Appendix WS-1

Potable Water System Study

Jackson Township
Potable Water System Study

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August 10, 2017

Sign-off Sheet

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Approved by _____
(signature)

Mark Smith, P.E.

Stantec

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Executive Summary

The Jackson Township Specific Plan (SP or Project) contains 1391+/- acres and is proposed to be a self-sustaining, mixed use "complete" community, including a broad range of residential uses, employment, retail, supporting uses, recreational open space, and public uses. The Project is located in southeastern Sacramento County, and lies south of the Mather Specific Plan Area, east of Excelsior Road, north of Jackson Highway, and west of Eagles Nest Road, in the Vineyard Community, refer to **Figure 1-1**.

The purpose of this study is to: 1) Define the potable water system infrastructure needs for the Project, 2) Define what delivery system is needed to serve the Project, 3) Analyze the water system for the Buildout and Existing plus Project scenarios relative to the NSA region, and 4) Verify that the proposed water system is compatible with and a subset of the regional improvements as proposed in the *Zone 40 Water System Infrastructure Plan Update (WSIP), September 2016, Brown and Caldwell (B&C), Zone 40 Jackson Township Water Supply Master Plan Amendment (JTWSMPA),* September 18, 2015, B&C. The hydraulic modeling performed in this task includes the analysis of the aforementioned scenarios in order to evaluate system performance and to verify that SCWA's operating criteria will be met from initial development stages through Buildout of the Project.

According to the JTWSMPA, available supplies (consisting of surface water, groundwater, and other sources) will be adequate to meet the Project's annual water demands for normal and dry year conditions, since supplies are shown to exceed NSA Buildout demands (source: JTWSMPA, Tables 7-8 and 7-9). Supply and water treatment Improvements are addressed in the JTWSMPA, and the CIP lists the projects needed to serve new growth regions within the NSA. With an initial phase capacity of 50 MGD, the Vineyard Surface Water Treatment Plant (VSWTP) will be capable of supplying treated water needs of the NSA in the near term.

The SCWA is in the process of completing the Phase A (P-10) NSA Project, which will convert the 30-inch Excelsior main to a treated water supply line (capacity of 15.8 MGD), with deliveries made to the Anatoila Terminal Storage and Pumping facility (Anatolia facility), refer to **Figure 6-1**. The initial phases of the Project will rely on use of existing available storage and pumping capacity in the NSA main zone, which includes the facilities as listed in **Table 2-1** and shown on **Figure 2-1**. At Buildout, the Project will incorporate supply deliveries from the regional 54-inch T-main, which will deliver treated water to the future NSA Terminal Storage and Pumping facility and be distributed through other future transmission mains proposed to serve the NSA.

Initial Project phases are proposed to be served by the extension of two independent transmission mains (T-mains) (north and south) and a T-main extension from the Anatolia Development. One T-main will extend from the Project's east boundary in Kiefer Boulevard to the connection point at the intersection of Sunrise and Kiefer Boulevards. The second T-main will extend from the SP east boundary to the east along Jackson Road and then to the north in Sunrise Boulevard to the connection point at the intersection of Kiefer Blvd. The existing 16-/24-inch loop within the Sunrise-Douglas area will need to be completed back to the Anatolia facility

to maintain adequate deliveries through a looped system to the connection point at the intersection of Sunrise/Kiefer Blvds. (**Figure 6-1**). The looped system will meet SCWA and State CCR Title 22 requirements for a secondary connection to serve the Project under normal operating conditions and in the event of a short-term outage of a supply T-main.

Based on the proposed SP land uses as listed in **Table 3-1**, a total of 6,315 D.U.s are proposed with the Project. Utilizing the Unit Water Demand Factors (UWDF) as developed in the *JTWSMPA, Table 9-10,* the Project is anticipated to have an annual average demand of 2,374.6 AF (including 7.5% system losses). Maximum Day Demands (MDD) and Peak Hour Demands (PHD) of 2,944 and 5,888 gpm respectively, are used in network modeling.

Steady-state water distribution modeling was performed utilizing *H2O Net, V12.5, SP1, Update 2* to size the local mains and to evaluate the capabilities of the Buildout and Existing plus Project systems to meet SCWA's operating criteria. The modeling criteria and assumptions are discussed in Sections 4 and 5 and are based on the more conservative boundary conditions as provided by SCWA and B&C for Buildout simulations.

To satisfy CEQA requirements, the Existing Plus Project Buildout scenario is provided to show how water service could be provided to the SP as a standalone project. Since the Existing Plus Project Buildout scenario is highly unlikely to occur, a more typical development scenario is provided in the *JTWSMPA*. The Existing plus Project scenario reflects a 2013 level of growth within the NSA and Buildout of land within the SP. No demands have been included for the AG area or preserves.

For the Existing Plus Project scenario, additional demands were included in the NSA region, east of Sunrise Blvd., to conservatively reflect conditions when the Anatolia facility is operating at its maximum pumping capacity after the installation of three pumps (15,600 gpm - 6 duty and 1 redundant pump). The addition of three booster pumps at this facility is proposed as a Phase 1 improvement in WSIP Table 13. This approach is anticipated to reflect worst-case pressures at the connection point, prior to implementation of the NSA Phase B project. The Anatolia facility piping manifolds and pump curves are utilized in the Existing plus Project network to enhance model accuracy.

The Existing plus Project modeling results indicate that PHD service pressures will drop to 37.80 psi (D-main) and 40.03 psi (T-main) along the east side of the Project, which meets SCWA's operating criteria. The model results show that adequate fire flow deliveries can be maintained to schools and other parcels (**Figure 7-2**) above the minimum residual pressure requirements for fire flows. Once additional future T-mains are constructed as per the JTWSMPA, the modeling shows that minimum pressures above 40 psi can be maintained under PHD conditions.

The Buildout and Existing plus Project simulations reveal that a 20-/18-inch T-main in Kiefer Blvd., 20-/16-inch T-main in Jackson Road, and 16-inch T-main in Sunrise Blvd. will provide adequate service to the SP and will form the backbone transmission system that will also serve the initial project phases (**Figure 7-1**). This system can be expanded as needed to serve Phases 1–4.

The existing NSA main zone supply and storage facilities have adequate capacity to serve the Existing plus Project scenario (2013) as addressed in Section 6. The Existing plus Project scenario utilizes the full capacity of the Anatolia facility, which is assumed to be upgraded to 7 pumps as per the WSIP. Under this scenario, the NSA main zone pumping facilities will have a total capacity of 32.86 MGD, exceeding the Existing plus Project requirements of 23.28 MGD (**Table 6-2**). Adequate storage capacity (5.8 MG) is provided in the existing NSA main zone to meet the storage requirements of 5.35 MG (**Table 6-4**) for the Existing plus Project growth scenario. This study defers to the WSIP and JTWSMP for timing and implementation of the regional projects needed to increase supply, storage, pumping, and transmission capacity in the NSA region, and additional information is provided in Tables 8-9, B-17, and B-18 of the JTWSMPA.

The Existing plus Project and the NSA buildout modeling of the water transmission lines in Kiefer Blvd and Jackson Road as proposed in the Phase 1 development of the Jackson Township SP shows that the system will provide sufficient service capacity under all service conditions of the SP. However, as development occurs in the SP, other projects may be developing within the NSA zone. SCWA Staff monitoring of development may at some point show the subsequent need to develop new storage reservoirs and pumping facilities in the NSA. Should this condition occur, SCWA will commence on the development of the NSA Terminal Storage and Pumping Facility. This new storage and pumping facility will serve as the ultimate supply for the SP and other projects within the NSA. Therefore, it will be necessary to construct the P4 Eagles Nest Pipeline to extend service to the overall region. This line will be extended from the NSA Terminal Storage and Pumping Facility south through the Mather South SPA to a connection point with the 20 inch transmission main in Kiefer Blvd.

The Buildout runs reveal that 20-inch T-mains in the Kiefer Blvd. and Jackson Road (west of Eagles Nest Road), along with 16-inch T-mains in Grenville Drive, Kiefer Blvd., and Jackson Road (west of Grenville Drive) will suffice in meeting SCWA's operating criteria at Buildout. This scenario reflects completion of the looping mains as called for in the JTWSMPA. Twelve (12)-inch mains are proposed to be looped and connected back to the T-mains to form a reliable grid system. The proposed Buildout Water System is shown on **Figures 7-2 & 7-3** and described in Section 7.

Proposed Deviations from the WSIP and JTWSMPA

The water systems and modeling criteria as proposed in this study are a subset of and consistent with those as proposed in the WSIP and JTWSMPA, except for the following:

1. The 18-inch T-main in Kiefer Blvd., between Eagles Nest Road and Sunrise Boulevard as shown on Figure 2-2, is proposed to be shifted to the north to Kiefer Blvd. This will maintain the T-main within an established roadway corridor rather than be aligned through a proposed future development. The timing for dedication of public Rights-of-Way for water main installation within the New Bridge Project is unknown.
2. The water demands as shown in Table 3-1 are within 15% of those listed in the JTWSMPA for buildout of the SP.

Abbreviations

ac.	Acre
ADD	Average Day Demands
AF or ac-ft	acre-feet
ac-ft./yr or AF/yr	acre-feet per year
Agency	Sacramento County Water Agency
CIP	Capital Improvement Plan
City	City of Sacramento
County	Sacramento County
CSA	Central Service Area
CVP	Central Valley Project
DU	dwelling unit
Fps	feet per second
ft.	Feet
fps or ft/Sec	feet per second
Gpd	gallons per day
gpm	gallons per minute
HDR	High Density Residential
HGL	hydraulic grade line
HL	head loss
JTWSMPA	Jackson Township Water Supply Master Plan Amendment
l.f.	lineal feet
Lbs	Pounds
LDR	Medium Density Residential

MDD	Maximum Day Demands
MG	million gallons
MGD	million gallons per day
M&I	municipal and industrial
NSA	North Service Area
P/QP	Public/Quasi Public
PF	Peaking Factor
PL	Public Law
PHD	Peak Hour Demand
Psi	pounds per square inch
Psf	pounds per square foot
SB	Senate Bill
SCWA	Sacramento County Water Agency or Agency
Sec or S	Second
s.f.	square feet
TC	Town Center
USB	Urban Services Boundary
UWDF	Unit Water Demand Factor
WMP	Water Master Plan
WSMP	Water Supply Master Plan
WSIP	Was Supply Infrastructure Plan
WTP	Water Treatment Plant
Zone 40	Sacramento County Water Agency Zone 40

1.0 INTRODUCTION

1.1 PROJECT OVERVIEW

The Jackson Township Specific Plan (Project, Specific Plan, or SP) contains approximately 1391+/- acres. The Project is proposed to be a self-sustaining, mixed use "complete" community, including a broad range of residential uses, employment, retail, supporting uses, recreational open space, and public uses. Development of the land use plan is estimated to result in approximately 6,415 dwelling units and a potential range of 1.3 to 2.9 million s.f. of employment, commercial services, and public land uses.

1.2 STUDY AREA

The Project is located in southeastern Sacramento County, and lies south of the Mather Specific Plan Area, east of Excelsior Road, north of Jackson Highway, and west of Eagles Nest Road in the Vineyard Community. Refer to **Figure 1-1** below for a map of the Specific Plan Area.

Figure 1-1 Jackson Township Location Map

The existing land within the SP is primarily undeveloped and vacant, or is used for cattle grazing. The terrain within the SP gently slopes from the east to the west. Higher existing ground elevations of up to around 138 feet are located along the east side of the SP with low elevations of 74 to 90 feet on the west side of the Project along Excelsior Road.

1.3 PURPOSE

The purpose of this study is to: 1) Define the potable water system infrastructure needs for the Project, 2) Define what delivery system is needed to serve the Project, 3) Analyze the water system for the Buildout and Existing plus Project scenarios relative to the NSA region, and 4) Verify that the proposed water system is compatible with and a subset of the regional improvements as proposed in the *Zone 40 Water System Infrastructure Plan Update (WSIP), September 2016, Brown and Caldwell (B&C), Zone 40 Jackson Township Water Supply Master Plan Amendment (JTWSMPA),* September 18, 2015, B&C. The hydraulic modeling performed in this task includes the analysis of the aforementioned scenarios in order to evaluate system performance and to verify that SCWA's operating criteria will be met from initial development stages through Buildout of the Project.

1.4 OVERALL SYSTEM PLANNING ASSUMPTIONS

Various overall water system planning assumptions were made in this study, which are listed as follows:

- Only potable water system facilities are evaluated in this study. This study does not address non-potable or recycled water systems.
- As per SCWA requirements, the water facilities at Buildout shall maintain consistency with the NSA regional improvements as identified in the WSIP and JTWSMPA. Regional improvements or other alternatives were not evaluated in this study.
- As per SCWA letter, dated July 6, 2016, the SP will be served with water delivered from the Anatolia Terminal Storage and Pumping facility (Anatolia facility), and the connection to the existing system will be at the intersection of Kiefer and Sunrise Boulevards.
- The Vineyard Surface Water Treatment Plant (VSWTP) will provide surface water deliveries to the NSA, and its 50 MGD Phase 1 capacity will be adequate to serve the Project for the phases as identified in the JTWSMPA.
- SCWA is completing the Phase A (P-10) NSA Project to convert the 30-inch Excelsior raw water line to a treated water main, so that treated surface water deliveries can be made from the VSWTP to the Anatolia facility for use in the NSA.

- The SCWA plans to implement improvements to its NSA supply system prior to reaching capacity of the existing 30-inch Excelsior main, which is indicated to have a capacity of 15.8 MGD in the JTWSMPA.

- A secondary connection is required to in order to provide a reliable system meeting SCWA, Blue Book, and CCR Title 22 requirements for new water systems. The secondary connection will supply the Project under normal as well as emergency conditions, during a short-term T-main outage or if a T-main is removed from service for maintenance or repair.

- As per SCWA, Buildout systems modeling is to be based on the more conservative boundary conditions (starting pressures at the connection points) at the two locations as provided by SCWA (refer to **Figure 2-2**) or as provided by B&C for these locations (refer to Appendix A.6).

- The Existing plus Project simulations incorporate the Anatolia pump station piping manifolds, reservoir(s), and pump curves in order to more accurately reflect the existing facility and the flows/pressures that can be maintained at the connection point on Kiefer/Sunrise Boulevards.

- Connections to the existing Mather system are not envisioned with this Project, and flows to/from the Mather system or to projects located west of Excelsior Road are not included in the analyses. It is assumed that the system will ultimately be connected to the Mather system as per the JTWSMPA by others.

2.0 BACKGROUND

2.1 PREVIOUS STUDIES

The SCWA authorized the preparation of the *Jackson Township - Zone 40 Water Supply Master Plan Amendment (JTWSMPA)* (Brown and Caldwell–B&C, September 18, 2015) in order to address the potable water supply facility component of the Jackson Township Project. The JTWSMPA is a comprehensive document that includes information relative to water demand projections, adequacy of water supplies and treatment facilities, proposed water system facilities, and costs for the three scenarios as presented in the report. The major regional water supply, storage, and transmission facilities that are needed to serve the NSA, as well as the SP, are identified in the B&C, Sept. 18, 2015 report.

The past water system studies that are applicable to this effort are listed as follows:

- *Jackson Township - Zone 40 Water Supply Master Plan Amendment (JTWSMPA)* (Brown and Caldwell - B&C, September 2015)
- Zone 40 Water System Infrastructure Plan Update (WSIP) (B&C, September 2016)
- Zone 40 Water Supply Master Plan (MWH, February 2005)
- Zone 40 Water System Infrastructure Plan (MWH, April 2006)

2.2 EXISTING NSA WATER SYSTEM FACILITIES

2.2.1 Existing NSA Storage and Pumping Facilities

The NSA region currently includes several existing storage and pumping facilities as listed below in **Table 2-1**, which are capable of serving new projects within the NSA.

Table 2-1 Existing NSA Storage and Pumping Facilities

Name	Total Volume	Pumping Capacity	Pressure Zone
	(MG)	(mgd)	
Mather 1 Main Base Tank	1.0	5.2	NSA Main Zone
Mather 2 Elevated Tank @ Mather Airport	0.3	0	NSA Main Zone
Mather Housing	0.5	5.2	NSA Main Zone
Anatolia facility[2]	4.0	22.5	NSA Main Zone
North Douglas	3.0	19.4	NSA Upper Zone
Totals	**8.8**	**52.3**	

1. Source: JTWSMPA
2. Anatolia facility is included in the above totals based on completion of the Phase A Project and installation of 3 future pumps to achieve the buildout capacity as listed.

The VSWTP currently has 20 MG of storage and a pumping capacity of 75 MGD to serve the Zone 40 system as per JTWMP, Table 2-1. As currently configured, most of this capacity will serve the CSA region. Upon completion of the Phase A improvements, storage and pumping capacity at the VSWTP will assist serving the NSA region through supply deliveries in the 30-inch Anatolia pipeline to the Anatolia Terminal Storage and Pumping facility.

2.2.2 Existing NSA Pipelines

SCWA's system has been recently expanded to serve the Sunrise-Douglas SPA and other projects along the Douglas and Sunrise Boulevard corridors. The existing transmission and distribution systems in this region are generally proposed to be looped and tied to the Anatolia facility at Buildout. A connection will be made to the North Douglas Storage and Pumping facility located in the NSA upper zone, which will permit flows into the main NSA main zone under short-term fire flow or emergency conditions. SCWA's existing NSA facilities are shown on **Figure 2-1**.

The 16-inch main in Sunrise Boulevard has been extended from the Anatolia facility to the south to Kiefer Blvd., and a 24-inch main in Kiefer has been installed between Sunrise Blvd. and Rancho Cordova Parkway. The 24-inch main then extends north in Rancho Cordova Parkway to a point just south of Chrysanthy Blvd. (**Figure 2-2**).

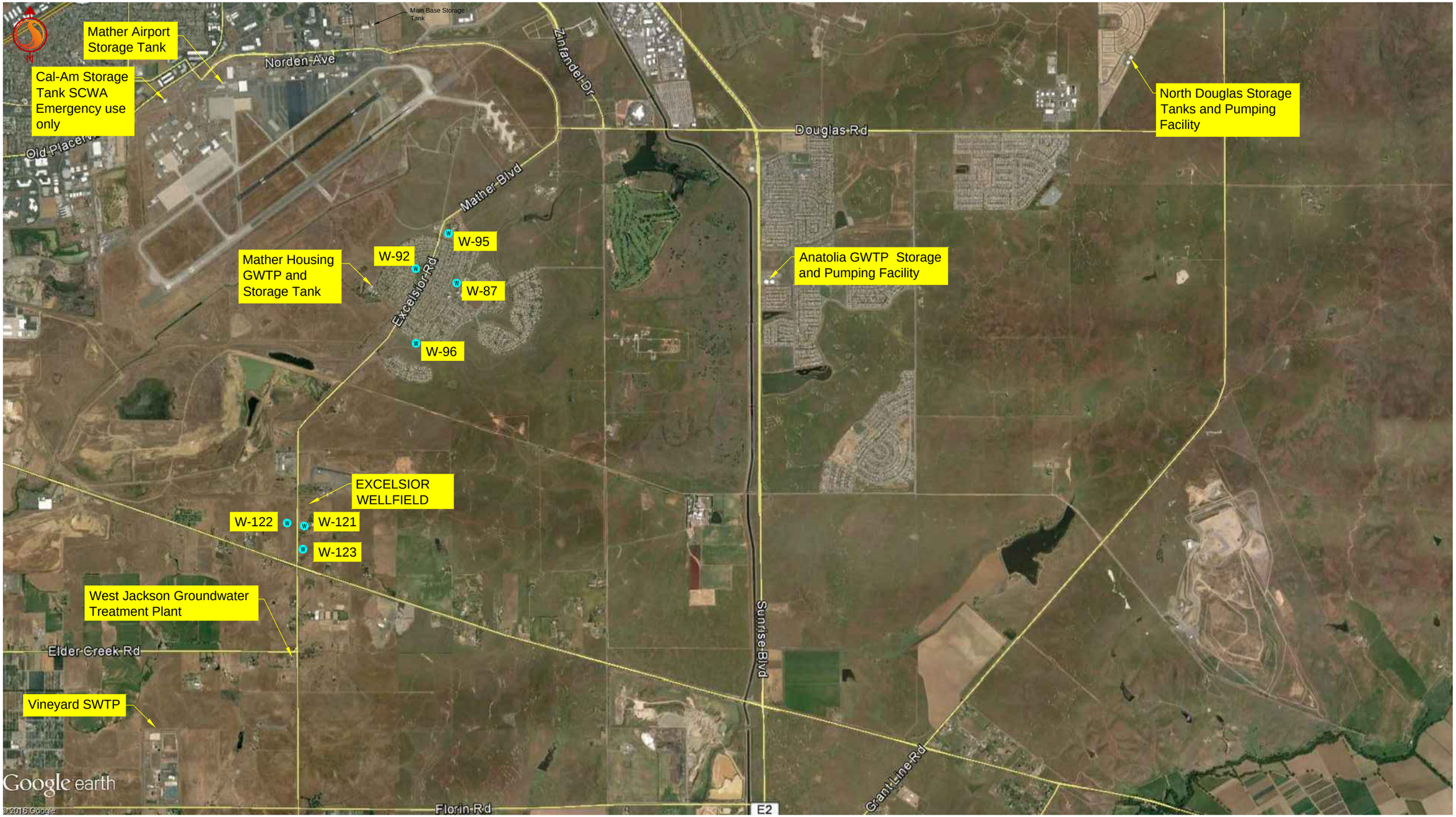
As part of the Phase A Project, a 66-inch diameter main has been constructed from the VSWTP to the east in Florin Road to Excelsior Road, and a large diameter main was placed in Excelsior Road to connect to the 30-inch Anatolia supply main. SCWA staff indicated that they're securing the necessary permits, and the project is close to being put into service. For the purposes of this study, this project is assumed to be in operation.

The Mather system has generally been designed as a stand-alone water system with a grid of smaller 6- to 12-inch mains with its own supply, treatment, storage, and pumping systems and is limited in its ability to supply any new growth. Cal Am has a 3 MG storage tank in the NSA that is available to SCWA for emergency purposes through an intertie to the Mather system. Additionally, a 16-inch main has been constructed to interconnect the Mather Housing area with the Main Base system.

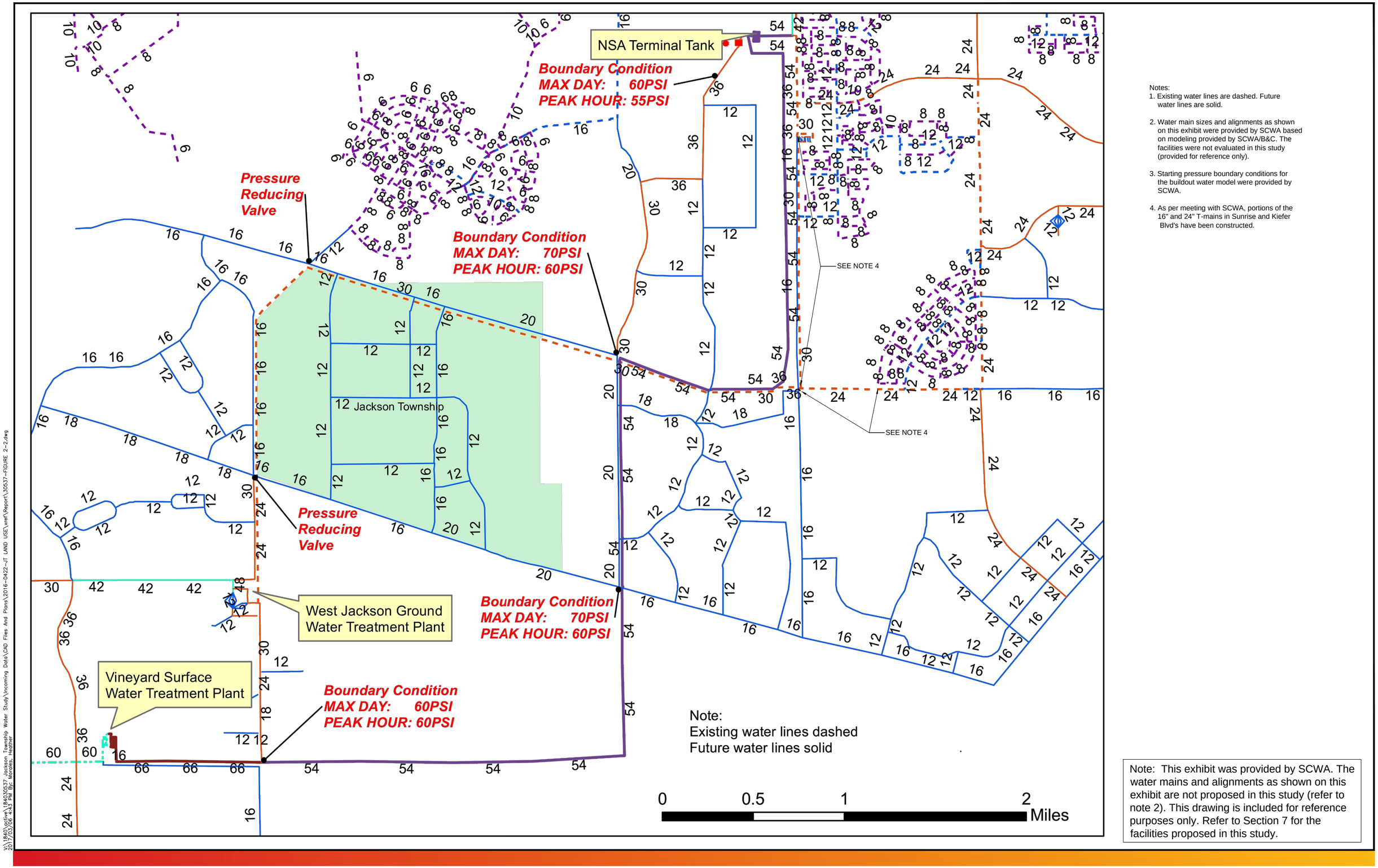
2.3 SETTING/BACKGROUND

2.3.1 Zone 40 Service and NSA Service Areas

The Jackson Township SP is located within the Zone 40 service area of the Sacramento County Water Agency (SCWA) and the North Service Area (NSA). The NSA region includes the old Mather and Sunrise Corridor systems, Sunridge, and the new growth regions located north of Jackson Road and east of Excelsior Road.



Jackson Township Water Study
Existing Water System Facilities
Figure 2-1



Notes:
1. Existing water lines are dashed. Future water lines are solid.
2. Water main sizes and alignments as shown on this exhibit were provided by SCWA based on modeling provided by SCWA/B&C. The facilities were not evaluated in this study (provided for reference only).
3. Starting pressure boundary conditions for the buildout water model were provided by SCWA.
4. As per meeting with SCWA, portions of the 16" and 24" T-mains in Sunrise and Kiefer Blvd's have been constructed.

Note: This exhibit was provided by SCWA. The water mains and alignments as shown on this exhibit are not proposed in this study (refer to note 2). This drawing is included for reference purposes only. Refer to Section 7 for the facilities proposed in this study.

SCWA System Map
Existing Water System Mains & Buildout Boundary Conditions
Figure 2-2

Y:\1840\active\184030537 Jackson Township Water Study\Incoming Data\CAD Files And Plans\2016-0422-JT LAND USE\xref\Report\30537-FIGURE 2-2.dwg
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2.3.2 NSA Water Supplies

The NSA region has been supplied with groundwater that was treated at the Anatolia GWTP and at other facilities. SCWA indicated that the Phase A (P-10) NSA Project is nearing completion. Once this project has been completed, surface water treated at SCWA's newly constructed Vineyard Surface Water Treatment Plant (VSWTP) will be delivered directly to the Anatolia storage tanks, and the facility will function as a terminal reservoir and pumping facility. The Anatolia groundwater treatment plant will be disconnected, and Excelsior Wells 1-3 will be placed in hibernation.

According to the JTWSMPA, the Phase A Project will allow up to 11,000 gpm (15.8 MGD) of supply to the Anatolia facility to serve the NSA main zone for several years until demand grows beyond the capacity of the pipeline. This flow will be available to meet maximum day (supply) demands in the system. SCWA will need to continue to make upgrades to its system to maintain proper levels of service within the NSA before the capacity of the 30-inch Excelsior pipeline is reached in order to avoid limitations in growth.

The current capacity of the VSWTP is 50 MGD with an ultimate capacity of 100 MGD. The plant's treatment processes include conventional surface water treatment and a large clear well. The plant has adequate capacity to supply the NSA and CSA regions in the near future. As per the JTWSMPA, surface water deliveries to the SP will be made from the VSWTP via the Anatolia Terminal Storage and Pumping facility. According to the JTWSMPA, available water supplies (consisting of surface water, groundwater, and other sources) will be adequate to meet the Project's annual water demands for normal and dry year conditions, since supplies are shown to exceed Buildout demands (source: JTWSMPA, Tables 7-8 and 7-9). Supply and water treatment Improvements are addressed in the JTWSMPA CIP, which includes the projects needed to serve new growth within the NSA through Buildout of the SP.

The Mather Housing area is currently supplied by three wells and a GWTP. SCWA has a memorandum of understanding with the Golden State Water Company (GSWC) to purchase up to 1,000 gpm of water through the Mercantile Intertie, which will serve to provide water to the NSA system in the event of an emergency.

2.3.3 System Development Background

Once the demand for treated surface water in the NSA exceeds the capacity of the 30-inch Excelsior pipeline, a new supply pipeline will need to be constructed. The new pipeline is envisioned to be part of Phase B NSA Project (S-1), which includes a 54-inch main extension from the VSWTP to the NSA Terminal Storage and Pumping facility and other transmission main improvements as shown on Figure 9-9 of the JTWSMPA.

The NSA S-1 Terminal Storage and Pumping facility is shown to be located just west of Sunrise Boulevard, between the Anatolia facility and Douglas Boulevard. The JTWSMPA indicates that there could be alternatives whereby additional storage facilities could be located in the

southern portions of the NSA to be supplied off of either the Phase A or B NSA pipelines that would assist in meeting the maximum day and peak hour demands in lieu of having the water delivered all the way to the NSA Terminal Storage and Pumping facility; however, regional facility improvements such as this option were not evaluated in this study.

Under Buildout of the NSA, the SP transmission system will interconnect with T- and D-mains proposed along and east of Eagles Nest Road and north of Kiefer Blvd. The 54-inch SCWA regional Phase B (S-1) pipeline is proposed in the JTWSMPA to extend along Eagles Nest Road along the east side of the Project and to the north of Kiefer Blvd. to deliver treated water to the NSA Terminal Storage and Pumping facility.

As per initial meetings between the Proponent and the SCWA, Agency staff determined that the SP should be served with deliveries from the Anatolia Terminal Storage and Pumping facility, which will necessitate the completion of the 16-/24" loop to the facility (Project P-5 or P-9) and the extension of off-site water main(s) from SCWA's existing system located at the intersection of Sunrise and Kiefer Boulevards to the Project.

In order to meet SCWA and State CCR Title 22 requirements, a second connection is included to provide normal and emergency service to the Project in the event of a short-term outage, or if a section of T-main needs to be maintained or repaired. This will be provided by the looped and dual feed T-main system.

3.0 PLANNING, LAND USES, AND WATER DEMAND PROJECTIONS

3.1 PROPOSED LAND USE PLAN

The Jackson Township Specific Plan is proposed as a self-sustaining, mixed use "complete" community including a broad range of residential uses, employment, retail and supporting uses, recreational, open space, and public uses, which are in symmetry and balance with the surrounding and planned land uses. The land use plan is estimated to result in approximately 6,415 dwelling units and a potential range of 1.3 to 2.9 million square feet (msf) of employment, commercial services and public land uses.

3.1.1 Buildout Land Uses

The Jackson Township SP is designated by the Sacramento General Plan with land use designations of Extensive Industrial and General Agricultural. The Jackson Township application was accepted and initiated by the Sacramento County Board of Supervisors on June 19, 2012. The SP is proposed to have a total of 6,315 D.U.s with a total acreage of 1,391 acres. The Proposed Land Use Plan acreages are listed in **Table 3-1**, and the proposed Land Use plan is shown on **Figure 3-1**.

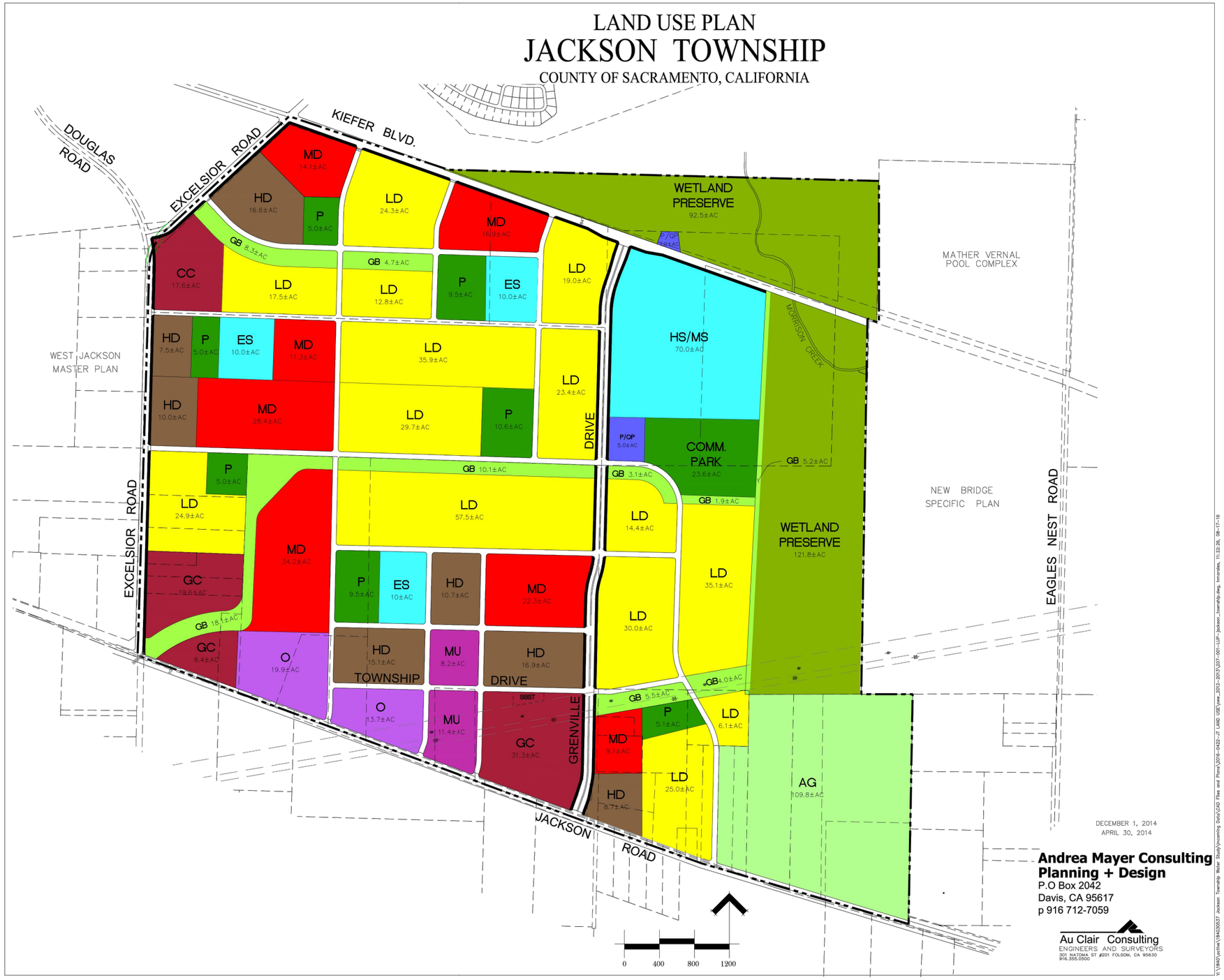
3.1.2 Phasing Plan

The proponent has developed a phasing plan for Jackson Township, which includes primary Phases 1-4. The initial Phase 1 is broken into two increments, which include: Phase 1A - LDR, MDR, HDR, Parks, and some Commercial. The High School is proposed in Phase 1B. Other phases are shown on the attached *Applicant Phasing Plan for Jackson Township* (Draft); refer to **Figure 3-2**. The system is anticipated to generally develop from the east side to the west with Phase 1 identified in the eastern and southern regions of the SP. Service to initial development phases is discussed in Section 6.

3.2 WATER DEMAND DEVELOPMENT

This study utilizes a land use based methodology to estimate the gross water demands for the Project and is consistent with past studies for areas within the NSA. The gross average annual demands are developed based on multiplying the land use acreage by a Unit Water Demand Factor (UWDF), which is expressed in terms of AF per acre per year (AF/ac/yr).

This methodology maintains consistency with the UWDFs as listed in the *JTWSMPA* for the projection of annual demands used to evaluate water consumption, supply, storage, and treatment facilities. The acres of each land use, UWDFs, and Average Annual Demands are listed below in **Table 3-1**.

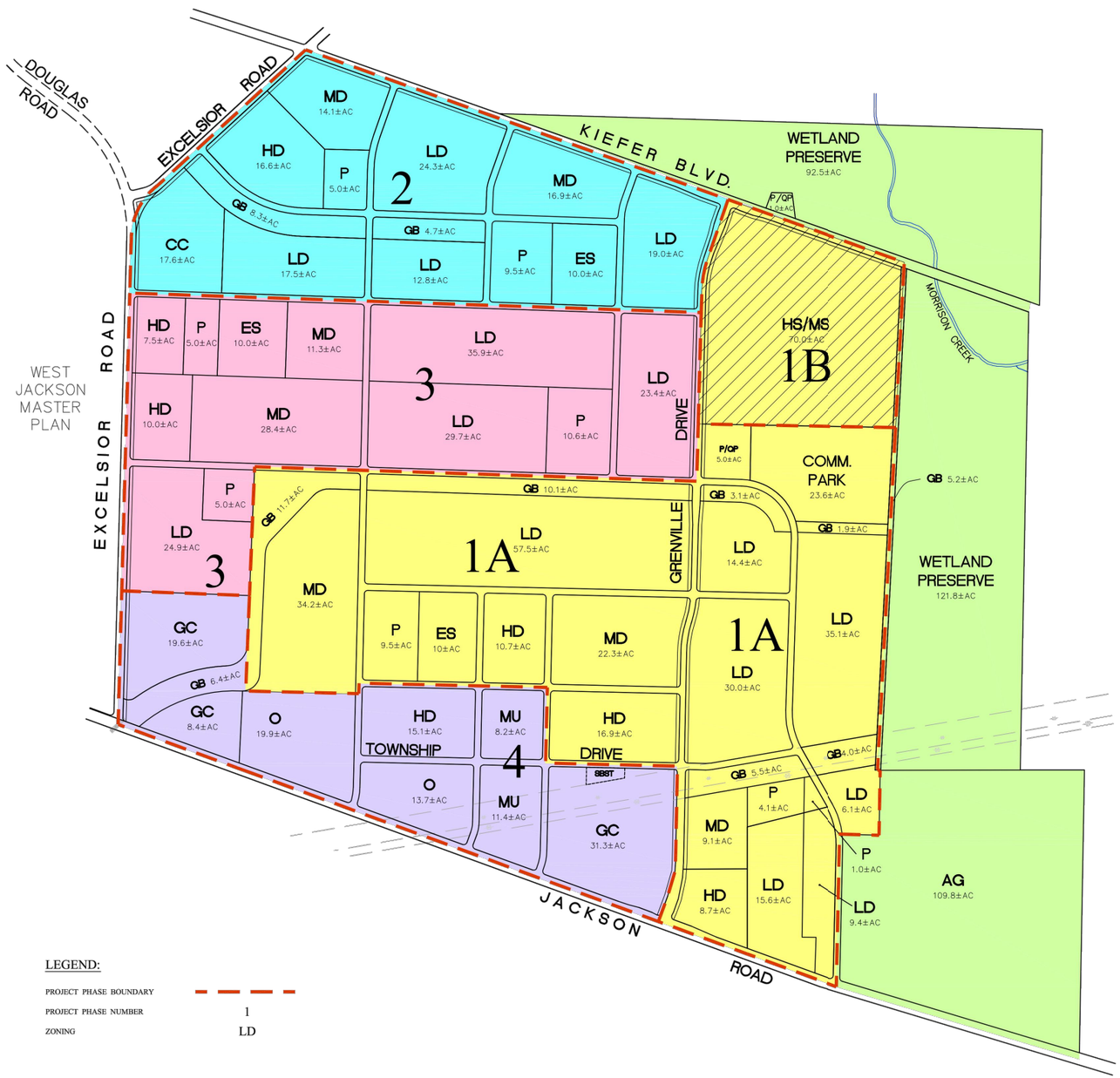


Jackson Township Water Study
Land Use Map
Figure 3-1

PHASING AREAS

JACKSON TOWNSHIP

COUNTY OF SACRAMENTO, CALIFORNIA



LEGEND:

PROJECT PHASE BOUNDARY

PROJECT PHASE NUMBER 1

ZONING LD

JACKSON TOWNSHIP PHASING DYNAMIC DISTRICT SUMMARY

PHASE	D.O.T. PHASE	ZONING															
		LD ACRE	LD UNIT	MD ACRE	MD UNIT	HD ACRE	HD UNIT	ES	HS/MS	P	GC	CC	MU	PQP	O	WL/ AG	TOTAL
1A	3	0	0	0	0	0	0	0	0	23.6	0	0	0	5.0	0	0	28.6
1A	5	57.5	345	56.5	735	10.7	267	10.0	0	9.5	0	0	0	0	0	0	149.3
1A	6	79.5	477	0	0	0	0	0	0	0	0	0	0	0	0	121.8	206.5
1A	8	31.1	187	9.1	118	8.7	217	0	0	5.1	0	0	0	0	0	0	55.1
1A	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	109.8	109.8
1A	12	0	0	0	0	16.9	422	0	0	0	0	0	0	0	0	0	16.9
1B	3	0	0	0	0	0	0	0	70.0	0	0	0	0	0	0	92.5	162.5
2	1	17.5	105	14.1	183	16.6	415	0	0	5.0	0	17.6	0	0	0	0	70.8
2	11	56.1	337	16.9	220	0	0	10.0	0	9.5	0	0	0	0	0	0	92.5
3	2	89.0	534	0	0	0	0	0	0	10.6	0	0	0	0	0	0	99.6
3	4	24.9	149	0	0	0	0	0	0	5.0	0	0	0	0	0	0	29.9
3	10	0	0	39.7	516	17.5	438	10.0	0	5.0	0	0	0	0	0	0	72.2
4	4	0	0	0	0	0	0	0	0	28.0	0	0	0	0	0	0	28.0
4	7	0	0	0	0	15.1	378	0	0	0	0	0	0	0	33.6	0	48.7
4	12	0	0	0	0	0	0	0	0	0	31.3	0	19.6	0	0	0	50.9
TOTAL		355.7	2,134	136.3	1,772	85.5	2,137	30.0	70.0	73.7	59.3	17.6	19.6	5.0	33.6	324.1	1,221.3

APPLICANT DYNAMIC MODEL PHASING

JACKSON TOWNSHIP

COUNTY OF SACRAMENTO, CALIFORNIA

FEBRUARY 19, 2016

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Planning + Design
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ENGINEERS AND SURVEYORS
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Jackson Township Water Study
Phasing Plan
Figure 3-2

Table 3-1 Land Use and Annual Average Demand Projections (Overall Project)

Land Use	Abbr.	Use	Avg. Density	D.U.	UWDF	Annual Demand
		Acres	Units/ac.	Units	AF/ac./yr.	AF
Low Density Residential	LD	353.1	6	2118.6	2.13	752.10
Medium Density Residential	MD	158.4	13	2059.2	2.44	386.50
High Density Residential	HD	85.5	25	2137.5	3.33	284.72
General Commercial	GC	39.7			2.02	80.19
Community Commercial	CC	17.6			2.02	35.55
Mixed Use	MU	19.6			2.15	42.14
Office	O	33.6			2.02	67.87
Fire Station/Community Center	P/QP	5.0			0.81	4.05
High School/Middle School	HS/MS	70.0			2.80	196.00
Elementary School	ES	30.0			2.80	84.00
Community Park	CP	23.6			2.80	66.08
Neighborhood Park	P	54.7			2.80	153.16
Wetland Preserve	OS	225.2			0.00	0.00
Greenbelt/Drainage Corridor	OS	59.1			0.00	0.00
Landscape Corridor	OS	14.5			2.80	40.60
Detention Basin	OS	3.2			0.00	0.00
Agriculture[5]	AG	109.3			0.00	0.00
Primary Roadways	RW	88.8			0.18	15.98
Subtotals		**1390.9**		**6315**		**2208.94**
Water Loss (7.5%)						**165.68**
Total						**2374.62**

1. Land use designations, density, acreage, and D.U. estimates were obtained from Table 1 of the *Jackson Township Specific Plan – Applicant Prepared Project Description, Revised 4-11-13.*
2. Population calculation is 6,315 D.U. x 2.64 pph, or 16,672 total.
3. UWDFs are consistent with those listed in Table 9-10 of the *JTWSMPA*.
4. School UWDF is assumed to be similar to Public Recreation use.
5. A demand of 0 AF is assigned to the AG property.

The SCWA conducted an analysis of metered residual connections in Zone 40 and developed UWDFs for rural residential, single family, multi-family low density, and multi-family high density uses for the years 2005 through 2012 (SCWA, 2013). The analysis shows a reduction in the UWDFs since the 2005 work was completed. The results show that potable water use has trended down in this time period.

Based on the assumed UWDFs and the Land Use plan, the Project is projected to have a total annual demand of 2,374.62 AF (2.12 MGD), including system losses, to serve an estimated population of 16,672. This equates to a MDD and PHD of 4.24 and 8.48 MGD respectively. The above projection is within 15% of that listed for Jackson Township in Table 9-10 of the *JTWSMPA*.

3.3 PEAKING FACTORS

Maximum daily demands are typically used to determine supply and production requirements, and a maximum day to average day demand factor of 2.0 is assumed. Peak hour demand projections are typically used for sizing pipelines and booster pump facilities, and a peak hour to maximum day demand factor of 2.0 is assumed. These system peaking factors are consistent with those as identified in the JTWSMPA.

3.4 WATER DEMAND PROJECTIONS USED IN HYDRAULIC MODELING

The Average Day Demand (ADD), Maximum Day Demand (MDD), and Peak Hour Demand (PHD) projections are listed below in **Table 3-2** and are based on the information contained in **Table 3-1** and the peaking factors as identified in Section 3.3.

Table 3-2 ADD, MDD, and PHD Projections (Buildout)

Land Use	Abbr.	Annual Demand w/7.5% Losses	ADD	MDD	PHD
		AF/yr.	gpm	gpm	gpm
Low Density Residential	LD	808.51	501.21	1002.42	2004.84
Medium Density Residential	MD	415.49	257.57	515.14	1030.28
High Density Residential	HD	306.07	189.74	379.48	758.96
General Commercial	GC	86.20	53.44	106.88	213.76
Community Commercial	CC	38.22	23.69	47.38	94.76
Mixed Use	MU	45.30	28.08	56.16	112.32
Office	O	72.96	45.23	90.46	180.92
Fire Station/Community Center	P/QP	4.35	2.70	5.40	10.80
High School/Middle School	HS/MS	210.70	130.62	261.24	522.48
Elementary School	ES	90.30	55.98	111.96	223.92
Community Park	CP	71.04	44.04	88.08	176.16
Neighborhood Park	P	164.65	102.07	204.14	408.28
Wetland Preserve	OS	0.00	0.00	0.00	0.00
Greenbelt/Drainage Corridor	OS	0.00	0.00	0.00	0.00
Landscape Corridor	OS	43.65	27.06	54.12	108.24
Detention Basin	OS	0.00	0.00	0.00	0.00
Agriculture	AG	0.00	0.00	0.00	0.00
Primary Roadways	RW	17.18	10.65	21.30	42.60
Totals		**2374.62**	**1472.08**	**2944.16**	**5888.32**

1. UWDFs are consistent with those listed in Table 9-10 of the *JTWSMPA with exceptions as listed in* ***Table 3-1***.
2. Annual average and ADD projections include 7.5% system losses.

4.0 WATER SYSTEM PLANNING CRITERIA

4.1 SCWA WATER SYSTEM OPERATING CRITERIA

The SCWA has established minimum water system operating criteria in order to maintain an appropriate level of service to customers within new growth areas. SCWA's operating criteria are listed in the Sacramento County Development Standards, the JTWSMPA, and the WSIP, in Table 5-14.

4.1.1 General System Criteria and Assumptions

The general system operating criteria assumed for this study are listed as follows:

- Water systems shall have a minimum of two supply connections, according to County Standards, the Blue Book, and CCR Title 22 requirements. This will provide redundancy in the event of a short-term outage or shut-down of a water main for repair/maintenance.
- Minimum system pressures during peak hour demand (PHD)(normal operating conditions) shall be 35 psi and 40 psi for D-mains and T-mains respectively.
- Maximum system pressures shall not exceed 65 and 75 psi for D-mains and T-mains respectively, except under special occurrences as noted herein. Pressures that exceed 65 psi shall be equipped with a pressure reducing valve (PRV) on each service connection.
- The required fire flow is to be provided under the maximum daily demand scenario at a minimum residual pressure of 25 psi and 20 psi for T-mains and D-mains respectively at the hydrant (including hydrant losses with all pipes on-line under normal conditions).
- Maximum velocities for D- and T-mains shall not exceed 5 fps under maximum day demand and 7 fps under peak hour demand conditions. Maximum velocities during maximum day demand plus fire flow conditions shall not exceed 10 fps.
- Maximum head loss shall be in the range of 3 to 5 feet per 1,000 feet of main.

4.2 FIRE FLOW ASSUMPTIONS

The water system must be sized to provide adequate fire flows at minimum residual pressures to all regions of the Project. The SP is located within the Sacramento Metropolitan Fire District (SMFD). The fire flows required by the SMFD are typically established by requirements in the Uniform Building Code (UBC) standards, the Uniform Fire Code (UFC), State, and local district requirements. UFC fire flow requirements are based on the size, type, exposure, and materials of

construction of each structure. The UBC now requires sprinklers within new residential structures, which became effective January 1, 2011.

SCWA typically requires water systems serving very large regions to be capable of supplying fire flows to two simultaneous 3,000 gpm fire flows or a single higher fire flow (based on land use) at Buildout. For Buildout and Existing plus Project growth scenarios, only one fire flow is assumed to be provided. Multiple fire flow scenarios are assumed for multiple large planning regions within the overall NSA. This will comply with SCWA, local, and State fire codes for new construction. The fire flow requirements and duration for each land use designation are listed below in **Table 4-1**.

Table 4-1 Fire Flow Requirements

Land Use	Fire Flow Requirements	Duration
	(gpm)	(hrs.)
Single Family Residential (<3,600 s.f.)	1,500	2
Single Family Residential (=>3,600 s.f.)	2,000	2
High Density Residential	3,000	3
Commercial	3,000	3
Industrial	4,000	4
School	4,000	4

1. Based on discussions with the Developer, proposed single-family residential homes are anticipated to be under 3,600 s.f.
2. Only one fire flow is assumed for Buildout and Existing plus Project scenarios.

4.3 PUMP STATION AND STORAGE FACILITY SIZING

4.3.1 Pump Station Sizing

Pump stations shall have the capacity to supply the higher of peak hour demands or the maximum daily demands plus fire flows, if they are equipped with storage facilities. Pumps that only make supply deliveries must be sized to meet the demands on the maximum day of use.

4.3.2 Storage Reservoir Sizing

The minimum volume of water to be stored is generally the sum of the following three components: 1) Equalization (Peaking) Storage, 2) Emergency Storage, and 3) Fire Flow storage. The volumes of these components are based on unique agency requirements. Based on the JTWSMPA, the criteria to be used for the NSA service area are listed below in **Table 4-2**.

Table 4-2 NSA Storage Reservoir Sizing Criteria

Component	Storage Criteria
Equalization Storage	20% of the MDD
Emergency Storage	33.3% of the ADD
Fire Flow Storage (SP)	Highest Fire Flow over Duration
Fire Flow Storage (overall NSA region)	2-3,000 gpm Fire Flows for 3 Hours

5.0 WATER SYSTEM MODELING

5.1 METHODOLOGY

The water distribution systems were modeled using *Innovyze H2O Net* software, V 12.5, SP1, Update #2. The software works within AutoCAD and is capable of performing comprehensive hydraulic steady-state and dynamic simulations, water quality modeling, energy management, real-time and control simulations, fire flow analysis, etc. The system relies on Bernoulli's equation and the EPA Net pipe flow equations for flow, friction-loss, and head-loss calculations.

Steady-state model runs were run to evaluate the backbone transmission and distribution mains serving Existing plus Project and Buildout growth levels. Extended period simulations were not performed, since the operation of storage reservoirs and pumping facilities were not evaluated in this study. The analysis was based on the criteria as provided by the SCWA and B&C.

5.1.1 ADD, MDD, Fire Flow, and PHD Simulations

Various simulations were run to evaluate the performance of the networks over generally accepted scenarios, which are listed as follows:

- **Average Day Demand (ADD)** scenarios are used to determine the overall average water supply and annual average demand needs of the Project. Low demand scenarios are typically run to evaluate maximum pressures under near static conditions.

- **Maximum Day Demand (MDD)** scenarios evaluate the system on the maximum day of use and to evaluate supply mains, production and storage facilities, and other facilities providing water to the SP.

- **Maximum Day Demand (MDD) plus Fire Flow** scenarios evaluate the performance of the networks during a fire emergency. These scenarios evaluate whether fire flow requirements can be met at the required minimum required residual pressures (refer to Section 4).

- **Peak Hour Demand (PHD)** scenarios represent the system during periods of peak use. PHD simulations are used to evaluate the capabilities of distribution, transmission, storage, and pumping facilities to serve the Project and the worst-case service pressures expected during normal operating conditions.

5.2 BUILDOUT SYSTEM MODELING

5.2.1 Model Development

Buildout model simulations verify that the on-site water transmission facilities are properly sized to meet SCWA's service criteria after implementation of the regional improvements as proposed in the JTWSMPA. The Buildout system model (including junction nodes, pipes, and other elements) is shown on **Figure A-1** in Appendix A.1. The major assumptions used to develop the Buildout system model are listed as follows:

- **Only Backbone Mains** (12-inch and larger mains) are included in the models. Other distribution mains (including 12-inch mains) are not included.

- **Starting Pressures -** SCWA provided starting boundary conditions that were extrapolated from the NSA regional water model. These starting pressures were based on the more conservative boundary conditions as provided by SCWA and by B&C. SCWA identified maximum day demand and peak hour demand simulation pressures of 70 and 60 psi accordingly at the intersections of Kiefer Boulevard/Eagles Nest Road and Jackson/Eagles Nest Roads – (**Figure 2-2**). B&C provided boundary conditions for these locations as per the information contained in Appendix A.6. It is assumed that SCWA's future system will be capable of maintaining these minimum starting pressures to the system.

- **Junction Node Elevations** are based on the proposed elevations taken from the *On-Site Mass Grading Plan Study – Jackson Township,* AuClair Consulting, Inc. (post grading). For regions where no grading is proposed, elevations are based on existing ground.

- **Demands** are apportioned to the nodes based on tributary service areas according to *the Buildout Demand Apportion Spread,* by parcel number/land use. A copy of this spreadsheet is *included* in Appendix A.2. The total demands for each node were compiled by ADD by node number, refer to *Buildout Demand Apportion Spread – Compiled by Node* in the Appendix. MDD and PHD projections are included in the model to reflect the peaking factors as discussed in Section 3.

- **Hazen-Williams "C" value** of 130 is used for pipe friction loss calculations. Minor losses for bends, valves, fittings, etc. are not included in this effort.

- **Analysis Criteria –** Refer to Section 4 – Water System Planning Criteria for additional water system planning assumptions and criteria used in the modeling.

- **Total head-**loss per 1,000 l.f. shall not exceed 5.0 feet for mains, except for potential fire flow events.

- **Hydrant and lead losses** are assumed to be 5 psi. It is assumed that additional hydrant(s) will be opened once the capacity of one or more hydrants is reached.

- **On-site Water Systems** will be sized/designed in the future on a project by project basis. To evaluate the capabilities of the system to serve the larger, more remote parcels, some on-site loops have been included to enhance the model precision. For fire system loops serving Commercial, High Density Residential, Public, and School uses, the on-site loops include head losses for double check backflow preventers, and fire flows are placed at multiple nodes (>1,500 gpm). Check valves are incorporated in the loops so that on-site systems do not contribute to the conveyance capabilities of the public system (refer to info in Appendix A.7).

- **Irrigation Demands** for areas to be irrigated are assumed to be served by the potable water system in this study as a conservative approach. If a non-potable system is developed in the future, it would free up capacity in the potable system.

- **Pressure Zones.** As consistent with the JTWSMPA, the SP systems are modeled as one service zone. PRVs are identified in the JTWSMPA to interconnect the system with the lower zone located on the west side of Excelsior Road. For purposes of modeling, these PRV stations are assumed to off-line during normal operating conditions, since the lower zone system is assumed to have its own supply delivery system.

- **Mather Intertie and Pipeline** are not included in this study.

5.2.2 Model Simulations

The ADD, MDD, and PHD simulations to portray the velocities, head losses, and node pressures under normal system operating conditions with both north and south T-mains in service. Run B4 shows high system pressures at the maximum HGL under very low demand (static) conditions. Runs B5 - B15 evaluate the capabilities of the network to deliver fire flows to the parcels within the SP under MDD conditions utilizing the fire flow criteria as discussed in Section 4. The Buildout system scenarios are listed below in **Table 5-1**.

Table 5-1 Buildout System – Model Scenarios

Run No.	Parcel & Land Use	Description
B1	-	ADD
B2	-	MDD
B3	-	PHD
B4	-	Max. HGL, Low Demand (High Static Pressure)
B5	38 – HS	MDD+4000 FF HS @ J146/J148
B6	43 – ES	MDD+4000 FF ES @ J184/J186
B7	49 – MD	MDD+3000 FF MD @ J216/J218
B8	35 – ES	MDD+4000 FF ES @ J206/J208
B9	27 – MD	MDD+3000 FF MD @ J210/J212
B10	8 – GC	MDD+3000 FF GC @ J164/J166
B11	3 – O	MDD+3000 FF O @ J150/J152
B12	17 – ES	MDD+4000 FF ES @ J170/J172
B13	12 – HD	MDD+3000 FF HD @ J174/J176
B14	15 – LD	MDD+1500 FF LD @ J132/J134
B15	6 – HD	MDD+3000 FF @ J160/J162

1. ADD, MDD, and PHD are considered normal operating conditions.
2. As per SCWA correspondence, emergency scenarios with one supply main offline will not be evaluated.

5.2.3 Model Results

The modeling results are tabulated within *H2O Net* by scenario, and can be viewed in printouts and in graphic color displays. The modeling results for the Buildout system are discussed below:

5.2.3.1 Worst Case Pressures

The worst case pressures within the SP for the Buildout scenarios are summarized below in **Table 5-2** and discussed in the following:

Table 5-2 Buildout System – Worst Case Pressures

Run No.	Node No.	Low Pressure	Notes
		(psi)	
B1 ADD	J160	66.05	-
B2 MDD	J160	65.71	-
B3 PHD	J160	54.13	East side
B4 Max.	J84	-	High pressure = 100.22 psi
B5 FF	J146	50.22	HS
B6 FF	J186	55.44	ES, north, Parcel 43
B7 FF	J218	63.00	MD Parcel 49, NW corner
B8 FF	J206	57.20	ES Parcel 35, NW side
B9 FF	J210	60.48	MD Parcel 27, west side
B10 FF	J164	60.33	GC Parcel 8, SW corner
B11 FF	J152	57.04	O Parcel 3, south side
B12 FF	J170	53.74	ES Parcel 17, south/middle
B13 FF	J174	52.75	HD Parcel 12, south side
B14 FF	J134	58.28	LD Parcel 15, southeast side
B15 FF	J162	54.11	HD Parcel 6, southeast side

1. Refer to Table 5-1 for simulation descriptions and abbreviations.

The results indicate worst-cast pressures of 66.05, 65.71, and 54.13 psi along the east side of the Project for Runs B1-B3 respectively. These pressures are higher than SCWA's minimum criteria of 40 psi by a comfortable margin.

For near static conditions (Run B4), pressures on-site range up to 100.2 psi along Excelsior Road. Service connections will need to be equipped with individual PRVs to reduce pressures to accommodate this operating condition. However, for systems with maximum operating pressures at or below 100 psi, Class 150 pipe and accessories may be acceptable, assuming a 150% maximum test to working pressure factor.

For MDD plus fire flow scenarios (Runs B5-B15), the system meets SCWA criteria in delivering fire flows to the various land uses. A fire flow of 4,000 gpm can be delivered to the schools at residual pressures of above 50.22 psi (not including hydrant losses), with the worst-case pressures at the High School (B5-J146/J148). Fire flows to LD parcels exceed delivery requirements, and 3,000 gpm fire flow deliveries to Office, Commercial, and HD parcels can be achieved at residual pressures at or above 52.75 psi. Since the fire flows can be delivered at residual pressures above 25 psi (with hydrant and lead losses for D-mains), the fire flow delivery requirements are met.

5.2.3.2 Max. Velocity and Head-Loss/1,000 l.f.

The model results show that the Buildout pipe network will exhibit acceptable performance relative to velocity and head-loss criteria. The worst case velocities in the transmission and 12-inch distribution mains are summarized below in **Table 5-3** for the selected runs:

Table 5-3 Buildout System – Max. Velocities

Run No.	Max. Velocities (fps)				
	20" T-main	20" T-main	16" T-main	16" T-main	12"/10" D-main
	Kiefer (E) of Grenville Dr.	Jackson (E) of Grenville Dr.	Grenville Dr.	Remainder Onsite	Remainder Onsite
	Fps	Fps	fps	fps	Fps
B2 MDD	2.46	0.55	2.02	1.64	.96
B3 PHD	3.83	2.18	3.02	2.61	1.48
B5-B15 FF	< 5	< 4	< 4	< 5	< 7

1. Refer to **Table 5-1** for simulation descriptions and abbreviations.
2. Pipe velocities for fire flows less than 3,000 gpm are not listed.

Maximum velocities in the 20-inch Kiefer T-main main east of Grenville Drive ranges from 2.46 to 3.83 fps for MDD and PHD conditions respectively. These velocities are under SCWA's target limits of 5 and 7 fps. Velocities in the 20-inch Jackson main range from 0.55 to 2.18 fps for MDD and PHD conditions, which is under the limit. Generally, velocities are higher in the Kiefer Blvd. than the Jackson Road T-main due to a higher starting HGL and shorter distance to the connection point. For the 16-inch main in Grenville Drive, worst case velocities range from 2.02 to 3.02 fps for MDD and PHD runs respectively. For fire flow deliveries (Runs B5 – B15), velocities remain under 7 fps during fire flow conditions. Velocities and node pressures are shown on the **Pressure-Velocity Maps** included in Appendix A.1.

Overall, the maximum velocities in the Buildout system simulations are under acceptable limits, with most pipelines in the lower velocity ranges. The dual feed grid system shows a good capability to balance flows and pressures to cover potential flow irregularities in one region of the system. Head-loss/1,000 l.f. values are within acceptable limits, which shows the network will exhibit efficient performance, even under high demand conditions.

5.3 EXISTING PLUS PROJECT SYSTEM MODELING

5.3.1 Model Development

Existing plus Project simulations were run to verify that the proposed and existing conveyance systems will provide adequate service of the SP up to the maximum pumping capacity of the Anatolia facility (refer to additional discussion in Section 6). The Existing plus Project System model (including junction nodes, pipes, and other elements) is shown on the **System Map** in Appendix A.1. Steady-state simulations were run to emulate the proposed system.

To satisfy CEQA requirements, the Existing Plus Project Buildout scenario is provided to show how water service could be provided to the SP as a standalone project. Since the Existing Plus Project Buildout scenario is highly unlikely to occur, a more typical development scenario is provided in the *JTWSMPA*. The Existing plus Project scenario reflects a 2013 level of growth within the NSA and Buildout of land within the SP. No demands have been included for the AG area or preserves.

The major assumptions used to develop the model are the same as those used for Buildout system modeling (refer to Section 5.2.1), except for the following:

- **Anatolia Storage and Pumping facility –** In order to enhance accuracy, the Anatolia facility pump station suction and discharge manifolds and reservoir(s) were incorporated into the model based on the as-built drawings, including friction loss and minor loss values. The initial minor loss values were adjusted in order to better reflect the pressures as shown by the SCADA data as provided by SCWA for the current flow ranges.

- **Anatolia pump curves –** The existing pump curves were used to more accurately reflect the operation of the upgraded facility. The model includes a total of 7 pumps (6 duty and 1 redundant pump). For each run, the number of operating pumps was adjusted to match the demands as indicated in **Table 5-4**.

- **NSA demands –** For these simulations, additional demands were included at Nodes J236, J238, and J246, in addition to the SP Buildout demands, to reflect growth in the NSA up to the capacity of the Anatolia facility (15,600 gpm pumping capacity under PHD and 7,800 gpm under MDD conditions). This is assumed to be a conservative approach relative to evaluating available pressures at the connection point to the existing system (Kiefer/Sunrise), since it reflects the full pumping capacity of the Anatolia facility (prior to implementation of the NSA Phase B project). Demands for other projects besides the SP were not included in the Existing plus Project models, since it is assumed that these Projects are incorporated in SCWA's JTWSMPA NSA system-wide modeling effort.

- **Sunrise T-main Loop –** The 16- and 24-inch T-main loop was input into the model to convey flows from the Anatolia Storage and Pumping facility to the connection point – refer to **Figure 6-1.** These projects will be needed to serve the Sunrise Douglas and NSA region and may be constructed by others.

5.3.2 Existing plus Project Model Scenarios

MDD and PHD simulations portray the velocities, head losses, and node pressures under normal system operation conditions with both north and south T-mains in service. The fire flow simulations reflect MDD plus the required fire flow placed at critical nodes in the system to reflect potential fires at schools, commercial, multi-family, and residential projects, and 3,000 and 4,000 gpm fire flows are assigned to two nodes. The Existing plus Project model scenarios for Alternatives A and B are listed below in Table 5-4.

Table 5-4 Existing plus Project System Model Scenarios

Alt. A Run No.	Alt. B Run No.	Parcel & Land Use	Description[1]	Anatolia PS Discharge[3] (gpm)	Anatolia Operating Pumps[4]
EB2	EB22		MDD	7,800	3
EB3	EB23		PHD	15,600	6
EB4	EB24	38 – HS	MDD+4000 FF HS @ J146/J148	11,800	5
EB5	EB25	43 – ES	MDD+4000 FF ES @ J184/J186	11,800	5
EB6	EB26	49 – MD	MDD+3000 FF MD @ J216/J218	10,800	5
EB7	EB27	35 – ES	MDD+4000 FF ES @ J206/J208	11,800	5
EB8	EB28	27 – MD	MDD+3000 FF MD @ J210/J212	10,800	5
EB9	EB29	8 – GC	MDD+3000 FF GC @ J164/J166	10,800	5
EB10	EB30	3 – O	MDD+3000 FF O @ J150/J152	10,800	5
EB11	EB31	17 – ES	MDD+4000 FF ES @ J170/J172	11,800	5
EB12	EB32	12 – HD	MDD+3000 FF HD @ J174/J176	10,800	5
EB13	EB33	15 – LD	MDD+1500 FF LD @ J132/J134	9,300	5
EB14	EB34	6 – HD	MDD+3000 FF @ J160/J162	10,800	4

1. ADD, MDD, and PHD are considered normal operating conditions.
2. As per SCWA correspondence, emergency scenarios with one supply main offline will not be evaluated.
3. Demands in NSA region were adjusted to reflect the maximum capacity of Anatolia Pump Station. This reflects worst case pressures at the connection point prior to implementation of the NSA Phase B project as identified in the JTWSMPA.
4. The existing Anatolia Pump Station includes 3 duty pumps and one redundant pump (4 total pumps). The upgraded Anatolia Pump Station capacity reflects a total of 7 pumps (6 duty pumps @ 2,600 gpm and 1 redundant pump), or 15,600 gpm.

5.3.3 Existing plus Project System Modeling Results

The modeling results are tabulated in *H2O Net* by scenario, and can be viewed in printouts and in graphic color displays. The results of the Existing plus Project system modeling are discussed below:

5.3.3.1 Worst Case Pressures

The worst case pressures within the SP for the Existing plus Project System are summarized below in Table 5-5 and are discussed in this section:

Table 5-5 Existing plus Project – Worst-Case Pressures

Run No.	Node No.	Low Pressure D-main	Low Pressure T-main	Notes
		(psi)	(psi)	
EB2 MDD	J160	64.98	-	HS
EB3 PHD	J160	37.80	-	HD Parcel southwest area
	J36	-	40.03	Southeast corner on Jackson Rd.
EB4 FF	J146	30.91	-	HS
EB5 FF	J186	35.65	-	ES, north, Parcel 43
EB6 FF	J218	50.95	-	MD Parcel 49, NW corner
EB7 FF	J206	37.25	-	ES Parcel 35, NW side
EB8 FF	J210	47.72	-	MD Parcel 27, west side
EB9 FF	J164	47.51	-	GC Parcel 8, SW corner
EB10 FF	J152	43.95	-	O Parcel 3, south side
EB11 FF	J170	32.58	-	ES Parcel 17, south/middle
EB12 FF	J174	39.68	-	HD Parcel 12, south side
EB13 FF	J134	55.95	-	LD Parcel 15, southeast side
EB14 FF	J162	40.59		HD Parcel 6, southeast side

1. Refer to Table 5-4 for simulation descriptions and abbreviations.

The results show worst-case MDD and PHD D-main pressures of 64.98 and 37.80 psi along the east side of the Project for Runs EB2 - EB3 respectively. T-main pressures under PHD conditions drop to 40.03 psi. These pressures are above SCWA's minimum criteria for PHD conditions of 35 and 40 psi for D- and T-mains respectively. The low pressure nodes represent a very limited area along the east side of the SP, and most of the Project will experience pressures greater than the minimum levels under PHD conditions.

For MDD plus fire flow scenarios (Runs EB4 - EB14), the system meets SCWA criteria in delivering fire flows to the SP. A fire flow of 4,000 gpm can be delivered to the schools at residual pressures at or above 30.91 psi (not including hydrant losses), with the worst-case pressures at the High School (J146/J148). Fire flows to LD parcels exceed delivery requirements, and fire flow deliveries to Office, Commercial, HD, and residential parcels can be achieved at residual pressures at or above 39.68 psi. Since the fire flows can be delivered at residual pressures above the required 25 psi, the fire flow delivery requirements are met.

5.3.3.2 Max. Velocity and Head-Loss/1,000 l.f.

The model results show that the Existing plus Project network will exhibit acceptable performance relative to velocity/head-loss criteria. The worst case velocities in the transmission and 12-/10-inch on-site distribution mains are summarized below in **Table 5-6** for the indicated runs:

Table 5-6 Existing plus Project – Max. Velocities

Run No.	Max. Velocities					
	18" T-main	16" T-main	16" T-main	16" T-main	16" T-mains	12"/10" D-mains
	Kiefer (E) of Eagles Nest Rd.	Jackson (E) Eagles Nest Rd.	Sunrise Blvd.	Grenville Dr.	Remainder Onsite	Remainder Onsite
	Fps	Fps	fps	fps	fps	fps
EB2 MDD	2.35	1.73	1.73	1.49	1.30	0.74
EB3 PHD	4.69	3.46	3.46	2.99	2.60	1.48
EB4-EB14 FF	< 6	< 5	< 5	< 4	< 5	< 7

1. Refer to **Table 5-4** for simulation descriptions and abbreviations.

Maximum velocities in the 18-inch Kiefer T-main main east of Eagles Nest Road ranges from 2.35 to 4.69 fps for MDD and PHD conditions respectively. These velocities are under SCWA's limit of 5 and 7 fps for these conditions. Velocities in the 16-inch Jackson and Sunrise mains range from 1.73 to 3.46 fps under MDD and PHD conditions respectively. Generally, velocities are higher in the Kiefer Blvd. than the Jackson Road T-main due to a shorter distance to the connection point. For fire flow deliveries (Runs EB4 – EB14), velocities remain under 7 fps, which is acceptable during short-term fire emergencies.

Overall, the maximum velocities for the Existing plus Project system are within acceptable limits, with most pipelines in the lower velocity ranges. The dual feed grid system has the capability to balance flows and pressures to cover potential flow irregularities in one region of the system. Head-loss/1,000 l.f. values are within acceptable limits, which shows the network will exhibit efficient performance, even under high demand flow conditions. **Pressure Velocity Maps** are included in Appendix A.1.

6.0 JACKSON TOWNSHIP SP WATER SYSTEM FACILITIES

6.1 EXISTING PLUS PROJECT TRANSMISSION SYSTEM

The backbone system represents the minimum off-site and on-site water transmission improvements needed to serve the Project, refer to **Figure 7-1**.

6.1.1 Backbone T-Main Improvements

The backbone system includes a combination 20-/18-inch off-site T-main in Kiefer Boulevard from Grenville Drive to the connection point at the intersection of Sunrise and Kiefer Boulevards and a second 20-/16-inch T-main in Jackson Road, east of Grenville Drive, which will extend to Sunrise Blvd. A 16-inch main is included in Sunrise Boulevard between Jackson Road and Kiefer Blvd, which is consistent with SCWA's modeling as shown on Figure 2-2. A 16-inch main is proposed in Grenville Drive to interconnect the two 20-inch T-mains and to form a reliable backbone T-main loop. These pipe sizes are in conformance with the system as shown on **Figure 2-2** as provided by SCWA, and SCWA's minimum operating pressures under PHD conditions are met.

A 16-/24-inch T-main is required In order to provide peaking and fire flow service from the Anatolia Terminal Storage and Pumping facility. The 16-/24-inch T-main will loop back to the Anatolia facility and will engage the capacity of the existing facility as well as the other storage facilities in the NSA zone. This will include the installation of either the 24-inch P-9 Jaeger pipeline to Douglas Blvd, or the 24-inch main in Chrysanthy Blvd. to the east to connect to the existing 24-inch main in Rancho Cordova Parkway. Only one of these pipeline extensions will be needed to complete the 16-/24-inch loop. These projects are needed to serve other NSA regions and may be constructed by other project developers or by a SCWA sponsored project prior to the installation of the backbone system.

6.1.2 Secondary Connection and Other Facilities

A second T-main extension to the Project will permit both normal and emergency service of the Project in the event that a section of T-main is taken down for short-term service or repair.

6.1.3 System Phasing

The onsite backbone transmission system will need to be expanded to serve various developments in Phases 1–4 by installing additional mains (**Figure 7-2**) that will interconnect with the 16-inch main in Grenville Drive and/or the 20-inch north/south T-mains, as needed. The initial backbone system will permit flexibility in phasing, since any region within the SP may be served by additional T-or D-main loops as needed to meet the needs of each individual project. The Existing plus Project modeling shows that acceptable service will be provided to the SP under this scenario, and the backbone T-main system is adequately sized for any combination of Phases 1-4. It will be the responsibility of each project to provide the hydraulic modeling needed to verify

SCWA's operating criteria will be met with the D- and T-main extensions as proposed to serve each development phase.

6.2 SUPPLY, PUMPING, AND STORAGE REQUIREMENTS

6.2.1 Supply and Pumping Requirements

Based on the demands as listed in Table 3-1, the pumping facilities must be sized to meet the higher rate of the Peak Hour Demands (PHD) or Maximum Day Demands (MDD) plus Fire Flows (FF). The required supply and pumping rates needed to serve only Buildout of the SP are listed below in Table 6-1.

Table 6-1 Buildout SP Supply and Pumping Requirements

Component	MDD	FF	PHD	Pumping Capacity
	(MGD)	(MGD)	(MGD)	(MGD)
MDD (Supply)	4.24			4.24
PHD			8.48	8.48
MDD+FF	4.24	5.76		10.00
Larger of Above:				**10.00**

The supply and pumping calculations for the Existing plus Project scenario are presented below in Table 6-2.

Table 6-2 NSA Main Zone Existing plus Project Pumping Requirements

Item	2013 NSA	Buildout SP	2013 NSA plus Project SP
	(MGD)	(MGD)	(MGD)
Supply Requirements-MDD	7.40[1]	4.24	11.64
Pumping Requirements-PHD	14.80[1]	8.48	23.28
Available Supply Capacity[2]			
30" Excelsior Supply Line Capacity	15.8		15.80
NSA Main Zone Supply Surplus @ 2013			**4.16**
Available Pumping Capacity[2]	**Exist. Anatolia**	**Fut. Anatolia**	
Mather Housing (GWTP)	5.20	5.20	
Mather 1 Main Base	5.20	5.20	
Mather 2 Elevated Tank	0.00	0.00	
Anatolia Facility[3]	11.23	22.46	
Total Available Pumping Capacity	**21.63**	**32.86**	**32.86**
NSA Main Zone Pumping Capacity Surplus			**9.58**

1. 2013 NSA MDD and PHD demands were obtained from JTWSMPA Tables 8-9 and B-18 without review.
2. Existing NSA main zone supply and pumping capacities reflect those as listed in JTWSMPA Table B-18, and conservatively do not include supply available from groundwater wells or interconnections.
3. The Anatolia facility is currently equipped with 4 pumps, and 7 pumps are proposed at Buildout.

Based on the above calculations, the converted 30-inch Excelsior main and supply system is capable of meeting the MDD of the Existing NSA area plus Project with a surplus capacity of 4.16 MGD. This does not include the NSA groundwater supply facilities or the Cal-Am intertie. The timing for implementation of new supply facilities within the NSA is listed in the JTWSMPA and WSIP.

Under the Existing NSA plus Project scenario, the existing Anatolia pumping capacity (3 operating pumps and 1 redundant pump) will have slightly less capacity than needed to meet PHD conditions. The facility is planned to be expanded by adding 3 pumps to achieve a Buildout capacity of 22.46 MGD (6 duty 2,600 gpm pumps and 1 redundant pump). This upgrade will increase the total capacity of NSA pumping facilities to 32.86 MGD and be sufficient to meet near term needs of the Existing NSA area plus Project, with a surplus capacity of 9.58 MGD.

An incremental pumping capacity analysis in five year increments is presented in JTWSMPA Tables 8-9 and B-18, and this analysis shows the timing for implementation of the regional NSA pumping facility projects.

6.2.2 Storage Requirements

In order to meet the NSA storage criteria as established in the JTWSMPA, the Project's storage requirements are listed below in **Table 6-3**.

Table 6-3 Buildout SP Storage Requirements

Component	Demand	Calculations	Volume
	(MGD)		(MG)
Equalization Storage	MDD-4.24	20% of MDD	0.85
Emergency Storage	ADD-2.12	33.3% of ADD	0.71
Fire Flow Storage (Single Project)		4,000 gpm FF @ 4 hrs.[1]	0.96
Total			**2.52**

1. Fire flow storage requirements for the overall NSA main zone are assumed to be two 3,000 gpm fire flows at 3 hours each, or 1.08 MG.

Regional storage facilities can provide fire flow storage volume to serve multiple projects; thus, the SP's Equalization and Emergency storage components equate to 1.56 MG. Water stored and pumped from the existing and proposed regional facilities will be made available to the Project through the proposed transmission system improvements.

For the Existing plus Project scenario, there should be adequate storage capacity in the NSA main zone in order to accommodate the needs of the Project. These calculations are presented below in **Table 6-4**.

Table 6-4 NSA Main Zone Existing plus Project Storage Requirements

Item	2013 NSA[2]	Buildout SP	2013 NSA plus Project SP
	(MG)	(MG)	(MG)
Maximum Day Demand (MGD)	7.40[1]	4.24	11.64
Required Storage			
Equalization (20% MDD)	1.48	0.85	2.33
Emergency (33.3% ADD)	1.23	0.71	1.94
Fire (2 x 3000 gpm FF @ 3 hrs.)[3]	1.08	1.08	1.08[4]
Total Required Storage (MG)	**3.79**	**2.64**	**5.35**
Available Storage Capacity[2]			
Mather Housing (GWTP)	0.50		
Mather 1 Main Base	1.00		
Mather 2 Elevated Tank (Airport)	0.30		
Anatolia Facility	4.00		
Total Available Storage Capacity	**5.80**		**5.80**
NSA Main Zone Storage Capacity Surplus @ 2013			**0.45**

1. 2013 NSA demands were obtained from JTWSMPA Tables 8-9 and B-1 without review.
2. Existing NSA main zone storage capacity reflects the capacities as listed in JTWSMPA Table B-17.
3. Storage capacity for two 3,000 gpm fire flows are included relative to service of the NSA main zone.
4. Required fire flow storage for two 3000 gpm fire flows will be adequate to serve both 2013 NSA and Buildout of SP regions.

The storage capacity needed to serve the initial phases of the Project is assumed to be located at the existing facility sites as listed in **Table 6-4**. The above table shows that the existing storage facilities are adequately sized to serve the Project and a 2013 level of growth within the NSA.

The JTWSMP indicates that storage will be located at numerous sites, including the Anatolia facility, NSA Terminal Storage and Pumping Facility, and at other potential sites within the NSA main zone. As the region develops, additional storage facilities will be needed. Moreover, the JTWSMPA indicates that additional alternatives for placing regional storage in the south area of the NSA as well as other regional options could be considered. The NSA Terminal Storage facility could also bring additional storage capacity online to the existing transmission system through connection to the T-main in Sunrise Blvd., east of the Folsom South Canal.

An incremental water demand and storage capacity analysis in five year increments is presented in JTWSMPA Tables 8-9 and B-15, which shows the timing for implementation of regional NSA storage facilities (It is assumed that SCWA will continue to monitor growth within the NSA and provide additional storage facilities prior to reaching capacity of the existing NSA storage tanks). It may also be possible to utilize storage at the North Douglas Facility (located in

the NSA upper zone) to assist in meeting the emergency/fire needs of the main zone through the use of PRVs, on a short-term basis, until the NSA Phase B Regional project can be implemented.

6.3 BUILDOUT SYSTEM REQUIREMENTS

6.3.1 Zone Development

As per the JTWSMPA, the SP is located within the NSA main pressure zone (ground elevations range from 74 to 215 feet and pressures between 40 and 85 psi.: Source JTWSMPA, Table 2-5). Since ground elevations within the SP are located between 74 and 138 feet (post grading), they are consistent with the NSA main pressure zone requirements of the JTWSMPA. Pressures will generally be higher during periods of low water use. A single pressure zone within the SP will simplify operations, enhance reliability, and reduce the number of PRV stations that SCWA will have to maintain in the future.

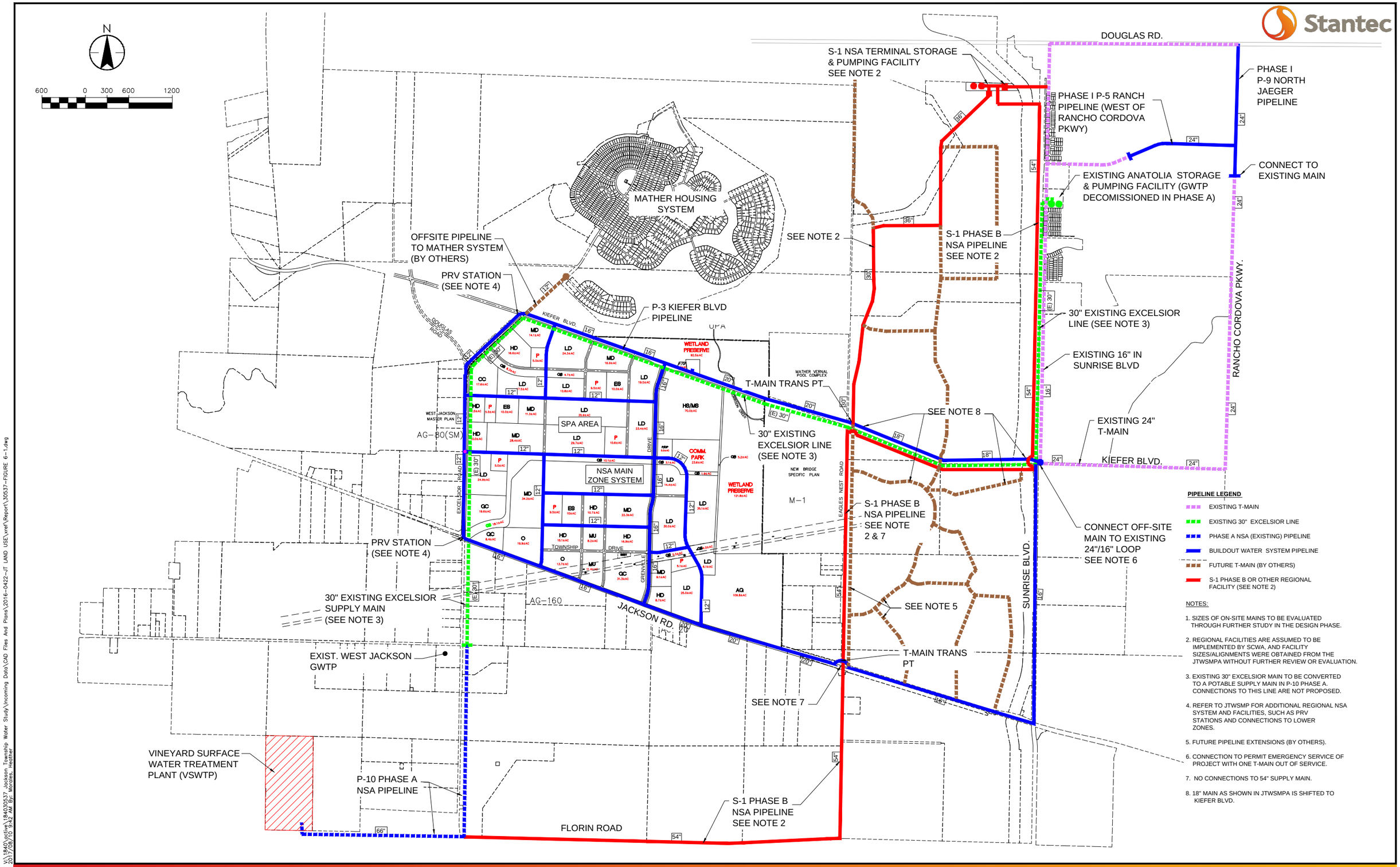
Minimum pressures in the zone, under normal conditions, are anticipated to be as indicated in Section 5. Maximum pressures are anticipated to occur under near-static conditions along Excelsior Road, with static pressures in the range of 94 psi near the southwest corner of Jackson/Excelsior Roads to a high pressure of 100.2 psi at J89. In accordance with SCWA requirements, service connections within the SP will need to be equipped with individual pressure reducing valves (set at 50-60 psi maximum) to limit pressures to customers and to minimize the over-consumption of water.

Development will occur in the SP concurrently with other projects within the NSA Zone. SCWA Staff will monitor development in the NSA for the planning and development of new storage and pumping capacity to service the overall region. When this condition occurs, SCWA will initiate the development of the NSA Terminal Storage and Pumping Facility. This new storage and pumping facility will serve as the ultimate supply for the new development projects in the NSA, including the SP. With the completion of the Terminal Tank construction, the P4 Eagles Nest Pipeline will be needed to provide a transmission cross connection. This line will be extended from the NSA Terminal Storage and Pumping Facility south through the Mather South SPA to a connection point with the transmission main in Kiefer Blvd. Substantial portions of the Eagles Nest Pipeline line may be constructed with the development of the Mather South SPA prior to or concurrent with construction of the NSA Terminal Storage and Pumping Facility. If the Eagles Nest Pipeline cross connection has not been constructed, SCWA will look to the Jackson Township SP to construct the Eagles nest Pipeline from the Terminal Storage Tank south to Kiefer Blvd. SCWA shall obtain all permits and Rights-of-Way needed to construct the Eagles Nest cross connection transmission main.

6.3.2 Buildout On-site Water System

On-site water transmission and distribution mains are proposed to be routed through the SP to form a reliable looped grid system. At Buildout, the 20-inch T-mains in Kiefer Boulevard and Jackson Road will connect to other the regional T-mains as identified in the JTWSMPA. The 16-inch P-3 Kiefer Blvd. pipeline is proposed between Grenville Drive and Excelsior Road. A 16-inch T-main loop in Jackson Road, west of Grenville Drive, and the 12-inch main in Excelsior Road will provide a reliable loop around the perimeter of the SP, west of Grenville Drive. A 16-inch T-main will extend in Grenville Drive to form the primary north-south transmission corridor within the Project and will interconnect the two 20-inch T-mains to form the initial phase loop. The distribution system (8- to 12-inch mains) will form the remainder of the public system and be connected to T-mains at regular intervals.

The proposed Buildout Water System Facilities are shown on **Figure 6-1** along with the applicable regional facilities as identified in the JTWSMPA for service of the SP. It is presumed that SCWA will address implementation of the regional facilities as identified in the JTWSMPA and the WSIP.



Jackson Township Water Study
Buildout Water System (With Regional Improvements)
Figure 6-1

7.0 PUBLIC FACILITIES FINANCING PLAN – JACKSON TOWNSHIP SP POTABLE WATER SYSTEM COMPONENTS

Potable water facilities are to be addressed in the Project's Public Facilities Financing Plan (PFFP) as per Sacramento County requirements. The potable water facilities that are proposed by the Project proponent are specifically summarized in this section.

Since the potable water system must be adequately sized to serve both initial as well as Buildout levels of growth, the T-main sizes, as identified in the Existing plus Project model are recommended to be included in the PFFP for budget purposes. Credits and reimbursements should also be included in the PFFP. Refer to Section 6 for additional information.

7.1 POTABLE WATER FACILITIES (BACKBONE TRANSMISSION SYSTEM)

The backbone transmission system includes the off-site and on-site T-mains needed to serve the development phases, assuming that growth will occur according to the Jackson Township Phasing Plan as discussed in Section 3.0. Phases 1 – 4 can be served by the backbone T-main system by extending additional T- and D-mains within the Project with connections back to the proposed primary T-mains. The backbone transmission system is described as follows and is shown on **Figure 7-1**:

WATER MAINS

- **Kiefer Blvd. T-main.** This component includes a 20-inch T-main that extends in Kiefer Blvd. from Grenville Drive to Eagles Nest Road, and an 18-inch T-main from that point to the intersection of Sunrise Blvd to tie into the existing 16-/24-inch mains. The main will cross the Folsom South Canal, and the 18-inch T-main is proposed to be shifted to the north to Kiefer Blvd.

- **Jackson Road T-main.** A 20-inch main is proposed to extend in Jackson Road from Grenville Drive to the east to Eagles Nest Road, and a 16-main will extend from Eagles Nest Road to Sunrise Boulevard. The main will cross the Folsom South Canal.

- **Sunrise Blvd. T-main** will include a 16-inch main, which will extend from Jackson Road to the north in Sunrise Blvd. to the connection point at Kiefer and Sunrise Boulevards.

- **Grenville Drive 16-inch Main** will extend in Grenville Drive between Jackson Road and Kiefer Blvd.

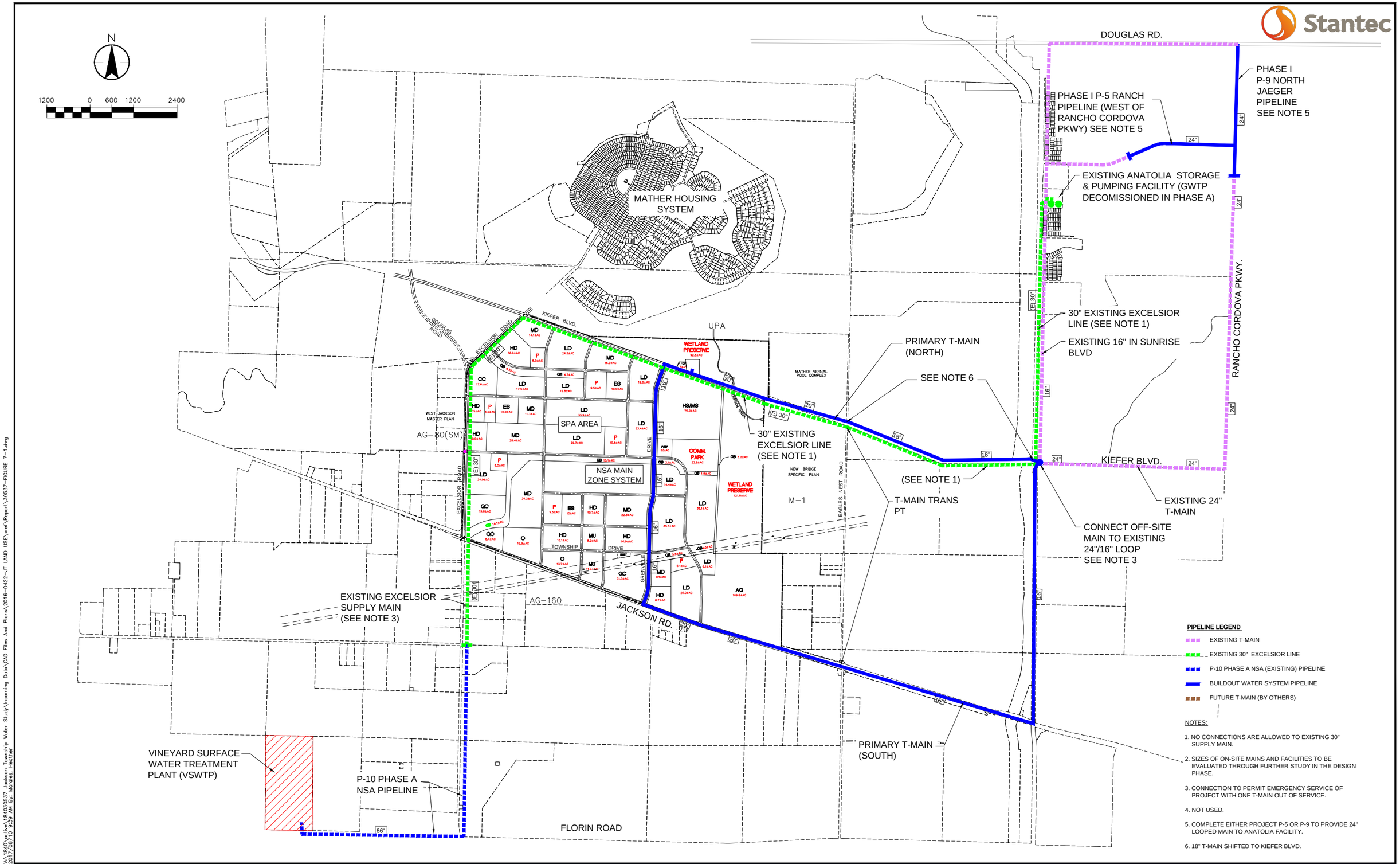
- **Completion of 16-/24-inch Loop to Anatolia facility.** This item includes either the completion of Project P-5 24-inch Ranch Pipeline to tie into the existing 24-inch main in Rancho Cordova Parkway or the extension of P-9, North Jaeger Pipeline to Douglas Road to complete the looped T-main system back to the Anatolia facility. These T-mains are

needed to serve other projects within the NSA and may be installed by others prior to construction of the backbone T-main system.

- **Completion of the Eagles Nest 30 and 36 inch Transmission Cross Connection**. A 36 inch transmission main will be extended south from the Terminal Storage and Pumping Facility through the Mather South Project to the intersection of Eagles Nest Road. The line will be reduced to a 30 inch transmission main and extend south in Eagles Nest Road to a connection with the 20 inch transmission main located in the intersection of Eagles Nest Road and Kiefer Blvd. Construction of this line will be necessary when, based upon capacity utilization, SCWA determines it is needed. Once this occurs, SP construction may be suspended, at the discretion of SCWA, until the line is actually in place and operational. SCWA will be responsible to secure all permits and Rights-of-Way for the construction of the cross connector. This is a regional service line; and therefore, any construction funds, engineering costs or other reasonably related expenses fronted by a private party will be jointly shared by all the projects developers actively pursuing land development projects in the NSA.

Facilities

- **Anatolia Pumping and Storage facility.** As discussed in the WSIP, expansion of the Anatolia Pumping and Storage facility is proposed as a Phase 1 improvement in Table 13. This project will add 3 new booster pumps at the facility, which will increase pumping capacity to 15,600 gpm. The timing for implementation of this project is listed in Table I-18 of the WSIP.



