032.59	94.33	217.59
J-1270	780	0	0.00	1,028.34	107.66	248.34
J-1280	785	3.08	2.01	1,027.78	105.25	242.78
J-1281	790	2.12	1.38	1,028.28	103.3	238.28
J-1290	720	3.08	2.01	1,028.64	133.8	308.64
J-1300	790	3.08	2.01	1,024.14	101.51	234.14
J-1301	750	3.08	2.01	1,025.92	119.61	275.92
J-1310	790	1.89	1.23	1,023.05	101.03	233.05
J-1315	750	1.89	1.23	1,020.00	117.05	270
J-1320	750	1.89	1.23	1,019.76	116.95	269.76
J-1322	790	1.89	1.23	1,018.31	98.98	228.31
J-1324	800	1.89	1.23	1,018.77	94.84	218.77
J-1330	800	1.89	1.23	1,018.34	94.66	218.34
J-1340	805	1.89	1.23	1,018.35	92.49	213.35
J-1342	805	1.89	1.23	1,018.65	92.62	213.65
J-1350	810	1.89	1.23	1,011.90	87.53	201.9
J-1355	775	3.32	2.16	1,011.81	102.66	236.81
J-1360	740	1.89	1.23	1,011.80	117.83	271.8
J-1370	792	1.67	1.08	1,007.17	93.28	215.17
J-1372	792	1.63	1.06	1,003.89	91.86	211.89
J-1380	800	3.72	2.42	1,011.63	91.75	211.63
J-1390	800	1.63	1.06	930.28	56.48	130.28
J-1400	820	7.64	4.96	930.29	47.81	110.29
J-1410	800	20.44	13.28	929.66	56.21	129.66
J-1420	793	3.08	2.01	929.66	59.24	136.66
J-1430	750	13.13	8.53	919.72	73.58	169.72
J-1440	820	1.63	1.06	930.29	47.81	110.29
J-1450	821	1.63	1.06	946.79	54.53	125.79
J-1460	826	0	0.00	975.68	64.89	149.68
J-1470	750	1.94	1.26	926.27	76.41	176.27
J-1480	795	1.94	1.26	926.21	56.88	131.21
J-1490	795	1.94	1.26	926.21	56.88	131.21
J-1500	761	1.94	1.26	926.06	71.56	165.06
J-1510	740	1.94	1.26	926.06	80.66	186.06
J-1520	771	2.49	1.62	925.96	67.18	154.96
J-1530	783	2.49	1.62	925.82	61.91	142.82
J-1540	717	2.49	1.62	925.78	90.51	208.78
J-1550	730	2.49	1.62	925.76	84.87	195.76
J-1560	759	2.49	1.62	925.8	72.31	166.8
J-1570	730	9.44	6.13	925.77	84.87	195.77
J-1580	817	2.81	1.82	996.72	77.91	179.72
J-1590	817	9.12	5.93	996.72	77.91	179.72
J-1600	809	64.65	42.02	980.04	74.15	171.04
J-1605	817	1.45	0.94	979.39	70.4	162.39
J-1610	819	0.92	0.60	978.97	69.35	159.97
J-1620	820	1.63	1.06	978.96	68.91	158.96
J-1630	825	1.63	1.06	978.82	66.68	153.82
J-1640	825	1.63	1.06	978.81	66.68	153.81
J-1650	800	1.63	1.06	978.79	77.51	178.79
J-1660	825	1.63	1.06	978.82	66.68	153.82
J-1670	700	1.63	1.06	978.81	120.87	278.81
J-1680	740	1.27	0.82	977.36	102.9	237.36
J-1690	750	1.27	0.82	976.97	98.39	226.97
J-1700	740	1.27	0.82	977.36	102.9	237.36
J-1710	740	1.27	0.82	977.36	102.9	237.36
J-1720	750	1.27	0.82	977.37	98.57	227.37
J-1730	760	1.27	0.82	977.38	94.24	217.38
J-1740	760	1.27	0.82	977.38	94.24	217.38
J-1750	750	1.27	0.82	977.38	98.57	227.38
J-1760	785	1.27	0.82	977.4	83.41	192.4
J-1770	801	1.27	0.82	977.39	76.47	176.39
J-1780	775	1.27	0.82	977.37	87.73	202.37
J-1790	750	1.27	0.82	977.34	98.56	227.34
J-1800	664	1.27	0.82	977.3	135.82	313.3
J-1810	700	1.27	0.82	977.3	120.21	277.3
J-1820	765	1.47	0.96	977.53	92.14	212.53

Average Day with 146 tank						
Label	Elevation (ft)	Base Flow (gpm)	Demand (Calculated) (gpm)	Calculated Hydraulic Grade (ft)	Pressure (psi)	Pressure Head (ft)
J-1830	765	1.27	0.82	977.52	92.13	212.52
J-1840	720	1.27	0.82	975.7	110.85	255.7
J-1850	705	1.47	0.96	975.7	117.35	270.7
J-1860	720	3.14	2.04	973.41	109.86	253.41
J-1870	740	3.14	2.04	972.13	100.63	232.13
J-1880	775	3.14	2.04	969.09	84.14	194.09
J-1890	775	3.14	2.04	968.14	83.73	193.14
J-1900	780	1.76	1.15	966.48	80.84	186.48
J-1910	750	1.76	1.15	967.46	94.27	217.46
J-1920	745	3.14	2.04	968.67	96.97	223.67
J-1930	755	3.14	2.04	970.28	93.33	215.28
J-1940	791	1.76	1.15	961.59	73.96	170.59
J-1950	775	1.76	1.15	961.59	80.89	186.59
J-1960	750	1.76	1.15	961.59	91.73	211.59
J-1970	725	1.76	1.15	961.58	102.56	236.58
J-1980	750	1.76	1.15	961.56	91.72	211.56
J-1990	765	1.76	1.15	961.56	85.21	196.56
J-2000	775	1.76	1.15	961.56	80.88	186.56
J-2004	785	1.76	1.15	948.91	71.06	163.91
J-2006	785	1.76	1.15	951.68	72.26	166.68
J-2008	753	1.76	1.15	955.83	87.93	202.83
J-2010	772	1.76	1.15	958.71	80.94	186.71
J-2020	800	1.76	1.15	960.99	69.79	160.99
J-2030	832	1.76	1.15	963.64	57.07	131.64
J-2040	825	2.26	1.47	966.39	61.3	141.39
J-2050	800	2.26	1.47	966.29	72.09	166.29
J-2060	792	2.26	1.47	967.78	76.21	175.78
J-2070	780	1.76	1.15	967.62	81.34	187.62
J-2080	725	1.82	1.18	970.46	106.41	245.46
J-2090	725	1.82	1.18	972.29	107.21	247.29
J-2100	843	1.82	1.18	970.76	55.39	127.76
J-2110	851	1.82	1.18	971.57	52.27	120.57
J-2120	775	1.82	1.18	971.84	85.33	196.84
J-2130	851	1.82	1.18	972.32	52.59	121.32
J-2140	790	1.82	1.18	971.42	78.65	181.42
J-2150	780	2.26	1.47	971.42	82.98	191.42
J-2160	852	1.82	1.18	976.79	54.1	124.79
J-2170	825	2.1	1.36	979.28	66.88	154.28
J-2180	760	2.1	1.36	979.7	95.25	219.7
J-2190	820	2.1	1.36	979.99	69.36	159.99
J-2200	860	2.1	1.36	980.37	52.18	120.37
J-2210	860	2.1	1.36	980.64	52.3	120.64
J-2220	860	2.1	1.36	980.01	52.03	120.01
J-2230	850	2.1	1.36	979.44	56.12	129.44
J-2240	840	2.05	1.33	980.4	60.86	140.4
J-2250	808	2.05	1.33	980.4	74.74	172.4
J-2260	755	2.05	1.33	980.43	97.73	225.43
J-2270	773	2.05	1.33	980.41	89.92	207.41
J-2280	842	2.05	1.33	980.7	60.13	138.7
J-2290	835	2.05	1.33	980.84	63.22	145.84
J-2300	870	2.05	1.33	981.13	48.18	111.13
J-2310	870	2.05	1.33	981.7	48.42	111.7
J-2320	860	2.05	1.33	1,014.08	66.8	154.08
J-2330	795	2.05	1.33	1,023.25	98.95	228.25
J-2340	780	0	0	1,024.45	105.97	244.45
J-2342	735	1.63	1.06	1,032.15	128.82	297.15
J-2344	735	1.63	1.06	1,036.77	130.82	301.77
J-2345	750	1.63	1.06	1,041.25	126.26	291.25
J-2346	790	1.63	1.06	1,048.17	111.92	258.17
J-2347	800	1.63	1.06	1,039.22	103.71	239.22
J-2350	750	2.05	1.33	1,023.24	118.46	273.24
J-2360	770	2.05	1.33	1,023.24	109.78	253.24
J-2370	840	2.05	1.33	979.68	60.55	139.68
J-2380	835	2.05	1.33	979.54	62.66	144.54
J-2390	835	2.05	1.33	979.48	62.63	144.48
J-2400	840	2.05	1.33	979.48	60.47	139.48
J-2410	810	2.05	1.33	979.3	73.4	169.3
J-2420	775	2.05	1.33	979.25	88.55	204.25
J-2430	755	2.05	1.33	979.22	97.21	224.22
J-2440	795	2.05	1.33	979.25	79.88	184.25
J-2450	819	2.05	1.33	979.29	69.49	160.29
J-2460	772	2.05	1.33	979.02	89.75	207.02
J-2470	720	2.05	1.33	978.95	112.26	258.95
J-2480	748	2.05	1.33	978.98	100.13	230.98
J-2490	770	1.47	0.96	978.74	90.49	208.74
J-2500	750	1.47	0.96	978.56	99.09	228.56
J-2510	825	1.47	0.96	977.51	66.11	152.51
J-2520	820	1.47	0.96	977.14	68.12	157.14
J-2530	805	2.24	1.46	977.12	74.62	172.12
J-2540	745	1.47	0.96	977.11	100.62	232.11
J-2550	835	2.95	1.92	976.97	61.55	141.97
J-2560	823	2.95	1.92	976.86	66.7	153.86

Average Day with 146 tank						
Label	Elevation (ft)	Base Flow (gpm)	Demand (Calculated) (gpm)	Calculated Hydraulic Grade (ft)	Pressure (psi)	Pressure Head (ft)
J-2570	800	2.95	1.92	976.63	76.57	176.63
J-2580	855	1.47	0.96	978.72	53.63	123.72
J-2600	850	1.47	0.96	978.45	55.68	128.45
J-2605	850	1.47	0.96	978.81	55.84	128.81
J-2610	860	2.95	1.92	980.01	52.02	120.01
J-2630	805	1.27	0.82	978.01	75	173.01
J-2640	840	2.95	1.92	978.17	59.9	138.17
J-2650	750	1.47	0.96	977.93	98.81	227.93
J-2660	840	2.95	1.92	978.44	60.02	138.44
J-2670	802	2.95	1.92	978.23	76.4	176.23
J-2680	802	2.95	1.92	978.17	76.37	176.17
J-2690	745	3.52	2.29	977.35	100.73	232.35
J-2700	730	3.52	2.29	977.34	107.23	247.34
J-2710	790	3.52	2.29	977.35	81.22	187.35
J-2720	730	3.52	2.29	977.34	107.23	247.34
J-2730	750	3.52	2.29	977.33	98.55	227.33
J-2740	762	2.21	1.44	977.33	93.35	215.33
J-2750	700	1.47	0.96	977.32	120.22	277.32
J-2760	790	3.52	2.29	978.09	81.54	188.09
J-2770	740	2.13	1.39	978.05	103.2	238.05
J-2780	780	1.47	0.96	978.71	86.15	198.71
J-2790	790	2.95	1.92	978.71	81.81	188.71
J-2800	780	2.13	1.39	978.71	86.14	198.71
J-2810	800	2.13	1.39	977.49	76.95	177.49
J-2820	790	2.13	1.39	977.49	81.28	187.49
J-2830	822	2.28	1.48	977.47	67.4	155.47
J-2840	825	2.28	1.48	977.46	66.1	152.46
J-2850	745	2.28	1.48	977.46	100.78	232.46
J-2860	820	2.68	1.75	977.46	68.26	157.46
J-2870	810	2.13	1.39	977.49	72.61	167.49
J-2880	790	2.13	1.39	977.49	81.28	187.49
J-2890	789	2.13	1.39	977.5	81.72	188.5
J-2900	772	2.13	1.39	977.5	89.09	205.5
J-2910	765	2.13	1.39	977.5	92.12	212.5
J-2920	772	2.01	1.31	977.5	89.09	205.5
J-2930	705	2.13	1.39	977.52	118.14	272.52
J-2940	745	2.49	1.62	977.47	100.78	232.47
J-2950	750	2.49	1.62	977.42	98.59	227.42
J-2960	720	2.49	1.62	977.42	111.6	257.42
J-2970	712	2.49	1.62	977.45	115.08	265.45
J-2980	750	2.49	1.62	977.5	98.62	227.5
J-2990	750	2.21	1.44	976.98	98.4	226.98
J-3000	750	2.49	1.62	976.47	98.18	226.47
J-3010	710	3.49	2.27	977.42	115.93	267.42
J-3020	680	3.49	2.27	977.38	128.92	297.38
J-3030	768	3.49	2.27	977.46	90.8	209.46
J-3040	740	1.56	1.01	977.84	103.11	237.84
J-3050	640	1.56	1.01	977.89	146.48	337.89
J-3060	715	3.49	2.27	977.56	113.82	262.56
J-3070	725	3.49	2.27	977.55	109.49	252.55
J-3080	745	3.49	2.27	978.18	101.09	233.18
J-3090	750	3.49	2.27	978.36	99	228.36
J-3100	773	3.49	2.27	978.5	89.09	205.5
J-3110	775	3.49	2.27	978.91	88.4	203.91
J-3120	730	2.28	1.48	978.91	107.91	248.91
J-3130	790	3.49	2.27	979.07	81.97	189.07
J-3140	800	3.49	2.27	979.26	77.71	179.26
J-3150	820	2.28	1.48	979.66	69.22	159.66
J-3160	825	2.68	1.75	979.65	67.04	154.65
J-3170	810	2.28	1.48	977.29	72.52	167.29
J-3180	770	2.28	1.48	977.22	89.83	207.22
J-3190	725	2.28	1.48	977.28	109.37	252.28
J-3200	700	2.28	1.48	977.3	120.21	277.3
J-3210	711	1.56	1.01	977.6	115.57	266.6
J-3220	721	2.28	1.48	977.6	111.24	256.6
J-3230	700	1.56	1.01	977.58	120.34	277.58
J-3240	700	1.56	1.01	977.67	120.38	277.67
J-3250	750	1.56	1.01	977.65	98.69	227.65
J-3260	780	1.56	1.01	977.3	85.53	197.3
J-3270	740	1.56	1.01	977.28	102.87	237.28
J-3280	750	1.56	1.01	977.69	98.71	227.69
J-3290	725	1.56	1.01	977.82	109.6	252.82
J-3300	750	1.56	1.01	977.82	98.76	227.82
J-3310	770	1.56	1.01	977.81	90.09	207.81
J-3320	689	1.56	1.01	977.87	125.23	288.87
J-3330	705	1.56	1.01	977.86	118.29	272.86
J-3335	732	1.56	1.01	978.23	106.75	246.23
J-3340	735	1.56	1.01	978.49	105.56	243.49
J-3350	780	1.56	1.01	978.51	86.06	198.51
J-3360	750	1.56	1.01	978.51	99.06	228.51
J-3370	745	1.56	1.01	978.54	101.25	233.54
J-3380	810	1.56	1.01	978.67	73.12	168.67