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2017/08/10 9:39 AM By: Morales, Heather

Jackson Township Water Study
Backbone Transmission System
Figure 7-1

7.2 POTABLE WATER FACILITIES (BUILDOUT SYSTEM)

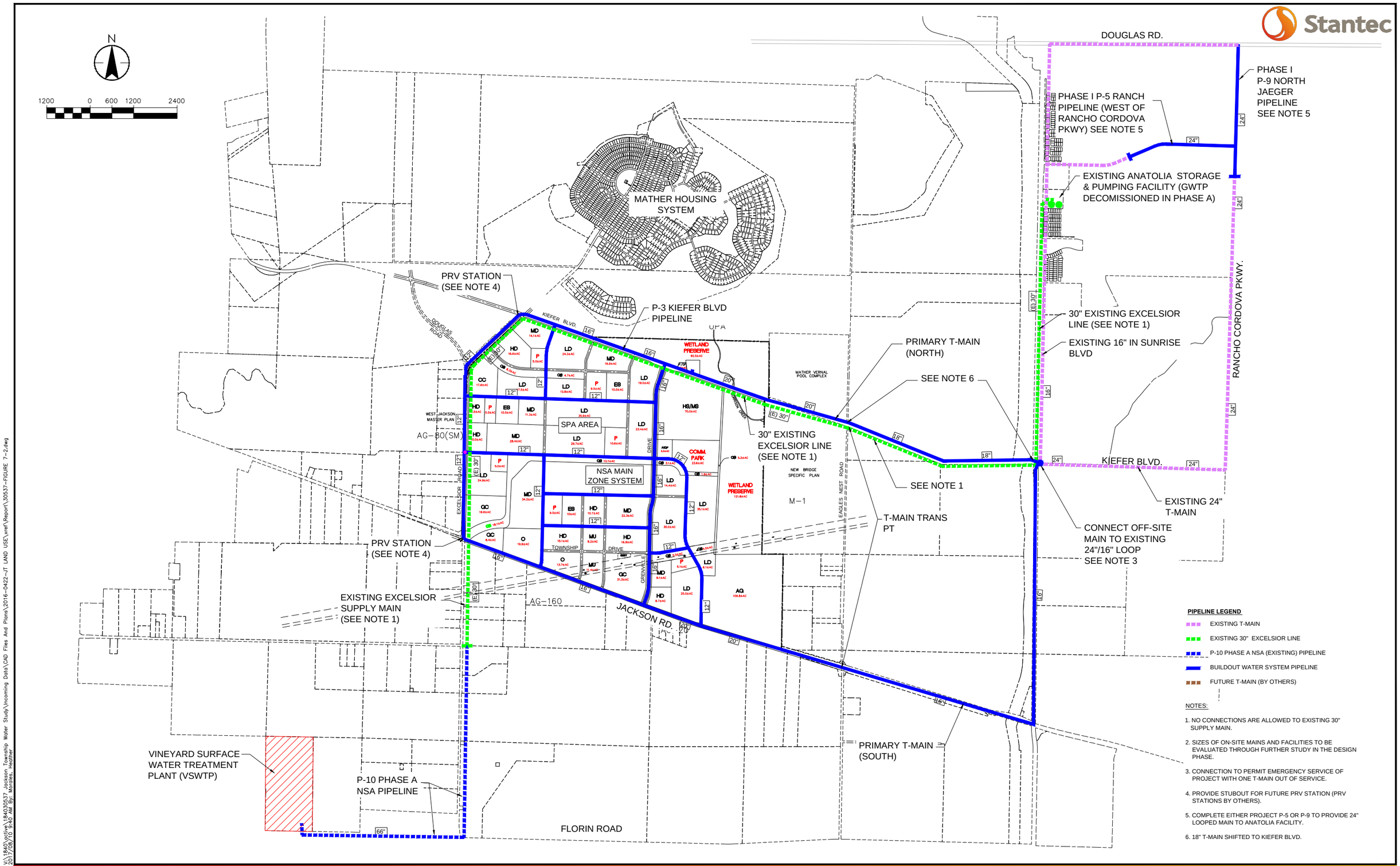
The Buildout potable water facilities includes the elements that are in addition to the proposed backbone transmission system, which are needed to serve the Project at Buildout of all land uses within the SP. The Buildout potable water system components are described as follows and are shown on **Figure 7-2**. **Figure 7-3** provides an enlarged view of the Buildout on-site system:

WATER MAINS

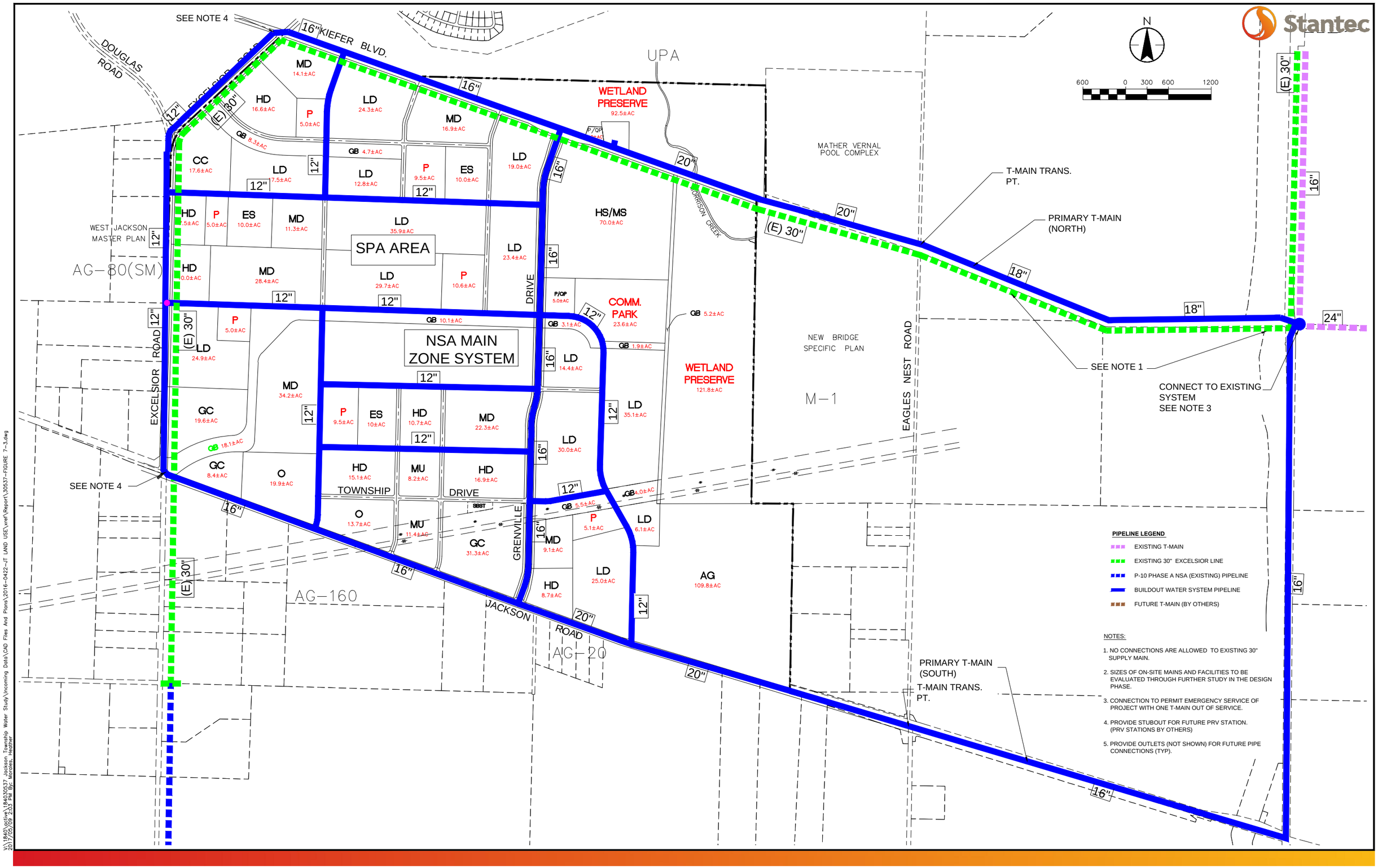
- **Backbone Transmission System** - Refer to the improvements as listed in Section 7.1.
- **Kiefer Blvd. 16-inch Main.** This main will extend in Kiefer Blvd. from Excelsior Road to Grenville Drive.
- **Jackson Road 16-inch Main** will extend in Jackson Road between Excelsior Road and Grenville Drive.
- **Excelsior Road 12-inch Main.** This main is proposed between Jackson Road and Kiefer Boulevard to serve new projects located to the east of Excelsior Road and intertie the Kiefer Blvd. and Jackson Road T-mains.
- **Internal 12-inch Mains**, are proposed within the Project to form a reliable looped grid system and to provide service to the remaining parcels not served by the backbone system. These mains will interconnect with the T-mains as shown on **Figure 7-3**. Additional 8-/10-/12-inch mains will need to be provided for certain roadways, which are not shown on the Buildout Water System plan to extend service to connections, hydrants, and as needed to complete each individual development.

FACILITIES

- **PRV Stubouts** are proposed on the 16-inch mains in Keifer Blvd. and Jackson Road to enable connection to the two future PRV stations along Excelsior Road (by others).
- **Service Connection PRVs.** Pressure Reducing Valves (PRVs) are recommended on the domestic service connections within the SP (downstream of meter) to avoid potential over-pressurization of on-site systems and to limit water over-consumption.



Jackson Township Water Study
Existing Plus Buildout System (Without Regional Improvements)
Figure 7-2

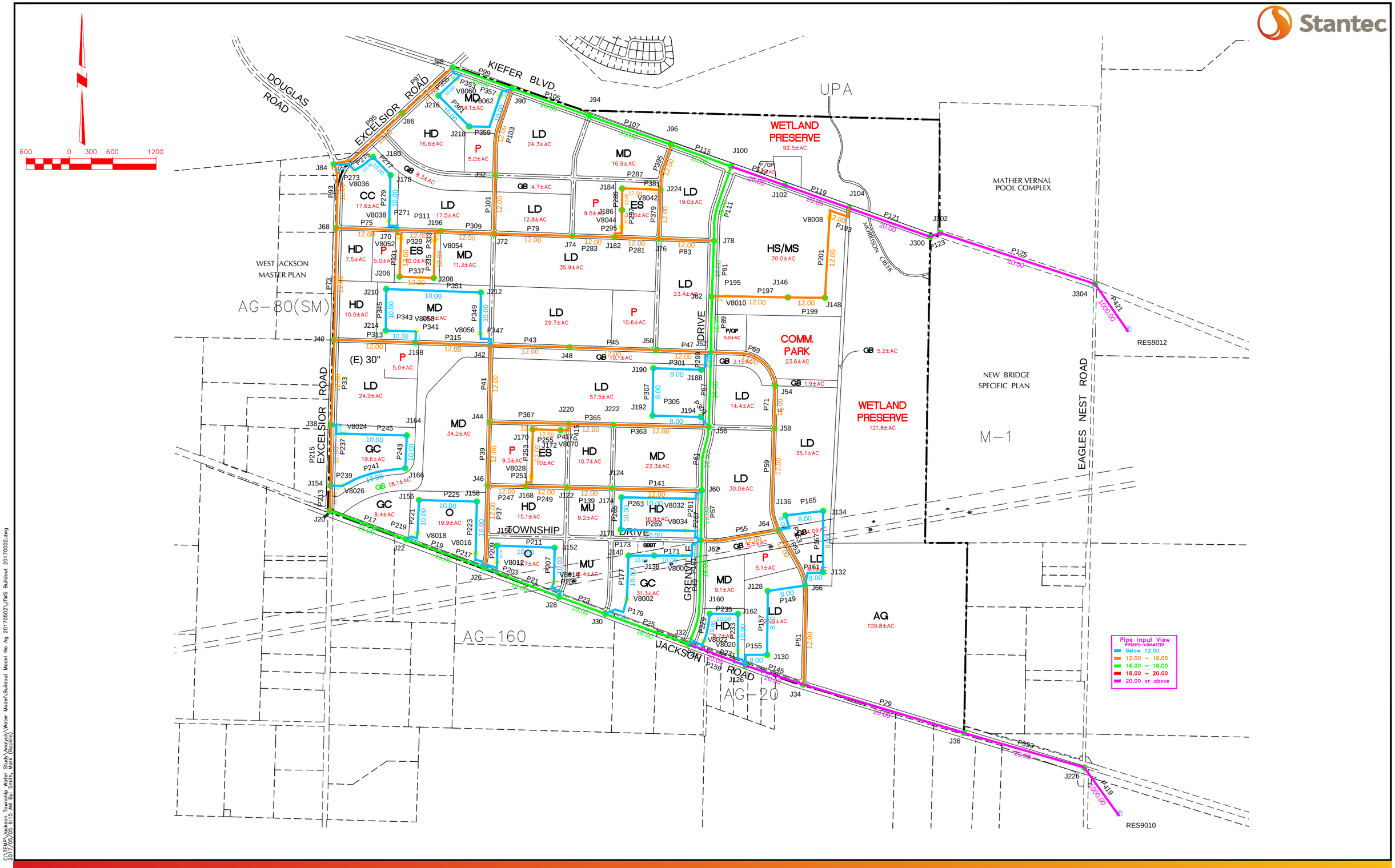


Jackson Township Water Study
Buildout Water System (Enlarged View)
Figure 7-3

APPENDICES

Appendix A

A.1 MODEL SYSTEM AND PRESSURE VELOCITY MAPS



Jackson Township Water Study
Buildout System Network Map
B1 - ADD - System Map

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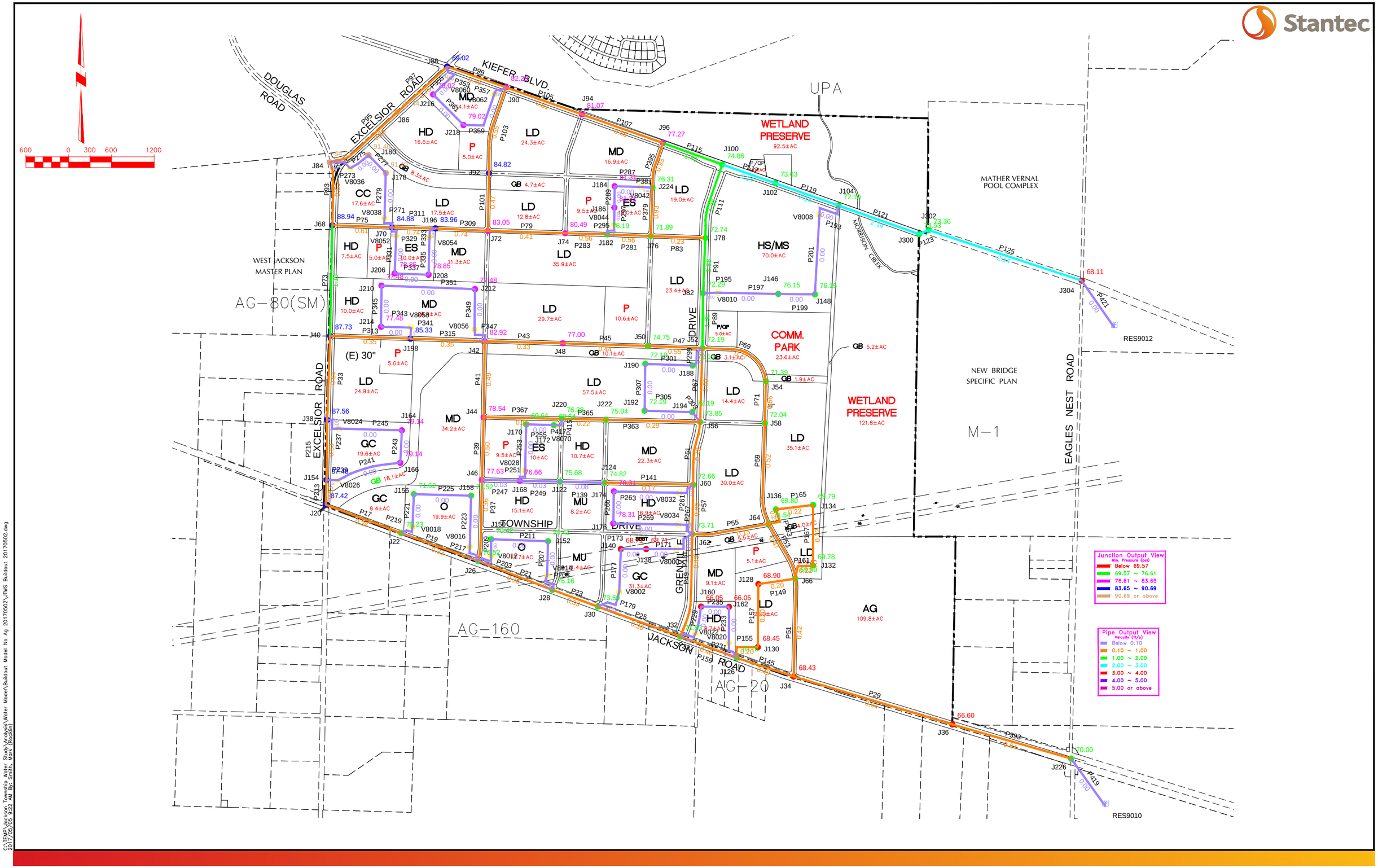

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Jackson Township Water Study
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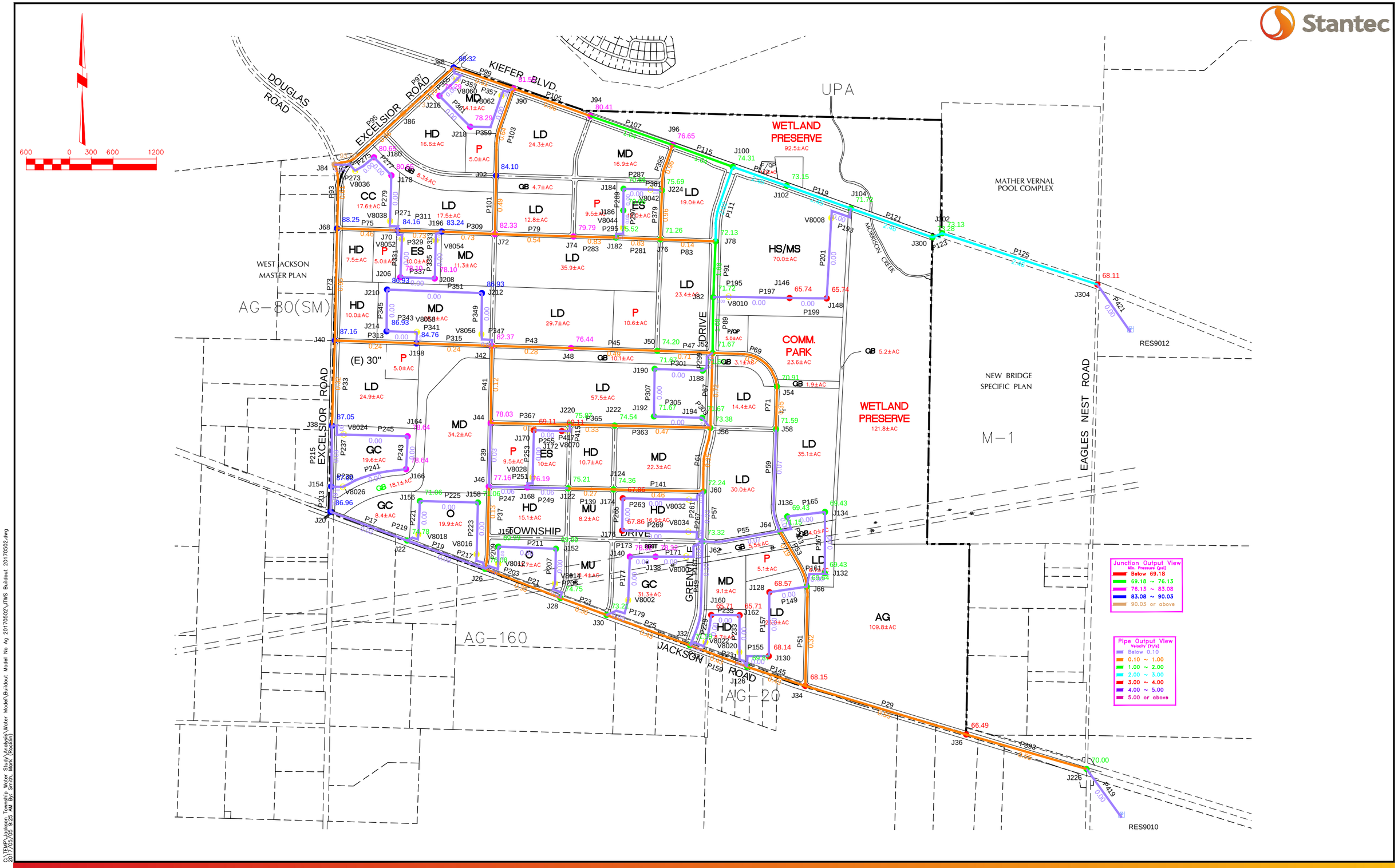
B1 - ADD - Pressure-Velocity Map



Jackson Township Water Study
Buildout System Network Map
B2 - MDD - Pressure-Velocity Map

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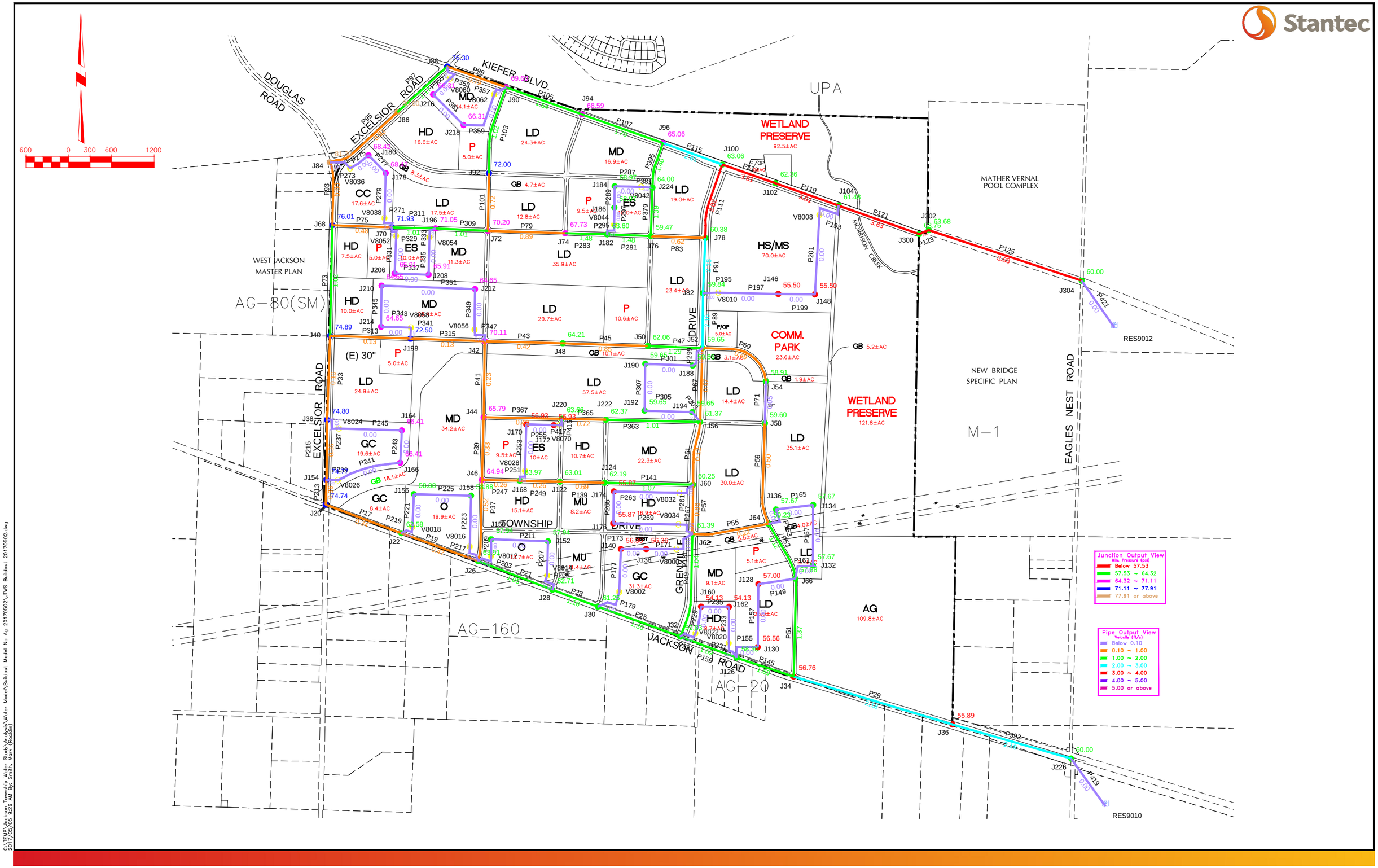

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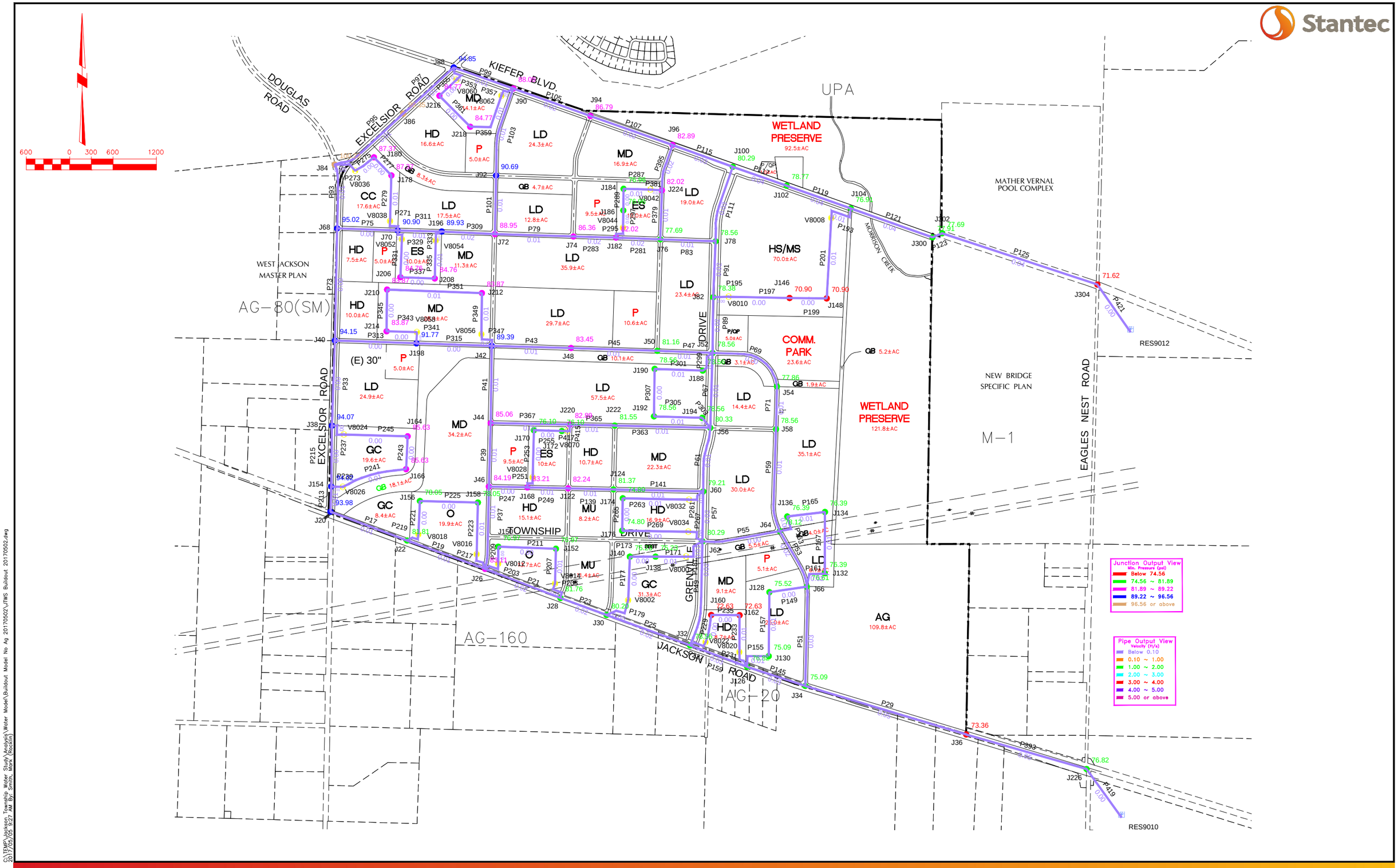
Jackson Township Water Study
Buildout System Network Map
B3 - PHD - Pressure-Velocity Map



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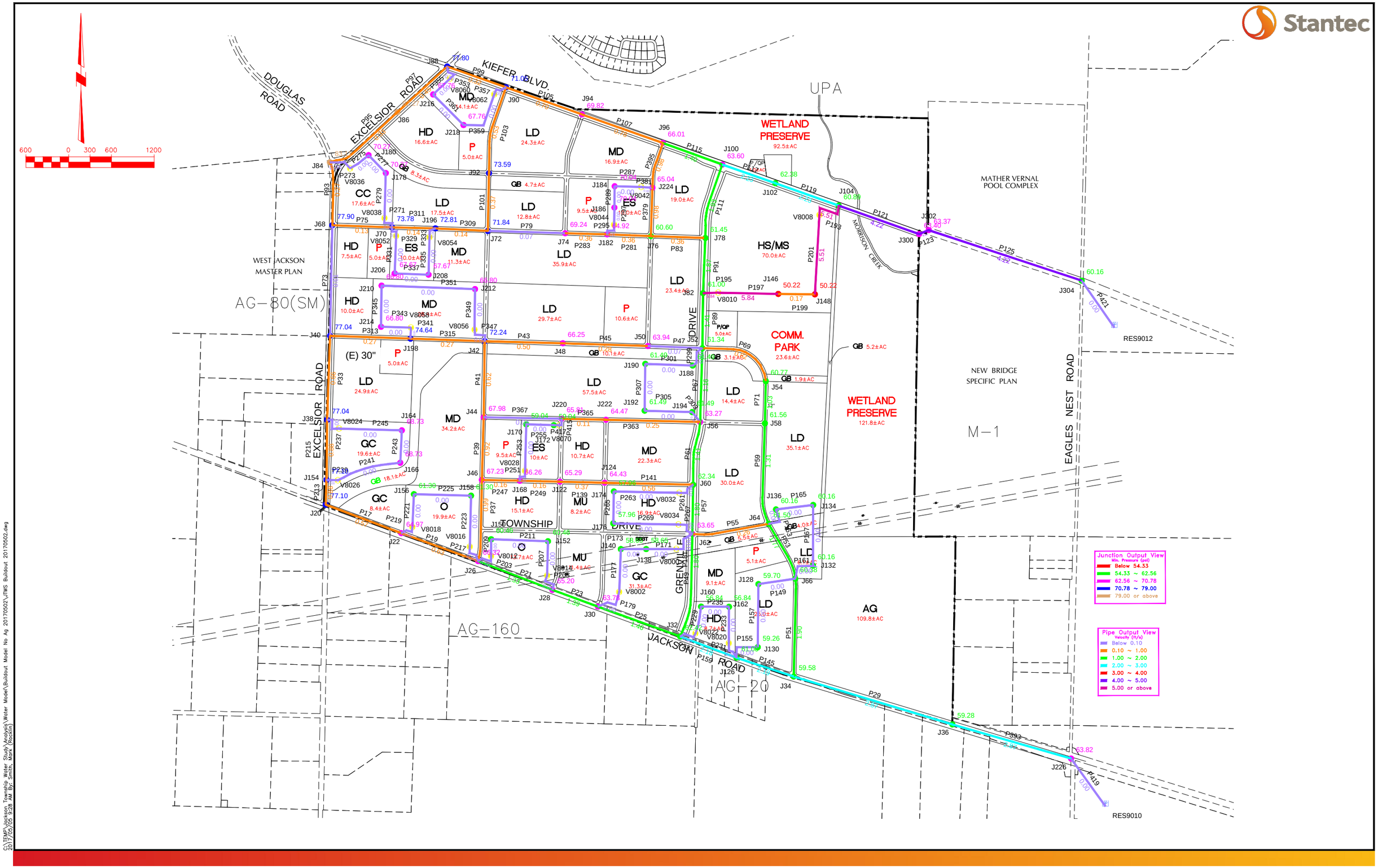
Jackson Township Water Study
Buildout System Network Map
B4 - Max. HGL - Pressure-Velocity Map



Jackson Township Water Study
Buildout System Network Map
B5 - MDD+FF - Pressure-Velocity Map

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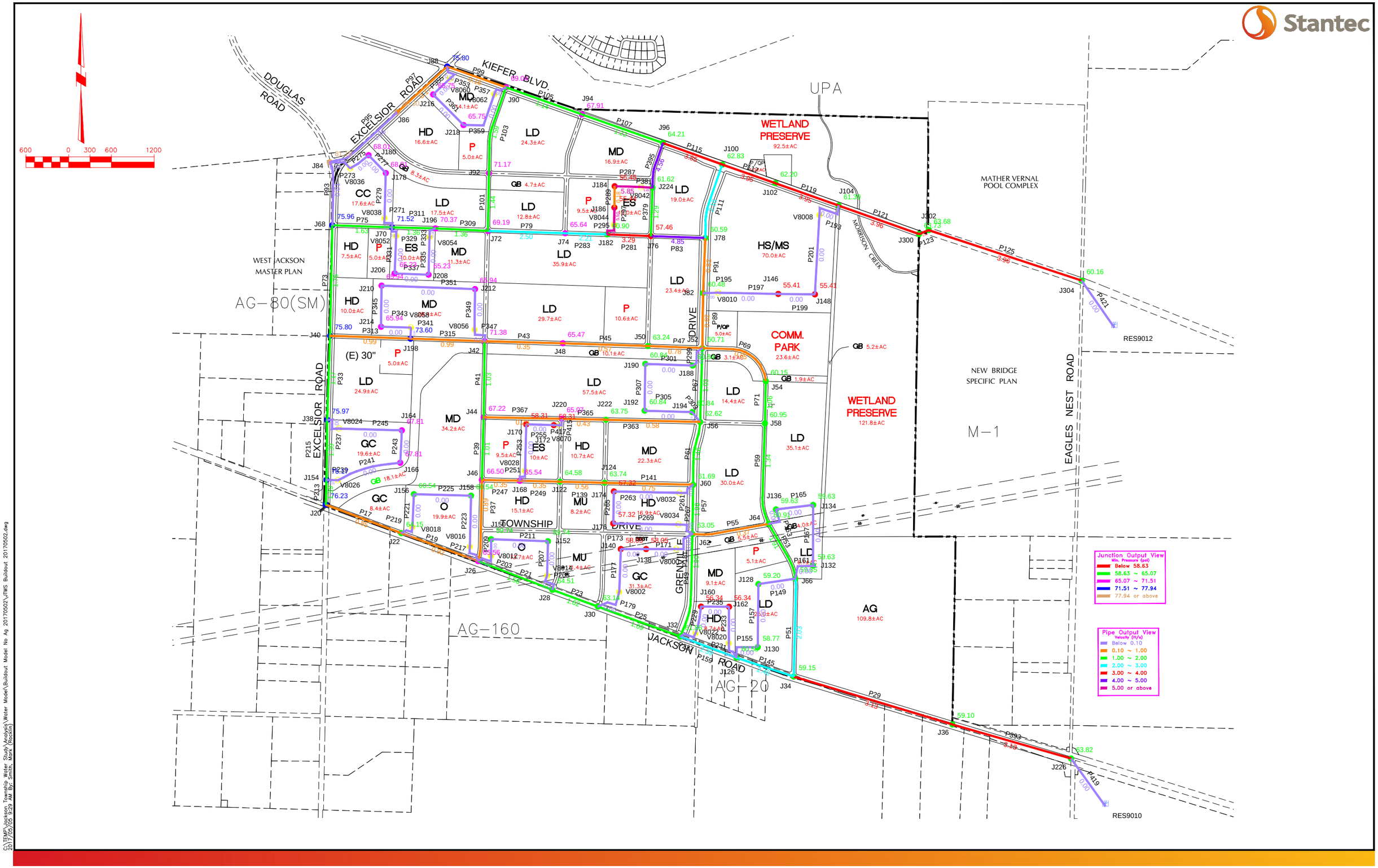

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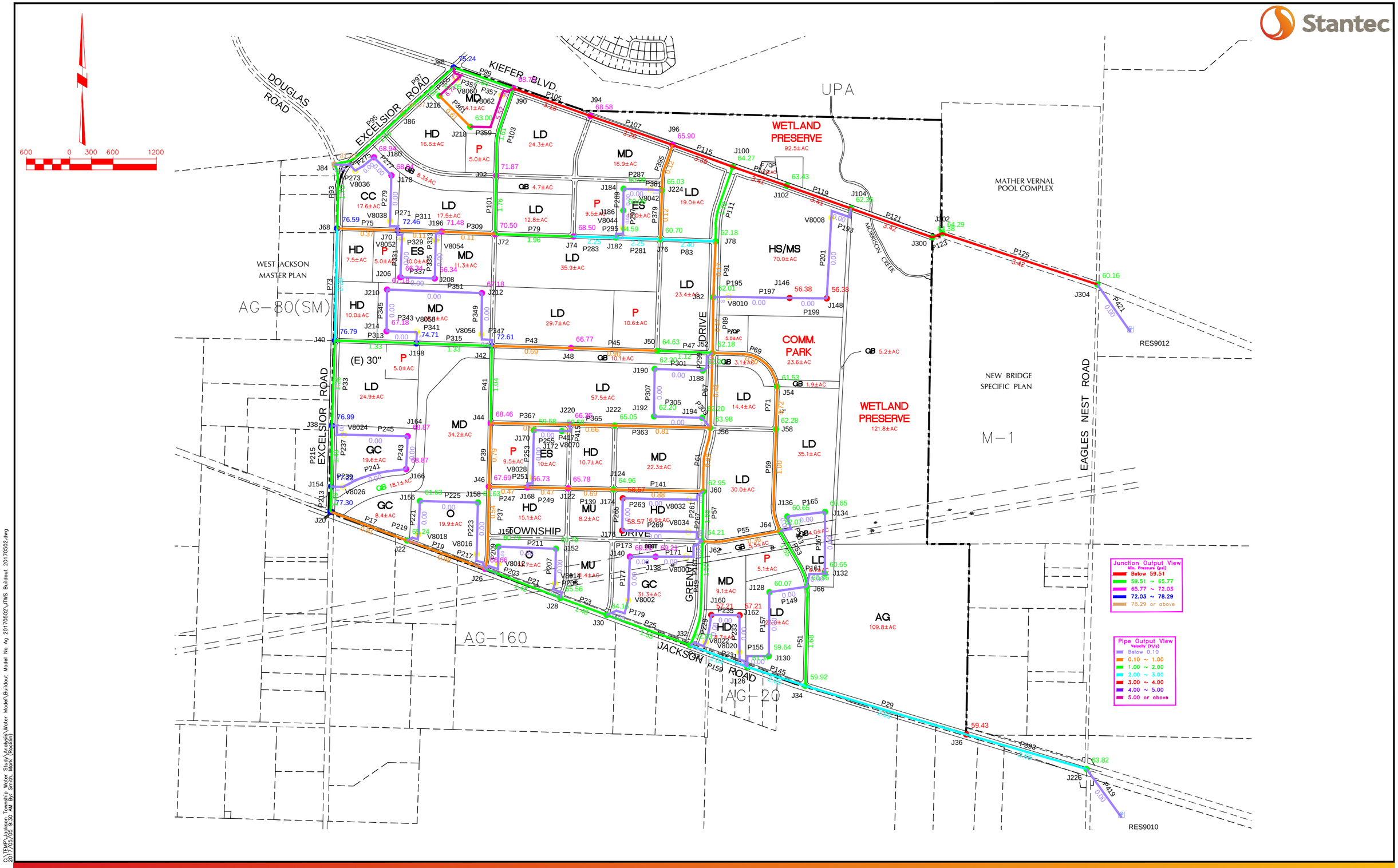
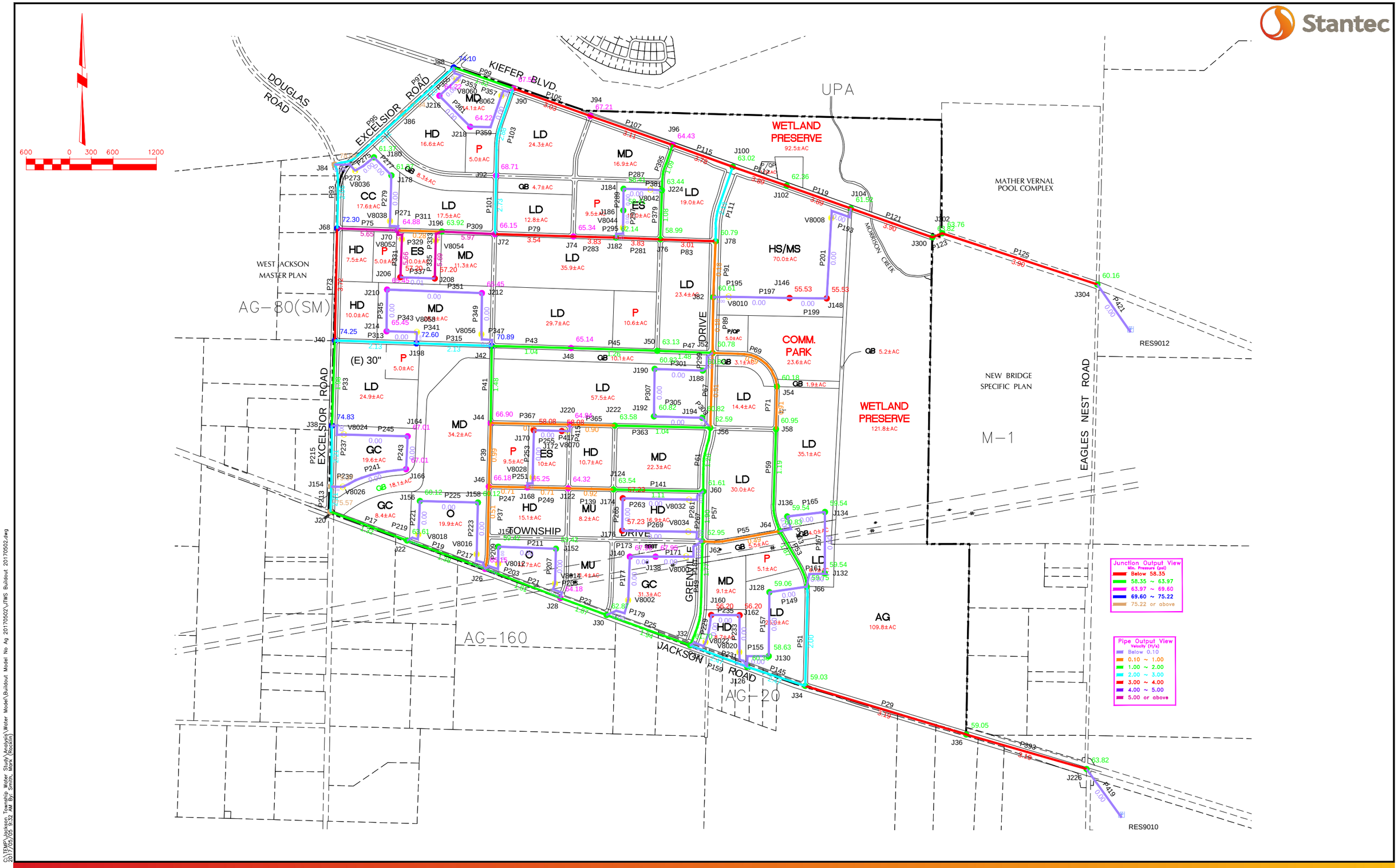
Jackson Township Water Study
Buildout System Network Map
B6 - MDD+FF - Pressure-Velocity Map



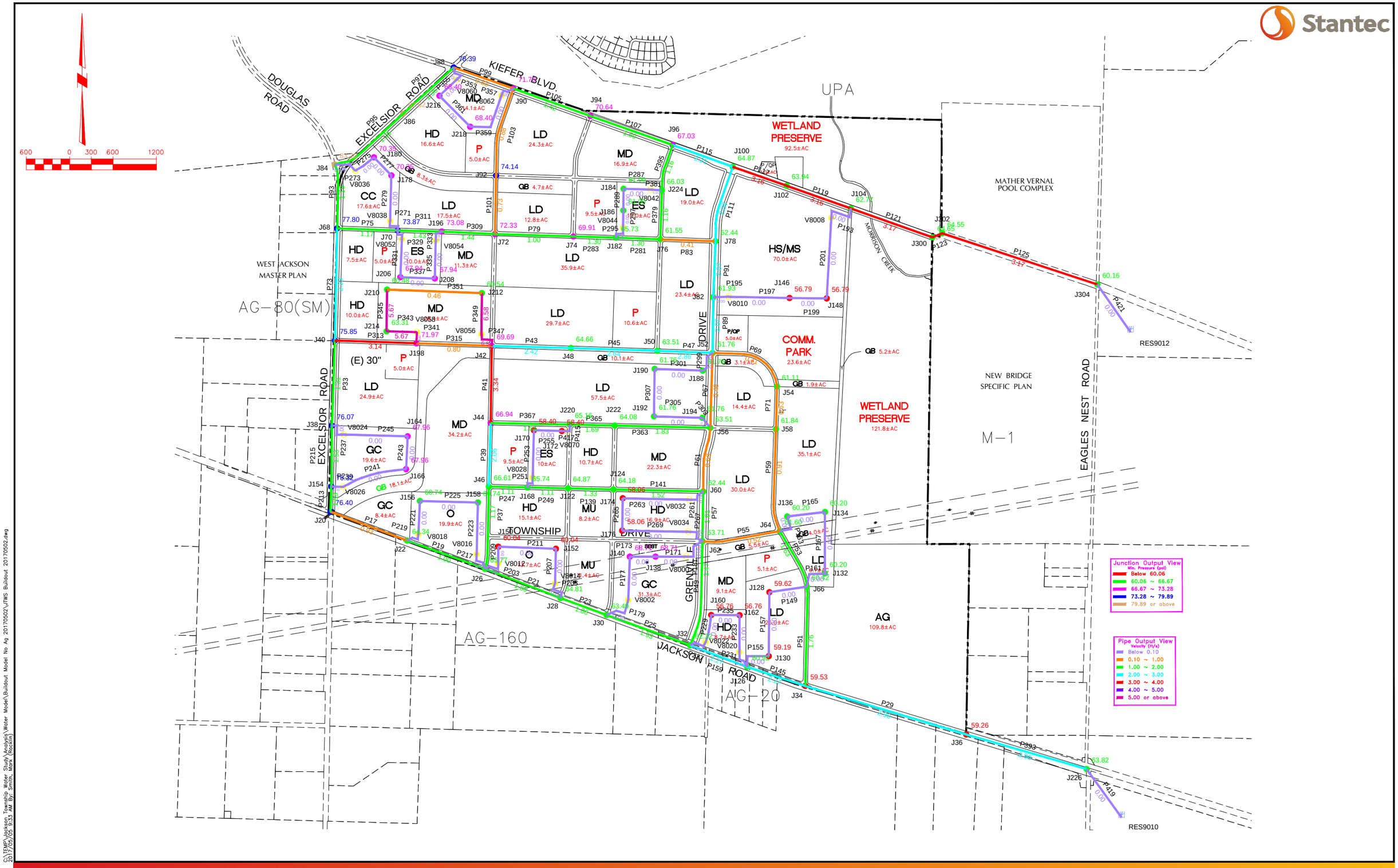
C:\TEMP\Jackson Township Water Study\Analysis\Water Model\Buildout Model No Ag 20170502\JTWS Buildout 20170502.dwg
2017/05/05 9:30 AM By: Smith, Mark (Rocklin)

Jackson Township Water Study
Buildout System Network Map
B7 - MDD+FF - Pressure-Velocity Map



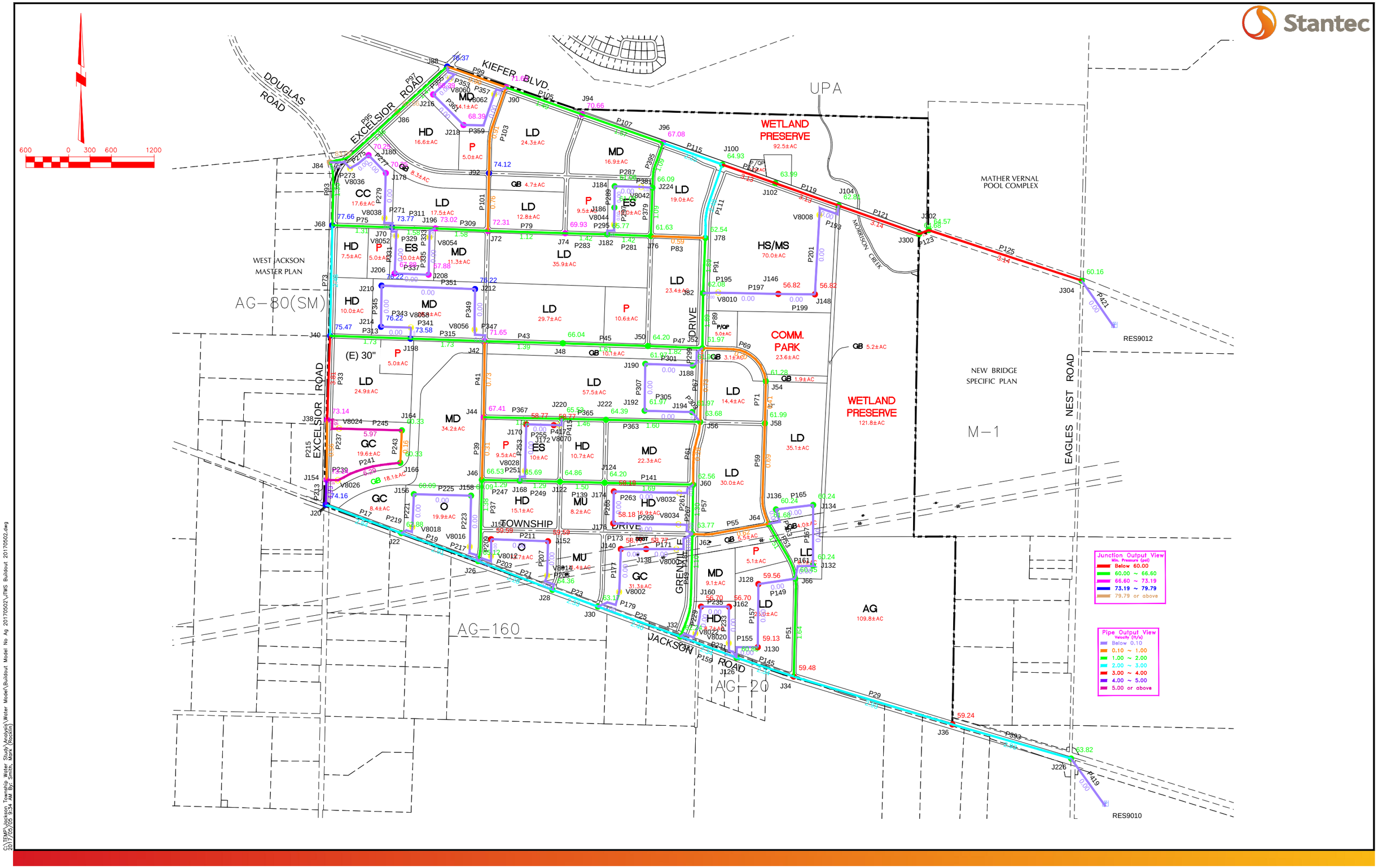
C:\TEMP\Jackson Township Water Study\Analysis\Water Model\Buildout Model No Ag 20170502_TWS Buildout 20170502.dwg
2017/05/05 9:32 AM By: Smith, Mark (Rocklin)

Jackson Township Water Study
Buildout System Network Map
B8 - MDD+FF - Pressure-Velocity Map



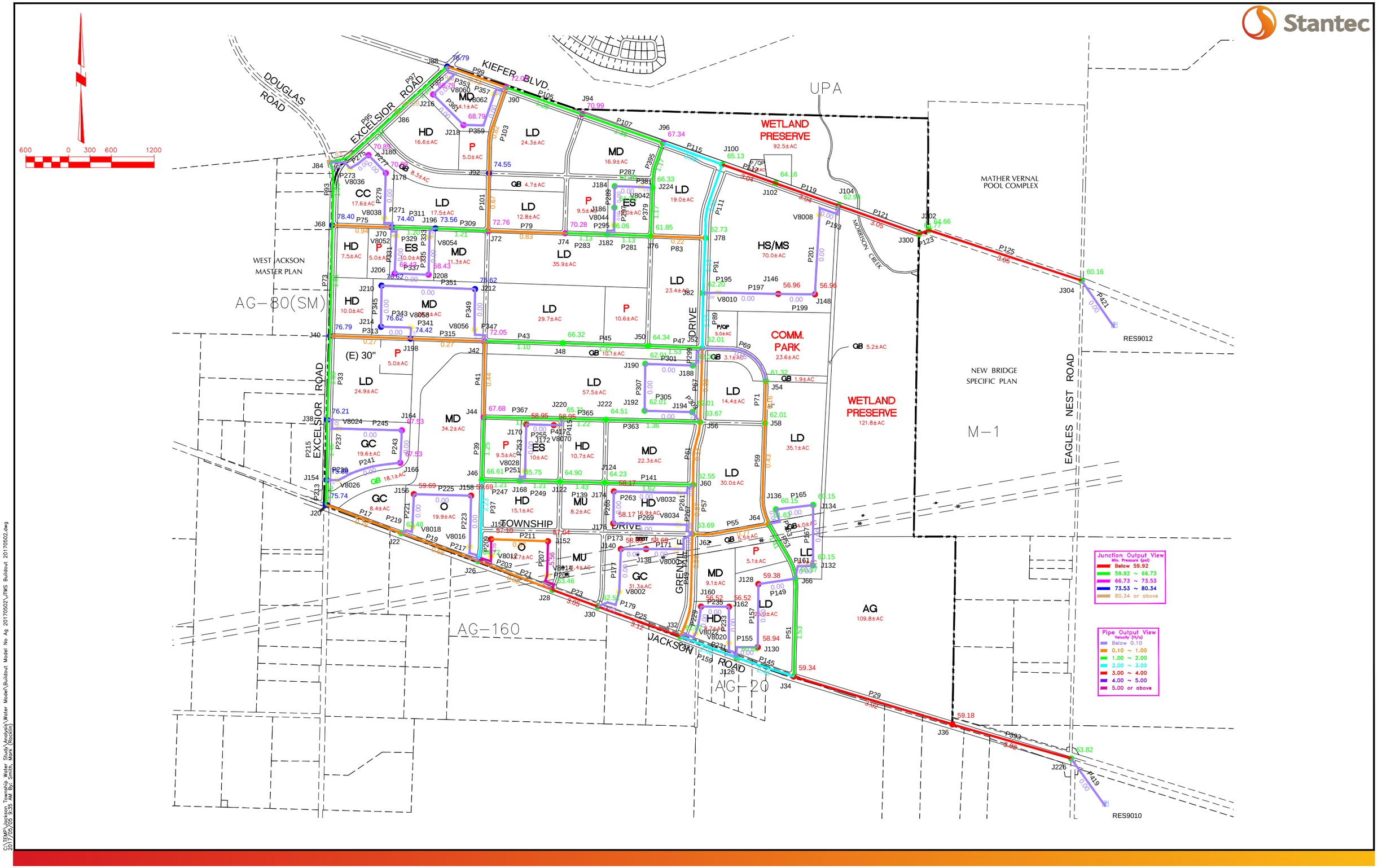
C:\TEMP\Jackson Township Water Study\Analysis\Water Model\Buildout Model No Ag 20170502\JTWS Buildout 20170502.dwg
2017/05/05 9:33 AM By: Smith, Mark (Rocklin)

Jackson Township Water Study
Buildout System Network Map
B9 - MDD+FF - Pressure-Velocity Map



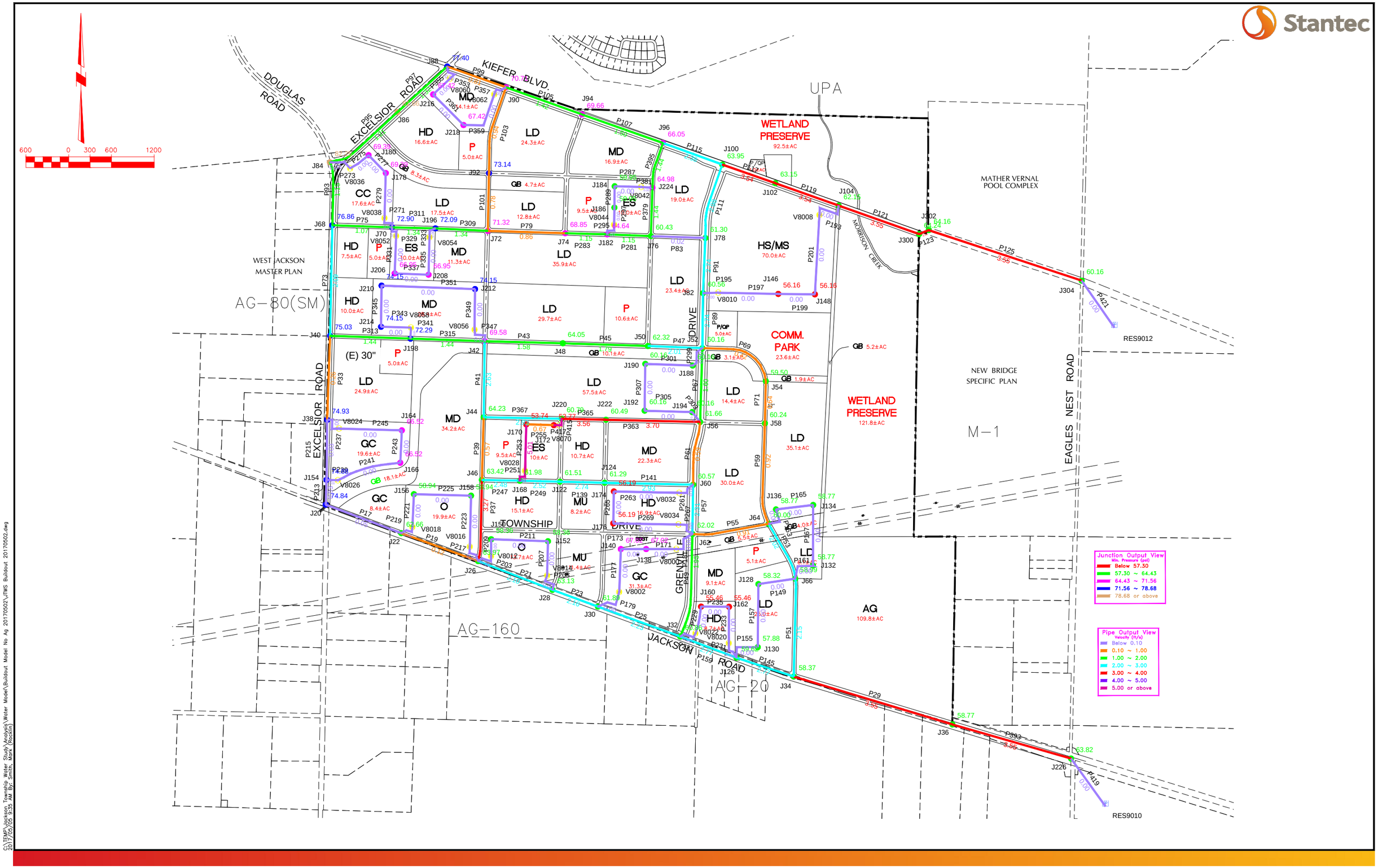
C:\TEMP\Jackson Township Water Study\Analysis\Water Model\Buildout Model No Ag 20170502\JTWS Buildout 20170502.dwg
2017/05/05 9:34 AM By: Smith, Mark (Reclaim)

Jackson Township Water Study
Buildout System Network Map
B10 - MDD+FF - Pressure-Velocity Map



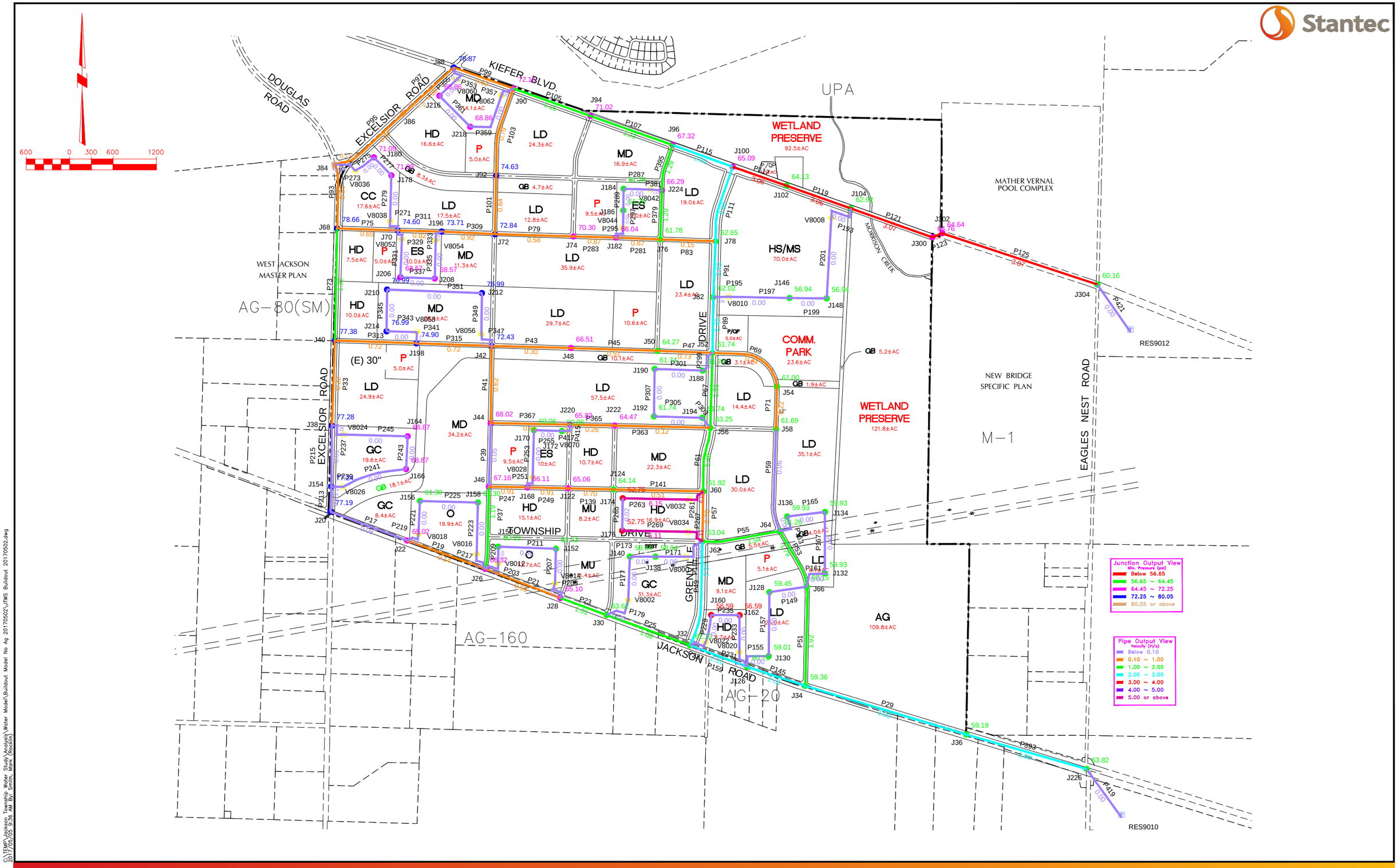
C:\TEMP\Jackson Township Water Study\Analysis\Water Model\Buildout Model No Ag 20170502\JTWS Buildout 20170502.dwg
2017/05/05 9:35 AM By: Smith, Mark (Reclaim)

Jackson Township Water Study
Buildout System Network Map
B11 - MDD+FF - Pressure-Velocity Map



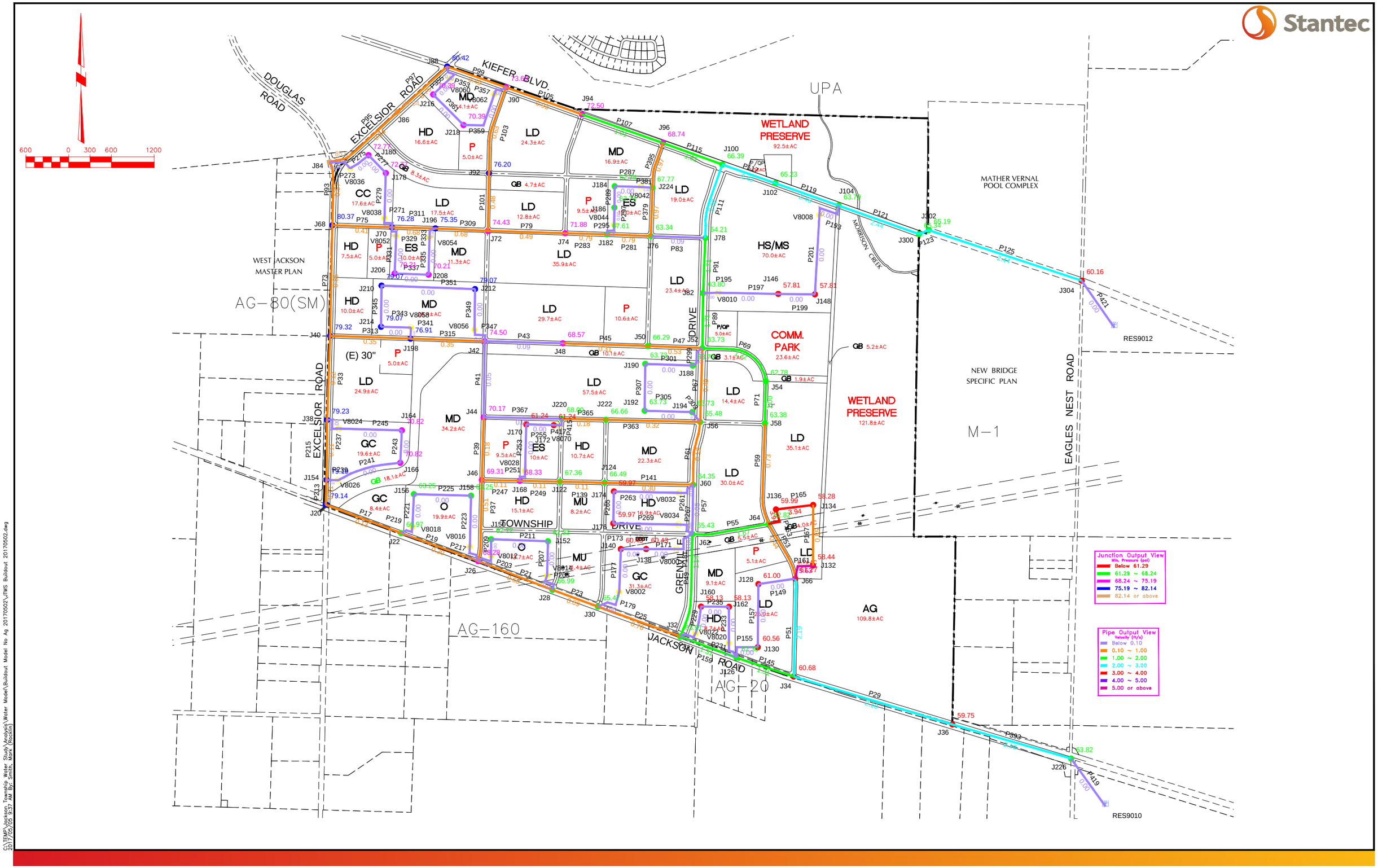
C:\TEMP\Jackson Township Water Study\Analysis\Water Model\Buildout Model No Ag 20170502\JTWS Buildout 20170502.dwg
2017/05/05 9:35 AM By: Smith, Mark (Reclaim)

Jackson Township Water Study
Buildout System Network Map
B12 - MDD+FF - Pressure-Velocity Map



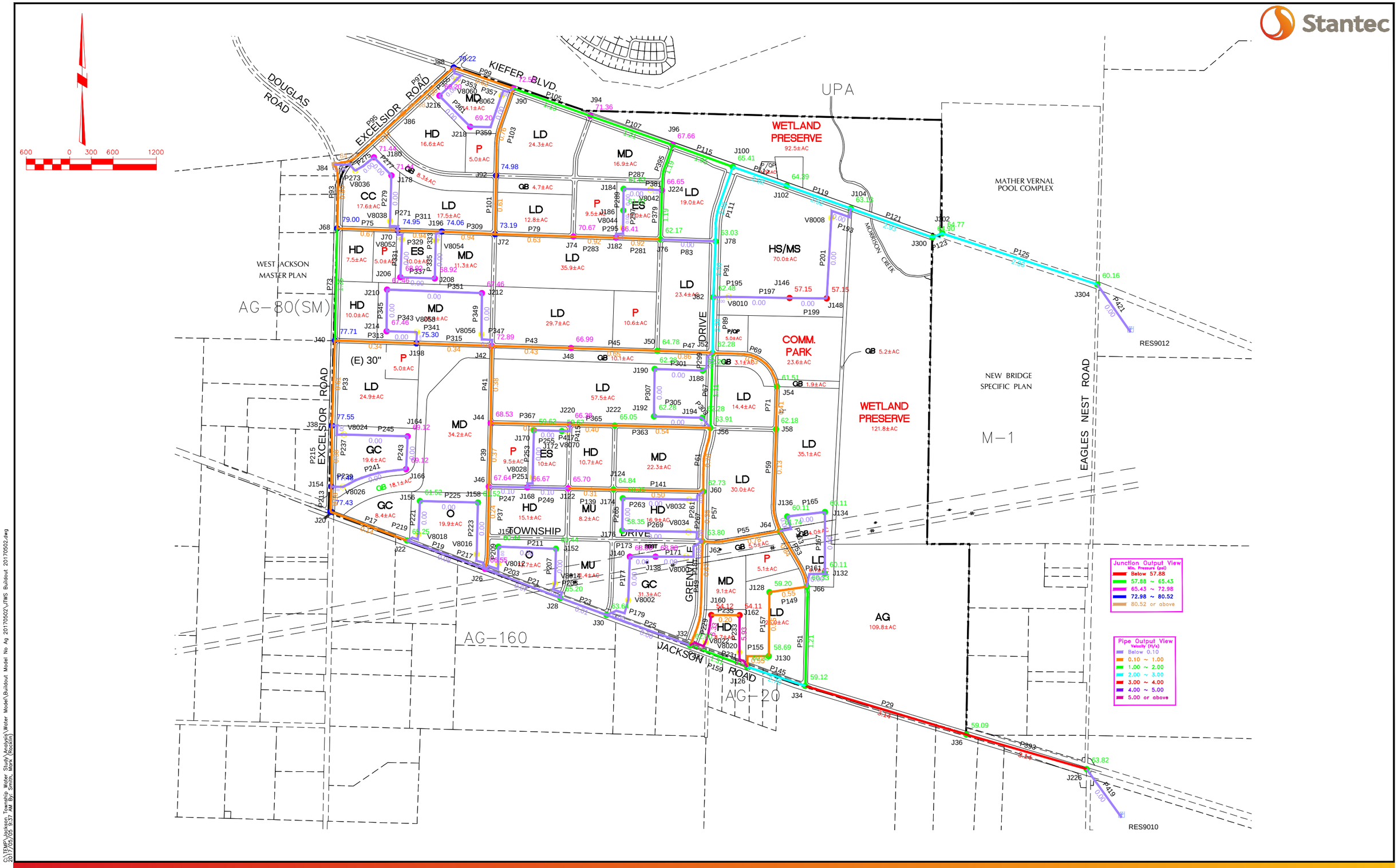
Jackson Township Water Study
Buildout System Network Map
B13 - MDD+FF - Pressure-Velocity Map

C:\TEMP\Jackson Township Water Study\Analysis\Water Model\Buildout Model No Ag 20170502_TWS Buildout 20170502.dwg
2017/05/05 9:36 AM By: Smith, Mark (Rocklin)



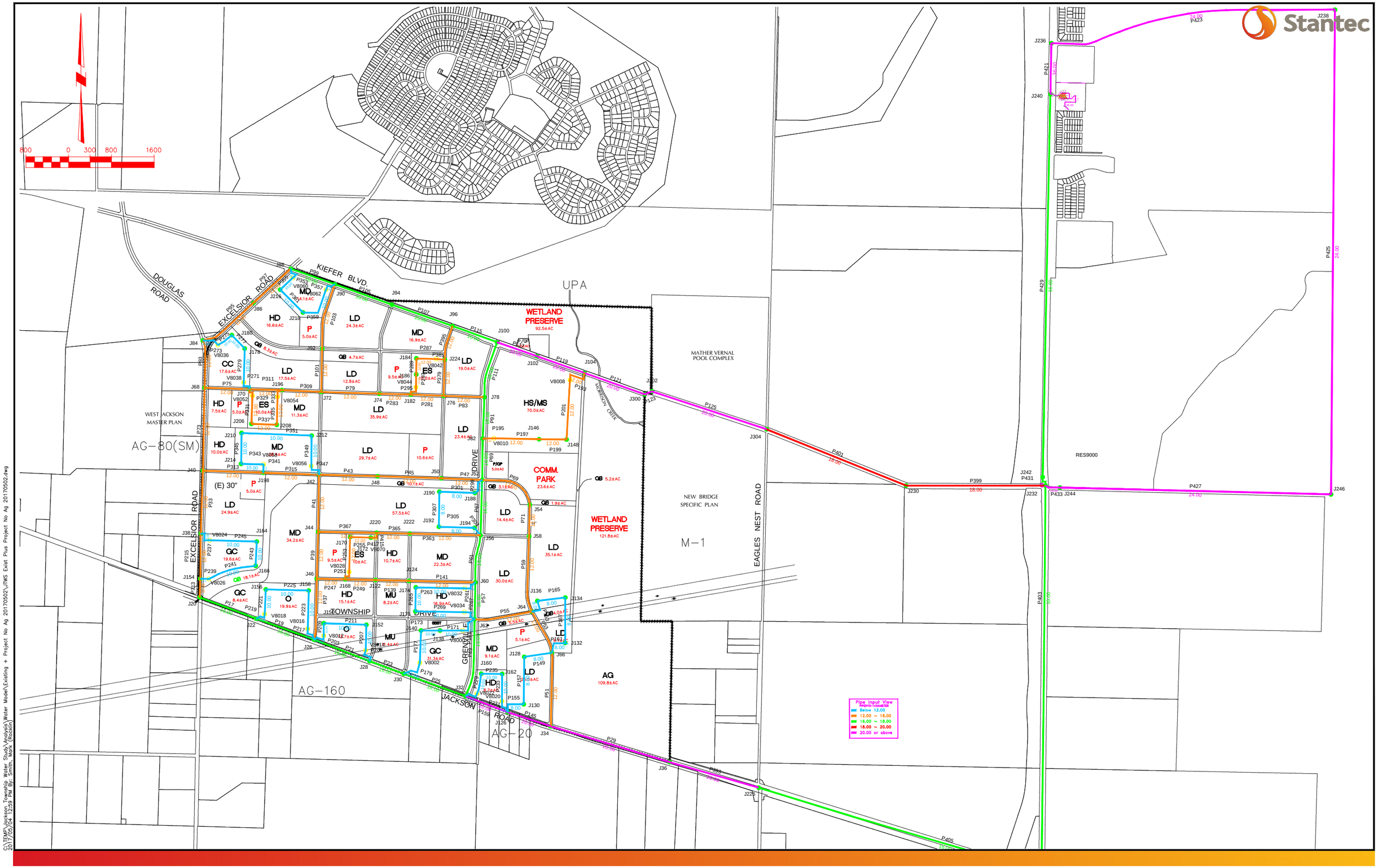
C:\TEMP\Jackson Township Water Study\Analysis\Water Model\Buildout Model No Ag 20170502\JTWS Buildout 20170502.dwg
2017/05/05 9:37 AM By: Smith, Mark (Reclaim)

Jackson Township Water Study
Buildout System Network Map
B14 - MDD+FF - Pressure-Velocity Map



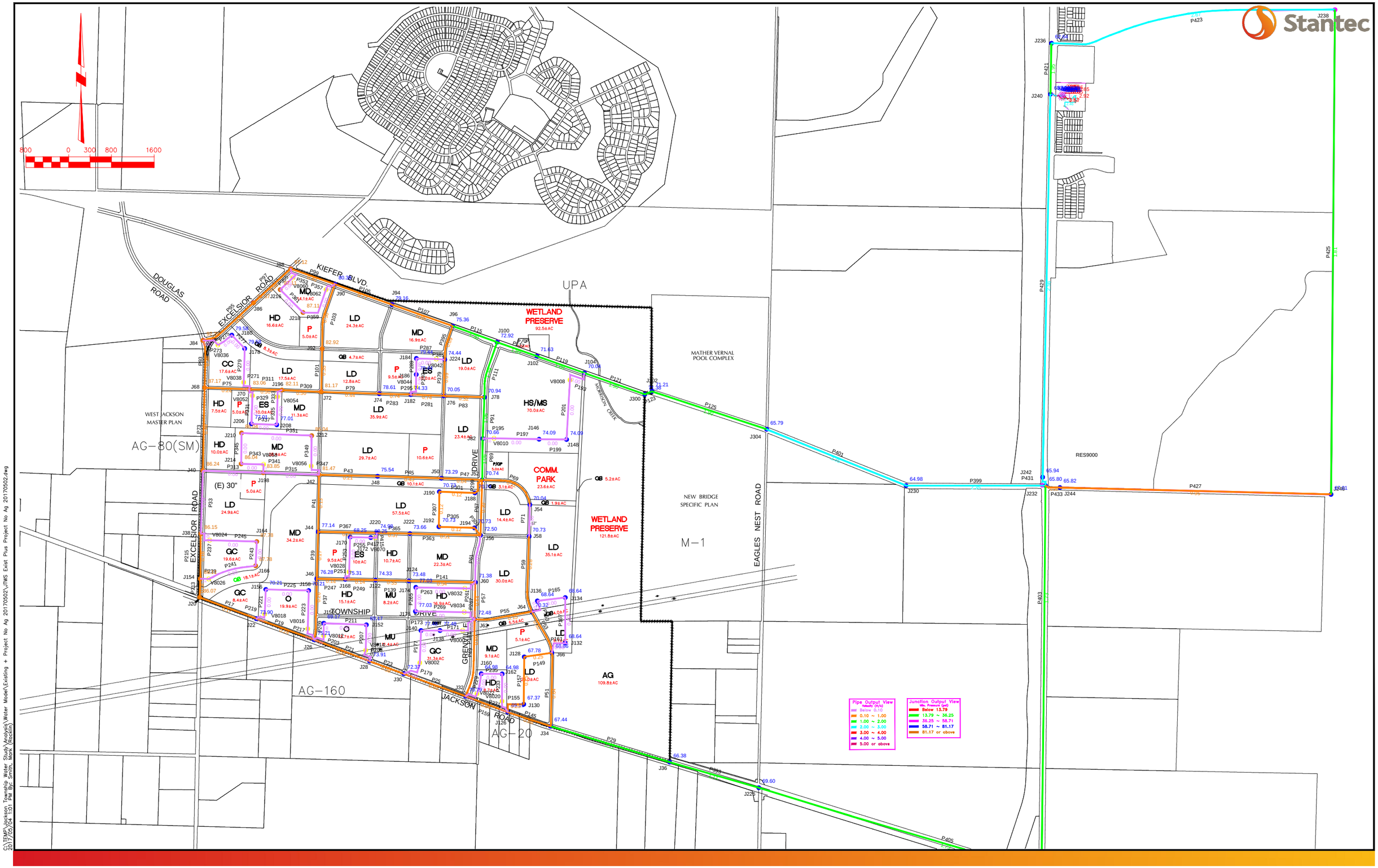
Jackson Township Water Study
Buildout System Network Map
B15 - MDD+FF - Pressure-Velocity Map

C:\TEMP\Jackson Township Water Study\Analysis\Water Model\Buildout Model No Ag 20170502\JTWS Buildout 20170502.dwg
2017/05/05 9:37 AM By: Smith, Mark (Rocklin)



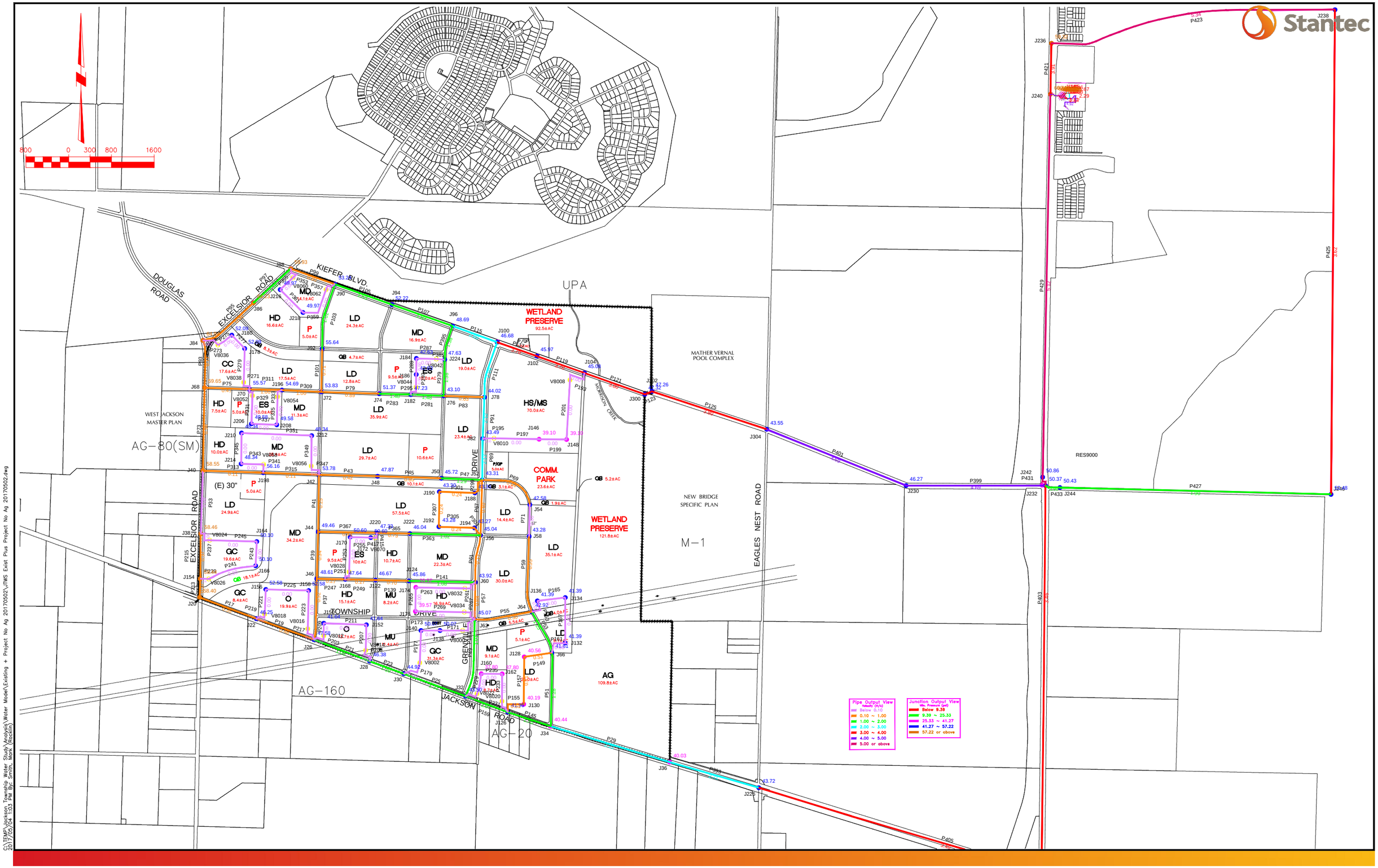
C:\TEMP\jackson Township Water Study\Analysis\Water Model\Existing + Project No Ag 20170502\JTWS Exist Plus Project No Ag 20170502.dwg
2017/05/04 12:59 PM By: Smith, Mark (Rockin)

Jackson Township Water Study
Existing plus Project
EB2 - MDD - System Map



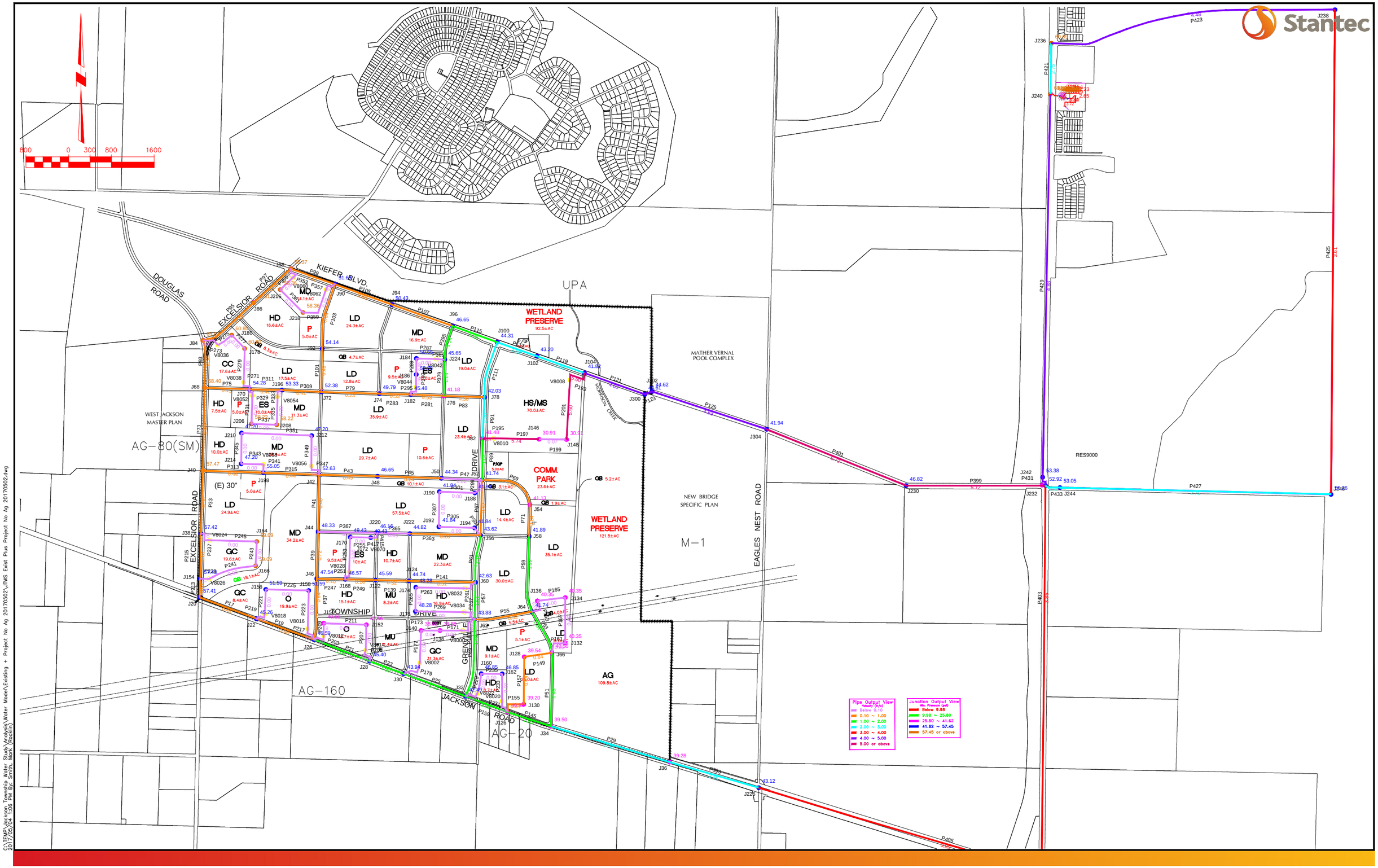
Jackson Township Water Study
Existing plus Project
EB2 - MDD - Pressure-Velocity Map

C:\TEMP\Jackson Township Water Study\Analysis\Water Model\Existing + Project No Ag 20170502\JTWS Exist Plus Project No Ag 20170502.dwg
2017/05/04 1:01 PM By: Smith, Mark (Rocklin)



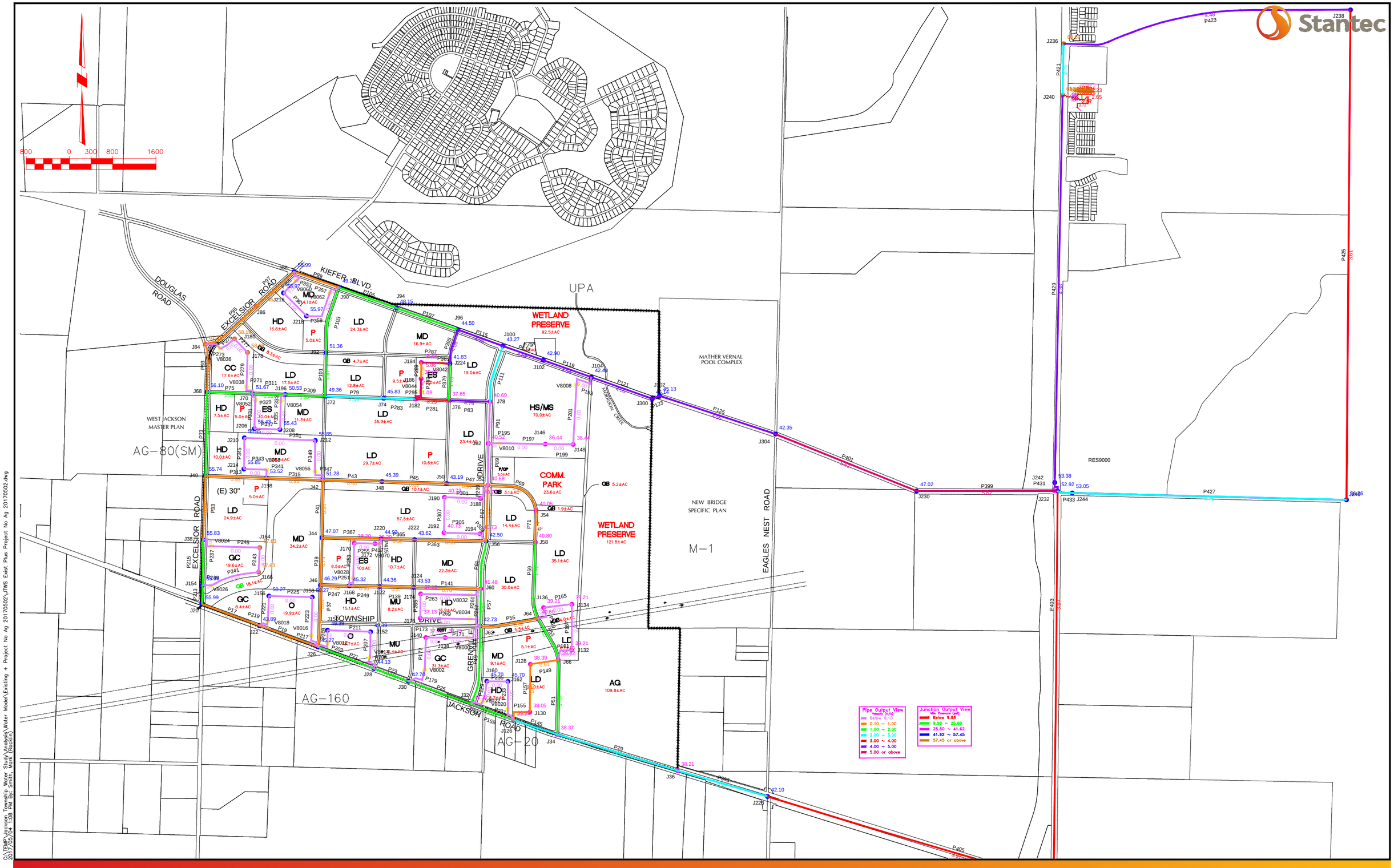
C:\TEMP\Jackson Township Water Study\Analysis\Water Model\Existing + Project No Ag 20170502\JTWS Exist Plus Project No Ag 20170502.dwg
2017/05/04 1:03 PM By: Smith, Mark (Rockfin)

Jackson Township Water Study
Existing plus Project
EB3 - PHD - Pressure-Velocity Map



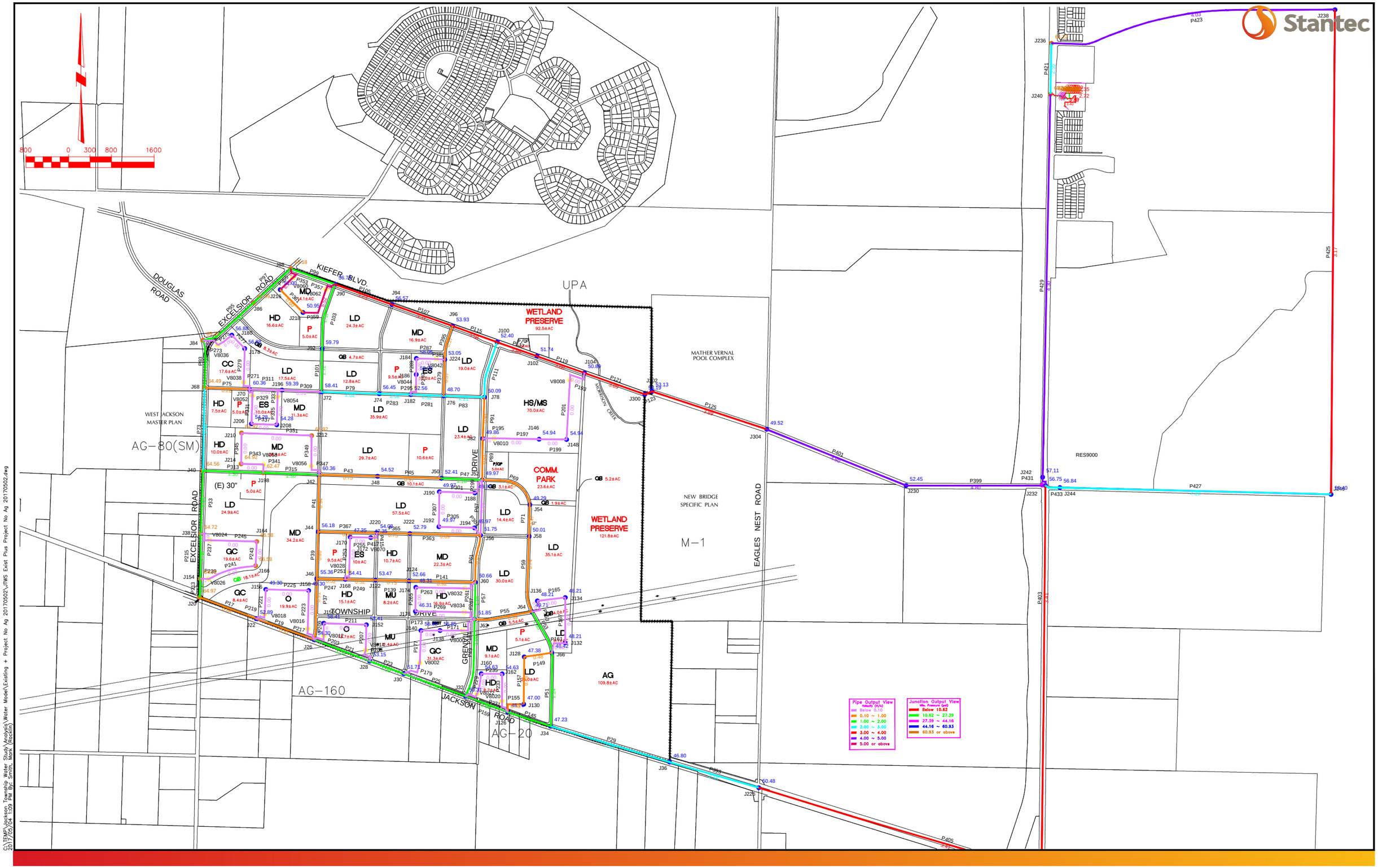
C:\TEMP\Jackson Township Water Study\Analysis\Water Model\Existing + Project No Ag 20170502\JTWS Exist Plus Project No Ag 20170502.dwg
2017/05/04 1:06 PM By: Smith, Mark (Rockfin)

Jackson Township Water Study
Existing plus Project
EB4 - MDD&FF - Pressure-Velocity Map



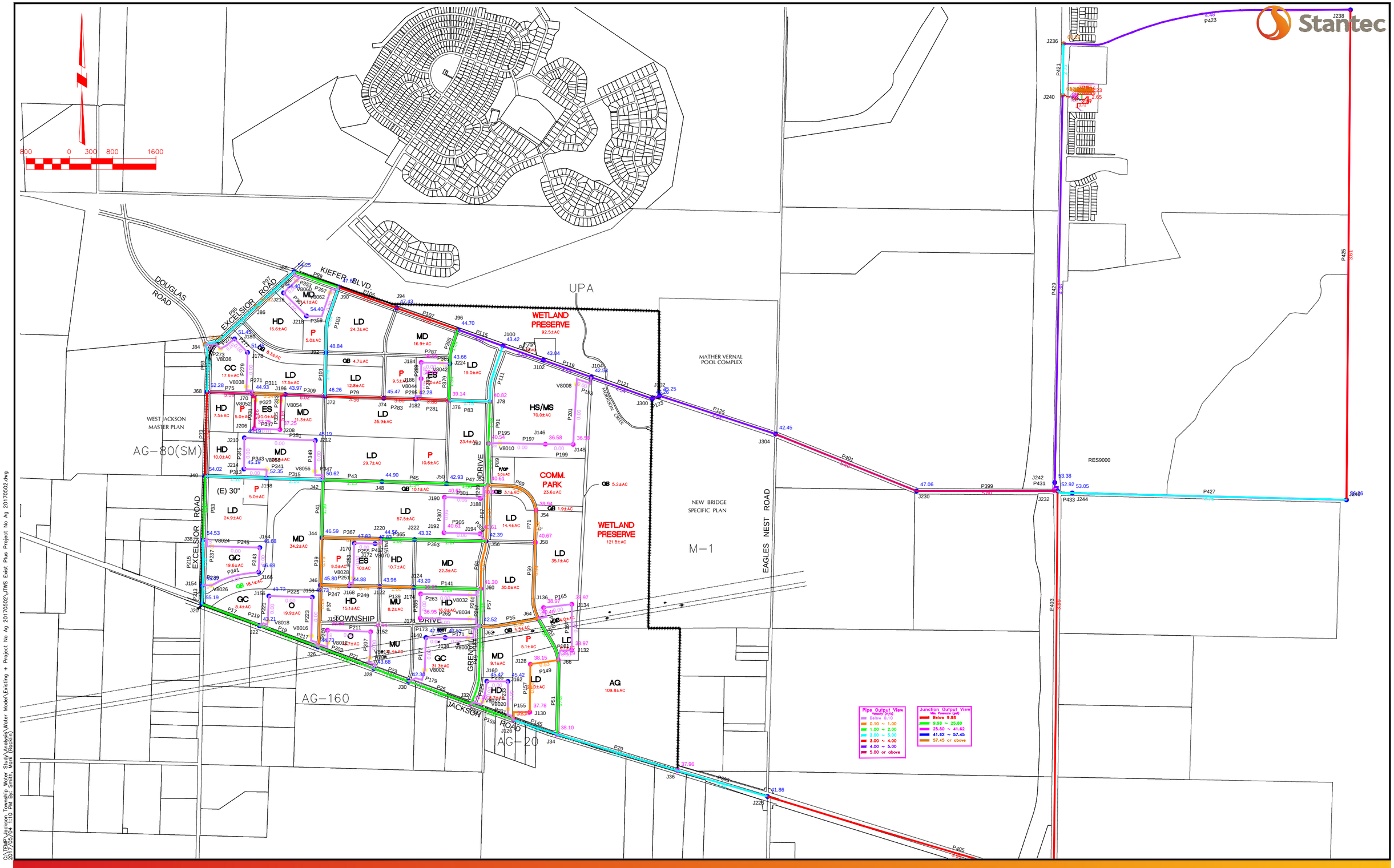
C:\TEMP\Jackson Township Water Study\Analysis\Water Model\Existing + Project No Ag 20170502\JTWS Exist Plus Project No Ag 20170502.dwg
2017/05/04 1:08 PM By: Smith, Mark (Rocklin)

Jackson Township Water Study
Existing plus Project
EB5 - MDD&FF - Pressure-Velocity Map



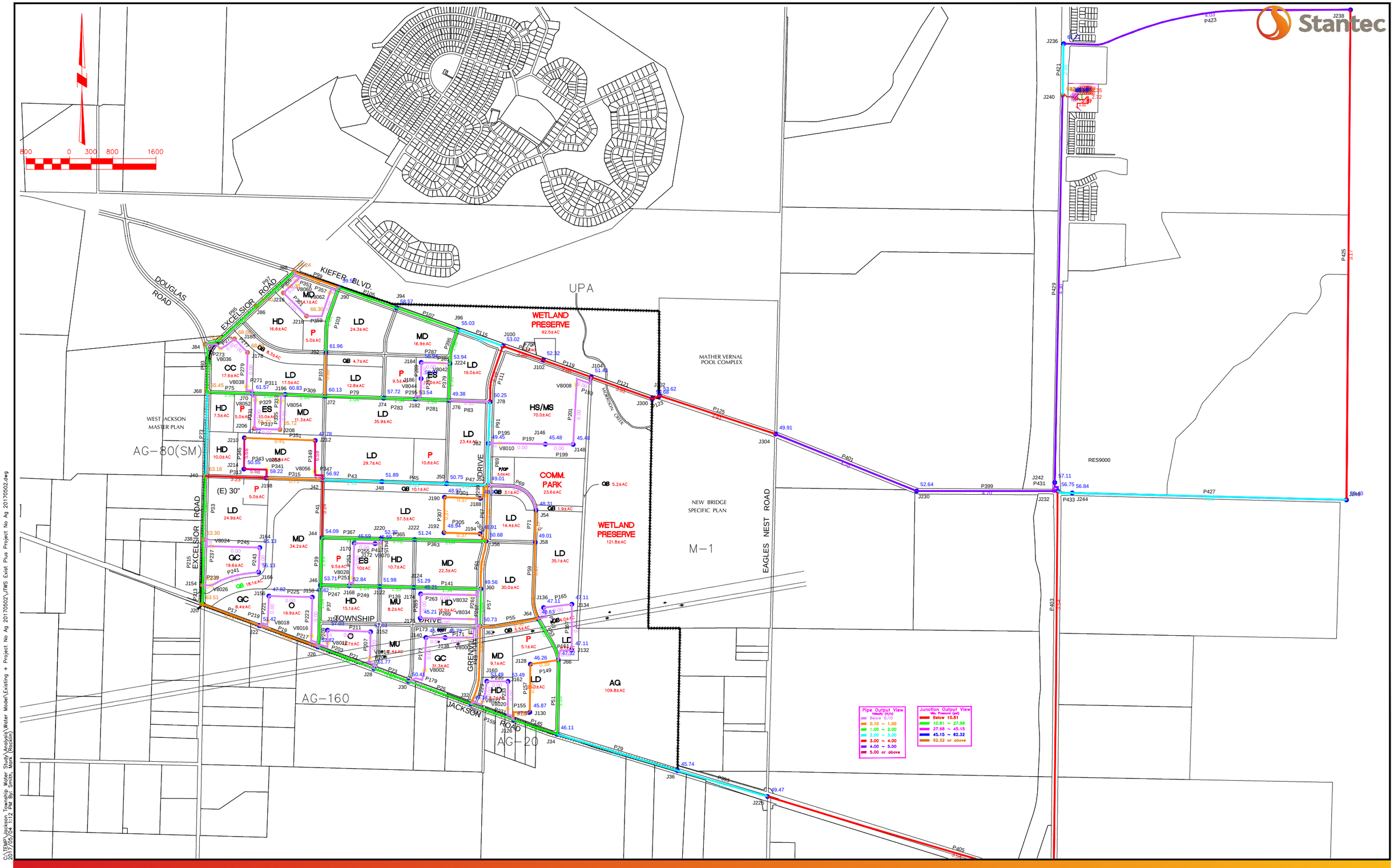
C:\TEMP\Jackson Township Water Study\Analysis\Water Model\Existing + Project No Ag 20170502\JTWS Exist Plus Project No Ag 20170502.dwg
2017/05/04 1:09 PM By: Smith, Mark (Rocklin)

Jackson Township Water Study
Existing plus Project
EB6 - MDD&FF - Pressure-Velocity Map



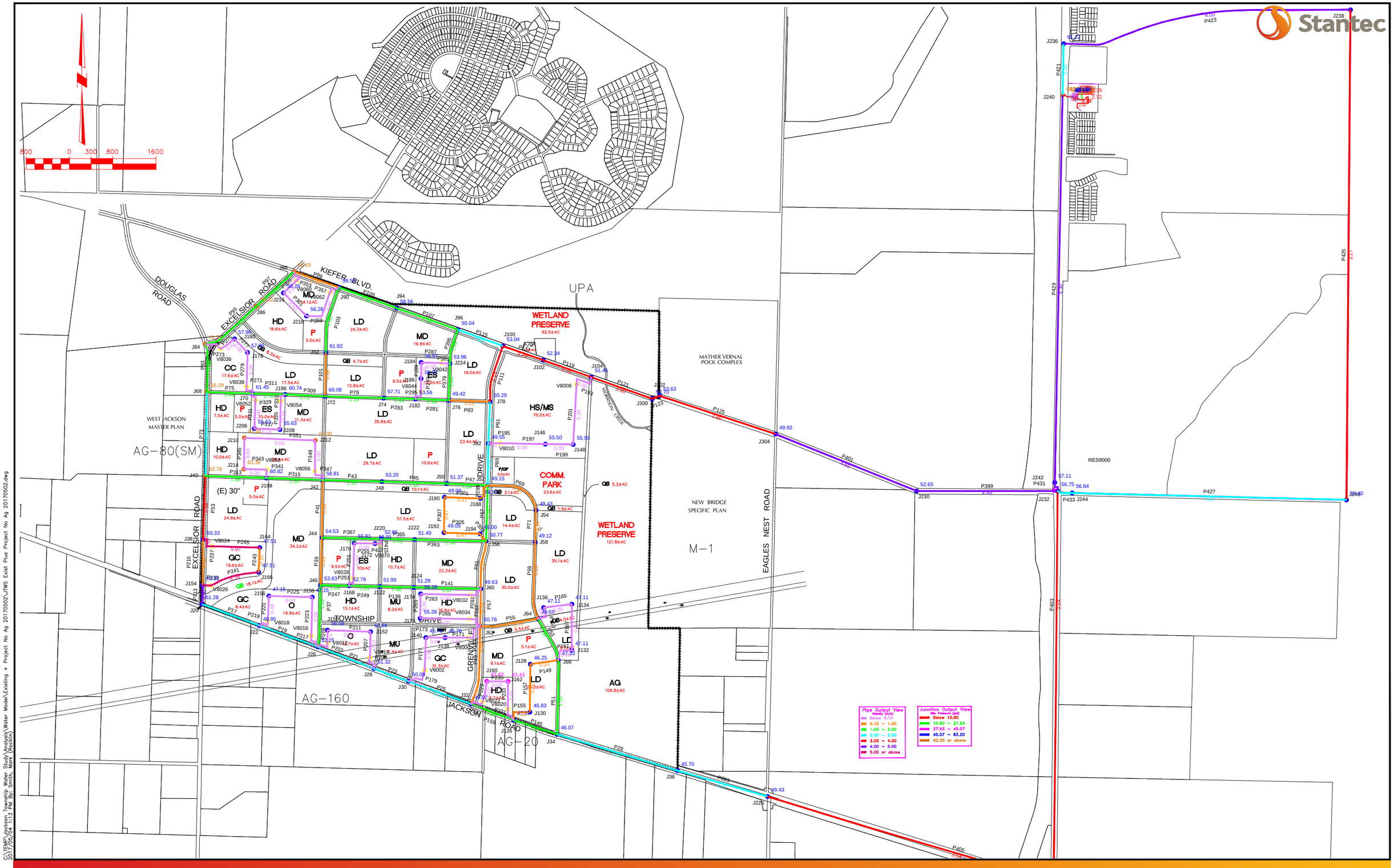
C:\TEMP\Jackson Township Water Study\Analysis\Water Model\Existing + Project No Ag 20170502\JTWS Exist Plus Project No Ag 20170502.dwg
2017/05/04 1:10 PM By: Smith, Mark (Rockfin)

Jackson Township Water Study
Existing plus Project
EB7 - MDD&FF - Pressure-Velocity Map



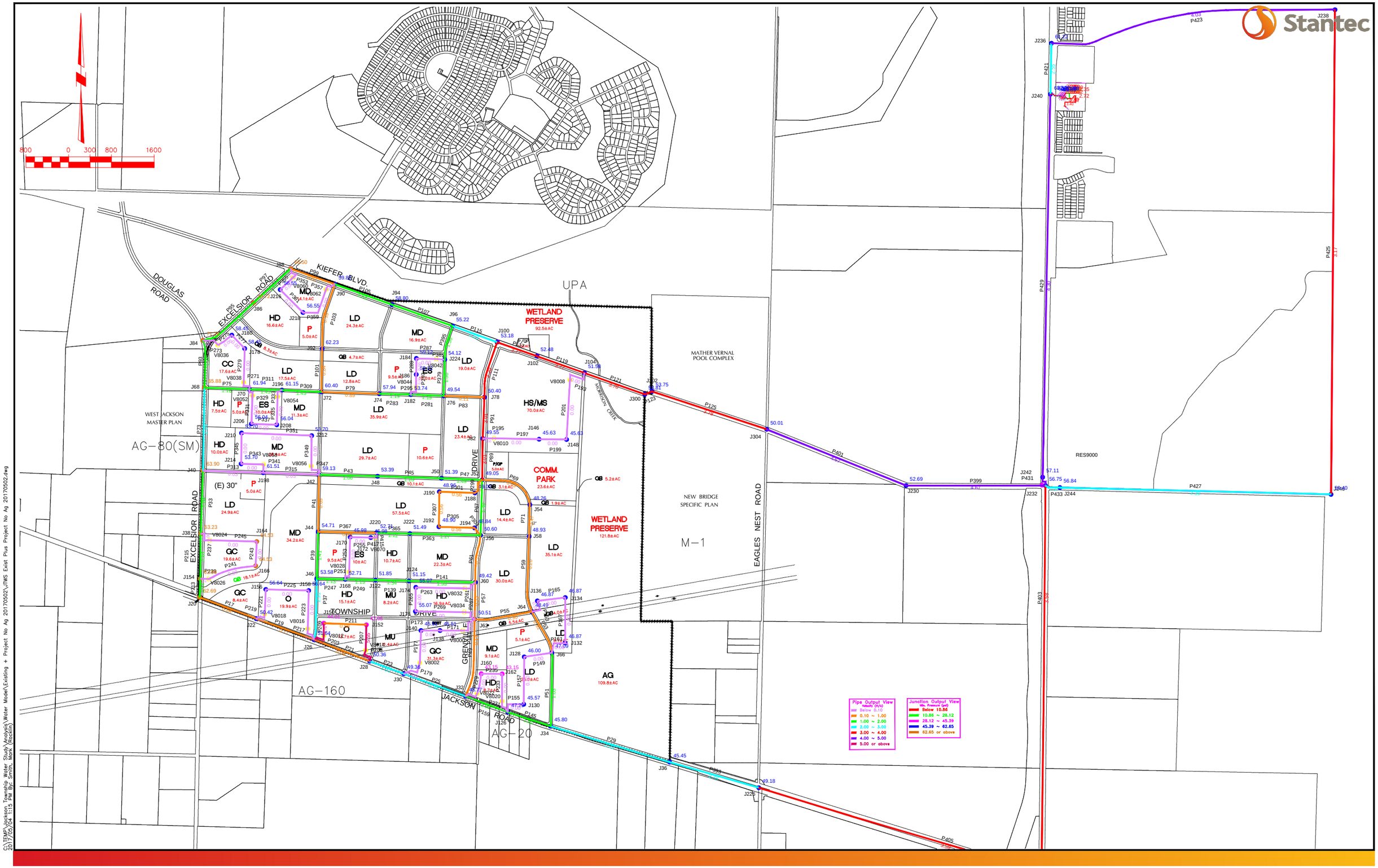
C:\TEMP\Jackson Township Water Study\Analysis\Water Model\Existing + Project No Ag 20170502\JTWS Exist Plus Project No Ag 20170502.dwg
2017/05/04 1:12 PM By: Smith, Mark (Rocklin)

Jackson Township Water Study
Existing plus Project
EB8 - MDD&FF - Pressure-Velocity Map



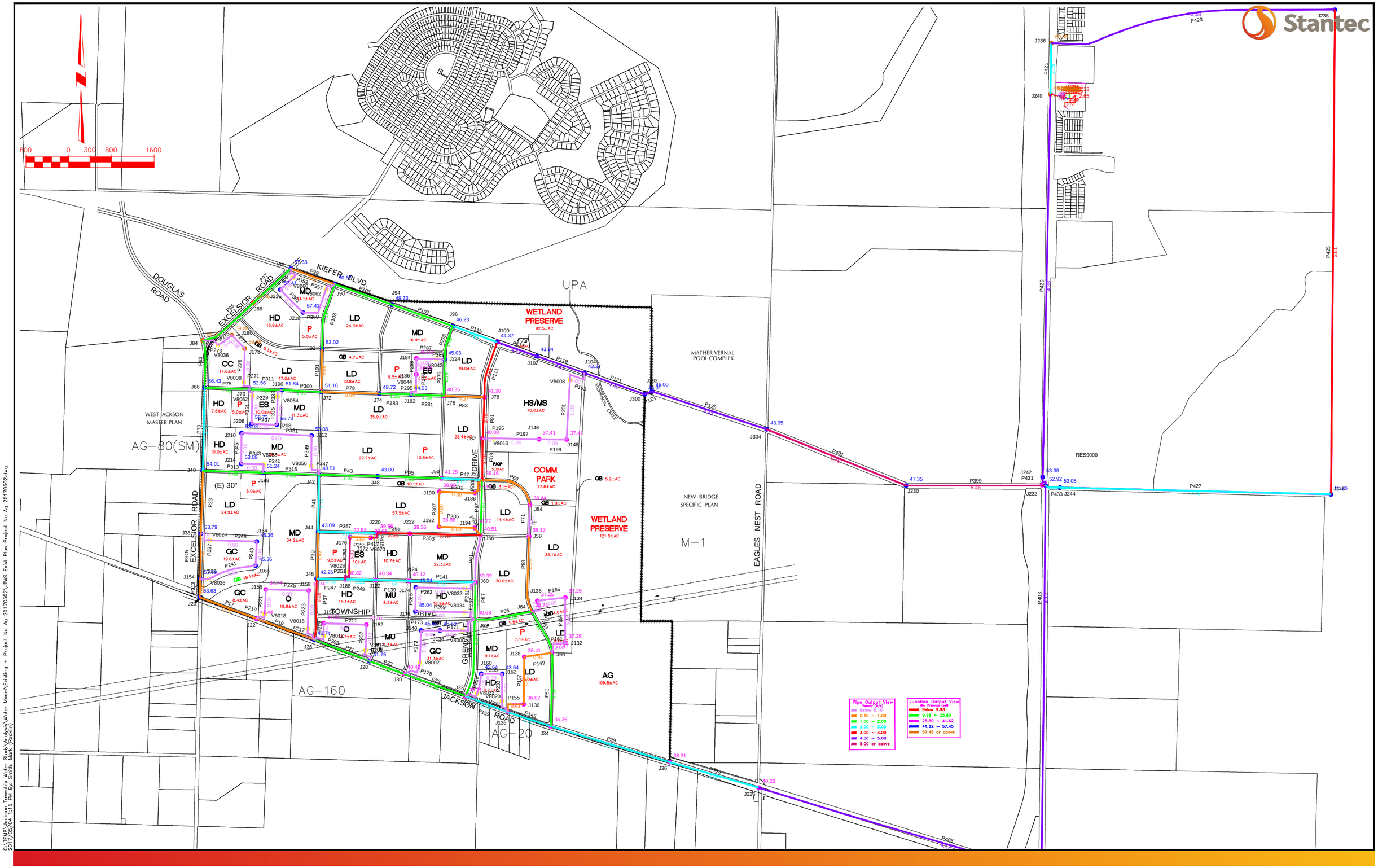
C:\TEMP\Jackson Township Water Study\Analysis\Water Model\Existing + Project No Ag 20170502\JTWS Exist Plus Project No Ag 20170502.dwg
2017/05/04 1:13 PM By: Smith, Mark (Rocklin)

Jackson Township Water Study
Existing plus Project
EB9 - MDD&FF - Pressure-Velocity Map



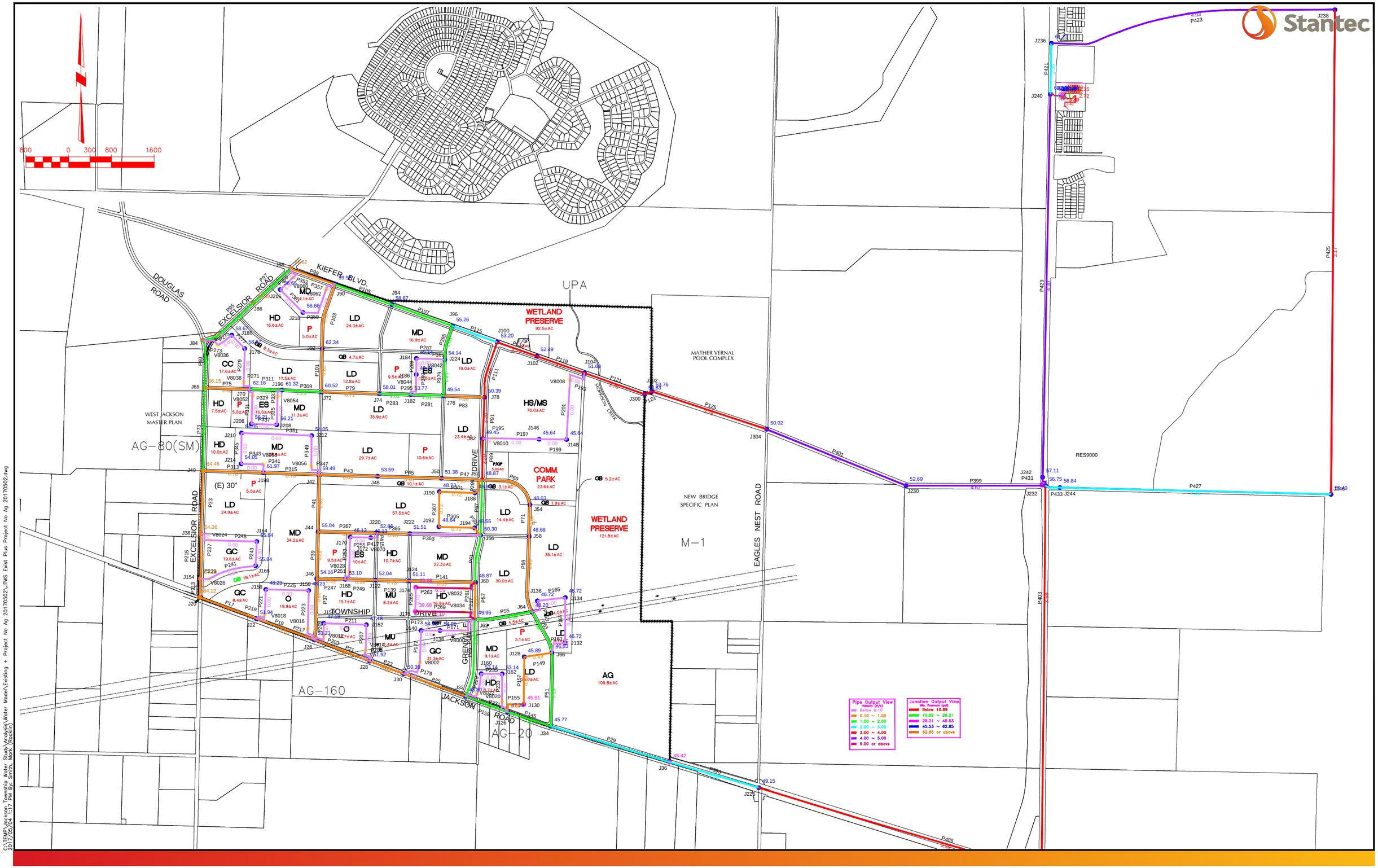
Jackson Township Water Study
Existing plus Project
EB10 - MDD&FF - Pressure-Velocity Map

C:\TEMP\Jackson Township Water Study\Analysis\Water Model\Existing + Project No Ag 20170502\TWS Exist Plus Project No Ag 20170502.dwg
2017/05/04 1:15 PM By: Smith, Mark (Rocklin)



C:\TEMP\Jackson Township Water Study\Analysis\Water Model\Existing + Project No Ag 20170502\JTWS Exist Plus Project No Ag 20170502.dwg
2017/05/04 1:15 PM By: Smith, Mark (Rockfin)

Jackson Township Water Study
Existing plus Project
EB11 - MDD&FF - Pressure-Velocity Map



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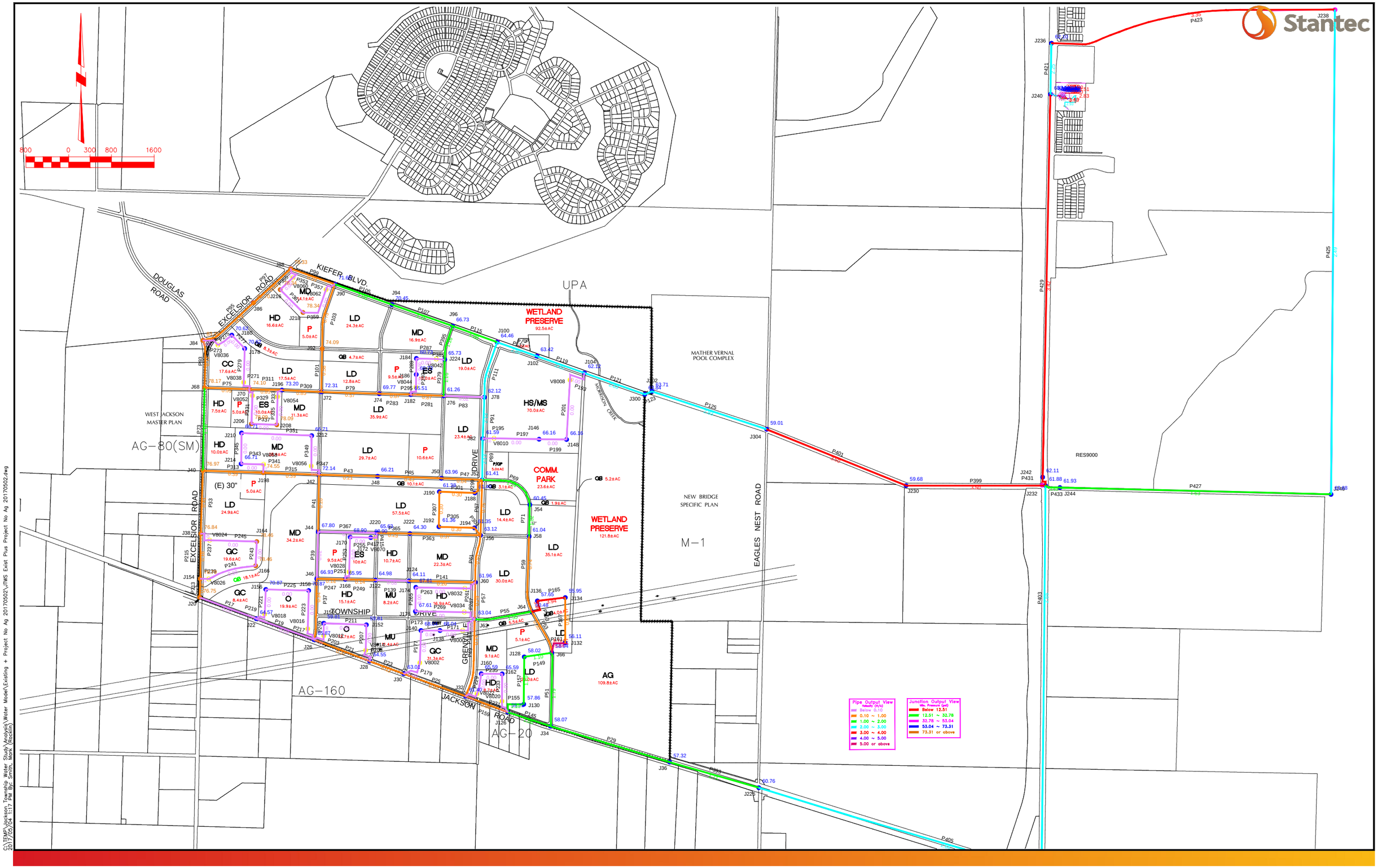
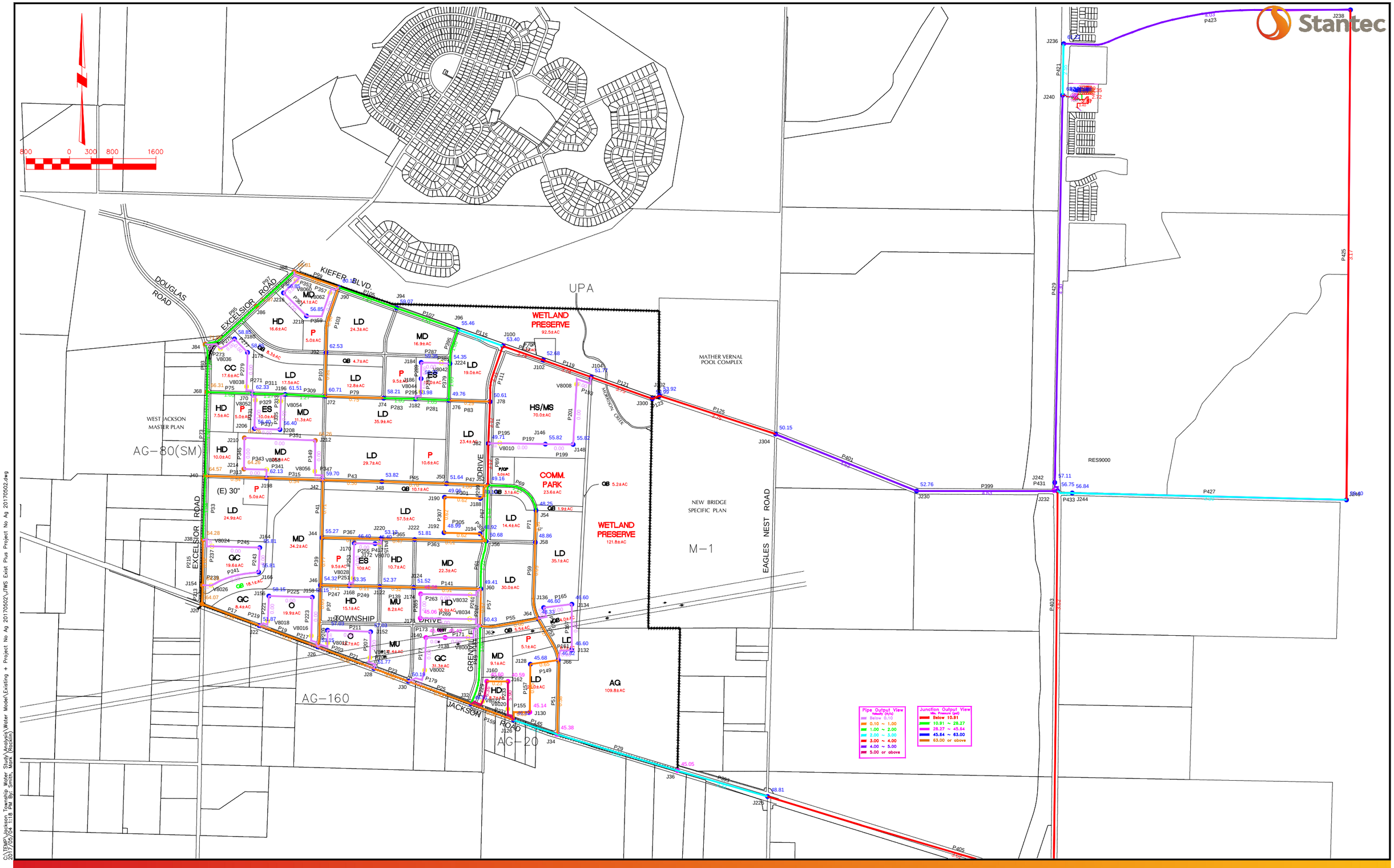
2017/05/04 1:17 PM By: Smith, Mark (Rockfin)

Jackson Township Water Study
Existing plus Project
EB12 - MDD&FF - Pressure-Velocity Map



C:\TEMP\Jackson Township Water Study\Analysis\Water Model\Existing + Project No Ag 20170502\JTWS Exist Plus Project No Ag 20170502.dwg
2017/05/04 1:17 PM By: Smith, Mark (Rockfin)

Jackson Township Water Study
Existing plus Project
EB13 - MDD&FF - Pressure-Velocity Map



C:\TEMP\Jackson Township Water Study\Analysis\Water Model\Existing + Project No Ag 20170502\JTWS Exist Plus Project No Ag 20170502.dwg
2017/05/04 1:18 PM By: Smith, Mark (Rockfin)

Jackson Township Water Study
Existing plus Project
EB14 - MDD&FF - Pressure-Velocity Map

A.2 BUILDOUT DEMAND APPORTIONMENT SPREADS

Jackson Township Water Study
Demand Apportionment Spread - By Phase and Parcel Tributary Area to each Node
Average Day Demands (ADD - gpm) **12/1/2016**

Parcel	Phase	Nodes	A. Fac.	Trib. A.	Demand (gpm)	LD	MD	HD	GC	CC	MU	O	P/QP	HS	ES	CP	P	OS-WP	OS-DC	OS-LC	OS-DB	AG	RW	Land Use
						1.41946	1.62604	2.21915	1.34615	1.34615	1.43279	1.34615	0.53979	1.86595	1.86595	1.86595	1.86595	0.00000	0.00000	1.86595	0.00000	0.00000	0.11995	gpm/ac.
1	4	J20	0.333	2.800	3.7692				8.4															
1	4	J22	0.667	5.600	7.5384																			
2	4	J22	0.500	9.950	13.3942							19.9												
2	4	J26	0.500	9.950	13.3942																			
3	4	J26	0.500	6.850	9.2211							13.7												
3	4	J28	0.500	6.850	9.2211																			
4	4	J28	0.500	5.700	8.1669						11.4													
4	4	J30	0.500	5.700	8.1669																			
5	4	J30	0.333	10.433	14.0448				31.3															
5	4	J32	0.333	10.433	14.0448																			
5	4	J62	0.333	10.433	14.0448																			
6	1	J32	0.500	4.350	9.6533			8.7																
6	1	J26	0.500	4.350	9.6533																			
7	1	J32	0.333	8.333	11.8288	25.0																		
7	1	J26	0.333	8.333	11.8288																			
7	1	J66	0.333	8.333	11.8288																			
8	4	J20	0.333	7.367	11.9785		22.1																	
8	4	J38	0.667	14.733	23.9571																			
9	1	J42	0.250	8.550	13.9027		34.2																	
9	1	J44	0.500	17.100	27.8054																			
9	1	J46	0.250	8.550	13.9027																			
10	4	J46	0.500	7.550	16.7546			15.1																
10	4	J122	0.500	7.550	16.7546																			
11	4	J122	0.500	4.100	5.8744						8.2													
11	4	J124	0.500	4.100	5.8744																			
12	4	J60	0.333	5.633	12.5012			16.9																
12	4	J62	0.333	5.633	12.5012																			
12	4	J124	0.333	5.633	12.5012																			
13	1	J32	0.333	3.033	4.9323		9.1																	
13	1	J62	0.667	6.067	9.8647																			
14	1	J64	0.500	2.550	4.7582												5.1							
14	1	J66	0.500	2.550	4.7582																			
15	1	J64	0.333	2.033	2.8862	6.1																	0.0	
15	1	J66	0.667	4.067	5.7725																			
16	1	J44	0.500	4.750	8.8633												9.5							
16	1	J46	0.500	4.750	8.8633																			
17	1	J122	0.500	5.000	9.3298										10.0									
17	1	J220	0.500	5.000	9.3298																			
18	1	J122	0.250	2.675	5.9362			10.7																
18	1	J124	0.250	2.675	5.9362																			
18	1	J220	0.250	2.675	5.9362																			
18	1	J222	0.250	2.675	5.9362																			
19	1	J56	0.250	5.575	9.0652		22.3																	
19	1	J60	0.250	5.575	9.0652																			
19	1	J124	0.250	5.575	9.0652																			
19	1	J222	0.250	5.575	9.0652																			
20	1	J56	0.250	7.500	10.6459	30.0																		
20	1	J62	0.250	7.500	10.6459																			

Jackson Township Water Study
Demand Apportionment Spread - By Phase and Parcel Tributary Area to each Node
Average Day Demands (ADD - gpm) **12/1/2016**

Parcel	Phase	Nodes	A. Fac.	Trib. A.	Demand (gpm)	LD	MD	HD	GC	CC	MU	O	P/QP	HS	ES	CP	P	OS-WP	OS-DC	OS-LC	OS-DB	AG	RW	Land Use
						1.41946	1.62604	2.21915	1.34615	1.34615	1.43279	1.34615	0.53979	1.86595	1.86595	1.86595	1.86595	0.00000	0.00000	1.86595	0.00000	0.00000	0.11995	gpm/ac.
20	1	J64	0.250	7.500	10.6459																			
20	1	J58	0.250	7.500	10.6459																			
21	1	J58	0.667	23.400	33.2153	35.1																		
21	1	J64	0.333	11.700	16.6076																			
22	3	J38	0.500	11.200	15.8979	22.4																		
22	3	J40	0.500	11.200	15.8979																			
23	3	J40	1.000	5.000	9.3298												5.0							
24	1	J52	0.125	7.188	10.2023	57.5																		
24	1	J56	0.125	7.188	10.2023																			
24	1	J50	0.125	7.188	10.2023																			
24	1	J48	0.125	7.188	10.2023																			
24	1	J42	0.125	7.188	10.2023																			
24	1	J44	0.125	7.188	10.2023																			
24	1	J220	0.125	7.188	10.2023																			
24	1	J222	0.125	7.188	10.2023																			
25	1	J52	0.250	3.600	5.1100	14.4																		
25	1	J56	0.250	3.600	5.1100																			
25	1	J54	0.250	3.600	5.1100																			
25	1	J58	0.250	3.600	5.1100																			
26	3	J40	1.000	10.000	22.1915			10.0																
27	3	J40	0.333	9.467	15.3932		28.4																	
27	3	J42	0.667	18.933	30.7864																			
28	3	J42	0.333	9.900	14.0526	29.7																		
28	3	J48	0.667	19.800	28.1052																			
29	3	J50	1.000	10.600	19.7791												10.6							
30	3	J50	0.250	5.850	8.3038	23.4																		
30	3	J52	0.250	5.850	8.3038																			
30	3	J76	0.250	5.850	8.3038																			
30	3	J78	0.250	5.850	8.3038																			
31	1	J52	1.000	5.000	2.6990										5.0									
32	1	J52	0.250	5.900	11.0091											23.6								
32	1	J54	0.750	17.700	33.0274																			
33	3	J68	1.000	7.500	16.6436			7.5																
34	3	J70	1.000	5.000	9.3298												5.0							
35	3	J70	1.000	10.000	18.6595											10.0								
36	3	J72	1.000	11.300	18.3743		11.3																	
37	3	J72	0.250	8.975	12.7396	35.9																		
37	3	J74	0.500	17.950	25.4792																			
37	3	J76	0.250	8.975	12.7396																			
38	1	J52	0.250	17.500	32.6542									70.0										
38	1	J78	0.500	35.000	65.3083																			
38	1	J100	0.250	17.500	32.6542																			
39	2	J68	0.250	4.400	5.9231					17.6														
39	2	J70	0.250	4.400	5.9231																			
39	2	J84	0.500	8.800	11.8461																			
40	2	J70	0.500	8.750	12.4202	17.5																		
40	2	J72	0.500	8.750	12.4202																			
41	2	J72	0.500	6.400	9.0845	12.8																		

Jackson Township Water Study
Demand Apportionment Spread - By Phase and Parcel Tributary Area to each Node
Average Day Demands (ADD - gpm) **12/1/2016**

Parcel	Phase	Nodes	A. Fac.	Trib. A.	Demand (gpm)	LD	MD	HD	GC	CC	MU	O	P/QP	HS	ES	CP	P	OS-WP	OS-DC	OS-LC	OS-DB	AG	RW	Land Use
						1.41946	1.62604	2.21915	1.34615	1.34615	1.43279	1.34615	0.53979	1.86595	1.86595	1.86595	1.86595	0.00000	0.00000	1.86595	0.00000	0.00000	0.11995	**gpm/ac.**
41	2	J74	0.500	6.400	9.0845																			
42	2	J74	1.000	9.500	17.7265												9.5							
43	2	J76	1.000	10.000	18.6595										10.0									
44	2	J76	0.250	4.750	6.7424	19.0																		
44	2	J78	0.250	4.750	6.7424																			
44	2	J96	0.250	4.750	6.7424																			
44	2	J100	0.250	4.750	6.7424																			
45	2	J86	0.750	10.575	17.1954		14.1																	
45	2	J92	0.250	3.525	5.7318																			
46	2	J92	1.000	5.000	9.3298												5.0							
47	2	J92	0.333	8.100	11.4976	24.3																		
47	2	J90	0.333	8.100	11.4976																			
47	2	J94	0.333	8.100	11.4976																			
48	2	J94	0.500	8.450	13.7401		16.9																	
48	2	J96	0.500	8.450	13.7401																			
49	2	J86	0.200	3.320	7.3676			16.6																
49	2	J88	0.400	6.640	14.7352																			
49	2	J90	0.400	6.640	14.7352																			
50	5	J100	0.500	2.500	4.6649												5.0							
50	5	J104	0.500	2.500	4.6649																			
OS-LC	5	J20	0.167	2.417	4.5094																			
OS-LC	5	J32	0.167	2.417	4.5094																			
OS-LC	5	J40	0.167	2.417	4.5094																			
OS-LC	5	J52	0.167	2.417	4.5094																			
OS-LC	5	J88	0.167	2.417	4.5094																			
OS-LC	5	J100	0.167	2.417	4.5094																			
RW	5	J20	0.167	14.800	1.7753																			
RW	5	J32	0.167	14.800	1.7753																			
RW	5	J40	0.167	14.800	1.7753																			
RW	5	J52	0.167	14.800	1.7753																			
RW	5	J88	0.167	14.800	1.7753																			
RW	5	J100	0.167	14.800	1.7753																			
OS-WP	5			225.200	0.0000																			
OS-DC	5			59.100	0.0000																			
OS-DB	5			3.200	0.0000																			
AG	5			109.300	0.0000																			
Totals			**50.000**	**1390.900**	**1472.0673**	353.1	158.4	85.5	39.7	17.6	19.6	33.6	5.0	70.0	30.0	23.6	54.7	225.2	59.1	14.5	3.2	109.3	88.8	**1390.90 ac.**
		Check using Ac/ft/yr				LD	MD	HD	GC	CC	MU	O	P/QP	HS	ES	CP	P	OS-WP	OS-DC	OS-LC	OS-DB	AG	RW	
						2.13	2.44	3.33	2.02	2.02	2.15	2.02	0.81	2.80	2.80	2.80	2.80	0.00	0.00	2.80	0.00	0.00	0.18	
		Total				752.10	386.50	284.72	80.19	35.55	42.14	67.87	4.05	196.00	84.00	66.08	153.16	0.00	0.00	40.60	0.00	0.00	15.98	**2208.95 AF**

Jackson Township Water Study
Buildout Demand Apportionment Spread
Compiled by Node (ADD - gpm)
12/2/2016

Parcel	Nodes	A. Fac.	Trib. A.	Demand (gpm)
38	J100	0.25	17.5	32.65
44	J100	0.25	4.75	6.74
50	J100	0.5	2.5	4.66
OS-LC	J100	0.166667	2.416667	4.51
RW	J100	0.166667	14.8	1.78
				50.35
50	J104	0.5	2.5	4.66
				4.66
10	J122	0.5	7.55	16.75
11	J122	0.5	4.1	5.87
17	J122	0.5	5	9.33
18	J122	0.25	2.675	5.94
				37.89
11	J124	0.5	4.1	5.87
12	J124	0.333333	5.633333	12.50
18	J124	0.25	2.675	5.94
19	J124	0.25	5.575	9.07
				33.38
1	J20	0.333333	2.8	3.77
8	J20	0.333333	7.366667	11.98
OS-LC	J20	0.166667	2.416667	4.51
RW	J20	0.166667	14.8	1.78
				22.03
1	J22	0.666667	5.6	7.54
2	J22	0.5	9.95	13.39
				20.93
17	J220	0.5	5	9.33
18	J220	0.25	2.675	5.94
24	J220	0.125	7.1875	10.20
				25.47
18	J222	0.25	2.675	5.94
19	J222	0.25	5.575	9.07
24	J222	0.125	7.1875	10.20
				25.20

Jackson Township Water Study
Buildout Demand Apportionment Spread
Compiled by Node (ADD - gpm)
12/2/2016

Parcel	Nodes	A. Fac.	Trib. A.	Demand (gpm)
2	J26	0.5	9.95	13.39
3	J26	0.5	6.85	9.22
6	J26	0.5	4.35	9.65
7	J26	0.333333	8.333333	11.83
				44.10
3	J28	0.5	6.85	9.22
4	J28	0.5	5.7	8.17
				17.39
4	J30	0.5	5.7	8.17
5	J30	0.333333	10.43333	14.04
				22.21
5	J32	0.333333	10.43333	14.04
6	J32	0.5	4.35	9.65
7	J32	0.333333	8.333333	11.83
13	J32	0.333333	3.033333	4.93
OS-LC	J32	0.166667	2.416667	4.51
RW	J32	0.166667	14.8	1.78
				46.74
8	J38	0.666667	14.73333	23.96
22	J38	0.5	11.2	15.90
				39.85
22	J40	0.5	11.2	15.90
23	J40	1	5	9.33
26	J40	1	10	22.19
27	J40	0.333333	9.466667	15.39
OS-LC	J40	0.166667	2.416667	4.51
RW	J40	0.166667	14.8	1.78
				69.10
9	J42	0.25	8.55	13.90
24	J42	0.125	7.1875	10.20
27	J42	0.666667	18.93333	30.79
28	J42	0.333333	9.9	14.05
				68.94

Jackson Township Water Study
Buildout Demand Apportionment Spread
Compiled by Node (ADD - gpm)
12/2/2016

Parcel	Nodes	A. Fac.	Trib. A.	Demand (gpm)
9	J44	0.5	17.1	27.81
16	J44	0.5	4.75	8.86
24	J44	0.125	7.1875	10.20
				46.87
9	J46	0.25	8.55	13.90
10	J46	0.5	7.55	16.75
16	J46	0.5	4.75	8.86
				39.52
24	J48	0.125	7.1875	10.20
28	J48	0.666667	19.8	28.11
				38.31
24	J50	0.125	7.1875	10.20
29	J50	1	10.6	19.78
30	J50	0.25	5.85	8.30
				38.29
24	J52	0.125	7.1875	10.20
25	J52	0.25	3.6	5.11
30	J52	0.25	5.85	8.30
31	J52	1	5	2.70
32	J52	0.25	5.9	11.01
38	J52	0.25	17.5	32.65
OS-LC	J52	0.166667	2.416667	4.51
RW	J52	0.166667	14.8	1.78
				76.26
25	J54	0.25	3.6	5.11
32	J54	0.75	17.7	33.03
				38.14
19	J56	0.25	5.575	9.07
20	J56	0.25	7.5	10.65
24	J56	0.125	7.1875	10.20
25	J56	0.25	3.6	5.11
				35.02
20	J58	0.25	7.5	10.65
21	J58	0.666667	23.4	33.22

Jackson Township Water Study
Buildout Demand Apportionment Spread
Compiled by Node (ADD - gpm)
12/2/2016

Parcel	Nodes	A. Fac.	Trib. A.	Demand (gpm)
25	J58	0.25	3.6	5.11
				48.97
12	J60	0.333333	5.633333	12.50
19	J60	0.25	5.575	9.07
				21.57
5	J62	0.333333	10.43333	14.04
12	J62	0.333333	5.633333	12.50
13	J62	0.666667	6.066667	9.86
20	J62	0.25	7.5	10.65
				47.06
14	J64	0.5	2.55	4.76
15	J64	0.333333	2.033333	2.89
20	J64	0.25	7.5	10.65
21	J64	0.333333	11.7	16.61
				34.90
7	J66	0.333333	8.333333	11.83
14	J66	0.5	2.55	4.76
15	J66	0.666667	4.066667	5.77
				22.36
33	J68	1	7.5	16.64
39	J68	0.25	4.4	5.92
				22.57
34	J70	1	5	9.33
35	J70	1	10	18.66
39	J70	0.25	4.4	5.92
40	J70	0.5	8.75	12.42
				46.33
36	J72	1	11.3	18.37
37	J72	0.25	8.975	12.74
40	J72	0.5	8.75	12.42
41	J72	0.5	6.4	9.08
				52.62
37	J74	0.5	17.95	25.48

Jackson Township Water Study
Buildout Demand Apportionment Spread
Compiled by Node (ADD - gpm)
12/2/2016

Parcel	Nodes	A. Fac.	Trib. A.	Demand (gpm)
41	J74	0.5	6.4	9.08
42	J74	1	9.5	17.73
				52.29
30	J76	0.25	5.85	8.30
37	J76	0.25	8.975	12.74
43	J76	1	10	18.66
44	J76	0.25	4.75	6.74
				46.45
30	J78	0.25	5.85	8.30
38	J78	0.5	35	65.31
44	J78	0.25	4.75	6.74
				80.35
39	J84	0.5	8.8	11.85
				11.85
45	J86	0.75	10.575	17.20
49	J86	0.2	3.32	7.37
				24.56
49	J88	0.4	6.64	14.74
OS-LC	J88	0.166667	2.416667	4.51
RW	J88	0.166667	14.8	1.78
				21.02
47	J90	0.333333	8.1	11.50
49	J90	0.4	6.64	14.74
				26.23
45	J92	0.25	3.525	5.73
46	J92	1	5	9.33
47	J92	0.333333	8.1	11.50
				26.56
47	J94	0.333333	8.1	11.50
48	J94	0.5	8.45	13.74
				25.24
44	J96	0.25	4.75	6.74

Jackson Township Water Study
Buildout Demand Apportionment Spread
Compiled by Node (ADD - gpm)
12/2/2016

Parcel	Nodes	A. Fac.	Trib. A.	Demand (gpm)	
48	J96	0.5	8.45	13.74	
				20.48	
AG			109.3	0.00	
OS-DB			3.2	0.00	
OS-DC			59.1	0.00	
OS-WP			225.2	0.00	
				1472.07	ADD
				2944.13	MDD
				5888.27	PHD

A.3 BUILDOUT SIMULATION RESULTS PRINTOUTS

Buildout Project Simulation Printouts
5/4/2017
Run B1

	ID	Demand (gpr	Elevation (ft)	Head (ft)	Pressure (psi)
0	J100	50.35	122	294.77	74.86
0	J102	0	125.5	295.42	73.63
0	J104	4.66	129.8	296.2	72.1
0	J122	37.89	117.5	292.17	75.68
0	J124	33.38	119.5	292.17	74.82
0	J126	0	130	291.96	70.18
0	J128	0	133	292	68.9
0	J130	0	134	291.98	68.45
0	J132	0	131	292.03	69.78
0	J134	0	131	292.06	69.79
0	J136	0	131	292.08	69.8
0	J138	0	122	280.57	68.71
0	J140	0	122	280.57	68.71
0	J146	0	132	307.74	76.15
0	J148	0	132	307.74	76.15
0	J150	0	118	280.52	70.42
0	J152	0	118	280.52	70.42
0	J154	0	90.3	292.19	87.48
0	J156	0	115.5	280.57	71.52
0	J158	0	115.5	280.57	71.52
0	J160	0	128	280.42	66.05
0	J162	0	128	280.42	66.05
0	J164	0	98	280.65	79.14
0	J166	0	98	280.65	79.14
0	J168	0	115.25	292.17	76.66
0	J170	0	120	280.73	69.64
0	J172	0	120	280.73	69.64
0	J174	0	123	303.73	78.31
0	J176	0	123	303.73	78.31
0	J178	0	94	304.93	91.4
0	J180	0	94	304.93	91.4
0	J182	0	118	293.83	76.19
0	J184	0	118	305.66	81.31
0	J186	0	118	305.66	81.31
0	J188	0	126	292.61	72.19
0	J190	0	126	292.61	72.19
0	J192	0	126	292.61	72.19
0	J194	0	126	292.61	72.19
0	J196	0	99.75	293.52	83.96
0	J198	0	95.5	292.42	85.33
0	J20	22.03	90.4	292.15	87.42
0	J206	0	100	281.98	78.85
0	J208	0	100	281.98	78.85
0	J210	0	102	280.82	77.48
0	J212	0	102	280.82	77.48
0	J214	0	102	280.82	77.48
0	J216	0	100	282.36	79.02
0	J218	0	100	282.36	79.02
0	J22	20.93	118.5	292.13	75.23
0	J220	25.47	116	292.27	76.38
0	J222	25.2	119.1	292.29	75.04
0	J224	0	118	294.12	76.31
0	J226	0	130	291.56	70
0	J26	44.1	115.5	292.11	76.52
0	J28	17.39	118.6	292.06	75.16
0	J30	22.21	122.2	292.04	73.59
0	J300	0	127.5	297.19	73.53

0	J302	0	128	297.31	73.36
0	J304	0	142	299.19	68.11
0	J32	46.74	126	292	71.93
0	J34	0	134	291.92	68.43
0	J36	0	138	291.71	66.6
0	J38	39.85	90.2	292.29	87.56
0	J40	69.1	90	292.48	87.73
0	J42	68.94	101	292.36	82.92
0	J44	46.87	111	292.26	78.54
0	J46	39.52	113	292.17	77.63
0	J48	38.31	114.7	292.42	77
0	J50	38.29	120	292.51	74.75
0	J52	76.26	126	292.61	72.19
0	J54	38.14	127.6	292.35	71.39
0	J56	35.02	121.9	292.33	73.85
0	J58	48.97	126	292.25	72.04
0	J60	21.57	124.5	292.19	72.66
0	J62	47.06	122	292.11	73.71
0	J64	34.9	127	292.09	71.54
0	J66	22.36	130.5	292.02	69.99
0	J68	22.57	88	293.27	88.94
0	J70	46.33	97.5	293.39	84.88
0	J72	52.62	102	293.67	83.05
0	J74	52.29	108	293.75	80.49
0	J76	46.45	128	293.91	71.89
0	J78	80.35	126	293.89	72.74
0	J82	0	126.4	293.24	72.29
0	J84	11.85	76	293.42	94.21
0	J86	24.56	78	293.64	93.44
0	J88	21.02	88.4	293.84	89.02
0	J90	26.23	104	293.9	82.28
0	J92	26.56	98	293.75	84.82
0	J94	25.24	107	294.1	81.07
0	J96	20.48	116	294.33	77.27

	ID	Flow (gpm)	Head (ft)
0	RES9010	625.14	291.56
0	RES9012	-2,097.20	299.19

	ID	Diameter (in)	Elevation (ft)	Upstream Pre	Downstream	Flow (gpm)	Velocity (ft/s	Headloss (ft)	Status	Setting	
0	V8000	8	122	73.71	68.71	0	0	11.54	Open		3
0	V8002	8	122	73.68	68.71	0	0	0	Closed		3
0	V8008	10	132	71.15	76.15	0	0	11.54	Open		2
0	V8010	10	132	69.87	76.15	0	0	0	Closed		2
0	V8012	8	118	75.44	70.42	0	0	0	Closed		3
0	V8014	8	118	75.42	70.42	0	0	11.54	Open		3
0	V8016	8	115.5	76.52	71.52	0	0	11.54	Open		3
0	V8018	8	115.5	76.53	71.52	0	0	0	Closed		3
0	V8020	8	128	71.05	66.05	0	0	11.54	Open		3
0	V8022	8	128	71.06	66.05	0	0	0	Closed		3
0	V8024	8	98	84.18	79.14	0	0	0	Closed		3
0	V8026	8	98	84.14	79.14	0	0	11.54	Open		3
0	V8028	10	120	74.6	69.64	0	0	0	Closed		2
0	V8032	8	123	73.31	78.31	0	0	11.54	Open		3
0	V8034	8	123	73.27	78.31	0	0	0	Closed		3
0	V8036	8	94	86.41	91.4	0	0	0	Closed		3
0	V8038	8	94	86.4	91.4	0	0	11.54	Open		3
0	V8042	10	118	76.31	81.31	0	0	11.54	Open		2
0	V8044	10	118	76.19	81.31	0	0	0	Closed		2
0	V8052	10	100	83.8	78.85	0	0	0	Closed		2
0	V8054	10	100	83.85	78.85	0	0	11.54	Open		2

0	V8056	8	102	82.48	77.48	0	0	11.54	Open	3
0	V8058	8	102	82.51	77.48	0	0	0	Closed	3
0	V8060	8	100	83.99	79.02	0	0	0	Closed	3
0	V8062	8	100	84.02	79.02	0	0	11.54	Open	3
0	V8070	10	120	74.65	69.64	0	0	11.54	Open	2

	ID	From Node	To Node	Length (ft)	Diameter (in)	Roughness	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	HL/1000 (ft/k
0	P101	J72	J92	810.17	12	130	-166.46	0.47	0.07	0.09
0	P103	J92	J90	1,241.83	12	130	-193.02	0.55	0.15	0.12
0	P105	J90	J94	1,132.34	16	130	-506.11	0.81	0.2	0.18
0	P107	J94	J96	1,204.53	16	130	-531.35	0.85	0.23	0.19
0	P111	J78	J100	1,067.79	16	130	-1,162.90	1.86	0.88	0.83
0	P115	J96	J100	886.7	16	130	-879.29	1.4	0.44	0.49
0	P117	J100	J102	789.56	20	130	-2,092.54	2.14	0.65	0.83
0	P119	J102	J104	941.88	20	130	-2,092.54	2.14	0.78	0.83
0	P121	J104	J300	1,197.93	20	130	-2,097.20	2.14	0.99	0.83
0	P123	J300	J302	147.08	20	130	-2,097.20	2.14	0.12	0.83
0	P125	J302	J304	2,260.56	20	130	-2,097.20	2.14	1.88	0.83
0	P139	J122	J124	627.68	12	130	-26.57	0.08	0	0
0	P141	J124	J60	1,242.80	12	130	-59.95	0.17	0.02	0.01
0	P145	J34	J126	846.23	20	130	-478.62	0.49	0.05	0.05
0	P149	J66	J128	522.48	8	130	30.94	0.2	0.02	0.03
0	P155	J126	J130	441.09	8	130	-30.94	0.2	0.01	0.03
0	P157	J128	J130	886.05	8	130	30.94	0.2	0.03	0.03
0	P159	J126	J32	843.52	20	130	-447.68	0.46	0.04	0.05
0	P161	J66	J132	415.81	8	130	-34.86	0.22	0.02	0.04
0	P163	J64	J136	338.87	8	130	34.86	0.22	0.01	0.04
0	P165	J136	J134	525.67	8	130	34.86	0.22	0.02	0.04
0	P167	J132	J134	848.01	8	130	-34.86	0.22	0.03	0.04
0	P17	J20	J22	1,133.08	16	130	165.39	0.26	0.03	0.02
0	P171	V8000	J138	423.5	10	130	0	0	0	0
0	P173	J138	J140	355.5	10	130	0	0	0	0
0	P177	V8002	J140	603.42	10	130	0	0	0	0
0	P179	J30	V8002	454.21	10	130	0	0	0	0
0	P181	J62	V8000	384.46	10	130	0	0	0	0
0	P19	J22	J26	1,147.36	16	130	144.46	0.23	0.02	0.02
0	P193	J104	V8008	482.89	12	130	0	0	0	0
0	P195	J82	V8010	213.6	12	130	0	0	0	0
0	P197	V8010	J146	842.68	12	130	0	0	0	0
0	P199	J146	J148	514.03	12	130	0	0	0	0
0	P201	V8008	J148	1,114.81	12	130	0	0	0	0
0	P203	J26	V8012	268.73	10	130	0	0	0	0
0	P205	J28	V8014	295.03	10	130	0	0	0	0
0	P207	V8014	J152	482.16	10	130	0	0	0	0
0	P209	V8012	J150	236	10	130	0	0	0	0
0	P21	J26	J28	1,118.04	16	130	226.84	0.36	0.04	0.04
0	P211	J152	J150	798.51	10	130	0	0	0	0
0	P213	J20	J154	348.19	12	130	-187.42	0.53	0.04	0.11
0	P215	J154	J38	842.54	12	130	-187.42	0.53	0.1	0.11
0	P217	J26	V8016	273.58	10	130	0	0	0	0
0	P219	J22	V8018	229.2	10	130	0	0	0	0
0	P221	V8018	J156	462.48	10	130	0	0	0	0
0	P223	V8016	J158	716.7	10	130	0	0	0	0
0	P225	J158	J156	802.77	10	130	0	0	0	0
0	P227	J32	V8022	269.66	10	130	0	0	0	0
0	P229	V8022	J160	385.74	10	130	0	0	0	0
0	P23	J28	J30	679.9	16	130	209.45	0.33	0.02	0.03
0	P231	J126	V8020	259.39	10	130	0	0	0	0
0	P233	V8020	J162	510.51	10	130	0	0	0	0
0	P235	J160	J162	392.51	10	130	0	0	0	0
0	P237	J38	V8024	301.75	10	130	0	0	0	0

0	P239	J154	V8026	160.09	10	130	0	0	0	0
0	P241	V8026	J166	918.28	10	130	0	0	0	0
0	P243	J166	J164	455.03	10	130	0	0	0	0
0	P245	V8024	J164	882.35	10	130	0	0	0	0
0	P247	J46	J168	532.6	12	130	11.32	0.03	0	0
0	P249	J168	J122	563.66	12	130	11.32	0.03	0	0
0	P25	J30	J32	1,229.93	16	130	187.24	0.3	0.03	0.03
0	P251	J168	V8028	209.52	12	130	0	0	0	0
0	P253	V8028	J170	652.72	12	130	0	0	0	0
0	P255	J170	J172	387.16	12	130	0	0	0	0
0	P261	J60	V8032	268.68	10	130	0	0	0	0
0	P263	V8032	J174	918.23	10	130	0	0	0	0
0	P265	J174	J176	448.57	10	130	0	0	0	0
0	P267	J62	V8034	292.8	10	130	0	0	0	0
0	P269	V8034	J176	916.13	10	130	0	0	0	0
0	P271	J70	V8038	242.57	10	130	0	0	0	0
0	P273	J84	V8036	324.38	10	130	0	0	0	0
0	P275	V8036	J180	319.74	10	130	0	0	0	0
0	P277	J180	J178	347.95	10	130	0	0	0	0
0	P279	V8038	J178	632.77	10	130	0	0	0	0
0	P281	J76	J182	613.97	12	130	198.51	0.56	0.08	0.13
0	P283	J182	J74	589.22	12	130	198.51	0.56	0.07	0.13
0	P287	V8042	J184	372.65	12	130	0	0	0	0
0	P289	J184	J186	299.52	12	130	0	0	0	0
0	P29	J34	J36	2,325.70	20	130	625.14	0.64	0.21	0.09
0	P295	J182	V8044	226.67	12	130	0	0	0	0
0	P297	V8044	J186	240.53	12	130	0	0	0	0
0	P299	J52	J188	313.33	8	130	0	0	0	0
0	P301	J188	J190	664.92	8	130	0	0	0	0
0	P303	J56	J194	178.12	8	130	0	0	0	0
0	P305	J194	J192	667.8	8	130	0	0	0	0
0	P307	J192	J190	657.08	8	130	0	0	0	0
0	P309	J72	J196	736.36	12	130	260.06	0.74	0.15	0.21
0	P311	J196	J70	609.66	12	130	260.06	0.74	0.13	0.21
0	P313	J40	J198	1,129.17	12	130	124.22	0.35	0.06	0.05
0	P315	J198	J42	1,043.66	12	130	124.22	0.35	0.06	0.05
0	P329	J70	V8052	185.71	12	130	0	0	0	0
0	P33	J38	J40	1,179.71	12	130	-227.27	0.64	0.19	0.16
0	P331	V8052	J206	525.44	12	130	0	0	0	0
0	P333	J196	V8054	178.3	12	130	0	0	0	0
0	P335	V8054	J208	525.19	12	130	0	0	0	0
0	P337	J208	J206	475.84	12	130	0	0	0	0
0	P341	J198	V8058	154.71	10	130	0	0	0	0
0	P343	V8058	J214	421.16	10	130	0	0	0	0
0	P345	J214	J210	577.05	10	130	0	0	0	0
0	P347	J42	V8056	297.78	10	130	0	0	0	0
0	P349	V8056	J212	569.55	10	130	0	0	0	0
0	P351	J212	J210	1,312.90	10	130	0	0	0	0
0	P353	J88	V8060	266.49	10	130	0	0	0	0
0	P355	V8060	J216	322.62	10	130	0	0	0	0
0	P357	J90	V8062	226.9	10	130	0	0	0	0
0	P359	V8062	J218	739.72	10	130	0	0	0	0
0	P361	J218	J216	604.58	10	130	0	0	0	0
0	P363	J56	J222	1,322.36	12	130	102.52	0.29	0.05	0.04
0	P365	J222	J220	621.17	12	130	77.32	0.22	0.01	0.02
0	P367	J220	J44	1,095.19	12	130	51.86	0.15	0.01	0.01
0	P37	J26	J46	1,141.00	12	130	-126.48	0.36	0.06	0.06
0	P379	J76	J224	678.87	12	130	-327.46	0.93	0.22	0.32
0	P381	J224	V8042	158.85	12	130	0	0	0	0
0	P39	J46	J44	879.87	12	130	-177.31	0.5	0.09	0.1
0	P393	J226	J36	1,733.97	20	130	-625.14	0.64	0.15	0.09

0	P395	J96	J224	650.52	12	130	327.46	0.93	0.21	0.32
0	P41	J44	J42	1,067.11	12	130	-172.33	0.49	0.1	0.1
0	P415	J220	V8070	123.15	12	130	0	0	0	0
0	P417	V8070	J172	76.51	12	130	0	0	0	0
0	P419	RES9010	J226	1	1,000.00	130	-625.14	0	0	0
0	P421	RES9012	J304	1	1,000.00	130	2,097.20	0	0	0
0	P43	J42	J48	1,096.37	12	130	-117.05	0.33	0.05	0.05
0	P45	J48	J50	1,194.62	12	130	-155.36	0.44	0.1	0.08
0	P47	J50	J52	765.09	12	130	-193.65	0.55	0.09	0.12
0	P49	J32	J62	1,463.77	16	130	-307.18	0.49	0.1	0.07
0	P51	J34	J66	1,373.58	12	130	-146.52	0.42	0.1	0.07
0	P53	J66	J64	862.35	12	130	-164.96	0.47	0.08	0.09
0	P55	J62	J64	1,082.76	12	130	51.55	0.15	0.01	0.01
0	P57	J62	J60	691.6	16	130	-405.79	0.65	0.08	0.12
0	P59	J64	J58	1,424.22	12	130	-183.17	0.52	0.16	0.11
0	P61	J60	J56	890.62	16	130	-487.31	0.78	0.15	0.16
0	P67	J56	J52	1,036.48	16	130	-624.86	1	0.27	0.26
0	P69	J52	J54	1,131.15	12	130	270.28	0.77	0.25	0.22
0	P71	J58	J54	591.64	12	130	-232.14	0.66	0.1	0.17
0	P73	J40	J68	1,551.82	12	130	-420.59	1.19	0.79	0.51
0	P75	J68	J70	838.54	12	130	-213.73	0.61	0.12	0.15
0	P79	J72	J74	1,086.50	12	130	-146.22	0.41	0.08	0.07
0	P83	J76	J78	765.46	12	130	82.49	0.23	0.02	0.02
0	P89	J52	J82	771.55	16	130	-1,165.05	1.86	0.64	0.83
0	P91	J82	J78	774.7	16	130	-1,165.05	1.86	0.64	0.83
0	P93	J68	J84	890.35	12	130	-229.43	0.65	0.15	0.17
0	P95	J84	J86	1,204.21	12	130	-241.28	0.68	0.22	0.18
0	P97	J86	J88	946.69	12	130	-265.84	0.75	0.21	0.22
0	P99	J88	J90	874.98	16	130	-286.86	0.46	0.05	0.06

Run B2

	ID	Demand (gpr	Elevation (ft)	Head (ft)	Pressure (psi)
0	J100	100.7	122	293.49	74.31
0	J102	0	125.5	294.33	73.15
0	J104	9.32	129.8	295.33	71.72
0	J122	75.78	117.5	291.08	75.21
0	J124	66.76	119.5	291.1	74.36
0	J126	0	130	291.25	69.87
0	J128	0	133	291.25	68.57
0	J130	0	134	291.25	68.14
0	J132	0	131	291.23	69.43
0	J134	0	131	291.23	69.43
0	J136	0	131	291.23	69.43
0	J138	0	122	302.75	78.32
0	J140	0	122	302.75	78.32
0	J146	0	132	283.72	65.74
0	J148	1	132	283.72	65.74
0	J150	0	118	279.52	69.99
0	J152	1	118	279.52	69.99
0	J154	0	90.3	291.09	87
0	J156	0	115.5	279.49	71.06
0	J158	1	115.5	279.49	71.06
0	J160	0	128	279.65	65.71
0	J162	1	128	279.65	65.71
0	J164	0	98	279.48	78.64
0	J166	1	98	279.48	78.64
0	J168	0	115.25	291.08	76.19
0	J170	1	120	279.49	69.11
0	J172	0	120	279.49	69.11
0	J174	1	123	279.61	67.86
0	J176	0	123	279.61	67.86

0	J178	1	94	280.13	80.65
0	J180	0	94	280.13	80.65
0	J182	0	118	292.29	75.52
0	J184	1	118	281.07	70.66
0	J186	0	118	281.07	70.66
0	J188	0	126	291.39	71.67
0	J190	0	126	291.39	71.67
0	J192	0	126	291.39	71.67
0	J194	0	126	291.39	71.67
0	J196	0	99.75	291.86	83.24
0	J198	0	95.5	291.11	84.76
0	J20	44.06	90.4	291.09	86.96
0	J206	0	100	280.25	78.1
0	J208	1	100	280.25	78.1
0	J210	0	102	302.63	86.93
0	J212	0	102	302.63	86.93
0	J214	0	102	302.63	86.93
0	J216	0	100	280.69	78.29
0	J218	1	100	280.69	78.29
0	J22	41.86	118.5	291.09	74.78
0	J220	50.94	116	291.1	75.87
0	J222	50.4	119.1	291.12	74.54
0	J224	0	118	292.68	75.69
0	J226	0	130	291.56	70
0	J26	88.2	115.5	291.09	76.08
0	J28	34.78	118.6	291.12	74.75
0	J30	44.42	122.2	291.15	73.21
0	J300	0	127.5	296.61	73.28
0	J302	0	128	296.77	73.13
0	J304	0	142	299.19	68.11
0	J32	93.48	126	291.22	71.59
0	J34	0	134	291.29	68.15
0	J36	0	138	291.44	66.49
0	J38	79.7	90.2	291.09	87.05
0	J40	138.2	90	291.14	87.16
0	J42	137.88	101	291.09	82.37
0	J44	93.74	111	291.08	78.03
0	J46	79.04	113	291.08	77.16
0	J48	76.62	114.7	291.13	76.44
0	J50	76.58	120	291.24	74.2
0	J52	152.52	126	291.39	71.67
0	J54	76.28	127.6	291.25	70.91
0	J56	70.04	121.9	291.24	73.38
0	J58	97.94	126	291.22	71.59
0	J60	43.14	124.5	291.21	72.24
0	J62	94.12	122	291.21	73.32
0	J64	69.8	127	291.21	71.15
0	J66	44.72	130.5	291.23	69.64
0	J68	45.14	88	291.66	88.25
0	J70	92.66	97.5	291.73	84.16
0	J72	105.24	102	292.01	82.33
0	J74	104.58	108	292.14	79.79
0	J76	92.9	128	292.45	71.26
0	J78	160.7	126	292.46	72.13
0	J82	0	126.4	291.93	71.72
0	J84	23.7	76	291.79	93.5
0	J86	38.12	78	292	92.73
0	J88	42.04	88.4	292.23	88.32
0	J90	52.46	104	292.29	81.59
0	J92	53.12	98	292.09	84.1
0	J94	50.48	107	292.57	80.41

0	J96	40.96	116	292.91	76.65

	ID	Flow (gpm)	Head (ft)
0	RES9010	-537.61	291.56
0	RES9012	-2,406.51	299.19

	ID	Diameter (in)	Elevation (ft)	Upstream Pre	Downstream	Flow (gpm)	Velocity (ft/s	Headloss (ft)	Status	Setting
0	V8000	8	122	73.32	78.32	0	0	11.54	Open	3
0	V8002	8	122	73.29	78.32	0	0	0	Closed	3
0	V8008	10	132	70.77	65.74	1	0	11.61	Open	2
0	V8010	10	132	69.3	65.74	0	0	0	Closed	2
0	V8012	8	118	75	69.99	0	0	0	Closed	3
0	V8014	8	118	75.01	69.99	1	0.01	11.6	Open	3
0	V8016	8	115.5	76.08	71.06	1	0.01	11.6	Open	3
0	V8018	8	115.5	76.08	71.06	0	0	0	Closed	3
0	V8020	8	128	70.74	65.71	1	0.01	11.6	Open	3
0	V8022	8	128	70.72	65.71	0	0	0	Closed	3
0	V8024	8	98	83.67	78.64	0	0	0	Closed	3
0	V8026	8	98	83.66	78.64	1	0.01	11.6	Open	3
0	V8028	10	120	74.13	69.11	0	0	0	Closed	2
0	V8032	8	123	72.89	67.86	1	0.01	11.6	Open	3
0	V8034	8	123	72.89	67.86	0	0	0	Closed	3
0	V8036	8	94	85.7	80.65	0	0	0	Closed	3
0	V8038	8	94	85.68	80.65	1	0.01	11.6	Open	3
0	V8042	10	118	75.69	70.66	1	0	11.61	Open	2
0	V8044	10	118	75.52	70.66	0	0	0	Closed	2
0	V8052	10	100	83.08	78.1	0	0	0	Closed	2
0	V8054	10	100	83.13	78.1	1	0	11.61	Open	2
0	V8056	8	102	81.93	86.93	0	0	11.54	Open	3
0	V8058	8	102	81.94	86.93	0	0	0	Closed	3
0	V8060	8	100	83.29	78.29	0	0	0	Closed	3
0	V8062	8	100	83.32	78.29	1	0.01	11.6	Open	3
0	V8070	10	120	74.14	69.11	1	0	11.61	Open	2

	ID	From Node	To Node	Length (ft)	Diameter (in)	Roughness	Flow (gpm)	Velocity (ft/s	Headloss (ft)	HL/1000 (ft/k
0	P101	J72	J92	810.17	12	130	-174.1	0.49	0.08	0.1
0	P103	J92	J90	1,241.83	12	130	-227.22	0.64	0.2	0.16
0	P105	J90	J94	1,132.34	16	130	-599.72	0.96	0.27	0.24
0	P107	J94	J96	1,204.53	16	130	-650.2	1.04	0.34	0.28
0	P111	J78	J100	1,067.79	16	130	-1,265.35	2.02	1.03	0.97
0	P115	J96	J100	886.7	16	130	-1,030.15	1.64	0.58	0.66
0	P117	J100	J102	789.56	20	130	-2,396.19	2.45	0.84	1.06
0	P119	J102	J104	941.88	20	130	-2,396.19	2.45	1	1.06
0	P121	J104	J300	1,197.93	20	130	-2,406.51	2.46	1.28	1.07
0	P123	J300	J302	147.08	20	130	-2,406.51	2.46	0.16	1.07
0	P125	J302	J304	2,260.56	20	130	-2,406.51	2.46	2.42	1.07
0	P139	J122	J124	627.68	12	130	-96.15	0.27	0.02	0.03
0	P141	J124	J60	1,242.80	12	130	-162.91	0.46	0.11	0.09
0	P145	J34	J126	846.23	20	130	425.39	0.43	0.04	0.04
0	P149	J66	J128	522.48	8	130	0	0	0	0
0	P155	J126	J130	441.09	8	130	0	0	0	0
0	P157	J128	J130	886.05	8	130	0	0	0	0
0	P159	J126	J32	843.52	20	130	424.39	0.43	0.04	0.04
0	P161	J66	J132	415.81	8	130	0	0	0	0
0	P163	J64	J136	338.87	8	130	0	0	0	0
0	P165	J136	J134	525.67	8	130	0	0	0	0
0	P167	J132	J134	848.01	8	130	0	0	0	0
0	P17	J20	J22	1,133.08	16	130	-12.46	0.02	0	0
0	P171	V8000	J138	423.5	10	130	0	0	0	0
0	P173	J138	J140	355.5	10	130	0	0	0	0
0	P177	V8002	J140	603.42	10	130	0	0	0	0

0	P179	J30	V8002	454.21	10	130	0	0	0	0
0	P181	J62	V8000	384.46	10	130	0	0	0	0
0	P19	J22	J26	1,147.36	16	130	-54.32	0.09	0	0
0	P193	J104	V8008	482.89	12	130	1	0	0	0
0	P195	J82	V8010	213.6	12	130	0	0	0	0
0	P197	V8010	J146	842.68	12	130	0	0	0	0
0	P199	J146	J148	514.03	12	130	0	0	0	0
0	P201	V8008	J148	1,114.81	12	130	1	0	0	0
0	P203	J26	V8012	268.73	10	130	0	0	0	0
0	P205	J28	V8014	295.03	10	130	1	0	0	0
0	P207	V8014	J152	482.16	10	130	1	0	0	0
0	P209	V8012	J150	236	10	130	0	0	0	0
0	P21	J26	J28	1,118.04	16	130	-190.1	0.3	0.03	0.03
0	P211	J152	J150	798.51	10	130	0	0	0	0
0	P213	J20	J154	348.19	12	130	-31.6	0.09	0	0
0	P215	J154	J38	842.54	12	130	-32.6	0.09	0	0
0	P217	J26	V8016	273.58	10	130	1	0	0	0
0	P219	J22	V8018	229.2	10	130	0	0	0	0
0	P221	V8018	J156	462.48	10	130	0	0	0	0
0	P223	V8016	J158	716.7	10	130	1	0	0	0
0	P225	J158	J156	802.77	10	130	0	0	0	0
0	P227	J32	V8022	269.66	10	130	0	0	0	0
0	P229	V8022	J160	385.74	10	130	0	0	0	0
0	P23	J28	J30	679.9	16	130	-225.88	0.36	0.03	0.04
0	P231	J126	V8020	259.39	10	130	1	0	0	0
0	P233	V8020	J162	510.51	10	130	1	0	0	0
0	P235	J160	J162	392.51	10	130	0	0	0	0
0	P237	J38	V8024	301.75	10	130	0	0	0	0
0	P239	J154	V8026	160.09	10	130	1	0	0	0
0	P241	V8026	J166	918.28	10	130	1	0	0	0
0	P243	J166	J164	455.03	10	130	0	0	0	0
0	P245	V8024	J164	882.35	10	130	0	0	0	0
0	P247	J46	J168	532.6	12	130	-20.37	0.06	0	0
0	P249	J168	J122	563.66	12	130	-20.37	0.06	0	0
0	P25	J30	J32	1,229.93	16	130	-270.3	0.43	0.07	0.06
0	P251	J168	V8028	209.52	12	130	0	0	0	0
0	P253	V8028	J170	652.72	12	130	0	0	0	0
0	P255	J170	J172	387.16	12	130	-1	0	0	0
0	P261	J60	V8032	268.68	10	130	1	0	0	0
0	P263	V8032	J174	918.23	10	130	1	0	0	0
0	P265	J174	J176	448.57	10	130	0	0	0	0
0	P267	J62	V8034	292.8	10	130	0	0	0	0
0	P269	V8034	J176	916.13	10	130	0	0	0	0
0	P271	J70	V8038	242.57	10	130	1	0	0	0
0	P273	J84	V8036	324.38	10	130	0	0	0	0
0	P275	V8036	J180	319.74	10	130	0	0	0	0
0	P277	J180	J178	347.95	10	130	0	0	0	0
0	P279	V8038	J178	632.77	10	130	1	0	0	0
0	P281	J76	J182	613.97	12	130	294.14	0.83	0.16	0.26
0	P283	J182	J74	589.22	12	130	294.14	0.83	0.15	0.26
0	P287	V8042	J184	372.65	12	130	1	0	0	0
0	P289	J184	J186	299.52	12	130	0	0	0	0
0	P29	J34	J36	2,325.70	20	130	-537.61	0.55	0.16	0.07
0	P295	J182	V8044	226.67	12	130	0	0	0	0
0	P297	V8044	J186	240.53	12	130	0	0	0	0
0	P299	J52	J188	313.33	8	130	0	0	0	0
0	P301	J188	J190	664.92	8	130	0	0	0	0
0	P303	J56	J194	178.12	8	130	0	0	0	0
0	P305	J194	J192	667.8	8	130	0	0	0	0
0	P307	J192	J190	657.08	8	130	0	0	0	0
0	P309	J72	J196	736.36	12	130	258.42	0.73	0.15	0.21

0	P311	J196	J70	609.66	12	130	257.42	0.73	0.13	0.21
0	P313	J40	J198	1,129.17	12	130	83.3	0.24	0.03	0.03
0	P315	J198	J42	1,043.66	12	130	83.3	0.24	0.03	0.03
0	P329	J70	V8052	185.71	12	130	0	0	0	0
0	P33	J38	J40	1,179.71	12	130	-112.3	0.32	0.05	0.04
0	P331	V8052	J206	525.44	12	130	0	0	0	0
0	P333	J196	V8054	178.3	12	130	1	0	0	0
0	P335	V8054	J208	525.19	12	130	1	0	0	0
0	P337	J208	J206	475.84	12	130	0	0	0	0
0	P341	J198	V8058	154.71	10	130	0	0	0	0
0	P343	V8058	J214	421.16	10	130	0	0	0	0
0	P345	J214	J210	577.05	10	130	0	0	0	0
0	P347	J42	V8056	297.78	10	130	0	0	0	0
0	P349	V8056	J212	569.55	10	130	0	0	0	0
0	P351	J212	J210	1,312.90	10	130	0	0	0	0
0	P353	J88	V8060	266.49	10	130	0	0	0	0
0	P355	V8060	J216	322.62	10	130	0	0	0	0
0	P357	J90	V8062	226.9	10	130	1	0	0	0
0	P359	V8062	J218	739.72	10	130	1	0	0	0
0	P361	J218	J216	604.58	10	130	0	0	0	0
0	P363	J56	J222	1,322.36	12	130	165.23	0.47	0.12	0.09
0	P365	J222	J220	621.17	12	130	114.83	0.33	0.03	0.05
0	P367	J220	J44	1,095.19	12	130	62.89	0.18	0.02	0.02
0	P37	J26	J46	1,141.00	12	130	46.58	0.13	0.01	0.01
0	P379	J76	J224	678.87	12	130	-337.99	0.96	0.23	0.34
0	P381	J224	V8042	158.85	12	130	1	0	0	0
0	P39	J46	J44	879.87	12	130	-12.09	0.03	0	0
0	P393	J226	J36	1,733.97	20	130	537.61	0.55	0.12	0.07
0	P395	J96	J224	650.52	12	130	338.99	0.96	0.22	0.34
0	P41	J44	J42	1,067.11	12	130	-42.94	0.12	0.01	0.01
0	P415	J220	V8070	123.15	12	130	1	0	0	0
0	P417	V8070	J172	76.51	12	130	1	0	0	0
0	P419	RES9010	J226	1	1,000.00	130	537.61	0	0	0
0	P421	RES9012	J304	1	1,000.00	130	2,406.51	0	0	0
0	P43	J42	J48	1,096.37	12	130	-97.52	0.28	0.04	0.03
0	P45	J48	J50	1,194.62	12	130	-174.14	0.49	0.12	0.1
0	P47	J50	J52	765.09	12	130	-250.72	0.71	0.15	0.2
0	P49	J32	J62	1,463.77	16	130	60.6	0.1	0.01	0
0	P51	J34	J66	1,373.58	12	130	112.22	0.32	0.06	0.04
0	P53	J66	J64	862.35	12	130	67.5	0.19	0.01	0.02
0	P55	J62	J64	1,082.76	12	130	-22.94	0.07	0	0
0	P57	J62	J60	691.6	16	130	-10.58	0.02	0	0
0	P59	J64	J58	1,424.22	12	130	-25.24	0.07	0	0
0	P61	J60	J56	890.62	16	130	-217.62	0.35	0.03	0.04
0	P67	J56	J52	1,036.48	16	130	-452.89	0.72	0.15	0.14
0	P69	J52	J54	1,131.15	12	130	199.46	0.57	0.14	0.13
0	P71	J58	J54	591.64	12	130	-123.18	0.35	0.03	0.05
0	P73	J40	J68	1,551.82	12	130	-333.8	0.95	0.52	0.33
0	P75	J68	J70	838.54	12	130	-163.76	0.46	0.07	0.09
0	P79	J72	J74	1,086.50	12	130	-189.56	0.54	0.13	0.12
0	P83	J76	J78	765.46	12	130	-49.05	0.14	0.01	0.01
0	P89	J52	J82	771.55	16	130	-1,055.59	1.68	0.53	0.69
0	P91	J82	J78	774.7	16	130	-1,055.59	1.68	0.53	0.69
0	P93	J68	J84	890.35	12	130	-215.18	0.61	0.13	0.15
0	P95	J84	J86	1,204.21	12	130	-238.88	0.68	0.22	0.18
0	P97	J86	J88	946.69	12	130	-277	0.79	0.22	0.24
0	P99	J88	J90	874.98	16	130	-319.04	0.51	0.07	0.08

Run B3

	ID	Demand (gpr	Elevation (ft)	Head (ft)	Pressure (psi)
0	J100	201.4	122	267.52	63.06

0	J102	0	125.5	269.43	62.36
0	J104	18.64	129.8	271.7	61.48
0	J122	151.56	117.5	262.91	63.01
0	J124	133.52	119.5	263.02	62.19
0	J126	0	130	264.54	58.3
0	J128	0	133	264.54	57
0	J130	0	134	264.54	56.56
0	J132	0	131	264.09	57.67
0	J134	0	131	264.09	57.67
0	J136	0	131	264.09	57.67
0	J138	0	122	252.07	56.36
0	J140	1	122	252.07	56.36
0	J146	0	132	260.09	55.5
0	J148	1	132	260.09	55.5
0	J150	0	118	251.72	57.94
0	J152	1	118	251.72	57.94
0	J154	0	90.3	262.87	74.77
0	J156	0	115.5	251.4	58.88
0	J158	1	115.5	251.4	58.88
0	J160	1	128	252.94	54.13
0	J162	0	128	252.94	54.13
0	J164	0	98	251.26	66.41
0	J166	1	98	251.26	66.41
0	J168	0	115.25	262.89	63.97
0	J170	0	120	251.38	56.93
0	J172	0	120	251.38	56.93
0	J174	1	123	251.94	55.87
0	J176	0	123	251.94	55.87
0	J178	1	94	251.89	68.42
0	J180	0	94	251.89	68.42
0	J182	0	118	264.77	63.6
0	J184	1	118	254.09	58.97
0	J186	0	118	254.09	58.97
0	J188	0	126	263.67	59.65
0	J190	0	126	263.67	59.65
0	J192	0	126	263.67	59.65
0	J194	0	126	263.67	59.65
0	J196	0	99.75	263.72	71.05
0	J198	0	95.5	262.82	72.5
0	J20	88.12	90.4	262.88	74.74
0	J206	0	100	252.12	65.91
0	J208	1	100	252.12	65.91
0	J210	0	102	251.2	64.65
0	J212	1	102	251.2	64.65
0	J214	0	102	251.2	64.65
0	J216	0	100	253.03	66.31
0	J218	1	100	253.03	66.31
0	J22	83.72	118.5	262.93	62.58
0	J220	101.88	116	262.92	63.66
0	J222	100.8	119.1	263.04	62.37
0	J224	0	118	265.7	64
0	J226	0	130	268.48	60
0	J26	176.4	115.5	263	63.91
0	J28	69.56	118.6	263.32	62.71
0	J30	88.84	122.2	263.56	61.25
0	J300	0	127.5	274.62	63.75
0	J302	0	128	274.97	63.68
0	J304	0	142	280.48	60
0	J32	186.96	126	264.09	59.83
0	J34	0	134	264.99	56.76
0	J36	0	138	266.99	55.89

0	J38	159.4	90.2	262.82	74.8
0	J40	276.4	90	262.83	74.89
0	J42	275.76	101	262.81	70.11
0	J44	187.48	111	262.83	65.79
0	J46	158.08	113	262.88	64.94
0	J48	153.24	114.7	262.89	64.21
0	J50	153.16	120	263.22	62.06
0	J52	305.04	126	263.67	59.65
0	J54	152.56	127.6	263.56	58.91
0	J56	140.08	121.9	263.54	61.37
0	J58	195.88	126	263.55	59.6
0	J60	86.28	124.5	263.54	60.25
0	J62	188.24	122	263.68	61.39
0	J64	139.6	127	263.7	59.23
0	J66	89.44	130.5	264.09	57.88
0	J68	90.28	88	263.42	76.01
0	J70	185.32	97.5	263.5	71.93
0	J72	210.48	102	264	70.2
0	J74	209.16	108	264.32	67.73
0	J76	185.8	128	265.24	59.47
0	J78	321.4	126	265.35	60.38
0	J82	0	126.4	264.51	59.84
0	J84	47.4	76	263.63	81.3
0	J86	86.24	78	264.02	80.6
0	J88	84.08	88.4	264.49	76.3
0	J90	104.92	104	264.64	69.6
0	J92	106.24	98	264.16	72
0	J94	100.96	107	265.3	68.59
0	J96	81.92	116	266.14	65.06

	ID	Flow (gpm)	Head (ft)
0	RES9010	-2,137.42	268.48
0	RES9012	-3,750.82	280.48

	ID	Diameter (in)	Elevation (ft)	Upstream Pre	Downstream	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	Status	Setting
0	V8000	8	122	61.39	56.36	1	0.01	11.6	Open	3
0	V8002	8	122	61.34	56.36	0	0	0	Closed	3
0	V8008	10	132	60.53	55.5	1	0	11.61	Open	2
0	V8010	10	132	57.42	55.5	0	0	0	Closed	2
0	V8012	8	118	62.83	57.94	0	0	0	Closed	3
0	V8014	8	118	62.97	57.94	1	0.01	11.6	Open	3
0	V8016	8	115.5	63.91	58.88	1	0.01	11.6	Open	3
0	V8018	8	115.5	63.88	58.88	0	0	0	Closed	3
0	V8020	8	128	59.16	54.13	1	0.01	11.6	Open	3
0	V8022	8	128	58.97	54.13	0	0	0	Closed	3
0	V8024	8	98	71.42	66.41	0	0	0	Closed	3
0	V8026	8	98	71.44	66.41	1	0.01	11.6	Open	3
0	V8028	10	120	61.91	56.93	0	0	0	Closed	2
0	V8032	8	123	60.9	55.87	1	0.01	11.6	Open	3
0	V8034	8	123	60.96	55.87	0	0	0	Closed	3
0	V8036	8	94	73.5	68.42	0	0	0	Closed	3
0	V8038	8	94	73.44	68.42	1	0.01	11.6	Open	3
0	V8042	10	118	64	58.97	1	0	11.61	Open	2
0	V8044	10	118	63.6	58.97	0	0	0	Closed	2
0	V8052	10	100	70.84	65.91	0	0	0	Closed	2
0	V8054	10	100	70.94	65.91	1	0	11.61	Open	2
0	V8056	8	102	69.68	64.65	1	0.01	11.6	Open	3
0	V8058	8	102	69.68	64.65	0	0	0	Closed	3
0	V8060	8	100	71.27	66.31	0	0	0	Closed	3
0	V8062	8	100	71.34	66.31	1	0.01	11.6	Open	3
0	V8070	10	120	61.93	56.93	0	0	11.54	Open	2

	ID	From Node	To Node	Length (ft)	Diameter (in)	Roughness	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	HL/1000 (ft/k
0	P101	J72	J92	810.17	12	130	-253.66	0.72	0.16	0.2
0	P103	J92	J90	1,241.83	12	130	-359.9	1.02	0.47	0.38
0	P105	J90	J94	1,132.34	16	130	-963.84	1.54	0.66	0.58
0	P107	J94	J96	1,204.53	16	130	-1,064.80	1.7	0.84	0.7
0	P111	J78	J100	1,067.79	16	130	-1,891.29	3.02	2.17	2.03
0	P115	J96	J100	886.7	16	130	-1,638.50	2.61	1.38	1.56
0	P117	J100	J102	789.56	20	130	-3,731.18	3.81	1.9	2.41
0	P119	J102	J104	941.88	20	130	-3,731.18	3.81	2.27	2.41
0	P121	J104	J300	1,197.93	20	130	-3,750.82	3.83	2.92	2.44
0	P123	J300	J302	147.08	20	130	-3,750.82	3.83	0.36	2.44
0	P125	J302	J304	2,260.56	20	130	-3,750.82	3.83	5.51	2.44
0	P139	J122	J124	627.68	12	130	-242.76	0.69	0.12	0.18
0	P141	J124	J60	1,242.80	12	130	-376.28	1.07	0.52	0.41
0	P145	J34	J126	846.23	20	130	1,654.88	1.69	0.45	0.54
0	P149	J66	J128	522.48	8	130	0	0	0	0
0	P155	J126	J130	441.09	8	130	0	0	0	0
0	P157	J128	J130	886.05	8	130	0	0	0	0
0	P159	J126	J32	843.52	20	130	1,653.88	1.69	0.45	0.53
0	P161	J66	J132	415.81	8	130	0	0	0	0
0	P163	J64	J136	338.87	8	130	0	0	0	0
0	P165	J136	J134	525.67	8	130	0	0	0	0
0	P167	J132	J134	848.01	8	130	0	0	0	0
0	P17	J20	J22	1,133.08	16	130	-213.26	0.34	0.04	0.04
0	P171	V8000	J138	423.5	10	130	1	0	0	0
0	P173	J138	J140	355.5	10	130	1	0	0	0
0	P177	V8002	J140	603.42	10	130	0	0	0	0
0	P179	J30	V8002	454.21	10	130	0	0	0	0
0	P181	J62	V8000	384.46	10	130	1	0	0	0
0	P19	J22	J26	1,147.36	16	130	-296.98	0.47	0.08	0.07
0	P193	J104	V8008	482.89	12	130	1	0	0	0
0	P195	J82	V8010	213.6	12	130	0	0	0	0
0	P197	V8010	J146	842.68	12	130	0	0	0	0
0	P199	J146	J148	514.03	12	130	0	0	0	0
0	P201	V8008	J148	1,114.81	12	130	1	0	0	0
0	P203	J26	V8012	268.73	10	130	0	0	0	0
0	P205	J28	V8014	295.03	10	130	1	0	0	0
0	P207	V8014	J152	482.16	10	130	1	0	0	0
0	P209	V8012	J150	236	10	130	0	0	0	0
0	P21	J26	J28	1,118.04	16	130	-658.02	1.05	0.32	0.29
0	P211	J152	J150	798.51	10	130	0	0	0	0
0	P213	J20	J154	348.19	12	130	125.14	0.36	0.02	0.05
0	P215	J154	J38	842.54	12	130	124.14	0.35	0.04	0.05
0	P217	J26	V8016	273.58	10	130	1	0	0	0
0	P219	J22	V8018	229.2	10	130	0	0	0	0
0	P221	V8018	J156	462.48	10	130	0	0	0	0
0	P223	V8016	J158	716.7	10	130	1	0	0	0
0	P225	J158	J156	802.77	10	130	0	0	0	0
0	P227	J32	V8022	269.66	10	130	0	0	0	0
0	P229	V8022	J160	385.74	10	130	0	0	0	0
0	P23	J28	J30	679.9	16	130	-728.58	1.16	0.24	0.35
0	P231	J126	V8020	259.39	10	130	1	0	0	0
0	P233	V8020	J162	510.51	10	130	1	0	0	0
0	P235	J160	J162	392.51	10	130	-1	0	0	0
0	P237	J38	V8024	301.75	10	130	0	0	0	0
0	P239	J154	V8026	160.09	10	130	1	0	0	0
0	P241	V8026	J166	918.28	10	130	1	0	0	0
0	P243	J166	J164	455.03	10	130	0	0	0	0
0	P245	V8024	J164	882.35	10	130	0	0	0	0
0	P247	J46	J168	532.6	12	130	-91.2	0.26	0.02	0.03

0	P249	J168	J122	563.66	12	130	-91.2	0.26	0.02	0.03
0	P25	J30	J32	1,229.93	16	130	-817.42	1.3	0.53	0.43
0	P251	J168	V8028	209.52	12	130	0	0	0	0
0	P253	V8028	J170	652.72	12	130	0	0	0	0
0	P255	J170	J172	387.16	12	130	0	0	0	0
0	P261	J60	V8032	268.68	10	130	1	0	0	0
0	P263	V8032	J174	918.23	10	130	1	0	0	0
0	P265	J174	J176	448.57	10	130	0	0	0	0
0	P267	J62	V8034	292.8	10	130	0	0	0	0
0	P269	V8034	J176	916.13	10	130	0	0	0	0
0	P271	J70	V8038	242.57	10	130	1	0	0	0
0	P273	J84	V8036	324.38	10	130	0	0	0	0
0	P275	V8036	J180	319.74	10	130	0	0	0	0
0	P277	J180	J178	347.95	10	130	0	0	0	0
0	P279	V8038	J178	632.77	10	130	1	0	0	0
0	P281	J76	J182	613.97	12	130	522.5	1.48	0.47	0.76
0	P283	J182	J74	589.22	12	130	522.5	1.48	0.45	0.76
0	P287	V8042	J184	372.65	12	130	1	0	0	0
0	P289	J184	J186	299.52	12	130	0	0	0	0
0	P29	J34	J36	2,325.70	20	130	-2,137.42	2.18	2	0.86
0	P295	J182	V8044	226.67	12	130	0	0	0	0
0	P297	V8044	J186	240.53	12	130	0	0	0	0
0	P299	J52	J188	313.33	8	130	0	0	0	0
0	P301	J188	J190	664.92	8	130	0	0	0	0
0	P303	J56	J194	178.12	8	130	0	0	0	0
0	P305	J194	J192	667.8	8	130	0	0	0	0
0	P307	J192	J190	657.08	8	130	0	0	0	0
0	P309	J72	J196	736.36	12	130	356.52	1.01	0.28	0.38
0	P311	J196	J70	609.66	12	130	355.52	1.01	0.23	0.37
0	P313	J40	J198	1,129.17	12	130	47.56	0.13	0.01	0.01
0	P315	J198	J42	1,043.66	12	130	47.56	0.13	0.01	0.01
0	P329	J70	V8052	185.71	12	130	0	0	0	0
0	P33	J38	J40	1,179.71	12	130	-35.26	0.1	0.01	0.01
0	P331	V8052	J206	525.44	12	130	0	0	0	0
0	P333	J196	V8054	178.3	12	130	1	0	0	0
0	P335	V8054	J208	525.19	12	130	1	0	0	0
0	P337	J208	J206	475.84	12	130	0	0	0	0
0	P341	J198	V8058	154.71	10	130	0	0	0	0
0	P343	V8058	J214	421.16	10	130	0	0	0	0
0	P345	J214	J210	577.05	10	130	0	0	0	0
0	P347	J42	V8056	297.78	10	130	1	0	0	0
0	P349	V8056	J212	569.55	10	130	1	0	0	0
0	P351	J212	J210	1,312.90	10	130	0	0	0	0
0	P353	J88	V8060	266.49	10	130	0	0	0	0
0	P355	V8060	J216	322.62	10	130	0	0	0	0
0	P357	J90	V8062	226.9	10	130	1	0	0	0
0	P359	V8062	J218	739.72	10	130	1	0	0	0
0	P361	J218	J216	604.58	10	130	0	0	0	0
0	P363	J56	J222	1,322.36	12	130	354.84	1.01	0.49	0.37
0	P365	J222	J220	621.17	12	130	254.04	0.72	0.12	0.2
0	P367	J220	J44	1,095.19	12	130	152.16	0.43	0.08	0.08
0	P37	J26	J46	1,141.00	12	130	183.64	0.52	0.13	0.11
0	P379	J76	J224	678.87	12	130	-490.78	1.39	0.46	0.68
0	P381	J224	V8042	158.85	12	130	1	0	0	0
0	P39	J46	J44	879.87	12	130	116.76	0.33	0.04	0.05
0	P393	J226	J36	1,733.97	20	130	2,137.42	2.18	1.49	0.86
0	P395	J96	J224	650.52	12	130	491.78	1.4	0.44	0.68
0	P41	J44	J42	1,067.11	12	130	81.43	0.23	0.03	0.02
0	P415	J220	V8070	123.15	12	130	0	0	0	0
0	P417	V8070	J172	76.51	12	130	0	0	0	0
0	P419	RES9010	J226	1	1,000.00	130	2,137.42	0	0	0