Average Day with 146 tank						
Label	Elevation (ft)	Base Flow (gpm)	Demand (Calculated) (gpm)	Calculated Hydraulic Grade (ft)	Pressure (psi)	Pressure Head (ft)
J-3400	840	1.56	1.01	978.76	60.15	138.76
J-3410	820	2.68	1.75	978.92	68.9	158.92
J-3420	840	2.68	1.75	979.17	60.33	139.17
J-3430	750	2.68	1.75	979.27	99.39	229.27
J-3440	770	2.68	1.75	979.35	90.76	209.35
J-3450	820	2.68	1.75	978.89	68.88	158.89
J-3460	772	2.68	1.75	978.85	89.68	206.85
J-3470	745	2.68	1.75	978.85	101.38	233.85
J-3480	751	1.47	0.96	978.79	98.75	227.79
J-3490	755	1.47	0.96	978.82	97.03	223.82
J-3500	758	1.47	0.96	978.8	95.72	220.8
J-3510	785	1.47	0.96	978.8	84.02	193.8
J-3520	800	1.47	0.96	978.8	77.51	178.8
J-3530	860	1.47	0.96	979.21	51.68	119.21
J-3540	820	1.47	0.96	979.21	69.02	159.21
J-3545	860	3.75	2.43	979.35	51.74	119.35
J-3547	825	3.75	2.43	979.35	66.91	154.35
J-3550	865	3.75	2.43	979.47	49.63	114.47
J-3560	870	3.75	2.43	979.63	47.53	109.63
J-3570	865	3.75	2.43	979.58	49.67	114.58
J-3580	838	1.47	0.96	979.47	61.33	141.47
J-3590	792	1.47	0.96	979.29	81.19	187.29
J-3600	835	1.47	0.96	979.27	62.54	144.27
J-3610	845	1.47	0.96	979.26	58.21	134.26
J-3620	812	3.75	2.43	978.28	72.08	166.28
J-3630	750	3.75	2.43	978.24	98.95	228.24
J-3640	735	3.75	2.43	978.23	105.44	243.23
J-3650	860	3.75	2.43	979.44	51.78	119.44
J-3660	850	3.75	2.43	979.44	56.11	129.44
J-3670	830	3.75	2.43	979.43	64.78	149.43
J-3680	810	3.75	2.43	979.43	73.45	169.43
J-3690	777	3.75	2.43	979.28	87.69	202.28
J-3700	785	3.75	2.43	979.25	84.21	194.25
J-3710	830	3.75	2.43	979.22	64.69	149.22
J-3720	800	3.75	2.43	979.22	77.7	179.22
J-3730	840	3.75	2.43	979.22	60.35	139.22
J-3740	780	3.75	2.43	979.22	86.36	199.22
J-3750	739	2.81	1.82	979.38	104.21	240.38
J-3760	735	4.99	3.24	979.39	105.95	244.39
J-3770	770	2.81	1.82	979.4	90.78	209.4
J-3780	800	2.81	1.82	979.38	77.76	179.38
J-3790	840	3.75	2.43	979.25	60.37	139.25
J-3800	810	3.75	2.43	979.2	73.35	169.2
J-3810	890	3.75	2.43	979.19	38.66	89.19
J-3820	821	0	0	979.22	68.59	158.22
J-3830	840	4.07	2.65	979.22	60.36	139.22
J-3840	871	2.81	1.82	979.2	46.91	108.2
J-3850	850	2.81	1.82	979.18	56	129.18
J-3860	842	0	0	979.2	59.48	137.2
J-3870	878	3.75	2.43	985.87	46.77	107.87
J-3880	910	0	0	985.03	32.53	75.03
J-3890	870	1.47	0.96	980.07	47.72	110.07
J-3900	870	1.47	0.96	980.01	47.69	110.01

Peak without 146 Tank						
Label	Elevation (ft)	Base Flow (gpm)	Demand (Calculated) (gpm)	Calculated Hydraulic Grade (ft)	Pressure (psi)	Pressure Head (ft)
J-1	740	4.99	10.44	953.41	92.52	213.41
J-2	470	1.64	3.44	481.13	4.83	11.13
J-3	440	3.42	7.16	844.13	175.2	404.13
J-4	470	1.64	3.44	817.8	150.78	347.8
J-5	685	3.42	7.16	844.06	68.96	159.06
J-6	670	1.06	2.22	833.32	70.8	163.32
J-7	630	3.42	7.16	833.32	88.14	203.32
J-8	675	3.42	7.16	833.34	68.64	158.34
J-9	700	3.61	7.57	833.38	57.82	133.38
J-10	480	1.64	3.44	816.34	145.81	336.34
J-12	480	1.26	2.64	816.32	145.8	336.32
J-13	715	3.42	7.16	833.6	51.41	118.6
J-14	720	3.42	7.16	833.59	49.25	113.59
J-15	670	3.42	7.16	833.41	70.84	163.41
J-16	690	3.42	7.16	833.46	62.19	143.46
J-17	680	3.42	7.16	833.49	66.54	153.49
J-18	670	3.42	7.16	844.02	75.44	174.02
J-19	700	3.42	7.16	844.04	62.44	144.04
J-20	480	1.64	3.44	631.01	65.47	151.01
J-21	775	3.42	7.16	886.19	48.2	111.19
J-22	760	1.5	3.14	881.62	52.73	121.62
J-23	770	2.79	5.84	881.63	48.39	111.63
J-24	710	1.83	3.84	942.74	100.9	232.74
J-25	760	0.81	1.69	938.75	77.49	178.75
J-26	825	3.56	7.46	946.39	52.63	121.39
J-27	815	3.75	7.85	946.4	56.96	131.4
J-28	835	2.31	4.85	950.02	49.86	115.02
J-29	730	3.35	7.02	937.92	90.14	207.92
J-30	479	1.64	3.44	631.01	65.9	152.01
J-31	730	2.21	4.63	937.93	90.14	207.93
J-32	700	2.83	5.92	941.57	104.72	241.57
J-33	685	0.81	1.69	943.26	111.96	258.26
J-34	835	1.56	3.26	948.77	49.32	113.77
J-35	800	3.74	7.83	948.76	64.49	148.76
J-36	815	2.18	4.56	1,008.23	83.77	193.23
J-37	815	2.07	4.34	978.82	71.02	163.82
J-38	780	3.13	6.56	907.05	55.08	127.05
J-39	735	4.66	9.76	842.47	46.59	107.47
J-40	479	1.64	3.44	631	65.9	152
J-41	725	1.77	3.7	842.49	50.93	117.49
J-42	700	0.76	1.6	839.85	60.63	139.85
J-43	660	1.48	3.09	834.32	75.57	174.32
J-44	690	1.77	3.7	834.32	62.56	144.32
J-45	750	8.67	18.17	851.31	43.92	101.31
J-46	710	1.77	3.7	851.5	61.34	141.5
J-47	720	2.42	5.07	858.24	59.93	138.24
J-48	690	2.17	4.54	858.24	72.94	168.24
J-49	720	2.49	5.22	871.83	65.82	151.83
J-50	480	1.64	3.44	631.01	65.46	151.01
J-51	700	2.25	4.72	896.91	85.36	196.91
J-52	715	2.89	6.06	896.91	78.86	181.91
J-53	700	0.92	1.93	960.61	112.98	260.61
J-54	730	1.77	3.7	960.61	99.98	230.61
J-55	785	2.78	5.81	970.65	80.48	185.65
J-56	765	1.77	3.7	970.65	89.15	205.65
J-57	740	3.15	6.6	963.27	96.79	223.27
J-58	790	1.77	3.7	963.28	75.12	173.28
J-59	795	4.54	9.5	954.86	69.3	159.86
J-60	450	1.26	2.64	631	78.47	181
J-61	798	1.61	3.38	980.79	79.25	182.79
J-62	800	0.71	1.49	980.8	78.38	180.8
J-63	795	0.58	1.21	981.04	80.65	186.04
J-64	810	2.12	4.43	981.04	74.15	171.04
J-65	720	0.83	1.73	982.17	113.65	262.17
J-66	705	2.39	5.01	982.17	120.16	277.17
J-67	700	4.78	10.01	983.14	122.75	283.14
J-68	780	0.6	1.25	982.5	87.79	202.5
J-69	650	5.53	11.59	834.29	79.9	184.29
J-70	453	1.26	2.64	816.27	157.49	363.27
J-71	750	2.26	4.74	949.32	86.41	199.32
J-72	750	2.26	4.74	941.24	82.91	191.24
J-73	720	1.82	3.82	944.89	97.49	224.89
J-74	755	2.26	4.74	944.89	82.32	189.89
J-75	730	2.95	6.18	947.14	94.13	217.14
J-76	740	2.26	4.74	947.13	89.8	207.13
J-77	775	2.26	4.74	942.75	72.72	167.75
J-78	810	2.26	4.74	942.35	57.38	132.35
J-79	750	4.99	10.44	953.11	88.05	203.11
J-80	755	4.99	10.44	953.42	86.02	198.42
J-81	860	2.81	5.88	949.51	38.81	89.51
J-82	850	2.81	5.88	949.71	43.22	99.71

Peak without 146 Tank						
Label	Elevation (ft)	Base Flow (gpm)	Demand (Calculated) (gpm)	Calculated Hydraulic Grade (ft)	Pressure (psi)	Pressure Head (ft)
J-83	770	2.81	5.88	951.06	78.49	181.06
J-84	760	3.75	7.85	942.36	79.06	182.36
J-85	760	3.75	7.85	938.43	77.35	178.43
J-86	745	2.24	4.7	947.51	87.79	202.51
J-87	810	2.1	4.4	970.48	69.57	160.48
J-88	790	2.1	4.4	970.49	78.25	180.49
J-89	820	2.1	4.4	970.14	65.09	150.14
J-90	790	2.1	4.4	970.16	78.1	180.16
J-91	795	2.95	6.18	952.14	68.12	157.14
J-92	795	2.95	6.18	954.3	69.06	159.3
J-93	770	2.95	6.18	952.34	79.05	182.34
J-94	800	2.95	6.18	952.35	66.05	152.35
J-95	800	2.95	6.18	952.37	66.05	152.37
J-96	810	2.95	6.18	952.38	61.73	142.38
J-97	715	2.21	4.63	938.59	96.93	223.59
J-98	720	2.21	4.63	938.18	94.58	218.18
J-99	710	2.21	4.63	937.77	98.74	227.77
J-100	507	1.26	2.64	816.27	134.07	309.27
J-101	690	2.21	4.63	937.72	107.39	247.72
J-102	715	2.21	4.63	937.72	96.55	222.72
J-103	625	2.49	5.22	942.56	137.67	317.56
J-104	690	2.49	5.22	942.56	109.49	252.56
J-105	750	2.49	5.22	942.79	83.58	192.79
J-106	740	2.49	5.22	942.87	87.95	202.87
J-107	690	2.49	5.22	943.08	109.72	253.08
J-108	675	2.49	5.22	943.08	116.22	268.08
J-109	720	3.49	7.3	941.14	95.87	221.14
J-110	510	1.07	2.25	816.25	132.77	306.25
J-111	695	3.49	7.3	942.16	107.15	247.16
J-112	715	3.49	7.3	942.24	98.51	227.24
J-113	675	3.49	7.3	941.18	115.4	266.18
J-114	690	3.49	7.3	941.94	109.22	251.94
J-115	640	3.49	7.3	941.17	130.56	301.17
J-116	750	3.49	7.3	941.55	83.04	191.55
J-117	710	3.49	7.3	941.57	100.39	231.57
J-118	730	3.49	7.3	941.56	91.71	211.56
J-119	815	1.45	3.03	982.18	72.48	167.18
J-120	580	1.07	2.25	816.24	102.42	236.24
J-121	725	1.45	3.03	982.18	111.49	257.18
J-122	740	1.45	3.03	982.18	104.99	242.18
J-123	800	1.45	3.03	982.04	78.92	182.04
J-124	810	1.45	3.03	982.04	74.58	172.04
J-125	820	1.45	3.03	982.04	70.25	162.04
J-126	770	1.45	3.03	982.05	91.93	212.05
J-127	785	1.45	3.03	982.06	85.43	197.06
J-128	825	1.45	3.03	982.11	68.11	157.11
J-129	750	1.45	3.03	982.18	100.65	232.18
J-130	760	1.77	3.7	803.2	18.73	43.2
J-131	810	1.45	3.03	982.1	74.61	172.1
J-132	755	1.77	3.7	803.18	20.89	48.18
J-133	815	1.45	3.03	982.1	72.44	167.1
J-134	800	3.08	6.46	1,031.29	100.27	231.29
J-135	790	3.08	6.46	1,029.98	104.04	239.98
J-136	770	3.08	6.46	1,024.46	110.31	254.46
J-137	715	3.42	7.16	859.17	62.5	144.17
J-138	715	3.42	7.16	852.06	59.42	137.06
J-139	705	3.42	7.16	851.5	63.51	146.5
J-140	760	1.77	3.7	976.73	93.96	216.73
J-141	500	3.42	7.16	850.48	151.94	350.48
J-142	760	3.42	7.16	886.27	54.74	126.27
J-143	670	3.42	7.16	833.38	70.83	163.38
J-144	685	3.42	7.16	833.39	64.33	148.39
J-145	680	3.42	7.16	833.44	66.52	153.44
J-146	690	3.42	7.16	833.44	62.19	143.44
J-147	775	2.39	5.01	983.15	90.24	208.15
J-148	760	2.39	5.01	982.49	96.45	222.49
J-149	735	2.39	5.01	984.48	108.15	249.48
J-150	760	1.77	3.7	976.17	93.71	216.17
J-151	760	1.42	2.97	981.51	96.03	221.51
J-152	840	1.42	2.97	981.51	61.35	141.51
J-153	830	1.42	2.97	981.51	65.68	151.51
J-154	840	1.42	2.97	981.51	61.35	141.51
J-155	888	1.47	3.09	954.47	28.82	66.47
J-156	855	1.07	2.25	984.23	56.02	129.23
J-157	782	1.26	2.64	984.22	87.67	202.22
J-158	770	3.42	7.16	886.19	50.37	116.19
J-159	750	3.42	7.16	886.18	59.04	136.18
J-160	778	1.77	3.7	969.79	83.14	191.79
J-161	745	1.77	3.7	845.7	43.65	100.7
J-162	675	1.77	3.7	906.41	100.32	231.41
J-163	675	2.49	5.21	906.43	100.33	231.43