0	P421	RES9012	J304	1	1,000.00	130	3,750.82	0	0	0
0	P43	J42	J48	1,096.37	12	130	-147.77	0.42	0.08	0.07
0	P45	J48	J50	1,194.62	12	130	-301.01	0.85	0.33	0.27
0	P47	J50	J52	765.09	12	130	-454.17	1.29	0.45	0.59
0	P49	J32	J62	1,463.77	16	130	649.5	1.04	0.41	0.28
0	P51	J34	J66	1,373.58	12	130	482.54	1.37	0.9	0.66
0	P53	J66	J64	862.35	12	130	393.1	1.12	0.39	0.45
0	P55	J62	J64	1,082.76	12	130	-77	0.22	0.02	0.02
0	P57	J62	J60	691.6	16	130	537.26	0.86	0.14	0.2
0	P59	J64	J58	1,424.22	12	130	176.5	0.5	0.15	0.1
0	P61	J60	J56	890.62	16	130	73.7	0.12	0	0.01
0	P67	J56	J52	1,036.48	16	130	-421.22	0.67	0.13	0.13
0	P69	J52	J54	1,131.15	12	130	171.94	0.49	0.11	0.1
0	P71	J58	J54	591.64	12	130	-19.38	0.05	0	0
0	P73	J40	J68	1,551.82	12	130	-359.22	1.02	0.59	0.38
0	P75	J68	J70	838.54	12	130	-169.2	0.48	0.08	0.09
0	P79	J72	J74	1,086.50	12	130	-313.34	0.89	0.32	0.3
0	P83	J76	J78	765.46	12	130	-217.52	0.62	0.12	0.15
0	P89	J52	J82	771.55	16	130	-1,352.36	2.16	0.84	1.09
0	P91	J82	J78	774.7	16	130	-1,352.36	2.16	0.85	1.09
0	P93	J68	J84	890.35	12	130	-280.29	0.8	0.21	0.24
0	P95	J84	J86	1,204.21	12	130	-327.7	0.93	0.39	0.32
0	P97	J86	J88	946.69	12	130	-413.94	1.17	0.47	0.49
0	P99	J88	J90	874.98	16	130	-498.02	0.79	0.15	0.17

Run B4

	ID	Demand (gpr	Elevation (ft)	Head (ft)	Pressure (psi)
0	J100	1	122	307.3	80.29
0	J102	1	125.5	307.3	78.77
0	J104	1	129.8	307.3	76.91
0	J122	1	117.5	307.3	82.24
0	J124	1	119.5	307.3	81.37
0	J126	1	130	307.3	76.82
0	J128	1	133	307.3	75.52
0	J130	1	134	307.3	75.09
0	J132	1	131	307.3	76.39
0	J134	1	131	307.3	76.39
0	J136	1	131	307.3	76.39
0	J138	1	122	295.63	75.23
0	J140	1	122	295.63	75.23
0	J146	1	132	295.62	70.9
0	J148	1	132	295.62	70.9
0	J150	1	118	295.63	76.97
0	J152	1	118	295.63	76.97
0	J154	1	90.3	307.3	94.02
0	J156	1	115.5	295.63	78.05
0	J158	1	115.5	295.63	78.05
0	J160	1	128	295.63	72.63
0	J162	1	128	295.63	72.63
0	J164	1	98	295.63	85.63
0	J166	1	98	295.63	85.63
0	J168	1	115.25	307.3	83.21
0	J170	1	120	295.62	76.1
0	J172	1	120	295.62	76.1
0	J174	1	123	295.63	74.8
0	J176	1	123	295.63	74.8
0	J178	1	94	295.63	87.37
0	J180	1	94	295.63	87.37
0	J182	1	118	307.3	82.02
0	J184	1	118	295.62	76.96
0	J186	1	118	295.62	76.96

0	J188	1	126	307.3	78.56
0	J190	1	126	307.3	78.56
0	J192	1	126	307.3	78.56
0	J194	1	126	307.3	78.56
0	J196	1	99.75	307.3	89.93
0	J198	1	95.5	307.3	91.77
0	J20	1	90.4	307.3	93.98
0	J206	1	100	295.62	84.76
0	J208	1	100	295.62	84.76
0	J210	1	102	295.57	83.87
0	J212	1	102	295.57	83.87
0	J214	1	102	295.57	83.87
0	J216	1	100	295.63	84.77
0	J218	1	100	295.63	84.77
0	J22	1	118.5	307.3	81.81
0	J220	1	116	307.3	82.89
0	J222	1	119.1	307.3	81.55
0	J224	1	118	307.3	82.02
0	J226	1	130	307.3	76.82
0	J26	1	115.5	307.3	83.11
0	J28	1	118.6	307.3	81.76
0	J30	1	122.2	307.3	80.2
0	J300	1	127.5	307.3	77.91
0	J302	1	128	307.3	77.69
0	J304	1	142	307.3	71.62
0	J32	1	126	307.3	78.56
0	J34	1	134	307.3	75.09
0	J36	1	138	307.3	73.36
0	J38	1	90.2	307.3	94.07
0	J40	1	90	307.3	94.15
0	J42	1	101	307.3	89.39
0	J44	1	111	307.3	85.06
0	J46	1	113	307.3	84.19
0	J48	1	114.7	307.3	83.45
0	J50	1	120	307.3	81.16
0	J52	1	126	307.3	78.56
0	J54	1	127.6	307.3	77.86
0	J56	1	121.9	307.3	80.33
0	J58	1	126	307.3	78.56
0	J60	1	124.5	307.3	79.21
0	J62	1	122	307.3	80.29
0	J64	1	127	307.3	78.12
0	J66	1	130.5	307.3	76.61
0	J68	1	88	307.3	95.02
0	J70	1	97.5	307.3	90.9
0	J72	1	102	307.3	88.95
0	J74	1	108	307.3	86.36
0	J76	1	128	307.3	77.69
0	J78	1	126	307.3	78.56
0	J82	1	126.4	307.3	78.38
0	J84	1	76	307.3	100.22
0	J86	1	78	307.3	99.35
0	J88	1	88.4	307.3	94.85
0	J90	1	104	307.3	88.09
0	J92	1	98	307.3	90.69
0	J94	1	107	307.3	86.79
0	J96	1	116	307.3	82.89

	ID	Flow (gpm)	Head (ft)
0	RES9010	-46.5	307.3
0	RES9012	-44.51	307.3

	ID	Diameter (in)	Elevation (ft)	Upstream Pre	Downstream	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	Status	Setting
0	V8000	8	122	80.29	75.23	2	0.01	11.67	Open	3
0	V8002	8	122	80.29	75.23	0	0	0	Closed	3
0	V8008	10	132	75.96	70.9	2	0.01	11.68	Open	2
0	V8010	10	132	75.96	70.9	0	0	0	Closed	2
0	V8012	8	118	82.02	76.97	0	0	0	Closed	3
0	V8014	8	118	82.02	76.97	2	0.01	11.67	Open	3
0	V8016	8	115.5	83.11	78.05	2	0.01	11.67	Open	3
0	V8018	8	115.5	83.11	78.05	0	0	0	Closed	3
0	V8020	8	128	77.69	72.63	2	0.01	11.67	Open	3
0	V8022	8	128	77.69	72.63	0	0	0	Closed	3
0	V8024	8	98	90.69	85.63	0	0	0	Closed	3
0	V8026	8	98	90.69	85.63	2	0.01	11.67	Open	3
0	V8028	10	120	81.16	76.1	0	0	0	Closed	2
0	V8032	8	123	79.86	74.8	2	0.01	11.67	Open	3
0	V8034	8	123	79.86	74.8	0	0	0	Closed	3
0	V8036	8	94	92.42	87.37	0	0	0	Closed	3
0	V8038	8	94	92.42	87.37	2	0.01	11.67	Open	3
0	V8042	10	118	82.02	76.96	2	0.01	11.68	Open	2
0	V8044	10	118	82.02	76.96	0	0	0	Closed	2
0	V8052	10	100	89.82	84.76	0	0	0	Closed	2
0	V8054	10	100	89.82	84.76	2	0.01	11.68	Open	2
0	V8056	8	102	88.95	83.87	3	0.02	11.73	Open	3
0	V8058	8	102	88.95	83.87	0	0	0	Closed	3
0	V8060	8	100	89.82	84.77	0	0	0	Closed	3
0	V8062	8	100	89.82	84.77	2	0.01	11.67	Open	3
0	V8070	10	120	81.16	76.1	2	0.01	11.68	Open	2

	ID	From Node	To Node	Length (ft)	Diameter (in)	Roughness	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	HL/1000 (ft/k
0	P101	J72	J92	810.17	12	130	-2.02	0.01	0	0
0	P103	J92	J90	1,241.83	12	130	-3.02	0.01	0	0
0	P105	J90	J94	1,132.34	16	130	-11.19	0.02	0	0
0	P107	J94	J96	1,204.53	16	130	-12.19	0.02	0	0
0	P111	J78	J100	1,067.79	16	130	-17.81	0.03	0	0
0	P115	J96	J100	886.7	16	130	-18.7	0.03	0	0
0	P117	J100	J102	789.56	20	130	-37.51	0.04	0	0
0	P119	J102	J104	941.88	20	130	-38.51	0.04	0	0
0	P121	J104	J300	1,197.93	20	130	-41.51	0.04	0	0
0	P123	J300	J302	147.08	20	130	-42.51	0.04	0	0
0	P125	J302	J304	2,260.56	20	130	-43.51	0.04	0	0
0	P139	J122	J124	627.68	12	130	-3.64	0.01	0	0
0	P141	J124	J60	1,242.80	12	130	-4.64	0.01	0	0
0	P145	J34	J126	846.23	20	130	33.54	0.03	0	0
0	P149	J66	J128	522.48	8	130	0	0	0	0
0	P155	J126	J130	441.09	8	130	2	0.01	0	0
0	P157	J128	J130	886.05	8	130	-1	0.01	0	0
0	P159	J126	J32	843.52	20	130	28.54	0.03	0	0
0	P161	J66	J132	415.81	8	130	3	0.02	0	0
0	P163	J64	J136	338.87	8	130	0	0	0	0
0	P165	J136	J134	525.67	8	130	-1	0.01	0	0
0	P167	J132	J134	848.01	8	130	2	0.01	0	0
0	P17	J20	J22	1,133.08	16	130	-4.79	0.01	0	0
0	P171	V8000	J138	423.5	10	130	2	0.01	0	0
0	P173	J138	J140	355.5	10	130	1	0	0	0
0	P177	V8002	J140	603.42	10	130	0	0	0	0
0	P179	J30	V8002	454.21	10	130	0	0	0	0
0	P181	J62	V8000	384.46	10	130	2	0.01	0	0
0	P19	J22	J26	1,147.36	16	130	-5.79	0.01	0	0
0	P193	J104	V8008	482.89	12	130	2	0.01	0	0
0	P195	J82	V8010	213.6	12	130	0	0	0	0

0	P197	V8010	J146	842.68	12	130	0	0	0	0
0	P199	J146	J148	514.03	12	130	-1	0	0	0
0	P201	V8008	J148	1,114.81	12	130	2	0.01	0	0
0	P203	J26	V8012	268.73	10	130	0	0	0	0
0	P205	J28	V8014	295.03	10	130	2	0.01	0	0
0	P207	V8014	J152	482.16	10	130	2	0.01	0	0
0	P209	V8012	J150	236	10	130	0	0	0	0
0	P21	J26	J28	1,118.04	16	130	-10.62	0.02	0	0
0	P211	J152	J150	798.51	10	130	1	0	0	0
0	P213	J20	J154	348.19	12	130	3.79	0.01	0	0
0	P215	J154	J38	842.54	12	130	0.79	0	0	0
0	P217	J26	V8016	273.58	10	130	2	0.01	0	0
0	P219	J22	V8018	229.2	10	130	0	0	0	0
0	P221	V8018	J156	462.48	10	130	0	0	0	0
0	P223	V8016	J158	716.7	10	130	2	0.01	0	0
0	P225	J158	J156	802.77	10	130	1	0	0	0
0	P227	J32	V8022	269.66	10	130	0	0	0	0
0	P229	V8022	J160	385.74	10	130	0	0	0	0
0	P23	J28	J30	679.9	16	130	-13.62	0.02	0	0
0	P231	J126	V8020	259.39	10	130	2	0.01	0	0
0	P233	V8020	J162	510.51	10	130	2	0.01	0	0
0	P235	J160	J162	392.51	10	130	-1	0	0	0
0	P237	J38	V8024	301.75	10	130	0	0	0	0
0	P239	J154	V8026	160.09	10	130	2	0.01	0	0
0	P241	V8026	J166	918.28	10	130	2	0.01	0	0
0	P243	J166	J164	455.03	10	130	1	0	0	0
0	P245	V8024	J164	882.35	10	130	0	0	0	0
0	P247	J46	J168	532.6	12	130	-1.64	0	0	0
0	P249	J168	J122	563.66	12	130	-2.64	0.01	0	0
0	P25	J30	J32	1,229.93	16	130	-14.62	0.02	0	0
0	P251	J168	V8028	209.52	12	130	0	0	0	0
0	P253	V8028	J170	652.72	12	130	0	0	0	0
0	P255	J170	J172	387.16	12	130	-1	0	0	0
0	P261	J60	V8032	268.68	10	130	2	0.01	0	0
0	P263	V8032	J174	918.23	10	130	2	0.01	0	0
0	P265	J174	J176	448.57	10	130	1	0	0	0
0	P267	J62	V8034	292.8	10	130	0	0	0	0
0	P269	V8034	J176	916.13	10	130	0	0	0	0
0	P271	J70	V8038	242.57	10	130	2	0.01	0	0
0	P273	J84	V8036	324.38	10	130	0	0	0	0
0	P275	V8036	J180	319.74	10	130	0	0	0	0
0	P277	J180	J178	347.95	10	130	-1	0	0	0
0	P279	V8038	J178	632.77	10	130	2	0.01	0	0
0	P281	J76	J182	613.97	12	130	6.34	0.02	0	0
0	P283	J182	J74	589.22	12	130	5.34	0.02	0	0
0	P287	V8042	J184	372.65	12	130	2	0.01	0	0
0	P289	J184	J186	299.52	12	130	1	0	0	0
0	P29	J34	J36	2,325.70	20	130	-44.5	0.05	0	0
0	P295	J182	V8044	226.67	12	130	0	0	0	0
0	P297	V8044	J186	240.53	12	130	0	0	0	0
0	P299	J52	J188	313.33	8	130	2	0.01	0	0
0	P301	J188	J190	664.92	8	130	1	0.01	0	0
0	P303	J56	J194	178.12	8	130	2	0.01	0	0
0	P305	J194	J192	667.8	8	130	1	0.01	0	0
0	P307	J192	J190	657.08	8	130	0	0	0	0
0	P309	J72	J196	736.36	12	130	5.36	0.02	0	0
0	P311	J196	J70	609.66	12	130	2.36	0.01	0	0
0	P313	J40	J198	1,129.17	12	130	-0.69	0	0	0
0	P315	J198	J42	1,043.66	12	130	-1.69	0	0	0
0	P329	J70	V8052	185.71	12	130	0	0	0	0
0	P33	J38	J40	1,179.71	12	130	-0.21	0	0	0

0	P331	V8052	J206	525.44	12	130	0	0	0	0
0	P333	J196	V8054	178.3	12	130	2	0.01	0	0
0	P335	V8054	J208	525.19	12	130	2	0.01	0	0
0	P337	J208	J206	475.84	12	130	1	0	0	0
0	P341	J198	V8058	154.71	10	130	0	0	0	0
0	P343	V8058	J214	421.16	10	130	0	0	0	0
0	P345	J214	J210	577.05	10	130	-1	0	0	0
0	P347	J42	V8056	297.78	10	130	3	0.01	0	0
0	P349	V8056	J212	569.55	10	130	3	0.01	0	0
0	P351	J212	J210	1,312.90	10	130	2	0.01	0	0
0	P353	J88	V8060	266.49	10	130	0	0	0	0
0	P355	V8060	J216	322.62	10	130	0	0	0	0
0	P357	J90	V8062	226.9	10	130	2	0.01	0	0
0	P359	V8062	J218	739.72	10	130	2	0.01	0	0
0	P361	J218	J216	604.58	10	130	1	0	0	0
0	P363	J56	J222	1,322.36	12	130	4.97	0.01	0	0
0	P365	J222	J220	621.17	12	130	3.97	0.01	0	0
0	P367	J220	J44	1,095.19	12	130	0.97	0	0	0
0	P37	J26	J46	1,141.00	12	130	1.82	0.01	0	0
0	P379	J76	J224	678.87	12	130	-2.51	0.01	0	0
0	P381	J224	V8042	158.85	12	130	2	0.01	0	0
0	P39	J46	J44	879.87	12	130	2.46	0.01	0	0
0	P393	J226	J36	1,733.97	20	130	45.5	0.05	0	0
0	P395	J96	J224	650.52	12	130	5.51	0.02	0	0
0	P41	J44	J42	1,067.11	12	130	2.43	0.01	0	0
0	P415	J220	V8070	123.15	12	130	2	0.01	0	0
0	P417	V8070	J172	76.51	12	130	2	0.01	0	0
0	P419	RES9010	J226	1	1,000.00	130	46.5	0	0	0
0	P421	RES9012	J304	1	1,000.00	130	44.51	0	0	0
0	P43	J42	J48	1,096.37	12	130	-3.25	0.01	0	0
0	P45	J48	J50	1,194.62	12	130	-4.25	0.01	0	0
0	P47	J50	J52	765.09	12	130	-5.25	0.01	0	0
0	P49	J32	J62	1,463.77	16	130	12.93	0.02	0	0
0	P51	J34	J66	1,373.58	12	130	9.95	0.03	0	0
0	P53	J66	J64	862.35	12	130	5.95	0.02	0	0
0	P55	J62	J64	1,082.76	12	130	-1.63	0	0	0
0	P57	J62	J60	691.6	16	130	11.56	0.02	0	0
0	P59	J64	J58	1,424.22	12	130	3.32	0.01	0	0
0	P61	J60	J56	890.62	16	130	3.92	0.01	0	0
0	P67	J56	J52	1,036.48	16	130	-4.05	0.01	0	0
0	P69	J52	J54	1,131.15	12	130	-1.32	0	0	0
0	P71	J58	J54	591.64	12	130	2.32	0.01	0	0
0	P73	J40	J68	1,551.82	12	130	-0.52	0	0	0
0	P75	J68	J70	838.54	12	130	0.64	0	0	0
0	P79	J72	J74	1,086.50	12	130	-4.34	0.01	0	0
0	P83	J76	J78	765.46	12	130	-4.83	0.01	0	0
0	P89	J52	J82	771.55	16	130	-10.98	0.02	0	0
0	P91	J82	J78	774.7	16	130	-11.98	0.02	0	0
0	P93	J68	J84	890.35	12	130	-2.17	0.01	0	0
0	P95	J84	J86	1,204.21	12	130	-3.17	0.01	0	0
0	P97	J86	J88	946.69	12	130	-4.17	0.01	0	0
0	P99	J88	J90	874.98	16	130	-5.17	0.01	0	0

Run B5

	ID	Demand (gpr	Elevation (ft)	Head (ft)	Pressure (psi)
0	J100	100.7	122	268.77	63.6
0	J102	0	125.5	269.48	62.38
0	J104	9.32	129.8	270.32	60.89
0	J122	75.78	117.5	268.17	65.29
0	J124	66.76	119.5	268.21	64.43
0	J126	0	130	270.78	61

0	J128	0	133	270.78	59.7
0	J130	0	134	270.78	59.26
0	J132	0	131	269.85	60.16
0	J134	0	131	269.85	60.16
0	J136	0	131	269.85	60.16
0	J138	0	122	257.36	58.65
0	J140	0	122	257.36	58.65
0	J146	2,000.00	132	247.91	50.22
0	J148	2,000.00	132	247.9	50.22
0	J150	0	118	257.53	60.46
0	J152	0	118	257.53	60.46
0	J154	0	90.3	268.23	77.1
0	J156	0	115.5	256.97	61.3
0	J158	1	115.5	256.97	61.3
0	J160	0	128	259.17	56.84
0	J162	1	128	259.17	56.84
0	J164	0	98	256.63	68.73
0	J166	1	98	256.63	68.73
0	J168	0	115.25	268.16	66.26
0	J170	1	120	256.27	59.04
0	J172	0	120	256.27	59.04
0	J174	1	123	256.76	57.96
0	J176	0	123	256.76	57.96
0	J178	1	94	256.18	70.27
0	J180	0	94	256.18	70.27
0	J182	0	118	267.83	64.92
0	J184	0	118	279.65	70.04
0	J186	0	118	279.65	70.04
0	J188	0	126	267.92	61.49
0	J190	0	126	267.92	61.49
0	J192	0	126	267.92	61.49
0	J194	0	126	267.92	61.49
0	J196	0	99.75	267.79	72.81
0	J198	0	95.5	267.75	74.64
0	J20	44.06	90.4	268.33	77.1
0	J206	0	100	256.18	67.67
0	J208	1	100	256.18	67.67
0	J210	0	102	256.18	66.8
0	J212	0	102	256.18	66.8
0	J214	0	102	256.18	66.8
0	J216	0	100	256.38	67.76
0	J218	1	100	256.38	67.76
0	J22	41.86	118.5	268.44	64.97
0	J220	50.94	116	267.88	65.81
0	J222	50.4	119.1	267.88	64.47
0	J224	0	118	268.11	65.04
0	J226	0	130	277.29	63.82
0	J26	88.2	115.5	268.57	66.32
0	J28	34.78	118.6	269.07	65.2
0	J30	44.42	122.2	269.4	63.78
0	J300	0	127.5	273.81	63.4
0	J302	0	128	274.24	63.37
0	J304	0	142	280.84	60.16
0	J32	93.48	126	270.05	62.42
0	J34	0	134	271.5	59.58
0	J36	0	138	274.82	59.28
0	J38	79.7	90.2	267.99	77.04
0	J40	138.2	90	267.79	77.04
0	J42	137.88	101	267.72	72.24
0	J44	93.74	111	267.88	67.98
0	J46	79.04	113	268.16	67.23

0	J48	76.62	114.7	267.6	66.25
0	J50	76.58	120	267.56	63.94
0	J52	152.52	126	267.56	61.34
0	J54	76.28	127.6	267.84	60.77
0	J56	70.04	121.9	267.92	63.27
0	J58	97.94	126	268.07	61.56
0	J60	43.14	124.5	268.36	62.34
0	J62	94.12	122	268.9	63.65
0	J64	69.8	127	268.94	61.5
0	J66	44.72	130.5	269.85	60.38
0	J68	45.14	88	267.79	77.9
0	J70	92.66	97.5	267.78	73.78
0	J72	105.24	102	267.8	71.84
0	J74	104.58	108	267.8	69.24
0	J76	92.9	128	267.86	60.6
0	J78	160.7	126	267.82	61.45
0	J82	0	126.4	267.17	61
0	J84	23.7	76	267.82	83.11
0	J86	41.12	78	267.87	82.27
0	J88	42.04	88.4	267.95	77.8
0	J90	52.46	104	267.98	71.05
0	J92	53.12	98	267.84	73.59
0	J94	50.48	107	268.14	69.82
0	J96	40.96	116	268.34	66.01

	ID	Flow (gpm)	Head (ft)
0	RES9010	-2,808.65	277.29
0	RES9012	-4,135.47	280.84

	ID	Diameter (in)	Elevation (ft)	Upstream Pre	Downstream	Flow (gpm)	Velocity (ft/s	Headloss (ft)	Status	Setting
0	V8000	8	122	63.65	58.65	0	0	11.54	Open	3
0	V8002	8	122	63.87	58.65	0	0	0	Closed	3
0	V8008	10	132	58.12	54.4	1,941.38	7.93	8.58	Open	2
0	V8010	10	132	57.68	53.75	2,058.62	8.41	9.07	Open	2
0	V8012	8	118	65.24	60.46	0	0	0	Closed	3
0	V8014	8	118	65.46	60.46	0	0	11.54	Open	3
0	V8016	8	115.5	66.32	61.3	1	0.01	11.6	Open	3
0	V8018	8	115.5	66.27	61.3	0	0	0	Closed	3
0	V8020	8	128	61.86	56.84	1	0.01	11.6	Open	3
0	V8022	8	128	61.55	56.84	0	0	0	Closed	3
0	V8024	8	98	73.66	68.73	0	0	0	Closed	3
0	V8026	8	98	73.76	68.73	1	0.01	11.6	Open	3
0	V8028	10	120	64.2	59.04	0	0	0	Closed	2
0	V8032	8	123	62.99	57.96	1	0.01	11.6	Open	3
0	V8034	8	123	63.22	57.96	0	0	0	Closed	3
0	V8036	8	94	75.31	70.27	0	0	0	Closed	3
0	V8038	8	94	75.3	70.27	1	0.01	11.6	Open	3
0	V8042	10	118	65.04	70.04	0	0	11.54	Open	2
0	V8044	10	118	64.92	70.04	0	0	0	Closed	2
0	V8052	10	100	72.7	67.67	0	0	0	Closed	2
0	V8054	10	100	72.7	67.67	1	0	11.61	Open	2
0	V8056	8	102	71.8	66.8	0	0	11.54	Open	3
0	V8058	8	102	71.82	66.8	0	0	0	Closed	3
0	V8060	8	100	72.77	67.76	0	0	0	Closed	3
0	V8062	8	100	72.79	67.76	1	0.01	11.6	Open	3
0	V8070	10	120	64.08	59.04	1	0	11.61	Open	2

	ID	From Node	To Node	Length (ft)	Diameter (in)	Roughness	Flow (gpm)	Velocity (ft/s	Headloss (ft)	HL/1000 (ft/k
0	P101	J72	J92	810.17	12	130	-131.98	0.37	0.05	0.06
0	P103	J92	J90	1,241.83	12	130	-185.1	0.53	0.14	0.11
0	P105	J90	J94	1,132.34	16	130	-439.08	0.7	0.15	0.14

0	P107	J94	J96	1,204.53	16	130	-489.56	0.78	0.2	0.17
0	P111	J78	J100	1,067.79	16	130	-1,207.92	1.93	0.95	0.89
0	P115	J96	J100	886.7	16	130	-876.15	1.4	0.43	0.49
0	P117	J100	J102	789.56	20	130	-2,184.77	2.23	0.71	0.9
0	P119	J102	J104	941.88	20	130	-2,184.77	2.23	0.84	0.9
0	P121	J104	J300	1,197.93	20	130	-4,135.47	4.22	3.5	2.92
0	P123	J300	J302	147.08	20	130	-4,135.47	4.22	0.43	2.92
0	P125	J302	J304	2,260.56	20	130	-4,135.47	4.22	6.6	2.92
0	P139	J122	J124	627.68	12	130	-131.13	0.37	0.04	0.06
0	P141	J124	J60	1,242.80	12	130	-197.89	0.56	0.16	0.13
0	P145	J34	J126	846.23	20	130	2,139.69	2.19	0.73	0.86
0	P149	J66	J128	522.48	8	130	0	0	0	0
0	P155	J126	J130	441.09	8	130	0	0	0	0
0	P157	J128	J130	886.05	8	130	0	0	0	0
0	P159	J126	J32	843.52	20	130	2,138.69	2.18	0.73	0.86
0	P161	J66	J132	415.81	8	130	0	0	0	0
0	P163	J64	J136	338.87	8	130	0	0	0	0
0	P165	J136	J134	525.67	8	130	0	0	0	0
0	P167	J132	J134	848.01	8	130	0	0	0	0
0	P17	J20	J22	1,133.08	16	130	-355.84	0.57	0.1	0.09
0	P171	V8000	J138	423.5	10	130	0	0	0	0
0	P173	J138	J140	355.5	10	130	0	0	0	0
0	P177	V8002	J140	603.42	10	130	0	0	0	0
0	P179	J30	V8002	454.21	10	130	0	0	0	0
0	P181	J62	V8000	384.46	10	130	0	0	0	0
0	P19	J22	J26	1,147.36	16	130	-397.7	0.63	0.13	0.11
0	P193	J104	V8008	482.89	12	130	1,941.38	5.51	4.18	8.66
0	P195	J82	V8010	213.6	12	130	2,058.62	5.84	2.06	9.65
0	P197	V8010	J146	842.68	12	130	2,058.62	5.84	8.13	9.65
0	P199	J146	J148	514.03	12	130	58.62	0.17	0.01	0.01
0	P201	V8008	J148	1,114.81	12	130	1,941.38	5.51	9.65	8.66
0	P203	J26	V8012	268.73	10	130	0	0	0	0
0	P205	J28	V8014	295.03	10	130	0	0	0	0
0	P207	V8014	J152	482.16	10	130	0	0	0	0
0	P209	V8012	J150	236	10	130	0	0	0	0
0	P21	J26	J28	1,118.04	16	130	-836.01	1.33	0.5	0.45
0	P211	J152	J150	798.51	10	130	0	0	0	0
0	P213	J20	J154	348.19	12	130	311.78	0.88	0.1	0.29
0	P215	J154	J38	842.54	12	130	310.78	0.88	0.25	0.29
0	P217	J26	V8016	273.58	10	130	1	0	0	0
0	P219	J22	V8018	229.2	10	130	0	0	0	0
0	P221	V8018	J156	462.48	10	130	0	0	0	0
0	P223	V8016	J158	716.7	10	130	1	0	0	0
0	P225	J158	J156	802.77	10	130	0	0	0	0
0	P227	J32	V8022	269.66	10	130	0	0	0	0
0	P229	V8022	J160	385.74	10	130	0	0	0	0
0	P23	J28	J30	679.9	16	130	-870.79	1.39	0.33	0.48
0	P231	J126	V8020	259.39	10	130	1	0	0	0
0	P233	V8020	J162	510.51	10	130	1	0	0	0
0	P235	J160	J162	392.51	10	130	0	0	0	0
0	P237	J38	V8024	301.75	10	130	0	0	0	0
0	P239	J154	V8026	160.09	10	130	1	0	0	0
0	P241	V8026	J166	918.28	10	130	1	0	0	0
0	P243	J166	J164	455.03	10	130	0	0	0	0
0	P245	V8024	J164	882.35	10	130	0	0	0	0
0	P247	J46	J168	532.6	12	130	-55.35	0.16	0.01	0.01
0	P249	J168	J122	563.66	12	130	-55.35	0.16	0.01	0.01
0	P25	J30	J32	1,229.93	16	130	-915.21	1.46	0.65	0.53
0	P251	J168	V8028	209.52	12	130	0	0	0	0
0	P253	V8028	J170	652.72	12	130	0	0	0	0
0	P255	J170	J172	387.16	12	130	-1	0	0	0

0	P261	J60	V8032	268.68	10	130	1	0	0	0
0	P263	V8032	J174	918.23	10	130	1	0	0	0
0	P265	J174	J176	448.57	10	130	0	0	0	0
0	P267	J62	V8034	292.8	10	130	0	0	0	0
0	P269	V8034	J176	916.13	10	130	0	0	0	0
0	P271	J70	V8038	242.57	10	130	1	0	0	0
0	P273	J84	V8036	324.38	10	130	0	0	0	0
0	P275	V8036	J180	319.74	10	130	0	0	0	0
0	P277	J180	J178	347.95	10	130	0	0	0	0
0	P279	V8038	J178	632.77	10	130	1	0	0	0
0	P281	J76	J182	613.97	12	130	127.56	0.36	0.03	0.06
0	P283	J182	J74	589.22	12	130	127.56	0.36	0.03	0.06
0	P287	V8042	J184	372.65	12	130	0	0	0	0
0	P289	J184	J186	299.52	12	130	0	0	0	0
0	P29	J34	J36	2,325.70	20	130	-2,808.65	2.87	3.31	1.43
0	P295	J182	V8044	226.67	12	130	0	0	0	0
0	P297	V8044	J186	240.53	12	130	0	0	0	0
0	P299	J52	J188	313.33	8	130	0	0	0	0
0	P301	J188	J190	664.92	8	130	0	0	0	0
0	P303	J56	J194	178.12	8	130	0	0	0	0
0	P305	J194	J192	667.8	8	130	0	0	0	0
0	P307	J192	J190	657.08	8	130	0	0	0	0
0	P309	J72	J196	736.36	12	130	49.72	0.14	0.01	0.01
0	P311	J196	J70	609.66	12	130	48.72	0.14	0.01	0.01
0	P313	J40	J198	1,129.17	12	130	96.46	0.27	0.04	0.03
0	P315	J198	J42	1,043.66	12	130	96.46	0.27	0.03	0.03
0	P329	J70	V8052	185.71	12	130	0	0	0	0
0	P33	J38	J40	1,179.71	12	130	231.08	0.66	0.2	0.17
0	P331	V8052	J206	525.44	12	130	0	0	0	0
0	P333	J196	V8054	178.3	12	130	1	0	0	0
0	P335	V8054	J208	525.19	12	130	1	0	0	0
0	P337	J208	J206	475.84	12	130	0	0	0	0
0	P341	J198	V8058	154.71	10	130	0	0	0	0
0	P343	V8058	J214	421.16	10	130	0	0	0	0
0	P345	J214	J210	577.05	10	130	0	0	0	0
0	P347	J42	V8056	297.78	10	130	0	0	0	0
0	P349	V8056	J212	569.55	10	130	0	0	0	0
0	P351	J212	J210	1,312.90	10	130	0	0	0	0
0	P353	J88	V8060	266.49	10	130	0	0	0	0
0	P355	V8060	J216	322.62	10	130	0	0	0	0
0	P357	J90	V8062	226.9	10	130	1	0	0	0
0	P359	V8062	J218	739.72	10	130	1	0	0	0
0	P361	J218	J216	604.58	10	130	0	0	0	0
0	P363	J56	J222	1,322.36	12	130	88.92	0.25	0.04	0.03
0	P365	J222	J220	621.17	12	130	38.52	0.11	0	0.01
0	P367	J220	J44	1,095.19	12	130	-13.42	0.04	0	0
0	P37	J26	J46	1,141.00	12	130	349.11	0.99	0.41	0.36
0	P379	J76	J224	678.87	12	130	-345.64	0.98	0.24	0.35
0	P381	J224	V8042	158.85	12	130	0	0	0	0
0	P39	J46	J44	879.87	12	130	325.42	0.92	0.28	0.32
0	P393	J226	J36	1,733.97	20	130	2,808.65	2.87	2.47	1.43
0	P395	J96	J224	650.52	12	130	345.64	0.98	0.23	0.35
0	P41	J44	J42	1,067.11	12	130	218.26	0.62	0.16	0.15
0	P415	J220	V8070	123.15	12	130	1	0	0	0
0	P417	V8070	J172	76.51	12	130	1	0	0	0
0	P419	RES9010	J226	1	1,000.00	130	2,808.65	0	0	0
0	P421	RES9012	J304	1	1,000.00	130	4,135.47	0	0	0
0	P43	J42	J48	1,096.37	12	130	176.84	0.5	0.11	0.1
0	P45	J48	J50	1,194.62	12	130	100.22	0.28	0.04	0.04
0	P47	J50	J52	765.09	12	130	23.64	0.07	0	0
0	P49	J32	J62	1,463.77	16	130	1,130.00	1.8	1.15	0.78

0	P51	J34	J66	1,373.58	12	130	668.96	1.9	1.65	1.2
0	P53	J66	J64	862.35	12	130	624.24	1.77	0.91	1.06
0	P55	J62	J64	1,082.76	12	130	-92.8	0.26	0.03	0.03
0	P57	J62	J60	691.6	16	130	1,128.68	1.8	0.54	0.78
0	P59	J64	J58	1,424.22	12	130	461.64	1.31	0.86	0.61
0	P61	J60	J56	890.62	16	130	886.64	1.41	0.44	0.5
0	P67	J56	J52	1,036.48	16	130	727.68	1.16	0.36	0.35
0	P69	J52	J54	1,131.15	12	130	-287.42	0.82	0.28	0.25
0	P71	J58	J54	591.64	12	130	363.7	1.03	0.23	0.39
0	P73	J40	J68	1,551.82	12	130	-3.58	0.01	0	0
0	P75	J68	J70	838.54	12	130	44.94	0.13	0.01	0.01
0	P79	J72	J74	1,086.50	12	130	-22.98	0.07	0	0
0	P83	J76	J78	765.46	12	130	125.17	0.36	0.04	0.05
0	P89	J52	J82	771.55	16	130	886.23	1.41	0.39	0.5
0	P91	J82	J78	774.7	16	130	-1,172.39	1.87	0.65	0.84
0	P93	J68	J84	890.35	12	130	-93.66	0.27	0.03	0.03
0	P95	J84	J86	1,204.21	12	130	-117.36	0.33	0.06	0.05
0	P97	J86	J88	946.69	12	130	-158.48	0.45	0.08	0.08
0	P99	J88	J90	874.98	16	130	-200.52	0.32	0.03	0.03

Run B6

	ID	Demand (gpr	Elevation (ft)	Head (ft)	Pressure (psi)
0	J100	100.7	122	267.01	62.83
0	J102	0	125.5	269.05	62.2
0	J104	9.32	129.8	271.48	61.39
0	J122	75.78	117.5	266.53	64.58
0	J124	66.76	119.5	266.61	63.74
0	J126	0	130	269.64	60.5
0	J128	0	133	269.64	59.2
0	J130	0	134	269.64	58.77
0	J132	0	131	268.62	59.63
0	J134	0	131	268.62	59.63
0	J136	0	131	268.62	59.63
0	J138	0	122	255.97	58.05
0	J140	0	122	255.97	58.05
0	J146	0	132	259.87	55.41
0	J148	1	132	259.87	55.41
0	J150	0	118	255.88	59.74
0	J152	1	118	255.88	59.74
0	J154	0	90.3	266.09	76.17
0	J156	0	115.5	255.21	60.54
0	J158	1	115.5	255.21	60.54
0	J160	0	128	258.03	56.34
0	J162	1	128	258.03	56.34
0	J164	0	98	254.49	67.81
0	J166	1	98	254.49	67.81
0	J168	0	115.25	266.5	65.54
0	J170	1	120	254.58	58.31
0	J172	0	120	254.58	58.31
0	J174	1	123	255.28	57.32
0	J176	0	123	255.28	57.32
0	J178	1	94	250.95	68.01
0	J180	0	94	250.95	68.01
0	J182	0	118	258.56	60.9
0	J184	2,001.00	118	245.96	55.45
0	J186	2,000.00	118	245.96	55.44
0	J188	0	126	266.41	60.84
0	J190	0	126	266.41	60.84
0	J192	0	126	266.41	60.84
0	J194	0	126	266.41	60.84
0	J196	0	99.75	262.16	70.37

0	J198	0	95.5	265.35	73.6
0	J20	44.06	90.4	266.33	76.23
0	J206	0	100	250.55	65.23
0	J208	1	100	250.55	65.23
0	J210	0	102	254.19	65.94
0	J212	0	102	254.19	65.94
0	J214	0	102	254.19	65.94
0	J216	0	100	251.74	65.75
0	J218	1	100	251.74	65.75
0	J22	41.86	118.5	266.55	64.15
0	J220	50.94	116	266.18	65.07
0	J222	50.4	119.1	266.23	63.75
0	J224	0	118	260.21	61.62
0	J226	0	130	277.29	63.82
0	J26	88.2	115.5	266.81	65.56
0	J28	34.78	118.6	267.48	64.51
0	J30	44.42	122.2	267.92	63.14
0	J300	0	127.5	274.59	63.73
0	J302	0	128	274.97	63.68
0	J304	0	142	280.84	60.16
0	J32	93.48	126	268.77	61.86
0	J34	0	134	270.5	59.15
0	J36	0	138	274.39	59.1
0	J38	79.7	90.2	265.52	75.97
0	J40	138.2	90	264.95	75.8
0	J42	137.88	101	265.73	71.38
0	J44	93.74	111	266.14	67.22
0	J46	79.04	113	266.48	66.5
0	J48	76.62	114.7	265.79	65.47
0	J50	76.58	120	265.94	63.24
0	J52	152.52	126	266.12	60.71
0	J54	76.28	127.6	266.43	60.15
0	J56	70.04	121.9	266.41	62.62
0	J58	97.94	126	266.67	60.95
0	J60	43.14	124.5	266.88	61.69
0	J62	94.12	122	267.51	63.05
0	J64	69.8	127	267.57	60.91
0	J66	44.72	130.5	268.62	59.85
0	J68	45.14	88	263.32	75.96
0	J70	92.66	97.5	262.55	71.52
0	J72	105.24	102	261.68	69.19
0	J74	104.58	108	259.49	65.64
0	J76	92.9	128	260.61	57.46
0	J78	160.7	126	265.84	60.59
0	J82	0	126.4	265.98	60.48
0	J84	23.7	76	263.32	81.16
0	J86	38.12	78	263.32	80.3
0	J88	42.04	88.4	263.33	75.8
0	J90	52.46	104	263.34	69.04
0	J92	53.12	98	262.26	71.17
0	J94	50.48	107	263.72	67.91
0	J96	40.96	116	264.18	64.21

	ID	Flow (gpm)	Head (ft)
0	RES9010	-3,062.31	277.29
0	RES9012	-3,881.82	280.84

	ID	Diameter (in)	Elevation (ft)	Upstream Pre	Downstream	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	Status	Setting
0	V8000	8	122	63.05	58.05	0	0	11.54	Open	3
0	V8002	8	122	63.23	58.05	0	0	0	Closed	3
0	V8008	10	132	60.44	55.41	1	0	11.61	Open	2

0	V8010	10	132	58.05	55.41	0	0	0	Closed	2
0	V8012	8	118	64.48	59.74	0	0	0	Closed	3
0	V8014	8	118	64.77	59.74	1	0.01	11.6	Open	3
0	V8016	8	115.5	65.56	60.54	1	0.01	11.6	Open	3
0	V8018	8	115.5	65.45	60.54	0	0	0	Closed	3
0	V8020	8	128	61.37	56.34	1	0.01	11.6	Open	3
0	V8022	8	128	61	56.34	0	0	0	Closed	3
0	V8024	8	98	72.59	67.81	0	0	0	Closed	3
0	V8026	8	98	72.83	67.81	1	0.01	11.6	Open	3
0	V8028	10	120	63.48	58.31	0	0	0	Closed	2
0	V8032	8	123	62.34	57.32	1	0.01	11.6	Open	3
0	V8034	8	123	62.62	57.32	0	0	0	Closed	3
0	V8036	8	94	73.36	68.01	0	0	0	Closed	3
0	V8038	8	94	73.03	68.01	1	0.01	11.6	Open	3
0	V8042	10	118	60.95	57.01	2,063.30	8.43	9.09	Open	2
0	V8044	10	118	60.06	56.34	1,937.70	7.92	8.57	Open	2
0	V8052	10	100	70.43	65.23	0	0	0	Closed	2
0	V8054	10	100	70.26	65.23	1	0	11.61	Open	2
0	V8056	8	102	70.94	65.94	0	0	11.54	Open	3
0	V8058	8	102	70.78	65.94	0	0	0	Closed	3
0	V8060	8	100	70.77	65.75	0	0	0	Closed	3
0	V8062	8	100	70.77	65.75	1	0.01	11.6	Open	3
0	V8070	10	120	63.34	58.31	1	0	11.61	Open	2

	ID	From Node	To Node	Length (ft)	Diameter (in)	Roughness	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	HL/1000 (ft/k
0	P101	J72	J92	810.17	12	130	-507.41	1.44	0.58	0.72
0	P103	J92	J90	1,241.83	12	130	-560.53	1.59	1.08	0.87
0	P105	J90	J94	1,132.34	16	130	-715.79	1.14	0.38	0.34
0	P107	J94	J96	1,204.53	16	130	-766.27	1.22	0.46	0.38
0	P111	J78	J100	1,067.79	16	130	-1,355.84	2.16	1.17	1.1
0	P115	J96	J100	886.7	16	130	-2,414.96	3.85	2.83	3.2
0	P117	J100	J102	789.56	20	130	-3,871.50	3.95	2.04	2.58
0	P119	J102	J104	941.88	20	130	-3,871.50	3.95	2.43	2.58
0	P121	J104	J300	1,197.93	20	130	-3,881.82	3.96	3.11	2.6
0	P123	J300	J302	147.08	20	130	-3,881.82	3.96	0.38	2.6
0	P125	J302	J304	2,260.56	20	130	-3,881.82	3.96	5.87	2.6
0	P139	J122	J124	627.68	12	130	-198.4	0.56	0.08	0.13
0	P141	J124	J60	1,242.80	12	130	-265.16	0.75	0.27	0.22
0	P145	J34	J126	846.23	20	130	2,345.56	2.4	0.86	1.02
0	P149	J66	J128	522.48	8	130	0	0	0	0
0	P155	J126	J130	441.09	8	130	0	0	0	0
0	P157	J128	J130	886.05	8	130	0	0	0	0
0	P159	J126	J32	843.52	20	130	2,344.56	2.39	0.86	1.02
0	P161	J66	J132	415.81	8	130	0	0	0	0
0	P163	J64	J136	338.87	8	130	0	0	0	0
0	P165	J136	J134	525.67	8	130	0	0	0	0
0	P167	J132	J134	848.01	8	130	0	0	0	0
0	P17	J20	J22	1,133.08	16	130	-535.62	0.85	0.22	0.2
0	P171	V8000	J138	423.5	10	130	0	0	0	0
0	P173	J138	J140	355.5	10	130	0	0	0	0
0	P177	V8002	J140	603.42	10	130	0	0	0	0
0	P179	J30	V8002	454.21	10	130	0	0	0	0
0	P181	J62	V8000	384.46	10	130	0	0	0	0
0	P19	J22	J26	1,147.36	16	130	-577.48	0.92	0.26	0.23
0	P193	J104	V8008	482.89	12	130	1	0	0	0
0	P195	J82	V8010	213.6	12	130	0	0	0	0
0	P197	V8010	J146	842.68	12	130	0	0	0	0
0	P199	J146	J148	514.03	12	130	0	0	0	0
0	P201	V8008	J148	1,114.81	12	130	1	0	0	0
0	P203	J26	V8012	268.73	10	130	0	0	0	0
0	P205	J28	V8014	295.03	10	130	1	0	0	0

0	P207	V8014	J152	482.16	10	130	1	0	0	0
0	P209	V8012	J150	236	10	130	0	0	0	0
0	P21	J26	J28	1,118.04	16	130	-979.61	1.56	0.67	0.6
0	P211	J152	J150	798.51	10	130	0	0	0	0
0	P213	J20	J154	348.19	12	130	491.56	1.39	0.24	0.68
0	P215	J154	J38	842.54	12	130	490.56	1.39	0.57	0.68
0	P217	J26	V8016	273.58	10	130	1	0	0	0
0	P219	J22	V8018	229.2	10	130	0	0	0	0
0	P221	V8018	J156	462.48	10	130	0	0	0	0
0	P223	V8016	J158	716.7	10	130	1	0	0	0
0	P225	J158	J156	802.77	10	130	0	0	0	0
0	P227	J32	V8022	269.66	10	130	0	0	0	0
0	P229	V8022	J160	385.74	10	130	0	0	0	0
0	P23	J28	J30	679.9	16	130	-1,015.39	1.62	0.44	0.64
0	P231	J126	V8020	259.39	10	130	1	0	0	0
0	P233	V8020	J162	510.51	10	130	1	0	0	0
0	P235	J160	J162	392.51	10	130	0	0	0	0
0	P237	J38	V8024	301.75	10	130	0	0	0	0
0	P239	J154	V8026	160.09	10	130	1	0	0	0
0	P241	V8026	J166	918.28	10	130	1	0	0	0
0	P243	J166	J164	455.03	10	130	0	0	0	0
0	P245	V8024	J164	882.35	10	130	0	0	0	0
0	P247	J46	J168	532.6	12	130	-122.62	0.35	0.03	0.05
0	P249	J168	J122	563.66	12	130	-122.62	0.35	0.03	0.05
0	P25	J30	J32	1,229.93	16	130	-1,059.81	1.69	0.85	0.7
0	P251	J168	V8028	209.52	12	130	0	0	0	0
0	P253	V8028	J170	652.72	12	130	0	0	0	0
0	P255	J170	J172	387.16	12	130	-1	0	0	0
0	P261	J60	V8032	268.68	10	130	1	0	0	0
0	P263	V8032	J174	918.23	10	130	1	0	0	0
0	P265	J174	J176	448.57	10	130	0	0	0	0
0	P267	J62	V8034	292.8	10	130	0	0	0	0
0	P269	V8034	J176	916.13	10	130	0	0	0	0
0	P271	J70	V8038	242.57	10	130	1	0	0	0
0	P273	J84	V8036	324.38	10	130	0	0	0	0
0	P275	V8036	J180	319.74	10	130	0	0	0	0
0	P277	J180	J178	347.95	10	130	0	0	0	0
0	P279	V8038	J178	632.77	10	130	1	0	0	0
0	P281	J76	J182	613.97	12	130	1,160.30	3.29	2.05	3.34
0	P283	J182	J74	589.22	12	130	-777.4	2.21	0.94	1.59
0	P287	V8042	J184	372.65	12	130	2,063.30	5.85	3.61	9.69
0	P289	J184	J186	299.52	12	130	62.3	0.18	0	0.01
0	P29	J34	J36	2,325.70	20	130	-3,062.31	3.13	3.89	1.67
0	P295	J182	V8044	226.67	12	130	1,937.70	5.5	1.96	8.63
0	P297	V8044	J186	240.53	12	130	1,937.70	5.5	2.08	8.63
0	P299	J52	J188	313.33	8	130	0	0	0	0
0	P301	J188	J190	664.92	8	130	0	0	0	0
0	P303	J56	J194	178.12	8	130	0	0	0	0
0	P305	J194	J192	667.8	8	130	0	0	0	0
0	P307	J192	J190	657.08	8	130	0	0	0	0
0	P309	J72	J196	736.36	12	130	-479.81	1.36	0.48	0.65
0	P311	J196	J70	609.66	12	130	-480.81	1.36	0.4	0.65
0	P313	J40	J198	1,129.17	12	130	-349.01	0.99	0.41	0.36
0	P315	J198	J42	1,043.66	12	130	-349.01	0.99	0.38	0.36
0	P329	J70	V8052	185.71	12	130	0	0	0	0
0	P33	J38	J40	1,179.71	12	130	410.86	1.17	0.58	0.49
0	P331	V8052	J206	525.44	12	130	0	0	0	0
0	P333	J196	V8054	178.3	12	130	1	0	0	0
0	P335	V8054	J208	525.19	12	130	1	0	0	0
0	P337	J208	J206	475.84	12	130	0	0	0	0
0	P341	J198	V8058	154.71	10	130	0	0	0	0

0	P343	V8058	J214	421.16	10	130	0	0	0	0
0	P345	J214	J210	577.05	10	130	0	0	0	0
0	P347	J42	V8056	297.78	10	130	0	0	0	0
0	P349	V8056	J212	569.55	10	130	0	0	0	0
0	P351	J212	J210	1,312.90	10	130	0	0	0	0
0	P353	J88	V8060	266.49	10	130	0	0	0	0
0	P355	V8060	J216	322.62	10	130	0	0	0	0
0	P357	J90	V8062	226.9	10	130	1	0	0	0
0	P359	V8062	J218	739.72	10	130	1	0	0	0
0	P361	J218	J216	604.58	10	130	0	0	0	0
0	P363	J56	J222	1,322.36	12	130	202.97	0.58	0.17	0.13
0	P365	J222	J220	621.17	12	130	152.57	0.43	0.05	0.08
0	P367	J220	J44	1,095.19	12	130	100.63	0.29	0.04	0.04
0	P37	J26	J46	1,141.00	12	130	312.93	0.89	0.34	0.29
0	P379	J76	J224	678.87	12	130	455.57	1.29	0.4	0.59
0	P381	J224	V8042	158.85	12	130	2,063.30	5.85	1.54	9.69
0	P39	J46	J44	879.87	12	130	356.51	1.01	0.33	0.38
0	P393	J226	J36	1,733.97	20	130	3,062.31	3.13	2.9	1.67
0	P395	J96	J224	650.52	12	130	1,607.73	4.56	3.97	6.11
0	P41	J44	J42	1,067.11	12	130	363.4	1.03	0.41	0.39
0	P415	J220	V8070	123.15	12	130	1	0	0	0
0	P417	V8070	J172	76.51	12	130	1	0	0	0
0	P419	RES9010	J226	1	1,000.00	130	3,062.31	0	0	0
0	P421	RES9012	J304	1	1,000.00	130	3,881.82	0	0	0
0	P43	J42	J48	1,096.37	12	130	-123.49	0.35	0.06	0.05
0	P45	J48	J50	1,194.62	12	130	-200.11	0.57	0.15	0.13
0	P47	J50	J52	765.09	12	130	-276.69	0.78	0.18	0.23
0	P49	J32	J62	1,463.77	16	130	1,191.27	1.9	1.26	0.86
0	P51	J34	J66	1,373.58	12	130	716.75	2.03	1.88	1.37
0	P53	J66	J64	862.35	12	130	672.03	1.91	1.05	1.21
0	P55	J62	J64	1,082.76	12	130	-129.24	0.37	0.06	0.06
0	P57	J62	J60	691.6	16	130	1,226.39	1.96	0.63	0.91
0	P59	J64	J58	1,424.22	12	130	472.98	1.34	0.9	0.63
0	P61	J60	J56	890.62	16	130	917.09	1.46	0.47	0.53
0	P67	J56	J52	1,036.48	16	130	644.08	1.03	0.29	0.28
0	P69	J52	J54	1,131.15	12	130	-298.76	0.85	0.31	0.27
0	P71	J58	J54	591.64	12	130	375.04	1.06	0.24	0.41
0	P73	J40	J68	1,551.82	12	130	621.67	1.76	1.63	1.05
0	P75	J68	J70	838.54	12	130	574.47	1.63	0.76	0.91
0	P79	J72	J74	1,086.50	12	130	881.98	2.5	2.18	2.01
0	P83	J76	J78	765.46	12	130	-1,708.77	4.85	5.23	6.84
0	P89	J52	J82	771.55	16	130	513.63	0.82	0.14	0.18
0	P91	J82	J78	774.7	16	130	513.63	0.82	0.14	0.18
0	P93	J68	J84	890.35	12	130	2.06	0.01	0	0
0	P95	J84	J86	1,204.21	12	130	-21.64	0.06	0	0
0	P97	J86	J88	946.69	12	130	-59.76	0.17	0.01	0.01
0	P99	J88	J90	874.98	16	130	-101.8	0.16	0.01	0.01

Run B7

	ID	Demand (gpr	Elevation (ft)	Head (ft)	Pressure (psi)
0	J100	100.7	122	270.33	64.27
0	J102	0	125.5	271.88	63.43
0	J104	9.32	129.8	273.72	62.36
0	J122	75.78	117.5	269.31	65.78
0	J124	66.76	119.5	269.42	64.96
0	J126	0	130	271.64	61.37
0	J128	0	133	271.64	60.07
0	J130	0	134	271.64	59.64
0	J132	0	131	270.97	60.65
0	J134	0	131	270.97	60.65
0	J136	0	131	270.97	60.65

0	J138	0	122	281.73	69.21
0	J140	0	122	281.73	69.21
0	J146	0	132	262.12	56.38
0	J148	1	132	262.12	56.38
0	J150	0	118	258.3	60.79
0	J152	1	118	258.3	60.79
0	J154	0	90.3	268.54	77.23
0	J156	0	115.5	257.74	61.63
0	J158	1	115.5	257.74	61.63
0	J160	0	128	260.04	57.21
0	J162	1	128	260.04	57.21
0	J164	0	98	256.94	68.87
0	J166	1	98	256.94	68.87
0	J168	0	115.25	269.26	66.73
0	J170	1	120	257.51	59.58
0	J172	0	120	257.51	59.58
0	J174	1	123	258.18	58.57
0	J176	0	123	258.18	58.57
0	J178	1	94	253.12	68.94
0	J180	0	94	253.12	68.94
0	J182	0	118	267.07	64.59
0	J184	1	118	256.48	60
0	J186	0	118	256.48	60
0	J188	0	126	269.55	62.2
0	J190	0	126	269.55	62.2
0	J192	0	126	269.55	62.2
0	J194	0	126	269.55	62.2
0	J196	0	99.75	264.71	71.48
0	J198	0	95.5	267.93	74.71
0	J20	44.06	90.4	268.81	77.3
0	J206	0	100	253.11	66.34
0	J208	1	100	253.11	66.34
0	J210	0	102	257.04	67.18
0	J212	0	102	257.04	67.18
0	J214	0	102	257.04	67.18
0	J216	1,500.00	100	245.52	63.05
0	J218	1,501.00	100	245.41	63
0	J22	41.86	118.5	269.06	65.24
0	J220	50.94	116	269.12	66.35
0	J222	50.4	119.1	269.23	65.05
0	J224	0	118	268.09	65.03
0	J226	0	130	277.29	63.82
0	J26	88.2	115.5	269.34	66.66
0	J28	34.78	118.6	269.91	65.56
0	J30	44.42	122.2	270.27	64.16
0	J300	0	127.5	276.09	64.38
0	J302	0	128	276.38	64.29
0	J304	0	142	280.84	60.16
0	J32	93.48	126	271	62.83
0	J34	0	134	272.29	59.92
0	J36	0	138	275.15	59.43
0	J38	79.7	90.2	267.89	76.99
0	J40	138.2	90	267.23	76.79
0	J42	137.88	101	268.58	72.61
0	J44	93.74	111	269	68.46
0	J46	79.04	113	269.21	67.69
0	J48	76.62	114.7	268.79	66.77
0	J50	76.58	120	269.15	64.63
0	J52	152.52	126	269.5	62.18
0	J54	76.28	127.6	269.61	61.53
0	J56	70.04	121.9	269.55	63.98

0	J58	97.94	126	269.73	62.28
0	J60	43.14	124.5	269.78	62.95
0	J62	94.12	122	270.19	64.21
0	J64	69.8	127	270.25	62.07
0	J66	44.72	130.5	270.97	60.86
0	J68	45.14	88	264.77	76.59
0	J70	92.66	97.5	264.72	72.46
0	J72	105.24	102	264.71	70.5
0	J74	104.58	108	266.1	68.5
0	J76	92.9	128	268.09	60.7
0	J78	160.7	126	269.51	62.18
0	J82	0	126.4	269.51	62.01
0	J84	23.7	76	263.9	81.41
0	J86	38.12	78	262.8	80.07
0	J88	42.04	88.4	262.04	75.24
0	J90	52.46	104	262.75	68.79
0	J92	53.12	98	263.86	71.87
0	J94	50.48	107	265.28	68.58
0	J96	40.96	116	268.1	65.9

	ID	Flow (gpm)	Head (ft)
0	RES9010	-2,595.99	277.29
0	RES9012	-3,348.13	280.84

	ID	Diameter (in)	Elevation (ft)	Upstream Pre	Downstream	Flow (gpm)	Velocity (ft/s	Headloss (ft)	Status	Setting
0	V8000	8	122	64.21	69.21	0	0	11.54	Open	3
0	V8002	8	122	64.25	69.21	0	0	0	Closed	3
0	V8008	10	132	61.41	56.38	1	0	11.61	Open	2
0	V8010	10	132	59.58	56.38	0	0	0	Closed	2
0	V8012	8	118	65.58	60.79	0	0	0	Closed	3
0	V8014	8	118	65.82	60.79	1	0.01	11.6	Open	3
0	V8016	8	115.5	66.66	61.63	1	0.01	11.6	Open	3
0	V8018	8	115.5	66.54	61.63	0	0	0	Closed	3
0	V8020	8	128	62.24	57.21	1	0.01	11.6	Open	3
0	V8022	8	128	61.96	57.21	0	0	0	Closed	3
0	V8024	8	98	73.61	68.87	0	0	0	Closed	3
0	V8026	8	98	73.89	68.87	1	0.01	11.6	Open	3
0	V8028	10	120	64.67	59.58	0	0	0	Closed	2
0	V8032	8	123	63.6	58.57	1	0.01	11.6	Open	3
0	V8034	8	123	63.78	58.57	0	0	0	Closed	3
0	V8036	8	94	73.62	68.94	0	0	0	Closed	3
0	V8038	8	94	73.97	68.94	1	0.01	11.6	Open	3
0	V8042	10	118	65.03	60	1	0	11.61	Open	2
0	V8044	10	118	64.59	60	0	0	0	Closed	2
0	V8052	10	100	71.37	66.34	0	0	0	Closed	2
0	V8054	10	100	71.37	66.34	1	0	11.61	Open	2
0	V8056	8	102	72.18	67.18	0	0	11.54	Open	3
0	V8058	8	102	71.9	67.18	0	0	0	Closed	3
0	V8060	8	100	68.42	65.23	1,649.19	10.53	7.36	Open	3
0	V8062	8	100	69.46	66.46	1,351.81	8.63	6.94	Open	3
0	V8070	10	120	64.61	59.58	1	0	11.61	Open	2

	ID	From Node	To Node	Length (ft)	Diameter (in)	Roughness	Flow (gpm)	Velocity (ft/s	Headloss (ft)	HL/1000 (ft/k
0	P101	J72	J92	810.17	12	130	621.78	1.76	0.85	1.05
0	P103	J92	J90	1,241.83	12	130	568.66	1.61	1.11	0.89
0	P105	J90	J94	1,132.34	16	130	-1,989.75	3.18	2.53	2.23
0	P107	J94	J96	1,204.53	16	130	-2,040.23	3.26	2.82	2.34
0	P111	J78	J100	1,067.79	16	130	-1,114.33	1.78	0.81	0.76
0	P115	J96	J100	886.7	16	130	-2,122.79	3.39	2.23	2.52
0	P117	J100	J102	789.56	20	130	-3,337.81	3.41	1.55	1.96
0	P119	J102	J104	941.88	20	130	-3,337.81	3.41	1.85	1.96

0	P121	J104	J300	1,197.93	20	130	-3,348.13	3.42	2.36	1.97
0	P123	J300	J302	147.08	20	130	-3,348.13	3.42	0.29	1.97
0	P125	J302	J304	2,260.56	20	130	-3,348.13	3.42	4.46	1.97
0	P139	J122	J124	627.68	12	130	-241.76	0.69	0.11	0.18
0	P141	J124	J60	1,242.80	12	130	-308.52	0.88	0.36	0.29
0	P145	J34	J126	846.23	20	130	2,003.30	2.05	0.65	0.76
0	P149	J66	J128	522.48	8	130	0	0	0	0
0	P155	J126	J130	441.09	8	130	0	0	0	0
0	P157	J128	J130	886.05	8	130	0	0	0	0
0	P159	J126	J32	843.52	20	130	2,002.30	2.04	0.64	0.76
0	P161	J66	J132	415.81	8	130	0	0	0	0
0	P163	J64	J136	338.87	8	130	0	0	0	0
0	P165	J136	J134	525.67	8	130	0	0	0	0
0	P167	J132	J134	848.01	8	130	0	0	0	0
0	P17	J20	J22	1,133.08	16	130	-569.32	0.91	0.25	0.22
0	P171	V8000	J138	423.5	10	130	0	0	0	0
0	P173	J138	J140	355.5	10	130	0	0	0	0
0	P177	V8002	J140	603.42	10	130	0	0	0	0
0	P179	J30	V8002	454.21	10	130	0	0	0	0
0	P181	J62	V8000	384.46	10	130	0	0	0	0
0	P19	J22	J26	1,147.36	16	130	-611.18	0.98	0.29	0.25
0	P193	J104	V8008	482.89	12	130	1	0	0	0
0	P195	J82	V8010	213.6	12	130	0	0	0	0
0	P197	V8010	J146	842.68	12	130	0	0	0	0
0	P199	J146	J148	514.03	12	130	0	0	0	0
0	P201	V8008	J148	1,114.81	12	130	1	0	0	0
0	P203	J26	V8012	268.73	10	130	0	0	0	0
0	P205	J28	V8014	295.03	10	130	1	0	0	0
0	P207	V8014	J152	482.16	10	130	1	0	0	0
0	P209	V8012	J150	236	10	130	0	0	0	0
0	P21	J26	J28	1,118.04	16	130	-890.59	1.42	0.56	0.5
0	P211	J152	J150	798.51	10	130	0	0	0	0
0	P213	J20	J154	348.19	12	130	525.26	1.49	0.27	0.77
0	P215	J154	J38	842.54	12	130	524.26	1.49	0.65	0.77
0	P217	J26	V8016	273.58	10	130	1	0	0	0
0	P219	J22	V8018	229.2	10	130	0	0	0	0
0	P221	V8018	J156	462.48	10	130	0	0	0	0
0	P223	V8016	J158	716.7	10	130	1	0	0	0
0	P225	J158	J156	802.77	10	130	0	0	0	0
0	P227	J32	V8022	269.66	10	130	0	0	0	0
0	P229	V8022	J160	385.74	10	130	0	0	0	0
0	P23	J28	J30	679.9	16	130	-926.37	1.48	0.37	0.54
0	P231	J126	V8020	259.39	10	130	1	0	0	0
0	P233	V8020	J162	510.51	10	130	1	0	0	0
0	P235	J160	J162	392.51	10	130	0	0	0	0
0	P237	J38	V8024	301.75	10	130	0	0	0	0
0	P239	J154	V8026	160.09	10	130	1	0	0	0
0	P241	V8026	J166	918.28	10	130	1	0	0	0
0	P243	J166	J164	455.03	10	130	0	0	0	0
0	P245	V8024	J164	882.35	10	130	0	0	0	0
0	P247	J46	J168	532.6	12	130	-165.98	0.47	0.05	0.09
0	P249	J168	J122	563.66	12	130	-165.98	0.47	0.05	0.09
0	P25	J30	J32	1,229.93	16	130	-970.79	1.55	0.73	0.59
0	P251	J168	V8028	209.52	12	130	0	0	0	0
0	P253	V8028	J170	652.72	12	130	0	0	0	0
0	P255	J170	J172	387.16	12	130	-1	0	0	0
0	P261	J60	V8032	268.68	10	130	1	0	0	0
0	P263	V8032	J174	918.23	10	130	1	0	0	0
0	P265	J174	J176	448.57	10	130	0	0	0	0
0	P267	J62	V8034	292.8	10	130	0	0	0	0
0	P269	V8034	J176	916.13	10	130	0	0	0	0

0	P271	J70	V8038	242.57	10	130	1	0	0	0
0	P273	J84	V8036	324.38	10	130	0	0	0	0
0	P275	V8036	J180	319.74	10	130	0	0	0	0
0	P277	J180	J178	347.95	10	130	0	0	0	0
0	P279	V8038	J178	632.77	10	130	1	0	0	0
0	P281	J76	J182	613.97	12	130	794.49	2.25	1.02	1.66
0	P283	J182	J74	589.22	12	130	794.49	2.25	0.98	1.66
0	P287	V8042	J184	372.65	12	130	1	0	0	0
0	P289	J184	J186	299.52	12	130	0	0	0	0
0	P29	J34	J36	2,325.70	20	130	-2,595.99	2.65	2.86	1.23
0	P295	J182	V8044	226.67	12	130	0	0	0	0
0	P297	V8044	J186	240.53	12	130	0	0	0	0
0	P299	J52	J188	313.33	8	130	0	0	0	0
0	P301	J188	J190	664.92	8	130	0	0	0	0
0	P303	J56	J194	178.12	8	130	0	0	0	0
0	P305	J194	J192	667.8	8	130	0	0	0	0
0	P307	J192	J190	657.08	8	130	0	0	0	0
0	P309	J72	J196	736.36	12	130	-37.11	0.11	0	0.01
0	P311	J196	J70	609.66	12	130	-38.11	0.11	0	0.01
0	P313	J40	J198	1,129.17	12	130	-469.46	1.33	0.71	0.62
0	P315	J198	J42	1,043.66	12	130	-469.46	1.33	0.65	0.62
0	P329	J70	V8052	185.71	12	130	0	0	0	0
0	P33	J38	J40	1,179.71	12	130	444.56	1.26	0.67	0.56
0	P331	V8052	J206	525.44	12	130	0	0	0	0
0	P333	J196	V8054	178.3	12	130	1	0	0	0
0	P335	V8054	J208	525.19	12	130	1	0	0	0
0	P337	J208	J206	475.84	12	130	0	0	0	0
0	P341	J198	V8058	154.71	10	130	0	0	0	0
0	P343	V8058	J214	421.16	10	130	0	0	0	0
0	P345	J214	J210	577.05	10	130	0	0	0	0
0	P347	J42	V8056	297.78	10	130	0	0	0	0
0	P349	V8056	J212	569.55	10	130	0	0	0	0
0	P351	J212	J210	1,312.90	10	130	0	0	0	0
0	P353	J88	V8060	266.49	10	130	1,649.19	6.74	4.15	15.56
0	P355	V8060	J216	322.62	10	130	1,649.19	6.74	5.02	15.56
0	P357	J90	V8062	226.9	10	130	1,351.81	5.52	2.44	10.77
0	P359	V8062	J218	739.72	10	130	1,351.81	5.52	7.96	10.77
0	P361	J218	J216	604.58	10	130	-149.19	0.61	0.11	0.18
0	P363	J56	J222	1,322.36	12	130	284.02	0.81	0.33	0.25
0	P365	J222	J220	621.17	12	130	233.62	0.66	0.11	0.17
0	P367	J220	J44	1,095.19	12	130	181.68	0.52	0.12	0.11
0	P37	J26	J46	1,141.00	12	130	190.21	0.54	0.13	0.12
0	P379	J76	J224	678.87	12	130	-40.6	0.12	0	0.01
0	P381	J224	V8042	158.85	12	130	1	0	0	0
0	P39	J46	J44	879.87	12	130	277.15	0.79	0.21	0.24
0	P393	J226	J36	1,733.97	20	130	2,595.99	2.65	2.14	1.23
0	P395	J96	J224	650.52	12	130	41.6	0.12	0	0.01
0	P41	J44	J42	1,067.11	12	130	365.09	1.04	0.42	0.39
0	P415	J220	V8070	123.15	12	130	1	0	0	0
0	P417	V8070	J172	76.51	12	130	1	0	0	0
0	P419	RES9010	J226	1	1,000.00	130	2,595.99	0	0	0
0	P421	RES9012	J304	1	1,000.00	130	3,348.13	0	0	0
0	P43	J42	J48	1,096.37	12	130	-242.25	0.69	0.2	0.18
0	P45	J48	J50	1,194.62	12	130	-318.87	0.9	0.36	0.31
0	P47	J50	J52	765.09	12	130	-395.45	1.12	0.35	0.45
0	P49	J32	J62	1,463.77	16	130	938.03	1.5	0.81	0.55
0	P51	J34	J66	1,373.58	12	130	592.69	1.68	1.32	0.96
0	P53	J66	J64	862.35	12	130	547.97	1.55	0.72	0.83
0	P55	J62	J64	1,082.76	12	130	-127.21	0.36	0.06	0.06
0	P57	J62	J60	691.6	16	130	971.12	1.55	0.41	0.59
0	P59	J64	J58	1,424.22	12	130	350.96	1	0.52	0.36

0	P61	J60	J56	890.62	16	130	618.46	0.99	0.23	0.26
0	P67	J56	J52	1,036.48	16	130	264.4	0.42	0.06	0.05
0	P69	J52	J54	1,131.15	12	130	-176.74	0.5	0.12	0.1
0	P71	J58	J54	591.64	12	130	253.02	0.72	0.12	0.2
0	P73	J40	J68	1,551.82	12	130	775.83	2.2	2.46	1.58
0	P75	J68	J70	838.54	12	130	131.77	0.37	0.05	0.06
0	P79	J72	J74	1,086.50	12	130	-689.91	1.96	1.38	1.27
0	P83	J76	J78	765.46	12	130	-846.79	2.4	1.43	1.86
0	P89	J52	J82	771.55	16	130	-106.84	0.17	0.01	0.01
0	P91	J82	J78	774.7	16	130	-106.84	0.17	0.01	0.01
0	P93	J68	J84	890.35	12	130	598.91	1.7	0.87	0.98
0	P95	J84	J86	1,204.21	12	130	575.21	1.63	1.1	0.91
0	P97	J86	J88	946.69	12	130	537.09	1.52	0.76	0.8
0	P99	J88	J90	874.98	16	130	-1,154.13	1.84	0.71	0.81

Run B8

	ID	Demand (gpr	Elevation (ft)	Head (ft)	Pressure (psi)
0	J100	100.7	122	267.44	63.02
0	J102	0	125.5	269.41	62.36
0	J104	9.32	129.8	271.77	61.52
0	J122	75.78	117.5	265.94	64.32
0	J124	66.76	119.5	266.14	63.54
0	J126	0	130	269.31	60.36
0	J128	0	133	269.31	59.06
0	J130	0	134	269.31	58.63
0	J132	0	131	268.41	59.54
0	J134	0	131	268.41	59.54
0	J136	0	131	268.41	59.54
0	J138	0	122	278.83	67.95
0	J140	0	122	278.83	67.95
0	J146	0	132	260.16	55.53
0	J148	1	132	260.16	55.53
0	J150	0	118	255.13	59.42
0	J152	1	118	255.13	59.42
0	J154	0	90.3	264.25	75.37
0	J156	0	115.5	254.24	60.12
0	J158	1	115.5	254.24	60.12
0	J160	0	128	257.71	56.2
0	J162	1	128	257.71	56.2
0	J164	0	98	252.64	67.01
0	J166	1	98	252.64	67.01
0	J168	0	115.25	265.83	65.25
0	J170	1	120	254.04	58.08
0	J172	0	120	254.04	58.08
0	J174	1	123	255.09	57.23
0	J176	0	123	255.09	57.23
0	J178	1	94	235.64	61.37
0	J180	0	94	235.64	61.37
0	J182	0	118	261.41	62.14
0	J184	1	118	252.81	58.41
0	J186	0	118	252.81	58.41
0	J188	0	126	266.36	60.82
0	J190	0	126	266.36	60.82
0	J192	0	126	266.36	60.82
0	J194	0	126	266.36	60.82
0	J196	0	99.75	247.26	63.92
0	J198	0	95.5	263.04	72.6
0	J20	44.06	90.4	264.8	75.57
0	J206	2,000.00	100	232	57.2
0	J208	2,001.00	100	232	57.2
0	J210	0	102	253.06	65.45

0	J212	0	102	253.06	65.45
0	J214	0	102	253.06	65.45
0	J216	0	100	248.2	64.22
0	J218	1	100	248.2	64.22
0	J22	41.86	118.5	265.3	63.61
0	J220	50.94	116	265.65	64.84
0	J222	50.4	119.1	265.83	63.58
0	J224	0	118	264.42	63.44
0	J226	0	130	277.29	63.82
0	J26	88.2	115.5	265.85	65.15
0	J28	34.78	118.6	266.73	64.18
0	J30	44.42	122.2	267.3	62.87
0	J300	0	127.5	274.78	63.82
0	J302	0	128	275.15	63.76
0	J304	0	142	280.84	60.16
0	J32	93.48	126	268.4	61.7
0	J34	0	134	270.23	59.03
0	J36	0	138	274.27	59.05
0	J38	79.7	90.2	262.9	74.83
0	J40	138.2	90	261.36	74.25
0	J42	137.88	101	264.6	70.89
0	J44	93.74	111	265.41	66.9
0	J46	79.04	113	265.73	66.18
0	J48	76.62	114.7	265.03	65.14
0	J50	76.58	120	265.7	63.13
0	J52	152.52	126	266.28	60.78
0	J54	76.28	127.6	266.49	60.18
0	J56	70.04	121.9	266.36	62.59
0	J58	97.94	126	266.68	60.95
0	J60	43.14	124.5	266.69	61.61
0	J62	94.12	122	267.29	62.95
0	J64	69.8	127	267.39	60.83
0	J66	44.72	130.5	268.41	59.75
0	J68	45.14	88	254.85	72.3
0	J70	92.66	97.5	247.24	64.88
0	J72	105.24	102	254.66	66.15
0	J74	104.58	108	258.8	65.34
0	J76	92.9	128	264.13	58.99
0	J78	160.7	126	266.3	60.79
0	J82	0	126.4	266.29	60.61
0	J84	23.7	76	256.1	78.04
0	J86	38.12	78	257.88	77.94
0	J88	42.04	88.4	259.42	74.1
0	J90	52.46	104	259.8	67.51
0	J92	53.12	98	256.57	68.71
0	J94	50.48	107	262.12	67.21
0	J96	40.96	116	264.7	64.43

	ID	Flow (gpm)	Head (ft)
0	RES9010	-3,127.27	277.29
0	RES9012	-3,816.85	280.84

	ID	Diameter (in)	Elevation (ft)	Upstream Pre	Downstream	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	Status	Setting	
0	V8000	8	122	62.95	67.95	0	0	11.54	Open		3
0	V8002	8	122	62.96	67.95	0	0	0	Closed		3
0	V8008	10	132	60.56	55.53	1	0	11.61	Open		2
0	V8010	10	132	58.19	55.53	0	0	0	Closed		2
0	V8012	8	118	64.06	59.42	0	0	0	Closed		3
0	V8014	8	118	64.44	59.42	1	0.01	11.6	Open		3
0	V8016	8	115.5	65.15	60.12	1	0.01	11.6	Open		3
0	V8018	8	115.5	64.91	60.12	0	0	0	Closed		3

0	V8020	8	128	61.23	56.2	1	0.01	11.6	Open	3
0	V8022	8	128	60.84	56.2	0	0	0	Closed	3
0	V8024	8	98	71.45	67.01	0	0	0	Closed	3
0	V8026	8	98	72.03	67.01	1	0.01	11.6	Open	3
0	V8028	10	120	63.19	58.08	0	0	0	Closed	2
0	V8032	8	123	62.26	57.23	1	0.01	11.6	Open	3
0	V8034	8	123	62.52	57.23	0	0	0	Closed	3
0	V8036	8	94	70.24	61.37	0	0	0	Closed	3
0	V8038	8	94	66.4	61.37	1	0.01	11.6	Open	3
0	V8042	10	118	63.44	58.41	1	0	11.61	Open	2
0	V8044	10	118	62.14	58.41	0	0	0	Closed	2
0	V8052	10	100	63.07	59.27	1,996.06	8.15	8.76	Open	2
0	V8054	10	100	63.1	59.29	2,004.94	8.19	8.8	Open	2
0	V8056	8	102	70.45	65.45	0	0	11.54	Open	3
0	V8058	8	102	69.78	65.45	0	0	0	Closed	3
0	V8060	8	100	69.08	64.22	0	0	0	Closed	3
0	V8062	8	100	69.24	64.22	1	0.01	11.6	Open	3
0	V8070	10	120	63.11	58.08	1	0	11.61	Open	2

	ID	From Node	To Node	Length (ft)	Diameter (in)	Roughness	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	HL/1000 (ft/k
0	P101	J72	J92	810.17	12	130	-961.61	2.73	1.91	2.36
0	P103	J92	J90	1,241.83	12	130	-1,014.73	2.88	3.23	2.6
0	P105	J90	J94	1,132.34	16	130	-1,896.57	3.03	2.31	2.04
0	P107	J94	J96	1,204.53	16	130	-1,947.05	3.11	2.58	2.14
0	P111	J78	J100	1,067.79	16	130	-1,334.70	2.13	1.14	1.07
0	P115	J96	J100	886.7	16	130	-2,371.14	3.78	2.74	3.09
0	P117	J100	J102	789.56	20	130	-3,806.53	3.89	1.98	2.5
0	P119	J102	J104	941.88	20	130	-3,806.53	3.89	2.36	2.5
0	P121	J104	J300	1,197.93	20	130	-3,816.85	3.9	3.01	2.52
0	P123	J300	J302	147.08	20	130	-3,816.85	3.9	0.37	2.52
0	P125	J302	J304	2,260.56	20	130	-3,816.85	3.9	5.69	2.52
0	P139	J122	J124	627.68	12	130	-324.68	0.92	0.2	0.32
0	P141	J124	J60	1,242.80	12	130	-391.44	1.11	0.55	0.45
0	P145	J34	J126	846.23	20	130	2,422.10	2.47	0.92	1.08
0	P149	J66	J128	522.48	8	130	0	0	0	0
0	P155	J126	J130	441.09	8	130	0	0	0	0
0	P157	J128	J130	886.05	8	130	0	0	0	0
0	P159	J126	J32	843.52	20	130	2,421.10	2.47	0.91	1.08
0	P161	J66	J132	415.81	8	130	0	0	0	0
0	P163	J64	J136	338.87	8	130	0	0	0	0
0	P165	J136	J134	525.67	8	130	0	0	0	0
0	P167	J132	J134	848.01	8	130	0	0	0	0
0	P17	J20	J22	1,133.08	16	130	-824.23	1.32	0.49	0.44
0	P171	V8000	J138	423.5	10	130	0	0	0	0
0	P173	J138	J140	355.5	10	130	0	0	0	0
0	P177	V8002	J140	603.42	10	130	0	0	0	0
0	P179	J30	V8002	454.21	10	130	0	0	0	0
0	P181	J62	V8000	384.46	10	130	0	0	0	0
0	P19	J22	J26	1,147.36	16	130	-866.09	1.38	0.55	0.48
0	P193	J104	V8008	482.89	12	130	1	0	0	0
0	P195	J82	V8010	213.6	12	130	0	0	0	0
0	P197	V8010	J146	842.68	12	130	0	0	0	0
0	P199	J146	J148	514.03	12	130	0	0	0	0
0	P201	V8008	J148	1,114.81	12	130	1	0	0	0
0	P203	J26	V8012	268.73	10	130	0	0	0	0
0	P205	J28	V8014	295.03	10	130	1	0	0	0
0	P207	V8014	J152	482.16	10	130	1	0	0	0
0	P209	V8012	J150	236	10	130	0	0	0	0
0	P21	J26	J28	1,118.04	16	130	-1,135.14	1.81	0.88	0.79
0	P211	J152	J150	798.51	10	130	0	0	0	0
0	P213	J20	J154	348.19	12	130	780.17	2.21	0.56	1.6

0	P215	J154	J38	842.54	12	130	779.17	2.21	1.35	1.6
0	P217	J26	V8016	273.58	10	130	1	0	0	0
0	P219	J22	V8018	229.2	10	130	0	0	0	0
0	P221	V8018	J156	462.48	10	130	0	0	0	0
0	P223	V8016	J158	716.7	10	130	1	0	0	0
0	P225	J158	J156	802.77	10	130	0	0	0	0
0	P227	J32	V8022	269.66	10	130	0	0	0	0
0	P229	V8022	J160	385.74	10	130	0	0	0	0
0	P23	J28	J30	679.9	16	130	-1,170.92	1.87	0.57	0.84
0	P231	J126	V8020	259.39	10	130	1	0	0	0
0	P233	V8020	J162	510.51	10	130	1	0	0	0
0	P235	J160	J162	392.51	10	130	0	0	0	0
0	P237	J38	V8024	301.75	10	130	0	0	0	0
0	P239	J154	V8026	160.09	10	130	1	0	0	0
0	P241	V8026	J166	918.28	10	130	1	0	0	0
0	P243	J166	J164	455.03	10	130	0	0	0	0
0	P245	V8024	J164	882.35	10	130	0	0	0	0
0	P247	J46	J168	532.6	12	130	-248.9	0.71	0.1	0.19
0	P249	J168	J122	563.66	12	130	-248.9	0.71	0.11	0.19
0	P25	J30	J32	1,229.93	16	130	-1,215.34	1.94	1.1	0.9
0	P251	J168	V8028	209.52	12	130	0	0	0	0
0	P253	V8028	J170	652.72	12	130	0	0	0	0
0	P255	J170	J172	387.16	12	130	-1	0	0	0
0	P261	J60	V8032	268.68	10	130	1	0	0	0
0	P263	V8032	J174	918.23	10	130	1	0	0	0
0	P265	J174	J176	448.57	10	130	0	0	0	0
0	P267	J62	V8034	292.8	10	130	0	0	0	0
0	P269	V8034	J176	916.13	10	130	0	0	0	0
0	P271	J70	V8038	242.57	10	130	1	0	0	0
0	P273	J84	V8036	324.38	10	130	0	0	0	0
0	P275	V8036	J180	319.74	10	130	0	0	0	0
0	P277	J180	J178	347.95	10	130	0	0	0	0
0	P279	V8038	J178	632.77	10	130	1	0	0	0
0	P281	J76	J182	613.97	12	130	1,351.43	3.83	2.72	4.43
0	P283	J182	J74	589.22	12	130	1,351.43	3.83	2.61	4.43
0	P287	V8042	J184	372.65	12	130	1	0	0	0
0	P289	J184	J186	299.52	12	130	0	0	0	0
0	P29	J34	J36	2,325.70	20	130	-3,127.27	3.19	4.04	1.74
0	P295	J182	V8044	226.67	12	130	0	0	0	0
0	P297	V8044	J186	240.53	12	130	0	0	0	0
0	P299	J52	J188	313.33	8	130	0	0	0	0
0	P301	J188	J190	664.92	8	130	0	0	0	0
0	P303	J56	J194	178.12	8	130	0	0	0	0
0	P305	J194	J192	667.8	8	130	0	0	0	0
0	P307	J192	J190	657.08	8	130	0	0	0	0
0	P309	J72	J196	736.36	12	130	2,103.23	5.97	7.4	10.04
0	P311	J196	J70	609.66	12	130	98.28	0.28	0.02	0.03
0	P313	J40	J198	1,129.17	12	130	-750.79	2.13	1.68	1.49
0	P315	J198	J42	1,043.66	12	130	-750.79	2.13	1.56	1.49
0	P329	J70	V8052	185.71	12	130	1,996.06	5.66	1.69	9.12
0	P33	J38	J40	1,179.71	12	130	699.47	1.98	1.54	1.31
0	P331	V8052	J206	525.44	12	130	1,996.06	5.66	4.79	9.12
0	P333	J196	V8054	178.3	12	130	2,004.94	5.69	1.64	9.19
0	P335	V8054	J208	525.19	12	130	2,004.94	5.69	4.83	9.19
0	P337	J208	J206	475.84	12	130	3.94	0.01	0	0
0	P341	J198	V8058	154.71	10	130	0	0	0	0
0	P343	V8058	J214	421.16	10	130	0	0	0	0
0	P345	J214	J210	577.05	10	130	0	0	0	0
0	P347	J42	V8056	297.78	10	130	0	0	0	0
0	P349	V8056	J212	569.55	10	130	0	0	0	0
0	P351	J212	J210	1,312.90	10	130	0	0	0	0

0	P353	J88	V8060	266.49	10	130	0	0	0	0
0	P355	V8060	J216	322.62	10	130	0	0	0	0
0	P357	J90	V8062	226.9	10	130	1	0	0	0
0	P359	V8062	J218	739.72	10	130	1	0	0	0
0	P361	J218	J216	604.58	10	130	0	0	0	0
0	P363	J56	J222	1,322.36	12	130	367.9	1.04	0.53	0.4
0	P365	J222	J220	621.17	12	130	317.5	0.9	0.19	0.3
0	P367	J220	J44	1,095.19	12	130	265.56	0.75	0.24	0.22
0	P37	J26	J46	1,141.00	12	130	179.85	0.51	0.12	0.11
0	P379	J76	J224	678.87	12	130	-382.13	1.08	0.29	0.43
0	P381	J224	V8042	158.85	12	130	1	0	0	0
0	P39	J46	J44	879.87	12	130	349.71	0.99	0.32	0.36
0	P393	J226	J36	1,733.97	20	130	3,127.27	3.19	3.02	1.74
0	P395	J96	J224	650.52	12	130	383.13	1.09	0.28	0.43
0	P41	J44	J42	1,067.11	12	130	521.53	1.48	0.81	0.76
0	P415	J220	V8070	123.15	12	130	1	0	0	0
0	P417	V8070	J172	76.51	12	130	1	0	0	0
0	P419	RES9010	J226	1	1,000.00	130	3,127.27	0	0	0
0	P421	RES9012	J304	1	1,000.00	130	3,816.85	0	0	0
0	P43	J42	J48	1,096.37	12	130	-367.14	1.04	0.43	0.4
0	P45	J48	J50	1,194.62	12	130	-443.76	1.26	0.67	0.56
0	P47	J50	J52	765.09	12	130	-520.34	1.48	0.58	0.76
0	P49	J32	J62	1,463.77	16	130	1,112.28	1.77	1.11	0.76
0	P51	J34	J66	1,373.58	12	130	705.17	2	1.82	1.33
0	P53	J66	J64	862.35	12	130	660.45	1.87	1.01	1.18
0	P55	J62	J64	1,082.76	12	130	-172.55	0.49	0.11	0.1
0	P57	J62	J60	691.6	16	130	1,190.71	1.9	0.6	0.86
0	P59	J64	J58	1,424.22	12	130	418.1	1.19	0.72	0.5
0	P61	J60	J56	890.62	16	130	755.12	1.2	0.33	0.37
0	P67	J56	J52	1,036.48	16	130	317.18	0.51	0.08	0.07
0	P69	J52	J54	1,131.15	12	130	-243.88	0.69	0.21	0.19
0	P71	J58	J54	591.64	12	130	320.16	0.91	0.18	0.31
0	P73	J40	J68	1,551.82	12	130	1,312.06	3.72	6.5	4.19
0	P75	J68	J70	838.54	12	130	1,991.43	5.65	7.61	9.08
0	P79	J72	J74	1,086.50	12	130	-1,246.85	3.54	4.14	3.81
0	P83	J76	J78	765.46	12	130	-1,062.20	3.01	2.17	2.83
0	P89	J52	J82	771.55	16	130	-111.79	0.18	0.01	0.01
0	P91	J82	J78	774.7	16	130	-111.79	0.18	0.01	0.01
0	P93	J68	J84	890.35	12	130	-724.51	2.06	1.24	1.4
0	P95	J84	J86	1,204.21	12	130	-748.21	2.12	1.78	1.48
0	P97	J86	J88	946.69	12	130	-786.33	2.23	1.54	1.62
0	P99	J88	J90	874.98	16	130	-828.37	1.32	0.39	0.44

Run B9

	ID	Demand (gpr	Elevation (ft)	Head (ft)	Pressure (psi)
0	J100	100.7	122	271.71	64.87
0	J102	0	125.5	273.06	63.94
0	J104	9.32	129.8	274.66	62.77
0	J122	75.78	117.5	267.22	64.87
0	J124	66.76	119.5	267.61	64.18
0	J126	0	130	270.6	60.92
0	J128	0	133	270.6	59.62
0	J130	0	134	270.6	59.19
0	J132	0	131	269.94	60.2
0	J134	0	131	269.94	60.2
0	J136	0	131	269.94	60.2
0	J138	0	122	280.58	68.71
0	J140	0	122	280.58	68.71
0	J146	0	132	263.05	56.79
0	J148	1	132	263.05	56.79
0	J150	0	118	256.56	60.04

0	J152	1	118	256.56	60.04
0	J154	0	90.3	266.44	76.32
0	J156	0	115.5	255.69	60.74
0	J158	1	115.5	255.69	60.74
0	J160	0	128	258.99	56.76
0	J162	1	128	258.99	56.76
0	J164	0	98	254.84	67.96
0	J166	1	98	254.84	67.96
0	J168	0	115.25	266.97	65.74
0	J170	1	120	254.78	58.4
0	J172	0	120	254.78	58.4
0	J174	1	123	256.99	58.06
0	J176	0	123	256.99	58.06
0	J178	1	94	256.37	70.35
0	J180	0	94	256.37	70.35
0	J182	0	118	269.69	65.73
0	J184	1	118	258.78	61
0	J186	0	118	258.78	61
0	J188	0	126	268.54	61.76
0	J190	0	126	268.54	61.76
0	J192	0	126	268.54	61.76
0	J194	0	126	268.54	61.76
0	J196	0	99.75	268.41	73.08
0	J198	0	95.5	261.59	71.97
0	J20	44.06	90.4	266.72	76.4
0	J206	0	100	256.8	67.94
0	J208	1	100	256.8	67.94
0	J210	1,500.00	102	241.58	60.48
0	J212	1,500.00	102	241.72	60.54
0	J214	0	102	248.11	63.31
0	J216	0	100	257.86	68.4
0	J218	1	100	257.86	68.4
0	J22	41.86	118.5	266.99	64.34
0	J220	50.94	116	266.39	65.16
0	J222	50.4	119.1	266.99	64.08
0	J224	0	118	270.39	66.03
0	J226	0	130	277.29	63.82
0	J26	88.2	115.5	267.29	65.77
0	J28	34.78	118.6	268.16	64.81
0	J30	44.42	122.2	268.73	63.49
0	J300	0	127.5	276.71	64.65
0	J302	0	128	276.97	64.55
0	J304	0	142	280.84	60.16
0	J32	93.48	126	269.82	62.32
0	J34	0	134	271.38	59.53
0	J36	0	138	274.76	59.26
0	J38	79.7	90.2	265.76	76.07
0	J40	138.2	90	265.05	75.85
0	J42	137.88	101	261.84	69.69
0	J44	93.74	111	265.49	66.94
0	J46	79.04	113	266.73	66.61
0	J48	76.62	114.7	263.92	64.66
0	J50	76.58	120	266.58	63.51
0	J52	152.52	126	268.54	61.76
0	J54	76.28	127.6	268.63	61.11
0	J56	70.04	121.9	268.48	63.51
0	J58	97.94	126	268.72	61.84
0	J60	43.14	124.5	268.6	62.44
0	J62	94.12	122	269.04	63.71
0	J64	69.8	127	269.16	61.6
0	J66	44.72	130.5	269.94	60.42

0	J68	45.14	88	267.56	77.8
0	J70	92.66	97.5	267.97	73.87
0	J72	105.24	102	268.94	72.33
0	J74	104.58	108	269.34	69.91
0	J76	92.9	128	270.06	61.55
0	J78	160.7	126	270.11	62.44
0	J82	0	126.4	269.33	61.93
0	J84	23.7	76	268.01	83.2
0	J86	38.12	78	268.69	82.62
0	J88	42.04	88.4	269.3	78.39
0	J90	52.46	104	269.47	71.7
0	J92	53.12	98	269.11	74.14
0	J94	50.48	107	270.03	70.64
0	J96	40.96	116	270.7	67.03

	ID	Flow (gpm)	Head (ft)
0	RES9010	-2,841.84	277.29
0	RES9012	-3,102.28	280.84

	ID	Diameter (in)	Elevation (ft)	Upstream Pre	Downstream	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	Status	Setting
0	V8000	8	122	63.71	68.71	0	0	11.54	Open	3
0	V8002	8	122	63.58	68.71	0	0	0	Closed	3
0	V8008	10	132	61.82	56.79	1	0	11.61	Open	2
0	V8010	10	132	59.5	56.79	0	0	0	Closed	2
0	V8012	8	118	64.69	60.04	0	0	0	Closed	3
0	V8014	8	118	65.07	60.04	1	0.01	11.6	Open	3
0	V8016	8	115.5	65.77	60.74	1	0.01	11.6	Open	3
0	V8018	8	115.5	65.64	60.74	0	0	0	Closed	3
0	V8020	8	128	61.79	56.76	1	0.01	11.6	Open	3
0	V8022	8	128	61.45	56.76	0	0	0	Closed	3
0	V8024	8	98	72.69	67.96	0	0	0	Closed	3
0	V8026	8	98	72.99	67.96	1	0.01	11.6	Open	3
0	V8028	10	120	63.68	58.4	0	0	0	Closed	2
0	V8032	8	123	63.09	58.06	1	0.01	11.6	Open	3
0	V8034	8	123	63.28	58.06	0	0	0	Closed	3
0	V8036	8	94	75.4	70.35	0	0	0	Closed	3
0	V8038	8	94	75.38	70.35	1	0.01	11.6	Open	3
0	V8042	10	118	66.03	61	1	0	11.61	Open	2
0	V8044	10	118	65.73	61	0	0	0	Closed	2
0	V8052	10	100	72.78	67.94	0	0	0	Closed	2
0	V8054	10	100	72.97	67.94	1	0	11.61	Open	2
0	V8056	8	102	67.34	64.22	1,611.47	10.29	7.2	Open	3
0	V8058	8	102	68.39	65.37	1,388.53	8.86	6.97	Open	3
0	V8060	8	100	73.36	68.4	0	0	0	Closed	3
0	V8062	8	100	73.43	68.4	1	0.01	11.6	Open	3
0	V8070	10	120	63.43	58.4	1	0	11.61	Open	2

	ID	From Node	To Node	Length (ft)	Diameter (in)	Roughness	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	HL/1000 (ft/k
0	P101	J72	J92	810.17	12	130	-257.78	0.73	0.17	0.21
0	P103	J92	J90	1,241.83	12	130	-310.9	0.88	0.36	0.29
0	P105	J90	J94	1,132.34	16	130	-886.85	1.42	0.57	0.5
0	P107	J94	J96	1,204.53	16	130	-937.33	1.5	0.67	0.55
0	P111	J78	J100	1,067.79	16	130	-1,604.65	2.56	1.6	1.5
0	P115	J96	J100	886.7	16	130	-1,386.61	2.21	1.01	1.14
0	P117	J100	J102	789.56	20	130	-3,091.96	3.16	1.34	1.7
0	P119	J102	J104	941.88	20	130	-3,091.96	3.16	1.6	1.7
0	P121	J104	J300	1,197.93	20	130	-3,102.28	3.17	2.05	1.71
0	P123	J300	J302	147.08	20	130	-3,102.28	3.17	0.25	1.71
0	P125	J302	J304	2,260.56	20	130	-3,102.28	3.17	3.87	1.71
0	P139	J122	J124	627.68	12	130	-468.26	1.33	0.39	0.62
0	P141	J124	J60	1,242.80	12	130	-535.02	1.52	0.99	0.8

0	P145	J34	J126	846.23	20	130	2,222.05	2.27	0.78	0.92
0	P149	J66	J128	522.48	8	130	0	0	0	0
0	P155	J126	J130	441.09	8	130	0	0	0	0
0	P157	J128	J130	886.05	8	130	0	0	0	0
0	P159	J126	J32	843.52	20	130	2,221.05	2.27	0.78	0.92
0	P161	J66	J132	415.81	8	130	0	0	0	0
0	P163	J64	J136	338.87	8	130	0	0	0	0
0	P165	J136	J134	525.67	8	130	0	0	0	0
0	P167	J132	J134	848.01	8	130	0	0	0	0
0	P17	J20	J22	1,133.08	16	130	-585.15	0.93	0.26	0.23
0	P171	V8000	J138	423.5	10	130	0	0	0	0
0	P173	J138	J140	355.5	10	130	0	0	0	0
0	P177	V8002	J140	603.42	10	130	0	0	0	0
0	P179	J30	V8002	454.21	10	130	0	0	0	0
0	P181	J62	V8000	384.46	10	130	0	0	0	0
0	P19	J22	J26	1,147.36	16	130	-627.01	1	0.3	0.26
0	P193	J104	V8008	482.89	12	130	1	0	0	0
0	P195	J82	V8010	213.6	12	130	0	0	0	0
0	P197	V8010	J146	842.68	12	130	0	0	0	0
0	P199	J146	J148	514.03	12	130	0	0	0	0
0	P201	V8008	J148	1,114.81	12	130	1	0	0	0
0	P203	J26	V8012	268.73	10	130	0	0	0	0
0	P205	J28	V8014	295.03	10	130	1	0	0	0
0	P207	V8014	J152	482.16	10	130	1	0	0	0
0	P209	V8012	J150	236	10	130	0	0	0	0
0	P21	J26	J28	1,118.04	16	130	-1,129.06	1.8	0.87	0.78
0	P211	J152	J150	798.51	10	130	0	0	0	0
0	P213	J20	J154	348.19	12	130	541.09	1.53	0.28	0.81
0	P215	J154	J38	842.54	12	130	540.09	1.53	0.68	0.81
0	P217	J26	V8016	273.58	10	130	1	0	0	0
0	P219	J22	V8018	229.2	10	130	0	0	0	0
0	P221	V8018	J156	462.48	10	130	0	0	0	0
0	P223	V8016	J158	716.7	10	130	1	0	0	0
0	P225	J158	J156	802.77	10	130	0	0	0	0
0	P227	J32	V8022	269.66	10	130	0	0	0	0
0	P229	V8022	J160	385.74	10	130	0	0	0	0
0	P23	J28	J30	679.9	16	130	-1,164.84	1.86	0.56	0.83
0	P231	J126	V8020	259.39	10	130	1	0	0	0
0	P233	V8020	J162	510.51	10	130	1	0	0	0
0	P235	J160	J162	392.51	10	130	0	0	0	0
0	P237	J38	V8024	301.75	10	130	0	0	0	0
0	P239	J154	V8026	160.09	10	130	1	0	0	0
0	P241	V8026	J166	918.28	10	130	1	0	0	0
0	P243	J166	J164	455.03	10	130	0	0	0	0
0	P245	V8024	J164	882.35	10	130	0	0	0	0
0	P247	J46	J168	532.6	12	130	-392.48	1.11	0.24	0.45
0	P249	J168	J122	563.66	12	130	-392.48	1.11	0.25	0.45
0	P25	J30	J32	1,229.93	16	130	-1,209.26	1.93	1.09	0.89
0	P251	J168	V8028	209.52	12	130	0	0	0	0
0	P253	V8028	J170	652.72	12	130	0	0	0	0
0	P255	J170	J172	387.16	12	130	-1	0	0	0
0	P261	J60	V8032	268.68	10	130	1	0	0	0
0	P263	V8032	J174	918.23	10	130	1	0	0	0
0	P265	J174	J176	448.57	10	130	0	0	0	0
0	P267	J62	V8034	292.8	10	130	0	0	0	0
0	P269	V8034	J176	916.13	10	130	0	0	0	0
0	P271	J70	V8038	242.57	10	130	1	0	0	0
0	P273	J84	V8036	324.38	10	130	0	0	0	0
0	P275	V8036	J180	319.74	10	130	0	0	0	0
0	P277	J180	J178	347.95	10	130	0	0	0	0
0	P279	V8038	J178	632.77	10	130	1	0	0	0

0	P281	J76	J182	613.97	12	130	458.42	1.3	0.37	0.6
0	P283	J182	J74	589.22	12	130	458.42	1.3	0.35	0.6
0	P287	V8042	J184	372.65	12	130	1	0	0	0
0	P289	J184	J186	299.52	12	130	0	0	0	0
0	P29	J34	J36	2,325.70	20	130	-2,841.84	2.9	3.39	1.46
0	P295	J182	V8044	226.67	12	130	0	0	0	0
0	P297	V8044	J186	240.53	12	130	0	0	0	0
0	P299	J52	J188	313.33	8	130	0	0	0	0
0	P301	J188	J190	664.92	8	130	0	0	0	0
0	P303	J56	J194	178.12	8	130	0	0	0	0
0	P305	J194	J192	667.8	8	130	0	0	0	0
0	P307	J192	J190	657.08	8	130	0	0	0	0
0	P309	J72	J196	736.36	12	130	506.38	1.44	0.53	0.72
0	P311	J196	J70	609.66	12	130	505.38	1.43	0.44	0.72
0	P313	J40	J198	1,129.17	12	130	1,107.40	3.14	3.46	3.06
0	P315	J198	J42	1,043.66	12	130	-281.12	0.8	0.25	0.24
0	P329	J70	V8052	185.71	12	130	0	0	0	0
0	P33	J38	J40	1,179.71	12	130	460.39	1.31	0.71	0.6
0	P331	V8052	J206	525.44	12	130	0	0	0	0
0	P333	J196	V8054	178.3	12	130	1	0	0	0
0	P335	V8054	J208	525.19	12	130	1	0	0	0
0	P337	J208	J206	475.84	12	130	0	0	0	0
0	P341	J198	V8058	154.71	10	130	1,388.53	5.67	1.75	11.31
0	P343	V8058	J214	421.16	10	130	1,388.53	5.67	4.76	11.31
0	P345	J214	J210	577.05	10	130	1,388.53	5.67	6.53	11.31
0	P347	J42	V8056	297.78	10	130	1,611.47	6.58	4.44	14.91
0	P349	V8056	J212	569.55	10	130	1,611.47	6.58	8.49	14.91
0	P351	J212	J210	1,312.90	10	130	111.47	0.46	0.14	0.11
0	P353	J88	V8060	266.49	10	130	0	0	0	0
0	P355	V8060	J216	322.62	10	130	0	0	0	0
0	P357	J90	V8062	226.9	10	130	1	0	0	0
0	P359	V8062	J218	739.72	10	130	1	0	0	0
0	P361	J218	J216	604.58	10	130	0	0	0	0
0	P363	J56	J222	1,322.36	12	130	645.44	1.83	1.49	1.13
0	P365	J222	J220	621.17	12	130	595.04	1.69	0.6	0.97
0	P367	J220	J44	1,095.19	12	130	543.1	1.54	0.9	0.82
0	P37	J26	J46	1,141.00	12	130	412.85	1.17	0.56	0.49
0	P379	J76	J224	678.87	12	130	-407.31	1.16	0.33	0.48
0	P381	J224	V8042	158.85	12	130	1	0	0	0
0	P39	J46	J44	879.87	12	130	726.29	2.06	1.23	1.4
0	P393	J226	J36	1,733.97	20	130	2,841.84	2.9	2.53	1.46
0	P395	J96	J224	650.52	12	130	408.31	1.16	0.31	0.48
0	P41	J44	J42	1,067.11	12	130	1,175.65	3.34	3.65	3.42
0	P415	J220	V8070	123.15	12	130	1	0	0	0
0	P417	V8070	J172	76.51	12	130	1	0	0	0
0	P419	RES9010	J226	1	1,000.00	130	2,841.84	0	0	0
0	P421	RES9012	J304	1	1,000.00	130	3,102.28	0	0	0
0	P43	J42	J48	1,096.37	12	130	-854.83	2.42	2.08	1.9
0	P45	J48	J50	1,194.62	12	130	-931.45	2.64	2.65	2.22
0	P47	J50	J52	765.09	12	130	-1,008.03	2.86	1.97	2.57
0	P49	J32	J62	1,463.77	16	130	918.31	1.47	0.78	0.53
0	P51	J34	J66	1,373.58	12	130	619.79	1.76	1.44	1.05
0	P53	J66	J64	862.35	12	130	575.07	1.63	0.78	0.91
0	P55	J62	J64	1,082.76	12	130	-184.94	0.52	0.12	0.11
0	P57	J62	J60	691.6	16	130	1,009.12	1.61	0.44	0.63
0	P59	J64	J58	1,424.22	12	130	320.33	0.91	0.44	0.31
0	P61	J60	J56	890.62	16	130	429.97	0.69	0.12	0.13
0	P67	J56	J52	1,036.48	16	130	-285.51	0.46	0.06	0.06
0	P69	J52	J54	1,131.15	12	130	-146.11	0.41	0.08	0.07
0	P71	J58	J54	591.64	12	130	222.39	0.63	0.09	0.16
0	P73	J40	J68	1,551.82	12	130	-785.21	2.23	2.51	1.62

0	P75	J68	J70	838.54	12	130	-411.72	1.17	0.41	0.49
0	P79	J72	J74	1,086.50	12	130	-353.84	1	0.4	0.37
0	P83	J76	J78	765.46	12	130	-144	0.41	0.05	0.07
0	P89	J52	J82	771.55	16	130	-1,299.95	2.07	0.78	1.01
0	P91	J82	J78	774.7	16	130	-1,299.95	2.07	0.79	1.01
0	P93	J68	J84	890.35	12	130	-418.63	1.19	0.45	0.51
0	P95	J84	J86	1,204.21	12	130	-442.33	1.25	0.67	0.56
0	P97	J86	J88	946.69	12	130	-480.45	1.36	0.62	0.65
0	P99	J88	J90	874.98	16	130	-522.49	0.83	0.16	0.19

Run B10

	ID	Demand (gpr	Elevation (ft)	Head (ft)	Pressure (psi)
0	J100	100.7	122	271.85	64.93
0	J102	0	125.5	273.17	63.99
0	J104	9.32	129.8	274.75	62.81
0	J122	75.78	117.5	267.18	64.86
0	J124	66.76	119.5	267.67	64.2
0	J126	0	130	270.45	60.86
0	J128	0	133	270.45	59.56
0	J130	0	134	270.45	59.13
0	J132	0	131	270.02	60.24
0	J134	0	131	270.02	60.24
0	J136	0	131	270.02	60.24
0	J138	0	122	257.63	58.77
0	J140	0	122	257.63	58.77
0	J146	0	132	263.14	56.82
0	J148	1	132	263.14	56.82
0	J150	0	118	255.53	59.59
0	J152	1	118	255.53	59.59
0	J154	0	90.3	259.1	73.14
0	J156	0	115.5	254.18	60.09
0	J158	1	115.5	254.18	60.09
0	J160	0	128	258.85	56.7
0	J162	1	128	258.85	56.7
0	J164	1,500.00	98	237.23	60.33
0	J166	1,501.00	98	237.23	60.33
0	J168	0	115.25	266.85	65.69
0	J170	1	120	255.63	58.77
0	J172	0	120	255.63	58.77
0	J174	1	123	257.28	58.18
0	J176	0	123	257.28	58.18
0	J178	1	94	256.14	70.25
0	J180	0	94	256.14	70.25
0	J182	0	118	269.8	65.77
0	J184	1	118	258.91	61.06
0	J186	0	118	258.91	61.06
0	J188	0	126	269.01	61.97
0	J190	0	126	269.01	61.97
0	J192	0	126	269.01	61.97
0	J194	0	126	269.01	61.97
0	J196	0	99.75	268.26	73.02
0	J198	0	95.5	265.31	73.58
0	J20	44.06	90.4	261.55	74.16
0	J206	0	100	256.65	67.88
0	J208	1	100	256.65	67.88
0	J210	0	102	277.9	76.22
0	J212	0	102	277.9	76.22
0	J214	0	102	277.9	76.22
0	J216	0	100	257.85	68.39
0	J218	1	100	257.85	68.39
0	J22	41.86	118.5	263.61	62.88

0	J220	50.94	116	267.24	65.53
0	J222	50.4	119.1	267.7	64.39
0	J224	0	118	270.52	66.09
0	J226	0	130	277.29	63.82
0	J26	88.2	115.5	265.79	65.12
0	J28	34.78	118.6	267.13	64.36
0	J30	44.42	122.2	267.99	63.17
0	J300	0	127.5	276.78	64.68
0	J302	0	128	277.02	64.57
0	J304	0	142	280.84	60.16
0	J32	93.48	126	269.63	62.24
0	J34	0	134	271.28	59.48
0	J36	0	138	274.72	59.24
0	J38	79.7	90.2	258.99	73.14
0	J40	138.2	90	264.17	75.47
0	J42	137.88	101	266.36	71.65
0	J44	93.74	111	266.58	67.41
0	J46	79.04	113	266.54	66.53
0	J48	76.62	114.7	267.1	66.04
0	J50	76.58	120	268.16	64.2
0	J52	152.52	126	269.01	61.97
0	J54	76.28	127.6	269.03	61.28
0	J56	70.04	121.9	268.86	63.68
0	J58	97.94	126	269.08	61.99
0	J60	43.14	124.5	268.88	62.56
0	J62	94.12	122	269.17	63.77
0	J64	69.8	127	269.34	61.68
0	J66	44.72	130.5	270.02	60.45
0	J68	45.14	88	267.23	77.66
0	J70	92.66	97.5	267.74	73.77
0	J72	105.24	102	268.89	72.31
0	J74	104.58	108	269.39	69.93
0	J76	92.9	128	270.23	61.63
0	J78	160.7	126	270.34	62.54
0	J82	0	126.4	269.67	62.08
0	J84	23.7	76	267.76	83.09
0	J86	38.12	78	268.55	82.56
0	J88	42.04	88.4	269.26	78.37
0	J90	52.46	104	269.45	71.69
0	J92	53.12	98	269.07	74.12
0	J94	50.48	107	270.07	70.66
0	J96	40.96	116	270.8	67.08

	ID	Flow (gpm)	Head (ft)
0	RES9010	-2,866.73	277.29
0	RES9012	-3,077.39	280.84

	ID	Diameter (in)	Elevation (ft)	Upstream Pre	Downstream	Flow (gpm)	Velocity (ft/s	Headloss (ft)	Status	Setting
0	V8000	8	122	63.77	58.77	0	0	11.54	Open	3
0	V8002	8	122	63.26	58.77	0	0	0	Closed	3
0	V8008	10	132	61.86	56.82	1	0	11.61	Open	2
0	V8010	10	132	59.65	56.82	0	0	0	Closed	2
0	V8012	8	118	64.04	59.59	0	0	0	Closed	3
0	V8014	8	118	64.62	59.59	1	0.01	11.6	Open	3
0	V8016	8	115.5	65.12	60.09	1	0.01	11.6	Open	3
0	V8018	8	115.5	64.18	60.09	0	0	0	Closed	3
0	V8020	8	128	61.73	56.7	1	0.01	11.6	Open	3
0	V8022	8	128	61.37	56.7	0	0	0	Closed	3
0	V8024	8	98	68.13	65.08	1,461.71	9.33	7.03	Open	3
0	V8026	8	98	68.85	65.78	1,539.28	9.82	7.1	Open	3
0	V8028	10	120	63.63	58.77	0	0	0	Closed	2

0	V8032	8	123	63.21	58.18	1	0.01	11.6	Open	3
0	V8034	8	123	63.34	58.18	0	0	0	Closed	3
0	V8036	8	94	75.29	70.25	0	0	0	Closed	3
0	V8038	8	94	75.28	70.25	1	0.01	11.6	Open	3
0	V8042	10	118	66.09	61.06	1	0	11.61	Open	2
0	V8044	10	118	65.77	61.06	0	0	0	Closed	2
0	V8052	10	100	72.68	67.88	0	0	0	Closed	2
0	V8054	10	100	72.91	67.88	1	0	11.61	Open	2
0	V8056	8	102	71.22	76.22	0	0	11.54	Open	3
0	V8058	8	102	70.76	76.22	0	0	0	Closed	3
0	V8060	8	100	73.34	68.39	0	0	0	Closed	3
0	V8062	8	100	73.42	68.39	1	0.01	11.6	Open	3
0	V8070	10	120	63.8	58.77	1	0	11.61	Open	2

	ID	From Node	To Node	Length (ft)	Diameter (in)	Roughness	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	HL/1000 (ft/k
0	P101	J72	J92	810.17	12	130	-266.4	0.76	0.18	0.22
0	P103	J92	J90	1,241.83	12	130	-319.52	0.91	0.38	0.31
0	P105	J90	J94	1,132.34	16	130	-934.15	1.49	0.62	0.55
0	P107	J94	J96	1,204.53	16	130	-984.63	1.57	0.73	0.61
0	P111	J78	J100	1,067.79	16	130	-1,556.15	2.48	1.51	1.42
0	P115	J96	J100	886.7	16	130	-1,410.21	2.25	1.05	1.18
0	P117	J100	J102	789.56	20	130	-3,067.07	3.13	1.32	1.68
0	P119	J102	J104	941.88	20	130	-3,067.07	3.13	1.58	1.68
0	P121	J104	J300	1,197.93	20	130	-3,077.39	3.14	2.02	1.69
0	P123	J300	J302	147.08	20	130	-3,077.39	3.14	0.25	1.69
0	P125	J302	J304	2,260.56	20	130	-3,077.39	3.14	3.82	1.69
0	P139	J122	J124	627.68	12	130	-529.03	1.5	0.49	0.78
0	P141	J124	J60	1,242.80	12	130	-595.79	1.69	1.21	0.97
0	P145	J34	J126	846.23	20	130	2,289.24	2.34	0.83	0.98
0	P149	J66	J128	522.48	8	130	0	0	0	0
0	P155	J126	J130	441.09	8	130	0	0	0	0
0	P157	J128	J130	886.05	8	130	0	0	0	0
0	P159	J126	J32	843.52	20	130	2,288.24	2.34	0.82	0.98
0	P161	J66	J132	415.81	8	130	0	0	0	0
0	P163	J64	J136	338.87	8	130	0	0	0	0
0	P165	J136	J134	525.67	8	130	0	0	0	0
0	P167	J132	J134	848.01	8	130	0	0	0	0
0	P17	J20	J22	1,133.08	16	130	-1,780.35	2.84	2.06	1.82
0	P171	V8000	J138	423.5	10	130	0	0	0	0
0	P173	J138	J140	355.5	10	130	0	0	0	0
0	P177	V8002	J140	603.42	10	130	0	0	0	0
0	P179	J30	V8002	454.21	10	130	0	0	0	0
0	P181	J62	V8000	384.46	10	130	0	0	0	0
0	P19	J22	J26	1,147.36	16	130	-1,822.21	2.91	2.18	1.9
0	P193	J104	V8008	482.89	12	130	1	0	0	0
0	P195	J82	V8010	213.6	12	130	0	0	0	0
0	P197	V8010	J146	842.68	12	130	0	0	0	0
0	P199	J146	J148	514.03	12	130	0	0	0	0
0	P201	V8008	J148	1,114.81	12	130	1	0	0	0
0	P203	J26	V8012	268.73	10	130	0	0	0	0
0	P205	J28	V8014	295.03	10	130	1	0	0	0
0	P207	V8014	J152	482.16	10	130	1	0	0	0
0	P209	V8012	J150	236	10	130	0	0	0	0
0	P21	J26	J28	1,118.04	16	130	-1,426.61	2.28	1.35	1.21
0	P211	J152	J150	798.51	10	130	0	0	0	0
0	P213	J20	J154	348.19	12	130	1,736.29	4.93	2.45	7.04
0	P215	J154	J38	842.54	12	130	197.01	0.56	0.11	0.13
0	P217	J26	V8016	273.58	10	130	1	0	0	0
0	P219	J22	V8018	229.2	10	130	0	0	0	0
0	P221	V8018	J156	462.48	10	130	0	0	0	0
0	P223	V8016	J158	716.7	10	130	1	0	0	0

0	P225	J158	J156	802.77	10	130	0	0	0	0
0	P227	J32	V8022	269.66	10	130	0	0	0	0
0	P229	V8022	J160	385.74	10	130	0	0	0	0
0	P23	J28	J30	679.9	16	130	-1,462.39	2.33	0.86	1.26
0	P231	J126	V8020	259.39	10	130	1	0	0	0
0	P233	V8020	J162	510.51	10	130	1	0	0	0
0	P235	J160	J162	392.51	10	130	0	0	0	0
0	P237	J38	V8024	301.75	10	130	1,461.71	5.97	3.75	12.44
0	P239	J154	V8026	160.09	10	130	1,539.28	6.29	2.19	13.69
0	P241	V8026	J166	918.28	10	130	1,539.28	6.29	12.57	13.69
0	P243	J166	J164	455.03	10	130	38.28	0.16	0.01	0.01
0	P245	V8024	J164	882.35	10	130	1,461.71	5.97	10.98	12.44
0	P247	J46	J168	532.6	12	130	-453.25	1.29	0.31	0.59
0	P249	J168	J122	563.66	12	130	-453.25	1.29	0.33	0.59
0	P25	J30	J32	1,229.93	16	130	-1,506.81	2.4	1.64	1.33
0	P251	J168	V8028	209.52	12	130	0	0	0	0
0	P253	V8028	J170	652.72	12	130	0	0	0	0
0	P255	J170	J172	387.16	12	130	-1	0	0	0
0	P261	J60	V8032	268.68	10	130	1	0	0	0
0	P263	V8032	J174	918.23	10	130	1	0	0	0
0	P265	J174	J176	448.57	10	130	0	0	0	0
0	P267	J62	V8034	292.8	10	130	0	0	0	0
0	P269	V8034	J176	916.13	10	130	0	0	0	0
0	P271	J70	V8038	242.57	10	130	1	0	0	0
0	P273	J84	V8036	324.38	10	130	0	0	0	0
0	P275	V8036	J180	319.74	10	130	0	0	0	0
0	P277	J180	J178	347.95	10	130	0	0	0	0
0	P279	V8038	J178	632.77	10	130	1	0	0	0
0	P281	J76	J182	613.97	12	130	499.98	1.42	0.43	0.7
0	P283	J182	J74	589.22	12	130	499.98	1.42	0.41	0.7
0	P287	V8042	J184	372.65	12	130	1	0	0	0
0	P289	J184	J186	299.52	12	130	0	0	0	0
0	P29	J34	J36	2,325.70	20	130	-2,866.73	2.93	3.44	1.48
0	P295	J182	V8044	226.67	12	130	0	0	0	0
0	P297	V8044	J186	240.53	12	130	0	0	0	0
0	P299	J52	J188	313.33	8	130	0	0	0	0
0	P301	J188	J190	664.92	8	130	0	0	0	0
0	P303	J56	J194	178.12	8	130	0	0	0	0
0	P305	J194	J192	667.8	8	130	0	0	0	0
0	P307	J192	J190	657.08	8	130	0	0	0	0
0	P309	J72	J196	736.36	12	130	556.55	1.58	0.63	0.86
0	P311	J196	J70	609.66	12	130	555.55	1.58	0.52	0.85
0	P313	J40	J198	1,129.17	12	130	-608.54	1.73	1.14	1.01
0	P315	J198	J42	1,043.66	12	130	-608.54	1.73	1.05	1.01
0	P329	J70	V8052	185.71	12	130	0	0	0	0
0	P33	J38	J40	1,179.71	12	130	-1,344.41	3.81	5.17	4.38
0	P331	V8052	J206	525.44	12	130	0	0	0	0
0	P333	J196	V8054	178.3	12	130	1	0	0	0
0	P335	V8054	J208	525.19	12	130	1	0	0	0
0	P337	J208	J206	475.84	12	130	0	0	0	0
0	P341	J198	V8058	154.71	10	130	0	0	0	0
0	P343	V8058	J214	421.16	10	130	0	0	0	0
0	P345	J214	J210	577.05	10	130	0	0	0	0
0	P347	J42	V8056	297.78	10	130	0	0	0	0
0	P349	V8056	J212	569.55	10	130	0	0	0	0
0	P351	J212	J210	1,312.90	10	130	0	0	0	0
0	P353	J88	V8060	266.49	10	130	0	0	0	0
0	P355	V8060	J216	322.62	10	130	0	0	0	0
0	P357	J90	V8062	226.9	10	130	1	0	0	0
0	P359	V8062	J218	739.72	10	130	1	0	0	0
0	P361	J218	J216	604.58	10	130	0	0	0	0

0	P363	J56	J222	1,322.36	12	130	563.59	1.6	1.16	0.88
0	P365	J222	J220	621.17	12	130	513.19	1.46	0.46	0.74
0	P367	J220	J44	1,095.19	12	130	461.25	1.31	0.66	0.6
0	P37	J26	J46	1,141.00	12	130	-484.8	1.38	0.76	0.66
0	P379	J76	J224	678.87	12	130	-383.62	1.09	0.29	0.43
0	P381	J224	V8042	158.85	12	130	1	0	0	0
0	P39	J46	J44	879.87	12	130	-110.59	0.31	0.04	0.04
0	P393	J226	J36	1,733.97	20	130	2,866.73	2.93	2.57	1.48
0	P395	J96	J224	650.52	12	130	384.62	1.09	0.28	0.43
0	P41	J44	J42	1,067.11	12	130	256.92	0.73	0.22	0.2
0	P415	J220	V8070	123.15	12	130	1	0	0	0
0	P417	V8070	J172	76.51	12	130	1	0	0	0
0	P419	RES9010	J226	1	1,000.00	130	2,866.73	0	0	0
0	P421	RES9012	J304	1	1,000.00	130	3,077.39	0	0	0
0	P43	J42	J48	1,096.37	12	130	-489.5	1.39	0.74	0.68
0	P45	J48	J50	1,194.62	12	130	-566.12	1.61	1.06	0.88
0	P47	J50	J52	765.09	12	130	-642.7	1.82	0.86	1.12
0	P49	J32	J62	1,463.77	16	130	687.95	1.1	0.46	0.31
0	P51	J34	J66	1,373.58	12	130	577.49	1.64	1.26	0.92
0	P53	J66	J64	862.35	12	130	532.77	1.51	0.68	0.79
0	P55	J62	J64	1,082.76	12	130	-219.26	0.62	0.17	0.15
0	P57	J62	J60	691.6	16	130	813.08	1.3	0.29	0.43
0	P59	J64	J58	1,424.22	12	130	243.72	0.69	0.26	0.19
0	P61	J60	J56	890.62	16	130	173.16	0.28	0.02	0.02
0	P67	J56	J52	1,036.48	16	130	-460.48	0.73	0.15	0.15
0	P69	J52	J54	1,131.15	12	130	-69.5	0.2	0.02	0.02
0	P71	J58	J54	591.64	12	130	145.78	0.41	0.04	0.07
0	P73	J40	J68	1,551.82	12	130	-874.07	2.48	3.07	1.98
0	P75	J68	J70	838.54	12	130	-461.89	1.31	0.51	0.61
0	P79	J72	J74	1,086.50	12	130	-395.4	1.12	0.49	0.45
0	P83	J76	J78	765.46	12	130	-209.25	0.59	0.11	0.14
0	P89	J52	J82	771.55	16	130	-1,186.20	1.89	0.66	0.86
0	P91	J82	J78	774.7	16	130	-1,186.20	1.89	0.66	0.86
0	P93	J68	J84	890.35	12	130	-457.31	1.3	0.53	0.6
0	P95	J84	J86	1,204.21	12	130	-481.02	1.36	0.79	0.65
0	P97	J86	J88	946.69	12	130	-519.14	1.47	0.71	0.75
0	P99	J88	J90	874.98	16	130	-561.18	0.9	0.19	0.21

Run B11

	ID	Demand (gpr	Elevation (ft)	Head (ft)	Pressure (psi)
0	J100	100.7	122	272.31	65.13
0	J102	0	125.5	273.57	64.16
0	J104	9.32	129.8	275.06	62.94
0	J122	75.78	117.5	267.29	64.9
0	J124	66.76	119.5	267.74	64.23
0	J126	0	130	270.03	60.68
0	J128	0	133	270.03	59.38
0	J130	0	134	270.03	58.94
0	J132	0	131	269.83	60.15
0	J134	0	131	269.83	60.15
0	J136	0	131	269.83	60.15
0	J138	0	122	257.45	58.69
0	J140	0	122	257.45	58.69
0	J146	0	132	263.46	56.96
0	J148	1	132	263.46	56.96
0	J150	1,500.00	118	249.77	57.1
0	J152	1,501.00	118	249.64	57.04
0	J154	0	90.3	265.45	75.89
0	J156	0	115.5	253.26	59.69
0	J158	1	115.5	253.26	59.69
0	J160	0	128	258.43	56.52

0	J162	1	128	258.43	56.52
0	J164	0	98	253.84	67.53
0	J166	1	98	253.84	67.53
0	J168	0	115.25	267	65.75
0	J170	1	120	256.05	58.95
0	J172	0	120	256.05	58.95
0	J174	1	123	257.24	58.17
0	J176	0	123	257.24	58.17
0	J178	1	94	257.61	70.89
0	J180	0	94	257.61	70.89
0	J182	0	118	270.46	66.06
0	J184	1	118	259.47	61.3
0	J186	0	118	259.47	61.3
0	J188	0	126	269.12	62.01
0	J190	0	126	269.12	62.01
0	J192	0	126	269.12	62.01
0	J194	0	126	269.12	62.01
0	J196	0	99.75	269.53	73.56
0	J198	0	95.5	267.25	74.42
0	J20	44.06	90.4	265.19	75.74
0	J206	0	100	257.92	68.43
0	J208	1	100	257.92	68.43
0	J210	0	102	278.83	76.62
0	J212	0	102	278.83	76.62
0	J214	0	102	278.83	76.62
0	J216	0	100	258.77	68.79
0	J218	1	100	258.77	68.79
0	J22	41.86	118.5	265.01	63.48
0	J220	50.94	116	267.66	65.71
0	J222	50.4	119.1	267.99	64.51
0	J224	0	118	271.08	66.33
0	J226	0	130	277.29	63.82
0	J26	88.2	115.5	264.86	64.72
0	J28	34.78	118.6	265.07	63.46
0	J30	44.42	122.2	266.47	62.51
0	J300	0	127.5	276.98	64.77
0	J302	0	128	277.22	64.66
0	J304	0	142	280.84	60.16
0	J32	93.48	126	269.13	62.02
0	J34	0	134	270.94	59.34
0	J36	0	138	274.58	59.18
0	J38	79.7	90.2	266.07	76.21
0	J40	138.2	90	267.22	76.79
0	J42	137.88	101	267.29	72.05
0	J44	93.74	111	267.2	67.68
0	J46	79.04	113	266.72	66.61
0	J48	76.62	114.7	267.77	66.32
0	J50	76.58	120	268.5	64.34
0	J52	152.52	126	269.12	62.01
0	J54	76.28	127.6	269.11	61.32
0	J56	70.04	121.9	268.85	63.67
0	J58	97.94	126	269.12	62.01
0	J60	43.14	124.5	268.85	62.55
0	J62	94.12	122	268.99	63.69
0	J64	69.8	127	269.23	61.63
0	J66	44.72	130.5	269.83	60.37
0	J68	45.14	88	268.94	78.4
0	J70	92.66	97.5	269.21	74.4
0	J72	105.24	102	269.91	72.76
0	J74	104.58	108	270.19	70.28
0	J76	92.9	128	270.75	61.85

0	J78	160.7	126	270.76	62.73
0	J82	0	126.4	269.94	62.2
0	J84	23.7	76	269.27	83.74
0	J86	38.12	78	269.77	83.09
0	J88	42.04	88.4	270.24	78.79
0	J90	52.46	104	270.37	72.09
0	J92	53.12	98	270.05	74.55
0	J94	50.48	107	270.84	70.99
0	J96	40.96	116	271.4	67.34

	ID	Flow (gpm)	Head (ft)
0	RES9010	-2,952.70	277.29
0	RES9012	-2,991.43	280.84

	ID	Diameter (in)	Elevation (ft)	Upstream Pre	Downstream	Flow (gpm)	Velocity (ft/s	Headloss (ft)	Status	Setting
0	V8000	8	122	63.69	58.69	0	0	11.54	Open	3
0	V8002	8	122	62.6	58.69	0	0	0	Closed	3
0	V8008	10	132	61.99	56.96	1	0	11.61	Open	2
0	V8010	10	132	59.77	56.96	0	0	0	Closed	2
0	V8012	8	118	61.84	58.67	1,639.87	10.47	7.32	Open	3
0	V8014	8	118	62.33	59.32	1,361.13	8.69	6.95	Open	3
0	V8016	8	115.5	64.72	59.69	1	0.01	11.6	Open	3
0	V8018	8	115.5	64.78	59.69	0	0	0	Closed	3
0	V8020	8	128	61.54	56.52	1	0.01	11.6	Open	3
0	V8022	8	128	61.15	56.52	0	0	0	Closed	3
0	V8024	8	98	72.83	67.53	0	0	0	Closed	3
0	V8026	8	98	72.55	67.53	1	0.01	11.6	Open	3
0	V8028	10	120	63.69	58.95	0	0	0	Closed	2
0	V8032	8	123	63.2	58.17	1	0.01	11.6	Open	3
0	V8034	8	123	63.26	58.17	0	0	0	Closed	3
0	V8036	8	94	75.94	70.89	0	0	0	Closed	3
0	V8038	8	94	75.92	70.89	1	0.01	11.6	Open	3
0	V8042	10	118	66.33	61.3	1	0	11.61	Open	2
0	V8044	10	118	66.06	61.3	0	0	0	Closed	2
0	V8052	10	100	73.32	68.43	0	0	0	Closed	2
0	V8054	10	100	73.46	68.43	1	0	11.61	Open	2
0	V8056	8	102	71.62	76.62	0	0	11.54	Open	3
0	V8058	8	102	71.6	76.62	0	0	0	Closed	3
0	V8060	8	100	73.77	68.79	0	0	0	Closed	3
0	V8062	8	100	73.82	68.79	1	0.01	11.6	Open	3
0	V8070	10	120	63.98	58.95	1	0	11.61	Open	2

	ID	From Node	To Node	Length (ft)	Diameter (in)	Roughness	Flow (gpm)	Velocity (ft/s	Headloss (ft)	HL/1000 (ft/k
0	P101	J72	J92	810.17	12	130	-237.31	0.67	0.14	0.18
0	P103	J92	J90	1,241.83	12	130	-290.43	0.82	0.32	0.26
0	P105	J90	J94	1,132.34	16	130	-801.86	1.28	0.47	0.41
0	P107	J94	J96	1,204.53	16	130	-852.34	1.36	0.56	0.46
0	P111	J78	J100	1,067.79	16	130	-1,574.06	2.51	1.54	1.45
0	P115	J96	J100	886.7	16	130	-1,306.35	2.08	0.91	1.02
0	P117	J100	J102	789.56	20	130	-2,981.11	3.04	1.26	1.59
0	P119	J102	J104	941.88	20	130	-2,981.11	3.04	1.5	1.59
0	P121	J104	J300	1,197.93	20	130	-2,991.43	3.05	1.92	1.6
0	P123	J300	J302	147.08	20	130	-2,991.43	3.05	0.24	1.6
0	P125	J302	J304	2,260.56	20	130	-2,991.43	3.05	3.62	1.6
0	P139	J122	J124	627.68	12	130	-502.55	1.43	0.44	0.71
0	P141	J124	J60	1,242.80	12	130	-569.31	1.62	1.11	0.89
0	P145	J34	J126	846.23	20	130	2,412.34	2.46	0.91	1.08
0	P149	J66	J128	522.48	8	130	0	0	0	0
0	P155	J126	J130	441.09	8	130	0	0	0	0
0	P157	J128	J130	886.05	8	130	0	0	0	0
0	P159	J126	J32	843.52	20	130	2,411.34	2.46	0.91	1.07

0	P161	J66	J132	415.81	8	130	0	0	0	0
0	P163	J64	J136	338.87	8	130	0	0	0	0
0	P165	J136	J134	525.67	8	130	0	0	0	0
0	P167	J132	J134	848.01	8	130	0	0	0	0
0	P17	J20	J22	1,133.08	16	130	470.92	0.75	0.18	0.15
0	P171	V8000	J138	423.5	10	130	0	0	0	0
0	P173	J138	J140	355.5	10	130	0	0	0	0
0	P177	V8002	J140	603.42	10	130	0	0	0	0
0	P179	J30	V8002	454.21	10	130	0	0	0	0
0	P181	J62	V8000	384.46	10	130	0	0	0	0
0	P19	J22	J26	1,147.36	16	130	429.06	0.68	0.15	0.13
0	P193	J104	V8008	482.89	12	130	1	0	0	0
0	P195	J82	V8010	213.6	12	130	0	0	0	0
0	P197	V8010	J146	842.68	12	130	0	0	0	0
0	P199	J146	J148	514.03	12	130	0	0	0	0
0	P201	V8008	J148	1,114.81	12	130	1	0	0	0
0	P203	J26	V8012	268.73	10	130	1,639.87	6.7	4.14	15.4
0	P205	J28	V8014	295.03	10	130	1,361.13	5.56	3.22	10.9
0	P207	V8014	J152	482.16	10	130	1,361.13	5.56	5.26	10.9
0	P209	V8012	J150	236	10	130	1,639.87	6.7	3.63	15.4
0	P21	J26	J28	1,118.04	16	130	-513.38	0.82	0.2	0.18
0	P211	J152	J150	798.51	10	130	-139.87	0.57	0.13	0.16
0	P213	J20	J154	348.19	12	130	-514.98	1.46	0.26	0.74
0	P215	J154	J38	842.54	12	130	-515.98	1.46	0.63	0.74
0	P217	J26	V8016	273.58	10	130	1	0	0	0
0	P219	J22	V8018	229.2	10	130	0	0	0	0
0	P221	V8018	J156	462.48	10	130	0	0	0	0
0	P223	V8016	J158	716.7	10	130	1	0	0	0
0	P225	J158	J156	802.77	10	130	0	0	0	0
0	P227	J32	V8022	269.66	10	130	0	0	0	0
0	P229	V8022	J160	385.74	10	130	0	0	0	0
0	P23	J28	J30	679.9	16	130	-1,909.29	3.05	1.41	2.07
0	P231	J126	V8020	259.39	10	130	1	0	0	0
0	P233	V8020	J162	510.51	10	130	1	0	0	0
0	P235	J160	J162	392.51	10	130	0	0	0	0
0	P237	J38	V8024	301.75	10	130	0	0	0	0
0	P239	J154	V8026	160.09	10	130	1	0	0	0
0	P241	V8026	J166	918.28	10	130	1	0	0	0
0	P243	J166	J164	455.03	10	130	0	0	0	0
0	P245	V8024	J164	882.35	10	130	0	0	0	0
0	P247	J46	J168	532.6	12	130	-426.77	1.21	0.28	0.52
0	P249	J168	J122	563.66	12	130	-426.77	1.21	0.3	0.52
0	P25	J30	J32	1,229.93	16	130	-1,953.71	3.12	2.65	2.16
0	P251	J168	V8028	209.52	12	130	0	0	0	0
0	P253	V8028	J170	652.72	12	130	0	0	0	0
0	P255	J170	J172	387.16	12	130	-1	0	0	0
0	P261	J60	V8032	268.68	10	130	1	0	0	0
0	P263	V8032	J174	918.23	10	130	1	0	0	0
0	P265	J174	J176	448.57	10	130	0	0	0	0
0	P267	J62	V8034	292.8	10	130	0	0	0	0
0	P269	V8034	J176	916.13	10	130	0	0	0	0
0	P271	J70	V8038	242.57	10	130	1	0	0	0
0	P273	J84	V8036	324.38	10	130	0	0	0	0
0	P275	V8036	J180	319.74	10	130	0	0	0	0
0	P277	J180	J178	347.95	10	130	0	0	0	0
0	P279	V8038	J178	632.77	10	130	1	0	0	0
0	P281	J76	J182	613.97	12	130	397.79	1.13	0.28	0.46
0	P283	J182	J74	589.22	12	130	397.79	1.13	0.27	0.46
0	P287	V8042	J184	372.65	12	130	1	0	0	0
0	P289	J184	J186	299.52	12	130	0	0	0	0
0	P29	J34	J36	2,325.70	20	130	-2,952.70	3.02	3.64	1.56

0	P295	J182	V8044	226.67	12	130	0	0	0	0
0	P297	V8044	J186	240.53	12	130	0	0	0	0
0	P299	J52	J188	313.33	8	130	0	0	0	0
0	P301	J188	J190	664.92	8	130	0	0	0	0
0	P303	J56	J194	178.12	8	130	0	0	0	0
0	P305	J194	J192	667.8	8	130	0	0	0	0
0	P307	J192	J190	657.08	8	130	0	0	0	0
0	P309	J72	J196	736.36	12	130	425.28	1.21	0.38	0.52
0	P311	J196	J70	609.66	12	130	424.28	1.2	0.32	0.52
0	P313	J40	J198	1,129.17	12	130	-94.29	0.27	0.04	0.03
0	P315	J198	J42	1,043.66	12	130	-94.29	0.27	0.03	0.03
0	P329	J70	V8052	185.71	12	130	0	0	0	0
0	P33	J38	J40	1,179.71	12	130	-595.68	1.69	1.15	0.97
0	P331	V8052	J206	525.44	12	130	0	0	0	0
0	P333	J196	V8054	178.3	12	130	1	0	0	0
0	P335	V8054	J208	525.19	12	130	1	0	0	0
0	P337	J208	J206	475.84	12	130	0	0	0	0
0	P341	J198	V8058	154.71	10	130	0	0	0	0
0	P343	V8058	J214	421.16	10	130	0	0	0	0
0	P345	J214	J210	577.05	10	130	0	0	0	0
0	P347	J42	V8056	297.78	10	130	0	0	0	0
0	P349	V8056	J212	569.55	10	130	0	0	0	0
0	P351	J212	J210	1,312.90	10	130	0	0	0	0
0	P353	J88	V8060	266.49	10	130	0	0	0	0
0	P355	V8060	J216	322.62	10	130	0	0	0	0
0	P357	J90	V8062	226.9	10	130	1	0	0	0
0	P359	V8062	J218	739.72	10	130	1	0	0	0
0	P361	J218	J216	604.58	10	130	0	0	0	0
0	P363	J56	J222	1,322.36	12	130	480.01	1.36	0.86	0.65
0	P365	J222	J220	621.17	12	130	429.61	1.22	0.33	0.53
0	P367	J220	J44	1,095.19	12	130	377.67	1.07	0.46	0.42
0	P37	J26	J46	1,141.00	12	130	-786.62	2.23	1.85	1.63
0	P379	J76	J224	678.87	12	130	-412.05	1.17	0.33	0.49
0	P381	J224	V8042	158.85	12	130	1	0	0	0
0	P39	J46	J44	879.87	12	130	-438.89	1.25	0.49	0.55
0	P393	J226	J36	1,733.97	20	130	2,952.70	3.02	2.71	1.56
0	P395	J96	J224	650.52	12	130	413.05	1.17	0.32	0.49
0	P41	J44	J42	1,067.11	12	130	-154.97	0.44	0.09	0.08
0	P415	J220	V8070	123.15	12	130	1	0	0	0
0	P417	V8070	J172	76.51	12	130	1	0	0	0
0	P419	RES9010	J226	1	1,000.00	130	2,952.70	0	0	0
0	P421	RES9012	J304	1	1,000.00	130	2,991.43	0	0	0
0	P43	J42	J48	1,096.37	12	130	-387.14	1.1	0.48	0.44
0	P45	J48	J50	1,194.62	12	130	-463.76	1.32	0.73	0.61
0	P47	J50	J52	765.09	12	130	-540.34	1.53	0.62	0.81
0	P49	J32	J62	1,463.77	16	130	364.14	0.58	0.14	0.1
0	P51	J34	J66	1,373.58	12	130	540.36	1.53	1.11	0.81
0	P53	J66	J64	862.35	12	130	495.64	1.41	0.6	0.69
0	P55	J62	J64	1,082.76	12	130	-273.03	0.77	0.25	0.23
0	P57	J62	J60	691.6	16	130	543.06	0.87	0.14	0.2
0	P59	J64	J58	1,424.22	12	130	152.81	0.43	0.11	0.08
0	P61	J60	J56	890.62	16	130	-70.39	0.11	0	0
0	P67	J56	J52	1,036.48	16	130	-620.44	0.99	0.27	0.26
0	P69	J52	J54	1,131.15	12	130	21.41	0.06	0	0
0	P71	J58	J54	591.64	12	130	54.87	0.16	0.01	0.01
0	P73	J40	J68	1,551.82	12	130	-639.59	1.81	1.72	1.11
0	P75	J68	J70	838.54	12	130	-330.62	0.94	0.27	0.33
0	P79	J72	J74	1,086.50	12	130	-293.21	0.83	0.28	0.26
0	P83	J76	J78	765.46	12	130	-78.64	0.22	0.02	0.02
0	P89	J52	J82	771.55	16	130	-1,334.71	2.13	0.82	1.07
0	P91	J82	J78	774.7	16	130	-1,334.71	2.13	0.83	1.07

0	P93	J68	J84	890.35	12	130	-354.12	1	0.33	0.37
0	P95	J84	J86	1,204.21	12	130	-377.82	1.07	0.5	0.42
0	P97	J86	J88	946.69	12	130	-415.94	1.18	0.47	0.5
0	P99	J88	J90	874.98	16	130	-457.98	0.73	0.13	0.15

Run B12

	ID	Demand (gpr	Elevation (ft)	Head (ft)	Pressure (psi)
0	J100	100.7	122	269.59	63.95
0	J102	0	125.5	271.25	63.15
0	J104	9.32	129.8	273.23	62.15
0	J122	75.78	117.5	259.45	61.51
0	J124	66.76	119.5	260.94	61.29
0	J126	0	130	267.59	59.62
0	J128	0	133	267.59	58.32
0	J130	0	134	267.59	57.88
0	J132	0	131	266.64	58.77
0	J134	0	131	266.64	58.77
0	J136	0	131	266.64	58.77
0	J138	0	122	276.68	67.02
0	J140	0	122	276.68	67.02
0	J146	0	132	261.62	56.16
0	J148	1	132	261.62	56.16
0	J150	0	118	252.69	58.36
0	J152	1	118	252.69	58.36
0	J154	0	90.3	263.12	74.88
0	J156	0	115.5	251.52	58.94
0	J158	1	115.5	251.52	58.94
0	J160	0	128	255.99	55.46
0	J162	1	128	255.99	55.46
0	J164	0	98	251.51	66.52
0	J166	1	98	251.51	66.52
0	J168	0	115.25	258.3	61.98
0	J170	2,001.00	120	244.02	53.74
0	J172	2,000.00	120	244.09	53.77
0	J174	1	123	252.68	56.19
0	J176	0	123	252.68	56.19
0	J178	1	94	254.14	69.39
0	J180	0	94	254.14	69.39
0	J182	0	118	267.18	64.64
0	J184	1	118	256.35	59.95
0	J186	0	118	256.35	59.95
0	J188	0	126	264.84	60.16
0	J190	0	126	264.84	60.16
0	J192	0	126	264.84	60.16
0	J194	0	126	264.84	60.16
0	J196	0	99.75	266.13	72.09
0	J198	0	95.5	262.34	72.29
0	J20	44.06	90.4	263.12	74.84
0	J206	0	100	254.52	66.95
0	J208	1	100	254.52	66.95
0	J210	0	102	273.13	74.15
0	J212	0	102	273.13	74.15
0	J214	0	102	273.13	74.15
0	J216	0	100	255.59	67.42
0	J218	1	100	255.59	67.42
0	J22	41.86	118.5	263.12	62.66
0	J220	50.94	116	256.3	60.79
0	J222	50.4	119.1	258.7	60.49
0	J224	0	118	267.96	64.98
0	J226	0	130	277.29	63.82
0	J26	88.2	115.5	263.12	63.97

0	J28	34.78	118.6	264.29	63.13
0	J30	44.42	122.2	265.03	61.89
0	J300	0	127.5	275.76	64.24
0	J302	0	128	276.07	64.16
0	J304	0	142	280.84	60.16
0	J32	93.48	126	266.46	60.86
0	J34	0	134	268.72	58.37
0	J36	0	138	273.63	58.77
0	J38	79.7	90.2	263.12	74.93
0	J40	138.2	90	263.15	75.03
0	J42	137.88	101	261.59	69.58
0	J44	93.74	111	259.24	64.23
0	J46	79.04	113	259.35	63.42
0	J48	76.62	114.7	262.52	64.05
0	J50	76.58	120	263.82	62.32
0	J52	152.52	126	264.84	60.16
0	J54	76.28	127.6	264.93	59.5
0	J56	70.04	121.9	264.19	61.66
0	J58	97.94	126	265.02	60.24
0	J60	43.14	124.5	264.28	60.57
0	J62	94.12	122	265.14	62.02
0	J64	69.8	127	265.47	60
0	J66	44.72	130.5	266.64	58.99
0	J68	45.14	88	265.39	76.86
0	J70	92.66	97.5	265.75	72.9
0	J72	105.24	102	266.6	71.32
0	J74	104.58	108	266.9	68.85
0	J76	92.9	128	267.47	60.43
0	J78	160.7	126	267.47	61.3
0	J82	0	126.4	266.16	60.56
0	J84	23.7	76	265.82	82.25
0	J86	38.12	78	266.45	81.66
0	J88	42.04	88.4	267.03	77.4
0	J90	52.46	104	267.19	70.71
0	J92	53.12	98	266.79	73.14
0	J94	50.48	107	267.76	69.66
0	J96	40.96	116	268.43	66.05

	ID	Flow (gpm)	Head (ft)
0	RES9010	-3,472.09	277.29
0	RES9012	-3,472.03	280.84

	ID	Diameter (in)	Elevation (ft)	Upstream Pre	Downstream	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	Status	Setting
0	V8000	8	122	62.02	67.02	0	0	11.54	Open	3
0	V8002	8	122	61.98	67.02	0	0	0	Closed	3
0	V8008	10	132	61.19	56.16	1	0	11.61	Open	2
0	V8010	10	132	58.13	56.16	0	0	0	Closed	2
0	V8012	8	118	62.88	58.36	0	0	0	Closed	3
0	V8014	8	118	63.39	58.36	1	0.01	11.6	Open	3
0	V8016	8	115.5	63.97	58.94	1	0.01	11.6	Open	3
0	V8018	8	115.5	63.96	58.94	0	0	0	Closed	3
0	V8020	8	128	60.48	55.46	1	0.01	11.6	Open	3
0	V8022	8	128	60	55.46	0	0	0	Closed	3
0	V8024	8	98	71.55	66.52	0	0	0	Closed	3
0	V8026	8	98	71.55	66.52	1	0.01	11.6	Open	3
0	V8028	10	120	59.26	55.79	1,765.59	7.21	8.01	Open	2
0	V8032	8	123	61.22	56.19	1	0.01	11.6	Open	3
0	V8034	8	123	61.59	56.19	0	0	0	Closed	3
0	V8036	8	94	74.45	69.39	0	0	0	Closed	3
0	V8038	8	94	74.42	69.39	1	0.01	11.6	Open	3
0	V8042	10	118	64.98	59.95	1	0	11.61	Open	2

0	V8044	10	118	64.64	59.95	0	0	0	Closed	2
0	V8052	10	100	71.82	66.95	0	0	0	Closed	2
0	V8054	10	100	71.98	66.95	1	0	11.61	Open	2
0	V8056	8	102	69.15	74.15	0	0	11.54	Open	3
0	V8058	8	102	69.47	74.15	0	0	0	Closed	3
0	V8060	8	100	72.38	67.42	0	0	0	Closed	3
0	V8062	8	100	72.44	67.42	1	0.01	11.6	Open	3
0	V8070	10	120	58.46	54.14	2,235.41	9.13	9.97	Open	2

	ID	From Node	To Node	Length (ft)	Diameter (in)	Roughness	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	HL/1000 (ft/k
0	P101	J72	J92	810.17	12	130	-276.54	0.78	0.19	0.23
0	P103	J92	J90	1,241.83	12	130	-329.66	0.94	0.4	0.32
0	P105	J90	J94	1,132.34	16	130	-891.4	1.42	0.57	0.5
0	P107	J94	J96	1,204.53	16	130	-941.88	1.5	0.67	0.56
0	P111	J78	J100	1,067.79	16	130	-1,869.38	2.98	2.12	1.99
0	P115	J96	J100	886.7	16	130	-1,491.64	2.38	1.16	1.31
0	P117	J100	J102	789.56	20	130	-3,461.71	3.54	1.66	2.1
0	P119	J102	J104	941.88	20	130	-3,461.71	3.54	1.98	2.1
0	P121	J104	J300	1,197.93	20	130	-3,472.03	3.55	2.53	2.11
0	P123	J300	J302	147.08	20	130	-3,472.03	3.55	0.31	2.11
0	P125	J302	J304	2,260.56	20	130	-3,472.03	3.55	4.77	2.11
0	P139	J122	J124	627.68	12	130	-965.58	2.74	1.49	2.38
0	P141	J124	J60	1,242.80	12	130	-1,032.34	2.93	3.34	2.69
0	P145	J34	J126	846.23	20	130	2,714.34	2.77	1.13	1.34
0	P149	J66	J128	522.48	8	130	0	0	0	0
0	P155	J126	J130	441.09	8	130	0	0	0	0
0	P157	J128	J130	886.05	8	130	0	0	0	0
0	P159	J126	J32	843.52	20	130	2,713.33	2.77	1.13	1.34
0	P161	J66	J132	415.81	8	130	0	0	0	0
0	P163	J64	J136	338.87	8	130	0	0	0	0
0	P165	J136	J134	525.67	8	130	0	0	0	0
0	P167	J132	J134	848.01	8	130	0	0	0	0
0	P17	J20	J22	1,133.08	16	130	-32.86	0.05	0	0
0	P171	V8000	J138	423.5	10	130	0	0	0	0
0	P173	J138	J140	355.5	10	130	0	0	0	0
0	P177	V8002	J140	603.42	10	130	0	0	0	0
0	P179	J30	V8002	454.21	10	130	0	0	0	0
0	P181	J62	V8000	384.46	10	130	0	0	0	0
0	P19	J22	J26	1,147.36	16	130	-74.72	0.12	0.01	0.01
0	P193	J104	V8008	482.89	12	130	1	0	0	0
0	P195	J82	V8010	213.6	12	130	0	0	0	0
0	P197	V8010	J146	842.68	12	130	0	0	0	0
0	P199	J146	J148	514.03	12	130	0	0	0	0
0	P201	V8008	J148	1,114.81	12	130	1	0	0	0
0	P203	J26	V8012	268.73	10	130	0	0	0	0
0	P205	J28	V8014	295.03	10	130	1	0	0	0
0	P207	V8014	J152	482.16	10	130	1	0	0	0
0	P209	V8012	J150	236	10	130	0	0	0	0
0	P21	J26	J28	1,118.04	16	130	-1,318.05	2.1	1.16	1.04
0	P211	J152	J150	798.51	10	130	0	0	0	0
0	P213	J20	J154	348.19	12	130	-11.2	0.03	0	0
0	P215	J154	J38	842.54	12	130	-12.2	0.03	0	0
0	P217	J26	V8016	273.58	10	130	1	0	0	0
0	P219	J22	V8018	229.2	10	130	0	0	0	0
0	P221	V8018	J156	462.48	10	130	0	0	0	0
0	P223	V8016	J158	716.7	10	130	1	0	0	0
0	P225	J158	J156	802.77	10	130	0	0	0	0
0	P227	J32	V8022	269.66	10	130	0	0	0	0
0	P229	V8022	J160	385.74	10	130	0	0	0	0
0	P23	J28	J30	679.9	16	130	-1,353.83	2.16	0.74	1.09
0	P231	J126	V8020	259.39	10	130	1	0	0	0

0	P233	V8020	J162	510.51	10	130	1	0	0	0
0	P235	J160	J162	392.51	10	130	0	0	0	0
0	P237	J38	V8024	301.75	10	130	0	0	0	0
0	P239	J154	V8026	160.09	10	130	1	0	0	0
0	P241	V8026	J166	918.28	10	130	1	0	0	0
0	P243	J166	J164	455.03	10	130	0	0	0	0
0	P245	V8024	J164	882.35	10	130	0	0	0	0
0	P247	J46	J168	532.6	12	130	875.79	2.48	1.06	1.98
0	P249	J168	J122	563.66	12	130	-889.8	2.52	1.15	2.04
0	P25	J30	J32	1,229.93	16	130	-1,398.25	2.23	1.43	1.16
0	P251	J168	V8028	209.52	12	130	1,765.59	5.01	1.52	7.26
0	P253	V8028	J170	652.72	12	130	1,765.59	5.01	4.74	7.26
0	P255	J170	J172	387.16	12	130	-235.41	0.67	0.07	0.17
0	P261	J60	V8032	268.68	10	130	1	0	0	0
0	P263	V8032	J174	918.23	10	130	1	0	0	0
0	P265	J174	J176	448.57	10	130	0	0	0	0
0	P267	J62	V8034	292.8	10	130	0	0	0	0
0	P269	V8034	J176	916.13	10	130	0	0	0	0
0	P271	J70	V8038	242.57	10	130	1	0	0	0
0	P273	J84	V8036	324.38	10	130	0	0	0	0
0	P275	V8036	J180	319.74	10	130	0	0	0	0
0	P277	J180	J178	347.95	10	130	0	0	0	0
0	P279	V8038	J178	632.77	10	130	1	0	0	0
0	P281	J76	J182	613.97	12	130	406.41	1.15	0.29	0.48
0	P283	J182	J74	589.22	12	130	406.41	1.15	0.28	0.48
0	P287	V8042	J184	372.65	12	130	1	0	0	0
0	P289	J184	J186	299.52	12	130	0	0	0	0
0	P29	J34	J36	2,325.70	20	130	-3,472.09	3.55	4.91	2.11
0	P295	J182	V8044	226.67	12	130	0	0	0	0
0	P297	V8044	J186	240.53	12	130	0	0	0	0
0	P299	J52	J188	313.33	8	130	0	0	0	0
0	P301	J188	J190	664.92	8	130	0	0	0	0
0	P303	J56	J194	178.12	8	130	0	0	0	0
0	P305	J194	J192	667.8	8	130	0	0	0	0
0	P307	J192	J190	657.08	8	130	0	0	0	0
0	P309	J72	J196	736.36	12	130	473.13	1.34	0.47	0.63
0	P311	J196	J70	609.66	12	130	472.13	1.34	0.38	0.63
0	P313	J40	J198	1,129.17	12	130	507.65	1.44	0.82	0.72
0	P315	J198	J42	1,043.66	12	130	507.65	1.44	0.75	0.72
0	P329	J70	V8052	185.71	12	130	0	0	0	0
0	P33	J38	J40	1,179.71	12	130	-91.9	0.26	0.04	0.03
0	P331	V8052	J206	525.44	12	130	0	0	0	0
0	P333	J196	V8054	178.3	12	130	1	0	0	0
0	P335	V8054	J208	525.19	12	130	1	0	0	0
0	P337	J208	J206	475.84	12	130	0	0	0	0
0	P341	J198	V8058	154.71	10	130	0	0	0	0
0	P343	V8058	J214	421.16	10	130	0	0	0	0
0	P345	J214	J210	577.05	10	130	0	0	0	0
0	P347	J42	V8056	297.78	10	130	0	0	0	0
0	P349	V8056	J212	569.55	10	130	0	0	0	0
0	P351	J212	J210	1,312.90	10	130	0	0	0	0
0	P353	J88	V8060	266.49	10	130	0	0	0	0
0	P355	V8060	J216	322.62	10	130	0	0	0	0
0	P357	J90	V8062	226.9	10	130	1	0	0	0
0	P359	V8062	J218	739.72	10	130	1	0	0	0
0	P361	J218	J216	604.58	10	130	0	0	0	0
0	P363	J56	J222	1,322.36	12	130	1,305.51	3.7	5.49	4.15
0	P365	J222	J220	621.17	12	130	1,255.11	3.56	2.4	3.86
0	P367	J220	J44	1,095.19	12	130	-1,031.24	2.93	2.94	2.68
0	P37	J26	J46	1,141.00	12	130	1,154.12	3.27	3.77	3.31
0	P379	J76	J224	678.87	12	130	-507.8	1.44	0.49	0.72

0	P381	J224	V8042	158.85	12	130	1	0	0	0
0	P39	J46	J44	879.87	12	130	199.29	0.57	0.11	0.13
0	P393	J226	J36	1,733.97	20	130	3,472.09	3.55	3.66	2.11
0	P395	J96	J224	650.52	12	130	508.8	1.44	0.47	0.73
0	P41	J44	J42	1,067.11	12	130	-925.69	2.63	2.34	2.2
0	P415	J220	V8070	123.15	12	130	2,235.41	6.34	1.38	11.24
0	P417	V8070	J172	76.51	12	130	2,235.41	6.34	0.86	11.24
0	P419	RES9010	J226	1	1,000.00	130	3,472.09	0	0	0
0	P421	RES9012	J304	1	1,000.00	130	3,472.03	0	0	0
0	P43	J42	J48	1,096.37	12	130	-555.92	1.58	0.94	0.85
0	P45	J48	J50	1,194.62	12	130	-632.54	1.79	1.3	1.09
0	P47	J50	J52	765.09	12	130	-709.12	2.01	1.03	1.34
0	P49	J32	J62	1,463.77	16	130	1,221.61	1.95	1.32	0.9
0	P51	J34	J66	1,373.58	12	130	757.75	2.15	2.08	1.52
0	P53	J66	J64	862.35	12	130	713.03	2.02	1.17	1.35
0	P55	J62	J64	1,082.76	12	130	-319.99	0.91	0.33	0.31
0	P57	J62	J60	691.6	16	130	1,447.48	2.31	0.86	1.24
0	P59	J64	J58	1,424.22	12	130	323.25	0.92	0.45	0.31
0	P61	J60	J56	890.62	16	130	371	0.59	0.09	0.1
0	P67	J56	J52	1,036.48	16	130	-1,004.55	1.6	0.65	0.63
0	P69	J52	J54	1,131.15	12	130	-149.03	0.42	0.08	0.07
0	P71	J58	J54	591.64	12	130	225.31	0.64	0.09	0.16
0	P73	J40	J68	1,551.82	12	130	-737.75	2.09	2.24	1.44
0	P75	J68	J70	838.54	12	130	-378.47	1.07	0.35	0.42
0	P79	J72	J74	1,086.50	12	130	-301.83	0.86	0.3	0.28
0	P83	J76	J78	765.46	12	130	8.49	0.02	0	0
0	P89	J52	J82	771.55	16	130	-1,717.16	2.74	1.31	1.7
0	P91	J82	J78	774.7	16	130	-1,717.16	2.74	1.32	1.7
0	P93	J68	J84	890.35	12	130	-404.42	1.15	0.42	0.47
0	P95	J84	J86	1,204.21	12	130	-428.12	1.21	0.63	0.53
0	P97	J86	J88	946.69	12	130	-466.24	1.32	0.58	0.62
0	P99	J88	J90	874.98	16	130	-508.28	0.81	0.16	0.18

Run B13

	ID	Demand (gpr	Elevation (ft)	Head (ft)	Pressure (psi)
0	J100	100.7	122	272.23	65.09
0	J102	0	125.5	273.5	64.13
0	J104	9.32	129.8	275.01	62.92
0	J122	75.78	117.5	267.65	65.06
0	J124	66.76	119.5	267.53	64.14
0	J126	0	130	270.2	60.75
0	J128	0	133	270.2	59.45
0	J130	0	134	270.2	59.01
0	J132	0	131	269.31	59.93
0	J134	0	131	269.31	59.93
0	J136	0	131	269.31	59.93
0	J138	0	122	255.95	58.04
0	J140	0	122	255.95	58.04
0	J146	0	132	263.4	56.94
0	J148	1	132	263.4	56.94
0	J150	0	118	257.23	60.33
0	J152	1	118	257.23	60.33
0	J154	0	90.3	268.55	77.24
0	J156	0	115.5	256.96	61.3
0	J158	1	115.5	256.96	61.3
0	J160	0	128	258.59	56.59
0	J162	1	128	258.59	56.59
0	J164	0	98	256.95	68.87
0	J166	1	98	256.95	68.87
0	J168	0	115.25	267.82	66.11
0	J170	1	120	256.3	59.06

0	J172	0	120	256.3	59.06
0	J174	1,501.00	123	244.73	52.75
0	J176	1,500.00	123	244.73	52.75
0	J178	1	94	258.07	71.09
0	J180	0	94	258.07	71.09
0	J182	0	118	270.41	66.04
0	J184	1	118	259.38	61.26
0	J186	0	118	259.38	61.26
0	J188	0	126	268.48	61.74
0	J190	0	126	268.48	61.74
0	J192	0	126	268.48	61.74
0	J194	0	126	268.48	61.74
0	J196	0	99.75	269.87	73.71
0	J198	0	95.5	268.36	74.9
0	J20	44.06	90.4	268.55	77.19
0	J206	0	100	258.26	68.57
0	J208	1	100	258.26	68.57
0	J210	0	102	279.69	76.99
0	J212	0	102	279.69	76.99
0	J214	0	102	279.69	76.99
0	J216	0	100	258.92	68.86
0	J218	1	100	258.92	68.86
0	J22	41.86	118.5	268.56	65.02
0	J220	50.94	116	267.91	65.82
0	J222	50.4	119.1	267.89	64.47
0	J224	0	118	270.99	66.29
0	J226	0	130	277.29	63.82
0	J26	88.2	115.5	268.56	66.32
0	J28	34.78	118.6	268.84	65.1
0	J30	44.42	122.2	269.02	63.62
0	J300	0	127.5	276.95	64.76
0	J302	0	128	277.18	64.64
0	J304	0	142	280.84	60.16
0	J32	93.48	126	269.39	62.13
0	J34	0	134	271	59.36
0	J36	0	138	274.6	59.19
0	J38	79.7	90.2	268.55	77.28
0	J40	138.2	90	268.58	77.38
0	J42	137.88	101	268.15	72.43
0	J44	93.74	111	267.99	68.02
0	J46	79.04	113	267.99	67.16
0	J48	76.62	114.7	268.19	66.51
0	J50	76.58	120	268.32	64.27
0	J52	152.52	126	268.48	61.74
0	J54	76.28	127.6	268.39	61
0	J56	70.04	121.9	267.88	63.25
0	J58	97.94	126	268.37	61.69
0	J60	43.14	124.5	267.4	61.92
0	J62	94.12	122	267.49	63.04
0	J64	69.8	127	268.38	61.26
0	J66	44.72	130.5	269.31	60.15
0	J68	45.14	88	269.54	78.66
0	J70	92.66	97.5	269.68	74.6
0	J72	105.24	102	270.1	72.84
0	J74	104.58	108	270.24	70.3
0	J76	92.9	128	270.59	61.78
0	J78	160.7	126	270.58	62.65
0	J82	0	126.4	269.53	62.02
0	J84	23.7	76	269.76	83.95
0	J86	38.12	78	270.1	83.24
0	J88	42.04	88.4	270.43	78.87

0	J90	52.46	104	270.53	72.16
0	J92	53.12	98	270.23	74.63
0	J94	50.48	107	270.91	71.02
0	J96	40.96	116	271.37	67.32

	ID	Flow (gpm)	Head (ft)
0	RES9010	-2,937.39	277.29
0	RES9012	-3,006.73	280.84

	ID	Diameter (in)	Elevation (ft)	Upstream Pre	Downstream	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	Status	Setting
0	V8000	8	122	63.04	58.04	0	0	11.54	Open	3
0	V8002	8	122	63.7	58.04	0	0	0	Closed	3
0	V8008	10	132	61.97	56.94	1	0	11.61	Open	2
0	V8010	10	132	59.59	56.94	0	0	0	Closed	2
0	V8012	8	118	65.24	60.33	0	0	0	Closed	3
0	V8014	8	118	65.36	60.33	1	0.01	11.6	Open	3
0	V8016	8	115.5	66.32	61.3	1	0.01	11.6	Open	3
0	V8018	8	115.5	66.32	61.3	0	0	0	Closed	3
0	V8020	8	128	61.61	56.59	1	0.01	11.6	Open	3
0	V8022	8	128	61.27	56.59	0	0	0	Closed	3
0	V8024	8	98	73.9	68.87	0	0	0	Closed	3
0	V8026	8	98	73.9	68.87	1	0.01	11.6	Open	3
0	V8028	10	120	64.05	59.06	0	0	0	Closed	2
0	V8032	8	123	61.04	57.97	1,505.29	9.61	7.07	Open	3
0	V8034	8	123	60.96	57.9	1,495.71	9.55	7.06	Open	3
0	V8036	8	94	76.16	71.09	0	0	0	Closed	3
0	V8038	8	94	76.12	71.09	1	0.01	11.6	Open	3
0	V8042	10	118	66.29	61.26	1	0	11.61	Open	2
0	V8044	10	118	66.04	61.26	0	0	0	Closed	2
0	V8052	10	100	73.52	68.57	0	0	0	Closed	2
0	V8054	10	100	73.6	68.57	1	0	11.61	Open	2
0	V8056	8	102	71.99	76.99	0	0	11.54	Open	3
0	V8058	8	102	72.08	76.99	0	0	0	Closed	3
0	V8060	8	100	73.85	68.86	0	0	0	Closed	3
0	V8062	8	100	73.89	68.86	1	0.01	11.6	Open	3
0	V8070	10	120	64.09	59.06	1	0	11.61	Open	2

	ID	From Node	To Node	Length (ft)	Diameter (in)	Roughness	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	HL/1000 (ft/k
0	P101	J72	J92	810.17	12	130	-225.64	0.64	0.13	0.16
0	P103	J92	J90	1,241.83	12	130	-278.76	0.79	0.3	0.24
0	P105	J90	J94	1,132.34	16	130	-718.85	1.15	0.38	0.34
0	P107	J94	J96	1,204.53	16	130	-769.33	1.23	0.46	0.38
0	P111	J78	J100	1,067.79	16	130	-1,630.15	2.6	1.65	1.54
0	P115	J96	J100	886.7	16	130	-1,265.56	2.02	0.86	0.97
0	P117	J100	J102	789.56	20	130	-2,996.41	3.06	1.27	1.61
0	P119	J102	J104	941.88	20	130	-2,996.41	3.06	1.51	1.61
0	P121	J104	J300	1,197.93	20	130	-3,006.73	3.07	1.94	1.62
0	P123	J300	J302	147.08	20	130	-3,006.73	3.07	0.24	1.62
0	P125	J302	J304	2,260.56	20	130	-3,006.73	3.07	3.66	1.62
0	P139	J122	J124	627.68	12	130	246.46	0.7	0.12	0.19
0	P141	J124	J60	1,242.80	12	130	179.7	0.51	0.13	0.11
0	P145	J34	J126	846.23	20	130	2,260.16	2.31	0.81	0.95
0	P149	J66	J128	522.48	8	130	0	0	0	0
0	P155	J126	J130	441.09	8	130	0	0	0	0
0	P157	J128	J130	886.05	8	130	0	0	0	0
0	P159	J126	J32	843.52	20	130	2,259.16	2.31	0.8	0.95
0	P161	J66	J132	415.81	8	130	0	0	0	0
0	P163	J64	J136	338.87	8	130	0	0	0	0
0	P165	J136	J134	525.67	8	130	0	0	0	0
0	P167	J132	J134	848.01	8	130	0	0	0	0
0	P17	J20	J22	1,133.08	16	130	-48.67	0.08	0	0

0	P171	V8000	J138	423.5	10	130	0	0	0	0
0	P173	J138	J140	355.5	10	130	0	0	0	0
0	P177	V8002	J140	603.42	10	130	0	0	0	0
0	P179	J30	V8002	454.21	10	130	0	0	0	0
0	P181	J62	V8000	384.46	10	130	0	0	0	0
0	P19	J22	J26	1,147.36	16	130	-90.53	0.14	0.01	0.01
0	P193	J104	V8008	482.89	12	130	1	0	0	0
0	P195	J82	V8010	213.6	12	130	0	0	0	0
0	P197	V8010	J146	842.68	12	130	0	0	0	0
0	P199	J146	J148	514.03	12	130	0	0	0	0
0	P201	V8008	J148	1,114.81	12	130	1	0	0	0
0	P203	J26	V8012	268.73	10	130	0	0	0	0
0	P205	J28	V8014	295.03	10	130	1	0	0	0
0	P207	V8014	J152	482.16	10	130	1	0	0	0
0	P209	V8012	J150	236	10	130	0	0	0	0
0	P21	J26	J28	1,118.04	16	130	-599.1	0.96	0.27	0.24
0	P211	J152	J150	798.51	10	130	0	0	0	0
0	P213	J20	J154	348.19	12	130	4.61	0.01	0	0
0	P215	J154	J38	842.54	12	130	3.61	0.01	0	0
0	P217	J26	V8016	273.58	10	130	1	0	0	0
0	P219	J22	V8018	229.2	10	130	0	0	0	0
0	P221	V8018	J156	462.48	10	130	0	0	0	0
0	P223	V8016	J158	716.7	10	130	1	0	0	0
0	P225	J158	J156	802.77	10	130	0	0	0	0
0	P227	J32	V8022	269.66	10	130	0	0	0	0
0	P229	V8022	J160	385.74	10	130	0	0	0	0
0	P23	J28	J30	679.9	16	130	-634.88	1.01	0.18	0.27
0	P231	J126	V8020	259.39	10	130	1	0	0	0
0	P233	V8020	J162	510.51	10	130	1	0	0	0
0	P235	J160	J162	392.51	10	130	0	0	0	0
0	P237	J38	V8024	301.75	10	130	0	0	0	0
0	P239	J154	V8026	160.09	10	130	1	0	0	0
0	P241	V8026	J166	918.28	10	130	1	0	0	0
0	P243	J166	J164	455.03	10	130	0	0	0	0
0	P245	V8024	J164	882.35	10	130	0	0	0	0
0	P247	J46	J168	532.6	12	130	322.24	0.91	0.17	0.31
0	P249	J168	J122	563.66	12	130	322.24	0.91	0.18	0.31
0	P25	J30	J32	1,229.93	16	130	-679.3	1.08	0.38	0.3
0	P251	J168	V8028	209.52	12	130	0	0	0	0
0	P253	V8028	J170	652.72	12	130	0	0	0	0
0	P255	J170	J172	387.16	12	130	-1	0	0	0
0	P261	J60	V8032	268.68	10	130	1,505.29	6.15	3.53	13.14
0	P263	V8032	J174	918.23	10	130	1,505.29	6.15	12.06	13.14
0	P265	J174	J176	448.57	10	130	4.29	0.02	0	0
0	P267	J62	V8034	292.8	10	130	1,495.71	6.11	3.8	12.98
0	P269	V8034	J176	916.13	10	130	1,495.71	6.11	11.9	12.98
0	P271	J70	V8038	242.57	10	130	1	0	0	0
0	P273	J84	V8036	324.38	10	130	0	0	0	0
0	P275	V8036	J180	319.74	10	130	0	0	0	0
0	P277	J180	J178	347.95	10	130	0	0	0	0
0	P279	V8038	J178	632.77	10	130	1	0	0	0
0	P281	J76	J182	613.97	12	130	308.1	0.87	0.18	0.29
0	P283	J182	J74	589.22	12	130	308.1	0.87	0.17	0.29
0	P287	V8042	J184	372.65	12	130	1	0	0	0
0	P289	J184	J186	299.52	12	130	0	0	0	0
0	P29	J34	J36	2,325.70	20	130	-2,937.39	3	3.6	1.55
0	P295	J182	V8044	226.67	12	130	0	0	0	0
0	P297	V8044	J186	240.53	12	130	0	0	0	0
0	P299	J52	J188	313.33	8	130	0	0	0	0
0	P301	J188	J190	664.92	8	130	0	0	0	0
0	P303	J56	J194	178.12	8	130	0	0	0	0

0	P305	J194	J192	667.8	8	130	0	0	0	0
0	P307	J192	J190	657.08	8	130	0	0	0	0
0	P309	J72	J196	736.36	12	130	323.93	0.92	0.23	0.31
0	P311	J196	J70	609.66	12	130	322.93	0.92	0.19	0.31
0	P313	J40	J198	1,129.17	12	130	252.6	0.72	0.22	0.2
0	P315	J198	J42	1,043.66	12	130	252.6	0.72	0.21	0.2
0	P329	J70	V8052	185.71	12	130	0	0	0	0
0	P33	J38	J40	1,179.71	12	130	-76.09	0.22	0.03	0.02
0	P331	V8052	J206	525.44	12	130	0	0	0	0
0	P333	J196	V8054	178.3	12	130	1	0	0	0
0	P335	V8054	J208	525.19	12	130	1	0	0	0
0	P337	J208	J206	475.84	12	130	0	0	0	0
0	P341	J198	V8058	154.71	10	130	0	0	0	0
0	P343	V8058	J214	421.16	10	130	0	0	0	0
0	P345	J214	J210	577.05	10	130	0	0	0	0
0	P347	J42	V8056	297.78	10	130	0	0	0	0
0	P349	V8056	J212	569.55	10	130	0	0	0	0
0	P351	J212	J210	1,312.90	10	130	0	0	0	0
0	P353	J88	V8060	266.49	10	130	0	0	0	0
0	P355	V8060	J216	322.62	10	130	0	0	0	0
0	P357	J90	V8062	226.9	10	130	1	0	0	0
0	P359	V8062	J218	739.72	10	130	1	0	0	0
0	P361	J218	J216	604.58	10	130	0	0	0	0
0	P363	J56	J222	1,322.36	12	130	-41.59	0.12	0.01	0.01
0	P365	J222	J220	621.17	12	130	-91.99	0.26	0.02	0.03
0	P367	J220	J44	1,095.19	12	130	-143.93	0.41	0.08	0.07
0	P37	J26	J46	1,141.00	12	130	419.37	1.19	0.58	0.51
0	P379	J76	J224	678.87	12	130	-454.27	1.29	0.4	0.59
0	P381	J224	V8042	158.85	12	130	1	0	0	0
0	P39	J46	J44	879.87	12	130	18.09	0.05	0	0
0	P393	J226	J36	1,733.97	20	130	2,937.39	3	2.69	1.55
0	P395	J96	J224	650.52	12	130	455.27	1.29	0.38	0.59
0	P41	J44	J42	1,067.11	12	130	-219.58	0.62	0.16	0.15
0	P415	J220	V8070	123.15	12	130	1	0	0	0
0	P417	V8070	J172	76.51	12	130	1	0	0	0
0	P419	RES9010	J226	1	1,000.00	130	2,937.39	0	0	0
0	P421	RES9012	J304	1	1,000.00	130	3,006.73	0	0	0
0	P43	J42	J48	1,096.37	12	130	-104.86	0.3	0.04	0.04
0	P45	J48	J50	1,194.62	12	130	-181.48	0.51	0.13	0.11
0	P47	J50	J52	765.09	12	130	-258.06	0.73	0.16	0.21
0	P49	J32	J62	1,463.77	16	130	1,486.39	2.37	1.9	1.3
0	P51	J34	J66	1,373.58	12	130	677.23	1.92	1.69	1.23
0	P53	J66	J64	862.35	12	130	632.51	1.79	0.94	1.09
0	P55	J62	J64	1,082.76	12	130	-543.18	1.54	0.89	0.82
0	P57	J62	J60	691.6	16	130	439.74	0.7	0.09	0.14
0	P59	J64	J58	1,424.22	12	130	19.52	0.06	0	0
0	P61	J60	J56	890.62	16	130	-928.99	1.48	0.49	0.54
0	P67	J56	J52	1,036.48	16	130	-957.44	1.53	0.6	0.58
0	P69	J52	J54	1,131.15	12	130	154.7	0.44	0.09	0.08
0	P71	J58	J54	591.64	12	130	-78.42	0.22	0.01	0.02
0	P73	J40	J68	1,551.82	12	130	-466.9	1.32	0.96	0.62
0	P75	J68	J70	838.54	12	130	-229.27	0.65	0.14	0.17
0	P79	J72	J74	1,086.50	12	130	-203.52	0.58	0.14	0.13
0	P83	J76	J78	765.46	12	130	53.27	0.15	0.01	0.01
0	P89	J52	J82	771.55	16	130	-1,522.72	2.43	1.05	1.36
0	P91	J82	J78	774.7	16	130	-1,522.72	2.43	1.05	1.36
0	P93	J68	J84	890.35	12	130	-282.77	0.8	0.22	0.24
0	P95	J84	J86	1,204.21	12	130	-306.47	0.87	0.34	0.28
0	P97	J86	J88	946.69	12	130	-344.59	0.98	0.33	0.35
0	P99	J88	J90	874.98	16	130	-386.63	0.62	0.09	0.11

Run B14

	ID	Demand (gpr	Elevation (ft)	Head (ft)	Pressure (psi)
0	J100	100.7	122	275.21	66.39
0	J102	0	125.5	276.04	65.23
0	J104	9.32	129.8	277.03	63.79
0	J122	75.78	117.5	272.95	67.36
0	J124	66.76	119.5	272.95	66.49
0	J126	0	130	273.77	62.3
0	J128	0	133	273.77	61
0	J130	0	134	273.77	60.56
0	J132	750	131	265.88	58.44
0	J134	750	131	265.51	58.28
0	J136	0	131	269.44	59.99
0	J138	0	122	261.46	60.43
0	J140	0	122	261.46	60.43
0	J146	0	132	265.42	57.81
0	J148	1	132	265.42	57.81
0	J150	0	118	261.6	62.22
0	J152	1	118	261.6	62.22
0	J154	0	90.3	273.05	79.19
0	J156	0	115.5	261.47	63.25
0	J158	1	115.5	261.47	63.25
0	J160	0	128	262.17	58.13
0	J162	1	128	262.17	58.13
0	J164	0	98	261.45	70.82
0	J166	1	98	261.45	70.82
0	J168	0	115.25	272.95	68.33
0	J170	1	120	261.33	61.24
0	J172	0	120	261.33	61.24
0	J174	1	123	261.4	59.97
0	J176	0	123	261.4	59.97
0	J178	1	94	261.94	72.77
0	J180	0	94	261.94	72.77
0	J182	0	118	274.03	67.61
0	J184	1	118	262.8	62.74
0	J186	0	118	262.8	62.74
0	J188	0	126	273.08	63.73
0	J190	0	126	273.08	63.73
0	J192	0	126	273.08	63.73
0	J194	0	126	273.08	63.73
0	J196	0	99.75	273.65	75.35
0	J198	0	95.5	273	76.91
0	J20	44.06	90.4	273.05	79.14
0	J206	0	100	262.04	70.21
0	J208	1	100	262.04	70.21
0	J210	0	102	284.48	79.07
0	J212	0	102	284.48	79.07
0	J214	0	102	284.48	79.07
0	J216	0	100	262.45	70.39
0	J218	1	100	262.45	70.39
0	J22	41.86	118.5	273.06	66.97
0	J220	50.94	116	272.94	68
0	J222	50.4	119.1	272.95	66.66
0	J224	0	118	274.41	67.77
0	J226	0	130	277.29	63.82
0	J26	88.2	115.5	273.08	68.28
0	J28	34.78	118.6	273.2	66.99
0	J30	44.42	122.2	273.29	65.47
0	J300	0	127.5	278.29	65.34
0	J302	0	128	278.45	65.19
0	J304	0	142	280.84	60.16

0	J32	93.48	126	273.49	63.91
0	J34	0	134	274.05	60.68
0	J36	0	138	275.91	59.75
0	J38	79.7	90.2	273.05	79.23
0	J40	138.2	90	273.06	79.32
0	J42	137.88	101	272.94	74.5
0	J44	93.74	111	272.94	70.17
0	J46	79.04	113	272.95	69.31
0	J48	76.62	114.7	272.95	68.57
0	J50	76.58	120	273	66.29
0	J52	152.52	126	273.08	63.73
0	J54	76.28	127.6	272.48	62.78
0	J56	70.04	121.9	273.01	65.48
0	J58	97.94	126	272.26	63.38
0	J60	43.14	124.5	273	64.35
0	J62	94.12	122	273	65.43
0	J64	69.8	127	271.97	62.82
0	J66	44.72	130.5	271.9	61.27
0	J68	45.14	88	273.48	80.37
0	J70	92.66	97.5	273.54	76.28
0	J72	105.24	102	273.78	74.43
0	J74	104.58	108	273.89	71.88
0	J76	92.9	128	274.18	63.34
0	J78	160.7	126	274.18	64.21
0	J82	0	126.4	273.63	63.8
0	J84	23.7	76	273.6	85.62
0	J86	38.12	78	273.79	84.84
0	J88	42.04	88.4	274	80.42
0	J90	52.46	104	274.06	73.69
0	J92	53.12	98	273.86	76.2
0	J94	50.48	107	274.32	72.5
0	J96	40.96	116	274.64	68.74

	ID	Flow (gpm)	Head (ft)
0	RES9010	-2,053.16	277.29
0	RES9012	-2,390.96	280.84

	ID	Diameter (in)	Elevation (ft)	Upstream Pre	Downstream	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	Status	Setting	
0	V8000	8	122	65.43	60.43	0	0	11.54	Open		3
0	V8002	8	122	65.56	60.43	0	0	0	Closed		3
0	V8008	10	132	62.84	57.81	1	0	11.61	Open		2
0	V8010	10	132	61.37	57.81	0	0	0	Closed		2
0	V8012	8	118	67.2	62.22	0	0	0	Closed		3
0	V8014	8	118	67.25	62.22	1	0.01	11.6	Open		3
0	V8016	8	115.5	68.28	63.25	1	0.01	11.6	Open		3
0	V8018	8	115.5	68.27	63.25	0	0	0	Closed		3
0	V8020	8	128	63.16	58.13	1	0.01	11.6	Open		3
0	V8022	8	128	63.04	58.13	0	0	0	Closed		3
0	V8024	8	98	75.85	70.82	0	0	0	Closed		3
0	V8026	8	98	75.85	70.82	1	0.01	11.6	Open		3
0	V8028	10	120	66.27	61.24	0	0	0	Closed		2
0	V8032	8	123	65	59.97	1	0.01	11.6	Open		3
0	V8034	8	123	65	59.97	0	0	0	Closed		3
0	V8036	8	94	77.82	72.77	0	0	0	Closed		3
0	V8038	8	94	77.8	72.77	1	0.01	11.6	Open		3
0	V8042	10	118	67.77	62.74	1	0	11.61	Open		2
0	V8044	10	118	67.61	62.74	0	0	0	Closed		2
0	V8052	10	100	75.2	70.21	0	0	0	Closed		2
0	V8054	10	100	75.24	70.21	1	0	11.61	Open		2
0	V8056	8	102	74.07	79.07	0	0	11.54	Open		3
0	V8058	8	102	74.09	79.07	0	0	0	Closed		3

0	V8060	8	100	75.39	70.39	0	0	0	Closed	3
0	V8062	8	100	75.42	70.39	1	0.01	11.6	Open	3
0	V8070	10	120	66.27	61.24	1	0	11.61	Open	2

	ID	From Node	To Node	Length (ft)	Diameter (in)	Roughness	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	HL/1000 (ft/k
0	P101	J72	J92	810.17	12	130	-170.38	0.48	0.08	0.1
0	P103	J92	J90	1,241.83	12	130	-223.5	0.63	0.2	0.16
0	P105	J90	J94	1,132.34	16	130	-582.67	0.93	0.26	0.23
0	P107	J94	J96	1,204.53	16	130	-633.15	1.01	0.32	0.27
0	P111	J78	J100	1,067.79	16	130	-1,263.70	2.02	1.03	0.96
0	P115	J96	J100	886.7	16	130	-1,016.24	1.62	0.57	0.64
0	P117	J100	J102	789.56	20	130	-2,380.64	2.43	0.83	1.05
0	P119	J102	J104	941.88	20	130	-2,380.64	2.43	0.99	1.05
0	P121	J104	J300	1,197.93	20	130	-2,390.96	2.44	1.27	1.06
0	P123	J300	J302	147.08	20	130	-2,390.96	2.44	0.16	1.06
0	P125	J302	J304	2,260.56	20	130	-2,390.96	2.44	2.39	1.06
0	P139	J122	J124	627.68	12	130	-38.11	0.11	0	0.01
0	P141	J124	J60	1,242.80	12	130	-104.87	0.3	0.05	0.04
0	P145	J34	J126	846.23	20	130	1,282.69	1.31	0.28	0.33
0	P149	J66	J128	522.48	8	130	0	0	0	0
0	P155	J126	J130	441.09	8	130	0	0	0	0
0	P157	J128	J130	886.05	8	130	0	0	0	0
0	P159	J126	J32	843.52	20	130	1,281.69	1.31	0.28	0.33
0	P161	J66	J132	415.81	8	130	882.6	5.63	6.03	14.49
0	P163	J64	J136	338.87	8	130	617.4	3.94	2.53	7.48
0	P165	J136	J134	525.67	8	130	617.4	3.94	3.93	7.48
0	P167	J132	J134	848.01	8	130	132.6	0.85	0.37	0.43
0	P17	J20	J22	1,133.08	16	130	-83.99	0.13	0.01	0.01
0	P171	V8000	J138	423.5	10	130	0	0	0	0
0	P173	J138	J140	355.5	10	130	0	0	0	0
0	P177	V8002	J140	603.42	10	130	0	0	0	0
0	P179	J30	V8002	454.21	10	130	0	0	0	0
0	P181	J62	V8000	384.46	10	130	0	0	0	0
0	P19	J22	J26	1,147.36	16	130	-125.85	0.2	0.02	0.01
0	P193	J104	V8008	482.89	12	130	1	0	0	0
0	P195	J82	V8010	213.6	12	130	0	0	0	0
0	P197	V8010	J146	842.68	12	130	0	0	0	0
0	P199	J146	J148	514.03	12	130	0	0	0	0
0	P201	V8008	J148	1,114.81	12	130	1	0	0	0
0	P203	J26	V8012	268.73	10	130	0	0	0	0
0	P205	J28	V8014	295.03	10	130	1	0	0	0
0	P207	V8014	J152	482.16	10	130	1	0	0	0
0	P209	V8012	J150	236	10	130	0	0	0	0
0	P21	J26	J28	1,118.04	16	130	-396.48	0.63	0.13	0.11
0	P211	J152	J150	798.51	10	130	0	0	0	0
0	P213	J20	J154	348.19	12	130	39.93	0.11	0	0.01
0	P215	J154	J38	842.54	12	130	38.93	0.11	0.01	0.01
0	P217	J26	V8016	273.58	10	130	1	0	0	0
0	P219	J22	V8018	229.2	10	130	0	0	0	0
0	P221	V8018	J156	462.48	10	130	0	0	0	0
0	P223	V8016	J158	716.7	10	130	1	0	0	0
0	P225	J158	J156	802.77	10	130	0	0	0	0
0	P227	J32	V8022	269.66	10	130	0	0	0	0
0	P229	V8022	J160	385.74	10	130	0	0	0	0
0	P23	J28	J30	679.9	16	130	-432.26	0.69	0.09	0.13
0	P231	J126	V8020	259.39	10	130	1	0	0	0
0	P233	V8020	J162	510.51	10	130	1	0	0	0
0	P235	J160	J162	392.51	10	130	0	0	0	0
0	P237	J38	V8024	301.75	10	130	0	0	0	0
0	P239	J154	V8026	160.09	10	130	1	0	0	0
0	P241	V8026	J166	918.28	10	130	1	0	0	0

0	P243	J166	J164	455.03	10	130	0	0	0	0
0	P245	V8024	J164	882.35	10	130	0	0	0	0
0	P247	J46	J168	532.6	12	130	37.67	0.11	0	0.01
0	P249	J168	J122	563.66	12	130	37.67	0.11	0	0.01
0	P25	J30	J32	1,229.93	16	130	-476.68	0.76	0.19	0.16
0	P251	J168	V8028	209.52	12	130	0	0	0	0
0	P253	V8028	J170	652.72	12	130	0	0	0	0
0	P255	J170	J172	387.16	12	130	-1	0	0	0
0	P261	J60	V8032	268.68	10	130	1	0	0	0
0	P263	V8032	J174	918.23	10	130	1	0	0	0
0	P265	J174	J176	448.57	10	130	0	0	0	0
0	P267	J62	V8034	292.8	10	130	0	0	0	0
0	P269	V8034	J176	916.13	10	130	0	0	0	0
0	P271	J70	V8038	242.57	10	130	1	0	0	0
0	P273	J84	V8036	324.38	10	130	0	0	0	0
0	P275	V8036	J180	319.74	10	130	0	0	0	0
0	P277	J180	J178	347.95	10	130	0	0	0	0
0	P279	V8038	J178	632.77	10	130	1	0	0	0
0	P281	J76	J182	613.97	12	130	278.98	0.79	0.15	0.24
0	P283	J182	J74	589.22	12	130	278.98	0.79	0.14	0.24
0	P287	V8042	J184	372.65	12	130	1	0	0	0
0	P289	J184	J186	299.52	12	130	0	0	0	0
0	P29	J34	J36	2,325.70	20	130	-2,053.16	2.1	1.86	0.8
0	P295	J182	V8044	226.67	12	130	0	0	0	0
0	P297	V8044	J186	240.53	12	130	0	0	0	0
0	P299	J52	J188	313.33	8	130	0	0	0	0
0	P301	J188	J190	664.92	8	130	0	0	0	0
0	P303	J56	J194	178.12	8	130	0	0	0	0
0	P305	J194	J192	667.8	8	130	0	0	0	0
0	P307	J192	J190	657.08	8	130	0	0	0	0
0	P309	J72	J196	736.36	12	130	239.54	0.68	0.13	0.18
0	P311	J196	J70	609.66	12	130	238.54	0.68	0.11	0.18
0	P313	J40	J198	1,129.17	12	130	122.63	0.35	0.06	0.05
0	P315	J198	J42	1,043.66	12	130	122.63	0.35	0.05	0.05
0	P329	J70	V8052	185.71	12	130	0	0	0	0
0	P33	J38	J40	1,179.71	12	130	-40.77	0.12	0.01	0.01
0	P331	V8052	J206	525.44	12	130	0	0	0	0
0	P333	J196	V8054	178.3	12	130	1	0	0	0
0	P335	V8054	J208	525.19	12	130	1	0	0	0
0	P337	J208	J206	475.84	12	130	0	0	0	0
0	P341	J198	V8058	154.71	10	130	0	0	0	0
0	P343	V8058	J214	421.16	10	130	0	0	0	0
0	P345	J214	J210	577.05	10	130	0	0	0	0
0	P347	J42	V8056	297.78	10	130	0	0	0	0
0	P349	V8056	J212	569.55	10	130	0	0	0	0
0	P351	J212	J210	1,312.90	10	130	0	0	0	0
0	P353	J88	V8060	266.49	10	130	0	0	0	0
0	P355	V8060	J216	322.62	10	130	0	0	0	0
0	P357	J90	V8062	226.9	10	130	1	0	0	0
0	P359	V8062	J218	739.72	10	130	1	0	0	0
0	P361	J218	J216	604.58	10	130	0	0	0	0
0	P363	J56	J222	1,322.36	12	130	114.2	0.32	0.06	0.05
0	P365	J222	J220	621.17	12	130	63.8	0.18	0.01	0.02
0	P367	J220	J44	1,095.19	12	130	11.86	0.03	0	0
0	P37	J26	J46	1,141.00	12	130	181.43	0.51	0.12	0.11
0	P379	J76	J224	678.87	12	130	-341.13	0.97	0.23	0.35
0	P381	J224	V8042	158.85	12	130	1	0	0	0
0	P39	J46	J44	879.87	12	130	64.72	0.18	0.01	0.02
0	P393	J226	J36	1,733.97	20	130	2,053.16	2.1	1.38	0.8
0	P395	J96	J224	650.52	12	130	342.13	0.97	0.23	0.35
0	P41	J44	J42	1,067.11	12	130	-17.16	0.05	0	0

0	P415	J220	V8070	123.15	12	130	1	0	0	0
0	P417	V8070	J172	76.51	12	130	1	0	0	0
0	P419	RES9010	J226	1	1,000.00	130	2,053.16	0	0	0
0	P421	RES9012	J304	1	1,000.00	130	2,390.96	0	0	0
0	P43	J42	J48	1,096.37	12	130	-32.41	0.09	0	0
0	P45	J48	J50	1,194.62	12	130	-109.03	0.31	0.05	0.04
0	P47	J50	J52	765.09	12	130	-185.61	0.53	0.09	0.11
0	P49	J32	J62	1,463.77	16	130	711.52	1.14	0.49	0.33
0	P51	J34	J66	1,373.58	12	130	770.47	2.19	2.15	1.56
0	P53	J66	J64	862.35	12	130	-156.85	0.44	0.07	0.08
0	P55	J62	J64	1,082.76	12	130	588.21	1.67	1.03	0.95
0	P57	J62	J60	691.6	16	130	29.19	0.05	0	0
0	P59	J64	J58	1,424.22	12	130	-255.84	0.73	0.29	0.2
0	P61	J60	J56	890.62	16	130	-119.82	0.19	0.01	0.01
0	P67	J56	J52	1,036.48	16	130	-304.06	0.49	0.07	0.07
0	P69	J52	J54	1,131.15	12	130	430.06	1.22	0.6	0.53
0	P71	J58	J54	591.64	12	130	-353.78	1	0.22	0.37
0	P73	J40	J68	1,551.82	12	130	-301.59	0.86	0.43	0.28
0	P75	J68	J70	838.54	12	130	-144.88	0.41	0.06	0.07
0	P79	J72	J74	1,086.50	12	130	-174.4	0.49	0.11	0.1
0	P83	J76	J78	765.46	12	130	-30.75	0.09	0	0
0	P89	J52	J82	771.55	16	130	-1,072.25	1.71	0.55	0.71
0	P91	J82	J78	774.7	16	130	-1,072.25	1.71	0.55	0.71
0	P93	J68	J84	890.35	12	130	-201.85	0.57	0.12	0.13
0	P95	J84	J86	1,204.21	12	130	-225.55	0.64	0.19	0.16
0	P97	J86	J88	946.69	12	130	-263.67	0.75	0.2	0.21
0	P99	J88	J90	874.98	16	130	-305.71	0.49	0.06	0.07