Peak without 146 Tank						
Label	Elevation (ft)	Base Flow (gpm)	Demand (Calculated) (gpm)	Calculated Hydraulic Grade (ft)	Pressure (psi)	Pressure Head (ft)
J-164	665	2.49	5.21	906.41	104.66	241.41
J-165	742	1.63	3.41	961.62	95.21	219.62
J-166	835	0.71	1.49	980.71	63.17	145.71
J-167	860	2.12	4.43	981.67	52.75	121.67
J-168	810	2.12	4.43	981.67	74.42	171.67
J-169	780	0.71	1.49	980.69	87	200.69
J-170	797	1.77	3.7	965.09	72.87	168.09
J-171	840	0.71	1.49	980.7	61	140.7
J-172	845	0	0	957.55	48.79	112.55
J-173	855	0	0	952.9	42.44	97.9
J-174	825	2.28	4.77	953.43	55.68	128.43
J-175	820	3.75	7.85	952.39	57.39	132.39
J-176	780	1.47	3.09	953.14	75.06	173.14
J-177	765	0	0	863.47	42.69	98.47
J-178	850	1.63	3.41	1,026.24	76.4	176.24
J-179	780	1.63	3.41	1,026.24	106.75	246.24
J-180	822	1.63	3.41	961.64	60.54	139.64
J-181	760	1.63	3.41	1,026.24	115.42	266.24
J-186	800	1.56	3.26	942.46	61.76	142.46
J-187	715	2.49	5.22	942.56	98.65	227.56
J-188	690	2.49	5.22	942.57	109.49	252.57
J-189	750	1.63	3.41	1,018.87	116.56	268.87
J-190	822	1.63	3.41	961.42	60.44	139.42
J-191	790	1.63	3.41	1,033.26	105.46	243.26
J-192	810	1.63	3.41	1,033.25	96.79	223.25
J-193	780	1.63	3.41	1,026.31	106.78	246.31
J-194	820	1.89	3.95	1,006.53	80.87	186.53
J-195	820	1.89	3.95	1,006.70	80.94	186.7
J-196	820	1.89	3.95	1,006.55	80.87	186.55
J-200	797	0.96	2.02	959.88	70.61	162.88
J-203	810	1.63	3.41	1,009.85	86.64	199.85
J-204	822	0	0	1,006.82	80.12	184.82
J-205	818	0	0	1,006.82	81.86	188.82
J-206	785	0	0	959.91	75.83	174.91
J-207	805	0	0	959.91	67.16	154.91
J-208	800	3.08	6.46	914.2	49.51	114.2
J-209	820	0	0	957.26	59.51	137.26
J-210	850	0	0	957.47	46.59	107.47
J-211	820	0	0	957.14	59.45	137.14
J-212	785	0	0	956.85	74.5	171.85
J-213	750	0	0	935.2	80.29	185.2
J-220	864	0	0	953.21	38.68	89.21
J-230	864	0	0	909.48	19.72	45.48
J-237	785	0	0	935.3	65.16	150.3
J-239	842	0	0	948.58	46.21	106.58
J-240	780	1.77	3.7	966.26	80.75	186.26
J-241	838	0	0	949.12	48.17	111.12
J-242	850	0	0	952.39	44.39	102.39
J-243	842	0	0	952.39	47.85	110.39
J-244	910	305.36	639.65	951.92	18.17	41.92
J-245	878	0	0	909.49	13.65	31.49
J-250	783	1.77	3.7	940.03	68.08	157.03
J-257	760	1.13	2.37	947.68	81.36	187.68
J-258	683	1.94	4.06	932.94	108.36	249.94
J-260	736	1.94	4.06	917.15	78.53	181.15
J-263	820	0	0	953.12	57.71	133.12
J-264	820	0	0	951.98	57.22	131.98
J-266	790	0.25	0.52	969.94	78.01	179.94
J-270	715	1.94	4.06	912.2	85.49	197.2
J-280	715	1.94	4.06	910.27	84.65	195.27
J-288	746	1.94	4.06	903.51	68.29	157.51
J-290	746	0.83	1.73	902.76	67.96	156.76
J-294	845	1.11	2.33	947.35	44.37	102.35
J-295	825	1.94	4.06	897.95	31.63	72.95
J-300	820	1.94	4.06	896.72	33.26	76.72
J-310	810	0	0	872.2	26.97	62.2
J-330	803	1.77	3.7	951.77	64.5	148.77
J-336	840	160.62	336.47	952.38	48.72	112.38
J-340	810	4.54	9.5	950.11	60.74	140.11
J-345	710	0	0	847.87	59.77	137.87
J-346	810	0	0	953.37	62.16	143.37
J-347	890	0	0	953.43	27.5	63.43
J-348	710	0	0	851.45	61.32	141.45
J-349	710	0	0	845.45	58.72	135.45
J-350	730	1.51	3.16	896.17	72.04	166.17
J-351	710	0	0	845.71	58.83	135.71
J-352	810	1.52	3.18	903.51	40.54	93.51
J-353	760	0	0	980.56	95.62	220.56
J-360	730	1.51	3.16	992.13	113.64	262.13
J-362	830	0	0	981.39	65.63	151.39
J-370	739	1.51	3.16	990.78	109.15	251.78

Peak without 146 Tank						
Label	Elevation (ft)	Base Flow (gpm)	Demand (Calculated) (gpm)	Calculated Hydraulic Grade (ft)	Pressure (psi)	Pressure Head (ft)
J-376	725	0	0	982.19	111.49	257.19
J-377	720	0	0	982.39	113.75	262.39
J-378	770	0	0	988.46	94.7	218.46
J-379	810	0	0	997.83	81.43	187.83
J-380	680	2.12	4.43	990.74	134.71	310.74
J-381	760	0	0	956.75	85.3	196.75
J-382	780	2.12	4.43	990.73	91.36	210.73
J-383	785	0	0	956.49	74.35	171.49
J-384	800	0	0	949.3	64.73	149.3
J-387	710	0	0	963.05	109.7	253.05
J-388	795	0	0	961.31	72.1	166.31
J-389	800	0	0	961.13	69.85	161.13
J-390	790	2.12	4.43	986.26	85.08	196.26
J-391	835	0	0	957.92	53.29	122.92
J-392	700	0	0	915.19	93.29	215.19
J-400	805	3.94	8.25	986.13	78.52	181.13
J-410	850	3.94	8.25	986.05	58.98	136.05
J-420	819	1.42	2.97	981.52	70.46	162.52
J-430	753	126.2	264.36	980.41	98.59	227.41
J-440	819	2.12	4.43	981.58	70.48	162.58
J-450	770	2.12	4.43	981.69	91.77	211.69
J-460	810	2.12	4.43	981.58	74.38	171.58
J-470	750	2.12	4.43	981.57	100.39	231.57
J-480	700	2.39	5.01	981.57	122.07	281.57
J-490	783	2.12	4.43	981.87	86.21	198.87
J-500	790	2.12	4.43	981.71	83.11	191.71
J-510	850	2.12	4.43	981.67	57.08	131.67
J-520	740	2.12	4.43	982.02	104.92	242.02
J-530	838	2.12	4.43	981.35	62.14	143.35
J-540	730	2.12	4.43	980.96	108.8	250.96
J-550	780	0.71	1.49	980.87	87.08	200.87
J-560	893	0.71	1.49	980.71	38.03	87.71
J-570	813	0.71	1.49	980.71	72.71	167.71
J-580	813	0.71	1.49	980.71	72.71	167.71
J-590	890	0.71	1.49	980.71	39.32	90.71
J-600	850	0.71	1.49	980.69	56.66	130.69
J-610	870	0.71	1.49	980.68	47.98	110.68
J-620	901	0.71	1.49	980.67	34.54	79.67
J-630	896	0.71	1.49	980.67	36.71	84.67
J-640	740	2.12	4.43	982.24	105.01	242.24
J-650	800	2.12	4.43	982.2	78.99	182.2
J-660	775	2.12	4.43	982.19	89.82	207.19
J-670	725	2.39	5.01	982.16	111.48	257.16
J-680	729	42.42	88.87	981.87	109.62	252.87
J-690	725	2.39	5.01	982.24	111.52	257.24
J-700	725	1.2	2.52	982.55	111.65	257.55
J-710	750	2.39	5.01	982.46	100.78	232.46
J-720	848	1.26	2.64	982.41	58.27	134.41
J-730	848	1.26	2.64	982.41	58.27	134.41
J-740	829	1.26	2.64	982.39	66.5	153.39
J-750	789	1.26	2.64	982.24	83.77	193.24
J-760	621	1.07	2.25	982.14	156.56	361.14
J-770	789	1.26	2.64	982.11	83.72	193.11
J-780	705	1.26	2.64	982.11	120.13	277.11
J-790	772	1.26	2.64	982.1	91.08	210.1
J-800	730	1.26	2.64	982.09	109.29	252.09
J-810	700	1.07	2.25	983.46	122.89	283.46
J-820	700	1.07	2.25	983.79	123.03	283.79
J-830	700	1.07	2.25	983.97	123.11	283.97
J-840	705	1.07	2.25	984.31	121.08	279.31
J-850	710	1.07	2.25	984.3	118.92	274.3
J-860	800	1.07	2.25	984.2	79.86	184.2
J-870	800	1.07	2.25	984.2	79.85	184.2
J-880	829	1.07	2.25	984.19	67.28	155.19
J-890	750	1.07	2.25	984.19	101.53	234.19
J-900	710	2.39	5.01	985.19	119.3	275.19
J-910	700	2.39	5.01	984.7	123.42	284.7
J-920	700	2.39	5.01	983.16	122.75	283.16
J-930	750	1.51	3.16	990.11	104.09	240.11
J-940	760	1.51	3.16	991.34	100.29	231.34
J-950	816	1.51	3.16	991.26	75.98	175.26
J-960	810	1.51	3.16	991.19	78.55	181.19
J-970	805	1.51	3.16	991.14	80.7	186.14
J-980	650	1.51	3.16	991.14	147.89	341.14
J-990	791	1.51	3.16	991.13	86.76	200.13
J-1000	600	1.51	3.16	991.13	169.56	391.13
J-1010	750	1.51	3.16	991.13	104.53	241.13
J-1020	773	1.77	3.7	911.66	60.11	138.66
J-1030	766	1.77	3.7	890.65	54.04	124.65
J-1040	766	5.01	10.49	886.75	52.35	120.75
J-1050	761	1.77	3.7	886.72	54.5	125.72

Peak without 146 Tank						
Label	Elevation (ft)	Base Flow (gpm)	Demand (Calculated) (gpm)	Calculated Hydraulic Grade (ft)	Pressure (psi)	Pressure Head (ft)
J-1060	770	2.28	4.78	886.21	50.38	116.21
J-1070	770	3.42	7.16	886.2	50.37	116.2
J-1080	766	1.91	3.99	881.64	50.13	115.64
J-1090	704	1.77	3.7	864.65	69.64	160.65
J-1100	692	3.42	7.16	850.91	68.89	158.91
J-1110	732	1.77	3.7	845.71	49.3	113.71
J-1120	710	1.77	3.7	844.97	58.51	134.97
J-1130	700	1.77	3.7	844.66	62.71	144.66
J-1140	684	3.42	7.16	844.14	69.43	160.14
J-1150	706	1.77	3.7	839.85	58.03	133.85
J-1160	720	1.77	3.7	834.64	49.7	114.64
J-1170	700	1.77	3.7	834.55	58.33	134.55
J-1180	700	1.77	3.7	834.54	58.33	134.54
J-1190	700	1.77	3.7	834.4	58.26	134.4
J-1200	650	1.19	2.5	834.29	79.89	184.29
J-1210	730	1.77	3.7	834.28	45.21	104.28
J-1220	720	3.42	7.16	833.46	49.19	113.46
J-1230	830	3.08	6.46	1,032.33	87.71	202.33
J-1240	815	3.08	6.46	1,029.35	92.93	214.35
J-1250	830	3.08	6.46	1,030.63	86.98	200.63
J-1260	815	3.08	6.46	1,028.65	92.62	213.65
J-1270	780	0	0	1,024.79	106.12	244.79
J-1280	785	3.08	6.46	1,024.28	103.73	239.28
J-1281	790	2.12	4.43	1,024.66	101.73	234.66
J-1290	720	3.08	6.46	1,025.01	132.23	305.01
J-1300	790	3.08	6.46	1,021.10	100.19	231.1
J-1301	750	3.08	6.46	1,022.59	118.17	272.59
J-1310	790	1.89	3.95	1,020.17	99.78	230.17
J-1315	750	1.89	3.95	1,017.55	115.99	267.55
J-1320	750	1.89	3.95	1,017.36	115.91	267.36
J-1322	790	1.89	3.95	1,016.14	98.04	226.14
J-1324	800	1.89	3.95	1,016.51	93.86	216.51
J-1330	800	1.89	3.95	1,016.17	93.71	216.17
J-1340	805	1.89	3.95	1,016.17	91.55	211.17
J-1342	805	1.89	3.95	1,016.40	91.65	211.4
J-1350	810	1.89	3.95	1,010.93	87.11	200.93
J-1355	775	3.32	6.96	1,010.17	101.95	235.17
J-1360	740	1.89	3.95	1,010.05	117.07	270.05
J-1370	792	1.67	3.5	1,007.36	93.36	215.36
J-1372	792	1.63	3.41	1,004.92	92.3	212.92
J-1380	800	3.72	7.79	1,008.60	90.43	208.6
J-1390	800	1.63	3.41	914.19	49.5	114.19
J-1400	820	7.64	16	914.21	40.84	94.21
J-1410	800	20.44	42.81	912.31	48.69	112.31
J-1420	793	3.08	6.46	913.74	52.34	120.74
J-1430	750	13.13	27.49	906.79	67.97	156.79
J-1440	820	1.63	3.41	914.21	40.84	94.21
J-1450	821	1.63	3.41	927.15	46.02	106.15
J-1460	826	0	0	951.17	54.27	125.17
J-1470	750	1.94	4.06	911.17	69.87	161.17
J-1480	795	1.94	4.06	910.65	50.14	115.65
J-1490	795	1.94	4.06	910.65	50.14	115.65
J-1500	761	1.94	4.06	909.33	64.3	148.33
J-1510	740	1.94	4.06	909.32	73.4	169.32
J-1520	771	2.49	5.21	908.48	59.6	137.48
J-1530	783	2.49	5.21	907.23	53.85	124.23
J-1540	717	2.49	5.21	906.96	82.35	189.96
J-1550	730	2.49	5.21	906.76	76.63	176.76
J-1560	759	2.49	5.21	907.05	64.18	148.05
J-1570	730	9.44	19.77	906.86	76.67	176.86
J-1580	817	2.81	5.88	999.6	79.16	182.6
J-1590	817	9.12	19.11	999.59	79.16	182.59
J-1600	809	64.65	135.43	987.82	77.52	178.82
J-1605	817	1.45	3.03	980.85	71.03	163.85
J-1610	819	0.92	1.93	976.29	68.19	157.29
J-1620	820	1.63	3.41	976.14	67.69	156.14
J-1630	825	1.63	3.41	974.63	64.87	149.63
J-1640	825	1.63	3.41	974.52	64.82	149.52
J-1650	800	1.63	3.41	974.4	75.61	174.4
J-1660	825	1.63	3.41	974.63	64.87	149.63
J-1670	700	1.63	3.41	974.52	119.01	274.52
J-1680	740	1.27	2.66	958.53	94.74	218.53
J-1690	750	1.27	2.66	956.24	89.41	206.24
J-1700	740	1.27	2.66	958.04	94.52	218.04
J-1710	740	1.27	2.66	958.04	94.52	218.04
J-1720	750	1.27	2.66	956.64	89.58	206.64
J-1730	760	1.27	2.66	956.04	84.99	196.04
J-1740	760	1.27	2.66	956.03	84.98	196.03
J-1750	750	1.27	2.66	956.03	89.32	206.03
J-1760	785	1.27	2.66	954.87	73.64	169.87
J-1770	801	1.27	2.66	954	66.33	153

Peak without 146 Tank						
Label	Elevation (ft)	Base Flow (gpm)	Demand (Calculated) (gpm)	Calculated Hydraulic Grade (ft)	Pressure (psi)	Pressure Head (ft)
J-1780	775	1.27	2.66	952.9	77.12	177.9
J-1790	750	1.27	2.66	952.08	87.61	202.08
J-1800	664	1.27	2.66	951.79	124.76	287.79
J-1810	700	1.27	2.66	951.73	109.13	251.73
J-1820	765	1.47	3.09	954.85	82.3	189.85
J-1830	765	1.27	2.66	954.94	82.34	189.94
J-1840	720	1.27	2.66	954.35	101.6	234.35
J-1850	705	1.47	3.09	954.35	108.1	249.35
J-1860	720	3.14	6.57	951.03	100.16	231.03
J-1870	740	3.14	6.57	949.29	90.73	209.29
J-1880	775	3.14	6.57	945.33	73.84	170.33
J-1890	775	3.14	6.57	944.15	73.33	169.15
J-1900	780	1.76	3.69	942.2	70.32	162.2
J-1910	750	1.76	3.69	942.73	83.55	192.73
J-1920	745	3.14	6.57	944.13	86.32	199.13
J-1930	755	3.14	6.57	946.28	82.93	191.28
J-1940	791	1.76	3.69	937.9	63.68	146.9
J-1950	775	1.76	3.69	937.89	70.61	162.89
J-1960	750	1.76	3.69	937.83	81.43	187.83
J-1970	725	1.76	3.69	937.8	92.25	212.8
J-1980	750	1.76	3.69	937.63	81.34	187.63
J-1990	765	1.76	3.69	937.62	74.83	172.62
J-2000	775	1.76	3.69	937.64	70.51	162.64
J-2004	785	1.76	3.69	928.64	62.27	143.64
J-2006	785	1.76	3.69	930.63	63.13	145.63
J-2008	753	1.76	3.69	933.66	78.32	180.66
J-2010	772	1.76	3.69	935.79	71.01	163.79
J-2020	800	1.76	3.69	937.56	59.63	137.56
J-2030	832	1.76	3.69	939.69	46.69	107.69
J-2040	825	2.26	4.74	941.98	50.71	116.98
J-2050	800	2.26	4.74	941.14	61.19	141.14
J-2060	792	2.26	4.74	942.82	65.38	150.82
J-2070	780	1.76	3.69	942.75	70.55	162.75
J-2080	725	1.82	3.82	944.39	95.11	219.39
J-2090	725	1.82	3.82	945.6	95.63	220.6
J-2100	843	1.82	3.82	948.33	45.66	105.33
J-2110	851	1.82	3.82	949.55	42.72	98.55
J-2120	775	1.82	3.82	947.3	74.69	172.3
J-2130	851	1.82	3.82	951.56	43.59	100.56
J-2140	790	1.82	3.82	949.37	69.09	159.37
J-2150	780	2.26	4.74	949.32	73.4	169.32
J-2160	852	1.82	3.82	963.59	48.38	111.59
J-2170	825	2.1	4.4	970.08	62.9	145.08
J-2180	760	2.1	4.4	971.12	91.52	211.12
J-2190	820	2.1	4.4	972.05	65.92	152.05
J-2200	860	2.1	4.4	973.4	49.16	113.4
J-2210	860	2.1	4.4	974.82	49.78	114.82
J-2220	860	2.1	4.4	972.71	48.86	112.71
J-2230	850	2.1	4.4	971.2	52.54	121.2
J-2240	840	2.05	4.29	973.44	57.85	133.44
J-2250	808	2.05	4.29	973.44	71.72	165.44
J-2260	755	2.05	4.29	973.53	94.74	218.53
J-2270	773	2.05	4.29	973.47	86.91	200.47
J-2280	842	2.05	4.29	974.64	57.5	132.64
J-2290	835	2.05	4.29	975.27	60.81	140.27
J-2300	870	2.05	4.29	976.68	46.25	106.68
J-2310	870	2.05	4.29	978.86	47.19	108.86
J-2320	860	2.05	4.29	999.09	60.3	139.09
J-2330	795	2.05	4.29	1,008.99	92.77	213.99
J-2340	780	0	0	1,010.31	99.84	230.31
J-2342	735	1.63	3.41	1,018.74	123.01	283.74
J-2344	735	1.63	3.41	1,023.85	125.22	288.85
J-2345	750	1.63	3.41	1,028.84	120.88	278.84
J-2346	790	1.63	3.41	1,036.57	106.89	246.57
J-2347	800	1.63	3.41	1,026.24	98.08	226.24
J-2350	750	2.05	4.29	1,008.90	112.24	258.9
J-2360	770	2.05	4.29	1,008.85	103.54	238.85
J-2370	840	2.05	4.29	957.48	50.93	117.48
J-2380	835	2.05	4.29	956.27	52.57	121.27
J-2390	835	2.05	4.29	955.82	52.38	120.82
J-2400	840	2.05	4.29	955.81	50.2	115.81
J-2410	810	2.05	4.29	954.53	62.66	144.53
J-2420	775	2.05	4.29	954.18	77.68	179.18
J-2430	755	2.05	4.29	953.97	86.26	198.97
J-2440	795	2.05	4.29	954.15	69	159.15
J-2450	819	2.05	4.29	954.44	58.71	135.44
J-2460	772	2.05	4.29	952.51	78.26	180.51
J-2470	720	2.05	4.29	952.07	100.61	232.07
J-2480	748	2.05	4.29	952.24	88.54	204.24
J-2490	770	1.47	3.09	950.57	78.28	180.57
J-2500	750	1.47	3.09	949.36	86.43	199.36

Peak without 146 Tank						
Label	Elevation (ft)	Base Flow (gpm)	Demand (Calculated) (gpm)	Calculated Hydraulic Grade (ft)	Pressure (psi)	Pressure Head (ft)
J-2510	825	1.47	3.09	947.71	53.2	122.71
J-2520	820	1.47	3.09	947.78	55.4	127.78
J-2530	805	2.24	4.7	947.57	61.81	142.57
J-2540	745	1.47	3.09	947.51	87.79	202.51
J-2550	835	2.95	6.18	947.91	48.95	112.91
J-2560	823	2.95	6.18	948.02	54.2	125.02
J-2570	800	2.95	6.18	948.02	64.17	148.02
J-2580	855	1.47	3.09	951.71	41.92	96.71
J-2600	850	1.47	3.09	953.92	45.05	103.92
J-2605	850	1.47	3.09	953.92	45.05	103.92
J-2610	860	2.95	6.18	954.31	40.88	94.31
J-2630	805	1.27	2.66	954.37	64.75	149.37
J-2640	840	2.95	6.18	953.92	49.39	113.92
J-2650	750	1.47	3.09	954.23	88.54	204.23
J-2660	840	2.95	6.18	952.73	48.87	112.73
J-2670	802	2.95	6.18	952.15	65.09	150.15
J-2680	802	2.95	6.18	952.94	65.44	150.94
J-2690	745	3.52	7.37	952.49	89.95	207.49
J-2700	730	3.52	7.37	952.32	96.38	222.32
J-2710	790	3.52	7.37	952.38	70.4	162.38
J-2720	730	3.52	7.37	952.08	96.28	222.08
J-2730	750	3.52	7.37	951.8	87.48	201.8
J-2740	762	2.21	4.63	951.53	82.16	189.53
J-2750	700	1.47	3.09	951.41	108.99	251.41
J-2760	790	3.52	7.37	950.8	69.71	160.8
J-2770	740	2.13	4.47	950.49	91.25	210.49
J-2780	780	1.47	3.09	951.67	74.42	171.67
J-2790	790	2.95	6.18	951.66	70.08	161.66
J-2800	780	2.13	4.47	951.65	74.42	171.65
J-2810	800	2.13	4.47	946.64	63.57	146.64
J-2820	790	2.13	4.47	946.45	67.82	156.45
J-2830	822	2.28	4.77	946.32	53.9	124.32
J-2840	825	2.28	4.77	946.4	52.63	121.4
J-2850	745	2.28	4.77	946.37	87.3	201.37
J-2860	820	2.68	5.62	946.37	54.78	126.37
J-2870	810	2.13	4.47	945.96	58.94	135.96
J-2880	790	2.13	4.47	945.56	67.44	155.56
J-2890	789	2.13	4.47	945.44	67.82	156.44
J-2900	772	2.13	4.47	945.44	75.19	173.44
J-2910	765	2.13	4.47	945.12	78.08	180.12
J-2920	772	2.01	4.21	945.29	75.12	173.29
J-2930	705	2.13	4.47	945.45	104.24	240.45
J-2940	745	2.49	5.22	943.26	85.95	198.26
J-2950	750	2.49	5.22	942.7	83.54	192.7
J-2960	720	2.49	5.22	942.61	96.51	222.61
J-2970	712	2.49	5.22	942.85	100.08	230.85
J-2980	750	2.49	5.22	943.18	83.75	193.18
J-2990	750	2.21	4.63	942.23	83.33	192.23
J-3000	750	2.49	5.22	937.75	81.39	187.75
J-3010	710	3.49	7.3	941.53	100.37	231.53
J-3020	680	3.49	7.3	941.11	113.2	261.11
J-3030	768	3.49	7.3	941.61	75.26	173.61
J-3040	740	1.56	3.26	943.59	88.26	203.59
J-3050	640	1.56	3.26	943.89	131.74	303.89
J-3060	715	3.49	7.3	943.25	98.95	228.25
J-3070	725	3.49	7.3	943.22	94.6	218.22
J-3080	745	3.49	7.3	945.03	86.72	200.03
J-3090	750	3.49	7.3	945.77	84.87	195.77
J-3100	773	3.49	7.3	946.38	75.16	173.38
J-3110	775	3.49	7.3	948.14	75.06	173.14
J-3120	730	2.28	4.77	948.12	94.56	218.12
J-3130	790	3.49	7.3	948.85	68.86	158.85
J-3140	800	3.49	7.3	949.71	64.9	149.71
J-3150	820	2.28	4.77	951.63	57.06	131.63
J-3160	825	2.68	5.62	951.68	54.92	126.68
J-3170	810	2.28	4.77	942	57.23	132
J-3180	770	2.28	4.77	941.39	74.3	171.39
J-3190	725	2.28	4.77	941.17	93.71	216.17
J-3200	700	2.28	4.77	941.06	104.5	241.06
J-3210	711	1.56	3.26	941.8	100.06	230.8
J-3220	721	2.28	4.77	941.81	95.72	220.81
J-3230	700	1.56	3.26	941.66	104.76	241.66
J-3240	700	1.56	3.26	942.33	105.05	242.33
J-3250	750	1.56	3.26	942.12	83.29	192.12
J-3260	780	1.56	3.26	941.05	69.82	161.05
J-3270	740	1.56	3.26	940.9	87.09	200.9
J-3280	750	1.56	3.26	942.09	83.27	192.09
J-3290	725	1.56	3.26	942.59	94.33	217.59
J-3300	750	1.56	3.26	942.53	83.47	192.53
J-3310	770	1.56	3.26	942.46	74.76	172.46
J-3320	689	1.56	3.26	942.88	110.06	253.88

Peak without 146 Tank						
Label	Elevation (ft)	Base Flow (gpm)	Demand (Calculated) (gpm)	Calculated Hydraulic Grade (ft)	Pressure (psi)	Pressure Head (ft)
J-3330	705	1.56	3.26	942.77	103.08	237.77
J-3335	732	1.56	3.26	945.13	92.39	213.13
J-3340	735	1.56	3.26	946.76	91.8	211.76
J-3350	780	1.56	3.26	946.87	72.34	166.87
J-3360	750	1.56	3.26	946.89	85.36	196.89
J-3370	745	1.56	3.26	947.12	87.62	202.12
J-3380	810	1.56	3.26	948.03	59.84	138.03
J-3400	840	1.56	3.26	948.63	47.09	108.63
J-3410	820	2.68	5.62	949.47	56.13	129.47
J-3420	840	2.68	5.62	950.15	47.75	110.15
J-3430	750	2.68	5.62	950.41	86.88	200.41
J-3440	770	2.68	5.62	950.7	78.34	180.7
J-3450	820	2.68	5.62	949.42	56.11	129.42
J-3460	772	2.68	5.62	949.35	76.88	177.35
J-3470	745	2.68	5.62	949.36	88.6	204.36
J-3480	751	1.47	3.09	949.32	85.97	198.32
J-3490	755	1.47	3.09	949.21	84.19	194.21
J-3500	758	1.47	3.09	949.24	82.91	191.24
J-3510	785	1.47	3.09	949.23	71.2	164.23
J-3520	800	1.47	3.09	949.23	64.69	149.23
J-3530	860	1.47	3.09	949.7	38.89	89.7
J-3540	820	1.47	3.09	949.69	56.22	129.69
J-3545	860	3.75	7.85	949.92	38.98	89.92
J-3547	825	3.75	7.85	949.9	54.15	124.9
J-3550	865	3.75	7.85	950.19	36.93	85.19
J-3560	870	3.75	7.85	950.57	34.93	80.57
J-3570	865	3.75	7.85	950.16	36.92	85.16
J-3580	838	1.47	3.09	949.19	48.2	111.19
J-3590	792	1.47	3.09	947.62	67.46	155.62
J-3600	835	1.47	3.09	947.44	48.74	112.44
J-3610	845	1.47	3.09	947.36	44.37	102.36
J-3620	812	3.75	7.85	938.75	54.95	126.75
J-3630	750	3.75	7.85	938.47	81.71	188.47
J-3640	735	3.75	7.85	938.34	88.15	203.34
J-3650	860	3.75	7.85	950.12	39.07	90.12
J-3660	850	3.75	7.85	950.07	43.38	100.07
J-3670	830	3.75	7.85	950.02	52.03	120.02
J-3680	810	3.75	7.85	950.02	60.7	140.02
J-3690	777	3.75	7.85	950.11	75.05	173.11
J-3700	785	3.75	7.85	950.05	71.55	165.05
J-3710	830	3.75	7.85	949.86	51.96	119.86
J-3720	800	3.75	7.85	949.83	64.95	149.83
J-3730	840	3.75	7.85	949.82	47.61	109.82
J-3740	780	3.75	7.85	949.78	73.6	169.78
J-3750	739	2.81	5.88	953.07	92.81	214.07
J-3760	735	4.99	10.44	953.42	94.69	218.42
J-3770	770	2.81	5.88	953.46	79.53	183.46
J-3780	800	2.81	5.88	953.02	66.34	153.02
J-3790	840	3.75	7.85	950.07	47.72	110.07
J-3800	810	3.75	7.85	949.69	60.56	139.69
J-3810	890	3.75	7.85	949.57	25.83	59.57
J-3820	821	0	0	949.88	55.87	128.88
J-3830	840	4.07	8.53	949.87	47.63	109.87
J-3840	871	2.81	5.88	949.71	34.12	78.71
J-3850	850	2.81	5.88	949.48	43.13	99.48
J-3860	842	0	0	949.71	46.69	107.71
J-3870	878	3.75	7.85	954.22	33.04	76.22
J-3880	910	0	0	952.32	18.35	42.32
J-3890	870	1.47	3.09	952.19	35.63	82.19
J-3900	870	1.47	3.09	952.09	35.59	82.09

Peak with 146 Tank						
Label	Elevation (ft)	Base Flow (gpm)	Demand (Calculated) (gpm)	Calculated Hydraulic Grade (ft)	Pressure (psi)	Pressure Head (ft)
J-1	740	4.99	10.44	961.27	95.93	221.27
J-2	470	1.64	3.44	481.13	4.83	11.13
J-3	440	3.42	7.16	850.83	178.1	410.83
J-4	470	1.64	3.44	819.21	151.39	349.21
J-5	685	3.42	7.16	850.76	71.86	165.76
J-6	670	1.06	2.22	840.02	73.71	170.02
J-7	630	3.42	7.16	840.02	91.05	210.02
J-8	675	3.42	7.16	840.04	71.55	165.04
J-9	700	3.61	7.57	840.08	60.73	140.08
J-10	480	1.64	3.44	817.77	146.43	337.77
J-12	480	1.26	2.64	817.74	146.42	337.74
J-13	715	3.42	7.16	840.29	54.32	125.29
J-14	720	3.42	7.16	840.29	52.15	120.29
J-15	670	3.42	7.16	840.11	73.74	170.11
J-16	690	3.42	7.16	840.16	65.1	150.16
J-17	680	3.42	7.16	840.18	69.44	160.18
J-18	670	3.42	7.16	850.72	78.35	180.72
J-19	700	3.42	7.16	850.74	65.35	150.74
J-20	480	1.64	3.44	631.01	65.47	151.01
J-21	775	3.42	7.16	892.87	51.1	117.87
J-22	760	1.5	3.14	888.32	55.63	128.32
J-23	770	2.79	5.84	888.32	51.3	118.32
J-24	710	1.83	3.84	950.24	104.15	240.24
J-25	760	0.81	1.69	946.86	81.01	186.86
J-26	825	3.56	7.46	954.5	56.14	129.5
J-27	815	3.75	7.85	954.51	60.48	139.51
J-28	835	2.31	4.85	958.08	53.36	123.08
J-29	730	3.35	7.02	945.6	93.47	215.6
J-30	479	1.64	3.44	631.01	65.9	152.01
J-31	730	2.21	4.63	945.61	93.47	215.61
J-32	700	2.83	5.92	949.44	108.14	249.44
J-33	685	0.81	1.69	951.09	115.35	266.09
J-34	835	1.56	3.26	956.73	52.77	121.73
J-35	800	3.74	7.83	956.73	67.94	156.73
J-36	815	2.18	4.56	1,009.23	84.2	194.23
J-37	815	2.07	4.34	980.04	71.55	165.04
J-38	780	3.13	6.56	915.77	58.86	135.77
J-39	735	4.66	9.76	849.17	49.49	114.17
J-40	479	1.64	3.44	631	65.9	152
J-41	725	1.77	3.7	849.19	53.84	124.19
J-42	700	0.76	1.6	846.55	63.53	146.55
J-43	660	1.48	3.09	841.01	78.47	181.01
J-44	690	1.77	3.7	841.02	65.47	151.02
J-45	750	8.67	18.17	858.01	46.82	108.01
J-46	710	1.77	3.7	858.2	64.25	148.2
J-47	720	2.42	5.07	864.93	62.83	144.93
J-48	690	2.17	4.54	864.94	75.84	174.94
J-49	720	2.49	5.22	878.53	68.72	158.53
J-50	480	1.64	3.44	631.01	65.46	151.01
J-51	700	2.25	4.72	903.83	88.36	203.83
J-52	715	2.89	6.06	903.83	81.86	188.83
J-53	700	0.92	1.93	968.02	116.19	268.02
J-54	730	1.77	3.7	968.02	103.19	238.02
J-55	785	2.78	5.81	977.87	83.61	192.87
J-56	765	1.77	3.7	977.88	92.29	212.88
J-57	740	3.15	6.6	970.41	99.89	230.41
J-58	790	1.77	3.7	970.42	78.21	180.42
J-59	795	4.54	9.5	961.62	72.23	166.62
J-60	450	1.26	2.64	631	78.47	181
J-61	798	1.61	3.38	981.09	79.37	183.09
J-62	800	0.71	1.49	981.1	78.51	181.1
J-63	795	0.58	1.21	981.34	80.78	186.34
J-64	810	2.12	4.43	981.34	74.28	171.34
J-65	720	0.83	1.73	982.42	113.76	262.42
J-66	705	2.39	5.01	982.42	120.27	277.42
J-67	700	4.78	10.01	983.46	122.89	283.46
J-68	780	0.6	1.25	982.6	87.83	202.6
J-69	650	5.53	11.59	840.99	82.8	190.99
J-70	453	1.26	2.64	817.7	158.1	364.7
J-71	750	2.26	4.74	956.82	89.66	206.82
J-72	750	2.26	4.74	948.82	86.19	198.82
J-73	720	1.82	3.82	952.5	100.79	232.5
J-74	755	2.26	4.74	952.5	85.62	197.5
J-75	730	2.95	6.18	954.86	97.48	224.86
J-76	740	2.26	4.74	954.85	93.14	214.85
J-77	775	2.26	4.74	950.24	75.97	175.24
J-78	810	2.26	4.74	949.9	60.65	139.9
J-79	750	4.99	10.44	960.99	91.47	210.99
J-80	755	4.99	10.44	961.28	89.43	206.28
J-81	860	2.81	5.88	957.54	42.29	97.54
J-82	850	2.81	5.88	957.73	46.7	107.73
J-83	770	2.81	5.88	959.04	81.95	189.04