Run B15

	ID	Demand (gpr	Elevation (ft)	Head (ft)	Pressure (psi)
0	J100	100.7	122	272.95	65.41
0	J102	0	125.5	274.11	64.39
0	J104	9.32	129.8	275.5	63.13
0	J122	75.78	117.5	269.12	65.7
0	J124	66.76	119.5	269.14	64.84
0	J126	0	130	269.36	60.39
0	J128	0	133	269.62	59.2
0	J130	0	134	269.45	58.69
0	J132	0	131	269.72	60.11
0	J134	0	131	269.72	60.11
0	J136	0	131	269.72	60.11
0	J138	0	122	280.79	68.8
0	J140	0	122	280.79	68.8
0	J146	0	132	263.89	57.15
0	J148	1	132	263.89	57.15
0	J150	0	118	257.48	60.44
0	J152	1	118	257.48	60.44
0	J154	0	90.3	269.11	77.48
0	J156	0	115.5	257.48	61.52
0	J158	1	115.5	257.48	61.52
0	J160	1,500.00	128	252.89	54.12
0	J162	1,501.00	128	252.88	54.11
0	J164	0	98	257.51	69.12
0	J166	1	98	257.51	69.12
0	J168	0	115.25	269.12	66.67
0	J170	1	120	257.59	59.62
0	J172	0	120	257.59	59.62
0	J174	1	123	257.67	58.35
0	J176	0	123	257.67	58.35
0	J178	1	94	258.88	71.44
0	J180	0	94	258.88	71.44

0	J182	0	118	271.28	66.41
0	J184	1	118	260.2	61.62
0	J186	0	118	260.2	61.62
0	J188	0	126	269.72	62.28
0	J190	0	126	269.72	62.28
0	J192	0	126	269.72	62.28
0	J194	0	126	269.72	62.28
0	J196	0	99.75	270.68	74.06
0	J198	0	95.5	269.28	75.3
0	J20	44.06	90.4	269.09	77.43
0	J206	0	100	259.07	68.92
0	J208	1	100	259.07	68.92
0	J210	0	102	257.69	67.46
0	J212	0	102	257.69	67.46
0	J214	0	102	257.69	67.46
0	J216	0	100	259.72	69.2
0	J218	1	100	259.72	69.2
0	J22	41.86	118.5	269.09	65.25
0	J220	50.94	116	269.19	66.38
0	J222	50.4	119.1	269.24	65.05
0	J224	0	118	271.81	66.65
0	J226	0	130	277.29	63.82
0	J26	88.2	115.5	269.08	66.55
0	J28	34.78	118.6	269.08	65.2
0	J30	44.42	122.2	269.08	63.64
0	J300	0	127.5	277.27	64.9
0	J302	0	128	277.49	64.77
0	J304	0	142	280.84	60.16
0	J32	93.48	126	269.08	62
0	J34	0	134	270.45	59.12
0	J36	0	138	274.37	59.09
0	J38	79.7	90.2	269.17	77.55
0	J40	138.2	90	269.34	77.71
0	J42	137.88	101	269.23	72.89
0	J44	93.74	111	269.16	68.53
0	J46	79.04	113	269.11	67.64
0	J48	76.62	114.7	269.31	66.99
0	J50	76.58	120	269.51	64.78
0	J52	152.52	126	269.72	62.28
0	J54	76.28	127.6	269.55	61.51
0	J56	70.04	121.9	269.39	63.91
0	J58	97.94	126	269.51	62.18
0	J60	43.14	124.5	269.27	62.73
0	J62	94.12	122	269.25	63.8
0	J64	69.8	127	269.49	61.74
0	J66	44.72	130.5	269.72	60.33
0	J68	45.14	88	270.33	79
0	J70	92.66	97.5	270.48	74.95
0	J72	105.24	102	270.92	73.19
0	J74	104.58	108	271.09	70.67
0	J76	92.9	128	271.47	62.17
0	J78	160.7	126	271.47	63.03
0	J82	0	126.4	270.6	62.48
0	J84	23.7	76	270.55	84.3
0	J86	38.12	78	270.89	83.58
0	J88	42.04	88.4	271.22	79.22
0	J90	52.46	104	271.32	72.5
0	J92	53.12	98	271.04	74.98
0	J94	50.48	107	271.69	71.36
0	J96	40.96	116	272.14	67.66

	ID	Flow (gpm)	Head (ft)
0	RES9010	-3,075.39	277.29
0	RES9012	-2,868.73	280.84

	ID	Diameter (in)	Elevation (ft)	Upstream Pre	Downstream	Flow (gpm)	Velocity (ft/s	Headloss (ft)	Status	Setting
0	V8000	8	122	63.8	68.8	0	0	11.54	Open	3
0	V8002	8	122	63.73	68.8	0	0	0	Closed	3
0	V8008	10	132	62.18	57.15	1	0	11.61	Open	2
0	V8010	10	132	60.05	57.15	0	0	0	Closed	2
0	V8012	8	118	65.46	60.44	0	0	0	Closed	3
0	V8014	8	118	65.46	60.44	1	0.01	11.6	Open	3
0	V8016	8	115.5	66.55	61.52	1	0.01	11.6	Open	3
0	V8018	8	115.5	66.55	61.52	0	0	0	Closed	3
0	V8020	8	128	59.87	56.83	1,451.63	9.27	7.02	Open	3
0	V8022	8	128	59.51	56.43	1,549.37	9.89	7.11	Open	3
0	V8024	8	98	74.17	69.12	0	0	0	Closed	3
0	V8026	8	98	74.14	69.12	1	0.01	11.6	Open	3
0	V8028	10	120	64.61	59.62	0	0	0	Closed	2
0	V8032	8	123	63.38	58.35	1	0.01	11.6	Open	3
0	V8034	8	123	63.37	58.35	0	0	0	Closed	3
0	V8036	8	94	76.5	71.44	0	0	0	Closed	3
0	V8038	8	94	76.47	71.44	1	0.01	11.6	Open	3
0	V8042	10	118	66.65	61.62	1	0	11.61	Open	2
0	V8044	10	118	66.41	61.62	0	0	0	Closed	2
0	V8052	10	100	73.87	68.92	0	0	0	Closed	2
0	V8054	10	100	73.95	68.92	1	0	11.61	Open	2
0	V8056	8	102	72.46	67.46	0	0	11.54	Open	3
0	V8058	8	102	72.48	67.46	0	0	0	Closed	3
0	V8060	8	100	74.19	69.2	0	0	0	Closed	3
0	V8062	8	100	74.23	69.2	1	0.01	11.6	Open	3
0	V8070	10	120	64.65	59.62	1	0	11.61	Open	2

	ID	From Node	To Node	Length (ft)	Diameter (in)	Roughness	Flow (gpm)	Velocity (ft/s	Headloss (ft)	HL/1000 (ft/k
0	P101	J72	J92	810.17	12	130	-216.25	0.61	0.12	0.15
0	P103	J92	J90	1,241.83	12	130	-269.37	0.76	0.28	0.22
0	P105	J90	J94	1,132.34	16	130	-709.51	1.13	0.37	0.33
0	P107	J94	J96	1,204.53	16	130	-759.99	1.21	0.45	0.38
0	P111	J78	J100	1,067.79	16	130	-1,536.47	2.45	1.48	1.38
0	P115	J96	J100	886.7	16	130	-1,221.24	1.95	0.8	0.9
0	P117	J100	J102	789.56	20	130	-2,858.41	2.92	1.16	1.47
0	P119	J102	J104	941.88	20	130	-2,858.41	2.92	1.39	1.47
0	P121	J104	J300	1,197.93	20	130	-2,868.73	2.93	1.78	1.48
0	P123	J300	J302	147.08	20	130	-2,868.73	2.93	0.22	1.48
0	P125	J302	J304	2,260.56	20	130	-2,868.73	2.93	3.35	1.48
0	P139	J122	J124	627.68	12	130	-109.93	0.31	0.03	0.04
0	P141	J124	J60	1,242.80	12	130	-176.69	0.5	0.13	0.1
0	P145	J34	J126	846.23	20	130	2,648.19	2.7	1.08	1.28
0	P149	J66	J128	522.48	8	130	86.23	0.55	0.1	0.2
0	P155	J126	J130	441.09	8	130	-86.23	0.55	0.09	0.2
0	P157	J128	J130	886.05	8	130	86.23	0.55	0.17	0.2
0	P159	J126	J32	843.52	20	130	1,282.78	1.31	0.28	0.33
0	P161	J66	J132	415.81	8	130	0	0	0	0
0	P163	J64	J136	338.87	8	130	0	0	0	0
0	P165	J136	J134	525.67	8	130	0	0	0	0
0	P167	J132	J134	848.01	8	130	0	0	0	0
0	P17	J20	J22	1,133.08	16	130	90.32	0.14	0.01	0.01
0	P171	V8000	J138	423.5	10	130	0	0	0	0
0	P173	J138	J140	355.5	10	130	0	0	0	0
0	P177	V8002	J140	603.42	10	130	0	0	0	0
0	P179	J30	V8002	454.21	10	130	0	0	0	0
0	P181	J62	V8000	384.46	10	130	0	0	0	0

0	P19	J22	J26	1,147.36	16	130	48.46	0.08	0	0
0	P193	J104	V8008	482.89	12	130	1	0	0	0
0	P195	J82	V8010	213.6	12	130	0	0	0	0
0	P197	V8010	J146	842.68	12	130	0	0	0	0
0	P199	J146	J148	514.03	12	130	0	0	0	0
0	P201	V8008	J148	1,114.81	12	130	1	0	0	0
0	P203	J26	V8012	268.73	10	130	0	0	0	0
0	P205	J28	V8014	295.03	10	130	1	0	0	0
0	P207	V8014	J152	482.16	10	130	1	0	0	0
0	P209	V8012	J150	236	10	130	0	0	0	0
0	P21	J26	J28	1,118.04	16	130	44.23	0.07	0	0
0	P211	J152	J150	798.51	10	130	0	0	0	0
0	P213	J20	J154	348.19	12	130	-134.38	0.38	0.02	0.06
0	P215	J154	J38	842.54	12	130	-135.38	0.38	0.05	0.06
0	P217	J26	V8016	273.58	10	130	1	0	0	0
0	P219	J22	V8018	229.2	10	130	0	0	0	0
0	P221	V8018	J156	462.48	10	130	0	0	0	0
0	P223	V8016	J158	716.7	10	130	1	0	0	0
0	P225	J158	J156	802.77	10	130	0	0	0	0
0	P227	J32	V8022	269.66	10	130	1,549.37	6.33	3.74	13.86
0	P229	V8022	J160	385.74	10	130	1,549.37	6.33	5.35	13.86
0	P23	J28	J30	679.9	16	130	8.45	0.01	0	0
0	P231	J126	V8020	259.39	10	130	1,451.63	5.93	3.19	12.28
0	P233	V8020	J162	510.51	10	130	1,451.63	5.93	6.27	12.28
0	P235	J160	J162	392.51	10	130	49.37	0.2	0.01	0.02
0	P237	J38	V8024	301.75	10	130	0	0	0	0
0	P239	J154	V8026	160.09	10	130	1	0	0	0
0	P241	V8026	J166	918.28	10	130	1	0	0	0
0	P243	J166	J164	455.03	10	130	0	0	0	0
0	P245	V8024	J164	882.35	10	130	0	0	0	0
0	P247	J46	J168	532.6	12	130	-34.15	0.1	0	0
0	P249	J168	J122	563.66	12	130	-34.15	0.1	0	0
0	P25	J30	J32	1,229.93	16	130	-35.97	0.06	0	0
0	P251	J168	V8028	209.52	12	130	0	0	0	0
0	P253	V8028	J170	652.72	12	130	0	0	0	0
0	P255	J170	J172	387.16	12	130	-1	0	0	0
0	P261	J60	V8032	268.68	10	130	1	0	0	0
0	P263	V8032	J174	918.23	10	130	1	0	0	0
0	P265	J174	J176	448.57	10	130	0	0	0	0
0	P267	J62	V8034	292.8	10	130	0	0	0	0
0	P269	V8034	J176	916.13	10	130	0	0	0	0
0	P271	J70	V8038	242.57	10	130	1	0	0	0
0	P273	J84	V8036	324.38	10	130	0	0	0	0
0	P275	V8036	J180	319.74	10	130	0	0	0	0
0	P277	J180	J178	347.95	10	130	0	0	0	0
0	P279	V8038	J178	632.77	10	130	1	0	0	0
0	P281	J76	J182	613.97	12	130	325.41	0.92	0.19	0.32
0	P283	J182	J74	589.22	12	130	325.41	0.92	0.19	0.32
0	P287	V8042	J184	372.65	12	130	1	0	0	0
0	P289	J184	J186	299.52	12	130	0	0	0	0
0	P29	J34	J36	2,325.70	20	130	-3,075.39	3.14	3.92	1.69
0	P295	J182	V8044	226.67	12	130	0	0	0	0
0	P297	V8044	J186	240.53	12	130	0	0	0	0
0	P299	J52	J188	313.33	8	130	0	0	0	0
0	P301	J188	J190	664.92	8	130	0	0	0	0
0	P303	J56	J194	178.12	8	130	0	0	0	0
0	P305	J194	J192	667.8	8	130	0	0	0	0
0	P307	J192	J190	657.08	8	130	0	0	0	0
0	P309	J72	J196	736.36	12	130	331.84	0.94	0.24	0.33
0	P311	J196	J70	609.66	12	130	330.84	0.94	0.2	0.33
0	P313	J40	J198	1,129.17	12	130	121.58	0.34	0.06	0.05

0	P315	J198	J42	1,043.66	12	130	121.58	0.34	0.05	0.05
0	P329	J70	V8052	185.71	12	130	0	0	0	0
0	P33	J38	J40	1,179.71	12	130	-215.08	0.61	0.17	0.15
0	P331	V8052	J206	525.44	12	130	0	0	0	0
0	P333	J196	V8054	178.3	12	130	1	0	0	0
0	P335	V8054	J208	525.19	12	130	1	0	0	0
0	P337	J208	J206	475.84	12	130	0	0	0	0
0	P341	J198	V8058	154.71	10	130	0	0	0	0
0	P343	V8058	J214	421.16	10	130	0	0	0	0
0	P345	J214	J210	577.05	10	130	0	0	0	0
0	P347	J42	V8056	297.78	10	130	0	0	0	0
0	P349	V8056	J212	569.55	10	130	0	0	0	0
0	P351	J212	J210	1,312.90	10	130	0	0	0	0
0	P353	J88	V8060	266.49	10	130	0	0	0	0
0	P355	V8060	J216	322.62	10	130	0	0	0	0
0	P357	J90	V8062	226.9	10	130	1	0	0	0
0	P359	V8062	J218	739.72	10	130	1	0	0	0
0	P361	J218	J216	604.58	10	130	0	0	0	0
0	P363	J56	J222	1,322.36	12	130	190.8	0.54	0.16	0.12
0	P365	J222	J220	621.17	12	130	140.4	0.4	0.04	0.07
0	P367	J220	J44	1,095.19	12	130	88.46	0.25	0.03	0.03
0	P37	J26	J46	1,141.00	12	130	-84.97	0.24	0.03	0.03
0	P379	J76	J224	678.87	12	130	-419.29	1.19	0.34	0.51
0	P381	J224	V8042	158.85	12	130	1	0	0	0
0	P39	J46	J44	879.87	12	130	-129.86	0.37	0.05	0.06
0	P393	J226	J36	1,733.97	20	130	3,075.39	3.14	2.92	1.69
0	P395	J96	J224	650.52	12	130	420.3	1.19	0.33	0.51
0	P41	J44	J42	1,067.11	12	130	-135.14	0.38	0.07	0.06
0	P415	J220	V8070	123.15	12	130	1	0	0	0
0	P417	V8070	J172	76.51	12	130	1	0	0	0
0	P419	RES9010	J226	1	1,000.00	130	3,075.39	0	0	0
0	P421	RES9012	J304	1	1,000.00	130	2,868.73	0	0	0
0	P43	J42	J48	1,096.37	12	130	-151.44	0.43	0.08	0.08
0	P45	J48	J50	1,194.62	12	130	-228.06	0.65	0.2	0.16
0	P47	J50	J52	765.09	12	130	-304.64	0.86	0.21	0.28
0	P49	J32	J62	1,463.77	16	130	-396.03	0.63	0.16	0.11
0	P51	J34	J66	1,373.58	12	130	427.2	1.21	0.72	0.52
0	P53	J66	J64	862.35	12	130	296.25	0.84	0.23	0.27
0	P55	J62	J64	1,082.76	12	130	-273.45	0.78	0.25	0.23
0	P57	J62	J60	691.6	16	130	-216.71	0.35	0.03	0.04
0	P59	J64	J58	1,424.22	12	130	-46.99	0.13	0.01	0.01
0	P61	J60	J56	890.62	16	130	-437.54	0.7	0.12	0.14
0	P67	J56	J52	1,036.48	16	130	-698.38	1.11	0.33	0.32
0	P69	J52	J54	1,131.15	12	130	221.21	0.63	0.18	0.16
0	P71	J58	J54	591.64	12	130	-144.93	0.41	0.04	0.07
0	P73	J40	J68	1,551.82	12	130	-474.86	1.35	0.99	0.64
0	P75	J68	J70	838.54	12	130	-237.18	0.67	0.15	0.18
0	P79	J72	J74	1,086.50	12	130	-220.83	0.63	0.17	0.15
0	P83	J76	J78	765.46	12	130	0.98	0	0	0
0	P89	J52	J82	771.55	16	130	-1,376.76	2.2	0.87	1.13
0	P91	J82	J78	774.7	16	130	-1,376.76	2.2	0.87	1.13
0	P93	J68	J84	890.35	12	130	-282.82	0.8	0.22	0.24
0	P95	J84	J86	1,204.21	12	130	-306.52	0.87	0.34	0.28
0	P97	J86	J88	946.69	12	130	-344.64	0.98	0.33	0.35
0	P99	J88	J90	874.98	16	130	-386.68	0.62	0.09	0.11

A.4 EXISTING PLUS PROJECT SIMULATION RESULTS PRINTOUTS

Existing plus Project Simulation Printouts
5/4/2017
Run EB2

	ID	Demand (gpr	Elevation (ft)	Head (ft)	Pressure (psi)
0	J100	100.7	122	290.3	72.92
0	J102	0	125.5	290.82	71.63
0	J104	9.32	129.8	291.44	70.04
0	J122	75.78	117.5	289.05	74.33
0	J124	66.76	119.5	289.08	73.48
0	J126	0	130	289.5	69.11
0	J128	0	133	289.44	67.78
0	J130	0	134	289.48	67.37
0	J132	0	131	289.41	68.64
0	J134	0	131	289.41	68.64
0	J136	0	131	289.41	68.64
0	J138	0	122	300.81	77.48
0	J140	0	122	300.81	77.48
0	J146	0	132	302.98	74.09
0	J148	0	132	302.98	74.09
0	J150	0	118	277.62	69.17
0	J152	0	118	277.62	69.17
0	J154	0	90.3	289.04	86.11
0	J156	0	115.5	277.53	70.21
0	J158	0	115.5	277.53	70.21
0	J160	0	128	277.96	64.98
0	J162	0	128	277.96	64.98
0	J164	0	98	300.58	87.78
0	J166	0	98	300.58	87.78
0	J168	0	115.25	289.05	75.31
0	J170	0	120	277.51	68.25
0	J172	0	120	277.51	68.25
0	J174	0	123	300.77	77.03
0	J176	0	123	300.77	77.03
0	J178	0	94	277.66	79.58
0	J180	0	94	277.66	79.58
0	J182	0	118	289.55	74.33
0	J184	0	118	301.34	79.44
0	J186	0	118	301.34	79.44
0	J188	0	126	289.25	70.74
0	J190	0	126	289.25	70.73
0	J192	0	126	289.24	70.73
0	J194	0	126	289.23	70.73
0	J196	0	99.75	289.26	82.11
0	J198	0	95.5	289.02	83.85
0	J20	44.06	90.4	289.04	86.07
0	J206	0	100	277.72	77.01
0	J208	0	100	277.72	77.01
0	J210	0	102	300.56	86.04
0	J212	0	102	300.56	86.04
0	J214	0	102	300.56	86.04
0	J216	0	100	301.05	87.11
0	J218	0	100	301.05	87.11
0	J22	41.86	118.5	289.05	73.9
0	J220	50.94	116	289.05	74.98
0	J222	50.4	119.1	289.09	73.66
0	J224	0	118	289.8	74.44
0	J226	0	130	290.62	69.6
0	J228	0	116	294.62	77.4
0	J230	0	147	296.96	64.98
0	J232	0	148	299.86	65.8
0	J236	2,427.93	166	310.57	62.64

0	J238	1,213.97	181	305.12	53.78
0	J240	0	164	310.91	63.65
0	J242	0	148	300.18	65.94
0	J244	0	148	299.9	65.82
0	J246	1,213.97	146	300.66	67.01
0	J252	0	164.3	311.12	63.62
0	J26	88.2	115.5	289.07	75.21
0	J260	0	164.48	311.16	63.56
0	J262	0	164.48	311.19	63.57
0	J264	0	167.47	312.12	62.68
0	J266	0	167.47	312.15	62.69
0	J268	0	167.47	312.19	62.71
0	J270	0	167.47	312.23	62.72
0	J272	0	167.47	312.27	62.74
0	J274	0	167.47	312.43	62.81
0	J276	0	167.47	312.56	62.87
0	J278	0	164.48	170.6	2.65
0	J28	34.78	118.6	289.16	73.91
0	J280	0	164.48	170.6	2.65
0	J282	0	164.48	170.6	2.65
0	J286	0	164.48	170.4	2.57
0	J288	0	164.48	170.41	2.57
0	J290	0	164.48	170.42	2.57
0	J292	0	164.48	170.46	2.59
0	J294	0	164.48	170.6	2.65
0	J296	0	164.57	170.68	2.65
0	J298	0	164.22	170.95	2.92
0	J30	44.42	122.2	289.23	72.37
0	J300	0	127.5	292.24	71.38
0	J302	0	128	292.33	71.21
0	J304	0	142	293.84	65.79
0	J308	0	163	171.12	3.52
0	J310	0	165.5	171.44	2.57
0	J312	0	164.48	170.6	2.65
0	J32	93.48	126	289.38	70.79
0	J328	0	167.47	320.13	66.15
0	J330	0	167.47	319.85	66.03
0	J332	0	167.47	312.19	62.71
0	J334	0	167.47	319.72	65.97
0	J336	0	167.47	312.43	62.81
0	J338	0	167.47	312.23	62.72
0	J34	0	134	289.63	67.44
0	J340	0	167.47	312.15	62.69
0	J36	0	137	290.2	66.38
0	J38	79.7	90.2	289.02	86.15
0	J40	138.2	90	289.02	86.24
0	J42	137.88	101	289.02	81.47
0	J44	93.74	111	289.03	77.14
0	J46	79.04	113	289.04	76.28
0	J48	76.62	114.7	289.04	75.54
0	J50	76.58	120	289.13	73.29
0	J52	152.52	126	289.26	70.74
0	J54	76.28	127.6	289.23	70.04
0	J56	70.04	121.9	289.23	72.5
0	J58	97.94	126	289.23	70.73
0	J60	43.14	124.5	289.23	71.38
0	J62	94.12	122	289.27	72.48
0	J64	69.8	127	289.28	70.32
0	J66	44.72	130.5	289.41	68.86
0	J68	45.14	88	289.18	87.17
0	J70	92.66	97.5	289.2	83.06

0	J72	105.24	102	289.33	81.17
0	J74	104.58	108	289.42	78.61
0	J76	92.9	128	289.68	70.05
0	J78	160.7	126	289.71	70.94
0	J82	0	126.4	289.48	70.66
0	J84	23.7	76	289.23	92.39
0	J86	49.12	78	289.33	91.57
0	J88	42.04	88.4	289.46	87.12
0	J90	52.46	104	289.51	80.38
0	J92	53.12	98	289.38	82.92
0	J94	50.48	107	289.69	79.16
0	J96	40.96	116	289.92	75.36

	ID	Flow (gpm)	Head (ft)
0	RES9010	-7,799.99	171.44

	ID	Elevation (ft)	Upstream Pre	Downstream	Flow (gpm)	Head Gain (ft	Status	Setting	Available NPS	Cavitation Inc
0	U7002	153.8	6.99	74.69	2,597.42	156.26	Open	1	49.26	0
0	U7004	153.8	6.97	74.58	2,599.79	156.04	Open	1	49.21	0
0	U7006	153.8	7.2	68.63	0	0	Closed	0	0	0
0	U7008	153.8	6.96	74.53	2,602.78	155.94	Open	1	49.19	0
0	U7010	153.8	7.28	68.74	0	0	Closed	0	0	0
0	U7012	153.8	7.28	68.65	0	0	Closed	0	0	0
0	U7014	153.8	7.28	68.62	0	0	Closed	0	0	0

	ID	Diameter (in)	Elevation (ft)	Upstream Pre	Downstream	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	Status	Setting
0	V8000	8	122	72.48	77.48	0	0	11.54	Open	5
0	V8002	8	122	72.46	77.48	0	0	0	Closed	5
0	V8008	10	132	69.09	74.09	0	0	11.54	Open	2
0	V8010	10	132	68.24	74.09	0	0	0	Closed	2
0	V8012	8	118	74.13	69.17	0	0	0	Closed	5
0	V8014	8	118	74.17	69.17	0	0	11.54	Open	5
0	V8016	8	115.5	75.21	70.21	0	0	11.54	Open	5
0	V8018	8	115.5	75.2	70.21	0	0	0	Closed	5
0	V8020	8	128	69.98	64.98	0	0	11.54	Open	5
0	V8022	8	128	69.92	64.98	0	0	0	Closed	5
0	V8024	8	98	82.77	87.78	0	0	0	Closed	5
0	V8026	8	98	82.78	87.78	0	0	11.54	Open	5
0	V8028	10	120	73.25	68.25	0	0	0	Closed	2
0	V8032	8	123	72.03	77.03	0	0	11.54	Open	5
0	V8034	8	123	72.04	77.03	0	0	0	Closed	5
0	V8036	8	94	84.59	79.58	0	0	0	Closed	5
0	V8038	8	94	84.58	79.58	0	0	11.54	Open	5
0	V8042	10	118	74.44	79.44	0	0	11.54	Open	2
0	V8044	10	118	74.33	79.44	0	0	0	Closed	2
0	V8052	10	100	81.98	77.01	0	0	0	Closed	2
0	V8054	10	100	82.01	77.01	0	0	11.54	Open	2
0	V8056	8	102	81.04	86.04	0	0	11.54	Open	5
0	V8058	8	102	81.04	86.04	0	0	0	Closed	5
0	V8060	8	100	82.09	87.11	0	0	0	Closed	5
0	V8062	8	100	82.11	87.11	0	0	11.54	Open	5
0	V8070	10	120	73.25	68.25	0	0	11.54	Open	2

	ID	From Node	To Node	Length (ft)	Diameter (in)	Roughness	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	HL/1000 (ft/k
0	P101	J72	J92	810.17	12	130	-124.71	0.35	0.04	0.05
0	P103	J92	J90	1,241.83	12	130	-177.83	0.5	0.13	0.1
0	P105	J90	J94	1,132.34	16	130	-480.36	0.77	0.18	0.16
0	P107	J94	J96	1,204.53	16	130	-530.84	0.85	0.23	0.19
0	P111	J78	J100	1,067.79	16	130	-936.16	1.49	0.59	0.55
0	P115	J96	J100	886.7	16	130	-814.44	1.3	0.38	0.43
0	P117	J100	J102	789.56	20	130	-1,851.30	1.89	0.52	0.66

0	P119	J102	J104	941.88	20	130	-1,851.30	1.89	0.62	0.66
0	P121	J104	J300	1,197.93	20	130	-1,860.62	1.9	0.8	0.66
0	P123	J300	J302	147.08	20	130	-1,860.62	1.9	0.1	0.66
0	P125	J302	J304	2,260.56	20	130	-1,860.62	1.9	1.5	0.66
0	P139	J122	J124	627.68	12	130	-123.45	0.35	0.03	0.05
0	P141	J124	J60	1,242.80	12	130	-190.21	0.54	0.15	0.12
0	P145	J34	J126	846.23	20	130	858.26	0.88	0.13	0.16
0	P149	J66	J128	522.48	8	130	-39.74	0.25	0.02	0.05
0	P155	J126	J130	441.09	8	130	39.74	0.25	0.02	0.05
0	P157	J128	J130	886.05	8	130	-39.74	0.25	0.04	0.05
0	P159	J126	J32	843.52	20	130	818.53	0.84	0.12	0.15
0	P161	J66	J132	415.81	8	130	0	0	0	0
0	P163	J64	J136	338.87	8	130	0	0	0	0
0	P165	J136	J134	525.67	8	130	0	0	0	0
0	P167	J132	J134	848.01	8	130	0	0	0	0
0	P17	J20	J22	1,133.08	16	130	-108.77	0.17	0.01	0.01
0	P171	V8000	J138	423.5	10	130	0	0	0	0
0	P173	J138	J140	355.5	10	130	0	0	0	0
0	P177	V8002	J140	603.42	10	130	0	0	0	0
0	P179	J30	V8002	454.21	10	130	0	0	0	0
0	P181	J62	V8000	384.46	10	130	0	0	0	0
0	P19	J22	J26	1,147.36	16	130	-150.63	0.24	0.02	0.02
0	P193	J104	V8008	482.89	12	130	0	0	0	0
0	P195	J82	V8010	213.6	12	130	0	0	0	0
0	P197	V8010	J146	842.68	12	130	0	0	0	0
0	P199	J146	J148	514.03	12	130	0	0	0	0
0	P201	V8008	J148	1,114.81	12	130	0	0	0	0
0	P203	J26	V8012	268.73	10	130	0	0	0	0
0	P205	J28	V8014	295.03	10	130	0	0	0	0
0	P207	V8014	J152	482.16	10	130	0	0	0	0
0	P209	V8012	J150	236	10	130	0	0	0	0
0	P21	J26	J28	1,118.04	16	130	-330.04	0.53	0.09	0.08
0	P211	J152	J150	798.51	10	130	0	0	0	0
0	P213	J20	J154	348.19	12	130	64.71	0.18	0.01	0.02
0	P215	J154	J38	842.54	12	130	64.71	0.18	0.01	0.02
0	P217	J26	V8016	273.58	10	130	0	0	0	0
0	P219	J22	V8018	229.2	10	130	0	0	0	0
0	P221	V8018	J156	462.48	10	130	0	0	0	0
0	P223	V8016	J158	716.7	10	130	0	0	0	0
0	P225	J158	J156	802.77	10	130	0	0	0	0
0	P227	J32	V8022	269.66	10	130	0	0	0	0
0	P229	V8022	J160	385.74	10	130	0	0	0	0
0	P23	J28	J30	679.9	16	130	-364.82	0.58	0.07	0.1
0	P231	J126	V8020	259.39	10	130	0	0	0	0
0	P233	V8020	J162	510.51	10	130	0	0	0	0
0	P235	J160	J162	392.51	10	130	0	0	0	0
0	P237	J38	V8024	301.75	10	130	0	0	0	0
0	P239	J154	V8026	160.09	10	130	0	0	0	0
0	P241	V8026	J166	918.28	10	130	0	0	0	0
0	P243	J166	J164	455.03	10	130	0	0	0	0
0	P245	V8024	J164	882.35	10	130	0	0	0	0
0	P247	J46	J168	532.6	12	130	-47.67	0.14	0	0.01
0	P249	J168	J122	563.66	12	130	-47.67	0.14	0.01	0.01
0	P25	J30	J32	1,229.93	16	130	-409.24	0.65	0.15	0.12
0	P251	J168	V8028	209.52	12	130	0	0	0	0
0	P253	V8028	J170	652.72	12	130	0	0	0	0
0	P255	J170	J172	387.16	12	130	0	0	0	0
0	P261	J60	V8032	268.68	10	130	0	0	0	0
0	P263	V8032	J174	918.23	10	130	0	0	0	0
0	P265	J174	J176	448.57	10	130	0	0	0	0
0	P267	J62	V8034	292.8	10	130	0	0	0	0

0	P269	V8034	J176	916.13	10	130	0	0	0	0
0	P271	J70	V8038	242.57	10	130	0	0	0	0
0	P273	J84	V8036	324.38	10	130	0	0	0	0
0	P275	V8036	J180	319.74	10	130	0	0	0	0
0	P277	J180	J178	347.95	10	130	0	0	0	0
0	P279	V8038	J178	632.77	10	130	0	0	0	0
0	P281	J76	J182	613.97	12	130	260.92	0.74	0.13	0.21
0	P283	J182	J74	589.22	12	130	260.92	0.74	0.12	0.21
0	P287	V8042	J184	372.65	12	130	0	0	0	0
0	P289	J184	J186	299.52	12	130	0	0	0	0
0	P29	J34	J36	2,325.70	20	130	-1,083.51	1.11	0.57	0.24
0	P295	J182	V8044	226.67	12	130	0	0	0	0
0	P297	V8044	J186	240.53	12	130	0	0	0	0
0	P299	J52	J188	313.33	8	130	19.04	0.12	0	0.01
0	P301	J188	J190	664.92	8	130	19.04	0.12	0.01	0.01
0	P303	J56	J194	178.12	8	130	-19.04	0.12	0	0.01
0	P305	J194	J192	667.8	8	130	-19.04	0.12	0.01	0.01
0	P307	J192	J190	657.08	8	130	-19.04	0.12	0.01	0.01
0	P309	J72	J196	736.36	12	130	175.81	0.5	0.07	0.1
0	P311	J196	J70	609.66	12	130	175.81	0.5	0.06	0.1
0	P313	J40	J198	1,129.17	12	130	20.03	0.06	0	0
0	P315	J198	J42	1,043.66	12	130	20.03	0.06	0	0
0	P329	J70	V8052	185.71	12	130	0	0	0	0
0	P33	J38	J40	1,179.71	12	130	-14.99	0.04	0	0
0	P331	V8052	J206	525.44	12	130	0	0	0	0
0	P333	J196	V8054	178.3	12	130	0	0	0	0
0	P335	V8054	J208	525.19	12	130	0	0	0	0
0	P337	J208	J206	475.84	12	130	0	0	0	0
0	P341	J198	V8058	154.71	10	130	0	0	0	0
0	P343	V8058	J214	421.16	10	130	0	0	0	0
0	P345	J214	J210	577.05	10	130	0	0	0	0
0	P347	J42	V8056	297.78	10	130	0	0	0	0
0	P349	V8056	J212	569.55	10	130	0	0	0	0
0	P351	J212	J210	1,312.90	10	130	0	0	0	0
0	P353	J88	V8060	266.49	10	130	0	0	0	0
0	P355	V8060	J216	322.62	10	130	0	0	0	0
0	P357	J90	V8062	226.9	10	130	0	0	0	0
0	P359	V8062	J218	739.72	10	130	0	0	0	0
0	P361	J218	J216	604.58	10	130	0	0	0	0
0	P363	J56	J222	1,322.36	12	130	179.39	0.51	0.14	0.11
0	P365	J222	J220	621.17	12	130	128.99	0.37	0.04	0.06
0	P367	J220	J44	1,095.19	12	130	78.05	0.22	0.02	0.02
0	P37	J26	J46	1,141.00	12	130	91.21	0.26	0.03	0.03
0	P379	J76	J224	678.87	12	130	-242.63	0.69	0.12	0.18
0	P381	J224	V8042	158.85	12	130	0	0	0	0
0	P39	J46	J44	879.87	12	130	59.84	0.17	0.01	0.01
0	P393	J226	J36	1,733.97	20	130	1,083.51	1.11	0.42	0.24
0	P395	J96	J224	650.52	12	130	242.63	0.69	0.12	0.18
0	P399	J232	J230	2,608.50	18	130	1,860.62	2.35	2.9	1.11
0	P401	J230	J304	2,813.67	18	130	1,860.62	2.35	3.12	1.11
0	P403	J232	J228	7,230.92	16	130	1,083.51	1.73	5.24	0.72
0	P405	J228	J226	5,520.22	16	130	1,083.51	1.73	4	0.72
0	P41	J44	J42	1,067.11	12	130	44.14	0.13	0.01	0.01
0	P415	J220	V8070	127.05	12	130	0	0	0	0
0	P417	V8070	J172	78.54	12	130	0	0	0	0
0	P421	J240	J236	955.52	36	130	6,195.92	1.95	0.34	0.35
0	P423	J236	J238	5,398.38	24	130	3,767.99	2.67	5.46	1.01
0	P425	J238	J246	9,066.36	24	130	2,554.02	1.81	4.46	0.49
0	P427	J246	J244	5,073.87	24	130	1,340.05	0.95	0.76	0.15
0	P429	J240	J242	7,163.69	16	130	1,604.07	2.56	10.73	1.5
0	P43	J42	J48	1,096.37	12	130	-73.7	0.21	0.02	0.02

0	P431	J242	J232	213.31	16	130	1,604.07	2.56	0.32	1.5
0	P433	J244	J232	281.24	24	130	1,340.05	0.95	0.04	0.15
0	P439	RES9010	J310	68.78	1,100.00	130	7,799.99	0	0	0
0	P441	J310	J308	18	36	130	7,799.99	2.46	0.32	17.75
0	P443	J308	J298	106.2	36	130	7,799.99	2.46	0.17	1.6
0	P445	J298	J296	55.4	36	130	7,799.99	2.46	0.27	4.94
0	P447	J296	J294	78.5	36	130	7,799.99	2.46	0.08	1.02
0	P449	J294	J292	19	30	130	7,800.00	3.54	0.13	7.05
0	P45	J48	J50	1,194.62	12	130	-150.32	0.43	0.09	0.08
0	P451	J292	J290	9.2	30	130	5,202.57	2.36	0.04	4.38
0	P453	J290	J288	9.2	30	130	2,602.78	1.18	0.01	1.11
0	P455	J288	J286	9.2	30	130	2,602.78	1.18	0.01	1.11
0	P461	J282	J280	9.2	30	130	0	0	0	0
0	P463	J280	J278	9.2	30	130	0	0	0	0
0	P465	J292	U7002	20.6	18	130	2,597.42	3.27	0.54	26.31
0	P469	J290	U7004	20.6	18	130	2,599.79	3.28	0.54	26.36
0	P47	J50	J52	765.09	12	130	-226.9	0.64	0.12	0.16
0	P473	J288	U7006	20.6	18	130	0	0	0	0
0	P477	J286	U7008	20.6	18	130	2,602.78	3.28	0.54	26.42
0	P481	J282	U7010	12.1	18	130	0	0	0	0
0	P485	J280	U7012	12.1	18	130	0	0	0	0
0	P489	J278	U7014	12.1	18	130	0	0	0	0
0	P49	J32	J62	1,463.77	16	130	315.8	0.5	0.11	0.07
0	P493	J276	J274	4.9	16	130	2,597.42	4.14	0.12	25.43
0	P495	J274	J272	4.2	16	130	2,597.42	4.14	0.16	39.22
0	P497	J272	J270	4.7	30	130	5,197.21	2.36	0.04	7.97
0	P499	J270	J268	4.7	30	130	5,197.21	2.36	0.04	7.97
0	P501	J268	J266	4.7	30	130	5,197.21	2.36	0.04	7.97
0	P503	J266	J264	4.7	30	130	5,197.21	2.36	0.04	7.97
0	P505	J264	J262	60.6	30	130	7,799.99	3.54	0.93	15.31
0	P507	J262	J260	20.3	36	130	7,799.99	2.46	0.03	1.46
0	P509	J260	J252	30.38	36	130	7,799.99	2.46	0.04	1.16
0	P51	J34	J66	1,373.58	12	130	225.24	0.64	0.22	0.16
0	P511	J252	J240	90.5	36	130	7,799.99	2.46	0.22	2.41
0	P513	J294	J312	36.2	30	130	0	0	0	0
0	P515	J312	J282	31.2	30	130	0	0	0	0
0	P517	U7002	J328	15	12	130	2,597.42	7.37	6.06	403.73
0	P519	J328	J276	9.1	14	130	2,597.42	5.41	7.57	832.01
0	P521	U7004	J330	15	12	130	2,599.79	7.38	6.07	404.46
0	P523	J330	J272	9.1	14	130	2,599.79	5.42	7.59	833.54
0	P525	U7006	J332	15	12	130	0	0	0	0
0	P527	J332	J268	9.1	14	130	0	0	0	0
0	P529	U7008	J334	15	12	130	2,602.78	7.38	6.08	405.39
0	P53	J66	J64	862.35	12	130	220.26	0.62	0.13	0.15
0	P531	J334	J264	9.1	14	130	2,602.78	5.42	7.6	835.45
0	P533	U7010	J336	15	12	130	0	0	0	0
0	P535	J336	J274	9.1	14	130	0	0	0	0
0	P537	U7012	J338	15	12	130	0	0	0	0
0	P539	J338	J270	9.1	14	130	0	0	0	0
0	P541	U7014	J340	15	12	130	0	0	0	0
0	P543	J340	J266	9.1	14	130	0	0	0	0
0	P55	J62	J64	1,082.76	12	130	-53.16	0.15	0.01	0.01
0	P57	J62	J60	691.6	16	130	274.85	0.44	0.04	0.06
0	P59	J64	J58	1,424.22	12	130	97.3	0.28	0.05	0.03
0	P61	J60	J56	890.62	16	130	41.5	0.07	0	0
0	P67	J56	J52	1,036.48	16	130	-188.89	0.3	0.03	0.03
0	P69	J52	J54	1,131.15	12	130	76.92	0.22	0.02	0.02
0	P71	J58	J54	591.64	12	130	-0.64	0	0	0
0	P73	J40	J68	1,551.82	12	130	-173.22	0.49	0.15	0.1
0	P75	J68	J70	838.54	12	130	-83.15	0.24	0.02	0.03
0	P79	J72	J74	1,086.50	12	130	-156.34	0.44	0.09	0.08

0	P83	J76	J78	765.46	12	130	-111.19	0.32	0.03	0.04
0	P89	J52	J82	771.55	16	130	-664.27	1.06	0.23	0.29
0	P91	J82	J78	774.7	16	130	-664.27	1.06	0.23	0.29
0	P93	J68	J84	890.35	12	130	-135.21	0.38	0.06	0.06
0	P95	J84	J86	1,204.21	12	130	-158.91	0.45	0.1	0.08
0	P97	J86	J88	946.69	12	130	-208.03	0.59	0.13	0.14
0	P99	J88	J90	874.98	16	130	-250.07	0.4	0.04	0.05

Run EB3

	ID	Demand (gpr	Elevation (ft)	Head (ft)	Pressure (psi)
0	J100	201.4	122	229.73	46.68
0	J102	0	125.5	231.6	45.97
0	J104	17.64	129.8	233.84	45.08
0	J122	151.56	117.5	225.22	46.67
0	J124	133.52	119.5	225.34	45.86
0	J126	0	130	226.84	41.96
0	J128	0	133	226.62	40.56
0	J130	0	134	226.76	40.19
0	J132	0	131	226.53	41.39
0	J134	0	131	226.53	41.39
0	J136	0	131	226.53	41.39
0	J138	0	122	237.55	50.07
0	J140	0	122	237.55	50.07
0	J146	0	132	222.23	39.1
0	J148	1	132	222.23	39.1
0	J150	0	118	214.09	41.64
0	J152	0	118	214.09	41.64
0	J154	0	90.3	225.17	58.44
0	J156	0	115.5	236.85	52.58
0	J158	0	115.5	236.85	52.58
0	J160	0	128	215.23	37.8
0	J162	1	128	215.23	37.8
0	J164	0	98	213.63	50.1
0	J166	0	98	213.63	50.1
0	J168	0	115.25	225.2	47.64
0	J170	0	120	236.77	50.6
0	J172	0	120	236.77	50.6
0	J174	0	123	214.32	39.57
0	J176	0	123	214.32	39.57
0	J178	0	94	214.21	52.09
0	J180	0	94	214.21	52.09
0	J182	0	118	227.01	47.23
0	J184	0	118	216.39	42.63
0	J186	0	118	216.39	42.63
0	J188	0	126	225.95	43.31
0	J190	0	126	225.92	43.3
0	J192	0	126	225.89	43.28
0	J194	0	126	225.87	43.27
0	J196	0	99.75	225.97	54.69
0	J198	0	95.5	225.11	56.16
0	J20	88.12	90.4	225.19	58.4
0	J206	0	100	214.43	49.58
0	J208	0	100	214.43	49.58
0	J210	0	102	213.57	48.34
0	J212	0	102	213.57	48.34
0	J214	0	102	213.57	48.34
0	J216	0	100	215.32	49.97
0	J218	0	100	215.32	49.97
0	J22	83.72	118.5	225.23	46.25
0	J220	101.88	116	225.23	47.33
0	J222	100.8	119.1	225.36	46.04

0	J224	0	118	227.93	47.63
0	J226	0	130	230.9	43.72
0	J228	0	116	245.33	56.04
0	J230	0	147	253.78	46.27
0	J232	0	148	264.24	50.37
0	J236	4,855.86	166	302.9	59.32
0	J238	2,427.93	181	283.21	44.29
0	J240	0	164	304.12	60.71
0	J242	0	148	265.39	50.86
0	J244	0	148	264.39	50.43
0	J246	2,427.93	146	267.12	52.48
0	J252	0	164.3	304.97	60.95
0	J26	176.4	115.5	225.31	47.58
0	J260	0	164.48	305.11	60.93
0	J262	0	164.48	305.22	60.98
0	J264	0	167.47	308.9	61.28
0	J266	0	167.47	309.13	61.38
0	J268	0	167.47	309.36	61.48
0	J270	0	167.47	309.51	61.55
0	J272	0	167.47	309.6	61.58
0	J274	0	167.47	310.25	61.87
0	J276	0	167.47	310.37	61.92
0	J278	0	164.48	167.81	1.44
0	J28	69.56	118.6	225.63	46.38
0	J280	0	164.48	167.81	1.44
0	J282	0	164.48	167.82	1.45
0	J286	0	164.48	167.74	1.41
0	J288	0	164.48	167.75	1.42
0	J290	0	164.48	167.8	1.44
0	J292	0	164.48	167.89	1.48
0	J294	0	164.48	168.12	1.58
0	J296	0	164.57	168.42	1.67
0	J298	0	164.22	169.51	2.29
0	J30	88.84	122.2	225.87	44.92
0	J300	0	127.5	236.72	47.32
0	J302	0	128	237.07	47.26
0	J304	0	142	242.5	43.55
0	J308	0	163	170.17	3.11
0	J310	0	165.5	171.44	2.57
0	J312	0	164.48	167.86	1.46
0	J32	186.96	126	226.4	43.5
0	J328	0	167.47	317.92	65.19
0	J330	0	167.47	317.18	64.87
0	J332	0	167.47	316.96	64.77
0	J334	0	167.47	316.54	64.59
0	J336	0	167.47	317.8	65.14
0	J338	0	167.47	317.11	64.84
0	J34	0	134	227.32	40.44
0	J340	0	167.47	309.13	61.38
0	J36	0	137	229.37	40.03
0	J38	159.4	90.2	225.12	58.46
0	J40	276.4	90	225.12	58.55
0	J42	275.76	101	225.11	53.78
0	J44	187.48	111	225.14	49.46
0	J46	158.08	113	225.18	48.61
0	J48	153.24	114.7	225.19	47.87
0	J50	153.16	120	225.52	45.72
0	J52	305.04	126	225.96	43.31
0	J54	152.56	127.6	225.87	42.58
0	J56	140.08	121.9	225.86	45.04
0	J58	195.88	126	225.87	43.28

0	J60	86.28	124.5	225.86	43.92
0	J62	188.24	122	226.01	45.07
0	J64	139.6	127	226.05	42.92
0	J66	88.44	130.5	226.53	41.61
0	J68	90.28	88	225.67	59.65
0	J70	185.32	97.5	225.75	55.57
0	J72	210.48	102	226.24	53.83
0	J74	209.16	108	226.56	51.37
0	J76	185.8	128	227.48	43.1
0	J78	321.4	126	227.6	44.02
0	J82	0	126.4	226.78	43.49
0	J84	47.4	76	225.87	64.94
0	J86	98.24	78	226.24	64.23
0	J88	84.08	88.4	226.71	59.93
0	J90	104.92	104	226.86	53.24
0	J92	106.24	98	226.4	55.64
0	J94	100.96	107	227.52	52.22
0	J96	81.92	116	228.36	48.69

	ID	Flow (gpm)	Head (ft)
0	RES9010	-15,599.96	171.44

	ID	Elevation (ft)	Upstream Pre	Downstream	Flow (gpm)	Head Gain (ft	Status	Setting	Available NPS	Cavitation Inc
0	U7002	153.8	5.87	73.73	2,593.68	156.62	Open	1	46.68	0
0	U7004	153.8	5.83	73.42	2,600.19	156	Open	1	46.59	0
0	U7006	153.8	5.81	73.33	2,601.90	155.83	Open	1	46.55	0
0	U7008	153.8	5.81	73.16	2,608.55	155.45	Open	1	46.53	0
0	U7010	153.8	5.85	73.68	2,594.42	156.55	Open	1	46.63	0
0	U7012	153.8	5.84	73.39	2,601.23	155.9	Open	1	46.62	0
0	U7014	153.8	6.07	67.31	0	0	Closed	0	0	0

	ID	Diameter (in)	Elevation (ft)	Upstream Pre	Downstream	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	Status	Setting
0	V8000	8	122	45.07	50.07	0	0	11.54	Open	5
0	V8002	8	122	45	50.07	0	0	0	Closed	5
0	V8008	10	132	44.13	39.1	1	0	11.61	Open	2
0	V8010	10	132	41.07	39.1	0	0	0	Closed	2
0	V8012	8	118	46.5	41.64	0	0	0	Closed	5
0	V8014	8	118	46.64	41.64	0	0	11.54	Open	5
0	V8016	8	115.5	47.58	52.58	0	0	11.54	Open	5
0	V8018	8	115.5	47.55	52.58	0	0	0	Closed	5
0	V8020	8	128	42.83	37.8	1	0.01	11.6	Open	5
0	V8022	8	128	42.63	37.8	0	0	0	Closed	5
0	V8024	8	98	55.08	50.1	0	0	0	Closed	5
0	V8026	8	98	55.1	50.1	0	0	11.54	Open	5
0	V8028	10	120	45.58	50.6	0	0	0	Closed	2
0	V8032	8	123	44.57	39.57	0	0	11.54	Open	5
0	V8034	8	123	44.63	39.57	0	0	0	Closed	5
0	V8036	8	94	57.14	52.09	0	0	0	Closed	5
0	V8038	8	94	57.09	52.09	0	0	11.54	Open	5
0	V8042	10	118	47.63	42.63	0	0	11.54	Open	2
0	V8044	10	118	47.23	42.63	0	0	0	Closed	2
0	V8052	10	100	54.49	49.58	0	0	0	Closed	2
0	V8054	10	100	54.58	49.58	0	0	11.54	Open	2
0	V8056	8	102	53.34	48.34	0	0	11.54	Open	5
0	V8058	8	102	53.35	48.34	0	0	0	Closed	5
0	V8060	8	100	54.9	49.97	0	0	0	Closed	5
0	V8062	8	100	54.97	49.97	0	0	11.54	Open	5
0	V8070	10	120	45.59	50.6	0	0	11.54	Open	2

	ID	From Node	To Node	Length (ft)	Diameter (in)	Roughness	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	HL/1000 (ft/k
0	P101	J72	J92	810.17	12	130	-249.43	0.71	0.16	0.19

0	P103	J92	J90	1,241.83	12	130	-355.67	1.01	0.46	0.37
0	P105	J90	J94	1,132.34	16	130	-960.73	1.53	0.66	0.58
0	P107	J94	J96	1,204.53	16	130	-1,061.69	1.69	0.84	0.7
0	P111	J78	J100	1,067.79	16	130	-1,872.31	2.99	2.13	1.99
0	P115	J96	J100	886.7	16	130	-1,628.87	2.6	1.37	1.54
0	P117	J100	J102	789.56	20	130	-3,702.58	3.78	1.88	2.38
0	P119	J102	J104	941.88	20	130	-3,702.58	3.78	2.24	2.38
0	P121	J104	J300	1,197.93	20	130	-3,721.22	3.8	2.87	2.4
0	P123	J300	J302	147.08	20	130	-3,721.22	3.8	0.35	2.4
0	P125	J302	J304	2,260.56	20	130	-3,721.22	3.8	5.43	2.4
0	P139	J122	J124	627.68	12	130	-246.92	0.7	0.12	0.19
0	P141	J124	J60	1,242.80	12	130	-380.44	1.08	0.53	0.42
0	P145	J34	J126	846.23	20	130	1,716.94	1.75	0.48	0.57
0	P149	J66	J128	522.48	8	130	-79.27	0.51	0.09	0.17
0	P155	J126	J130	441.09	8	130	79.27	0.51	0.07	0.17
0	P157	J128	J130	886.05	8	130	-79.27	0.51	0.15	0.17
0	P159	J126	J32	843.52	20	130	1,636.67	1.67	0.44	0.52
0	P161	J66	J132	415.81	8	130	0	0	0	0
0	P163	J64	J136	338.87	8	130	0	0	0	0
0	P165	J136	J134	525.67	8	130	0	0	0	0
0	P167	J132	J134	848.01	8	130	0	0	0	0
0	P17	J20	J22	1,133.08	16	130	-217.51	0.35	0.04	0.04
0	P171	V8000	J138	423.5	10	130	0	0	0	0
0	P173	J138	J140	355.5	10	130	0	0	0	0
0	P177	V8002	J140	603.42	10	130	0	0	0	0
0	P179	J30	V8002	454.21	10	130	0	0	0	0
0	P181	J62	V8000	384.46	10	130	0	0	0	0
0	P19	J22	J26	1,147.36	16	130	-301.23	0.48	0.08	0.07
0	P193	J104	V8008	482.89	12	130	1	0	0	0
0	P195	J82	V8010	213.6	12	130	0	0	0	0
0	P197	V8010	J146	842.68	12	130	0	0	0	0
0	P199	J146	J148	514.03	12	130	0	0	0	0
0	P201	V8008	J148	1,114.81	12	130	1	0	0	0
0	P203	J26	V8012	268.73	10	130	0	0	0	0
0	P205	J28	V8014	295.03	10	130	0	0	0	0
0	P207	V8014	J152	482.16	10	130	0	0	0	0
0	P209	V8012	J150	236	10	130	0	0	0	0
0	P21	J26	J28	1,118.04	16	130	-660.01	1.05	0.32	0.29
0	P211	J152	J150	798.51	10	130	0	0	0	0
0	P213	J20	J154	348.19	12	130	129.39	0.37	0.02	0.06
0	P215	J154	J38	842.54	12	130	129.39	0.37	0.05	0.06
0	P217	J26	V8016	273.58	10	130	0	0	0	0
0	P219	J22	V8018	229.2	10	130	0	0	0	0
0	P221	V8018	J156	462.48	10	130	0	0	0	0
0	P223	V8016	J158	716.7	10	130	0	0	0	0
0	P225	J158	J156	802.77	10	130	0	0	0	0
0	P227	J32	V8022	269.66	10	130	0	0	0	0
0	P229	V8022	J160	385.74	10	130	0	0	0	0
0	P23	J28	J30	679.9	16	130	-729.57	1.16	0.24	0.35
0	P231	J126	V8020	259.39	10	130	1	0	0	0
0	P233	V8020	J162	510.51	10	130	1	0	0	0
0	P235	J160	J162	392.51	10	130	0	0	0	0
0	P237	J38	V8024	301.75	10	130	0	0	0	0
0	P239	J154	V8026	160.09	10	130	0	0	0	0
0	P241	V8026	J166	918.28	10	130	0	0	0	0
0	P243	J166	J164	455.03	10	130	0	0	0	0
0	P245	V8024	J164	882.35	10	130	0	0	0	0
0	P247	J46	J168	532.6	12	130	-95.36	0.27	0.02	0.03
0	P249	J168	J122	563.66	12	130	-95.36	0.27	0.02	0.03
0	P25	J30	J32	1,229.93	16	130	-818.41	1.31	0.53	0.43
0	P251	J168	V8028	209.52	12	130	0	0	0	0

0	P253	V8028	J170	652.72	12	130	0	0	0	0
0	P255	J170	J172	387.16	12	130	0	0	0	0
0	P261	J60	V8032	268.68	10	130	0	0	0	0
0	P263	V8032	J174	918.23	10	130	0	0	0	0
0	P265	J174	J176	448.57	10	130	0	0	0	0
0	P267	J62	V8034	292.8	10	130	0	0	0	0
0	P269	V8034	J176	916.13	10	130	0	0	0	0
0	P271	J70	V8038	242.57	10	130	0	0	0	0
0	P273	J84	V8036	324.38	10	130	0	0	0	0
0	P275	V8036	J180	319.74	10	130	0	0	0	0
0	P277	J180	J178	347.95	10	130	0	0	0	0
0	P279	V8038	J178	632.77	10	130	0	0	0	0
0	P281	J76	J182	613.97	12	130	521.84	1.48	0.47	0.76
0	P283	J182	J74	589.22	12	130	521.84	1.48	0.45	0.76
0	P287	V8042	J184	372.65	12	130	0	0	0	0
0	P289	J184	J186	299.52	12	130	0	0	0	0
0	P29	J34	J36	2,325.70	20	130	-2,167.02	2.21	2.05	0.88
0	P295	J182	V8044	226.67	12	130	0	0	0	0
0	P297	V8044	J186	240.53	12	130	0	0	0	0
0	P299	J52	J188	313.33	8	130	38.09	0.24	0.01	0.04
0	P301	J188	J190	664.92	8	130	38.09	0.24	0.03	0.04
0	P303	J56	J194	178.12	8	130	-38.09	0.24	0.01	0.04
0	P305	J194	J192	667.8	8	130	-38.09	0.24	0.03	0.04
0	P307	J192	J190	657.08	8	130	-38.09	0.24	0.03	0.04
0	P309	J72	J196	736.36	12	130	351.62	1	0.27	0.37
0	P311	J196	J70	609.66	12	130	351.62	1	0.22	0.37
0	P313	J40	J198	1,129.17	12	130	40.05	0.11	0.01	0.01
0	P315	J198	J42	1,043.66	12	130	40.05	0.11	0.01	0.01
0	P329	J70	V8052	185.71	12	130	0	0	0	0
0	P33	J38	J40	1,179.71	12	130	-30.01	0.09	0	0
0	P331	V8052	J206	525.44	12	130	0	0	0	0
0	P333	J196	V8054	178.3	12	130	0	0	0	0
0	P335	V8054	J208	525.19	12	130	0	0	0	0
0	P337	J208	J206	475.84	12	130	0	0	0	0
0	P341	J198	V8058	154.71	10	130	0	0	0	0
0	P343	V8058	J214	421.16	10	130	0	0	0	0
0	P345	J214	J210	577.05	10	130	0	0	0	0
0	P347	J42	V8056	297.78	10	130	0	0	0	0
0	P349	V8056	J212	569.55	10	130	0	0	0	0
0	P351	J212	J210	1,312.90	10	130	0	0	0	0
0	P353	J88	V8060	266.49	10	130	0	0	0	0
0	P355	V8060	J216	322.62	10	130	0	0	0	0
0	P357	J90	V8062	226.9	10	130	0	0	0	0
0	P359	V8062	J218	739.72	10	130	0	0	0	0
0	P361	J218	J216	604.58	10	130	0	0	0	0
0	P363	J56	J222	1,322.36	12	130	358.8	1.02	0.5	0.38
0	P365	J222	J220	621.17	12	130	258	0.73	0.13	0.21
0	P367	J220	J44	1,095.19	12	130	156.12	0.44	0.09	0.08
0	P37	J26	J46	1,141.00	12	130	182.37	0.52	0.12	0.11
0	P379	J76	J224	678.87	12	130	-485.26	1.38	0.45	0.66
0	P381	J224	V8042	158.85	12	130	0	0	0	0
0	P39	J46	J44	879.87	12	130	119.65	0.34	0.04	0.05
0	P393	J226	J36	1,733.97	20	130	2,167.02	2.21	1.53	0.88
0	P395	J96	J224	650.52	12	130	485.26	1.38	0.43	0.66
0	P399	J232	J230	2,608.50	18	130	3,721.22	4.69	10.46	4.01
0	P401	J230	J304	2,813.67	18	130	3,721.22	4.69	11.28	4.01
0	P403	J232	J228	7,230.92	16	130	2,167.02	3.46	18.9	2.61
0	P405	J228	J226	5,520.22	16	130	2,167.02	3.46	14.43	2.61
0	P41	J44	J42	1,067.11	12	130	88.29	0.25	0.03	0.03
0	P415	J220	V8070	127.05	12	130	0	0	0	0
0	P417	V8070	J172	78.54	12	130	0	0	0	0

0	P421	J240	J236	955.52	36	130	12,391.83	3.91	1.21	1.27
0	P423	J236	J238	5,398.38	24	130	7,535.97	5.34	19.69	3.65
0	P425	J238	J246	9,066.36	24	130	5,108.04	3.62	16.1	1.78
0	P427	J246	J244	5,073.87	24	130	2,680.11	1.9	2.73	0.54
0	P429	J240	J242	7,163.69	16	130	3,208.13	5.12	38.73	5.41
0	P43	J42	J48	1,096.37	12	130	-147.43	0.42	0.08	0.07
0	P431	J242	J232	213.31	16	130	3,208.13	5.12	1.15	5.41
0	P433	J244	J232	281.24	24	130	2,680.11	1.9	0.15	0.54
0	P439	RES9010	J310	68.78	1,100.00	130	15,599.96	0.01	0	0
0	P441	J310	J308	18	36	130	15,599.96	4.92	1.27	70.77
0	P443	J308	J298	106.2	36	130	15,599.96	4.92	0.66	6.19
0	P445	J298	J296	55.4	36	130	15,599.96	4.92	1.08	19.57
0	P447	J296	J294	78.5	36	130	15,599.96	4.92	0.3	3.86
0	P449	J294	J292	19	30	130	10,404.31	4.72	0.24	12.44
0	P45	J48	J50	1,194.62	12	130	-300.67	0.85	0.33	0.27
0	P451	J292	J290	9.2	30	130	7,810.63	3.55	0.09	9.8
0	P453	J290	J288	9.2	30	130	5,210.44	2.36	0.04	4.4
0	P455	J288	J286	9.2	30	130	2,608.55	1.18	0.01	1.12
0	P461	J282	J280	9.2	30	130	2,601.23	1.18	0.01	1.11
0	P463	J280	J278	9.2	30	130	0	0	0	0
0	P465	J292	U7002	20.6	18	130	2,593.68	3.27	0.54	26.23
0	P469	J290	U7004	20.6	18	130	2,600.19	3.28	0.54	26.37
0	P47	J50	J52	765.09	12	130	-453.83	1.29	0.45	0.59
0	P473	J288	U7006	20.6	18	130	2,601.90	3.28	0.54	26.4
0	P477	J286	U7008	20.6	18	130	2,608.55	3.29	0.55	26.53
0	P481	J282	U7010	12.1	18	130	2,594.42	3.27	0.52	43.24
0	P485	J280	U7012	12.1	18	130	2,601.23	3.28	0.53	43.47
0	P489	J278	U7014	12.1	18	130	0	0	0	0
0	P49	J32	J62	1,463.77	16	130	631.3	1.01	0.39	0.27
0	P493	J276	J274	4.9	16	130	2,593.68	4.14	0.12	25.36
0	P495	J274	J272	4.2	16	130	5,188.10	8.28	0.65	155.04
0	P497	J272	J270	4.7	30	130	7,788.29	3.54	0.08	17.82
0	P499	J270	J268	4.7	30	130	10,389.52	4.72	0.15	31.61
0	P501	J268	J266	4.7	30	130	12,991.42	5.9	0.23	49.32
0	P503	J266	J264	4.7	30	130	12,991.42	5.9	0.23	49.32
0	P505	J264	J262	60.6	30	130	15,599.96	7.08	3.68	60.74
0	P507	J262	J260	20.3	36	130	15,599.96	4.92	0.11	5.65
0	P509	J260	J252	30.38	36	130	15,599.96	4.92	0.13	4.42
0	P51	J34	J66	1,373.58	12	130	450.08	1.28	0.79	0.58
0	P511	J252	J240	90.5	36	130	15,599.96	4.92	0.85	9.41
0	P513	J294	J312	36.2	30	130	5,195.65	2.36	0.26	7.3
0	P515	J312	J282	31.2	30	130	5,195.65	2.36	0.04	1.17
0	P517	U7002	J328	15	12	130	2,593.68	7.36	6.04	402.57
0	P519	J328	J276	9.1	14	130	2,593.68	5.41	7.55	829.62
0	P521	U7004	J330	15	12	130	2,600.19	7.38	6.07	404.59
0	P523	J330	J272	9.1	14	130	2,600.19	5.42	7.59	833.79
0	P525	U7006	J332	15	12	130	2,601.90	7.38	6.08	405.12
0	P527	J332	J268	9.1	14	130	2,601.90	5.42	7.6	834.88
0	P529	U7008	J334	15	12	130	2,608.55	7.4	6.11	407.19
0	P53	J66	J64	862.35	12	130	440.9	1.25	0.48	0.56
0	P531	J334	J264	9.1	14	130	2,608.55	5.44	7.64	839.15
0	P533	U7010	J336	15	12	130	2,594.42	7.36	6.04	402.8
0	P535	J336	J274	9.1	14	130	2,594.42	5.41	7.55	830.09
0	P537	U7012	J338	15	12	130	2,601.23	7.38	6.07	404.91
0	P539	J338	J270	9.1	14	130	2,601.23	5.42	7.59	834.45
0	P541	U7014	J340	15	12	130	0	0	0	0
0	P543	J340	J266	9.1	14	130	0	0	0	0
0	P55	J62	J64	1,082.76	12	130	-106.63	0.3	0.04	0.04
0	P57	J62	J60	691.6	16	130	549.7	0.88	0.14	0.21
0	P59	J64	J58	1,424.22	12	130	194.67	0.55	0.17	0.12
0	P61	J60	J56	890.62	16	130	82.98	0.13	0.01	0.01

0	P67	J56	J52	1,036.48	16	130	-377.81	0.6	0.11	0.1
0	P69	J52	J54	1,131.15	12	130	153.77	0.44	0.09	0.08
0	P71	J58	J54	591.64	12	130	-1.21	0	0	0
0	P73	J40	J68	1,551.82	12	130	-346.45	0.98	0.55	0.36
0	P75	J68	J70	838.54	12	130	-166.3	0.47	0.08	0.09
0	P79	J72	J74	1,086.50	12	130	-312.68	0.89	0.32	0.29
0	P83	J76	J78	765.46	12	130	-222.38	0.63	0.12	0.16
0	P89	J52	J82	771.55	16	130	-1,328.53	2.12	0.82	1.06
0	P91	J82	J78	774.7	16	130	-1,328.53	2.12	0.82	1.06
0	P93	J68	J84	890.35	12	130	-270.43	0.77	0.2	0.22
0	P95	J84	J86	1,204.21	12	130	-317.83	0.9	0.37	0.3
0	P97	J86	J88	946.69	12	130	-416.07	1.18	0.47	0.5
0	P99	J88	J90	874.98	16	130	-500.15	0.8	0.15	0.17

Run EB4

	ID	Demand (gpr	Elevation (ft)	Head (ft)	Pressure (psi)
0	J100	100.7	122	224.26	44.31
0	J102	0	125.5	225.2	43.2
0	J104	9.32	129.8	226.32	41.82
0	J122	75.78	117.5	222.72	45.59
0	J124	66.76	119.5	222.75	44.74
0	J126	0	130	224.59	40.98
0	J128	0	133	224.25	39.54
0	J130	0	134	224.47	39.2
0	J132	0	131	224.11	40.35
0	J134	0	131	224.11	40.35
0	J136	0	131	224.11	40.35
0	J138	0	122	211.73	38.88
0	J140	0	122	211.73	38.88
0	J146	2,000.00	132	203.34	30.91
0	J148	2,000.00	132	203.34	30.91
0	J150	0	118	211.83	40.66
0	J152	0	118	211.83	40.66
0	J154	0	90.3	222.84	57.43
0	J156	0	115.5	234.56	51.59
0	J158	0	115.5	234.56	51.59
0	J160	0	128	236.13	46.85
0	J162	0	128	236.13	46.85
0	J164	0	98	234.38	59.09
0	J166	0	98	234.38	59.09
0	J168	0	115.25	222.72	46.57
0	J170	0	120	234.08	49.43
0	J172	0	120	234.08	49.43
0	J174	0	123	234.42	48.28
0	J176	0	123	234.42	48.28
0	J178	0	94	234.32	60.8
0	J180	0	94	234.32	60.8
0	J182	0	118	222.97	45.48
0	J184	0	118	234.9	50.65
0	J186	0	118	234.9	50.65
0	J188	0	126	222.57	41.84
0	J190	0	126	222.57	41.84
0	J192	0	126	222.57	41.84
0	J194	0	126	222.57	41.84
0	J196	0	99.75	222.82	53.33
0	J198	0	95.5	222.55	55.05
0	J20	44.06	90.4	222.89	57.41
0	J206	0	100	234.36	58.22
0	J208	0	100	234.36	58.22
0	J210	0	102	210.92	47.2
0	J212	0	102	210.92	47.2

0	J214	0	102	210.92	47.2
0	J216	0	100	234.69	58.36
0	J218	0	100	234.69	58.36
0	J22	41.86	118.5	222.94	45.26
0	J220	50.94	116	222.54	46.16
0	J222	50.4	119.1	222.54	44.82
0	J224	0	118	223.36	45.65
0	J226	0	130	229.52	43.12
0	J228	0	116	247.1	56.81
0	J230	0	147	255.05	46.82
0	J232	0	148	270.13	52.92
0	J236	2,427.93	166	306.06	60.69
0	J238	1,213.97	181	291.88	48.04
0	J240	0	164	306.7	61.83
0	J242	0	148	271.19	53.38
0	J244	0	148	270.43	53.05
0	J246	1,213.97	146	275.85	56.26
0	J252	0	164.3	307.19	61.91
0	J26	88.2	115.5	223.02	46.59
0	J260	0	164.48	307.27	61.87
0	J262	0	164.48	307.33	61.9
0	J264	0	167.47	309.44	61.52
0	J266	0	167.47	309.59	61.58
0	J268	0	167.47	309.74	61.65
0	J270	0	167.47	309.83	61.68
0	J272	0	167.47	309.91	61.72
0	J274	0	167.47	310.57	62.01
0	J276	0	167.47	310.7	62.06
0	J278	0	164.48	169.45	2.15
0	J28	34.78	118.6	223.37	45.4
0	J280	0	164.48	169.45	2.15
0	J282	0	164.48	169.45	2.15
0	J286	0	164.48	169.25	2.07
0	J288	0	164.48	169.26	2.07
0	J290	0	164.48	169.28	2.08
0	J292	0	164.48	169.34	2.11
0	J294	0	164.48	169.53	2.19
0	J296	0	164.57	169.71	2.23
0	J298	0	164.22	170.33	2.65
0	J30	44.42	122.2	223.6	43.94
0	J300	0	127.5	230.46	44.61
0	J302	0	128	230.97	44.62
0	J304	0	142	238.79	41.94
0	J308	0	163	170.71	3.34
0	J310	0	165.5	171.44	2.57
0	J312	0	164.48	169.46	2.16
0	J32	93.48	126	224.07	42.49
0	J328	0	167.47	318.31	65.36
0	J330	0	167.47	317.56	65.03
0	J332	0	167.47	317.4	64.96
0	J334	0	167.47	311.54	62.43
0	J336	0	167.47	318.19	65.31
0	J338	0	167.47	309.83	61.68
0	J34	0	134	225.16	39.5
0	J340	0	167.47	309.59	61.58
0	J36	0	137	227.66	39.28
0	J38	79.7	90.2	222.71	57.42
0	J40	138.2	90	222.64	57.47
0	J42	137.88	101	222.46	52.63
0	J44	93.74	111	222.54	48.33
0	J46	79.04	113	222.71	47.54

0	J48	76.62	114.7	222.37	46.65
0	J50	76.58	120	222.34	44.34
0	J52	152.52	126	222.34	41.74
0	J54	76.28	127.6	222.51	41.13
0	J56	70.04	121.9	222.57	43.62
0	J58	97.94	126	222.67	41.89
0	J60	43.14	124.5	222.88	42.63
0	J62	94.12	122	223.27	43.88
0	J64	69.8	127	223.32	41.74
0	J66	44.72	130.5	224.11	40.56
0	J68	45.14	88	222.77	58.4
0	J70	92.66	97.5	222.78	54.28
0	J72	105.24	102	222.88	52.38
0	J74	104.58	108	222.9	49.79
0	J76	92.9	128	223.04	41.18
0	J78	160.7	126	223	42.03
0	J82	0	126.4	222.12	41.48
0	J84	23.7	76	222.84	63.62
0	J86	49.12	78	222.96	62.81
0	J88	42.04	88.4	223.11	58.37
0	J90	52.46	104	223.15	51.63
0	J92	53.12	98	222.96	54.14
0	J94	50.48	107	223.38	50.43
0	J96	40.96	116	223.67	46.65

	ID	Flow (gpm)	Head (ft)
0	RES9010	-11,799.99	171.44

	ID	Elevation (ft)	Upstream Pre	Downstream	Flow (gpm)	Head Gain (ft	Status	Setting	Available NPS	Cavitation Inc
0	U7002	153.8	6.5	73.92	2,604.19	155.59	Open	1	48.13	0
0	U7004	153.8	6.47	73.61	2,610.57	154.95	Open	1	48.07	0
0	U7006	153.8	6.46	73.54	2,611.87	154.81	Open	1	48.04	0
0	U7008	153.8	6.63	69.08	1,366.93	144.12	Open	1	48.4	0
0	U7010	153.8	6.55	73.87	2,606.43	155.37	Open	1	48.26	0
0	U7012	153.8	6.78	67.61	0	0	Closed	0	0	0
0	U7014	153.8	6.78	67.51	0	0	Closed	0	0	0

	ID	Diameter (in)	Elevation (ft)	Upstream Pre	Downstream	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	Status	Setting
0	V8000	8	122	43.88	38.88	0	0	11.54	Open	5
0	V8002	8	122	44.02	38.88	0	0	0	Closed	5
0	V8008	10	132	39	35.23	1,975.42	8.07	8.69	Open	2
0	V8010	10	132	38.18	34.33	2,024.58	8.27	8.89	Open	2
0	V8012	8	118	45.51	40.66	0	0	0	Closed	5
0	V8014	8	118	45.66	40.66	0	0	11.54	Open	5
0	V8016	8	115.5	46.59	51.59	0	0	11.54	Open	5
0	V8018	8	115.5	46.56	51.59	0	0	0	Closed	5
0	V8020	8	128	41.85	46.85	0	0	11.54	Open	5
0	V8022	8	128	41.63	46.85	0	0	0	Closed	5
0	V8024	8	98	54.04	59.09	0	0	0	Closed	5
0	V8026	8	98	54.09	59.09	0	0	11.54	Open	5
0	V8028	10	120	44.51	49.43	0	0	0	Closed	2
0	V8032	8	123	43.28	48.28	0	0	11.54	Open	5
0	V8034	8	123	43.45	48.28	0	0	0	Closed	5
0	V8036	8	94	55.83	60.8	0	0	0	Closed	5
0	V8038	8	94	55.8	60.8	0	0	11.54	Open	5
0	V8042	10	118	45.65	50.65	0	0	11.54	Open	2
0	V8044	10	118	45.48	50.65	0	0	0	Closed	2
0	V8052	10	100	53.2	58.22	0	0	0	Closed	2
0	V8054	10	100	53.22	58.22	0	0	11.54	Open	2
0	V8056	8	102	52.2	47.2	0	0	11.54	Open	5
0	V8058	8	102	52.23	47.2	0	0	0	Closed	5

0	V8060	8	100	53.34	58.36	0	0	0	Closed	5
0	V8062	8	100	53.36	58.36	0	0	11.54	Open	5
0	V8070	10	120	44.43	49.43	0	0	11.54	Open	2

	ID	From Node	To Node	Length (ft)	Diameter (in)	Roughness	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	HL/1000 (ft/k
0	P101	J72	J92	810.17	12	130	-171.23	0.49	0.08	0.1
0	P103	J92	J90	1,241.83	12	130	-224.35	0.64	0.2	0.16
0	P105	J90	J94	1,132.34	16	130	-541.96	0.86	0.23	0.2
0	P107	J94	J96	1,204.53	16	130	-592.44	0.95	0.29	0.24
0	P111	J78	J100	1,067.79	16	130	-1,411.07	2.25	1.26	1.18
0	P115	J96	J100	886.7	16	130	-1,037.00	1.65	0.59	0.67
0	P117	J100	J102	789.56	20	130	-2,548.77	2.6	0.94	1.19
0	P119	J102	J104	941.88	20	130	-2,548.77	2.6	1.12	1.19
0	P121	J104	J300	1,197.93	20	130	-4,533.50	4.63	4.14	3.46
0	P123	J300	J302	147.08	20	130	-4,533.50	4.63	0.51	3.46
0	P125	J302	J304	2,260.56	20	130	-4,533.50	4.63	7.82	3.46
0	P139	J122	J124	627.68	12	130	-112.3	0.32	0.03	0.04
0	P141	J124	J60	1,242.80	12	130	-179.06	0.51	0.13	0.1
0	P145	J34	J126	846.23	20	130	1,886.98	1.93	0.58	0.68
0	P149	J66	J128	522.48	8	130	-100.06	0.64	0.13	0.26
0	P155	J126	J130	441.09	8	130	100.06	0.64	0.11	0.26
0	P157	J128	J130	886.05	8	130	-100.06	0.64	0.23	0.26
0	P159	J126	J32	843.52	20	130	1,786.92	1.82	0.52	0.62
0	P161	J66	J132	415.81	8	130	0	0	0	0
0	P163	J64	J136	338.87	8	130	0	0	0	0
0	P165	J136	J134	525.67	8	130	0	0	0	0
0	P167	J132	J134	848.01	8	130	0	0	0	0
0	P17	J20	J22	1,133.08	16	130	-258.23	0.41	0.06	0.05
0	P171	V8000	J138	423.5	10	130	0	0	0	0
0	P173	J138	J140	355.5	10	130	0	0	0	0
0	P177	V8002	J140	603.42	10	130	0	0	0	0
0	P179	J30	V8002	454.21	10	130	0	0	0	0
0	P181	J62	V8000	384.46	10	130	0	0	0	0
0	P19	J22	J26	1,147.36	16	130	-300.09	0.48	0.08	0.07
0	P193	J104	V8008	482.89	12	130	1,975.42	5.6	4.32	8.94
0	P195	J82	V8010	213.6	12	130	2,024.58	5.74	2	9.36
0	P197	V8010	J146	842.68	12	130	2,024.58	5.74	7.89	9.36
0	P199	J146	J148	514.03	12	130	24.58	0.07	0	0
0	P201	V8008	J148	1,114.81	12	130	1,975.42	5.6	9.97	8.94
0	P203	J26	V8012	268.73	10	130	0	0	0	0
0	P205	J28	V8014	295.03	10	130	0	0	0	0
0	P207	V8014	J152	482.16	10	130	0	0	0	0
0	P209	V8012	J150	236	10	130	0	0	0	0
0	P21	J26	J28	1,118.04	16	130	-685.75	1.09	0.35	0.31
0	P211	J152	J150	798.51	10	130	0	0	0	0
0	P213	J20	J154	348.19	12	130	214.17	0.61	0.05	0.15
0	P215	J154	J38	842.54	12	130	214.17	0.61	0.12	0.15
0	P217	J26	V8016	273.58	10	130	0	0	0	0
0	P219	J22	V8018	229.2	10	130	0	0	0	0
0	P221	V8018	J156	462.48	10	130	0	0	0	0
0	P223	V8016	J158	716.7	10	130	0	0	0	0
0	P225	J158	J156	802.77	10	130	0	0	0	0
0	P227	J32	V8022	269.66	10	130	0	0	0	0
0	P229	V8022	J160	385.74	10	130	0	0	0	0
0	P23	J28	J30	679.9	16	130	-720.53	1.15	0.23	0.34
0	P231	J126	V8020	259.39	10	130	0	0	0	0
0	P233	V8020	J162	510.51	10	130	0	0	0	0
0	P235	J160	J162	392.51	10	130	0	0	0	0
0	P237	J38	V8024	301.75	10	130	0	0	0	0
0	P239	J154	V8026	160.09	10	130	0	0	0	0
0	P241	V8026	J166	918.28	10	130	0	0	0	0

0	P243	J166	J164	455.03	10	130	0	0	0	0
0	P245	V8024	J164	882.35	10	130	0	0	0	0
0	P247	J46	J168	532.6	12	130	-36.52	0.1	0	0.01
0	P249	J168	J122	563.66	12	130	-36.52	0.1	0	0.01
0	P25	J30	J32	1,229.93	16	130	-764.95	1.22	0.47	0.38
0	P251	J168	V8028	209.52	12	130	0	0	0	0
0	P253	V8028	J170	652.72	12	130	0	0	0	0
0	P255	J170	J172	387.16	12	130	0	0	0	0
0	P261	J60	V8032	268.68	10	130	0	0	0	0
0	P263	V8032	J174	918.23	10	130	0	0	0	0
0	P265	J174	J176	448.57	10	130	0	0	0	0
0	P267	J62	V8034	292.8	10	130	0	0	0	0
0	P269	V8034	J176	916.13	10	130	0	0	0	0
0	P271	J70	V8038	242.57	10	130	0	0	0	0
0	P273	J84	V8036	324.38	10	130	0	0	0	0
0	P275	V8036	J180	319.74	10	130	0	0	0	0
0	P277	J180	J178	347.95	10	130	0	0	0	0
0	P279	V8038	J178	632.77	10	130	0	0	0	0
0	P281	J76	J182	613.97	12	130	185.37	0.53	0.07	0.11
0	P283	J182	J74	589.22	12	130	185.37	0.53	0.07	0.11
0	P287	V8042	J184	372.65	12	130	0	0	0	0
0	P289	J184	J186	299.52	12	130	0	0	0	0
0	P29	J34	J36	2,325.70	20	130	-2,410.62	2.46	2.5	1.07
0	P295	J182	V8044	226.67	12	130	0	0	0	0
0	P297	V8044	J186	240.53	12	130	0	0	0	0
0	P299	J52	J188	313.33	8	130	0	0	0	0
0	P301	J188	J190	664.92	8	130	0	0	0	0
0	P303	J56	J194	178.12	8	130	0	0	0	0
0	P305	J194	J192	667.8	8	130	0	0	0	0
0	P307	J192	J190	657.08	8	130	0	0	0	0
0	P309	J72	J196	736.36	12	130	146.78	0.42	0.05	0.07
0	P311	J196	J70	609.66	12	130	146.78	0.42	0.04	0.07
0	P313	J40	J198	1,129.17	12	130	155.54	0.44	0.09	0.08
0	P315	J198	J42	1,043.66	12	130	155.54	0.44	0.08	0.08
0	P329	J70	V8052	185.71	12	130	0	0	0	0
0	P33	J38	J40	1,179.71	12	130	134.47	0.38	0.07	0.06
0	P331	V8052	J206	525.44	12	130	0	0	0	0
0	P333	J196	V8054	178.3	12	130	0	0	0	0
0	P335	V8054	J208	525.19	12	130	0	0	0	0
0	P337	J208	J206	475.84	12	130	0	0	0	0
0	P341	J198	V8058	154.71	10	130	0	0	0	0
0	P343	V8058	J214	421.16	10	130	0	0	0	0
0	P345	J214	J210	577.05	10	130	0	0	0	0
0	P347	J42	V8056	297.78	10	130	0	0	0	0
0	P349	V8056	J212	569.55	10	130	0	0	0	0
0	P351	J212	J210	1,312.90	10	130	0	0	0	0
0	P353	J88	V8060	266.49	10	130	0	0	0	0
0	P355	V8060	J216	322.62	10	130	0	0	0	0
0	P357	J90	V8062	226.9	10	130	0	0	0	0
0	P359	V8062	J218	739.72	10	130	0	0	0	0
0	P361	J218	J216	604.58	10	130	0	0	0	0
0	P363	J56	J222	1,322.36	12	130	82.56	0.23	0.03	0.02
0	P365	J222	J220	621.17	12	130	32.16	0.09	0	0
0	P367	J220	J44	1,095.19	12	130	-18.78	0.05	0	0
0	P37	J26	J46	1,141.00	12	130	297.46	0.84	0.31	0.27
0	P379	J76	J224	678.87	12	130	-403.6	1.14	0.32	0.47
0	P381	J224	V8042	158.85	12	130	0	0	0	0
0	P39	J46	J44	879.87	12	130	254.94	0.72	0.18	0.2
0	P393	J226	J36	1,733.97	20	130	2,410.62	2.46	1.86	1.07
0	P395	J96	J224	650.52	12	130	403.6	1.14	0.31	0.47
0	P399	J232	J230	2,608.50	18	130	4,533.50	5.72	15.08	5.78

0	P401	J230	J304	2,813.67	18	130	4,533.50	5.72	16.26	5.78
0	P403	J232	J228	7,230.92	16	130	2,410.62	3.85	23.03	3.18
0	P405	J228	J226	5,520.22	16	130	2,410.62	3.85	17.58	3.18
0	P41	J44	J42	1,067.11	12	130	142.42	0.4	0.07	0.07
0	P415	J220	V8070	127.05	12	130	0	0	0	0
0	P417	V8070	J172	78.54	12	130	0	0	0	0
0	P421	J240	J236	955.52	36	130	8,738.80	2.75	0.64	0.67
0	P423	J236	J238	5,398.38	24	130	6,310.87	4.48	14.18	2.63
0	P425	J238	J246	9,066.36	24	130	5,096.90	3.61	16.03	1.77
0	P427	J246	J244	5,073.87	24	130	3,882.93	2.75	5.42	1.07
0	P429	J240	J242	7,163.69	16	130	3,061.20	4.88	35.51	4.96
0	P43	J42	J48	1,096.37	12	130	160.08	0.45	0.09	0.09
0	P431	J242	J232	213.31	16	130	3,061.20	4.88	1.06	4.96
0	P433	J244	J232	281.24	24	130	3,882.93	2.75	0.3	1.07
0	P439	RES9010	J310	68.78	1,100.00	130	11,799.99	0	0	0
0	P441	J310	J308	18	36	130	11,799.99	3.72	0.73	40.54
0	P443	J308	J298	106.2	36	130	11,799.99	3.72	0.38	3.59
0	P445	J298	J296	55.4	36	130	11,799.99	3.72	0.62	11.24
0	P447	J296	J294	78.5	36	130	11,799.99	3.72	0.18	2.26
0	P449	J294	J292	19	30	130	9,193.57	4.17	0.19	9.75
0	P45	J48	J50	1,194.62	12	130	83.46	0.24	0.03	0.03
0	P451	J292	J290	9.2	30	130	6,589.37	2.99	0.06	7
0	P453	J290	J288	9.2	30	130	3,978.80	1.81	0.02	2.58
0	P455	J288	J286	9.2	30	130	1,366.93	0.62	0	0.31
0	P461	J282	J280	9.2	30	130	0	0	0	0
0	P463	J280	J278	9.2	30	130	0	0	0	0
0	P465	J292	U7002	20.6	18	130	2,604.19	3.28	0.54	26.45
0	P469	J290	U7004	20.6	18	130	2,610.57	3.29	0.55	26.57
0	P47	J50	J52	765.09	12	130	6.88	0.02	0	0
0	P473	J288	U7006	20.6	18	130	2,611.87	3.29	0.55	26.6
0	P477	J286	U7008	20.6	18	130	1,366.93	1.72	0.15	7.34
0	P481	J282	U7010	12.1	18	130	2,606.43	3.29	0.53	43.64
0	P485	J280	U7012	12.1	18	130	0	0	0	0
0	P489	J278	U7014	12.1	18	130	0	0	0	0
0	P49	J32	J62	1,463.77	16	130	928.49	1.48	0.8	0.54
0	P493	J276	J274	4.9	16	130	2,604.19	4.16	0.13	25.56
0	P495	J274	J272	4.2	16	130	5,210.62	8.31	0.66	156.39
0	P497	J272	J270	4.7	30	130	7,821.20	3.55	0.08	17.97
0	P499	J270	J268	4.7	30	130	7,821.20	3.55	0.08	17.97
0	P501	J268	J266	4.7	30	130	10,433.06	4.74	0.15	31.87
0	P503	J266	J264	4.7	30	130	10,433.06	4.74	0.15	31.88
0	P505	J264	J262	60.6	30	130	11,799.99	5.36	2.11	34.87
0	P507	J262	J260	20.3	36	130	11,799.99	3.72	0.07	3.28
0	P509	J260	J252	30.38	36	130	11,799.99	3.72	0.08	2.58
0	P51	J34	J66	1,373.58	12	130	523.64	1.49	1.05	0.76
0	P511	J252	J240	90.5	36	130	11,799.99	3.72	0.49	5.43
0	P513	J294	J312	36.2	30	130	2,606.43	1.18	0.07	1.85
0	P515	J312	J282	31.2	30	130	2,606.43	1.18	0.01	0.31
0	P517	U7002	J328	15	12	130	2,604.19	7.39	6.09	405.83
0	P519	J328	J276	9.1	14	130	2,604.19	5.43	7.61	836.36
0	P521	U7004	J330	15	12	130	2,610.57	7.41	6.12	407.82
0	P523	J330	J272	9.1	14	130	2,610.57	5.44	7.65	840.46
0	P525	U7006	J332	15	12	130	2,611.87	7.41	6.12	408.22
0	P527	J332	J268	9.1	14	130	2,611.87	5.44	7.66	841.29
0	P529	U7008	J334	15	12	130	1,366.93	3.88	1.68	112.22
0	P53	J66	J64	862.35	12	130	578.98	1.64	0.79	0.92
0	P531	J334	J264	9.1	14	130	1,366.93	2.85	2.1	230.63
0	P533	U7010	J336	15	12	130	2,606.43	7.39	6.1	406.53
0	P535	J336	J274	9.1	14	130	2,606.43	5.43	7.62	837.79
0	P537	U7012	J338	15	12	130	0	0	0	0
0	P539	J338	J270	9.1	14	130	0	0	0	0

0	P541	U7014	J340	15	12	130	0	0	0	0
0	P543	J340	J266	9.1	14	130	0	0	0	0
0	P55	J62	J64	1,082.76	12	130	-114.16	0.32	0.05	0.05
0	P57	J62	J60	691.6	16	130	948.54	1.51	0.39	0.57
0	P59	J64	J58	1,424.22	12	130	395.02	1.12	0.65	0.45
0	P61	J60	J56	890.62	16	130	726.34	1.16	0.31	0.35
0	P67	J56	J52	1,036.48	16	130	573.73	0.92	0.23	0.22
0	P69	J52	J54	1,131.15	12	130	-220.8	0.63	0.17	0.15
0	P71	J58	J54	591.64	12	130	297.08	0.84	0.16	0.27
0	P73	J40	J68	1,551.82	12	130	-159.27	0.45	0.13	0.08
0	P75	J68	J70	838.54	12	130	-54.12	0.15	0.01	0.01
0	P79	J72	J74	1,086.50	12	130	-80.79	0.23	0.03	0.02
0	P83	J76	J78	765.46	12	130	125.33	0.36	0.04	0.05
0	P89	J52	J82	771.55	16	130	648.89	1.04	0.22	0.28
0	P91	J82	J78	774.7	16	130	-1,375.69	2.2	0.87	1.13
0	P93	J68	J84	890.35	12	130	-150.29	0.43	0.07	0.08
0	P95	J84	J86	1,204.21	12	130	-173.99	0.49	0.12	0.1
0	P97	J86	J88	946.69	12	130	-223.11	0.63	0.15	0.16
0	P99	J88	J90	874.98	16	130	-265.15	0.42	0.05	0.05

Run EB5

	ID	Demand (gpr	Elevation (ft)	Head (ft)	Pressure (psi)
0	J100	100.7	122	221.86	43.27
0	J102	0	125.5	224.5	42.9
0	J104	9.32	129.8	227.65	42.4
0	J122	75.78	117.5	219.88	44.36
0	J124	66.76	119.5	219.96	43.53
0	J126	0	130	221.92	39.83
0	J128	0	133	221.61	38.39
0	J130	0	134	221.82	38.05
0	J132	0	131	221.49	39.21
0	J134	0	131	221.49	39.21
0	J136	0	131	221.49	39.21
0	J138	0	122	209.08	37.73
0	J140	0	122	209.08	37.73
0	J146	0	132	216.11	36.44
0	J148	0	132	216.11	36.44
0	J150	0	118	231.99	49.39
0	J152	0	118	231.99	49.39
0	J154	0	90.3	219.45	55.96
0	J156	0	115.5	231.53	50.27
0	J158	0	115.5	231.53	50.27
0	J160	0	128	233.46	45.7
0	J162	0	128	233.46	45.7
0	J164	0	98	230.99	57.63
0	J166	0	98	230.99	57.63
0	J168	0	115.25	219.85	45.32
0	J170	0	120	208.16	38.2
0	J172	0	120	208.16	38.2
0	J174	0	123	208.69	37.13
0	J176	0	123	208.69	37.13
0	J178	0	94	228.29	58.19
0	J180	0	94	228.29	58.19
0	J182	0	118	212.84	41.09
0	J184	2,000.00	118	200.27	35.65
0	J186	2,000.00	118	200.27	35.65
0	J188	0	126	219.99	40.73
0	J190	0	126	219.99	40.73
0	J192	0	126	219.99	40.73
0	J194	0	126	219.99	40.73
0	J196	0	99.75	216.38	50.53

0	J198	0	95.5	219.01	53.52
0	J20	44.06	90.4	219.63	55.99
0	J206	0	100	227.92	55.43
0	J208	0	100	227.92	55.43
0	J210	0	102	230.89	55.85
0	J212	0	102	230.89	55.85
0	J214	0	102	230.89	55.85
0	J216	0	100	229.18	55.97
0	J218	0	100	229.18	55.97
0	J22	41.86	118.5	219.79	43.89
0	J220	50.94	116	219.7	44.93
0	J222	50.4	119.1	219.77	43.62
0	J224	0	118	214.55	41.83
0	J226	0	130	227.16	42.1
0	J228	0	116	245.76	56.23
0	J230	0	147	255.51	47.02
0	J232	0	148	270.13	52.92
0	J236	2,427.93	166	306.06	60.69
0	J238	1,213.97	181	291.88	48.04
0	J240	0	164	306.7	61.83
0	J242	0	148	271.19	53.38
0	J244	0	148	270.43	53.05
0	J246	1,213.97	146	275.85	56.26
0	J252	0	164.3	307.19	61.91
0	J26	88.2	115.5	219.99	45.27
0	J260	0	164.48	307.27	61.87
0	J262	0	164.48	307.33	61.9
0	J264	0	167.47	309.44	61.52
0	J266	0	167.47	309.59	61.58
0	J268	0	167.47	309.74	61.65
0	J270	0	167.47	309.83	61.68
0	J272	0	167.47	309.91	61.72
0	J274	0	167.47	310.57	62.01
0	J276	0	167.47	310.7	62.06
0	J278	0	164.48	169.45	2.15
0	J28	34.78	118.6	220.45	44.13
0	J280	0	164.48	169.45	2.15
0	J282	0	164.48	169.45	2.15
0	J286	0	164.48	169.25	2.07
0	J288	0	164.48	169.26	2.07
0	J290	0	164.48	169.28	2.08
0	J292	0	164.48	169.34	2.11
0	J294	0	164.48	169.53	2.19
0	J296	0	164.57	169.71	2.23
0	J298	0	164.22	170.33	2.65
0	J30	44.42	122.2	220.75	42.7
0	J300	0	127.5	231.67	45.14
0	J302	0	128	232.16	45.13
0	J304	0	142	239.74	42.35
0	J308	0	163	170.71	3.34
0	J310	0	165.5	171.44	2.57
0	J312	0	164.48	169.46	2.16
0	J32	93.48	126	221.36	41.32
0	J328	0	167.47	318.31	65.36
0	J330	0	167.47	317.56	65.03
0	J332	0	167.47	317.4	64.96
0	J334	0	167.47	311.54	62.43
0	J336	0	167.47	318.19	65.31
0	J338	0	167.47	309.83	61.68
0	J34	0	134	222.54	38.37
0	J340	0	167.47	309.59	61.58

0	J36	0	137	225.19	38.21
0	J38	79.7	90.2	219.04	55.83
0	J40	138.2	90	218.65	55.74
0	J42	137.88	101	219.35	51.28
0	J44	93.74	111	219.64	47.07
0	J46	79.04	113	219.82	46.29
0	J48	76.62	114.7	219.45	45.39
0	J50	76.58	120	219.67	43.19
0	J52	152.52	126	219.91	40.69
0	J54	76.28	127.6	220.04	40.05
0	J56	70.04	121.9	219.99	42.5
0	J58	97.94	126	220.16	40.8
0	J60	43.14	124.5	220.23	41.48
0	J62	94.12	122	220.62	42.73
0	J64	69.8	127	220.7	40.6
0	J66	44.72	130.5	221.49	39.42
0	J68	45.14	88	217.47	56.1
0	J70	92.66	97.5	216.75	51.67
0	J72	105.24	102	215.92	49.36
0	J74	104.58	108	213.76	45.83
0	J76	92.9	128	214.89	37.65
0	J78	160.7	126	219.91	40.69
0	J82	0	126.4	219.91	40.52
0	J84	23.7	76	217.49	61.31
0	J86	49.12	78	217.54	60.46
0	J88	42.04	88.4	217.62	55.99
0	J90	52.46	104	217.64	49.24
0	J92	53.12	98	216.53	51.36
0	J94	50.48	107	218.13	48.15
0	J96	40.96	116	218.71	44.5

	ID	Flow (gpm)	Head (ft)
0	RES9010	-11,799.99	171.44

	ID	Elevation (ft)	Upstream Pre	Downstream	Flow (gpm)	Head Gain (ft	Status	Setting	Available NPS	Cavitation Inc
0	U7002	153.8	6.5	73.92	2,604.19	155.59	Open	1	48.13	0
0	U7004	153.8	6.47	73.61	2,610.57	154.95	Open	1	48.07	0
0	U7006	153.8	6.46	73.54	2,611.86	154.82	Open	1	48.04	0
0	U7008	153.8	6.63	69.08	1,366.93	144.12	Open	1	48.4	0
0	U7010	153.8	6.55	73.87	2,606.43	155.37	Open	1	48.26	0
0	U7012	153.8	6.78	67.61	0	0	Closed	0	0	0
0	U7014	153.8	6.78	67.51	0	0	Closed	0	0	0