Peak with 146 Tank						
Label	Elevation (ft)	Base Flow (gpm)	Demand (Calculated) (gpm)	Calculated Hydraulic Grade (ft)	Pressure (psi)	Pressure Head (ft)
J-84	760	3.75	7.85	950.47	82.57	190.47
J-85	760	3.75	7.85	946.53	80.87	186.53
J-86	745	2.24	4.7	955.29	91.17	210.29
J-87	810	2.1	4.4	977.76	72.73	167.76
J-88	790	2.1	4.4	977.77	81.4	187.77
J-89	820	2.1	4.4	977.43	68.25	157.43
J-90	790	2.1	4.4	977.44	81.26	187.44
J-91	795	2.95	6.18	959.57	71.34	164.57
J-92	795	2.95	6.18	962.2	72.48	167.2
J-93	770	2.95	6.18	959.78	82.27	189.78
J-94	800	2.95	6.18	959.78	69.27	159.78
J-95	800	2.95	6.18	959.8	69.26	159.8
J-96	810	2.95	6.18	959.82	64.95	149.82
J-97	715	2.21	4.63	946.27	100.26	231.27
J-98	720	2.21	4.63	945.86	97.91	225.86
J-99	710	2.21	4.63	945.45	102.07	235.45
J-100	507	1.26	2.64	817.69	134.69	310.69
J-101	690	2.21	4.63	945.4	110.72	255.4
J-102	715	2.21	4.63	945.4	99.88	230.4
J-103	625	2.49	5.22	950.39	141.06	325.39
J-104	690	2.49	5.22	950.39	112.88	260.39
J-105	750	2.49	5.22	950.62	86.97	200.62
J-106	740	2.49	5.22	950.69	91.34	210.69
J-107	690	2.49	5.22	950.91	113.11	260.91
J-108	675	2.49	5.22	950.91	119.61	275.91
J-109	720	3.49	7.3	949.01	99.28	229.01
J-110	510	1.07	2.25	817.68	133.38	307.68
J-111	695	3.49	7.3	950.05	110.57	255.05
J-112	715	3.49	7.3	950.13	101.93	235.13
J-113	675	3.49	7.3	949.06	118.81	274.06
J-114	690	3.49	7.3	949.8	112.63	259.8
J-115	640	3.49	7.3	949.04	133.97	309.04
J-116	750	3.49	7.3	949.43	86.46	199.43
J-117	710	3.49	7.3	949.45	103.81	239.45
J-118	730	3.49	7.3	949.43	95.13	219.43
J-119	815	1.45	3.03	982.69	72.7	167.69
J-120	580	1.07	2.25	817.67	103.03	237.67
J-121	725	1.45	3.03	982.69	111.71	257.69
J-122	740	1.45	3.03	982.69	105.21	242.69
J-123	800	1.45	3.03	982.55	79.14	182.55
J-124	810	1.45	3.03	982.55	74.8	172.55
J-125	820	1.45	3.03	982.55	70.47	162.55
J-126	770	1.45	3.03	982.56	92.15	212.56
J-127	785	1.45	3.03	982.57	85.65	197.57
J-128	825	1.45	3.03	982.62	68.33	157.62
J-129	750	1.45	3.03	982.69	100.88	232.69
J-130	760	1.77	3.7	804.74	19.4	44.74
J-131	810	1.45	3.03	982.61	74.83	172.61
J-132	755	1.77	3.7	804.72	21.55	49.72
J-133	815	1.45	3.03	982.61	72.66	167.61
J-134	800	3.08	6.46	1,033.51	101.23	233.51
J-135	790	3.08	6.46	1,032.13	104.97	242.13
J-136	770	3.08	6.46	1,026.29	111.11	256.29
J-137	715	3.42	7.16	865.86	65.4	150.86
J-138	715	3.42	7.16	858.76	62.32	143.76
J-139	705	3.42	7.16	858.2	66.41	153.2
J-140	760	1.77	3.7	983.81	97.03	223.81
J-141	500	3.42	7.16	857.18	154.84	357.18
J-142	760	3.42	7.16	892.96	57.64	132.96
J-143	670	3.42	7.16	840.08	73.73	170.08
J-144	685	3.42	7.16	840.08	67.23	155.08
J-145	680	3.42	7.16	840.13	69.42	160.13
J-146	690	3.42	7.16	840.14	65.09	150.14
J-147	775	2.39	5.01	983.37	90.33	208.37
J-148	760	2.39	5.01	982.65	96.52	222.65
J-149	735	2.39	5.01	984.82	108.3	249.82
J-150	760	1.77	3.7	983.26	96.79	223.26
J-151	760	1.42	2.97	981.85	96.18	221.85
J-152	840	1.42	2.97	981.85	61.49	141.85
J-153	830	1.42	2.97	981.85	65.83	151.85
J-154	840	1.42	2.97	981.85	61.5	141.85
J-155	888	1.47	3.09	962.36	32.24	74.36
J-156	855	1.07	2.25	984.56	56.17	129.56
J-157	782	1.26	2.64	984.55	87.81	202.55
J-158	770	3.42	7.16	892.87	53.27	122.87
J-159	750	3.42	7.16	892.86	61.93	142.86
J-160	778	1.77	3.7	977.02	86.28	199.02
J-161	745	1.77	3.7	852.4	46.56	107.4
J-162	675	1.77	3.7	915.14	104.1	240.14
J-163	675	2.49	5.21	915.15	104.11	240.15
J-164	665	2.49	5.21	915.13	108.44	250.13
J-165	742	1.63	3.41	969.1	98.45	227.1

Peak with 146 Tank						
Label	Elevation (ft)	Base Flow (gpm)	Demand (Calculated) (gpm)	Calculated Hydraulic Grade (ft)	Pressure (psi)	Pressure Head (ft)
J-166	835	0.71	1.49	981.01	63.3	146.01
J-167	860	2.12	4.43	981.98	52.88	121.98
J-168	810	2.12	4.43	981.98	74.56	171.98
J-169	780	0.71	1.49	980.99	87.13	200.99
J-170	797	1.77	3.7	972.31	76	175.31
J-171	840	0.71	1.49	981	61.13	141
J-172	845	0	0	965.27	52.14	120.27
J-173	855	0	0	960.61	45.79	105.61
J-174	825	2.28	4.77	961.5	59.18	136.5
J-175	820	3.75	7.85	960.5	60.91	140.5
J-176	780	1.47	3.09	961.22	78.56	181.22
J-177	765	0	0	872.75	46.71	107.75
J-178	850	1.63	3.41	1,033.79	79.68	183.79
J-179	780	1.63	3.41	1,033.79	110.02	253.79
J-180	822	1.63	3.41	969.12	63.78	147.12
J-181	760	1.63	3.41	1,033.79	118.69	273.79
J-186	800	1.56	3.26	950.39	65.2	150.39
J-187	715	2.49	5.22	950.39	102.05	235.39
J-188	690	2.49	5.22	950.4	112.89	260.4
J-189	750	1.63	3.41	1,026.41	119.83	276.41
J-190	822	1.63	3.41	968.92	63.69	146.92
J-191	790	1.63	3.41	1,040.82	108.73	250.82
J-192	810	1.63	3.41	1,040.81	100.06	230.81
J-193	780	1.63	3.41	1,033.86	110.05	253.86
J-194	820	1.89	3.95	1,007.53	81.3	187.53
J-195	820	1.89	3.95	1,007.69	81.37	187.69
J-196	820	1.89	3.95	1,007.54	81.3	187.54
J-200	797	0.96	2.02	967.5	73.91	170.5
J-203	810	1.63	3.41	1,010.77	87.04	200.77
J-204	822	0	0	1,007.81	80.55	185.81
J-205	818	0	0	1,007.81	82.29	189.81
J-206	785	0	0	967.53	79.13	182.53
J-207	805	0	0	967.53	70.46	162.53
J-208	800	3.08	6.46	922.89	53.28	122.89
J-209	820	0	0	965.01	62.86	145.01
J-210	850	0	0	965.17	49.93	115.17
J-211	820	0	0	964.9	62.82	144.9
J-212	785	0	0	964.62	77.87	179.62
J-213	750	0	0	943.05	83.69	193.05
J-220	864	0	0	960.93	42.02	96.93
J-230	864	0	0	909.33	19.65	45.33
J-237	785	0	0	943.15	68.56	158.15
J-239	842	0	0	956.69	49.72	114.69
J-240	780	1.77	3.7	973.56	83.91	193.56
J-241	838	0	0	957.23	51.69	119.23
J-242	850	0	0	960.5	47.9	110.5
J-243	842	0	0	960.49	51.37	118.49
J-244	910	305.36	639.65	959.62	21.51	49.62
J-245	878	0	0	909.34	13.58	31.34
J-250	783	1.77	3.7	947.84	71.46	164.84
J-257	760	1.13	2.37	955.79	84.88	195.79
J-258	683	1.94	4.06	940.98	111.84	257.98
J-260	736	1.94	4.06	925.71	82.24	189.71
J-263	820	0	0	961.29	61.25	141.29
J-264	820	0	0	960.12	60.74	140.12
J-266	790	0.25	0.52	977.17	81.14	187.17
J-270	715	1.94	4.06	920.93	89.27	205.93
J-280	715	1.94	4.06	919.06	88.47	204.06
J-288	746	1.94	4.06	912.56	72.21	166.56
J-290	746	0.83	1.73	911.83	71.89	165.83
J-294	845	1.11	2.33	955.46	47.89	110.46
J-295	825	1.94	4.06	907.2	35.63	82.2
J-300	820	1.94	4.06	906.01	37.29	86.01
J-310	810	0	0	881.49	30.99	71.49
J-330	803	1.77	3.7	958.40	67.37	155.4
J-336	840	160.62	336.47	960.41	52.2	120.41
J-340	810	4.54	9.5	956.66	63.58	146.66
J-345	710	0	0	854.57	62.67	144.57
J-346	810	0	0	960.07	65.06	150.07
J-347	890	0	0	961.33	30.92	71.33
J-348	710	0	0	858.15	64.23	148.15
J-349	710	0	0	852.15	61.63	142.15
J-350	730	1.51	3.16	900.24	73.8	170.24
J-351	710	0	0	852.41	61.74	142.41
J-352	810	1.52	3.18	912.55	44.46	102.55
J-353	760	0	0	980.9	95.77	220.9
J-360	730	1.51	3.16	992.92	113.98	262.92
J-362	830	0	0	981.74	65.78	151.74
J-370	739	1.51	3.16	991.52	109.47	252.52
J-376	725	0	0	982.43	111.6	257.43
J-377	720	0	0	982.58	113.83	262.58
J-378	770	0	0	989.04	94.96	219.04

Peak with 146 Tank						
Label	Elevation (ft)	Base Flow (gpm)	Demand (Calculated) (gpm)	Calculated Hydraulic Grade (ft)	Pressure (psi)	Pressure Head (ft)
J-379	810	0	0	997.93	81.47	187.93
J-380	680	2.12	4.43	991.48	135.03	311.48
J-381	760	0	0	964.53	88.67	204.53
J-382	780	2.12	4.43	991.47	91.67	211.47
J-383	785	0	0	964.29	77.72	179.29
J-384	800	0	0	957.38	68.23	157.38
J-387	710	0	0	970.42	112.9	260.42
J-388	795	0	0	968.81	75.35	173.81
J-389	800	0	0	968.71	73.14	168.71
J-390	790	2.12	4.43	986.81	85.32	196.81
J-391	835	0	0	965.62	56.63	130.62
J-392	700	0	0	923.81	97.03	223.81
J-400	805	3.94	8.25	986.68	78.76	181.68
J-410	850	3.94	8.25	986.6	59.22	136.6
J-420	819	1.42	2.97	981.86	70.6	162.86
J-430	753	126.2	264.36	980.75	98.74	227.75
J-440	819	2.12	4.43	981.92	70.63	162.92
J-450	770	2.12	4.43	982.01	91.91	212.01
J-460	810	2.12	4.43	981.9	74.52	171.9
J-470	750	2.12	4.43	981.9	100.53	231.9
J-480	700	2.39	5.01	981.89	122.21	281.89
J-490	783	2.12	4.43	982.18	86.35	199.18
J-500	790	2.12	4.43	982.02	83.24	192.02
J-510	850	2.12	4.43	981.98	57.22	131.98
J-520	740	2.12	4.43	982.32	105.05	242.32
J-530	838	2.12	4.43	981.65	62.27	143.65
J-540	730	2.12	4.43	981.26	108.93	251.26
J-550	780	0.71	1.49	981.17	87.21	201.17
J-560	893	0.71	1.49	981.01	38.16	88.01
J-570	813	0.71	1.49	981.01	72.84	168.01
J-580	813	0.71	1.49	981.01	72.84	168.01
J-590	890	0.71	1.49	981	39.45	91
J-600	850	0.71	1.49	980.99	56.79	130.99
J-610	870	0.71	1.49	980.97	48.11	110.97
J-620	901	0.71	1.49	980.97	34.67	79.97
J-630	896	0.71	1.49	980.97	36.84	84.97
J-640	740	2.12	4.43	982.52	105.14	242.52
J-650	800	2.12	4.43	982.47	79.1	182.47
J-660	775	2.12	4.43	982.46	89.94	207.46
J-670	725	2.39	5.01	982.41	111.59	257.41
J-680	729	42.42	88.87	982.12	109.73	253.12
J-690	725	2.39	5.01	982.47	111.62	257.47
J-700	725	1.2	2.52	982.7	111.72	257.7
J-710	750	2.39	5.01	982.51	100.8	232.51
J-720	848	1.26	2.64	982.4	58.27	134.4
J-730	848	1.26	2.64	982.4	58.27	134.4
J-740	829	1.26	2.64	982.38	66.49	153.38
J-750	789	1.26	2.64	982.22	83.77	193.22
J-760	621	1.07	2.25	982.13	156.56	361.13
J-770	789	1.26	2.64	982.1	83.71	193.1
J-780	705	1.26	2.64	982.1	120.13	277.1
J-790	772	1.26	2.64	982.09	91.08	210.09
J-800	730	1.26	2.64	982.08	109.28	252.08
J-810	700	1.07	2.25	983.71	122.99	283.71
J-820	700	1.07	2.25	984.08	123.15	284.08
J-830	700	1.07	2.25	984.27	123.24	284.27
J-840	705	1.07	2.25	984.64	121.23	279.64
J-850	710	1.07	2.25	984.64	119.06	274.64
J-860	800	1.07	2.25	984.54	80	184.54
J-870	800	1.07	2.25	984.53	80	184.53
J-880	829	1.07	2.25	984.53	67.42	155.53
J-890	750	1.07	2.25	984.53	101.67	234.53
J-900	710	2.39	5.01	985.6	119.48	275.6
J-910	700	2.39	5.01	985.08	123.59	285.08
J-920	700	2.39	5.01	983.48	122.9	283.48
J-930	750	1.51	3.16	990.78	104.38	240.78
J-940	760	1.51	3.16	992.09	100.62	232.09
J-950	816	1.51	3.16	992.01	76.3	176.01
J-960	810	1.51	3.16	991.93	78.87	181.93
J-970	805	1.51	3.16	991.89	81.02	186.89
J-980	650	1.51	3.16	991.88	148.21	341.88
J-990	791	1.51	3.16	991.88	87.08	200.88
J-1000	600	1.51	3.16	991.87	169.88	391.87
J-1010	750	1.51	3.16	991.87	104.86	241.87
J-1020	773	1.77	3.7	918.89	63.24	145.89
J-1030	766	1.77	3.7	897.43	56.98	131.43
J-1040	766	5.01	10.49	893.44	55.25	127.44
J-1050	761	1.77	3.7	893.41	57.4	132.41
J-1060	770	2.28	4.78	892.89	53.28	122.89
J-1070	770	3.42	7.16	892.88	53.27	122.88
J-1080	766	1.91	3.99	888.33	53.03	122.33
J-1090	704	1.77	3.7	871.34	72.55	167.34

Peak with 146 Tank						
Label	Elevation (ft)	Base Flow (gpm)	Demand (Calculated) (gpm)	Calculated Hydraulic Grade (ft)	Pressure (psi)	Pressure Head (ft)
J-1100	692	3.42	7.16	857.6	71.79	165.6
J-1110	732	1.77	3.7	852.41	52.2	120.41
J-1120	710	1.77	3.7	851.67	61.42	141.67
J-1130	700	1.77	3.7	851.36	65.62	151.36
J-1140	684	3.42	7.16	850.84	72.33	166.84
J-1150	706	1.77	3.7	846.55	60.93	140.55
J-1160	720	1.77	3.7	841.33	52.6	121.33
J-1170	700	1.77	3.7	841.24	61.23	141.24
J-1180	700	1.77	3.7	841.24	61.23	141.24
J-1190	700	1.77	3.7	841.09	61.17	141.09
J-1200	650	1.19	2.5	840.99	82.8	190.99
J-1210	730	1.77	3.7	840.98	48.11	110.98
J-1220	720	3.42	7.16	840.15	52.09	120.15
J-1230	830	3.08	6.46	1,034.60	88.7	204.6
J-1240	815	3.08	6.46	1,031.46	93.84	216.46
J-1250	830	3.08	6.46	1,032.82	87.92	202.82
J-1260	815	3.08	6.46	1,030.72	93.52	215.72
J-1270	780	0	0	1,026.64	106.92	246.64
J-1280	785	3.08	6.46	1,026.09	104.52	241.09
J-1281	790	2.12	4.43	1,026.51	102.53	236.51
J-1290	720	3.08	6.46	1,026.88	133.04	306.88
J-1300	790	3.08	6.46	1,022.73	100.89	232.73
J-1301	750	3.08	6.46	1,024.31	118.92	274.31
J-1310	790	1.89	3.95	1,021.74	100.46	231.74
J-1315	750	1.89	3.95	1,018.96	116.6	268.96
J-1320	750	1.89	3.95	1,018.76	116.51	268.76
J-1322	790	1.89	3.95	1,017.47	98.61	227.47
J-1324	800	1.89	3.95	1,017.85	94.44	217.85
J-1330	800	1.89	3.95	1,017.49	94.29	217.49
J-1340	805	1.89	3.95	1,017.50	92.12	212.5
J-1342	805	1.89	3.95	1,017.74	92.23	212.74
J-1350	810	1.89	3.95	1,011.93	87.54	201.93
J-1355	775	3.32	6.96	1,011.17	102.38	236.17
J-1360	740	1.89	3.95	1,011.04	117.5	271.04
J-1370	792	1.67	3.5	1,008.12	93.69	216.12
J-1372	792	1.63	3.41	1,005.51	92.56	213.51
J-1380	800	3.72	7.79	1,009.60	90.86	209.6
J-1390	800	1.63	3.41	922.88	53.27	122.88
J-1400	820	7.64	16	922.9	44.61	102.9
J-1410	800	20.44	42.81	921.01	52.46	121.01
J-1420	793	3.08	6.46	922.45	56.12	129.45
J-1430	750	13.13	27.49	915.72	71.84	165.72
J-1440	820	1.63	3.41	922.89	44.61	102.89
J-1450	821	1.63	3.41	935.45	49.62	114.45
J-1460	826	0	0	959.03	57.67	133.03
J-1470	750	1.94	4.06	919.89	73.65	169.89
J-1480	795	1.94	4.06	919.37	53.92	124.37
J-1490	795	1.94	4.06	919.37	53.92	124.37
J-1500	761	1.94	4.06	918.05	68.09	157.05
J-1510	740	1.94	4.06	918.05	77.19	178.05
J-1520	771	2.49	5.21	917.2	63.38	146.2
J-1530	783	2.49	5.21	915.95	57.64	132.95
J-1540	717	2.49	5.21	915.68	86.13	198.68
J-1550	730	2.49	5.21	915.49	80.41	185.49
J-1560	759	2.49	5.21	915.78	67.97	156.78
J-1570	730	9.44	19.77	915.59	80.46	185.59
J-1580	817	2.81	5.88	999.83	79.26	182.83
J-1590	817	9.12	19.11	999.82	79.26	182.82
J-1600	809	64.65	135.43	987.22	77.26	178.22
J-1605	817	1.45	3.03	981.64	71.37	164.64
J-1610	819	0.92	1.93	978.05	68.95	159.05
J-1620	820	1.63	3.41	977.9	68.45	157.9
J-1630	825	1.63	3.41	976.75	65.78	151.75
J-1640	825	1.63	3.41	976.64	65.74	151.64
J-1650	800	1.63	3.41	976.52	76.52	176.52
J-1660	825	1.63	3.41	976.74	65.78	151.74
J-1670	700	1.63	3.41	976.64	119.93	276.64
J-1680	740	1.27	2.66	964.23	97.21	224.23
J-1690	750	1.27	2.66	962.42	92.09	212.42
J-1700	740	1.27	2.66	963.88	97.06	223.88
J-1710	740	1.27	2.66	963.88	97.06	223.88
J-1720	750	1.27	2.66	962.89	92.29	212.89
J-1730	760	1.27	2.66	962.46	87.77	202.46
J-1740	760	1.27	2.66	962.45	87.77	202.45
J-1750	750	1.27	2.66	962.45	92.1	212.45
J-1760	785	1.27	2.66	961.66	76.58	176.66
J-1770	801	1.27	2.66	960.89	69.32	159.89
J-1780	775	1.27	2.66	959.92	80.17	184.92
J-1790	750	1.27	2.66	959.16	90.67	209.16
J-1800	664	1.27	2.66	958.86	127.83	294.86
J-1810	700	1.27	2.66	958.8	112.19	258.8
J-1820	765	1.47	3.09	961.66	85.26	196.66

Peak with 146 Tank						
Label	Elevation (ft)	Base Flow (gpm)	Demand (Calculated) (gpm)	Calculated Hydraulic Grade (ft)	Pressure (psi)	Pressure Head (ft)
J-1830	765	1.27	2.66	961.73	85.29	196.73
J-1840	720	1.27	2.66	960.69	104.34	240.69
J-1850	705	1.47	3.09	960.69	110.85	255.69
J-1860	720	3.14	6.57	957.66	103.03	237.66
J-1870	740	3.14	6.57	956.07	93.67	216.07
J-1880	775	3.14	6.57	952.47	76.94	177.47
J-1890	775	3.14	6.57	951.4	76.47	176.4
J-1900	780	1.76	3.69	949.65	73.55	169.65
J-1910	750	1.76	3.69	950.2	86.79	200.2
J-1920	745	3.14	6.57	951.43	89.49	206.43
J-1930	755	3.14	6.57	953.36	85.99	198.36
J-1940	791	1.76	3.69	945.59	67.02	154.59
J-1950	775	1.76	3.69	945.57	73.95	170.57
J-1960	750	1.76	3.69	945.51	84.76	195.51
J-1970	725	1.76	3.69	945.48	95.58	220.48
J-1980	750	1.76	3.69	945.31	84.67	195.31
J-1990	765	1.76	3.69	945.3	78.16	180.3
J-2000	775	1.76	3.69	945.32	73.84	170.32
J-2004	785	1.76	3.69	936.86	65.83	151.86
J-2006	785	1.76	3.69	938.73	66.65	153.73
J-2008	753	1.76	3.69	941.6	81.76	188.6
J-2010	772	1.76	3.69	943.61	74.4	171.61
J-2020	800	1.76	3.69	945.31	62.99	145.31
J-2030	832	1.76	3.69	947.36	50.01	115.36
J-2040	825	2.26	4.74	949.55	54	124.55
J-2050	800	2.26	4.74	948.72	64.47	148.72
J-2060	792	2.26	4.74	950.33	68.64	158.33
J-2070	780	1.76	3.69	950.24	73.8	170.24
J-2080	725	1.82	3.82	951.98	98.4	226.98
J-2090	725	1.82	3.82	953.24	98.95	228.24
J-2100	843	1.82	3.82	955.85	48.92	112.85
J-2110	851	1.82	3.82	957.06	45.98	106.06
J-2120	775	1.82	3.82	954.87	77.98	179.87
J-2130	851	1.82	3.82	959.04	46.84	108.04
J-2140	790	1.82	3.82	956.87	72.34	166.87
J-2150	780	2.26	4.74	956.82	76.65	176.82
J-2160	852	1.82	3.82	970.95	51.57	118.95
J-2170	825	2.1	4.4	977.37	66.05	152.37
J-2180	760	2.1	4.4	978.39	94.68	218.39
J-2190	820	2.1	4.4	979.32	69.07	159.32
J-2200	860	2.1	4.4	980.66	52.31	120.66
J-2210	860	2.1	4.4	982.07	52.92	122.07
J-2220	860	2.1	4.4	979.98	52.01	119.98
J-2230	850	2.1	4.4	978.48	55.7	128.48
J-2240	840	2.05	4.29	980.69	60.99	140.69
J-2250	808	2.05	4.29	980.7	74.87	172.7
J-2260	755	2.05	4.29	980.78	97.88	225.78
J-2270	773	2.05	4.29	980.73	90.05	207.73
J-2280	842	2.05	4.29	981.89	60.64	139.89
J-2290	835	2.05	4.29	982.51	63.95	147.51
J-2300	870	2.05	4.29	983.91	49.38	113.91
J-2310	870	2.05	4.29	986.09	50.33	116.09
J-2320	860	2.05	4.29	1,006.61	63.56	146.61
J-2330	795	2.05	4.29	1,016.52	96.03	221.52
J-2340	780	0	0	1,017.84	103.11	237.84
J-2342	735	1.63	3.41	1,026.28	126.28	291.28
J-2344	735	1.63	3.41	1,031.40	128.5	296.4
J-2345	750	1.63	3.41	1,036.39	124.16	286.39
J-2346	790	1.63	3.41	1,044.13	110.17	254.13
J-2347	800	1.63	3.41	1,033.79	101.35	233.79
J-2350	750	2.05	4.29	1,016.43	115.5	266.43
J-2360	770	2.05	4.29	1,016.38	106.81	246.38
J-2370	840	2.05	4.29	965.23	54.29	125.23
J-2380	835	2.05	4.29	964.04	55.94	129.04
J-2390	835	2.05	4.29	963.59	55.75	128.59
J-2400	840	2.05	4.29	963.58	53.58	123.58
J-2410	810	2.05	4.29	962.33	66.04	152.33
J-2420	775	2.05	4.29	961.99	81.06	186.99
J-2430	755	2.05	4.29	961.78	89.64	206.78
J-2440	795	2.05	4.29	961.96	72.38	166.96
J-2450	819	2.05	4.29	962.24	62.1	143.24
J-2460	772	2.05	4.29	960.36	81.66	188.36
J-2470	720	2.05	4.29	959.92	104.01	239.92
J-2480	748	2.05	4.29	960.09	91.95	212.09
J-2490	770	1.47	3.09	958.47	81.7	188.47
J-2500	750	1.47	3.09	957.29	89.86	207.29
J-2510	825	1.47	3.09	955.51	56.58	130.51
J-2520	820	1.47	3.09	955.57	58.77	135.57
J-2530	805	2.24	4.7	955.35	65.18	150.35
J-2540	745	1.47	3.09	955.29	91.17	210.29
J-2550	835	2.95	6.18	955.68	52.32	120.68
J-2560	823	2.95	6.18	955.77	57.56	132.77