	ID	Diameter (in)	Elevation (ft)	Upstream Pre	Downstream	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	Status	Setting
0	V8000	8	122	42.73	37.73	0	0	11.54	Open	5
0	V8002	8	122	42.79	37.73	0	0	0	Closed	5
0	V8008	10	132	41.45	36.44	0	0	11.54	Open	2
0	V8010	10	132	38.09	36.44	0	0	0	Closed	2
0	V8012	8	118	44.19	49.39	0	0	0	Closed	5
0	V8014	8	118	44.39	49.39	0	0	11.54	Open	5
0	V8016	8	115.5	45.27	50.27	0	0	11.54	Open	5
0	V8018	8	115.5	45.19	50.27	0	0	0	Closed	5
0	V8020	8	128	40.7	45.7	0	0	11.54	Open	5
0	V8022	8	128	40.45	45.7	0	0	0	Closed	5
0	V8024	8	98	52.45	57.63	0	0	0	Closed	5
0	V8026	8	98	52.63	57.63	0	0	11.54	Open	5
0	V8028	10	120	43.26	38.2	0	0	0	Closed	2
0	V8032	8	123	42.13	37.13	0	0	11.54	Open	5
0	V8034	8	123	42.3	37.13	0	0	0	Closed	5
0	V8036	8	94	53.51	58.19	0	0	0	Closed	5
0	V8038	8	94	53.19	58.19	0	0	11.54	Open	5

0	V8042	10	118	41.16	37.22	2,066.51	8.44	9.11	Open	2
0	V8044	10	118	40.25	36.54	1,933.49	7.9	8.55	Open	2
0	V8052	10	100	50.59	55.43	0	0	0	Closed	2
0	V8054	10	100	50.43	55.43	0	0	11.54	Open	2
0	V8056	8	102	50.85	55.85	0	0	11.54	Open	5
0	V8058	8	102	50.7	55.85	0	0	0	Closed	5
0	V8060	8	100	50.96	55.97	0	0	0	Closed	5
0	V8062	8	100	50.97	55.97	0	0	11.54	Open	5
0	V8070	10	120	43.2	38.2	0	0	11.54	Open	2

	ID	From Node	To Node	Length (ft)	Diameter (in)	Roughness	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	HL/1000 (ft/k
0	P101	J72	J92	810.17	12	130	-517.27	1.47	0.61	0.75
0	P103	J92	J90	1,241.83	12	130	-570.39	1.62	1.11	0.9
0	P105	J90	J94	1,132.34	16	130	-818.83	1.31	0.49	0.43
0	P107	J94	J96	1,204.53	16	130	-869.31	1.39	0.58	0.48
0	P111	J78	J100	1,067.79	16	130	-1,789.14	2.85	1.96	1.83
0	P115	J96	J100	886.7	16	130	-2,559.46	4.08	3.15	3.56
0	P117	J100	J102	789.56	20	130	-4,449.30	4.54	2.64	3.34
0	P119	J102	J104	941.88	20	130	-4,449.30	4.54	3.15	3.34
0	P121	J104	J300	1,197.93	20	130	-4,458.62	4.55	4.02	3.35
0	P123	J300	J302	147.08	20	130	-4,458.62	4.55	0.49	3.35
0	P125	J302	J304	2,260.56	20	130	-4,458.62	4.55	7.58	3.35
0	P139	J122	J124	627.68	12	130	-200.35	0.57	0.08	0.13
0	P141	J124	J60	1,242.80	12	130	-267.11	0.76	0.27	0.22
0	P145	J34	J126	846.23	20	130	1,960.48	2	0.62	0.73
0	P149	J66	J128	522.48	8	130	-95.6	0.61	0.12	0.24
0	P155	J126	J130	441.09	8	130	95.6	0.61	0.1	0.24
0	P157	J128	J130	886.05	8	130	-95.6	0.61	0.21	0.24
0	P159	J126	J32	843.52	20	130	1,864.88	1.9	0.56	0.67
0	P161	J66	J132	415.81	8	130	0	0	0	0
0	P163	J64	J136	338.87	8	130	0	0	0	0
0	P165	J136	J134	525.67	8	130	0	0	0	0
0	P167	J132	J134	848.01	8	130	0	0	0	0
0	P17	J20	J22	1,133.08	16	130	-456.22	0.73	0.17	0.15
0	P171	V8000	J138	423.5	10	130	0	0	0	0
0	P173	J138	J140	355.5	10	130	0	0	0	0
0	P177	V8002	J140	603.42	10	130	0	0	0	0
0	P179	J30	V8002	454.21	10	130	0	0	0	0
0	P181	J62	V8000	384.46	10	130	0	0	0	0
0	P19	J22	J26	1,147.36	16	130	-498.08	0.79	0.2	0.17
0	P193	J104	V8008	482.89	12	130	0	0	0	0
0	P195	J82	V8010	213.6	12	130	0	0	0	0
0	P197	V8010	J146	842.68	12	130	0	0	0	0
0	P199	J146	J148	514.03	12	130	0	0	0	0
0	P201	V8008	J148	1,114.81	12	130	0	0	0	0
0	P203	J26	V8012	268.73	10	130	0	0	0	0
0	P205	J28	V8014	295.03	10	130	0	0	0	0
0	P207	V8014	J152	482.16	10	130	0	0	0	0
0	P209	V8012	J150	236	10	130	0	0	0	0
0	P21	J26	J28	1,118.04	16	130	-800.81	1.28	0.46	0.41
0	P211	J152	J150	798.51	10	130	0	0	0	0
0	P213	J20	J154	348.19	12	130	412.16	1.17	0.17	0.49
0	P215	J154	J38	842.54	12	130	412.16	1.17	0.41	0.49
0	P217	J26	V8016	273.58	10	130	0	0	0	0
0	P219	J22	V8018	229.2	10	130	0	0	0	0
0	P221	V8018	J156	462.48	10	130	0	0	0	0
0	P223	V8016	J158	716.7	10	130	0	0	0	0
0	P225	J158	J156	802.77	10	130	0	0	0	0
0	P227	J32	V8022	269.66	10	130	0	0	0	0
0	P229	V8022	J160	385.74	10	130	0	0	0	0
0	P23	J28	J30	679.9	16	130	-835.59	1.33	0.3	0.45

0	P231	J126	V8020	259.39	10	130	0	0	0	0
0	P233	V8020	J162	510.51	10	130	0	0	0	0
0	P235	J160	J162	392.51	10	130	0	0	0	0
0	P237	J38	V8024	301.75	10	130	0	0	0	0
0	P239	J154	V8026	160.09	10	130	0	0	0	0
0	P241	V8026	J166	918.28	10	130	0	0	0	0
0	P243	J166	J164	455.03	10	130	0	0	0	0
0	P245	V8024	J164	882.35	10	130	0	0	0	0
0	P247	J46	J168	532.6	12	130	-124.57	0.35	0.03	0.05
0	P249	J168	J122	563.66	12	130	-124.57	0.35	0.03	0.05
0	P25	J30	J32	1,229.93	16	130	-880.01	1.4	0.61	0.49
0	P251	J168	V8028	209.52	12	130	0	0	0	0
0	P253	V8028	J170	652.72	12	130	0	0	0	0
0	P255	J170	J172	387.16	12	130	0	0	0	0
0	P261	J60	V8032	268.68	10	130	0	0	0	0
0	P263	V8032	J174	918.23	10	130	0	0	0	0
0	P265	J174	J176	448.57	10	130	0	0	0	0
0	P267	J62	V8034	292.8	10	130	0	0	0	0
0	P269	V8034	J176	916.13	10	130	0	0	0	0
0	P271	J70	V8038	242.57	10	130	0	0	0	0
0	P273	J84	V8036	324.38	10	130	0	0	0	0
0	P275	V8036	J180	319.74	10	130	0	0	0	0
0	P277	J180	J178	347.95	10	130	0	0	0	0
0	P279	V8038	J178	632.77	10	130	0	0	0	0
0	P281	J76	J182	613.97	12	130	1,160.75	3.29	2.05	3.34
0	P283	J182	J74	589.22	12	130	-772.74	2.19	0.93	1.57
0	P287	V8042	J184	372.65	12	130	2,066.51	5.86	3.62	9.72
0	P289	J184	J186	299.52	12	130	66.51	0.19	0.01	0.02
0	P29	J34	J36	2,325.70	20	130	-2,485.51	2.54	2.64	1.14
0	P295	J182	V8044	226.67	12	130	1,933.49	5.48	1.95	8.59
0	P297	V8044	J186	240.53	12	130	1,933.49	5.48	2.07	8.59
0	P299	J52	J188	313.33	8	130	0	0	0	0
0	P301	J188	J190	664.92	8	130	0	0	0	0
0	P303	J56	J194	178.12	8	130	0	0	0	0
0	P305	J194	J192	667.8	8	130	0	0	0	0
0	P307	J192	J190	657.08	8	130	0	0	0	0
0	P309	J72	J196	736.36	12	130	-465.29	1.32	0.45	0.61
0	P311	J196	J70	609.66	12	130	-465.29	1.32	0.37	0.61
0	P313	J40	J198	1,129.17	12	130	-327.71	0.93	0.36	0.32
0	P315	J198	J42	1,043.66	12	130	-327.71	0.93	0.34	0.32
0	P329	J70	V8052	185.71	12	130	0	0	0	0
0	P33	J38	J40	1,179.71	12	130	332.46	0.94	0.39	0.33
0	P331	V8052	J206	525.44	12	130	0	0	0	0
0	P333	J196	V8054	178.3	12	130	0	0	0	0
0	P335	V8054	J208	525.19	12	130	0	0	0	0
0	P337	J208	J206	475.84	12	130	0	0	0	0
0	P341	J198	V8058	154.71	10	130	0	0	0	0
0	P343	V8058	J214	421.16	10	130	0	0	0	0
0	P345	J214	J210	577.05	10	130	0	0	0	0
0	P347	J42	V8056	297.78	10	130	0	0	0	0
0	P349	V8056	J212	569.55	10	130	0	0	0	0
0	P351	J212	J210	1,312.90	10	130	0	0	0	0
0	P353	J88	V8060	266.49	10	130	0	0	0	0
0	P355	V8060	J216	322.62	10	130	0	0	0	0
0	P357	J90	V8062	226.9	10	130	0	0	0	0
0	P359	V8062	J218	739.72	10	130	0	0	0	0
0	P361	J218	J216	604.58	10	130	0	0	0	0
0	P363	J56	J222	1,322.36	12	130	232.85	0.66	0.23	0.17
0	P365	J222	J220	621.17	12	130	182.45	0.52	0.07	0.11
0	P367	J220	J44	1,095.19	12	130	131.51	0.37	0.06	0.06
0	P37	J26	J46	1,141.00	12	130	214.53	0.61	0.17	0.15

0	P379	J76	J224	678.87	12	130	417.32	1.18	0.34	0.5
0	P381	J224	V8042	158.85	12	130	2,066.51	5.86	1.54	9.72
0	P39	J46	J44	879.87	12	130	260.05	0.74	0.18	0.21
0	P393	J226	J36	1,733.97	20	130	2,485.51	2.54	1.97	1.14
0	P395	J96	J224	650.52	12	130	1,649.19	4.68	4.16	6.4
0	P399	J232	J230	2,608.50	18	130	4,458.62	5.62	14.62	5.6
0	P401	J230	J304	2,813.67	18	130	4,458.62	5.62	15.77	5.6
0	P403	J232	J228	7,230.92	16	130	2,485.51	3.97	24.37	3.37
0	P405	J228	J226	5,520.22	16	130	2,485.51	3.97	18.6	3.37
0	P41	J44	J42	1,067.11	12	130	297.83	0.84	0.29	0.27
0	P415	J220	V8070	127.05	12	130	0	0	0	0
0	P417	V8070	J172	78.54	12	130	0	0	0	0
0	P421	J240	J236	955.52	36	130	8,738.80	2.75	0.64	0.67
0	P423	J236	J238	5,398.38	24	130	6,310.87	4.48	14.18	2.63
0	P425	J238	J246	9,066.36	24	130	5,096.90	3.61	16.03	1.77
0	P427	J246	J244	5,073.87	24	130	3,882.93	2.75	5.42	1.07
0	P429	J240	J242	7,163.69	16	130	3,061.20	4.88	35.51	4.96
0	P43	J42	J48	1,096.37	12	130	-167.77	0.48	0.1	0.09
0	P431	J242	J232	213.31	16	130	3,061.20	4.88	1.06	4.96
0	P433	J244	J232	281.24	24	130	3,882.93	2.75	0.3	1.07
0	P439	RES9010	J310	68.78	1,100.00	130	11,799.99	0	0	0
0	P441	J310	J308	18	36	130	11,799.99	3.72	0.73	40.54
0	P443	J308	J298	106.2	36	130	11,799.99	3.72	0.38	3.59
0	P445	J298	J296	55.4	36	130	11,799.99	3.72	0.62	11.24
0	P447	J296	J294	78.5	36	130	11,799.99	3.72	0.18	2.26
0	P449	J294	J292	19	30	130	9,193.57	4.17	0.19	9.75
0	P45	J48	J50	1,194.62	12	130	-244.39	0.69	0.22	0.19
0	P451	J292	J290	9.2	30	130	6,589.37	2.99	0.06	7
0	P453	J290	J288	9.2	30	130	3,978.80	1.81	0.02	2.58
0	P455	J288	J286	9.2	30	130	1,366.93	0.62	0	0.31
0	P461	J282	J280	9.2	30	130	0	0	0	0
0	P463	J280	J278	9.2	30	130	0	0	0	0
0	P465	J292	U7002	20.6	18	130	2,604.19	3.28	0.54	26.45
0	P469	J290	U7004	20.6	18	130	2,610.57	3.29	0.55	26.57
0	P47	J50	J52	765.09	12	130	-320.97	0.91	0.24	0.31
0	P473	J288	U7006	20.6	18	130	2,611.86	3.29	0.55	26.6
0	P477	J286	U7008	20.6	18	130	1,366.93	1.72	0.15	7.34
0	P481	J282	U7010	12.1	18	130	2,606.43	3.29	0.53	43.64
0	P485	J280	U7012	12.1	18	130	0	0	0	0
0	P489	J278	U7014	12.1	18	130	0	0	0	0
0	P49	J32	J62	1,463.77	16	130	891.39	1.42	0.74	0.5
0	P493	J276	J274	4.9	16	130	2,604.19	4.16	0.13	25.56
0	P495	J274	J272	4.2	16	130	5,210.62	8.31	0.66	156.39
0	P497	J272	J270	4.7	30	130	7,821.20	3.55	0.08	17.97
0	P499	J270	J268	4.7	30	130	7,821.20	3.55	0.08	17.97
0	P501	J268	J266	4.7	30	130	10,433.06	4.74	0.15	31.88
0	P503	J266	J264	4.7	30	130	10,433.06	4.74	0.15	31.87
0	P505	J264	J262	60.6	30	130	11,799.99	5.36	2.11	34.87
0	P507	J262	J260	20.3	36	130	11,799.99	3.72	0.07	3.28
0	P509	J260	J252	30.38	36	130	11,799.99	3.72	0.08	2.58
0	P51	J34	J66	1,373.58	12	130	525.03	1.49	1.06	0.77
0	P511	J252	J240	90.5	36	130	11,799.99	3.72	0.49	5.43
0	P513	J294	J312	36.2	30	130	2,606.43	1.18	0.07	1.85
0	P515	J312	J282	31.2	30	130	2,606.43	1.18	0.01	0.31
0	P517	U7002	J328	15	12	130	2,604.19	7.39	6.09	405.83
0	P519	J328	J276	9.1	14	130	2,604.19	5.43	7.61	836.36
0	P521	U7004	J330	15	12	130	2,610.57	7.41	6.12	407.82
0	P523	J330	J272	9.1	14	130	2,610.57	5.44	7.65	840.46
0	P525	U7006	J332	15	12	130	2,611.86	7.41	6.12	408.22
0	P527	J332	J268	9.1	14	130	2,611.86	5.44	7.66	841.29
0	P529	U7008	J334	15	12	130	1,366.93	3.88	1.68	112.23

0	P53	J66	J64	862.35	12	130	575.91	1.63	0.79	0.91
0	P531	J334	J264	9.1	14	130	1,366.93	2.85	2.1	230.62
0	P533	U7010	J336	15	12	130	2,606.43	7.39	6.1	406.52
0	P535	J336	J274	9.1	14	130	2,606.43	5.43	7.62	837.79
0	P537	U7012	J338	15	12	130	0	0	0	0
0	P539	J338	J270	9.1	14	130	0	0	0	0
0	P541	U7014	J340	15	12	130	0	0	0	0
0	P543	J340	J266	9.1	14	130	0	0	0	0
0	P55	J62	J64	1,082.76	12	130	-147.35	0.42	0.08	0.07
0	P57	J62	J60	691.6	16	130	944.62	1.51	0.39	0.56
0	P59	J64	J58	1,424.22	12	130	358.76	1.02	0.54	0.38
0	P61	J60	J56	890.62	16	130	634.37	1.01	0.24	0.27
0	P67	J56	J52	1,036.48	16	130	331.48	0.53	0.08	0.08
0	P69	J52	J54	1,131.15	12	130	-184.54	0.52	0.13	0.11
0	P71	J58	J54	591.64	12	130	260.82	0.74	0.12	0.21
0	P73	J40	J68	1,551.82	12	130	521.97	1.48	1.18	0.76
0	P75	J68	J70	838.54	12	130	557.95	1.58	0.72	0.86
0	P79	J72	J74	1,086.50	12	130	877.32	2.49	2.16	1.99
0	P83	J76	J78	765.46	12	130	-1,670.97	4.74	5.02	6.56
0	P89	J52	J82	771.55	16	130	42.53	0.07	0	0
0	P91	J82	J78	774.7	16	130	42.53	0.07	0	0
0	P93	J68	J84	890.35	12	130	-81.12	0.23	0.02	0.02
0	P95	J84	J86	1,204.21	12	130	-104.82	0.3	0.05	0.04
0	P97	J86	J88	946.69	12	130	-153.94	0.44	0.07	0.08
0	P99	J88	J90	874.98	16	130	-195.98	0.31	0.03	0.03

Run EB6

	ID	Demand (gpr	Elevation (ft)	Head (ft)	Pressure (psi)
0	J100	100.7	122	242.94	52.4
0	J102	0	125.5	244.91	51.74
0	J104	9.32	129.8	247.25	50.89
0	J122	75.78	117.5	240.89	53.47
0	J124	66.76	119.5	241.02	52.66
0	J126	0	130	242.54	48.76
0	J128	0	133	242.34	47.38
0	J130	0	134	242.47	47
0	J132	0	131	242.26	48.21
0	J134	0	131	242.26	48.21
0	J136	0	131	242.26	48.21
0	J138	0	122	253.19	56.85
0	J140	0	122	253.19	56.85
0	J146	0	132	258.79	54.94
0	J148	0	132	258.79	54.94
0	J150	0	118	252.79	58.41
0	J152	0	118	252.79	58.41
0	J154	0	90.3	240.12	64.92
0	J156	0	115.5	229.28	49.3
0	J158	0	115.5	229.28	49.3
0	J160	0	128	254.08	54.63
0	J162	0	128	254.08	54.63
0	J164	0	98	251.66	66.58
0	J166	0	98	251.66	66.58
0	J168	0	115.25	240.83	54.41
0	J170	0	120	229.27	47.35
0	J172	0	120	229.27	47.35
0	J174	0	123	229.87	46.31
0	J176	0	123	229.87	46.31
0	J178	0	94	225.27	56.88
0	J180	0	94	225.27	56.88
0	J182	0	118	239.31	52.56
0	J184	0	118	251.96	58.05

0	J186	0	118	251.96	58.05
0	J188	0	126	241.33	49.97
0	J190	0	126	241.33	49.97
0	J192	0	126	241.33	49.97
0	J194	0	126	241.33	49.97
0	J196	0	99.75	236.81	59.39
0	J198	0	95.5	239.68	62.47
0	J20	44.06	90.4	240.35	64.97
0	J206	0	100	225.27	54.28
0	J208	0	100	225.27	54.28
0	J210	0	102	251.84	64.92
0	J212	0	102	251.84	64.92
0	J214	0	102	251.84	64.92
0	J216	1,500.00	100	217.7	51
0	J218	1,500.00	100	217.6	50.95
0	J22	41.86	118.5	240.57	52.89
0	J220	50.94	116	240.81	54.08
0	J222	50.4	119.1	240.94	52.79
0	J224	0	118	240.42	53.05
0	J226	0	130	246.5	50.48
0	J228	0	116	260.55	62.64
0	J230	0	147	268.05	52.45
0	J232	0	148	278.97	56.75
0	J236	2,427.93	166	307.28	61.22
0	J238	1,213.97	181	295.62	49.67
0	J240	0	164	307.83	62.32
0	J242	0	148	279.8	57.11
0	J244	0	148	279.18	56.84
0	J246	1,213.97	146	283.08	59.4
0	J252	0	164.3	308.25	62.37
0	J26	88.2	115.5	240.82	54.3
0	J260	0	164.48	308.31	62.32
0	J262	0	164.48	308.37	62.35
0	J264	0	167.47	310.14	61.82
0	J266	0	167.47	310.29	61.88
0	J268	0	167.47	310.44	61.95
0	J270	0	167.47	310.52	61.98
0	J272	0	167.47	310.61	62.02
0	J274	0	167.47	311.26	62.31
0	J276	0	167.47	311.39	62.36
0	J278	0	164.48	169.76	2.29
0	J28	34.78	118.6	241.25	53.15
0	J280	0	164.48	169.76	2.29
0	J282	0	164.48	169.76	2.29
0	J286	0	164.48	169.63	2.23
0	J288	0	164.48	169.63	2.23
0	J290	0	164.48	169.64	2.24
0	J292	0	164.48	169.69	2.26
0	J294	0	164.48	169.84	2.32
0	J296	0	164.57	169.99	2.35
0	J298	0	164.22	170.51	2.72
0	J30	44.42	122.2	241.54	51.71
0	J300	0	127.5	250.25	53.19
0	J302	0	128	250.62	53.13
0	J304	0	142	256.28	49.52
0	J308	0	163	170.83	3.39
0	J310	0	165.5	171.44	2.57
0	J312	0	164.48	169.77	2.29
0	J32	93.48	126	242.1	50.31
0	J328	0	167.47	318.98	65.65
0	J330	0	167.47	318.24	65.33

0	J332	0	167.47	318.08	65.26
0	J334	0	167.47	310.3	61.89
0	J336	0	167.47	318.87	65.6
0	J338	0	167.47	310.52	61.98
0	J34	0	134	243.01	47.23
0	J340	0	167.47	310.29	61.88
0	J36	0	137	245.01	46.8
0	J38	79.7	90.2	239.56	64.72
0	J40	138.2	90	239	64.56
0	J42	137.88	101	240.3	60.36
0	J44	93.74	111	240.65	56.18
0	J46	79.04	113	240.78	55.36
0	J48	76.62	114.7	240.53	54.52
0	J50	76.58	120	240.95	52.41
0	J52	152.52	126	241.33	49.97
0	J54	76.28	127.6	241.36	49.29
0	J56	70.04	121.9	241.33	51.75
0	J58	97.94	126	241.42	50.01
0	J60	43.14	124.5	241.41	50.66
0	J62	94.12	122	241.65	51.85
0	J64	69.8	127	241.72	49.71
0	J66	44.72	130.5	242.26	48.42
0	J68	45.14	88	236.83	64.49
0	J70	92.66	97.5	236.81	60.36
0	J72	105.24	102	236.81	58.41
0	J74	104.58	108	238.28	56.45
0	J76	92.9	128	240.38	48.7
0	J78	160.7	126	241.61	50.09
0	J82	0	126.4	241.47	49.86
0	J84	23.7	76	235.98	69.32
0	J86	49.12	78	234.92	67.99
0	J88	42.04	88.4	234.21	63.18
0	J90	52.46	104	234.94	56.74
0	J92	53.12	98	235.99	59.79
0	J94	50.48	107	237.55	56.57
0	J96	40.96	116	240.46	53.93

	ID	Flow (gpm)	Head (ft)
0	RES9010	-10,799.99	171.44

	ID	Elevation (ft)	Upstream Pre	Downstream	Flow (gpm)	Head Gain (ft	Status	Setting	Available NPS	Cavitation Inc
0	U7002	153.8	6.65	74.2	2,601.11	155.91	Open	1	48.48	0
0	U7004	153.8	6.63	73.9	2,607.63	155.25	Open	1	48.43	0
0	U7006	153.8	6.62	73.83	2,609.01	155.11	Open	1	48.42	0
0	U7008	153.8	6.85	67.87	379.25	140.82	Open	1	48.9	0
0	U7010	153.8	6.69	74.16	2,603.00	155.71	Open	1	48.57	0
0	U7012	153.8	6.92	67.91	0	0	Closed	0	0	0
0	U7014	153.8	6.92	67.81	0	0	Closed	0	0	0

	ID	Diameter (in)	Elevation (ft)	Upstream Pre	Downstream	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	Status	Setting
0	V8000	8	122	51.85	56.85	0	0	11.54	Open	5
0	V8002	8	122	51.79	56.85	0	0	0	Closed	5
0	V8008	10	132	49.94	54.94	0	0	11.54	Open	2
0	V8010	10	132	47.43	54.94	0	0	0	Closed	2
0	V8012	8	118	53.22	58.41	0	0	0	Closed	5
0	V8014	8	118	53.41	58.41	0	0	11.54	Open	5
0	V8016	8	115.5	54.3	49.3	0	0	11.54	Open	5
0	V8018	8	115.5	54.19	49.3	0	0	0	Closed	5
0	V8020	8	128	49.63	54.63	0	0	11.54	Open	5
0	V8022	8	128	49.44	54.63	0	0	0	Closed	5
0	V8024	8	98	61.34	66.58	0	0	0	Closed	5

0	V8026	8	98	61.58	66.58	0	0	11.54	Open	5
0	V8028	10	120	52.36	47.35	0	0	0	Closed	2
0	V8032	8	123	51.31	46.31	0	0	11.54	Open	5
0	V8034	8	123	51.41	46.31	0	0	0	Closed	5
0	V8036	8	94	61.52	56.88	0	0	0	Closed	5
0	V8038	8	94	61.88	56.88	0	0	11.54	Open	5
0	V8042	10	118	53.05	58.05	0	0	11.54	Open	2
0	V8044	10	118	52.56	58.05	0	0	0	Closed	2
0	V8052	10	100	59.28	54.28	0	0	0	Closed	2
0	V8054	10	100	59.28	54.28	0	0	11.54	Open	2
0	V8056	8	102	59.92	64.92	0	0	11.54	Open	5
0	V8058	8	102	59.65	64.92	0	0	0	Closed	5
0	V8060	8	100	56.36	53.17	1,648.00	10.52	7.35	Open	5
0	V8062	8	100	57.41	54.41	1,352.00	8.63	6.94	Open	5
0	V8070	10	120	52.35	47.35	0	0	11.54	Open	2

	ID	From Node	To Node	Length (ft)	Diameter (in)	Roughness	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	HL/1000 (ft/k
0	P101	J72	J92	810.17	12	130	605.92	1.72	0.81	1
0	P103	J92	J90	1,241.83	12	130	552.8	1.57	1.05	0.85
0	P105	J90	J94	1,132.34	16	130	-2,024.65	3.23	2.61	2.31
0	P107	J94	J96	1,204.53	16	130	-2,075.13	3.31	2.91	2.41
0	P111	J78	J100	1,067.79	16	130	-1,451.22	2.32	1.33	1.24
0	P115	J96	J100	886.7	16	130	-2,246.41	3.58	2.48	2.79
0	P117	J100	J102	789.56	20	130	-3,798.33	3.88	1.97	2.49
0	P119	J102	J104	941.88	20	130	-3,798.33	3.88	2.35	2.49
0	P121	J104	J300	1,197.93	20	130	-3,807.65	3.89	3	2.5
0	P123	J300	J302	147.08	20	130	-3,807.65	3.89	0.37	2.5
0	P125	J302	J304	2,260.56	20	130	-3,807.65	3.89	5.66	2.5
0	P139	J122	J124	627.68	12	130	-257.72	0.73	0.13	0.21
0	P141	J124	J60	1,242.80	12	130	-324.48	0.92	0.39	0.32
0	P145	J34	J126	846.23	20	130	1,698.71	1.73	0.48	0.56
0	P149	J66	J128	522.48	8	130	-75.76	0.48	0.08	0.15
0	P155	J126	J130	441.09	8	130	75.76	0.48	0.07	0.15
0	P157	J128	J130	886.05	8	130	-75.76	0.48	0.13	0.15
0	P159	J126	J32	843.52	20	130	1,622.95	1.66	0.44	0.52
0	P161	J66	J132	415.81	8	130	0	0	0	0
0	P163	J64	J136	338.87	8	130	0	0	0	0
0	P165	J136	J134	525.67	8	130	0	0	0	0
0	P167	J132	J134	848.01	8	130	0	0	0	0
0	P17	J20	J22	1,133.08	16	130	-529.05	0.84	0.22	0.19
0	P171	V8000	J138	423.5	10	130	0	0	0	0
0	P173	J138	J140	355.5	10	130	0	0	0	0
0	P177	V8002	J140	603.42	10	130	0	0	0	0
0	P179	J30	V8002	454.21	10	130	0	0	0	0
0	P181	J62	V8000	384.46	10	130	0	0	0	0
0	P19	J22	J26	1,147.36	16	130	-570.91	0.91	0.25	0.22
0	P193	J104	V8008	482.89	12	130	0	0	0	0
0	P195	J82	V8010	213.6	12	130	0	0	0	0
0	P197	V8010	J146	842.68	12	130	0	0	0	0
0	P199	J146	J148	514.03	12	130	0	0	0	0
0	P201	V8008	J148	1,114.81	12	130	0	0	0	0
0	P203	J26	V8012	268.73	10	130	0	0	0	0
0	P205	J28	V8014	295.03	10	130	0	0	0	0
0	P207	V8014	J152	482.16	10	130	0	0	0	0
0	P209	V8012	J150	236	10	130	0	0	0	0
0	P21	J26	J28	1,118.04	16	130	-768.78	1.23	0.43	0.38
0	P211	J152	J150	798.51	10	130	0	0	0	0
0	P213	J20	J154	348.19	12	130	484.99	1.38	0.23	0.66
0	P215	J154	J38	842.54	12	130	484.99	1.38	0.56	0.66
0	P217	J26	V8016	273.58	10	130	0	0	0	0
0	P219	J22	V8018	229.2	10	130	0	0	0	0

0	P221	V8018	J156	462.48	10	130	0	0	0	0
0	P223	V8016	J158	716.7	10	130	0	0	0	0
0	P225	J158	J156	802.77	10	130	0	0	0	0
0	P227	J32	V8022	269.66	10	130	0	0	0	0
0	P229	V8022	J160	385.74	10	130	0	0	0	0
0	P23	J28	J30	679.9	16	130	-803.56	1.28	0.28	0.42
0	P231	J126	V8020	259.39	10	130	0	0	0	0
0	P233	V8020	J162	510.51	10	130	0	0	0	0
0	P235	J160	J162	392.51	10	130	0	0	0	0
0	P237	J38	V8024	301.75	10	130	0	0	0	0
0	P239	J154	V8026	160.09	10	130	0	0	0	0
0	P241	V8026	J166	918.28	10	130	0	0	0	0
0	P243	J166	J164	455.03	10	130	0	0	0	0
0	P245	V8024	J164	882.35	10	130	0	0	0	0
0	P247	J46	J168	532.6	12	130	-181.94	0.52	0.06	0.11
0	P249	J168	J122	563.66	12	130	-181.94	0.52	0.06	0.11
0	P25	J30	J32	1,229.93	16	130	-847.98	1.35	0.57	0.46
0	P251	J168	V8028	209.52	12	130	0	0	0	0
0	P253	V8028	J170	652.72	12	130	0	0	0	0
0	P255	J170	J172	387.16	12	130	0	0	0	0
0	P261	J60	V8032	268.68	10	130	0	0	0	0
0	P263	V8032	J174	918.23	10	130	0	0	0	0
0	P265	J174	J176	448.57	10	130	0	0	0	0
0	P267	J62	V8034	292.8	10	130	0	0	0	0
0	P269	V8034	J176	916.13	10	130	0	0	0	0
0	P271	J70	V8038	242.57	10	130	0	0	0	0
0	P273	J84	V8036	324.38	10	130	0	0	0	0
0	P275	V8036	J180	319.74	10	130	0	0	0	0
0	P277	J180	J178	347.95	10	130	0	0	0	0
0	P279	V8038	J178	632.77	10	130	0	0	0	0
0	P281	J76	J182	613.97	12	130	818.16	2.32	1.07	1.75
0	P283	J182	J74	589.22	12	130	818.16	2.32	1.03	1.75
0	P287	V8042	J184	372.65	12	130	0	0	0	0
0	P289	J184	J186	299.52	12	130	0	0	0	0
0	P29	J34	J36	2,325.70	20	130	-2,136.47	2.18	2	0.86
0	P295	J182	V8044	226.67	12	130	0	0	0	0
0	P297	V8044	J186	240.53	12	130	0	0	0	0
0	P299	J52	J188	313.33	8	130	0	0	0	0
0	P301	J188	J190	664.92	8	130	0	0	0	0
0	P303	J56	J194	178.12	8	130	0	0	0	0
0	P305	J194	J192	667.8	8	130	0	0	0	0
0	P307	J192	J190	657.08	8	130	0	0	0	0
0	P309	J72	J196	736.36	12	130	2.42	0.01	0	0
0	P311	J196	J70	609.66	12	130	2.42	0.01	0	0
0	P313	J40	J198	1,129.17	12	130	-458.16	1.3	0.67	0.6
0	P315	J198	J42	1,043.66	12	130	-458.16	1.3	0.62	0.6
0	P329	J70	V8052	185.71	12	130	0	0	0	0
0	P33	J38	J40	1,179.71	12	130	405.29	1.15	0.56	0.48
0	P331	V8052	J206	525.44	12	130	0	0	0	0
0	P333	J196	V8054	178.3	12	130	0	0	0	0
0	P335	V8054	J208	525.19	12	130	0	0	0	0
0	P337	J208	J206	475.84	12	130	0	0	0	0
0	P341	J198	V8058	154.71	10	130	0	0	0	0
0	P343	V8058	J214	421.16	10	130	0	0	0	0
0	P345	J214	J210	577.05	10	130	0	0	0	0
0	P347	J42	V8056	297.78	10	130	0	0	0	0
0	P349	V8056	J212	569.55	10	130	0	0	0	0
0	P351	J212	J210	1,312.90	10	130	0	0	0	0
0	P353	J88	V8060	266.49	10	130	1,648.00	6.73	4.14	15.54
0	P355	V8060	J216	322.62	10	130	1,648.00	6.73	5.01	15.54
0	P357	J90	V8062	226.9	10	130	1,352.00	5.52	2.44	10.77

0	P359	V8062	J218	739.72	10	130	1,352.00	5.52	7.97	10.77
0	P361	J218	J216	604.58	10	130	-148	0.6	0.11	0.18
0	P363	J56	J222	1,322.36	12	130	314.08	0.89	0.39	0.3
0	P365	J222	J220	621.17	12	130	263.68	0.75	0.13	0.21
0	P367	J220	J44	1,095.19	12	130	212.74	0.6	0.16	0.14
0	P37	J26	J46	1,141.00	12	130	109.67	0.31	0.05	0.04
0	P379	J76	J224	678.87	12	130	-130.33	0.37	0.04	0.06
0	P381	J224	V8042	158.85	12	130	0	0	0	0
0	P39	J46	J44	879.87	12	130	212.57	0.6	0.13	0.14
0	P393	J226	J36	1,733.97	20	130	2,136.47	2.18	1.49	0.86
0	P395	J96	J224	650.52	12	130	130.33	0.37	0.04	0.06
0	P399	J232	J230	2,608.50	18	130	3,807.65	4.8	10.91	4.18
0	P401	J230	J304	2,813.67	18	130	3,807.65	4.8	11.77	4.18
0	P403	J232	J228	7,230.92	16	130	2,136.47	3.41	18.41	2.55
0	P405	J228	J226	5,520.22	16	130	2,136.47	3.41	14.06	2.55
0	P41	J44	J42	1,067.11	12	130	331.57	0.94	0.35	0.33
0	P415	J220	V8070	127.05	12	130	0	0	0	0
0	P417	V8070	J172	78.54	12	130	0	0	0	0
0	P421	J240	J236	955.52	36	130	8,105.76	2.55	0.55	0.58
0	P423	J236	J238	5,398.38	24	130	5,677.83	4.03	11.66	2.16
0	P425	J238	J246	9,066.36	24	130	4,463.86	3.17	12.54	1.38
0	P427	J246	J244	5,073.87	24	130	3,249.89	2.3	3.9	0.77
0	P429	J240	J242	7,163.69	16	130	2,694.23	4.3	28.03	3.91
0	P43	J42	J48	1,096.37	12	130	-264.48	0.75	0.24	0.22
0	P431	J242	J232	213.31	16	130	2,694.23	4.3	0.83	3.91
0	P433	J244	J232	281.24	24	130	3,249.89	2.3	0.22	0.77
0	P439	RES9010	J310	68.78	1,100.00	130	10,799.99	0	0	0
0	P441	J310	J308	18	36	130	10,799.99	3.4	0.61	33.97
0	P443	J308	J298	106.2	36	130	10,799.99	3.4	0.32	3.02
0	P445	J298	J296	55.4	36	130	10,799.99	3.4	0.52	9.43
0	P447	J296	J294	78.5	36	130	10,799.99	3.4	0.15	1.9
0	P449	J294	J292	19	30	130	8,196.99	3.72	0.15	7.77
0	P45	J48	J50	1,194.62	12	130	-341.1	0.97	0.41	0.35
0	P451	J292	J290	9.2	30	130	5,595.88	2.54	0.05	5.06
0	P453	J290	J288	9.2	30	130	2,988.25	1.36	0.01	1.46
0	P455	J288	J286	9.2	30	130	379.25	0.17	0	0.02
0	P461	J282	J280	9.2	30	130	0	0	0	0
0	P463	J280	J278	9.2	30	130	0	0	0	0
0	P465	J292	U7002	20.6	18	130	2,601.11	3.28	0.54	26.38
0	P469	J290	U7004	20.6	18	130	2,607.63	3.29	0.55	26.51
0	P47	J50	J52	765.09	12	130	-417.68	1.18	0.38	0.5
0	P473	J288	U7006	20.6	18	130	2,609.01	3.29	0.55	26.54
0	P477	J286	U7008	20.6	18	130	379.25	0.48	0.01	0.57
0	P481	J282	U7010	12.1	18	130	2,603.00	3.28	0.53	43.53
0	P485	J280	U7012	12.1	18	130	0	0	0	0
0	P489	J278	U7014	12.1	18	130	0	0	0	0
0	P49	J32	J62	1,463.77	16	130	681.5	1.09	0.45	0.31
0	P493	J276	J274	4.9	16	130	2,601.11	4.15	0.12	25.5
0	P495	J274	J272	4.2	16	130	5,204.11	8.3	0.66	156
0	P497	J272	J270	4.7	30	130	7,811.74	3.55	0.08	17.92
0	P499	J270	J268	4.7	30	130	7,811.74	3.55	0.08	17.93
0	P501	J268	J266	4.7	30	130	10,420.74	4.73	0.15	31.8
0	P503	J266	J264	4.7	30	130	10,420.74	4.73	0.15	31.8
0	P505	J264	J262	60.6	30	130	10,799.99	4.9	1.77	29.24
0	P507	J262	J260	20.3	36	130	10,799.99	3.4	0.06	2.76
0	P509	J260	J252	30.38	36	130	10,799.99	3.4	0.07	2.17
0	P51	J34	J66	1,373.58	12	130	437.76	1.24	0.75	0.55
0	P511	J252	J240	90.5	36	130	10,799.99	3.4	0.41	4.56
0	P513	J294	J312	36.2	30	130	2,603.00	1.18	0.07	1.85
0	P515	J312	J282	31.2	30	130	2,603.00	1.18	0.01	0.31
0	P517	U7002	J328	15	12	130	2,601.11	7.38	6.07	404.87

0	P519	J328	J276	9.1	14	130	2,601.11	5.42	7.59	834.38
0	P521	U7004	J330	15	12	130	2,607.63	7.4	6.1	406.9
0	P523	J330	J272	9.1	14	130	2,607.63	5.43	7.63	838.56
0	P525	U7006	J332	15	12	130	2,609.01	7.4	6.11	407.33
0	P527	J332	J268	9.1	14	130	2,609.01	5.44	7.64	839.45
0	P529	U7008	J334	15	12	130	379.25	1.08	0.13	8.71
0	P53	J66	J64	862.35	12	130	468.79	1.33	0.54	0.62
0	P531	J334	J264	9.1	14	130	379.25	0.79	0.16	17.78
0	P533	U7010	J336	15	12	130	2,603.00	7.38	6.08	405.46
0	P535	J336	J274	9.1	14	130	2,603.00	5.43	7.6	835.59
0	P537	U7012	J338	15	12	130	0	0	0	0
0	P539	J338	J270	9.1	14	130	0	0	0	0
0	P541	U7014	J340	15	12	130	0	0	0	0
0	P543	J340	J266	9.1	14	130	0	0	0	0
0	P55	J62	J64	1,082.76	12	130	-136.7	0.39	0.07	0.06
0	P57	J62	J60	691.6	16	130	724.08	1.16	0.24	0.34
0	P59	J64	J58	1,424.22	12	130	262.29	0.74	0.3	0.21
0	P61	J60	J56	890.62	16	130	356.45	0.57	0.08	0.09
0	P67	J56	J52	1,036.48	16	130	-27.66	0.04	0	0
0	P69	J52	J54	1,131.15	12	130	-88.07	0.25	0.03	0.03
0	P71	J58	J54	591.64	12	130	164.35	0.47	0.05	0.09
0	P73	J40	J68	1,551.82	12	130	725.25	2.06	2.17	1.4
0	P75	J68	J70	838.54	12	130	90.24	0.26	0.02	0.03
0	P79	J72	J74	1,086.50	12	130	-713.58	2.02	1.47	1.36
0	P83	J76	J78	765.46	12	130	-780.73	2.21	1.23	1.6
0	P89	J52	J82	771.55	16	130	-509.79	0.81	0.14	0.18
0	P91	J82	J78	774.7	16	130	-509.79	0.81	0.14	0.18
0	P93	J68	J84	890.35	12	130	589.87	1.67	0.85	0.95
0	P95	J84	J86	1,204.21	12	130	566.17	1.61	1.06	0.88
0	P97	J86	J88	946.69	12	130	517.05	1.47	0.71	0.75
0	P99	J88	J90	874.98	16	130	-1,172.99	1.87	0.73	0.84

Run EB7

	ID	Demand (gpr	Elevation (ft)	Head (ft)	Pressure (psi)
0	J100	100.7	122	222.21	43.42
0	J102	0	125.5	224.83	43.04
0	J104	9.32	129.8	227.96	42.53
0	J122	75.78	117.5	218.96	43.96
0	J124	66.76	119.5	219.19	43.2
0	J126	0	130	221.28	39.55
0	J128	0	133	221.04	38.15
0	J130	0	134	221.2	37.78
0	J132	0	131	220.94	38.97
0	J134	0	131	220.94	38.97
0	J136	0	131	220.94	38.97
0	J138	0	122	231.67	47.52
0	J140	0	122	231.67	47.52
0	J146	0	132	216.42	36.58
0	J148	0	132	216.42	36.58
0	J150	0	118	207.86	38.94
0	J152	0	118	207.86	38.94
0	J154	0	90.3	217.27	55.02
0	J156	0	115.5	230.27	49.73
0	J158	0	115.5	230.27	49.73
0	J160	0	128	232.82	45.42
0	J162	0	128	232.82	45.42
0	J164	0	98	205.73	46.68
0	J166	0	98	205.73	46.68
0	J168	0	115.25	218.83	44.88
0	J170	0	120	230.38	47.83
0	J172	0	120	230.38	47.83

0	J174	0	123	208.28	36.95
0	J176	0	123	208.28	36.95
0	J178	0	94	212.73	51.45
0	J180	0	94	212.73	51.45
0	J182	0	118	215.58	42.28
0	J184	0	118	207.22	38.66
0	J186	0	118	207.22	38.66
0	J188	0	126	219.73	40.61
0	J190	0	126	219.73	40.61
0	J192	0	126	219.72	40.61
0	J194	0	126	219.72	40.61
0	J196	0	99.75	201.22	43.97
0	J198	0	95.5	216.31	52.35
0	J20	44.06	90.4	217.78	55.19
0	J206	2,000.00	100	185.96	37.25
0	J208	2,000.00	100	185.96	37.25
0	J210	0	102	206.28	45.19
0	J212	0	102	206.28	45.19
0	J214	0	102	206.28	45.19
0	J216	0	100	225.56	54.4
0	J218	0	100	225.56	54.4
0	J22	41.86	118.5	218.23	43.21
0	J220	50.94	116	218.84	44.56
0	J222	50.4	119.1	219.07	43.32
0	J224	0	118	218.76	43.66
0	J226	0	130	226.6	41.86
0	J228	0	116	245.44	56.09
0	J230	0	147	255.62	47.06
0	J232	0	148	270.13	52.92
0	J236	2,427.93	166	306.06	60.69
0	J238	1,213.97	181	291.88	48.04
0	J240	0	164	306.7	61.83
0	J242	0	148	271.19	53.38
0	J244	0	148	270.43	53.05
0	J246	1,213.97	146	275.85	56.26
0	J252	0	164.3	307.19	61.91
0	J26	88.2	115.5	218.73	44.73
0	J260	0	164.48	307.27	61.87
0	J262	0	164.48	307.33	61.9
0	J264	0	167.47	309.44	61.52
0	J266	0	167.47	309.59	61.58
0	J268	0	167.47	309.74	61.65
0	J270	0	167.47	309.83	61.68
0	J272	0	167.47	309.91	61.72
0	J274	0	167.47	310.57	62.01
0	J276	0	167.47	310.7	62.06
0	J278	0	164.48	169.45	2.15
0	J28	34.78	118.6	219.4	43.68
0	J280	0	164.48	169.45	2.15
0	J282	0	164.48	169.45	2.15
0	J286	0	164.48	169.25	2.07
0	J288	0	164.48	169.26	2.07
0	J290	0	164.48	169.28	2.08
0	J292	0	164.48	169.34	2.11
0	J294	0	164.48	169.53	2.19
0	J296	0	164.57	169.71	2.23
0	J298	0	164.22	170.33	2.65
0	J30	44.42	122.2	219.83	42.3
0	J300	0	127.5	231.95	45.26
0	J302	0	128	232.44	45.25
0	J304	0	142	239.96	42.45

0	J308	0	163	170.71	3.34
0	J310	0	165.5	171.44	2.57
0	J312	0	164.48	169.46	2.16
0	J32	93.48	126	220.69	41.03
0	J328	0	167.47	318.31	65.36
0	J330	0	167.47	317.56	65.03
0	J332	0	167.47	317.4	64.96
0	J334	0	167.47	311.54	62.43
0	J336	0	167.47	318.19	65.31
0	J338	0	167.47	309.83	61.68
0	J34	0	134	221.92	38.1
0	J340	0	167.47	309.59	61.58
0	J36	0	137	224.6	37.96
0	J38	79.7	90.2	216.06	54.53
0	J40	138.2	90	214.68	54.02
0	J42	137.88	101	217.82	50.62
0	J44	93.74	111	218.52	46.59
0	J46	79.04	113	218.71	45.8
0	J48	76.62	114.7	218.33	44.9
0	J50	76.58	120	219.09	42.93
0	J52	152.52	126	219.73	40.61
0	J54	76.28	127.6	219.79	39.94
0	J56	70.04	121.9	219.72	42.39
0	J58	97.94	126	219.86	40.67
0	J60	43.14	124.5	219.82	41.3
0	J62	94.12	122	220.13	42.52
0	J64	69.8	127	220.24	40.4
0	J66	44.72	130.5	220.94	39.19
0	J68	45.14	88	208.65	52.28
0	J70	92.66	97.5	201.19	44.93
0	J72	105.24	102	208.75	46.26
0	J74	104.58	108	212.94	45.47
0	J76	92.9	128	218.33	39.14
0	J78	160.7	126	220.2	40.82
0	J82	0	126.4	219.96	40.54
0	J84	23.7	76	209.99	58.06
0	J86	49.12	78	211.91	58.02
0	J88	42.04	88.4	213.6	54.25
0	J90	52.46	104	214.02	47.67
0	J92	53.12	98	210.71	48.84
0	J94	50.48	107	216.45	47.43
0	J96	40.96	116	219.17	44.7

	ID	Flow (gpm)	Head (ft)
0	RES9010	-11,799.99	171.44

	ID	Elevation (ft)	Upstream Pre	Downstream	Flow (gpm)	Head Gain (ft	Status	Setting	Available NPS	Cavitation Inc
0	U7002	153.8	6.5	73.92	2,604.19	155.59	Open	1	48.13	0
0	U7004	153.8	6.47	73.61	2,610.57	154.95	Open	1	48.07	0
0	U7006	153.8	6.46	73.54	2,611.86	154.82	Open	1	48.04	0
0	U7008	153.8	6.63	69.08	1,366.93	144.12	Open	1	48.4	0
0	U7010	153.8	6.55	73.87	2,606.43	155.37	Open	1	48.26	0
0	U7012	153.8	6.78	67.61	0	0	Closed	0	0	0
0	U7014	153.8	6.78	67.51	0	0	Closed	0	0	0

	ID	Diameter (in)	Elevation (ft)	Upstream Pre	Downstream	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	Status	Setting
0	V8000	8	122	42.52	47.52	0	0	11.54	Open	5
0	V8002	8	122	42.39	47.52	0	0	0	Closed	5
0	V8008	10	132	41.58	36.58	0	0	11.54	Open	2
0	V8010	10	132	38.11	36.58	0	0	0	Closed	2
0	V8012	8	118	43.64	38.94	0	0	0	Closed	5

0	V8014	8	118	43.94	38.94	0	0	11.54	Open	5
0	V8016	8	115.5	44.73	49.73	0	0	11.54	Open	5
0	V8018	8	115.5	44.51	49.73	0	0	0	Closed	5
0	V8020	8	128	40.42	45.42	0	0	11.54	Open	5
0	V8022	8	128	40.16	45.42	0	0	0	Closed	5
0	V8024	8	98	51.15	46.68	0	0	0	Closed	5
0	V8026	8	98	51.68	46.68	0	0	11.54	Open	5
0	V8028	10	120	42.82	47.83	0	0	0	Closed	2
0	V8032	8	123	41.95	36.95	0	0	11.54	Open	5
0	V8034	8	123	42.09	36.95	0	0	0	Closed	5
0	V8036	8	94	50.26	51.45	0	0	0	Closed	5
0	V8038	8	94	46.45	51.45	0	0	11.54	Open	5
0	V8042	10	118	43.66	38.66	0	0	11.54	Open	2
0	V8044	10	118	42.28	38.66	0	0	0	Closed	2
0	V8052	10	100	43.11	39.32	1,995.08	8.15	8.75	Open	2
0	V8054	10	100	43.15	39.34	2,004.92	8.19	8.79	Open	2
0	V8056	8	102	50.19	45.19	0	0	11.54	Open	5
0	V8058	8	102	49.53	45.19	0	0	0	Closed	5
0	V8060	8	100	49.22	54.4	0	0	0	Closed	5
0	V8062	8	100	49.4	54.4	0	0	11.54	Open	5
0	V8070	10	120	42.83	47.83	0	0	11.54	Open	2

	ID	From Node	To Node	Length (ft)	Diameter (in)	Roughness	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	HL/1000 (ft/k
0	P101	J72	J92	810.17	12	130	-974.27	2.76	1.96	2.42
0	P103	J92	J90	1,241.83	12	130	-1,027.39	2.91	3.31	2.66
0	P105	J90	J94	1,132.34	16	130	-1,949.42	3.11	2.43	2.15
0	P107	J94	J96	1,204.53	16	130	-1,999.90	3.19	2.71	2.25
0	P111	J78	J100	1,067.79	16	130	-1,818.47	2.9	2.02	1.89
0	P115	J96	J100	886.7	16	130	-2,512.66	4.01	3.05	3.44
0	P117	J100	J102	789.56	20	130	-4,431.83	4.53	2.62	3.32
0	P119	J102	J104	941.88	20	130	-4,431.83	4.53	3.12	3.32
0	P121	J104	J300	1,197.93	20	130	-4,441.15	4.54	3.99	3.33
0	P123	J300	J302	147.08	20	130	-4,441.15	4.54	0.49	3.33
0	P125	J302	J304	2,260.56	20	130	-4,441.15	4.54	7.53	3.33
0	P139	J122	J124	627.68	12	130	-350.98	1	0.23	0.36
0	P141	J124	J60	1,242.80	12	130	-417.74	1.19	0.63	0.5
0	P145	J34	J126	846.23	20	130	1,999.22	2.04	0.64	0.76
0	P149	J66	J128	522.48	8	130	-82.84	0.53	0.09	0.18
0	P155	J126	J130	441.09	8	130	82.84	0.53	0.08	0.18
0	P157	J128	J130	886.05	8	130	-82.84	0.53	0.16	0.18
0	P159	J126	J32	843.52	20	130	1,916.37	1.96	0.59	0.7
0	P161	J66	J132	415.81	8	130	0	0	0	0
0	P163	J64	J136	338.87	8	130	0	0	0	0
0	P165	J136	J134	525.67	8	130	0	0	0	0
0	P167	J132	J134	848.01	8	130	0	0	0	0
0	P17	J20	J22	1,133.08	16	130	-782.26	1.25	0.45	0.4
0	P171	V8000	J138	423.5	10	130	0	0	0	0
0	P173	J138	J140	355.5	10	130	0	0	0	0
0	P177	V8002	J140	603.42	10	130	0	0	0	0
0	P179	J30	V8002	454.21	10	130	0	0	0	0
0	P181	J62	V8000	384.46	10	130	0	0	0	0
0	P19	J22	J26	1,147.36	16	130	-824.12	1.32	0.5	0.44
0	P193	J104	V8008	482.89	12	130	0	0	0	0
0	P195	J82	V8010	213.6	12	130	0	0	0	0
0	P197	V8010	J146	842.68	12	130	0	0	0	0
0	P199	J146	J148	514.03	12	130	0	0	0	0
0	P201	V8008	J148	1,114.81	12	130	0	0	0	0
0	P203	J26	V8012	268.73	10	130	0	0	0	0
0	P205	J28	V8014	295.03	10	130	0	0	0	0
0	P207	V8014	J152	482.16	10	130	0	0	0	0
0	P209	V8012	J150	236	10	130	0	0	0	0

0	P21	J26	J28	1,118.04	16	130	-979.62	1.56	0.67	0.6
0	P211	J152	J150	798.51	10	130	0	0	0	0
0	P213	J20	J154	348.19	12	130	738.2	2.09	0.5	1.44
0	P215	J154	J38	842.54	12	130	738.2	2.09	1.22	1.44
0	P217	J26	V8016	273.58	10	130	0	0	0	0
0	P219	J22	V8018	229.2	10	130	0	0	0	0
0	P221	V8018	J156	462.48	10	130	0	0	0	0
0	P223	V8016	J158	716.7	10	130	0	0	0	0
0	P225	J158	J156	802.77	10	130	0	0	0	0
0	P227	J32	V8022	269.66	10	130	0	0	0	0
0	P229	V8022	J160	385.74	10	130	0	0	0	0
0	P23	J28	J30	679.9	16	130	-1,014.40	1.62	0.44	0.64
0	P231	J126	V8020	259.39	10	130	0	0	0	0
0	P233	V8020	J162	510.51	10	130	0	0	0	0
0	P235	J160	J162	392.51	10	130	0	0	0	0
0	P237	J38	V8024	301.75	10	130	0	0	0	0
0	P239	J154	V8026	160.09	10	130	0	0	0	0
0	P241	V8026	J166	918.28	10	130	0	0	0	0
0	P243	J166	J164	455.03	10	130	0	0	0	0
0	P245	V8024	J164	882.35	10	130	0	0	0	0
0	P247	J46	J168	532.6	12	130	-275.2	0.78	0.12	0.23
0	P249	J168	J122	563.66	12	130	-275.2	0.78	0.13	0.23
0	P25	J30	J32	1,229.93	16	130	-1,058.82	1.69	0.85	0.69
0	P251	J168	V8028	209.52	12	130	0	0	0	0
0	P253	V8028	J170	652.72	12	130	0	0	0	0
0	P255	J170	J172	387.16	12	130	0	0	0	0
0	P261	J60	V8032	268.68	10	130	0	0	0	0
0	P263	V8032	J174	918.23	10	130	0	0	0	0
0	P265	J174	J176	448.57	10	130	0	0	0	0
0	P267	J62	V8034	292.8	10	130	0	0	0	0
0	P269	V8034	J176	916.13	10	130	0	0	0	0
0	P271	J70	V8038	242.57	10	130	0	0	0	0
0	P273	J84	V8036	324.38	10	130	0	0	0	0
0	P275	V8036	J180	319.74	10	130	0	0	0	0
0	P277	J180	J178	347.95	10	130	0	0	0	0
0	P279	V8038	J178	632.77	10	130	0	0	0	0
0	P281	J76	J182	613.97	12	130	1,359.17	3.86	2.75	4.47
0	P283	J182	J74	589.22	12	130	1,359.17	3.86	2.64	4.47
0	P287	V8042	J184	372.65	12	130	0	0	0	0
0	P289	J184	J186	299.52	12	130	0	0	0	0
0	P29	J34	J36	2,325.70	20	130	-2,502.97	2.56	2.68	1.15
0	P295	J182	V8044	226.67	12	130	0	0	0	0
0	P297	V8044	J186	240.53	12	130	0	0	0	0
0	P299	J52	J188	313.33	8	130	8.86	0.06	0	0
0	P301	J188	J190	664.92	8	130	8.86	0.06	0	0
0	P303	J56	J194	178.12	8	130	-8.86	0.06	0	0
0	P305	J194	J192	667.8	8	130	-8.86	0.06	0	0
0	P307	J192	J190	657.08	8	130	-8.86	0.06	0	0
0	P309	J72	J196	736.36	12	130	2,123.62	6.02	7.53	10.22
0	P311	J196	J70	609.66	12	130	118.7	0.34	0.03	0.05
0	P313	J40	J198	1,129.17	12	130	-739.17	2.1	1.64	1.45
0	P315	J198	J42	1,043.66	12	130	-739.17	2.1	1.51	1.45
0	P329	J70	V8052	185.71	12	130	1,995.08	5.66	1.69	9.11
0	P33	J38	J40	1,179.71	12	130	658.5	1.87	1.38	1.17
0	P331	V8052	J206	525.44	12	130	1,995.08	5.66	4.79	9.11
0	P333	J196	V8054	178.3	12	130	2,004.92	5.69	1.64	9.19
0	P335	V8054	J208	525.19	12	130	2,004.92	5.69	4.83	9.19
0	P337	J208	J206	475.84	12	130	4.92	0.01	0	0
0	P341	J198	V8058	154.71	10	130	0	0	0	0
0	P343	V8058	J214	421.16	10	130	0	0	0	0
0	P345	J214	J210	577.05	10	130	0	0	0	0

0	P347	J42	V8056	297.78	10	130	0	0	0	0
0	P349	V8056	J212	569.55	10	130	0	0	0	0
0	P351	J212	J210	1,312.90	10	130	0	0	0	0
0	P353	J88	V8060	266.49	10	130	0	0	0	0
0	P355	V8060	J216	322.62	10	130	0	0	0	0
0	P357	J90	V8062	226.9	10	130	0	0	0	0
0	P359	V8062	J218	739.72	10	130	0	0	0	0
0	P361	J218	J216	604.58	10	130	0	0	0	0
0	P363	J56	J222	1,322.36	12	130	411.4	1.17	0.65	0.49
0	P365	J222	J220	621.17	12	130	361	1.02	0.24	0.38
0	P367	J220	J44	1,095.19	12	130	310.06	0.88	0.32	0.29
0	P37	J26	J46	1,141.00	12	130	67.3	0.19	0.02	0.02
0	P379	J76	J224	678.87	12	130	-471.8	1.34	0.43	0.63
0	P381	J224	V8042	158.85	12	130	0	0	0	0
0	P39	J46	J44	879.87	12	130	263.46	0.75	0.19	0.21
0	P393	J226	J36	1,733.97	20	130	2,502.97	2.56	2	1.15
0	P395	J96	J224	650.52	12	130	471.8	1.34	0.41	0.63
0	P399	J232	J230	2,608.50	18	130	4,441.15	5.6	14.51	5.56
0	P401	J230	J304	2,813.67	18	130	4,441.15	5.6	15.65	5.56
0	P403	J232	J228	7,230.92	16	130	2,502.97	3.99	24.69	3.41
0	P405	J228	J226	5,520.22	16	130	2,502.97	3.99	18.85	3.41
0	P41	J44	J42	1,067.11	12	130	479.78	1.36	0.69	0.65
0	P415	J220	V8070	127.05	12	130	0	0	0	0
0	P417	V8070	J172	78.54	12	130	0	0	0	0
0	P421	J240	J236	955.52	36	130	8,738.80	2.75	0.64	0.67
0	P423	J236	J238	5,398.38	24	130	6,310.87	4.48	14.18	2.63
0	P425	J238	J246	9,066.36	24	130	5,096.90	3.61	16.03	1.77
0	P427	J246	J244	5,073.87	24	130	3,882.93	2.75	5.42	1.07
0	P429	J240	J242	7,163.69	16	130	3,061.20	4.88	35.51	4.96
0	P43	J42	J48	1,096.37	12	130	-397.27	1.13	0.5	0.46
0	P431	J242	J232	213.31	16	130	3,061.20	4.88	1.06	4.96
0	P433	J244	J232	281.24	24	130	3,882.93	2.75	0.3	1.07
0	P439	RES9010	J310	68.78	1,100.00	130	11,799.99	0	0	0
0	P441	J310	J308	18	36	130	11,799.99	3.72	0.73	40.54
0	P443	J308	J298	106.2	36	130	11,799.99	3.72	0.38	3.59
0	P445	J298	J296	55.4	36	130	11,799.99	3.72	0.62	11.24
0	P447	J296	J294	78.5	36	130	11,799.99	3.72	0.18	2.26
0	P449	J294	J292	19	30	130	9,193.57	4.17	0.19	9.75
0	P45	J48	J50	1,194.62	12	130	-473.89	1.34	0.76	0.64
0	P451	J292	J290	9.2	30	130	6,589.37	2.99	0.06	7
0	P453	J290	J288	9.2	30	130	3,978.80	1.81	0.02	2.58
0	P455	J288	J286	9.2	30	130	1,366.93	0.62	0	0.31
0	P461	J282	J280	9.2	30	130	0	0	0	0
0	P463	J280	J278	9.2	30	130	0	0	0	0
0	P465	J292	U7002	20.6	18	130	2,604.19	3.28	0.54	26.45
0	P469	J290	U7004	20.6	18	130	2,610.57	3.29	0.55	26.57
0	P47	J50	J52	765.09	12	130	-550.47	1.56	0.64	0.84
0	P473	J288	U7006	20.6	18	130	2,611.86	3.29	0.55	26.6
0	P477	J286	U7008	20.6	18	130	1,366.93	1.72	0.15	7.34
0	P481	J282	U7010	12.1	18	130	2,606.43	3.29	0.53	43.64
0	P485	J280	U7012	12.1	18	130	0	0	0	0
0	P489	J278	U7014	12.1	18	130	0	0	0	0
0	P49	J32	J62	1,463.77	16	130	764.07	1.22	0.56	0.38
0	P493	J276	J274	4.9	16	130	2,604.19	4.16	0.13	25.56
0	P495	J274	J272	4.2	16	130	5,210.62	8.31	0.66	156.39
0	P497	J272	J270	4.7	30	130	7,821.20	3.55	0.08	17.97
0	P499	J270	J268	4.7	30	130	7,821.20	3.55	0.08	17.97
0	P501	J268	J266	4.7	30	130	10,433.06	4.74	0.15	31.88
0	P503	J266	J264	4.7	30	130	10,433.06	4.74	0.15	31.87
0	P505	J264	J262	60.6	30	130	11,799.99	5.36	2.11	34.87
0	P507	J262	J260	20.3	36	130	11,799.99	3.72	0.07	3.28

0	P509	J260	J252	30.38	36	130	11,799.99	3.72	0.08	2.58
0	P51	J34	J66	1,373.58	12	130	503.75	1.43	0.98	0.71
0	P511	J252	J240	90.5	36	130	11,799.99	3.72	0.49	5.43
0	P513	J294	J312	36.2	30	130	2,606.43	1.18	0.07	1.85
0	P515	J312	J282	31.2	30	130	2,606.43	1.18	0.01	0.31
0	P517	U7002	J328	15	12	130	2,604.19	7.39	6.09	405.83
0	P519	J328	J276	9.1	14	130	2,604.19	5.43	7.61	836.36
0	P521	U7004	J330	15	12	130	2,610.57	7.41	6.12	407.81
0	P523	J330	J272	9.1	14	130	2,610.57	5.44	7.65	840.46
0	P525	U7006	J332	15	12	130	2,611.86	7.41	6.12	408.22
0	P527	J332	J268	9.1	14	130	2,611.86	5.44	7.66	841.29
0	P529	U7008	J334	15	12	130	1,366.93	3.88	1.68	112.23
0	P53	J66	J64	862.35	12	130	541.88	1.54	0.7	0.81
0	P531	J334	J264	9.1	14	130	1,366.93	2.85	2.1	230.62
0	P533	U7010	J336	15	12	130	2,606.43	7.39	6.1	406.52
0	P535	J336	J274	9.1	14	130	2,606.43	5.43	7.62	837.79
0	P537	U7012	J338	15	12	130	0	0	0	0
0	P539	J338	J270	9.1	14	130	0	0	0	0
0	P541	U7014	J340	15	12	130	0	0	0	0
0	P543	J340	J266	9.1	14	130	0	0	0	0
0	P55	J62	J64	1,082.76	12	130	-175.59	0.5	0.11	0.1
0	P57	J62	J60	691.6	16	130	845.55	1.35	0.32	0.46
0	P59	J64	J58	1,424.22	12	130	296.49	0.84	0.38	0.27
0	P61	J60	J56	890.62	16	130	384.67	0.61	0.09	0.11
0	P67	J56	J52	1,036.48	16	130	-87.91	0.14	0.01	0.01
0	P69	J52	J54	1,131.15	12	130	-122.27	0.35	0.06	0.05
0	P71	J58	J54	591.64	12	130	198.55	0.56	0.08	0.13
0	P73	J40	J68	1,551.82	12	130	1,259.47	3.57	6.03	3.89
0	P75	J68	J70	838.54	12	130	1,969.04	5.59	7.45	8.89
0	P79	J72	J74	1,086.50	12	130	-1,254.59	3.56	4.19	3.86
0	P83	J76	J78	765.46	12	130	-980.27	2.78	1.87	2.44
0	P89	J52	J82	771.55	16	130	-677.5	1.08	0.23	0.3
0	P91	J82	J78	774.7	16	130	-677.5	1.08	0.24	0.3
0	P93	J68	J84	890.35	12	130	-754.71	2.14	1.34	1.51
0	P95	J84	J86	1,204.21	12	130	-778.41	2.21	1.92	1.59
0	P97	J86	J88	946.69	12	130	-827.53	2.35	1.69	1.79
0	P99	J88	J90	874.98	16	130	-869.57	1.39	0.42	0.48

Run EB8

	ID	Demand (gpr	Elevation (ft)	Head (ft)	Pressure (psi)
0	J100	100.7	122	244.36	53.02
0	J102	0	125.5	246.25	52.32
0	J104	9.32	129.8	248.5	51.43
0	J122	75.78	117.5	237.46	51.98
0	J124	66.76	119.5	237.86	51.29
0	J126	0	130	239.9	47.62
0	J128	0	133	239.77	46.26
0	J130	0	134	239.86	45.87
0	J132	0	131	239.71	47.11
0	J134	0	131	239.71	47.11
0	J136	0	131	239.71	47.11
0	J138	0	122	227.55	45.73
0	J140	0	122	227.55	45.73
0	J146	0	132	236.96	45.48
0	J148	0	132	236.96	45.48
0	J150	0	118	249.63	57.03
0	J152	0	118	249.63	57.03
0	J154	0	90.3	236.77	63.47
0	J156	0	115.5	225.86	47.82
0	J158	0	115.5	225.86	47.82
0	J160	0	128	251.44	53.49

0	J162	0	128	251.44	53.49
0	J164	0	98	225.23	55.13
0	J166	0	98	225.23	55.13
0	J168	0	115.25	237.2	52.84
0	J170	0	120	225.21	45.59
0	J172	0	120	225.21	45.59
0	J174	0	123	227.34	45.21
0	J176	0	123	227.34	45.21
0	J178	0	94	251.13	68.08
0	J180	0	94	251.13	68.08
0	J182	0	118	241.57	53.54
0	J184	0	118	254.03	58.94
0	J186	0	118	254.03	58.94
0	J188	0	126	239.07	48.99
0	J190	0	126	239.01	48.97
0	J192	0	126	238.95	48.94
0	J194	0	126	238.89	48.91
0	J196	0	99.75	240.13	60.83
0	J198	0	95.5	232.16	59.22
0	J20	44.06	90.4	236.98	63.51
0	J206	0	100	251.67	65.72
0	J208	0	100	251.67	65.72
0	J210	1,500.00	102	212.13	47.72
0	J212	1,500.00	102	212.27	47.78
0	J214	0	102	218.67	50.55
0	J216	0	100	253.01	66.3
0	J218	0	100	253.01	66.3
0	J22	41.86	118.5	237.17	51.42
0	J220	50.94	116	236.75	52.32
0	J222	50.4	119.1	237.36	51.24
0	J224	0	118	242.49	53.94
0	J226	0	130	244.16	49.47
0	J228	0	116	259.23	62.06
0	J230	0	147	268.48	52.64
0	J232	0	148	278.97	56.75
0	J236	2,427.93	166	307.28	61.22
0	J238	1,213.97	181	295.62	49.67
0	J240	0	164	307.83	62.32
0	J242	0	148	279.8	57.11
0	J244	0	148	279.18	56.84
0	J246	1,213.97	146	283.08	59.4
0	J252	0	164.3	308.25	62.37
0	J26	88.2	115.5	237.4	52.82
0	J260	0	164.48	308.31	62.32
0	J262	0	164.48	308.37	62.35
0	J264	0	167.47	310.14	61.82
0	J266	0	167.47	310.29	61.88
0	J268	0	167.47	310.44	61.95
0	J270	0	167.47	310.52	61.98
0	J272	0	167.47	310.61	62.02
0	J274	0	167.47	311.26	62.31
0	J276	0	167.47	311.39	62.36
0	J278	0	164.48	169.76	2.29
0	J28	34.78	118.6	238.09	51.77
0	J280	0	164.48	169.76	2.29
0	J282	0	164.48	169.76	2.29
0	J286	0	164.48	169.63	2.23
0	J288	0	164.48	169.63	2.23
0	J290	0	164.48	169.64	2.24
0	J292	0	164.48	169.69	2.26
0	J294	0	164.48	169.84	2.32

0	J296	0	164.57	169.99	2.35
0	J298	0	164.22	170.51	2.72
0	J30	44.42	122.2	238.53	50.41
0	J300	0	127.5	251.38	53.68
0	J302	0	128	251.74	53.62
0	J304	0	142	257.18	49.91
0	J308	0	163	170.83	3.39
0	J310	0	165.5	171.44	2.57
0	J312	0	164.48	169.77	2.29
0	J32	93.48	126	239.41	49.14
0	J328	0	167.47	318.98	65.65
0	J330	0	167.47	318.24	65.33
0	J332	0	167.47	318.08	65.26
0	J334	0	167.47	310.3	61.89
0	J336	0	167.47	318.87	65.6
0	J338	0	167.47	310.52	61.98
0	J34	0	134	240.43	46.11
0	J340	0	167.47	310.29	61.88
0	J36	0	137	242.57	45.74
0	J38	79.7	90.2	236.28	63.3
0	J40	138.2	90	235.8	63.18
0	J42	137.88	101	232.37	56.92
0	J44	93.74	111	235.83	54.09
0	J46	79.04	113	236.95	53.71
0	J48	76.62	114.7	234.46	51.89
0	J50	76.58	120	237.12	50.75
0	J52	152.52	126	239.1	49.01
0	J54	76.28	127.6	239.1	48.31
0	J56	70.04	121.9	238.87	50.68
0	J58	97.94	126	239.11	49.01
0	J60	43.14	124.5	238.88	49.56
0	J62	94.12	122	239.09	50.73
0	J64	69.8	127	239.24	48.63
0	J66	44.72	130.5	239.71	47.32
0	J68	45.14	88	239.06	65.45
0	J70	92.66	97.5	239.59	61.57
0	J72	105.24	102	240.78	60.13
0	J74	104.58	108	241.2	57.72
0	J76	92.9	128	241.96	49.38
0	J78	160.7	126	241.96	50.25
0	J82	0	126.4	240.53	49.45
0	J84	23.7	76	239.63	70.9
0	J86	49.12	78	240.47	70.4
0	J88	42.04	88.4	241.26	66.24
0	J90	52.46	104	241.47	59.57
0	J92	53.12	98	241	61.96
0	J94	50.48	107	242.18	58.57
0	J96	40.96	116	243	55.03

	ID	Flow (gpm)	Head (ft)
0	RES9010	-10,799.99	171.44

	ID	Elevation (ft)	Upstream Pre	Downstream	Flow (gpm)	Head Gain (ft	Status	Setting	Available NPS	Cavitation Inc
0	U7002	153.8	6.65	74.2	2,601.11	155.91	Open	1	48.48	0
0	U7004	153.8	6.63	73.9	2,607.63	155.25	Open	1	48.43	0
0	U7006	153.8	6.62	73.83	2,609.01	155.11	Open	1	48.42	0
0	U7008	153.8	6.85	67.87	379.25	140.82	Open	1	48.9	0
0	U7010	153.8	6.69	74.16	2,603.00	155.71	Open	1	48.57	0
0	U7012	153.8	6.92	67.91	0	0	Closed	0	0	0
0	U7014	153.8	6.92	67.81	0	0	Closed	0	0	0

	ID	Diameter (in)	Elevation (ft)	Upstream Pre	Downstream	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	Status	Setting
0	V8000	8	122	50.73	45.73	0	0	11.54	Open	5
0	V8002	8	122	50.49	45.73	0	0	0	Closed	5
0	V8008	10	132	50.48	45.48	0	0	11.54	Open	2
0	V8010	10	132	47.03	45.48	0	0	0	Closed	2
0	V8012	8	118	51.74	57.03	0	0	0	Closed	5
0	V8014	8	118	52.03	57.03	0	0	11.54	Open	5
0	V8016	8	115.5	52.82	47.82	0	0	11.54	Open	5
0	V8018	8	115.5	52.72	47.82	0	0	0	Closed	5
0	V8020	8	128	48.49	53.49	0	0	11.54	Open	5
0	V8022	8	128	48.27	53.49	0	0	0	Closed	5
0	V8024	8	98	59.92	55.13	0	0	0	Closed	5
0	V8026	8	98	60.13	55.13	0	0	11.54	Open	5
0	V8028	10	120	50.78	45.59	0	0	0	Closed	2
0	V8032	8	123	50.21	45.21	0	0	11.54	Open	5
0	V8034	8	123	50.3	45.21	0	0	0	Closed	5
0	V8036	8	94	63.1	68.08	0	0	0	Closed	5
0	V8038	8	94	63.08	68.08	0	0	11.54	Open	5
0	V8042	10	118	53.94	58.94	0	0	11.54	Open	2
0	V8044	10	118	53.54	58.94	0	0	0	Closed	2
0	V8052	10	100	60.48	65.72	0	0	0	Closed	2
0	V8054	10	100	60.72	65.72	0	0	11.54	Open	2
0	V8056	8	102	54.57	51.45	1,610.29	10.28	7.19	Open	5
0	V8058	8	102	55.64	52.62	1,389.71	8.87	6.97	Open	5
0	V8060	8	100	61.21	66.3	0	0	0	Closed	5
0	V8062	8	100	61.3	66.3	0	0	11.54	Open	5
0	V8070	10	120	50.59	45.59	0	0	11.54	Open	2

	ID	From Node	To Node	Length (ft)	Diameter (in)	Roughness	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	HL/1000 (ft/k
0	P101	J72	J92	810.17	12	130	-304.06	0.86	0.23	0.28
0	P103	J92	J90	1,241.83	12	130	-357.18	1.01	0.47	0.38
0	P105	J90	J94	1,132.34	16	130	-1,000.40	1.6	0.71	0.62
0	P107	J94	J96	1,204.53	16	130	-1,050.88	1.68	0.82	0.68
0	P111	J78	J100	1,067.79	16	130	-1,993.92	3.18	2.39	2.24
0	P115	J96	J100	886.7	16	130	-1,622.07	2.59	1.36	1.53
0	P117	J100	J102	789.56	20	130	-3,716.69	3.8	1.89	2.39
0	P119	J102	J104	941.88	20	130	-3,716.69	3.8	2.26	2.39
0	P121	J104	J300	1,197.93	20	130	-3,726.01	3.81	2.88	2.41
0	P123	J300	J302	147.08	20	130	-3,726.01	3.81	0.35	2.41
0	P125	J302	J304	2,260.56	20	130	-3,726.01	3.81	5.44	2.41
0	P139	J122	J124	627.68	12	130	-476.13	1.35	0.4	0.64
0	P141	J124	J60	1,242.80	12	130	-542.89	1.54	1.02	0.82
0	P145	J34	J126	846.23	20	130	1,793.63	1.83	0.53	0.62
0	P149	J66	J128	522.48	8	130	-60.38	0.39	0.05	0.1
0	P155	J126	J130	441.09	8	130	60.38	0.39	0.04	0.1
0	P157	J128	J130	886.05	8	130	-60.38	0.39	0.09	0.1
0	P159	J126	J32	843.52	20	130	1,733.24	1.77	0.49	0.58
0	P161	J66	J132	415.81	8	130	0	0	0	0
0	P163	J64	J136	338.87	8	130	0	0	0	0
0	P165	J136	J134	525.67	8	130	0	0	0	0
0	P167	J132	J134	848.01	8	130	0	0	0	0
0	P17	J20	J22	1,133.08	16	130	-496.71	0.79	0.19	0.17
0	P171	V8000	J138	423.5	10	130	0	0	0	0
0	P173	J138	J140	355.5	10	130	0	0	0	0
0	P177	V8002	J140	603.42	10	130	0	0	0	0
0	P179	J30	V8002	454.21	10	130	0	0	0	0
0	P181	J62	V8000	384.46	10	130	0	0	0	0
0	P19	J22	J26	1,147.36	16	130	-538.57	0.86	0.23	0.2
0	P193	J104	V8008	482.89	12	130	0	0	0	0
0	P195	J82	V8010	213.6	12	130	0	0	0	0
0	P197	V8010	J146	842.68	12	130	0	0	0	0

0	P199	J146	J148	514.03	12	130	0	0	0	0
0	P201	V8008	J148	1,114.81	12	130	0	0	0	0
0	P203	J26	V8012	268.73	10	130	0	0	0	0
0	P205	J28	V8014	295.03	10	130	0	0	0	0
0	P207	V8014	J152	482.16	10	130	0	0	0	0
0	P209	V8012	J150	236	10	130	0	0	0	0
0	P21	J26	J28	1,118.04	16	130	-993.11	1.58	0.69	0.62
0	P211	J152	J150	798.51	10	130	0	0	0	0
0	P213	J20	J154	348.19	12	130	452.65	1.28	0.2	0.58
0	P215	J154	J38	842.54	12	130	452.65	1.28	0.49	0.58
0	P217	J26	V8016	273.58	10	130	0	0	0	0
0	P219	J22	V8018	229.2	10	130	0	0	0	0
0	P221	V8018	J156	462.48	10	130	0	0	0	0
0	P223	V8016	J158	716.7	10	130	0	0	0	0
0	P225	J158	J156	802.77	10	130	0	0	0	0
0	P227	J32	V8022	269.66	10	130	0	0	0	0
0	P229	V8022	J160	385.74	10	130	0	0	0	0
0	P23	J28	J30	679.9	16	130	-1,027.89	1.64	0.45	0.66
0	P231	J126	V8020	259.39	10	130	0	0	0	0
0	P233	V8020	J162	510.51	10	130	0	0	0	0
0	P235	J160	J162	392.51	10	130	0	0	0	0
0	P237	J38	V8024	301.75	10	130	0	0	0	0
0	P239	J154	V8026	160.09	10	130	0	0	0	0
0	P241	V8026	J166	918.28	10	130	0	0	0	0
0	P243	J166	J164	455.03	10	130	0	0	0	0
0	P245	V8024	J164	882.35	10	130	0	0	0	0
0	P247	J46	J168	532.6	12	130	-400.35	1.14	0.25	0.47
0	P249	J168	J122	563.66	12	130	-400.35	1.14	0.26	0.47
0	P25	J30	J32	1,229.93	16	130	-1,072.31	1.71	0.87	0.71
0	P251	J168	V8028	209.52	12	130	0	0	0	0
0	P253	V8028	J170	652.72	12	130	0	0	0	0
0	P255	J170	J172	387.16	12	130	0	0	0	0
0	P261	J60	V8032	268.68	10	130	0	0	0	0
0	P263	V8032	J174	918.23	10	130	0	0	0	0
0	P265	J174	J176	448.57	10	130	0	0	0	0
0	P267	J62	V8034	292.8	10	130	0	0	0	0
0	P269	V8034	J176	916.13	10	130	0	0	0	0
0	P271	J70	V8038	242.57	10	130	0	0	0	0
0	P273	J84	V8036	324.38	10	130	0	0	0	0
0	P275	V8036	J180	319.74	10	130	0	0	0	0
0	P277	J180	J178	347.95	10	130	0	0	0	0
0	P279	V8038	J178	632.77	10	130	0	0	0	0
0	P281	J76	J182	613.97	12	130	470.97	1.34	0.39	0.63
0	P283	J182	J74	589.22	12	130	470.97	1.34	0.37	0.63
0	P287	V8042	J184	372.65	12	130	0	0	0	0
0	P289	J184	J186	299.52	12	130	0	0	0	0
0	P29	J34	J36	2,325.70	20	130	-2,218.11	2.27	2.14	0.92
0	P295	J182	V8044	226.67	12	130	0	0	0	0
0	P297	V8044	J186	240.53	12	130	0	0	0	0
0	P299	J52	J188	313.33	8	130	57.44	0.37	0.03	0.09
0	P301	J188	J190	664.92	8	130	57.44	0.37	0.06	0.09
0	P303	J56	J194	178.12	8	130	-57.44	0.37	0.02	0.09
0	P305	J194	J192	667.8	8	130	-57.44	0.37	0.06	0.09
0	P307	J192	J190	657.08	8	130	-57.44	0.37	0.06	0.09
0	P309	J72	J196	736.36	12	130	565.21	1.6	0.65	0.88
0	P311	J196	J70	609.66	12	130	565.21	1.6	0.54	0.88
0	P313	J40	J198	1,129.17	12	130	1,138.06	3.23	3.64	3.22
0	P315	J198	J42	1,043.66	12	130	-251.65	0.71	0.21	0.2
0	P329	J70	V8052	185.71	12	130	0	0	0	0
0	P33	J38	J40	1,179.71	12	130	372.95	1.06	0.48	0.41
0	P331	V8052	J206	525.44	12	130	0	0	0	0

0	P333	J196	V8054	178.3	12	130	0	0	0	0
0	P335	V8054	J208	525.19	12	130	0	0	0	0
0	P337	J208	J206	475.84	12	130	0	0	0	0
0	P341	J198	V8058	154.71	10	130	1,389.71	5.68	1.75	11.33
0	P343	V8058	J214	421.16	10	130	1,389.71	5.68	4.77	11.33
0	P345	J214	J210	577.05	10	130	1,389.71	5.68	6.54	11.33
0	P347	J42	V8056	297.78	10	130	1,610.29	6.58	4.43	14.89
0	P349	V8056	J212	569.55	10	130	1,610.29	6.58	8.48	14.89
0	P351	J212	J210	1,312.90	10	130	110.29	0.45	0.14	0.1
0	P353	J88	V8060	266.49	10	130	0	0	0	0
0	P355	V8060	J216	322.62	10	130	0	0	0	0
0	P357	J90	V8062	226.9	10	130	0	0	0	0
0	P359	V8062	J218	739.72	10	130	0	0	0	0
0	P361	J218	J216	604.58	10	130	0	0	0	0
0	P363	J56	J222	1,322.36	12	130	650.37	1.84	1.51	1.14
0	P365	J222	J220	621.17	12	130	599.97	1.7	0.61	0.98
0	P367	J220	J44	1,095.19	12	130	549.03	1.56	0.91	0.83
0	P37	J26	J46	1,141.00	12	130	366.34	1.04	0.45	0.39
0	P379	J76	J224	678.87	12	130	-530.23	1.5	0.53	0.78
0	P381	J224	V8042	158.85	12	130	0	0	0	0
0	P39	J46	J44	879.87	12	130	687.65	1.95	1.11	1.27
0	P393	J226	J36	1,733.97	20	130	2,218.11	2.27	1.6	0.92
0	P395	J96	J224	650.52	12	130	530.23	1.5	0.51	0.78
0	P399	J232	J230	2,608.50	18	130	3,726.01	4.7	10.48	4.02
0	P401	J230	J304	2,813.67	18	130	3,726.01	4.7	11.31	4.02
0	P403	J232	J228	7,230.92	16	130	2,218.11	3.54	19.74	2.73
0	P405	J228	J226	5,520.22	16	130	2,218.11	3.54	15.07	2.73
0	P41	J44	J42	1,067.11	12	130	1,142.94	3.24	3.46	3.25
0	P415	J220	V8070	127.05	12	130	0	0	0	0
0	P417	V8070	J172	78.54	12	130	0	0	0	0
0	P421	J240	J236	955.52	36	130	8,105.76	2.55	0.55	0.58
0	P423	J236	J238	5,398.38	24	130	5,677.83	4.03	11.66	2.16
0	P425	J238	J246	9,066.36	24	130	4,463.86	3.17	12.54	1.38
0	P427	J246	J244	5,073.87	24	130	3,249.89	2.3	3.9	0.77
0	P429	J240	J242	7,163.69	16	130	2,694.23	4.3	28.03	3.91
0	P43	J42	J48	1,096.37	12	130	-856.88	2.43	2.09	1.9
0	P431	J242	J232	213.31	16	130	2,694.23	4.3	0.83	3.91
0	P433	J244	J232	281.24	24	130	3,249.89	2.3	0.22	0.77
0	P439	RES9010	J310	68.78	1,100.00	130	10,799.99	0	0	0
0	P441	J310	J308	18	36	130	10,799.99	3.4	0.61	33.97
0	P443	J308	J298	106.2	36	130	10,799.99	3.4	0.32	3.02
0	P445	J298	J296	55.4	36	130	10,799.99	3.4	0.52	9.43
0	P447	J296	J294	78.5	36	130	10,799.99	3.4	0.15	1.9
0	P449	J294	J292	19	30	130	8,196.99	3.72	0.15	7.77
0	P45	J48	J50	1,194.62	12	130	-933.5	2.65	2.67	2.23
0	P451	J292	J290	9.2	30	130	5,595.88	2.54	0.05	5.06
0	P453	J290	J288	9.2	30	130	2,988.26	1.36	0.01	1.46
0	P455	J288	J286	9.2	30	130	379.25	0.17	0	0.02
0	P461	J282	J280	9.2	30	130	0	0	0	0
0	P463	J280	J278	9.2	30	130	0	0	0	0
0	P465	J292	U7002	20.6	18	130	2,601.11	3.28	0.54	26.38
0	P469	J290	U7004	20.6	18	130	2,607.63	3.29	0.55	26.51
0	P47	J50	J52	765.09	12	130	-1,010.08	2.87	1.98	2.58
0	P473	J288	U7006	20.6	18	130	2,609.01	3.29	0.55	26.54
0	P477	J286	U7008	20.6	18	130	379.25	0.48	0.01	0.57
0	P481	J282	U7010	12.1	18	130	2,603.00	3.28	0.53	43.53
0	P485	J280	U7012	12.1	18	130	0	0	0	0
0	P489	J278	U7014	12.1	18	130	0	0	0	0
0	P49	J32	J62	1,463.77	16	130	567.45	0.91	0.32	0.22
0	P493	J276	J274	4.9	16	130	2,601.11	4.15	0.12	25.5
0	P495	J274	J272	4.2	16	130	5,204.11	8.3	0.66	156

0	P497	J272	J270	4.7	30	130	7,811.74	3.55	0.08	17.93
0	P499	J270	J268	4.7	30	130	7,811.74	3.55	0.08	17.93
0	P501	J268	J266	4.7	30	130	10,420.74	4.73	0.15	31.8
0	P503	J266	J264	4.7	30	130	10,420.74	4.73	0.15	31.8
0	P505	J264	J262	60.6	30	130	10,799.99	4.9	1.77	29.24
0	P507	J262	J260	20.3	36	130	10,799.99	3.4	0.06	2.76
0	P509	J260	J252	30.38	36	130	10,799.99	3.4	0.07	2.17
0	P51	J34	J66	1,373.58	12	130	424.48	1.2	0.71	0.52
0	P511	J252	J240	90.5	36	130	10,799.99	3.4	0.41	4.56
0	P513	J294	J312	36.2	30	130	2,603.00	1.18	0.07	1.85
0	P515	J312	J282	31.2	30	130	2,603.00	1.18	0.01	0.31
0	P517	U7002	J328	15	12	130	2,601.11	7.38	6.07	404.87
0	P519	J328	J276	9.1	14	130	2,601.11	5.42	7.59	834.37
0	P521	U7004	J330	15	12	130	2,607.63	7.4	6.1	406.9
0	P523	J330	J272	9.1	14	130	2,607.63	5.43	7.63	838.56
0	P525	U7006	J332	15	12	130	2,609.01	7.4	6.11	407.33
0	P527	J332	J268	9.1	14	130	2,609.01	5.44	7.64	839.45
0	P529	U7008	J334	15	12	130	379.25	1.08	0.13	8.71
0	P53	J66	J64	862.35	12	130	440.15	1.25	0.48	0.55
0	P531	J334	J264	9.1	14	130	379.25	0.79	0.16	17.79
0	P533	U7010	J336	15	12	130	2,603.00	7.38	6.08	405.46
0	P535	J336	J274	9.1	14	130	2,603.00	5.43	7.6	835.59
0	P537	U7012	J338	15	12	130	0	0	0	0
0	P539	J338	J270	9.1	14	130	0	0	0	0
0	P541	U7014	J340	15	12	130	0	0	0	0
0	P543	J340	J266	9.1	14	130	0	0	0	0
0	P55	J62	J64	1,082.76	12	130	-205.99	0.58	0.15	0.14
0	P57	J62	J60	691.6	16	130	679.32	1.08	0.21	0.31
0	P59	J64	J58	1,424.22	12	130	164.36	0.47	0.13	0.09
0	P61	J60	J56	890.62	16	130	93.29	0.15	0.01	0.01
0	P67	J56	J52	1,036.48	16	130	-569.68	0.91	0.23	0.22
0	P69	J52	J54	1,131.15	12	130	9.86	0.03	0	0
0	P71	J58	J54	591.64	12	130	66.42	0.19	0.01	0.02
0	P73	J40	J68	1,551.82	12	130	-903.31	2.56	3.26	2.1
0	P75	J68	J70	838.54	12	130	-472.55	1.34	0.53	0.63
0	P79	J72	J74	1,086.50	12	130	-366.39	1.04	0.43	0.39
0	P83	J76	J78	765.46	12	130	-33.64	0.1	0	0
0	P89	J52	J82	771.55	16	130	-1,799.58	2.87	1.43	1.85
0	P91	J82	J78	774.7	16	130	-1,799.58	2.87	1.44	1.85
0	P93	J68	J84	890.35	12	130	-475.9	1.35	0.57	0.64
0	P95	J84	J86	1,204.21	12	130	-499.6	1.42	0.84	0.7
0	P97	J86	J88	946.69	12	130	-548.72	1.56	0.79	0.83
0	P99	J88	J90	874.98	16	130	-590.76	0.94	0.21	0.24

Run EB9

	ID	Demand (gpr	Elevation (ft)	Head (ft)	Pressure (psi)
0	J100	100.7	122	244.41	53.04
0	J102	0	125.5	246.3	52.34
0	J104	9.32	129.8	248.55	51.45
0	J122	75.78	117.5	237.39	51.95
0	J124	66.76	119.5	237.87	51.29
0	J126	0	130	239.78	47.57
0	J128	0	133	239.74	46.25
0	J130	0	134	239.77	45.83
0	J132	0	131	239.73	47.11
0	J134	0	131	239.73	47.11
0	J136	0	131	239.73	47.11
0	J138	0	122	227.61	45.76
0	J140	0	122	227.61	45.76
0	J146	0	132	260.09	55.5
0	J148	0	132	260.09	55.5

0	J150	0	118	248.59	56.58
0	J152	0	118	248.59	56.58
0	J154	0	90.3	229.49	60.31
0	J156	0	115.5	224.32	47.15
0	J158	0	115.5	224.32	47.15
0	J160	0	128	228.24	43.43
0	J162	0	128	228.24	43.43
0	J164	1,500.00	98	207.65	47.51
0	J166	1,500.00	98	207.65	47.51
0	J168	0	115.25	237.08	52.79
0	J170	0	120	249.04	55.91
0	J172	0	120	249.04	55.91
0	J174	0	123	250.59	55.28
0	J176	0	123	250.59	55.28
0	J178	0	94	227.77	57.96
0	J180	0	94	227.77	57.96
0	J182	0	118	241.6	53.56
0	J184	0	118	254.08	58.97
0	J186	0	118	254.08	58.97
0	J188	0	126	239.38	49.13
0	J190	0	126	239.29	49.09
0	J192	0	126	239.19	49.05
0	J194	0	126	239.1	49
0	J196	0	99.75	239.92	60.74
0	J198	0	95.5	235.86	60.82
0	J20	44.06	90.4	231.82	61.28
0	J206	0	100	228.38	55.63
0	J208	0	100	228.38	55.63
0	J210	0	102	248.27	63.38
0	J212	0	102	248.27	63.38
0	J214	0	102	248.27	63.38
0	J216	0	100	229.84	56.26
0	J218	0	100	229.84	56.26
0	J22	41.86	118.5	233.79	49.95
0	J220	50.94	116	237.5	52.65
0	J222	50.4	119.1	237.94	51.49
0	J224	0	118	242.54	53.96
0	J226	0	130	244.07	49.43
0	J228	0	116	259.18	62.04
0	J230	0	147	268.5	52.65
0	J232	0	148	278.97	56.75
0	J236	2,427.93	166	307.28	61.22
0	J238	1,213.97	181	295.62	49.67
0	J240	0	164	307.83	62.32
0	J242	0	148	279.8	57.11
0	J244	0	148	279.18	56.84
0	J246	1,213.97	146	283.08	59.4
0	J252	0	164.3	308.25	62.37
0	J26	88.2	115.5	235.86	52.15
0	J260	0	164.48	308.31	62.32
0	J262	0	164.48	308.37	62.35
0	J264	0	167.47	310.14	61.82
0	J266	0	167.47	310.29	61.88
0	J268	0	167.47	310.44	61.95
0	J270	0	167.47	310.52	61.98
0	J272	0	167.47	310.61	62.02
0	J274	0	167.47	311.26	62.31
0	J276	0	167.47	311.39	62.36
0	J278	0	164.48	169.76	2.29
0	J28	34.78	118.6	237.05	51.32
0	J280	0	164.48	169.76	2.29

0	J282	0	164.48	169.76	2.29
0	J286	0	164.48	169.63	2.23
0	J288	0	164.48	169.63	2.23
0	J290	0	164.48	169.64	2.24
0	J292	0	164.48	169.69	2.26
0	J294	0	164.48	169.84	2.32
0	J296	0	164.57	169.99	2.35
0	J298	0	164.22	170.51	2.72
0	J30	44.42	122.2	237.8	50.09
0	J300	0	127.5	251.43	53.7
0	J302	0	128	251.78	53.63
0	J304	0	142	257.21	49.92
0	J308	0	163	170.83	3.39
0	J310	0	165.5	171.44	2.57
0	J312	0	164.48	169.77	2.29
0	J32	93.48	126	239.25	49.07
0	J328	0	167.47	318.98	65.65
0	J330	0	167.47	318.24	65.33
0	J332	0	167.47	318.08	65.26
0	J334	0	167.47	310.3	61.89
0	J336	0	167.47	318.87	65.6
0	J338	0	167.47	310.52	61.98
0	J34	0	134	240.33	46.07
0	J340	0	167.47	310.29	61.88
0	J36	0	137	242.47	45.7
0	J38	79.7	90.2	229.42	60.33
0	J40	138.2	90	234.91	62.79
0	J42	137.88	101	236.73	58.81
0	J44	93.74	111	236.86	54.53
0	J46	79.04	113	236.77	53.63
0	J48	76.62	114.7	237.48	53.2
0	J50	76.58	120	238.56	51.37
0	J52	152.52	126	239.43	49.15
0	J54	76.28	127.6	239.36	48.43
0	J56	70.04	121.9	239.07	50.77
0	J58	97.94	126	239.36	49.12
0	J60	43.14	124.5	239.05	49.63
0	J62	94.12	122	239.15	50.76
0	J64	69.8	127	239.37	48.69
0	J66	44.72	130.5	239.73	47.33
0	J68	45.14	88	238.69	65.29
0	J70	92.66	97.5	239.31	61.45
0	J72	105.24	102	240.67	60.08
0	J74	104.58	108	241.18	57.71
0	J76	92.9	128	242.05	49.42
0	J78	160.7	126	242.07	50.29
0	J82	0	126.4	240.74	49.55
0	J84	23.7	76	239.33	70.77
0	J86	49.12	78	240.28	70.32
0	J88	42.04	88.4	241.16	66.19
0	J90	52.46	104	241.38	59.53
0	J92	53.12	98	240.9	61.92
0	J94	50.48	107	242.14	58.56
0	J96	40.96	116	243.02	55.04