Peak with 146 Tank						
Label	Elevation (ft)	Base Flow (gpm)	Demand (Calculated) (gpm)	Calculated Hydraulic Grade (ft)	Pressure (psi)	Pressure Head (ft)
J-2570	800	2.95	6.18	955.77	67.53	155.77
J-2580	855	1.47	3.09	959.55	45.32	104.55
J-2600	850	1.47	3.09	961.36	48.28	111.36
J-2605	850	1.47	3.09	961.4	48.29	111.4
J-2610	860	2.95	6.18	962.2	44.31	102.2
J-2630	805	1.27	2.66	961.52	67.85	156.52
J-2640	840	2.95	6.18	961.32	52.59	121.32
J-2650	750	1.47	3.09	961.43	91.66	211.43
J-2660	840	2.95	6.18	960.18	52.1	120.18
J-2670	802	2.95	6.18	959.58	68.31	157.58
J-2680	802	2.95	6.18	960.27	68.61	158.27
J-2690	745	3.52	7.37	959.53	93	214.53
J-2700	730	3.52	7.37	959.38	99.44	229.38
J-2710	790	3.52	7.37	959.43	73.45	169.43
J-2720	730	3.52	7.37	959.16	99.34	229.16
J-2730	750	3.52	7.37	958.9	90.56	208.9
J-2740	762	2.21	4.63	958.66	85.26	196.66
J-2750	700	1.47	3.09	958.54	112.08	258.54
J-2760	790	3.52	7.37	958.29	72.96	168.29
J-2770	740	2.13	4.47	957.99	94.5	217.99
J-2780	780	1.47	3.09	959.51	77.82	179.51
J-2790	790	2.95	6.18	959.5	73.48	169.5
J-2800	780	2.13	4.47	959.49	77.81	179.49
J-2810	800	2.13	4.47	954.43	66.95	154.43
J-2820	790	2.13	4.47	954.24	71.2	164.24
J-2830	822	2.28	4.77	954.12	57.28	132.12
J-2840	825	2.28	4.77	954.2	56.01	129.2
J-2850	745	2.28	4.77	954.16	90.68	209.16
J-2860	820	2.68	5.62	954.16	58.16	134.16
J-2870	810	2.13	4.47	953.74	62.31	143.74
J-2880	790	2.13	4.47	953.33	70.81	163.33
J-2890	789	2.13	4.47	953.21	71.19	164.21
J-2900	772	2.13	4.47	953.21	78.56	181.21
J-2910	765	2.13	4.47	952.89	81.45	187.89
J-2920	772	2.01	4.21	953.06	78.49	181.06
J-2930	705	2.13	4.47	953.21	107.61	248.21
J-2940	745	2.49	5.22	951.09	89.34	206.09
J-2950	750	2.49	5.22	950.52	86.93	200.52
J-2960	720	2.49	5.22	950.44	99.9	230.44
J-2970	712	2.49	5.22	950.68	103.47	238.68
J-2980	750	2.49	5.22	951.02	87.15	201.02
J-2990	750	2.21	4.63	949.91	86.66	199.91
J-3000	750	2.49	5.22	945.43	84.72	195.43
J-3010	710	3.49	7.3	949.41	103.79	239.41
J-3020	680	3.49	7.3	948.99	116.61	268.99
J-3030	768	3.49	7.3	949.49	78.68	181.49
J-3040	740	1.56	3.26	951.49	91.69	211.49
J-3050	640	1.56	3.26	951.79	135.17	311.79
J-3060	715	3.49	7.3	951.1	102.35	236.1
J-3070	725	3.49	7.3	951.07	98.01	226.07
J-3080	745	3.49	7.3	952.98	90.16	207.98
J-3090	750	3.49	7.3	953.74	88.33	203.74
J-3100	773	3.49	7.3	954.37	78.63	181.37
J-3110	775	3.49	7.3	956.18	78.54	181.18
J-3120	730	2.28	4.77	956.16	98.05	226.16
J-3130	790	3.49	7.3	956.91	72.36	166.91
J-3140	800	3.49	7.3	957.8	68.41	157.8
J-3150	820	2.28	4.77	959.76	60.59	139.76
J-3160	825	2.68	5.62	959.8	58.44	134.8
J-3170	810	2.28	4.77	949.85	60.63	139.85
J-3180	770	2.28	4.77	949.24	77.7	179.24
J-3190	725	2.28	4.77	949.04	97.13	224.04
J-3200	700	2.28	4.77	948.94	107.92	248.94
J-3210	711	1.56	3.26	949.7	103.48	238.7
J-3220	721	2.28	4.77	949.71	99.15	228.71
J-3230	700	1.56	3.26	949.57	108.19	249.57
J-3240	700	1.56	3.26	950.23	108.48	250.23
J-3250	750	1.56	3.26	950.03	86.71	200.03
J-3260	780	1.56	3.26	948.93	73.24	168.93
J-3270	740	1.56	3.26	948.78	90.51	208.78
J-3280	750	1.56	3.26	950	86.7	200
J-3290	725	1.56	3.26	950.52	97.77	225.52
J-3300	750	1.56	3.26	950.46	86.9	200.46
J-3310	770	1.56	3.26	950.38	78.2	180.38
J-3320	689	1.56	3.26	950.81	113.5	261.81
J-3330	705	1.56	3.26	950.7	106.52	245.7
J-3335	732	1.56	3.26	953.07	95.84	221.07
J-3340	735	1.56	3.26	954.72	95.25	219.72
J-3350	780	1.56	3.26	954.83	75.79	174.83
J-3360	750	1.56	3.26	954.85	88.81	204.85
J-3370	745	1.56	3.26	955.08	91.07	210.08
J-3380	810	1.56	3.26	956	63.29	146

Peak with 146 Tank						
Label	Elevation (ft)	Base Flow (gpm)	Demand (Calculated) (gpm)	Calculated Hydraulic Grade (ft)	Pressure (psi)	Pressure Head (ft)
J-3400	840	1.56	3.26	956.6	50.55	116.6
J-3410	820	2.68	5.62	957.45	59.59	137.45
J-3420	840	2.68	5.62	958.18	51.23	118.18
J-3430	750	2.68	5.62	958.46	90.37	208.46
J-3440	770	2.68	5.62	958.77	81.83	188.77
J-3450	820	2.68	5.62	957.39	59.56	137.39
J-3460	772	2.68	5.62	957.31	80.34	185.31
J-3470	745	2.68	5.62	957.32	92.05	212.32
J-3480	751	1.47	3.09	957.27	89.42	206.27
J-3490	755	1.47	3.09	957.17	87.65	202.17
J-3500	758	1.47	3.09	957.2	86.36	199.2
J-3510	785	1.47	3.09	957.19	74.65	172.19
J-3520	800	1.47	3.09	957.19	68.15	157.19
J-3530	860	1.47	3.09	957.73	42.37	97.73
J-3540	820	1.47	3.09	957.72	59.71	137.72
J-3545	860	3.75	7.85	957.97	42.47	97.97
J-3547	825	3.75	7.85	957.96	57.64	132.96
J-3550	865	3.75	7.85	958.26	40.43	93.26
J-3560	870	3.75	7.85	958.68	38.44	88.68
J-3570	865	3.75	7.85	958.26	40.43	93.26
J-3580	838	1.47	3.09	957.29	51.72	119.29
J-3590	792	1.47	3.09	955.73	70.98	163.73
J-3600	835	1.47	3.09	955.54	52.26	120.54
J-3610	845	1.47	3.09	955.47	47.89	110.47
J-3620	812	3.75	7.85	946.86	58.46	134.86
J-3630	750	3.75	7.85	946.58	85.22	196.58
J-3640	735	3.75	7.85	946.44	91.66	211.44
J-3650	860	3.75	7.85	958.18	42.56	98.18
J-3660	850	3.75	7.85	958.14	46.88	108.14
J-3670	830	3.75	7.85	958.09	55.53	128.09
J-3680	810	3.75	7.85	958.09	64.2	148.09
J-3690	777	3.75	7.85	958.15	78.53	181.15
J-3700	785	3.75	7.85	958.08	75.03	173.08
J-3710	830	3.75	7.85	957.89	55.44	127.89
J-3720	800	3.75	7.85	957.86	68.43	157.86
J-3730	840	3.75	7.85	957.85	51.09	117.85
J-3740	780	3.75	7.85	957.81	77.09	177.81
J-3750	739	2.81	5.88	960.95	96.22	221.95
J-3760	735	4.99	10.44	961.28	98.1	226.28
J-3770	770	2.81	5.88	961.32	82.94	191.32
J-3780	800	2.81	5.88	960.9	69.75	160.9
J-3790	840	3.75	7.85	958.1	51.2	118.1
J-3800	810	3.75	7.85	957.72	64.04	147.72
J-3810	890	3.75	7.85	957.6	29.3	67.6
J-3820	821	0	0	957.91	59.35	136.91
J-3830	840	4.07	8.53	957.9	51.11	117.9
J-3840	871	2.81	5.88	957.73	37.6	86.73
J-3850	850	2.81	5.88	957.51	46.61	107.51
J-3860	842	0	0	957.73	50.17	115.73
J-3870	878	3.75	7.85	962.03	36.43	84.03
J-3880	910	0	0	960.02	21.68	50.02
J-3890	870	1.47	3.09	960.35	39.17	90.35
J-3900	870	1.47	3.09	960.27	39.14	90.27

Q11. Provide all demand studies that Oldham District has conducted since January 1, 2000.

RESPONSE: GRW Engineers, Inc. has prepared a demand study for the District. That report follows:

A. Population Projection

The population of Oldham County is projected to increase from 50,517 in 2003 to as much as 84,432 in 2025. Oldham County population data and projections from the Kentucky State Data Center are presented in Exhibit **11-1**.

The Kentucky State Data Center prepares projections in low, middle, and high growth scenarios. Considering the historical rate of population increase in Oldham County, the high growth scenario will be used for planning purposes.

OCWD had 6,716 single-family residential customers in July 2003, the last year for which Kentucky State Data Center county population estimates are available. The population associated with these customers is estimated to be 19,140 based on 2.85 persons per household as per the 2000 census. There were also seven apartment customers with a total estimated population of about 250 persons. The Kentucky State Data Center estimates the 2003 population of LaGrange to be 5,865. Therefore, OCWD supplied water to about 25,255 persons in Oldham County (about 50% of the county population) in 2003.

OCWD also supplied water to about 300 additional persons through water sales to Henry County Water District in 2003.

The Kentucky State Data Center population projections do not include the 1,900 inmates at the Kentucky State Reformatory. Water demand for the reformatory will be projected based on historical demands because the Kentucky Department of Corrections does not expect a significant increase in the number of inmates during the planning period.

B. Existing and Projected Water Demands

The existing and projected water demands are presented in **Exhibit 11-2**.

The population of the OCWD service area is projected to increase in proportion to the overall increase expected for Oldham County. The projected increase from 2003 to 2025 is 67 percent.

The commercial, educational, farm, and government usages are projected to increase in proportion to the projected population increase. The commercial projection includes growth of water demand from existing industries.

The Oldham County Economic Development Authority (OCEDA) is developing the 1,194 acre Oldham County Economic Development Campus located just southwest of the I-71 interchange at LaGrange. This new development, for which master planning is currently underway, is expected to be comprised of 592 acres commercial, 314 acres residential, 17 acres educational, 25 acres parks,

56 acres roads, and 190 acres greenway. The future water demand for the residential and educational portions of this development are included in the overall projections for residential and educational water use. The future water demand for the commercial portion of this development is 590,000 gallons per day based on a water use of 1,000 gallons per acre per day. This is only half of the per acre water use recommended in the Louisville and Jefferson County MSD Sewer Design Manual because the hilly topography will limit the density of development.

The Kentucky Department of Corrections was contacted and it was determined they have no specific plans to increase the size of the Kentucky State Reformatory. However, they recommended planning for a 20 percent increase in water demand over the planning period. A 20 percent increase in the number of inmates would be about 380 persons.

The OCEDA web site indicates there are 291 acres of available developed industrial sites in the Oldham County Business Park and Westbrook. It also indicates there are three available previously occupied sites totaling 88 acres that have existing buildings. There are also about 200 undeveloped acres located near the intersection of Old LaGrange Road and New Cut Road that are zoned industrial, but there is significant uncertainty that this property will actually be developed for industrial use. The industrial water demand increase is projected to

be 380,000 gallons per day based on 379 developed acres at 1000 gallons per acre per day.

The City of LaGrange water use is projected to increase in proportion to the overall population increase projected for Oldham County (67 percent).

The Henry County Water District (HCWD) service area, for which OCWD provides wholesale water service, is limited and isolated from the rest of the HCWD system because it is in a different pressure zone. The size of the service area is not expected to increase in the future. Due to the close proximity of this area to Oldham County and LaGrange, the water demand is projected to increase at the same rate as the population of Oldham County.

High peaks are reported to be common for OCWD in the summer, apparently due to the increased use of lawn sprinkling systems in new home construction. A peak demand of 1.8 times average demand will be used for projection of peak demands during dry summers.

WITNESS: Steve L. Vogelsberg, P.E., GRW Engineers, Inc.

EXHIBIT 11-1
OLDHAM COUNTY POPULATION PROJECTION
OLDHAM COUNTY WATER DISTRICT

YEAR	HISTORY		PROJECTIONS[3]					
			LOW		MIDDLE		HIGH	
	POPULATION	ANNUAL % INCREASE	POPULATION	ANNUAL % INCREASE	POPULATION	ANNUAL % INCREASE	POPULATION	ANNUAL % INCREASE
1990	33,263[1]	-						
2000	46,178[1]	3.3						
2001	47,991[2]	3.9						
2002	49,192[2]	2.5						
2003	50,517[2]	2.7						
2005			51,637	1.1	52,448	1.9	52,919	2.3
2010			56,766	1.9	58,666	2.3	59,795	2.5
2015			62,028	1.8	65,238	2.2	67,177	2.4
2020			67,684	1.8	72,684	2.2	75,343	2.3
2025			73,859	1.8	80,334	2.0	84,432	2.3
2030			80,171	1.7	88,683	2.0	94,139	2.2

[1]US Census
[2]County Population Estimates: 2000 – 2003 (Kentucky State Data Center Estimates)
[3]Populations 1990-2000, with low, middle and high projections 2005-2030 (Kentucky State Data Center)

EXHIBIT 11-1

EXHIBIT 11-2

EXISTING AND PROJECTED AVERAGE WATER DEMANDS OLDHAM COUNTY WATER DISTRICT

	2003 WATER USE, GALLONS PER DAY	2025 PROJECTED WATER USE, GALLONS PER DAY
Retail		
Residential	1,560,000	2,610,000[1]
Commercial	280,000	470,000[1]
Educational	28,000	50,000[1]
Farm	23,000	40,000[1]
Government	28,000	50,000[1]
Industrial	0[2]	380,000[3]
Commercial	0	590,000[4]
Kentucky State Reformatory	628,000	760,000[5]
Wholesale		
LaGrange	837,000	1,400,000[1]
Henry County Water District	20,000	30,000[1]
Subtotal – Water Sold	3,404,000	6,380,000
Other[6]	426,000	800,000
Total – Water Pumped	3,830,000	7,180,000
Projected Peak Day Demand @ 1.8 Peak Factor		12,930,000
Projected Peak Day Demand, Rounded		13,000,000

[1]Projected to increase at the same rate as the population of Oldham County (67 percent), rounded to the nearest 10,000 gallons per day.
[2]The existing industrial water use is included in the existing commercial water use.
[3]Based on 379 acres at 1,000 gallons per acre per day, rounded.
[4]Based on 592 acres at 1,000 gallons per acre per day, rounded.
[5]Based on a 20 percent increase in water demand as recommended by the Kentucky Department of Corrections.
[6]Flushing, fire protection, main breaks, leaks, etc.

Q12a. State Oldham District's expected maximum day demand and average day demand for each of the next 5 years.

RESPONSE:

Year	Average Demand (mgd)	Maximum Day Demand with Normal Weather (mgd)	Potential Maximum Day Demand with Drought (mgd)
2006	4.3	6.4	7.7
2007	4.4	6.7	8.0
2008	4.6	6.9	8.3
2009	4.7	7.1	8.5
2010	4.9	7.3	8.8

Q12b. State Oldham District's current maximum day demand and the date on which this level was reached.

RESPONSE:

The maximum day pumpage was 6.25 MGD. The maximum day was reached on October 10, 2004. In June 2005, there were around 4 days where the peak day was over 6.0 MGD. The pumpage is the amount of water pumped to the system. Peak day demands are slightly greater because the tanks could not be refilled on peak days.

Q12c. State Oldham District's average day demand for each of the last 5 years.

RESPONSE:

Year	Average Day (mgd)
2001	3.5
2002	3.7
2003	3.6
2004	4.2
2005	4.2

WITNESS: Steve L. Vogelsberg, P.E., GRW Engineers, Inc.

Q13. State why Oldham District is of the opinion that its existing storage facilities are insufficient to meet expected customer demand in the immediate future.

Response:

Effective Storage:

The OCWD currently experiences an average demand over 4.0 mgd. The peak day demands are frequently 1.5 times average. This high peak factor is likely due to the increased use of lawn sprinkling systems in the OCWD.

OCWD currently operates 12 storage tanks along with 2 clearwells at the WTP. The total volume associated with these tanks is around 7.6 MGD. However, some of the storage tanks and standpipes have minimum water levels that must be maintained to provide a minimum system pressure of 30 psi. The table shown in **Exhibit 13-1** summarizes the overall system storage, the storage volume versus demand in each of the OCWD pressure zones, and the effective storage volume based on maintaining a minimum pressure of 30 psi.

The term "Effective Storage" is somewhat subjective. Ten States Standards indicates that the minimum pressure should not drop below 20 psi and that the normal working pressure should not be less than 35 psi. PSC requires a minimum working pressure of 30 psi. Once the pressure drops below 20 psi , a boil water advisory must be issued per the Kentucky Division of Water. Also, Ten State Standards brings volume required for fire protection into the discussion by

indicating that the total storage in the system has to exceed the average daily demand plus that required for fire flows. From the standpoint of practical considerations, most modern appliances and plumbing fixtures do not operate well at pressures below 35 to 45 psi.

With all of the above discussion taken into consideration, it has been assumed that water stored above a ground elevation of 70 feet (30 psi) is considered as Effective Storage. However, it should be noted that hydraulic considerations (turnover, response to fire flow occurrences, system-wide minimum pressures, etc.) governed the sizing and location of recommended storage facilities.

Based on the data presented in the table above and the preceding discussion, OCWD currently has about 2/3 of a day of effective storage. Additional storage is required to provide effective storage of 1 day of average demand. This is particularly true if it is considered that residential fire protection of 700 gpm is a requirement of Oldham County Planning and Zoning prior to the approval of development, even in remote, rural locations.

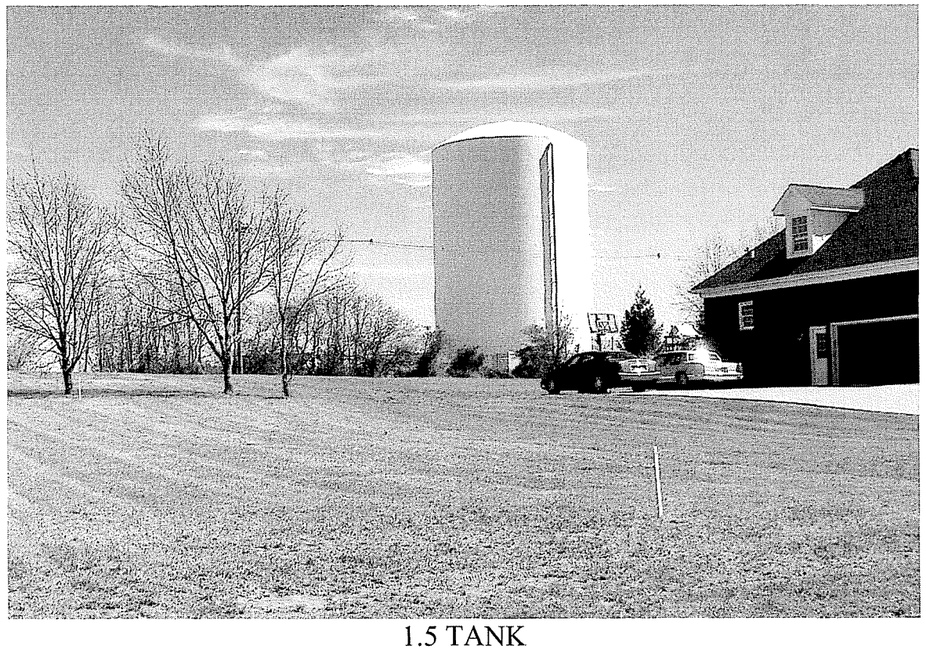
For most water systems, the peak day demand in most years is about 1.25 times the annual average water demand. The peak day demand is OCWD is frequently 1.5 times the annual average demand. OCWD's peak day demands are therefore about 20% higher than those for most water systems. This indicates a need for more than the typical amount of storage.

Other factors that make some standpipe storage less effective:

The two tanks at the Woodlawn Tank site are pictured below. The larger tank (500,000 gallons) has an overflow of 912 feet, while the smaller tank (250,000 gallons) has an overflow of 937 feet. Because these tanks have different overflow elevations, the smaller tank only fills to 912 before the common altitude valve closes. Further, both of the Woodlawn Tanks are located in OCWD's central pressure zone, which currently has a hydraulic grade of 990. Therefore, neither of these tanks has useful storage to benefit the customers in the pressure zone in which they are located.

WOODLAWN TANKS

The 1.5 Tank (shown below) on the west side of the system sits at a much lower overflow elevation than the rest of the system in Pressure Zone 4. Its overflow is at 915 feet, while the rest of the system in that area has an overflow of around 990 feet. This tank is mainly used as a suction reservoir to feed two booster pump stations. During a power failure, when the booster pump stations are out of service, there are just a few customers served by this tank. Therefore, the 1.5 Tank only provides effective storage for a very few customers and does not provide effective storage for the system during a power failure.



1.5 TANK

Impact of a Power Failure at the WTP and Greenhaven Pump Station:

All of the water for OCWD is pumped at both the WTP and the Greenhaven pump station, which are in nearby proximity to each other. If there is a power failure in the WTP/Greenhaven area, the maximum water production rate is reduced to about 1400 gpm (2 MGD) with the standby power generators. The graphs shown as **Exhibit 13-2** show the system under a power failure at the WTP and Greenhaven with and without the 146 Tank. The first graph shows the situation without the 146 Tank, and Centerfield empties around hour 10.

If the 146 Tank is constructed, it will take longer for the OCWD's tanks to empty. The graph on the next page show the rate at which the tank levels drop during a power failure in the WTP/Greenhaven area. The second graph depicted in **Exhibit 13-2** shows the system under a power failure at the WTP and Greenhaven with the 146 Tank in service. The Centerfield Tank finally emptied at around 18 hours. Having the 146 Tank allows about 8 extra hours to restore power before the Centerfield Tank completely empties. Significant power failure occurrences are frequent at the Greenhaven Pump Station.

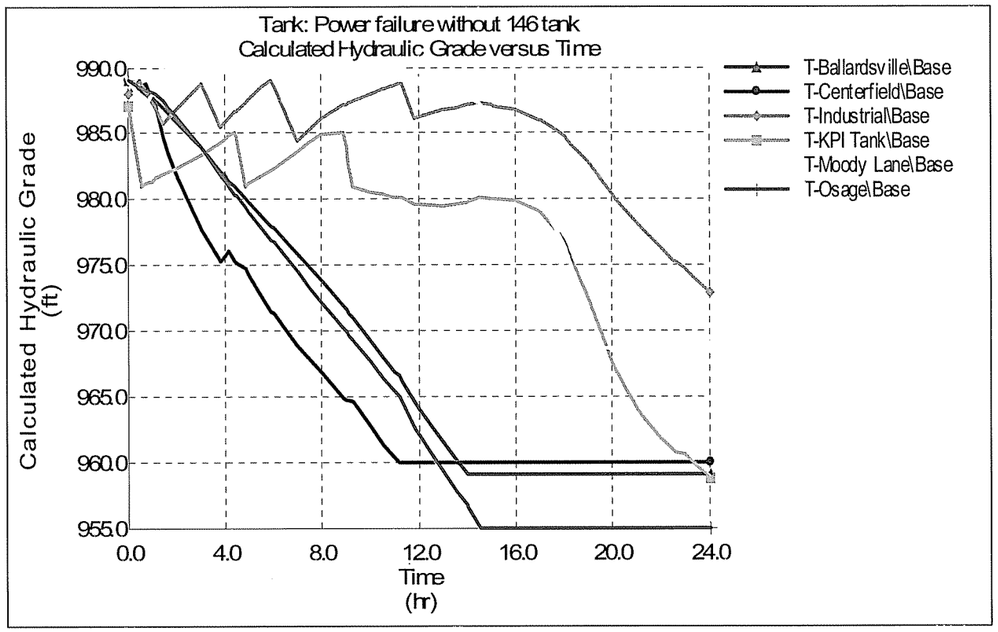
Comprehensive Approach:

The OCWD has been a rural water system with a service area that is experiencing one of the fastest rates of population growth in Kentucky. The service area is rapidly developing into an urban area with a growth rate of 4% per year. The 146 Tank is part of a comprehensive plan for improvements that will maintain a relatively constant hydraulic grade of about 990 feet throughout the central and southern part of the distribution system. This tank, combined with larger transmission mains to reduce the overall friction loss will be very beneficial to the OCWD system. All of the booster pumping stations (except Greenhaven) will be eliminated. The pumping stations require significant maintenance and were originally installed to overcome friction loss in undersized mains. Eliminating the booster stations will result in greater reliability, lower maintenance expense, less power usage, the ability to accommodate current and future growth, and the ability to provide higher flow rates for fire protection. See the map attached as **Exhibit 13-3** for the overall view of the Comprehensive Plan.

WITNESS: Brad Montgomery, P.E., GRW Engineers, Inc.
Phillip Ward, Superintendent, OCWD

EXHIBIT 13-1						
Tank Name	**Type**	**Volume (gal)**	**Overflow Elevation (ft)**	**Base Elevation (ft)**	**Head Range (ft)**	**Effective Storage Volume (gal)**
Pressure Zone 1 (Average Demand 21,600 = gpd)						
Westport	Clearwell	(2) 1,000,000	481.17	-	-	0
Greenhaven	Standpipe	195,000	806	755	51	0
Greenhaven	Standpipe	800,000	806	755	51	0
Pressure Zone 2 (Average Demand = 252,000 gpd)						
Liberty	Elevated	150,000	910	761	25	150,000
					TOTAL =	**150,000**
Pressure Zone 3 (Average Demand = 237,600 gpd)						
KPI	Standpipe	350,000	988	893	95	92,100
					TOTAL =	**92,100**
Pressure Zone 4 (Average Demand = 936,000 gpd)						
1.5	Standpipe	1,500,000	915	830	85	247,058
					TOTAL=	**247,058**
Pressure Zone 5 (Average Demand = 2,174,400 gpd)						
Woodlawn	Standpipe	500,000	912	878	34	0
Woodlawn	Standpipe	250,000	937	882	55	0
Osage	Elevated	750,000	990	825	35	750,000
Industrial Park	Elevated	250,000	989	809	28	250,000
Ballardville	Elevated	250,000	990	855	31	250,000
Centerfield	Elevated	500,000	990	888	30	500,000
Moody Lane	Elevated	100,000	990	880	21	100,000
					TOTAL=	**1,850,000**
TOTAL =		**7.6 MG**				**2.34 MG**

EXHIBIT 13-2


Tank: Power failure without 146 tank
Calculated Hydraulic Grade versus Time
Calculated Hydraulic Grade (ft)
990.0
985.0
980.0
975.0
970.0
965.0
960.0
955.0
0.0
4.0
8.0
12.0
16.0
20.0
24.0
Time (hr)
T-Ballardsville\Base
T-Centerfield\Base
T-Industrial\Base
T-KPI Tank\Base
T-Moody Lane\Base
T-Osage\Base

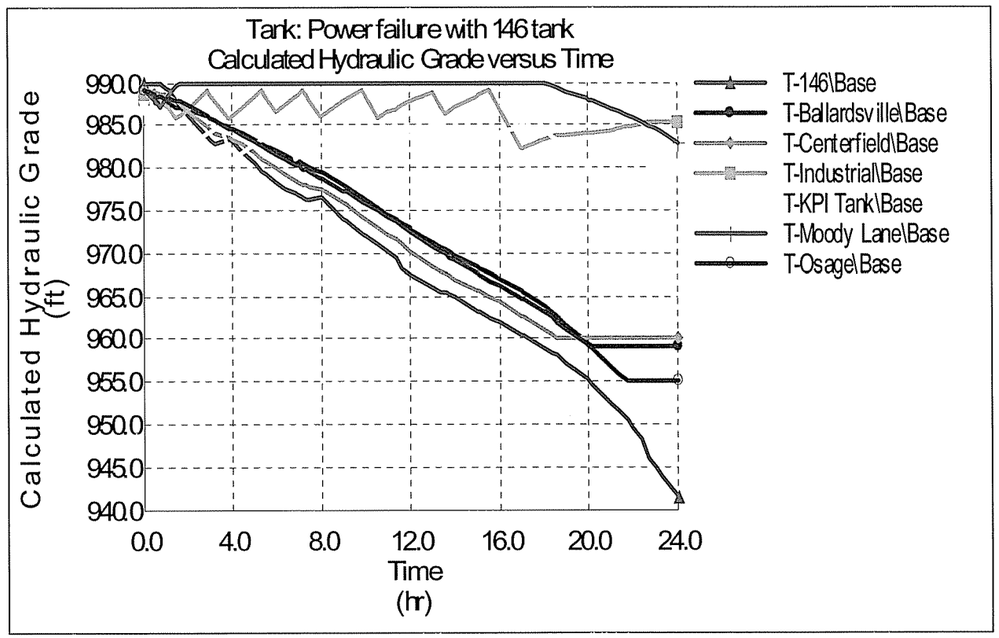

Tank: Power failure with 146 tank
Calculated Hydraulic Grade versus Time
Calculated Hydraulic Grade (ft)
990.0
985.0
980.0
975.0
970.0
965.0
960.0
955.0
950.0
945.0
940.0
0.0
4.0
8.0
12.0
16.0
20.0
24.0
Time (hr)
T-146\Base
T-Ballardsville\Base
T-Centerfield\Base
T-Industrial\Base
T-KPI Tank\Base
T-Moody Lane\Base
T-Osage\Base

EXHIBIT 13-3

SYSTEM IMPROVEMENT MAP

Phase 1 Improvements

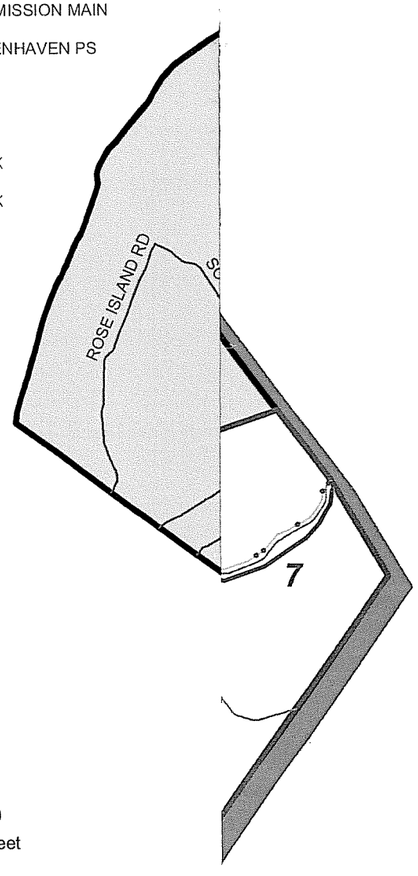
1) PROPOSED 36-INCH MAIN
2) PROPOSED 30-INCH MAIN
3) PROPOSED 1,000,000 GALLON WOODLAWN TANK
4) PROPOSED 24-INCH MAIN
5) PROPOSED 2,000,000 GALLON HWY. 146 TANK
6) PROPOSED 18-INCH MAIN
7) PROPOSED 24-INCH MAIN
8) PROPOSED WATER TREATMENT PLANT EXPANSION
9) PROPOSED UPGRADE TO WELL FIELD - INCLUDING TWO NEW WELLS
10) PROPOSED RAW WATER TRANSMISSION MAIN
11) PROPOSED UPGRADES TO GREENHAVEN PS

Phase 2 Improvei

1) ELIMINATE ALLEN
2) PROPOSED 24-INC
3) PROPOSED 18-INC
4) ELIMINATE 1,500,(GROUND 1,500,00 WITH ELEVATED
5) PROPOSED 18-INC
6) PROPOSED 1,000
7) PROPOSED 12-IN

Phase 3 Improvements

1) PROPOSED 500,000 GALLON TANK
2) PROPOSED 500,000 GALLON TANK
3) PROPOSED 24-INCH MAIN
4) PROPOSED 10-INCH MAIN
5) ELIMINATE OLD STATE ROAD PS
6) PROPOSED 18-INCH MAIN
7) PROPOSED 8-INCH MAIN
8) PROPOSED 18-INCH MAIN
9) PROPOSED TWO NEW CONVENTIONAL WELLS



N

0 4,500 9,000
Feet

GRW Engineers, Inc.

Water Tank Legend

1 -- 1.5 Million Gallon
2 -- Ballardsville
3 -- Centerfield
4 -- Greenhaven (2)
5 -- Industrial
6 -- KPI
7 -- Liberty
8 -- Moody Lane
9 -- Osage
10 -- Woodlawn (2)
11 -- Zhale Smith

Water Pump Station Legend

1 -- Allen Lane
2 -- 1.5 / Industrial
3 -- Greenhaven
4 -- Water Treatment Plant
5 -- Old State Road
6 -- KSR
7 -- Liberty

Explanation

- Phase 3 Proposed Water Tanks
- Phase 3 Proposed Water Mains
- Phase 2 Proposed Water Tanks
- Phase 2 Proposed Water Mains
- Phase 1 Proposed Water Tanks
- Phase 1 Proposed Water Mains
- OCWD Treatment Plant
- Water Tank
- Pump Station
- Junction Node

Existing Water Pipe
DIAMETER

- 3 inch
- 4 inch
- 6 inch
- 8 inch
- 10 inch
- 12 inch
- 14 inch
- 16 inch
- 24 inch
- Road
- OCWD Service Area
- Areas of Oldham County not Serviced by OCWD
- LaGrange Utility Service Area
- Existing Wells

Oldham County Water District

Planned Improvements

EXHIBIT 13-3

Map Document: (I:\3237-23\gis\plan_improvements.mxd) 04/10/2006 -- 03:10:00 AM EM