	ID	Flow (gpm)	Head (ft)
0	RES9010	-10,799.99	171.44

	ID	Elevation (ft)	Upstream Pre	Downstream	Flow (gpm)	Head Gain (ft	Status	Setting	Available NPS	Cavitation Inc
0	U7002	153.8	6.65	74.2	2,601.11	155.91	Open	1	48.48	0
0	U7004	153.8	6.63	73.9	2,607.63	155.25	Open	1	48.43	0

0	U7006	153.8	6.62	73.83	2,609.01	155.11	Open	1	48.42	0
0	U7008	153.8	6.85	67.87	379.25	140.82	Open	1	48.9	0
0	U7010	153.8	6.69	74.16	2,603.00	155.71	Open	1	48.57	0
0	U7012	153.8	6.92	67.91	0	0	Closed	0	0	0
0	U7014	153.8	6.92	67.81	0	0	Closed	0	0	0

	ID	Diameter (in)	Elevation (ft)	Upstream Pre	Downstream	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	Status	Setting
0	V8000	8	122	50.76	45.76	0	0	11.54	Open	5
0	V8002	8	122	50.18	45.76	0	0	0	Closed	5
0	V8008	10	132	50.5	55.5	0	0	11.54	Open	2
0	V8010	10	132	47.12	55.5	0	0	0	Closed	2
0	V8012	8	118	51.07	56.58	0	0	0	Closed	5
0	V8014	8	118	51.58	56.58	0	0	11.54	Open	5
0	V8016	8	115.5	52.15	47.15	0	0	11.54	Open	5
0	V8018	8	115.5	51.25	47.15	0	0	0	Closed	5
0	V8020	8	128	48.43	43.43	0	0	11.54	Open	5
0	V8022	8	128	48.21	43.43	0	0	0	Closed	5
0	V8024	8	98	55.32	52.27	1,462.25	9.33	7.03	Open	5
0	V8026	8	98	56.03	52.95	1,537.75	9.82	7.1	Open	5
0	V8028	10	120	50.73	55.91	0	0	0	Closed	2
0	V8032	8	123	50.28	55.28	0	0	11.54	Open	5
0	V8034	8	123	50.33	55.28	0	0	0	Closed	5
0	V8036	8	94	62.97	57.96	0	0	0	Closed	5
0	V8038	8	94	62.96	57.96	0	0	11.54	Open	5
0	V8042	10	118	53.96	58.97	0	0	11.54	Open	2
0	V8044	10	118	53.56	58.97	0	0	0	Closed	2
0	V8052	10	100	60.36	55.63	0	0	0	Closed	2
0	V8054	10	100	60.63	55.63	0	0	11.54	Open	2
0	V8056	8	102	58.38	63.38	0	0	11.54	Open	5
0	V8058	8	102	58	63.38	0	0	0	Closed	5
0	V8060	8	100	61.16	56.26	0	0	0	Closed	5
0	V8062	8	100	61.26	56.26	0	0	11.54	Open	5
0	V8070	10	120	50.91	55.91	0	0	11.54	Open	2

	ID	From Node	To Node	Length (ft)	Diameter (in)	Roughness	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	HL/1000 (ft/k
0	P101	J72	J92	810.17	12	130	-310.08	0.88	0.23	0.29
0	P103	J92	J90	1,241.83	12	130	-363.2	1.03	0.48	0.39
0	P105	J90	J94	1,132.34	16	130	-1,038.48	1.66	0.76	0.67
0	P107	J94	J96	1,204.53	16	130	-1,088.96	1.74	0.88	0.73
0	P111	J78	J100	1,067.79	16	130	-1,970.80	3.14	2.34	2.19
0	P115	J96	J100	886.7	16	130	-1,642.16	2.62	1.39	1.56
0	P117	J100	J102	789.56	20	130	-3,713.66	3.79	1.89	2.39
0	P119	J102	J104	941.88	20	130	-3,713.66	3.79	2.25	2.39
0	P121	J104	J300	1,197.93	20	130	-3,722.98	3.8	2.88	2.4
0	P123	J300	J302	147.08	20	130	-3,722.98	3.8	0.35	2.4
0	P125	J302	J304	2,260.56	20	130	-3,722.98	3.8	5.43	2.4
0	P139	J122	J124	627.68	12	130	-521.51	1.48	0.48	0.76
0	P141	J124	J60	1,242.80	12	130	-588.27	1.67	1.18	0.95
0	P145	J34	J126	846.23	20	130	1,833.56	1.87	0.55	0.65
0	P149	J66	J128	522.48	8	130	-31.08	0.2	0.02	0.03
0	P155	J126	J130	441.09	8	130	31.08	0.2	0.01	0.03
0	P157	J128	J130	886.05	8	130	-31.08	0.2	0.03	0.03
0	P159	J126	J32	843.52	20	130	1,802.47	1.84	0.53	0.63
0	P161	J66	J132	415.81	8	130	0	0	0	0
0	P163	J64	J136	338.87	8	130	0	0	0	0
0	P165	J136	J134	525.67	8	130	0	0	0	0
0	P167	J132	J134	848.01	8	130	0	0	0	0
0	P17	J20	J22	1,133.08	16	130	-1,735.19	2.77	1.96	1.73
0	P171	V8000	J138	423.5	10	130	0	0	0	0
0	P173	J138	J140	355.5	10	130	0	0	0	0
0	P177	V8002	J140	603.42	10	130	0	0	0	0

0	P179	J30	V8002	454.21	10	130	0	0	0	0
0	P181	J62	V8000	384.46	10	130	0	0	0	0
0	P19	J22	J26	1,147.36	16	130	-1,777.05	2.84	2.08	1.81
0	P193	J104	V8008	482.89	12	130	0	0	0	0
0	P195	J82	V8010	213.6	12	130	0	0	0	0
0	P197	V8010	J146	842.68	12	130	0	0	0	0
0	P199	J146	J148	514.03	12	130	0	0	0	0
0	P201	V8008	J148	1,114.81	12	130	0	0	0	0
0	P203	J26	V8012	268.73	10	130	0	0	0	0
0	P205	J28	V8014	295.03	10	130	0	0	0	0
0	P207	V8014	J152	482.16	10	130	0	0	0	0
0	P209	V8012	J150	236	10	130	0	0	0	0
0	P21	J26	J28	1,118.04	16	130	-1,330.01	2.12	1.18	1.06
0	P211	J152	J150	798.51	10	130	0	0	0	0
0	P213	J20	J154	348.19	12	130	1,691.13	4.8	2.34	6.71
0	P215	J154	J38	842.54	12	130	153.37	0.44	0.07	0.08
0	P217	J26	V8016	273.58	10	130	0	0	0	0
0	P219	J22	V8018	229.2	10	130	0	0	0	0
0	P221	V8018	J156	462.48	10	130	0	0	0	0
0	P223	V8016	J158	716.7	10	130	0	0	0	0
0	P225	J158	J156	802.77	10	130	0	0	0	0
0	P227	J32	V8022	269.66	10	130	0	0	0	0
0	P229	V8022	J160	385.74	10	130	0	0	0	0
0	P23	J28	J30	679.9	16	130	-1,364.79	2.18	0.75	1.11
0	P231	J126	V8020	259.39	10	130	0	0	0	0
0	P233	V8020	J162	510.51	10	130	0	0	0	0
0	P235	J160	J162	392.51	10	130	0	0	0	0
0	P237	J38	V8024	301.75	10	130	1,462.25	5.97	3.76	12.45
0	P239	J154	V8026	160.09	10	130	1,537.75	6.28	2.19	13.67
0	P241	V8026	J166	918.28	10	130	1,537.75	6.28	12.55	13.67
0	P243	J166	J164	455.03	10	130	37.75	0.15	0.01	0.01
0	P245	V8024	J164	882.35	10	130	1,462.25	5.97	10.99	12.45
0	P247	J46	J168	532.6	12	130	-445.73	1.26	0.3	0.57
0	P249	J168	J122	563.66	12	130	-445.73	1.26	0.32	0.57
0	P25	J30	J32	1,229.93	16	130	-1,409.21	2.25	1.45	1.18
0	P251	J168	V8028	209.52	12	130	0	0	0	0
0	P253	V8028	J170	652.72	12	130	0	0	0	0
0	P255	J170	J172	387.16	12	130	0	0	0	0
0	P261	J60	V8032	268.68	10	130	0	0	0	0
0	P263	V8032	J174	918.23	10	130	0	0	0	0
0	P265	J174	J176	448.57	10	130	0	0	0	0
0	P267	J62	V8034	292.8	10	130	0	0	0	0
0	P269	V8034	J176	916.13	10	130	0	0	0	0
0	P271	J70	V8038	242.57	10	130	0	0	0	0
0	P273	J84	V8036	324.38	10	130	0	0	0	0
0	P275	V8036	J180	319.74	10	130	0	0	0	0
0	P277	J180	J178	347.95	10	130	0	0	0	0
0	P279	V8038	J178	632.77	10	130	0	0	0	0
0	P281	J76	J182	613.97	12	130	507.43	1.44	0.44	0.72
0	P283	J182	J74	589.22	12	130	507.43	1.44	0.43	0.72
0	P287	V8042	J184	372.65	12	130	0	0	0	0
0	P289	J184	J186	299.52	12	130	0	0	0	0
0	P29	J34	J36	2,325.70	20	130	-2,221.14	2.27	2.15	0.92
0	P295	J182	V8044	226.67	12	130	0	0	0	0
0	P297	V8044	J186	240.53	12	130	0	0	0	0
0	P299	J52	J188	313.33	8	130	72.89	0.47	0.04	0.14
0	P301	J188	J190	664.92	8	130	72.89	0.47	0.1	0.14
0	P303	J56	J194	178.12	8	130	-72.89	0.47	0.03	0.14
0	P305	J194	J192	667.8	8	130	-72.89	0.47	0.1	0.14
0	P307	J192	J190	657.08	8	130	-72.89	0.47	0.09	0.14
0	P309	J72	J196	736.36	12	130	607.69	1.72	0.74	1.01

0	P311	J196	J70	609.66	12	130	607.69	1.72	0.61	1.01
0	P313	J40	J198	1,129.17	12	130	-548.92	1.56	0.94	0.83
0	P315	J198	J42	1,043.66	12	130	-548.92	1.56	0.87	0.83
0	P329	J70	V8052	185.71	12	130	0	0	0	0
0	P33	J38	J40	1,179.71	12	130	-1,388.57	3.94	5.49	4.66
0	P331	V8052	J206	525.44	12	130	0	0	0	0
0	P333	J196	V8054	178.3	12	130	0	0	0	0
0	P335	V8054	J208	525.19	12	130	0	0	0	0
0	P337	J208	J206	475.84	12	130	0	0	0	0
0	P341	J198	V8058	154.71	10	130	0	0	0	0
0	P343	V8058	J214	421.16	10	130	0	0	0	0
0	P345	J214	J210	577.05	10	130	0	0	0	0
0	P347	J42	V8056	297.78	10	130	0	0	0	0
0	P349	V8056	J212	569.55	10	130	0	0	0	0
0	P351	J212	J210	1,312.90	10	130	0	0	0	0
0	P353	J88	V8060	266.49	10	130	0	0	0	0
0	P355	V8060	J216	322.62	10	130	0	0	0	0
0	P357	J90	V8062	226.9	10	130	0	0	0	0
0	P359	V8062	J218	739.72	10	130	0	0	0	0
0	P361	J218	J216	604.58	10	130	0	0	0	0
0	P363	J56	J222	1,322.36	12	130	555.52	1.58	1.13	0.85
0	P365	J222	J220	621.17	12	130	505.12	1.43	0.44	0.72
0	P367	J220	J44	1,095.19	12	130	454.18	1.29	0.64	0.59
0	P37	J26	J46	1,141.00	12	130	-535.23	1.52	0.91	0.8
0	P379	J76	J224	678.87	12	130	-512.24	1.45	0.5	0.73
0	P381	J224	V8042	158.85	12	130	0	0	0	0
0	P39	J46	J44	879.87	12	130	-168.54	0.48	0.08	0.09
0	P393	J226	J36	1,733.97	20	130	2,221.14	2.27	1.6	0.92
0	P395	J96	J224	650.52	12	130	512.24	1.45	0.48	0.73
0	P399	J232	J230	2,608.50	18	130	3,722.98	4.69	10.47	4.01
0	P401	J230	J304	2,813.67	18	130	3,722.98	4.69	11.29	4.01
0	P403	J232	J228	7,230.92	16	130	2,221.14	3.54	19.79	2.74
0	P405	J228	J226	5,520.22	16	130	2,221.14	3.54	15.11	2.74
0	P41	J44	J42	1,067.11	12	130	191.9	0.54	0.13	0.12
0	P415	J220	V8070	127.05	12	130	0	0	0	0
0	P417	V8070	J172	78.54	12	130	0	0	0	0
0	P421	J240	J236	955.52	36	130	8,105.76	2.55	0.55	0.58
0	P423	J236	J238	5,398.38	24	130	5,677.83	4.03	11.66	2.16
0	P425	J238	J246	9,066.36	24	130	4,463.86	3.17	12.54	1.38
0	P427	J246	J244	5,073.87	24	130	3,249.89	2.3	3.9	0.77
0	P429	J240	J242	7,163.69	16	130	2,694.23	4.3	28.03	3.91
0	P43	J42	J48	1,096.37	12	130	-494.91	1.4	0.76	0.69
0	P431	J242	J232	213.31	16	130	2,694.23	4.3	0.83	3.91
0	P433	J244	J232	281.24	24	130	3,249.89	2.3	0.22	0.77
0	P439	RES9010	J310	68.78	1,100.00	130	10,799.99	0	0	0
0	P441	J310	J308	18	36	130	10,799.99	3.4	0.61	33.97
0	P443	J308	J298	106.2	36	130	10,799.99	3.4	0.32	3.02
0	P445	J298	J296	55.4	36	130	10,799.99	3.4	0.52	9.43
0	P447	J296	J294	78.5	36	130	10,799.99	3.4	0.15	1.9
0	P449	J294	J292	19	30	130	8,196.99	3.72	0.15	7.77
0	P45	J48	J50	1,194.62	12	130	-571.53	1.62	1.07	0.9
0	P451	J292	J290	9.2	30	130	5,595.88	2.54	0.05	5.06
0	P453	J290	J288	9.2	30	130	2,988.26	1.36	0.01	1.46
0	P455	J288	J286	9.2	30	130	379.25	0.17	0	0.02
0	P461	J282	J280	9.2	30	130	0	0	0	0
0	P463	J280	J278	9.2	30	130	0	0	0	0
0	P465	J292	U7002	20.6	18	130	2,601.11	3.28	0.54	26.38
0	P469	J290	U7004	20.6	18	130	2,607.63	3.29	0.55	26.51
0	P47	J50	J52	765.09	12	130	-648.11	1.84	0.87	1.14
0	P473	J288	U7006	20.6	18	130	2,609.01	3.29	0.55	26.54
0	P477	J286	U7008	20.6	18	130	379.25	0.48	0.01	0.57

0	P481	J282	U7010	12.1	18	130	2,603.00	3.28	0.53	43.53
0	P485	J280	U7012	12.1	18	130	0	0	0	0
0	P489	J278	U7014	12.1	18	130	0	0	0	0
0	P49	J32	J62	1,463.77	16	130	299.78	0.48	0.1	0.07
0	P493	J276	J274	4.9	16	130	2,601.11	4.15	0.12	25.5
0	P495	J274	J272	4.2	16	130	5,204.11	8.3	0.66	156
0	P497	J272	J270	4.7	30	130	7,811.74	3.55	0.08	17.93
0	P499	J270	J268	4.7	30	130	7,811.74	3.55	0.08	17.93
0	P501	J268	J266	4.7	30	130	10,420.74	4.73	0.15	31.8
0	P503	J266	J264	4.7	30	130	10,420.74	4.73	0.15	31.8
0	P505	J264	J262	60.6	30	130	10,799.99	4.9	1.77	29.24
0	P507	J262	J260	20.3	36	130	10,799.99	3.4	0.06	2.76
0	P509	J260	J252	30.38	36	130	10,799.99	3.4	0.07	2.17
0	P51	J34	J66	1,373.58	12	130	387.59	1.1	0.6	0.44
0	P511	J252	J240	90.5	36	130	10,799.99	3.4	0.41	4.56
0	P513	J294	J312	36.2	30	130	2,603.00	1.18	0.07	1.85
0	P515	J312	J282	31.2	30	130	2,603.00	1.18	0.01	0.31
0	P517	U7002	J328	15	12	130	2,601.11	7.38	6.07	404.87
0	P519	J328	J276	9.1	14	130	2,601.11	5.42	7.59	834.37
0	P521	U7004	J330	15	12	130	2,607.63	7.4	6.1	406.9
0	P523	J330	J272	9.1	14	130	2,607.63	5.43	7.63	838.56
0	P525	U7006	J332	15	12	130	2,609.01	7.4	6.11	407.33
0	P527	J332	J268	9.1	14	130	2,609.01	5.44	7.64	839.45
0	P529	U7008	J334	15	12	130	379.25	1.08	0.13	8.71
0	P53	J66	J64	862.35	12	130	373.95	1.06	0.35	0.41
0	P531	J334	J264	9.1	14	130	379.25	0.79	0.16	17.79
0	P533	U7010	J336	15	12	130	2,603.00	7.38	6.08	405.46
0	P535	J336	J274	9.1	14	130	2,603.00	5.43	7.6	835.59
0	P537	U7012	J338	15	12	130	0	0	0	0
0	P539	J338	J270	9.1	14	130	0	0	0	0
0	P541	U7014	J340	15	12	130	0	0	0	0
0	P543	J340	J266	9.1	14	130	0	0	0	0
0	P55	J62	J64	1,082.76	12	130	-255.45	0.72	0.22	0.2
0	P57	J62	J60	691.6	16	130	461.11	0.74	0.1	0.15
0	P59	J64	J58	1,424.22	12	130	48.7	0.14	0.01	0.01
0	P61	J60	J56	890.62	16	130	-170.31	0.27	0.02	0.02
0	P67	J56	J52	1,036.48	16	130	-722.97	1.15	0.35	0.34
0	P69	J52	J54	1,131.15	12	130	125.52	0.36	0.06	0.05
0	P71	J58	J54	591.64	12	130	-49.24	0.14	0.01	0.01
0	P73	J40	J68	1,551.82	12	130	-977.85	2.77	3.77	2.43
0	P75	J68	J70	838.54	12	130	-515.03	1.46	0.62	0.74
0	P79	J72	J74	1,086.50	12	130	-402.85	1.14	0.51	0.47
0	P83	J76	J78	765.46	12	130	-88.09	0.25	0.02	0.03
0	P89	J52	J82	771.55	16	130	-1,722.01	2.75	1.32	1.71
0	P91	J82	J78	774.7	16	130	-1,722.01	2.75	1.32	1.71
0	P93	J68	J84	890.35	12	130	-507.96	1.44	0.64	0.72
0	P95	J84	J86	1,204.21	12	130	-531.66	1.51	0.95	0.79
0	P97	J86	J88	946.69	12	130	-580.78	1.65	0.88	0.93
0	P99	J88	J90	874.98	16	130	-622.82	0.99	0.23	0.26

Run EB10

	ID	Demand (gpr	Elevation (ft)	Head (ft)	Pressure (psi)
0	J100	100.7	122	244.74	53.18
0	J102	0	125.5	246.61	52.48
0	J104	9.32	129.8	248.84	51.58
0	J122	75.78	117.5	237.16	51.85
0	J124	66.76	119.5	237.56	51.15
0	J126	0	130	239.13	47.29
0	J128	0	133	239.17	46
0	J130	0	134	239.17	45.57
0	J132	0	131	239.17	46.87

0	J134	0	131	239.17	46.87
0	J136	0	131	239.17	46.87
0	J138	0	122	227.03	45.51
0	J140	0	122	227.03	45.51
0	J146	0	132	237.3	45.63
0	J148	0	132	237.3	45.63
0	J150	1,500.00	118	219.56	44.01
0	J152	1,500.00	118	219.43	43.95
0	J154	0	90.3	235.38	62.86
0	J156	0	115.5	246.21	56.64
0	J158	0	115.5	246.21	56.64
0	J160	0	128	227.59	43.15
0	J162	0	128	227.59	43.15
0	J164	0	98	246.92	64.53
0	J166	0	98	246.92	64.53
0	J168	0	115.25	236.9	52.71
0	J170	0	120	226.11	45.98
0	J172	0	120	226.11	45.98
0	J174	0	123	250.1	55.07
0	J176	0	123	250.1	55.07
0	J178	0	94	228.9	58.45
0	J180	0	94	228.9	58.45
0	J182	0	118	242.01	53.74
0	J184	0	118	254.43	59.12
0	J186	0	118	254.43	59.12
0	J188	0	126	239.13	49.02
0	J190	0	126	238.99	48.96
0	J192	0	126	238.86	48.9
0	J194	0	126	238.72	48.84
0	J196	0	99.75	240.87	61.15
0	J198	0	95.5	237.46	61.51
0	J20	44.06	90.4	235.07	62.69
0	J206	0	100	229.33	56.04
0	J208	0	100	229.33	56.04
0	J210	0	102	225.92	53.7
0	J212	0	102	225.92	53.7
0	J214	0	102	225.92	53.7
0	J216	0	100	230.52	56.55
0	J218	0	100	230.52	56.55
0	J22	41.86	118.5	234.86	50.42
0	J220	50.94	116	237.65	52.71
0	J222	50.4	119.1	237.93	51.49
0	J224	0	118	242.89	54.12
0	J226	0	130	243.51	49.18
0	J228	0	116	258.86	61.9
0	J230	0	147	268.6	52.69
0	J232	0	148	278.97	56.75
0	J236	2,427.93	166	307.28	61.22
0	J238	1,213.97	181	295.62	49.67
0	J240	0	164	307.83	62.32
0	J242	0	148	279.8	57.11
0	J244	0	148	279.18	56.84
0	J246	1,213.97	146	283.08	59.4
0	J252	0	164.3	308.25	62.37
0	J26	88.2	115.5	234.67	51.64
0	J260	0	164.48	308.31	62.32
0	J262	0	164.48	308.37	62.35
0	J264	0	167.47	310.14	61.82
0	J266	0	167.47	310.29	61.88
0	J268	0	167.47	310.44	61.95
0	J270	0	167.47	310.52	61.98

0	J272	0	167.47	310.61	62.02
0	J274	0	167.47	311.26	62.31
0	J276	0	167.47	311.39	62.36
0	J278	0	164.48	169.76	2.29
0	J28	34.78	118.6	234.82	50.36
0	J280	0	164.48	169.76	2.29
0	J282	0	164.48	169.76	2.29
0	J286	0	164.48	169.63	2.23
0	J288	0	164.48	169.63	2.23
0	J290	0	164.48	169.64	2.24
0	J292	0	164.48	169.69	2.26
0	J294	0	164.48	169.84	2.32
0	J296	0	164.57	169.99	2.35
0	J298	0	164.22	170.51	2.72
0	J30	44.42	122.2	236.11	49.36
0	J300	0	127.5	251.69	53.81
0	J302	0	128	252.04	53.75
0	J304	0	142	257.42	50.01
0	J308	0	163	170.83	3.39
0	J310	0	165.5	171.44	2.57
0	J312	0	164.48	169.77	2.29
0	J32	93.48	126	238.56	48.77
0	J328	0	167.47	318.98	65.65
0	J330	0	167.47	318.24	65.33
0	J332	0	167.47	318.08	65.26
0	J334	0	167.47	310.3	61.89
0	J336	0	167.47	318.87	65.6
0	J338	0	167.47	310.52	61.98
0	J34	0	134	239.7	45.8
0	J340	0	167.47	310.29	61.88
0	J36	0	137	241.88	45.45
0	J38	79.7	90.2	236.13	63.23
0	J40	138.2	90	237.46	63.9
0	J42	137.88	101	237.46	59.13
0	J44	93.74	111	237.26	54.71
0	J46	79.04	113	236.65	53.58
0	J48	76.62	114.7	237.91	53.39
0	J50	76.58	120	238.6	51.39
0	J52	152.52	126	239.19	49.05
0	J54	76.28	127.6	238.98	48.26
0	J56	70.04	121.9	238.69	50.6
0	J58	97.94	126	238.93	48.93
0	J60	43.14	124.5	238.56	49.42
0	J62	94.12	122	238.57	50.51
0	J64	69.8	127	238.9	48.49
0	J66	44.72	130.5	239.17	47.09
0	J68	45.14	88	240.03	65.88
0	J70	92.66	97.5	240.44	61.94
0	J72	105.24	102	241.4	60.4
0	J74	104.58	108	241.72	57.94
0	J76	92.9	128	242.32	49.54
0	J78	160.7	126	242.32	50.4
0	J82	0	126.4	240.75	49.55
0	J84	23.7	76	240.5	71.28
0	J86	49.12	78	241.21	70.72
0	J88	42.04	88.4	241.88	66.5
0	J90	52.46	104	242.06	59.82
0	J92	53.12	98	241.61	62.23
0	J94	50.48	107	242.69	58.8
0	J96	40.96	116	243.44	55.22

	ID	Flow (gpm)	Head (ft)
0	RES9010	-10,799.99	171.44

	ID	Elevation (ft)	Upstream Pre	Downstream	Flow (gpm)	Head Gain (ft	Status	Setting	Available NPS	Cavitation Inc
0	U7002	153.8	6.65	74.2	2,601.11	155.91	Open	1	48.48	0
0	U7004	153.8	6.63	73.9	2,607.63	155.25	Open	1	48.43	0
0	U7006	153.8	6.62	73.83	2,609.01	155.11	Open	1	48.42	0
0	U7008	153.8	6.85	67.87	379.25	140.82	Open	1	48.9	0
0	U7010	153.8	6.69	74.16	2,603.00	155.71	Open	1	48.57	0
0	U7012	153.8	6.92	67.91	0	0	Closed	0	0	0
0	U7014	153.8	6.92	67.81	0	0	Closed	0	0	0

	ID	Diameter (in)	Elevation (ft)	Upstream Pre	Downstream	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	Status	Setting
0	V8000	8	122	50.51	45.51	0	0	11.54	Open	5
0	V8002	8	122	49.45	45.51	0	0	0	Closed	5
0	V8008	10	132	50.63	45.63	0	0	11.54	Open	2
0	V8010	10	132	47.12	45.63	0	0	0	Closed	2
0	V8012	8	118	48.76	45.58	1,641.44	10.48	7.33	Open	5
0	V8014	8	118	49.23	46.22	1,358.56	8.67	6.94	Open	5
0	V8016	8	115.5	51.64	56.64	0	0	11.54	Open	5
0	V8018	8	115.5	51.72	56.64	0	0	0	Closed	5
0	V8020	8	128	48.15	43.15	0	0	11.54	Open	5
0	V8022	8	128	47.91	43.15	0	0	0	Closed	5
0	V8024	8	98	59.85	64.53	0	0	0	Closed	5
0	V8026	8	98	59.53	64.53	0	0	11.54	Open	5
0	V8028	10	120	50.65	45.98	0	0	0	Closed	2
0	V8032	8	123	50.07	55.07	0	0	11.54	Open	5
0	V8034	8	123	50.08	55.07	0	0	0	Closed	5
0	V8036	8	94	63.48	58.45	0	0	0	Closed	5
0	V8038	8	94	63.45	58.45	0	0	11.54	Open	5
0	V8042	10	118	54.12	59.12	0	0	11.54	Open	2
0	V8044	10	118	53.74	59.12	0	0	0	Closed	2
0	V8052	10	100	60.85	56.04	0	0	0	Closed	2
0	V8054	10	100	61.04	56.04	0	0	11.54	Open	2
0	V8056	8	102	58.7	53.7	0	0	11.54	Open	5
0	V8058	8	102	58.7	53.7	0	0	0	Closed	5
0	V8060	8	100	61.48	56.55	0	0	0	Closed	5
0	V8062	8	100	61.55	56.55	0	0	11.54	Open	5
0	V8070	10	120	50.98	45.98	0	0	11.54	Open	2

	ID	From Node	To Node	Length (ft)	Diameter (in)	Roughness	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	HL/1000 (ft/k
0	P101	J72	J92	810.17	12	130	-294.98	0.84	0.21	0.26
0	P103	J92	J90	1,241.83	12	130	-348.1	0.99	0.45	0.36
0	P105	J90	J94	1,132.34	16	130	-944.88	1.51	0.64	0.56
0	P107	J94	J96	1,204.53	16	130	-995.36	1.59	0.75	0.62
0	P111	J78	J100	1,067.79	16	130	-2,006.92	3.2	2.42	2.27
0	P115	J96	J100	886.7	16	130	-1,586.75	2.53	1.3	1.47
0	P117	J100	J102	789.56	20	130	-3,694.37	3.77	1.87	2.37
0	P119	J102	J104	941.88	20	130	-3,694.37	3.77	2.23	2.37
0	P121	J104	J300	1,197.93	20	130	-3,703.69	3.78	2.85	2.38
0	P123	J300	J302	147.08	20	130	-3,703.69	3.78	0.35	2.38
0	P125	J302	J304	2,260.56	20	130	-3,703.69	3.78	5.38	2.38
0	P139	J122	J124	627.68	12	130	-473.53	1.34	0.4	0.63
0	P141	J124	J60	1,242.80	12	130	-540.29	1.53	1.01	0.81
0	P145	J34	J126	846.23	20	130	1,876.20	1.92	0.57	0.68
0	P149	J66	J128	522.48	8	130	0	0	0	0
0	P155	J126	J130	441.09	8	130	0	0	0	0
0	P157	J128	J130	886.05	8	130	0	0	0	0
0	P159	J126	J32	843.52	20	130	1,876.20	1.92	0.57	0.68
0	P161	J66	J132	415.81	8	130	0	0	0	0
0	P163	J64	J136	338.87	8	130	0	0	0	0

0	P165	J136	J134	525.67	8	130	0	0	0	0
0	P167	J132	J134	848.01	8	130	0	0	0	0
0	P17	J20	J22	1,133.08	16	130	523.46	0.84	0.21	0.19
0	P171	V8000	J138	423.5	10	130	0	0	0	0
0	P173	J138	J140	355.5	10	130	0	0	0	0
0	P177	V8002	J140	603.42	10	130	0	0	0	0
0	P179	J30	V8002	454.21	10	130	0	0	0	0
0	P181	J62	V8000	384.46	10	130	0	0	0	0
0	P19	J22	J26	1,147.36	16	130	481.6	0.77	0.19	0.16
0	P193	J104	V8008	482.89	12	130	0	0	0	0
0	P195	J82	V8010	213.6	12	130	0	0	0	0
0	P197	V8010	J146	842.68	12	130	0	0	0	0
0	P199	J146	J148	514.03	12	130	0	0	0	0
0	P201	V8008	J148	1,114.81	12	130	0	0	0	0
0	P203	J26	V8012	268.73	10	130	1,641.44	6.71	4.14	15.42
0	P205	J28	V8014	295.03	10	130	1,358.56	5.55	3.21	10.87
0	P207	V8014	J152	482.16	10	130	1,358.56	5.55	5.24	10.87
0	P209	V8012	J150	236	10	130	1,641.44	6.71	3.64	15.42
0	P21	J26	J28	1,118.04	16	130	-432.83	0.69	0.15	0.13
0	P211	J152	J150	798.51	10	130	-141.44	0.58	0.13	0.16
0	P213	J20	J154	348.19	12	130	-567.52	1.61	0.31	0.89
0	P215	J154	J38	842.54	12	130	-567.52	1.61	0.75	0.89
0	P217	J26	V8016	273.58	10	130	0	0	0	0
0	P219	J22	V8018	229.2	10	130	0	0	0	0
0	P221	V8018	J156	462.48	10	130	0	0	0	0
0	P223	V8016	J158	716.7	10	130	0	0	0	0
0	P225	J158	J156	802.77	10	130	0	0	0	0
0	P227	J32	V8022	269.66	10	130	0	0	0	0
0	P229	V8022	J160	385.74	10	130	0	0	0	0
0	P23	J28	J30	679.9	16	130	-1,826.17	2.91	1.29	1.9
0	P231	J126	V8020	259.39	10	130	0	0	0	0
0	P233	V8020	J162	510.51	10	130	0	0	0	0
0	P235	J160	J162	392.51	10	130	0	0	0	0
0	P237	J38	V8024	301.75	10	130	0	0	0	0
0	P239	J154	V8026	160.09	10	130	0	0	0	0
0	P241	V8026	J166	918.28	10	130	0	0	0	0
0	P243	J166	J164	455.03	10	130	0	0	0	0
0	P245	V8024	J164	882.35	10	130	0	0	0	0
0	P247	J46	J168	532.6	12	130	-397.75	1.13	0.24	0.46
0	P249	J168	J122	563.66	12	130	-397.75	1.13	0.26	0.46
0	P25	J30	J32	1,229.93	16	130	-1,870.59	2.98	2.45	1.99
0	P251	J168	V8028	209.52	12	130	0	0	0	0
0	P253	V8028	J170	652.72	12	130	0	0	0	0
0	P255	J170	J172	387.16	12	130	0	0	0	0
0	P261	J60	V8032	268.68	10	130	0	0	0	0
0	P263	V8032	J174	918.23	10	130	0	0	0	0
0	P265	J174	J176	448.57	10	130	0	0	0	0
0	P267	J62	V8034	292.8	10	130	0	0	0	0
0	P269	V8034	J176	916.13	10	130	0	0	0	0
0	P271	J70	V8038	242.57	10	130	0	0	0	0
0	P273	J84	V8036	324.38	10	130	0	0	0	0
0	P275	V8036	J180	319.74	10	130	0	0	0	0
0	P277	J180	J178	347.95	10	130	0	0	0	0
0	P279	V8038	J178	632.77	10	130	0	0	0	0
0	P281	J76	J182	613.97	12	130	417.81	1.19	0.31	0.5
0	P283	J182	J74	589.22	12	130	417.81	1.19	0.3	0.5
0	P287	V8042	J184	372.65	12	130	0	0	0	0
0	P289	J184	J186	299.52	12	130	0	0	0	0
0	P29	J34	J36	2,325.70	20	130	-2,240.43	2.29	2.18	0.94
0	P295	J182	V8044	226.67	12	130	0	0	0	0
0	P297	V8044	J186	240.53	12	130	0	0	0	0

0	P299	J52	J188	313.33	8	130	88.24	0.56	0.06	0.2
0	P301	J188	J190	664.92	8	130	88.24	0.56	0.14	0.2
0	P303	J56	J194	178.12	8	130	-88.24	0.56	0.04	0.2
0	P305	J194	J192	667.8	8	130	-88.24	0.56	0.14	0.2
0	P307	J192	J190	657.08	8	130	-88.24	0.56	0.13	0.2
0	P309	J72	J196	736.36	12	130	502.97	1.43	0.52	0.71
0	P311	J196	J70	609.66	12	130	502.97	1.43	0.43	0.71
0	P313	J40	J198	1,129.17	12	130	9.2	0.03	0	0
0	P315	J198	J42	1,043.66	12	130	9.2	0.03	0	0
0	P329	J70	V8052	185.71	12	130	0	0	0	0
0	P33	J38	J40	1,179.71	12	130	-647.22	1.84	1.34	1.13
0	P331	V8052	J206	525.44	12	130	0	0	0	0
0	P333	J196	V8054	178.3	12	130	0	0	0	0
0	P335	V8054	J208	525.19	12	130	0	0	0	0
0	P337	J208	J206	475.84	12	130	0	0	0	0
0	P341	J198	V8058	154.71	10	130	0	0	0	0
0	P343	V8058	J214	421.16	10	130	0	0	0	0
0	P345	J214	J210	577.05	10	130	0	0	0	0
0	P347	J42	V8056	297.78	10	130	0	0	0	0
0	P349	V8056	J212	569.55	10	130	0	0	0	0
0	P351	J212	J210	1,312.90	10	130	0	0	0	0
0	P353	J88	V8060	266.49	10	130	0	0	0	0
0	P355	V8060	J216	322.62	10	130	0	0	0	0
0	P357	J90	V8062	226.9	10	130	0	0	0	0
0	P359	V8062	J218	739.72	10	130	0	0	0	0
0	P361	J218	J216	604.58	10	130	0	0	0	0
0	P363	J56	J222	1,322.36	12	130	446.73	1.27	0.75	0.57
0	P365	J222	J220	621.17	12	130	396.33	1.12	0.28	0.46
0	P367	J220	J44	1,095.19	12	130	345.39	0.98	0.39	0.35
0	P37	J26	J46	1,141.00	12	130	-815.21	2.31	1.98	1.74
0	P379	J76	J224	678.87	12	130	-550.43	1.56	0.57	0.84
0	P381	J224	V8042	158.85	12	130	0	0	0	0
0	P39	J46	J44	879.87	12	130	-496.49	1.41	0.61	0.69
0	P393	J226	J36	1,733.97	20	130	2,240.43	2.29	1.63	0.94
0	P395	J96	J224	650.52	12	130	550.43	1.56	0.55	0.84
0	P399	J232	J230	2,608.50	18	130	3,703.69	4.67	10.37	3.97
0	P401	J230	J304	2,813.67	18	130	3,703.69	4.67	11.18	3.97
0	P403	J232	J228	7,230.92	16	130	2,240.43	3.58	20.11	2.78
0	P405	J228	J226	5,520.22	16	130	2,240.43	3.58	15.35	2.78
0	P41	J44	J42	1,067.11	12	130	-244.84	0.69	0.2	0.19
0	P415	J220	V8070	127.05	12	130	0	0	0	0
0	P417	V8070	J172	78.54	12	130	0	0	0	0
0	P421	J240	J236	955.52	36	130	8,105.76	2.55	0.55	0.58
0	P423	J236	J238	5,398.38	24	130	5,677.83	4.03	11.66	2.16
0	P425	J238	J246	9,066.36	24	130	4,463.86	3.17	12.54	1.38
0	P427	J246	J244	5,073.87	24	130	3,249.89	2.3	3.9	0.77
0	P429	J240	J242	7,163.69	16	130	2,694.23	4.3	28.03	3.91
0	P43	J42	J48	1,096.37	12	130	-373.52	1.06	0.45	0.41
0	P431	J242	J232	213.31	16	130	2,694.23	4.3	0.83	3.91
0	P433	J244	J232	281.24	24	130	3,249.89	2.3	0.22	0.77
0	P439	RES9010	J310	68.78	1,100.00	130	10,799.99	0	0	0
0	P441	J310	J308	18	36	130	10,799.99	3.4	0.61	33.97
0	P443	J308	J298	106.2	36	130	10,799.99	3.4	0.32	3.02
0	P445	J298	J296	55.4	36	130	10,799.99	3.4	0.52	9.43
0	P447	J296	J294	78.5	36	130	10,799.99	3.4	0.15	1.9
0	P449	J294	J292	19	30	130	8,196.99	3.72	0.15	7.77
0	P45	J48	J50	1,194.62	12	130	-450.14	1.28	0.69	0.58
0	P451	J292	J290	9.2	30	130	5,595.88	2.54	0.05	5.06
0	P453	J290	J288	9.2	30	130	2,988.26	1.36	0.01	1.46
0	P455	J288	J286	9.2	30	130	379.25	0.17	0	0.02
0	P461	J282	J280	9.2	30	130	0	0	0	0

0	P463	J280	J278	9.2	30	130	0	0	0	0
0	P465	J292	U7002	20.6	18	130	2,601.11	3.28	0.54	26.38
0	P469	J290	U7004	20.6	18	130	2,607.63	3.29	0.55	26.51
0	P47	J50	J52	765.09	12	130	-526.72	1.49	0.59	0.77
0	P473	J288	U7006	20.6	18	130	2,609.01	3.29	0.55	26.54
0	P477	J286	U7008	20.6	18	130	379.25	0.48	0.01	0.57
0	P481	J282	U7010	12.1	18	130	2,603.00	3.28	0.53	43.53
0	P485	J280	U7012	12.1	18	130	0	0	0	0
0	P489	J278	U7014	12.1	18	130	0	0	0	0
0	P49	J32	J62	1,463.77	16	130	-87.87	0.14	0.01	0.01
0	P493	J276	J274	4.9	16	130	2,601.11	4.15	0.12	25.5
0	P495	J274	J272	4.2	16	130	5,204.11	8.3	0.66	156
0	P497	J272	J270	4.7	30	130	7,811.74	3.55	0.08	17.93
0	P499	J270	J268	4.7	30	130	7,811.74	3.55	0.08	17.93
0	P501	J268	J266	4.7	30	130	10,420.74	4.73	0.15	31.8
0	P503	J266	J264	4.7	30	130	10,420.74	4.73	0.15	31.8
0	P505	J264	J262	60.6	30	130	10,799.99	4.9	1.77	29.24
0	P507	J262	J260	20.3	36	130	10,799.99	3.4	0.06	2.76
0	P509	J260	J252	30.38	36	130	10,799.99	3.4	0.07	2.17
0	P51	J34	J66	1,373.58	12	130	364.24	1.03	0.54	0.39
0	P511	J252	J240	90.5	36	130	10,799.99	3.4	0.41	4.56
0	P513	J294	J312	36.2	30	130	2,603.00	1.18	0.07	1.85
0	P515	J312	J282	31.2	30	130	2,603.00	1.18	0.01	0.31
0	P517	U7002	J328	15	12	130	2,601.11	7.38	6.07	404.87
0	P519	J328	J276	9.1	14	130	2,601.11	5.42	7.59	834.37
0	P521	U7004	J330	15	12	130	2,607.63	7.4	6.1	406.9
0	P523	J330	J272	9.1	14	130	2,607.63	5.43	7.63	838.56
0	P525	U7006	J332	15	12	130	2,609.01	7.4	6.11	407.33
0	P527	J332	J268	9.1	14	130	2,609.01	5.44	7.64	839.45
0	P529	U7008	J334	15	12	130	379.25	1.08	0.13	8.71
0	P53	J66	J64	862.35	12	130	319.52	0.91	0.26	0.31
0	P531	J334	J264	9.1	14	130	379.25	0.79	0.16	17.79
0	P533	U7010	J336	15	12	130	2,603.00	7.38	6.08	405.46
0	P535	J336	J274	9.1	14	130	2,603.00	5.43	7.6	835.59
0	P537	U7012	J338	15	12	130	0	0	0	0
0	P539	J338	J270	9.1	14	130	0	0	0	0
0	P541	U7014	J340	15	12	130	0	0	0	0
0	P543	J340	J266	9.1	14	130	0	0	0	0
0	P55	J62	J64	1,082.76	12	130	-318.79	0.9	0.33	0.31
0	P57	J62	J60	691.6	16	130	136.79	0.22	0.01	0.02
0	P59	J64	J58	1,424.22	12	130	-69.07	0.2	0.03	0.02
0	P61	J60	J56	890.62	16	130	-446.64	0.71	0.12	0.14
0	P67	J56	J52	1,036.48	16	130	-875.18	1.4	0.51	0.49
0	P69	J52	J54	1,131.15	12	130	243.29	0.69	0.21	0.18
0	P71	J58	J54	591.64	12	130	-167.01	0.47	0.05	0.09
0	P73	J40	J68	1,551.82	12	130	-794.63	2.25	2.57	1.66
0	P75	J68	J70	838.54	12	130	-410.31	1.16	0.41	0.49
0	P79	J72	J74	1,086.50	12	130	-313.23	0.89	0.32	0.3
0	P83	J76	J78	765.46	12	130	39.72	0.11	0	0.01
0	P89	J52	J82	771.55	16	130	-1,885.94	3.01	1.56	2.02
0	P91	J82	J78	774.7	16	130	-1,885.94	3.01	1.57	2.02
0	P93	J68	J84	890.35	12	130	-429.45	1.22	0.47	0.53
0	P95	J84	J86	1,204.21	12	130	-453.15	1.29	0.7	0.59
0	P97	J86	J88	946.69	12	130	-502.27	1.42	0.67	0.71
0	P99	J88	J90	874.98	16	130	-544.31	0.87	0.18	0.2

Run EB11

	ID	Demand (gpr	Elevation (ft)	Head (ft)	Pressure (psi)
0	J100	100.7	122	224.41	44.37
0	J102	0	125.5	226.91	43.94
0	J104	9.32	129.8	229.89	43.37

0	J122	75.78	117.5	210.61	40.34
0	J124	66.76	119.5	212.08	40.12
0	J126	0	130	217.17	37.77
0	J128	0	133	217.02	36.41
0	J130	0	134	217.12	36.02
0	J132	0	131	216.97	37.25
0	J134	0	131	216.97	37.25
0	J136	0	131	216.97	37.25
0	J138	0	122	227.44	45.69
0	J140	0	122	227.44	45.69
0	J146	0	132	218.35	37.41
0	J148	0	132	218.35	37.41
0	J150	0	118	203.41	37.01
0	J152	0	118	203.41	37.01
0	J154	0	90.3	214.22	53.69
0	J156	0	115.5	202.59	37.74
0	J158	0	115.5	202.59	37.74
0	J160	0	128	228.71	43.64
0	J162	0	128	228.71	43.64
0	J164	0	98	202.68	45.36
0	J166	0	98	202.68	45.36
0	J168	0	115.25	209.47	40.82
0	J170	2,000.00	120	195.19	32.58
0	J172	2,000.00	120	195.25	32.61
0	J174	0	123	226.94	45.04
0	J176	0	123	226.94	45.04
0	J178	0	94	230.35	59.08
0	J180	0	94	230.35	59.08
0	J182	0	118	220.77	44.53
0	J184	0	118	210.39	40.03
0	J186	0	118	210.39	40.03
0	J188	0	126	216.24	39.1
0	J190	0	126	215.98	38.99
0	J192	0	126	215.73	38.88
0	J194	0	126	215.47	38.77
0	J196	0	99.75	219.38	51.84
0	J198	0	95.5	213.77	51.24
0	J20	44.06	90.4	214.17	53.63
0	J206	0	100	230.92	56.73
0	J208	0	100	230.92	56.73
0	J210	0	102	224.5	53.08
0	J212	0	102	224.5	53.08
0	J214	0	102	224.5	53.08
0	J216	0	100	232.49	57.41
0	J218	0	100	232.49	57.41
0	J22	41.86	118.5	214.14	41.44
0	J220	50.94	116	207.52	39.66
0	J222	50.4	119.1	209.91	39.35
0	J224	0	118	221.93	45.03
0	J226	0	130	222.96	40.28
0	J228	0	116	243.38	55.19
0	J230	0	147	256.28	47.35
0	J232	0	148	270.13	52.92
0	J236	2,427.93	166	306.06	60.69
0	J238	1,213.97	181	291.88	48.04
0	J240	0	164	306.7	61.83
0	J242	0	148	271.19	53.38
0	J244	0	148	270.43	53.05
0	J246	1,213.97	146	275.85	56.26
0	J252	0	164.3	307.19	61.91
0	J26	88.2	115.5	214.13	42.74

0	J260	0	164.48	307.27	61.87
0	J262	0	164.48	307.33	61.9
0	J264	0	167.47	309.44	61.52
0	J266	0	167.47	309.59	61.58
0	J268	0	167.47	309.74	61.65
0	J270	0	167.47	309.83	61.68
0	J272	0	167.47	309.91	61.72
0	J274	0	167.47	310.57	62.01
0	J276	0	167.47	310.7	62.06
0	J278	0	164.48	169.45	2.15
0	J28	34.78	118.6	214.95	41.75
0	J280	0	164.48	169.45	2.15
0	J282	0	164.48	169.45	2.15
0	J286	0	164.48	169.25	2.07
0	J288	0	164.48	169.26	2.07
0	J290	0	164.48	169.28	2.08
0	J292	0	164.48	169.34	2.11
0	J294	0	164.48	169.53	2.19
0	J296	0	164.57	169.71	2.23
0	J298	0	164.22	170.33	2.65
0	J30	44.42	122.2	215.47	40.42
0	J300	0	127.5	233.69	46.01
0	J302	0	128	234.16	46
0	J304	0	142	241.34	43.05
0	J308	0	163	170.71	3.34
0	J310	0	165.5	171.44	2.57
0	J312	0	164.48	169.46	2.16
0	J32	93.48	126	216.5	39.21
0	J328	0	167.47	318.31	65.36
0	J330	0	167.47	317.56	65.03
0	J332	0	167.47	317.4	64.96
0	J334	0	167.47	311.54	62.43
0	J336	0	167.47	318.19	65.31
0	J338	0	167.47	309.83	61.68
0	J34	0	134	217.89	36.35
0	J340	0	167.47	309.59	61.58
0	J36	0	137	220.79	36.31
0	J38	79.7	90.2	214.34	53.79
0	J40	138.2	90	214.64	54.01
0	J42	137.88	101	212.96	48.51
0	J44	93.74	111	210.45	43.09
0	J46	79.04	113	210.53	42.26
0	J48	76.62	114.7	213.94	43
0	J50	76.58	120	215.3	41.29
0	J52	152.52	126	216.37	39.16
0	J54	76.28	127.6	216.32	38.44
0	J56	70.04	121.9	215.4	40.51
0	J58	97.94	126	216.32	39.13
0	J60	43.14	124.5	215.4	39.39
0	J62	94.12	122	215.9	40.68
0	J64	69.8	127	216.34	38.71
0	J66	44.72	130.5	216.97	37.47
0	J68	45.14	88	218.24	56.43
0	J70	92.66	97.5	218.81	52.56
0	J72	105.24	102	220.07	51.16
0	J74	104.58	108	220.44	48.72
0	J76	92.9	128	221.12	40.35
0	J78	160.7	126	221.07	41.2
0	J82	0	126.4	218.71	40
0	J84	23.7	76	218.89	61.91
0	J86	49.12	78	219.84	61.46

0	J88	42.04	88.4	220.72	57.33
0	J90	52.46	104	220.95	50.67
0	J92	53.12	98	220.36	53.02
0	J94	50.48	107	221.76	49.73
0	J96	40.96	116	222.7	46.23

	ID	Flow (gpm)	Head (ft)
0	RES9010	-11,799.99	171.44

	ID	Elevation (ft)	Upstream Pre	Downstream	Flow (gpm)	Head Gain (ft	Status	Setting	Available NPS	Cavitation Inc
0	U7002	153.8	6.5	73.92	2,604.19	155.59	Open	1	48.13	0
0	U7004	153.8	6.47	73.61	2,610.57	154.95	Open	1	48.07	0
0	U7006	153.8	6.46	73.54	2,611.86	154.82	Open	1	48.04	0
0	U7008	153.8	6.63	69.08	1,366.93	144.12	Open	1	48.4	0
0	U7010	153.8	6.55	73.87	2,606.43	155.37	Open	1	48.26	0
0	U7012	153.8	6.78	67.61	0	0	Closed	0	0	0
0	U7014	153.8	6.78	67.51	0	0	Closed	0	0	0

	ID	Diameter (in)	Elevation (ft)	Upstream Pre	Downstream	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	Status	Setting
0	V8000	8	122	40.68	45.69	0	0	11.54	Open	5
0	V8002	8	122	40.5	45.69	0	0	0	Closed	5
0	V8008	10	132	42.41	37.41	0	0	11.54	Open	2
0	V8010	10	132	37.57	37.41	0	0	0	Closed	2
0	V8012	8	118	41.65	37.01	0	0	0	Closed	5
0	V8014	8	118	42.01	37.01	0	0	11.54	Open	5
0	V8016	8	115.5	42.74	37.74	0	0	11.54	Open	5
0	V8018	8	115.5	42.74	37.74	0	0	0	Closed	5
0	V8020	8	128	38.64	43.64	0	0	11.54	Open	5
0	V8022	8	128	38.35	43.64	0	0	0	Closed	5
0	V8024	8	98	50.41	45.36	0	0	0	Closed	5
0	V8026	8	98	50.36	45.36	0	0	11.54	Open	5
0	V8028	10	120	38.11	34.63	1,766.20	7.21	8.01	Open	2
0	V8032	8	123	40.04	45.04	0	0	11.54	Open	5
0	V8034	8	123	40.25	45.04	0	0	0	Closed	5
0	V8036	8	94	54.11	59.08	0	0	0	Closed	5
0	V8038	8	94	54.08	59.08	0	0	11.54	Open	5
0	V8042	10	118	45.03	40.03	0	0	11.54	Open	2
0	V8044	10	118	44.53	40.03	0	0	0	Closed	2
0	V8052	10	100	51.48	56.73	0	0	0	Closed	2
0	V8054	10	100	51.73	56.73	0	0	11.54	Open	2
0	V8056	8	102	48.08	53.08	0	0	11.54	Open	5
0	V8058	8	102	48.43	53.08	0	0	0	Closed	5
0	V8060	8	100	52.31	57.41	0	0	0	Closed	5
0	V8062	8	100	52.41	57.41	0	0	11.54	Open	5
0	V8070	10	120	37.3	32.99	2,233.80	9.13	9.96	Open	2

	ID	From Node	To Node	Length (ft)	Diameter (in)	Roughness	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	HL/1000 (ft/k
0	P101	J72	J92	810.17	12	130	-349.58	0.99	0.29	0.36
0	P103	J92	J90	1,241.83	12	130	-402.7	1.14	0.58	0.47
0	P105	J90	J94	1,132.34	16	130	-1,078.77	1.72	0.81	0.72
0	P107	J94	J96	1,204.53	16	130	-1,129.25	1.8	0.94	0.78
0	P111	J78	J100	1,067.79	16	130	-2,384.67	3.81	3.33	3.12
0	P115	J96	J100	886.7	16	130	-1,835.60	2.93	1.7	1.92
0	P117	J100	J102	789.56	20	130	-4,320.97	4.41	2.5	3.17
0	P119	J102	J104	941.88	20	130	-4,320.97	4.41	2.98	3.17
0	P121	J104	J300	1,197.93	20	130	-4,330.29	4.42	3.81	3.18
0	P123	J300	J302	147.08	20	130	-4,330.29	4.42	0.47	3.18
0	P125	J302	J304	2,260.56	20	130	-4,330.29	4.42	7.18	3.18
0	P139	J122	J124	627.68	12	130	-961.06	2.73	1.48	2.35
0	P141	J124	J60	1,242.80	12	130	-1,027.82	2.92	3.31	2.67
0	P145	J34	J126	846.23	20	130	2,124.12	2.17	0.72	0.85

0	P149	J66	J128	522.48	8	130	-64.19	0.41	0.06	0.11
0	P155	J126	J130	441.09	8	130	64.19	0.41	0.05	0.11
0	P157	J128	J130	886.05	8	130	-64.19	0.41	0.1	0.11
0	P159	J126	J32	843.52	20	130	2,059.94	2.1	0.68	0.8
0	P161	J66	J132	415.81	8	130	0	0	0	0
0	P163	J64	J136	338.87	8	130	0	0	0	0
0	P165	J136	J134	525.67	8	130	0	0	0	0
0	P167	J132	J134	848.01	8	130	0	0	0	0
0	P17	J20	J22	1,133.08	16	130	165.83	0.26	0.03	0.02
0	P171	V8000	J138	423.5	10	130	0	0	0	0
0	P173	J138	J140	355.5	10	130	0	0	0	0
0	P177	V8002	J140	603.42	10	130	0	0	0	0
0	P179	J30	V8002	454.21	10	130	0	0	0	0
0	P181	J62	V8000	384.46	10	130	0	0	0	0
0	P19	J22	J26	1,147.36	16	130	123.97	0.2	0.01	0.01
0	P193	J104	V8008	482.89	12	130	0	0	0	0
0	P195	J82	V8010	213.6	12	130	0	0	0	0
0	P197	V8010	J146	842.68	12	130	0	0	0	0
0	P199	J146	J148	514.03	12	130	0	0	0	0
0	P201	V8008	J148	1,114.81	12	130	0	0	0	0
0	P203	J26	V8012	268.73	10	130	0	0	0	0
0	P205	J28	V8014	295.03	10	130	0	0	0	0
0	P207	V8014	J152	482.16	10	130	0	0	0	0
0	P209	V8012	J150	236	10	130	0	0	0	0
0	P21	J26	J28	1,118.04	16	130	-1,088.97	1.74	0.82	0.73
0	P211	J152	J150	798.51	10	130	0	0	0	0
0	P213	J20	J154	348.19	12	130	-209.89	0.6	0.05	0.14
0	P215	J154	J38	842.54	12	130	-209.89	0.6	0.12	0.14
0	P217	J26	V8016	273.58	10	130	0	0	0	0
0	P219	J22	V8018	229.2	10	130	0	0	0	0
0	P221	V8018	J156	462.48	10	130	0	0	0	0
0	P223	V8016	J158	716.7	10	130	0	0	0	0
0	P225	J158	J156	802.77	10	130	0	0	0	0
0	P227	J32	V8022	269.66	10	130	0	0	0	0
0	P229	V8022	J160	385.74	10	130	0	0	0	0
0	P23	J28	J30	679.9	16	130	-1,123.75	1.79	0.53	0.77
0	P231	J126	V8020	259.39	10	130	0	0	0	0
0	P233	V8020	J162	510.51	10	130	0	0	0	0
0	P235	J160	J162	392.51	10	130	0	0	0	0
0	P237	J38	V8024	301.75	10	130	0	0	0	0
0	P239	J154	V8026	160.09	10	130	0	0	0	0
0	P241	V8026	J166	918.28	10	130	0	0	0	0
0	P243	J166	J164	455.03	10	130	0	0	0	0
0	P245	V8024	J164	882.35	10	130	0	0	0	0
0	P247	J46	J168	532.6	12	130	880.92	2.5	1.07	2
0	P249	J168	J122	563.66	12	130	-885.28	2.51	1.14	2.02
0	P25	J30	J32	1,229.93	16	130	-1,168.17	1.86	1.02	0.83
0	P251	J168	V8028	209.52	12	130	1,766.20	5.01	1.52	7.27
0	P253	V8028	J170	652.72	12	130	1,766.20	5.01	4.74	7.27
0	P255	J170	J172	387.16	12	130	-233.8	0.66	0.07	0.17
0	P261	J60	V8032	268.68	10	130	0	0	0	0
0	P263	V8032	J174	918.23	10	130	0	0	0	0
0	P265	J174	J176	448.57	10	130	0	0	0	0
0	P267	J62	V8034	292.8	10	130	0	0	0	0
0	P269	V8034	J176	916.13	10	130	0	0	0	0
0	P271	J70	V8038	242.57	10	130	0	0	0	0
0	P273	J84	V8036	324.38	10	130	0	0	0	0
0	P275	V8036	J180	319.74	10	130	0	0	0	0
0	P277	J180	J178	347.95	10	130	0	0	0	0
0	P279	V8038	J178	632.77	10	130	0	0	0	0
0	P281	J76	J182	613.97	12	130	443.49	1.26	0.35	0.56

0	P283	J182	J74	589.22	12	130	443.49	1.26	0.33	0.56
0	P287	V8042	J184	372.65	12	130	0	0	0	0
0	P289	J184	J186	299.52	12	130	0	0	0	0
0	P29	J34	J36	2,325.70	20	130	-2,613.83	2.67	2.9	1.25
0	P295	J182	V8044	226.67	12	130	0	0	0	0
0	P297	V8044	J186	240.53	12	130	0	0	0	0
0	P299	J52	J188	313.33	8	130	125.24	0.8	0.12	0.39
0	P301	J188	J190	664.92	8	130	125.24	0.8	0.26	0.39
0	P303	J56	J194	178.12	8	130	-125.24	0.8	0.07	0.39
0	P305	J194	J192	667.8	8	130	-125.24	0.8	0.26	0.39
0	P307	J192	J190	657.08	8	130	-125.24	0.8	0.26	0.39
0	P309	J72	J196	736.36	12	130	583.25	1.65	0.69	0.93
0	P311	J196	J70	609.66	12	130	583.25	1.65	0.57	0.93
0	P313	J40	J198	1,129.17	12	130	526.41	1.49	0.87	0.77
0	P315	J198	J42	1,043.66	12	130	526.4	1.49	0.81	0.77
0	P329	J70	V8052	185.71	12	130	0	0	0	0
0	P33	J38	J40	1,179.71	12	130	-289.59	0.82	0.3	0.26
0	P331	V8052	J206	525.44	12	130	0	0	0	0
0	P333	J196	V8054	178.3	12	130	0	0	0	0
0	P335	V8054	J208	525.19	12	130	0	0	0	0
0	P337	J208	J206	475.84	12	130	0	0	0	0
0	P341	J198	V8058	154.71	10	130	0	0	0	0
0	P343	V8058	J214	421.16	10	130	0	0	0	0
0	P345	J214	J210	577.05	10	130	0	0	0	0
0	P347	J42	V8056	297.78	10	130	0	0	0	0
0	P349	V8056	J212	569.55	10	130	0	0	0	0
0	P351	J212	J210	1,312.90	10	130	0	0	0	0
0	P353	J88	V8060	266.49	10	130	0	0	0	0
0	P355	V8060	J216	322.62	10	130	0	0	0	0
0	P357	J90	V8062	226.9	10	130	0	0	0	0
0	P359	V8062	J218	739.72	10	130	0	0	0	0
0	P361	J218	J216	604.58	10	130	0	0	0	0
0	P363	J56	J222	1,322.36	12	130	1,304.58	3.7	5.48	4.15
0	P365	J222	J220	621.17	12	130	1,254.18	3.56	2.39	3.86
0	P367	J220	J44	1,095.19	12	130	-1,030.56	2.92	2.93	2.68
0	P37	J26	J46	1,141.00	12	130	1,124.74	3.19	3.6	3.15
0	P379	J76	J224	678.87	12	130	-665.39	1.89	0.81	1.19
0	P381	J224	V8042	158.85	12	130	0	0	0	0
0	P39	J46	J44	879.87	12	130	164.78	0.47	0.08	0.09
0	P393	J226	J36	1,733.97	20	130	2,613.83	2.67	2.16	1.25
0	P395	J96	J224	650.52	12	130	665.39	1.89	0.78	1.19
0	P399	J232	J230	2,608.50	18	130	4,330.29	5.46	13.85	5.31
0	P401	J230	J304	2,813.67	18	130	4,330.29	5.46	14.94	5.31
0	P403	J232	J228	7,230.92	16	130	2,613.83	4.17	26.75	3.7
0	P405	J228	J226	5,520.22	16	130	2,613.83	4.17	20.42	3.7
0	P41	J44	J42	1,067.11	12	130	-959.52	2.72	2.51	2.35
0	P415	J220	V8070	127.05	12	130	2,233.80	6.34	1.43	11.23
0	P417	V8070	J172	78.54	12	130	2,233.80	6.34	0.88	11.23
0	P421	J240	J236	955.52	36	130	8,738.80	2.75	0.64	0.67
0	P423	J236	J238	5,398.38	24	130	6,310.87	4.48	14.18	2.63
0	P425	J238	J246	9,066.36	24	130	5,096.90	3.61	16.03	1.77
0	P427	J246	J244	5,073.87	24	130	3,882.93	2.75	5.42	1.07
0	P429	J240	J242	7,163.69	16	130	3,061.20	4.88	35.51	4.96
0	P43	J42	J48	1,096.37	12	130	-571	1.62	0.98	0.9
0	P431	J242	J232	213.31	16	130	3,061.20	4.88	1.06	4.96
0	P433	J244	J232	281.24	24	130	3,882.93	2.75	0.3	1.07
0	P439	RES9010	J310	68.78	1,100.00	130	11,799.99	0	0	0
0	P441	J310	J308	18	36	130	11,799.99	3.72	0.73	40.54
0	P443	J308	J298	106.2	36	130	11,799.99	3.72	0.38	3.59
0	P445	J298	J296	55.4	36	130	11,799.99	3.72	0.62	11.24
0	P447	J296	J294	78.5	36	130	11,799.99	3.72	0.18	2.26

0	P449	J294	J292	19	30	130	9,193.57	4.17	0.19	9.75
0	P45	J48	J50	1,194.62	12	130	-647.62	1.84	1.35	1.13
0	P451	J292	J290	9.2	30	130	6,589.37	2.99	0.06	7
0	P453	J290	J288	9.2	30	130	3,978.80	1.81	0.02	2.58
0	P455	J288	J286	9.2	30	130	1,366.93	0.62	0	0.31
0	P461	J282	J280	9.2	30	130	0	0	0	0
0	P463	J280	J278	9.2	30	130	0	0	0	0
0	P465	J292	U7002	20.6	18	130	2,604.19	3.28	0.54	26.45
0	P469	J290	U7004	20.6	18	130	2,610.57	3.29	0.55	26.57
0	P47	J50	J52	765.09	12	130	-724.2	2.05	1.07	1.39
0	P473	J288	U7006	20.6	18	130	2,611.86	3.29	0.55	26.6
0	P477	J286	U7008	20.6	18	130	1,366.93	1.72	0.15	7.34
0	P481	J282	U7010	12.1	18	130	2,606.43	3.29	0.53	43.64
0	P485	J280	U7012	12.1	18	130	0	0	0	0
0	P489	J278	U7014	12.1	18	130	0	0	0	0
0	P49	J32	J62	1,463.77	16	130	798.29	1.27	0.6	0.41
0	P493	J276	J274	4.9	16	130	2,604.19	4.16	0.13	25.56
0	P495	J274	J272	4.2	16	130	5,210.62	8.31	0.66	156.39
0	P497	J272	J270	4.7	30	130	7,821.20	3.55	0.08	17.97
0	P499	J270	J268	4.7	30	130	7,821.20	3.55	0.08	17.97
0	P501	J268	J266	4.7	30	130	10,433.06	4.74	0.15	31.88
0	P503	J266	J264	4.7	30	130	10,433.06	4.74	0.15	31.87
0	P505	J264	J262	60.6	30	130	11,799.99	5.36	2.11	34.87
0	P507	J262	J260	20.3	36	130	11,799.99	3.72	0.07	3.28
0	P509	J260	J252	30.38	36	130	11,799.99	3.72	0.08	2.58
0	P51	J34	J66	1,373.58	12	130	489.71	1.39	0.93	0.68
0	P511	J252	J240	90.5	36	130	11,799.99	3.72	0.49	5.43
0	P513	J294	J312	36.2	30	130	2,606.43	1.18	0.07	1.85
0	P515	J312	J282	31.2	30	130	2,606.43	1.18	0.01	0.31
0	P517	U7002	J328	15	12	130	2,604.19	7.39	6.09	405.83
0	P519	J328	J276	9.1	14	130	2,604.19	5.43	7.61	836.36
0	P521	U7004	J330	15	12	130	2,610.57	7.41	6.12	407.82
0	P523	J330	J272	9.1	14	130	2,610.57	5.44	7.65	840.45
0	P525	U7006	J332	15	12	130	2,611.86	7.41	6.12	408.22
0	P527	J332	J268	9.1	14	130	2,611.86	5.44	7.66	841.29
0	P529	U7008	J334	15	12	130	1,366.93	3.88	1.68	112.23
0	P53	J66	J64	862.35	12	130	509.17	1.44	0.63	0.73
0	P531	J334	J264	9.1	14	130	1,366.93	2.85	2.1	230.62
0	P533	U7010	J336	15	12	130	2,606.43	7.39	6.1	406.53
0	P535	J336	J274	9.1	14	130	2,606.43	5.43	7.62	837.79
0	P537	U7012	J338	15	12	130	0	0	0	0
0	P539	J338	J270	9.1	14	130	0	0	0	0
0	P541	U7014	J340	15	12	130	0	0	0	0
0	P543	J340	J266	9.1	14	130	0	0	0	0
0	P55	J62	J64	1,082.76	12	130	-373.95	1.06	0.44	0.41
0	P57	J62	J60	691.6	16	130	1,078.12	1.72	0.5	0.72
0	P59	J64	J58	1,424.22	12	130	65.42	0.19	0.02	0.02
0	P61	J60	J56	890.62	16	130	7.16	0.01	0	0
0	P67	J56	J52	1,036.48	16	130	-1,242.22	1.98	0.97	0.93
0	P69	J52	J54	1,131.15	12	130	108.8	0.31	0.05	0.04
0	P71	J58	J54	591.64	12	130	-32.52	0.09	0	0
0	P73	J40	J68	1,551.82	12	130	-954.19	2.71	3.61	2.32
0	P75	J68	J70	838.54	12	130	-490.59	1.39	0.57	0.68
0	P79	J72	J74	1,086.50	12	130	-338.91	0.96	0.37	0.34
0	P83	J76	J78	765.46	12	130	129	0.37	0.04	0.06
0	P89	J52	J82	771.55	16	130	-2,352.98	3.75	2.35	3.04
0	P91	J82	J78	774.7	16	130	-2,352.98	3.75	2.36	3.04
0	P93	J68	J84	890.35	12	130	-508.74	1.44	0.65	0.73
0	P95	J84	J86	1,204.21	12	130	-532.44	1.51	0.95	0.79
0	P97	J86	J88	946.69	12	130	-581.56	1.65	0.88	0.93
0	P99	J88	J90	874.98	16	130	-623.6	1	0.23	0.26

Run EB12

	ID	Demand (gpr	Elevation (ft)	Head (ft)	Pressure (psi)
0	J100	100.7	122	244.78	53.2
0	J102	0	125.5	246.65	52.49
0	J104	9.32	129.8	248.87	51.6
0	J122	75.78	117.5	237.59	52.04
0	J124	66.76	119.5	237.45	51.11
0	J126	0	130	239.11	47.28
0	J128	0	133	238.9	45.89
0	J130	0	134	239.04	45.51
0	J132	0	131	238.82	46.72
0	J134	0	131	238.82	46.72
0	J136	0	131	238.82	46.72
0	J138	0	122	248.84	54.96
0	J140	0	122	248.84	54.96
0	J146	0	132	237.33	45.64
0	J148	0	132	237.33	45.64
0	J150	0	118	226.89	47.18
0	J152	0	118	226.89	47.18
0	J154	0	90.3	238.42	64.18
0	J156	0	115.5	226.81	48.23
0	J158	0	115.5	226.81	48.23
0	J160	0	128	250.65	53.14
0	J162	0	128	250.65	53.14
0	J164	0	98	226.88	55.84
0	J166	0	98	226.88	55.84
0	J168	0	115.25	237.8	53.1
0	J170	0	120	226.45	46.13
0	J172	0	120	226.45	46.13
0	J174	1,500.00	123	214.59	39.68
0	J176	1,500.00	123	214.59	39.68
0	J178	0	94	229.41	58.67
0	J180	0	94	229.41	58.67
0	J182	0	118	242.1	53.77
0	J184	0	118	231.4	49.14
0	J186	0	118	231.4	49.14
0	J188	0	126	238.68	48.83
0	J190	0	126	238.47	48.73
0	J192	0	126	238.26	48.64
0	J194	0	126	238.05	48.55
0	J196	0	99.75	241.27	61.32
0	J198	0	95.5	238.52	61.97
0	J20	44.06	90.4	238.38	64.12
0	J206	0	100	229.73	56.21
0	J208	0	100	229.73	56.21
0	J210	0	102	226.74	54.05
0	J212	0	102	226.74	54.05
0	J214	0	102	226.74	54.05
0	J216	0	100	230.76	56.66
0	J218	0	100	230.76	56.66
0	J22	41.86	118.5	238.36	51.94
0	J220	50.94	116	237.99	52.86
0	J222	50.4	119.1	237.99	51.51
0	J224	0	118	242.94	54.14
0	J226	0	130	243.44	49.15
0	J228	0	116	258.82	61.88
0	J230	0	147	268.61	52.69
0	J232	0	148	278.97	56.75
0	J236	2,427.93	166	307.28	61.22
0	J238	1,213.97	181	295.62	49.67

0	J240	0	164	307.83	62.32
0	J242	0	148	279.8	57.11
0	J244	0	148	279.18	56.84
0	J246	1,213.97	146	283.08	59.4
0	J252	0	164.3	308.25	62.37
0	J26	88.2	115.5	238.35	53.23
0	J260	0	164.48	308.31	62.32
0	J262	0	164.48	308.37	62.35
0	J264	0	167.47	310.14	61.82
0	J266	0	167.47	310.29	61.88
0	J268	0	167.47	310.44	61.95
0	J270	0	167.47	310.52	61.98
0	J272	0	167.47	310.61	62.02
0	J274	0	167.47	311.26	62.31
0	J276	0	167.47	311.39	62.36
0	J278	0	164.48	169.76	2.29
0	J28	34.78	118.6	238.43	51.92
0	J280	0	164.48	169.76	2.29
0	J282	0	164.48	169.76	2.29
0	J286	0	164.48	169.63	2.23
0	J288	0	164.48	169.63	2.23
0	J290	0	164.48	169.64	2.24
0	J292	0	164.48	169.69	2.26
0	J294	0	164.48	169.84	2.32
0	J296	0	164.57	169.99	2.35
0	J298	0	164.22	170.51	2.72
0	J30	44.42	122.2	238.49	50.39
0	J300	0	127.5	251.72	53.83
0	J302	0	128	252.07	53.76
0	J304	0	142	257.44	50.02
0	J308	0	163	170.83	3.39
0	J310	0	165.5	171.44	2.57
0	J312	0	164.48	169.77	2.29
0	J32	93.48	126	238.63	48.8
0	J328	0	167.47	318.98	65.65
0	J330	0	167.47	318.24	65.33
0	J332	0	167.47	318.08	65.26
0	J334	0	167.47	310.3	61.89
0	J336	0	167.47	318.87	65.6
0	J338	0	167.47	310.52	61.98
0	J34	0	134	239.63	45.77
0	J340	0	167.47	310.29	61.88
0	J36	0	137	241.81	45.42
0	J38	79.7	90.2	238.51	64.26
0	J40	138.2	90	238.77	64.46
0	J42	137.88	101	238.28	59.49
0	J44	93.74	111	238.02	55.04
0	J46	79.04	113	237.99	54.16
0	J48	76.62	114.7	238.37	53.59
0	J50	76.58	120	238.57	51.38
0	J52	152.52	126	238.78	48.87
0	J54	76.28	127.6	238.44	48.03
0	J56	70.04	121.9	237.99	50.3
0	J58	97.94	126	238.34	48.68
0	J60	43.14	124.5	237.28	48.87
0	J62	94.12	122	237.3	49.96
0	J64	69.8	127	238.24	48.2
0	J66	44.72	130.5	238.82	46.93
0	J68	45.14	88	240.66	66.15
0	J70	92.66	97.5	240.95	62.16
0	J72	105.24	102	241.67	60.52

0	J74	104.58	108	241.88	58.01
0	J76	92.9	128	242.33	49.54
0	J78	160.7	126	242.28	50.39
0	J82	0	126.4	240.53	49.45
0	J84	23.7	76	241.03	71.51
0	J86	49.12	78	241.6	70.89
0	J88	42.04	88.4	242.15	66.62
0	J90	52.46	104	242.3	59.92
0	J92	53.12	98	241.87	62.34
0	J94	50.48	107	242.86	58.87
0	J96	40.96	116	243.53	55.26

	ID	Flow (gpm)	Head (ft)
0	RES9010	-10,799.99	171.44

	ID	Elevation (ft)	Upstream Pre	Downstream	Flow (gpm)	Head Gain (ft	Status	Setting	Available NPS	Cavitation Inc
0	U7002	153.8	6.65	74.2	2,601.11	155.91	Open	1	48.48	0
0	U7004	153.8	6.63	73.9	2,607.63	155.25	Open	1	48.43	0
0	U7006	153.8	6.62	73.83	2,609.01	155.11	Open	1	48.42	0
0	U7008	153.8	6.85	67.87	379.25	140.82	Open	1	48.9	0
0	U7010	153.8	6.69	74.16	2,603.01	155.71	Open	1	48.57	0
0	U7012	153.8	6.92	67.91	0	0	Closed	0	0	0
0	U7014	153.8	6.92	67.81	0	0	Closed	0	0	0

	ID	Diameter (in)	Elevation (ft)	Upstream Pre	Downstream	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	Status	Setting
0	V8000	8	122	49.96	54.96	0	0	11.54	Open	5
0	V8002	8	122	50.48	54.96	0	0	0	Closed	5
0	V8008	10	132	50.64	45.64	0	0	11.54	Open	2
0	V8010	10	132	47.03	45.64	0	0	0	Closed	2
0	V8012	8	118	52.15	47.18	0	0	0	Closed	5
0	V8014	8	118	52.18	47.18	0	0	11.54	Open	5
0	V8016	8	115.5	53.23	48.23	0	0	11.54	Open	5
0	V8018	8	115.5	53.23	48.23	0	0	0	Closed	5
0	V8020	8	128	48.14	53.14	0	0	11.54	Open	5
0	V8022	8	128	47.93	53.14	0	0	0	Closed	5
0	V8024	8	98	60.88	55.84	0	0	0	Closed	5
0	V8026	8	98	60.84	55.84	0	0	11.54	Open	5
0	V8028	10	120	51.04	46.13	0	0	0	Closed	2
0	V8032	8	123	47.98	44.92	1,506.59	9.62	7.07	Open	5
0	V8034	8	123	47.88	44.82	1,493.41	9.53	7.06	Open	5
0	V8036	8	94	63.71	58.67	0	0	0	Closed	5
0	V8038	8	94	63.67	58.67	0	0	11.54	Open	5
0	V8042	10	118	54.14	49.14	0	0	11.54	Open	2
0	V8044	10	118	53.77	49.14	0	0	0	Closed	2
0	V8052	10	100	61.07	56.21	0	0	0	Closed	2
0	V8054	10	100	61.21	56.21	0	0	11.54	Open	2
0	V8056	8	102	59.05	54.05	0	0	11.54	Open	5
0	V8058	8	102	59.15	54.05	0	0	0	Closed	5
0	V8060	8	100	61.59	56.66	0	0	0	Closed	5
0	V8062	8	100	61.66	56.66	0	0	11.54	Open	5
0	V8070	10	120	51.13	46.13	0	0	11.54	Open	2

	ID	From Node	To Node	Length (ft)	Diameter (in)	Roughness	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	HL/1000 (ft/k
0	P101	J72	J92	810.17	12	130	-287.13	0.81	0.2	0.25
0	P103	J92	J90	1,241.83	12	130	-340.25	0.97	0.43	0.34
0	P105	J90	J94	1,132.34	16	130	-886.56	1.41	0.57	0.5
0	P107	J94	J96	1,204.53	16	130	-937.04	1.5	0.67	0.55
0	P111	J78	J100	1,067.79	16	130	-2,039.57	3.25	2.5	2.34
0	P115	J96	J100	886.7	16	130	-1,551.76	2.48	1.25	1.41
0	P117	J100	J102	789.56	20	130	-3,692.03	3.77	1.87	2.37
0	P119	J102	J104	941.88	20	130	-3,692.03	3.77	2.23	2.37

0	P121	J104	J300	1,197.93	20	130	-3,701.35	3.78	2.85	2.38
0	P123	J300	J302	147.08	20	130	-3,701.35	3.78	0.35	2.38
0	P125	J302	J304	2,260.56	20	130	-3,701.35	3.78	5.37	2.38
0	P139	J122	J124	627.68	12	130	274.06	0.78	0.14	0.23
0	P141	J124	J60	1,242.80	12	130	207.3	0.59	0.17	0.14
0	P145	J34	J126	846.23	20	130	1,787.27	1.83	0.52	0.62
0	P149	J66	J128	522.48	8	130	-77.25	0.49	0.08	0.16
0	P155	J126	J130	441.09	8	130	77.25	0.49	0.07	0.16
0	P157	J128	J130	886.05	8	130	-77.25	0.49	0.14	0.16
0	P159	J126	J32	843.52	20	130	1,710.01	1.75	0.48	0.57
0	P161	J66	J132	415.81	8	130	0	0	0	0
0	P163	J64	J136	338.87	8	130	0	0	0	0
0	P165	J136	J134	525.67	8	130	0	0	0	0
0	P167	J132	J134	848.01	8	130	0	0	0	0
0	P17	J20	J22	1,133.08	16	130	142.02	0.23	0.02	0.02
0	P171	V8000	J138	423.5	10	130	0	0	0	0
0	P173	J138	J140	355.5	10	130	0	0	0	0
0	P177	V8002	J140	603.42	10	130	0	0	0	0
0	P179	J30	V8002	454.21	10	130	0	0	0	0
0	P181	J62	V8000	384.46	10	130	0	0	0	0
0	P19	J22	J26	1,147.36	16	130	100.16	0.16	0.01	0.01
0	P193	J104	V8008	482.89	12	130	0	0	0	0
0	P195	J82	V8010	213.6	12	130	0	0	0	0
0	P197	V8010	J146	842.68	12	130	0	0	0	0
0	P199	J146	J148	514.03	12	130	0	0	0	0
0	P201	V8008	J148	1,114.81	12	130	0	0	0	0
0	P203	J26	V8012	268.73	10	130	0	0	0	0
0	P205	J28	V8014	295.03	10	130	0	0	0	0
0	P207	V8014	J152	482.16	10	130	0	0	0	0
0	P209	V8012	J150	236	10	130	0	0	0	0
0	P21	J26	J28	1,118.04	16	130	-313.12	0.5	0.08	0.07
0	P211	J152	J150	798.51	10	130	0	0	0	0
0	P213	J20	J154	348.19	12	130	-186.08	0.53	0.04	0.11
0	P215	J154	J38	842.54	12	130	-186.08	0.53	0.09	0.11
0	P217	J26	V8016	273.58	10	130	0	0	0	0
0	P219	J22	V8018	229.2	10	130	0	0	0	0
0	P221	V8018	J156	462.48	10	130	0	0	0	0
0	P223	V8016	J158	716.7	10	130	0	0	0	0
0	P225	J158	J156	802.77	10	130	0	0	0	0
0	P227	J32	V8022	269.66	10	130	0	0	0	0
0	P229	V8022	J160	385.74	10	130	0	0	0	0
0	P23	J28	J30	679.9	16	130	-347.9	0.56	0.06	0.09
0	P231	J126	V8020	259.39	10	130	0	0	0	0
0	P233	V8020	J162	510.51	10	130	0	0	0	0
0	P235	J160	J162	392.51	10	130	0	0	0	0
0	P237	J38	V8024	301.75	10	130	0	0	0	0
0	P239	J154	V8026	160.09	10	130	0	0	0	0
0	P241	V8026	J166	918.28	10	130	0	0	0	0
0	P243	J166	J164	455.03	10	130	0	0	0	0
0	P245	V8024	J164	882.35	10	130	0	0	0	0
0	P247	J46	J168	532.6	12	130	349.84	0.99	0.19	0.36
0	P249	J168	J122	563.66	12	130	349.84	0.99	0.2	0.36
0	P25	J30	J32	1,229.93	16	130	-392.32	0.63	0.14	0.11
0	P251	J168	V8028	209.52	12	130	0	0	0	0
0	P253	V8028	J170	652.72	12	130	0	0	0	0
0	P255	J170	J172	387.16	12	130	0	0	0	0
0	P261	J60	V8032	268.68	10	130	1,506.59	6.15	3.54	13.16
0	P263	V8032	J174	918.23	10	130	1,506.59	6.15	12.08	13.16
0	P265	J174	J176	448.57	10	130	6.59	0.03	0	0
0	P267	J62	V8034	292.8	10	130	1,493.41	6.1	3.79	12.95
0	P269	V8034	J176	916.13	10	130	1,493.41	6.1	11.86	12.95

0	P271	J70	V8038	242.57	10	130	0	0	0	0
0	P273	J84	V8036	324.38	10	130	0	0	0	0
0	P275	V8036	J180	319.74	10	130	0	0	0	0
0	P277	J180	J178	347.95	10	130	0	0	0	0
0	P279	V8038	J178	632.77	10	130	0	0	0	0
0	P281	J76	J182	613.97	12	130	354.73	1.01	0.23	0.37
0	P283	J182	J74	589.22	12	130	354.73	1.01	0.22	0.37
0	P287	V8042	J184	372.65	12	130	0	0	0	0
0	P289	J184	J186	299.52	12	130	0	0	0	0
0	P29	J34	J36	2,325.70	20	130	-2,242.77	2.29	2.19	0.94
0	P295	J182	V8044	226.67	12	130	0	0	0	0
0	P297	V8044	J186	240.53	12	130	0	0	0	0
0	P299	J52	J188	313.33	8	130	112.63	0.72	0.1	0.32
0	P301	J188	J190	664.92	8	130	112.63	0.72	0.21	0.32
0	P303	J56	J194	178.12	8	130	-112.63	0.72	0.06	0.32
0	P305	J194	J192	667.8	8	130	-112.63	0.72	0.21	0.32
0	P307	J192	J190	657.08	8	130	-112.63	0.72	0.21	0.32
0	P309	J72	J196	736.36	12	130	432.03	1.23	0.39	0.54
0	P311	J196	J70	609.66	12	130	432.03	1.23	0.33	0.54
0	P313	J40	J198	1,129.17	12	130	269.25	0.76	0.25	0.22
0	P315	J198	J42	1,043.66	12	130	269.25	0.76	0.23	0.22
0	P329	J70	V8052	185.71	12	130	0	0	0	0
0	P33	J38	J40	1,179.71	12	130	-265.78	0.75	0.26	0.22
0	P331	V8052	J206	525.44	12	130	0	0	0	0
0	P333	J196	V8054	178.3	12	130	0	0	0	0
0	P335	V8054	J208	525.19	12	130	0	0	0	0
0	P337	J208	J206	475.84	12	130	0	0	0	0
0	P341	J198	V8058	154.71	10	130	0	0	0	0
0	P343	V8058	J214	421.16	10	130	0	0	0	0
0	P345	J214	J210	577.05	10	130	0	0	0	0
0	P347	J42	V8056	297.78	10	130	0	0	0	0
0	P349	V8056	J212	569.55	10	130	0	0	0	0
0	P351	J212	J210	1,312.90	10	130	0	0	0	0
0	P353	J88	V8060	266.49	10	130	0	0	0	0
0	P355	V8060	J216	322.62	10	130	0	0	0	0
0	P357	J90	V8062	226.9	10	130	0	0	0	0
0	P359	V8062	J218	739.72	10	130	0	0	0	0
0	P361	J218	J216	604.58	10	130	0	0	0	0
0	P363	J56	J222	1,322.36	12	130	14.84	0.04	0	0
0	P365	J222	J220	621.17	12	130	-35.56	0.1	0	0
0	P367	J220	J44	1,095.19	12	130	-86.5	0.25	0.03	0.03
0	P37	J26	J46	1,141.00	12	130	325.08	0.92	0.36	0.32
0	P379	J76	J224	678.87	12	130	-573.76	1.63	0.61	0.91
0	P381	J224	V8042	158.85	12	130	0	0	0	0
0	P39	J46	J44	879.87	12	130	-103.8	0.29	0.03	0.04
0	P393	J226	J36	1,733.97	20	130	2,242.77	2.29	1.63	0.94
0	P395	J96	J224	650.52	12	130	573.76	1.63	0.59	0.91
0	P399	J232	J230	2,608.50	18	130	3,701.35	4.67	10.36	3.97
0	P401	J230	J304	2,813.67	18	130	3,701.35	4.67	11.17	3.97
0	P403	J232	J228	7,230.92	16	130	2,242.77	3.58	20.15	2.79
0	P405	J228	J226	5,520.22	16	130	2,242.77	3.58	15.38	2.79
0	P41	J44	J42	1,067.11	12	130	-284.04	0.81	0.26	0.25
0	P415	J220	V8070	127.05	12	130	0	0	0	0
0	P417	V8070	J172	78.54	12	130	0	0	0	0
0	P421	J240	J236	955.52	36	130	8,105.76	2.55	0.55	0.58
0	P423	J236	J238	5,398.38	24	130	5,677.83	4.03	11.66	2.16
0	P425	J238	J246	9,066.36	24	130	4,463.86	3.17	12.54	1.38
0	P427	J246	J244	5,073.87	24	130	3,249.89	2.3	3.9	0.77
0	P429	J240	J242	7,163.69	16	130	2,694.23	4.3	28.03	3.91
0	P43	J42	J48	1,096.37	12	130	-152.67	0.43	0.09	0.08
0	P431	J242	J232	213.31	16	130	2,694.23	4.3	0.83	3.91

0	P433	J244	J232	281.24	24	130	3,249.89	2.3	0.22	0.77
0	P439	RES9010	J310	68.78	1,100.00	130	10,799.99	0	0	0
0	P441	J310	J308	18	36	130	10,799.99	3.4	0.61	33.97
0	P443	J308	J298	106.2	36	130	10,799.99	3.4	0.32	3.02
0	P445	J298	J296	55.4	36	130	10,799.99	3.4	0.52	9.43
0	P447	J296	J294	78.5	36	130	10,799.99	3.4	0.15	1.9
0	P449	J294	J292	19	30	130	8,196.99	3.72	0.15	7.77
0	P45	J48	J50	1,194.62	12	130	-229.29	0.65	0.2	0.17
0	P451	J292	J290	9.2	30	130	5,595.88	2.54	0.05	5.06
0	P453	J290	J288	9.2	30	130	2,988.26	1.36	0.01	1.46
0	P455	J288	J286	9.2	30	130	379.25	0.17	0	0.02
0	P461	J282	J280	9.2	30	130	0	0	0	0
0	P463	J280	J278	9.2	30	130	0	0	0	0
0	P465	J292	U7002	20.6	18	130	2,601.11	3.28	0.54	26.38
0	P469	J290	U7004	20.6	18	130	2,607.63	3.29	0.55	26.51
0	P47	J50	J52	765.09	12	130	-305.87	0.87	0.22	0.28
0	P473	J288	U7006	20.6	18	130	2,609.01	3.29	0.55	26.54
0	P477	J286	U7008	20.6	18	130	379.25	0.48	0.01	0.57
0	P481	J282	U7010	12.1	18	130	2,603.01	3.28	0.53	43.53
0	P485	J280	U7012	12.1	18	130	0	0	0	0
0	P489	J278	U7014	12.1	18	130	0	0	0	0
0	P49	J32	J62	1,463.77	16	130	1,224.21	1.95	1.33	0.91
0	P493	J276	J274	4.9	16	130	2,601.11	4.15	0.12	25.5
0	P495	J274	J272	4.2	16	130	5,204.11	8.3	0.66	156
0	P497	J272	J270	4.7	30	130	7,811.74	3.55	0.08	17.93
0	P499	J270	J268	4.7	30	130	7,811.74	3.55	0.08	17.93
0	P501	J268	J266	4.7	30	130	10,420.74	4.73	0.15	31.8
0	P503	J266	J264	4.7	30	130	10,420.74	4.73	0.15	31.8
0	P505	J264	J262	60.6	30	130	10,799.99	4.9	1.77	29.24
0	P507	J262	J260	20.3	36	130	10,799.99	3.4	0.06	2.76
0	P509	J260	J252	30.38	36	130	10,799.99	3.4	0.07	2.17
0	P51	J34	J66	1,373.58	12	130	455.51	1.29	0.81	0.59
0	P511	J252	J240	90.5	36	130	10,799.99	3.4	0.41	4.56
0	P513	J294	J312	36.2	30	130	2,603.00	1.18	0.07	1.85
0	P515	J312	J282	31.2	30	130	2,603.00	1.18	0.01	0.31
0	P517	U7002	J328	15	12	130	2,601.11	7.38	6.07	404.87
0	P519	J328	J276	9.1	14	130	2,601.11	5.42	7.59	834.37
0	P521	U7004	J330	15	12	130	2,607.63	7.4	6.1	406.9
0	P523	J330	J272	9.1	14	130	2,607.63	5.43	7.63	838.56
0	P525	U7006	J332	15	12	130	2,609.01	7.4	6.11	407.33
0	P527	J332	J268	9.1	14	130	2,609.01	5.44	7.64	839.45
0	P529	U7008	J334	15	12	130	379.25	1.08	0.13	8.71
0	P53	J66	J64	862.35	12	130	488.04	1.38	0.58	0.67
0	P531	J334	J264	9.1	14	130	379.25	0.79	0.16	17.79
0	P533	U7010	J336	15	12	130	2,603.01	7.38	6.08	405.46
0	P535	J336	J274	9.1	14	130	2,603.01	5.43	7.6	835.59
0	P537	U7012	J338	15	12	130	0	0	0	0
0	P539	J338	J270	9.1	14	130	0	0	0	0
0	P541	U7014	J340	15	12	130	0	0	0	0
0	P543	J340	J266	9.1	14	130	0	0	0	0
0	P55	J62	J64	1,082.76	12	130	-560.91	1.59	0.94	0.87
0	P57	J62	J60	691.6	16	130	197.59	0.32	0.02	0.03
0	P59	J64	J58	1,424.22	12	130	-142.67	0.4	0.1	0.07
0	P61	J60	J56	890.62	16	130	-1,144.84	1.83	0.71	0.8
0	P67	J56	J52	1,036.48	16	130	-1,117.09	1.78	0.79	0.77
0	P69	J52	J54	1,131.15	12	130	316.89	0.9	0.34	0.3
0	P71	J58	J54	591.64	12	130	-240.61	0.68	0.11	0.18
0	P73	J40	J68	1,551.82	12	130	-673.23	1.91	1.89	1.22
0	P75	J68	J70	838.54	12	130	-339.37	0.96	0.29	0.34
0	P79	J72	J74	1,086.50	12	130	-250.15	0.71	0.21	0.19
0	P83	J76	J78	765.46	12	130	126.13	0.36	0.04	0.05

0	P89	J52	J82	771.55	16	130	-2,005.00	3.2	1.75	2.26
0	P91	J82	J78	774.7	16	130	-2,005.00	3.2	1.75	2.26
0	P93	J68	J84	890.35	12	130	-379	1.08	0.37	0.42
0	P95	J84	J86	1,204.21	12	130	-402.7	1.14	0.57	0.47
0	P97	J86	J88	946.69	12	130	-451.82	1.28	0.55	0.58
0	P99	J88	J90	874.98	16	130	-493.86	0.79	0.15	0.17

Run EB13

	ID	Demand (gpr	Elevation (ft)	Head (ft)	Pressure (psi)
0	J100	100.7	122	270.76	64.46
0	J102	0	125.5	271.86	63.42
0	J104	9.32	129.8	273.16	62.12
0	J122	75.78	117.5	267.46	64.98
0	J124	66.76	119.5	267.46	64.11
0	J126	0	130	267.83	59.72
0	J128	0	133	266.9	58.02
0	J130	0	134	267.52	57.86
0	J132	750	131	260.5	56.11
0	J134	750	131	260.13	55.95
0	J136	0	131	264.05	57.65
0	J138	0	122	279.02	68.04
0	J140	0	122	279.02	68.04
0	J146	0	132	284.7	66.16
0	J148	0	132	284.7	66.16
0	J150	0	118	256.03	59.81
0	J152	0	118	256.03	59.81
0	J154	0	90.3	267.53	76.79
0	J156	0	115.5	279.07	70.87
0	J158	0	115.5	279.07	70.87
0	J160	0	128	279.37	65.59
0	J162	0	128	279.37	65.59
0	J164	0	98	279.07	78.46
0	J166	0	98	279.07	78.46
0	J168	0	115.25	267.46	65.95
0	J170	0	120	279.01	68.9
0	J172	0	120	279.01	68.9
0	J174	0	123	279.04	67.61
0	J176	0	123	279.04	67.61
0	J178	0	94	256.98	70.62
0	J180	0	94	256.98	70.62
0	J182	0	118	269.2	65.51
0	J184	0	118	258.16	60.73
0	J186	0	118	258.16	60.73
0	J188	0	126	267.71	61.4
0	J190	0	126	267.66	61.38
0	J192	0	126	267.62	61.36
0	J194	0	126	267.58	61.35
0	J196	0	99.75	268.69	73.2
0	J198	0	95.5	267.55	74.55
0	J20	44.06	90.4	267.53	76.75
0	J206	0	100	280.23	78.09
0	J208	0	100	280.23	78.09
0	J210	0	102	255.95	66.71
0	J212	0	102	255.95	66.71
0	J214	0	102	255.95	66.71
0	J216	0	100	280.79	78.34
0	J218	0	100	280.79	78.34
0	J22	41.86	118.5	267.53	64.57
0	J220	50.94	116	267.47	65.63
0	J222	50.4	119.1	267.49	64.3
0	J224	0	118	269.7	65.73

0	J226	0	130	270.23	60.76
0	J228	0	116	279.14	70.69
0	J230	0	147	284.73	59.68
0	J232	0	148	290.8	61.88
0	J236	2,427.93	166	309.31	62.1
0	J238	1,213.97	181	301.01	52
0	J240	0	164	309.75	63.15
0	J242	0	148	291.35	62.11
0	J244	0	148	290.92	61.93
0	J246	1,213.97	146	292.97	63.68
0	J252	0	164.3	310.06	63.16
0	J26	88.2	115.5	267.53	65.87
0	J260	0	164.48	310.11	63.1
0	J262	0	164.48	310.15	63.12
0	J264	0	167.47	311.46	62.39
0	J266	0	167.47	311.55	62.43
0	J268	0	167.47	311.63	62.47
0	J270	0	167.47	311.67	62.48
0	J272	0	167.47	311.71	62.5
0	J274	0	167.47	311.87	62.57
0	J276	0	167.47	312	62.62
0	J278	0	164.48	170.25	2.5
0	J28	34.78	118.6	267.57	64.55
0	J280	0	164.48	170.25	2.5
0	J282	0	164.48	170.25	2.5
0	J286	0	164.48	169.96	2.38
0	J288	0	164.48	169.97	2.38
0	J290	0	164.48	169.99	2.39
0	J292	0	164.48	170.06	2.42
0	J294	0	164.48	170.25	2.5
0	J296	0	164.57	170.36	2.51
0	J298	0	164.22	170.75	2.83
0	J30	44.42	122.2	267.61	63.01
0	J300	0	127.5	274.83	63.84
0	J302	0	128	275.03	63.71
0	J304	0	142	278.18	59.01
0	J308	0	163	170.99	3.46
0	J310	0	165.5	171.44	2.57
0	J312	0	164.48	170.25	2.5
0	J32	93.48	126	267.7	61.4
0	J328	0	167.47	319.58	65.91
0	J330	0	167.47	319.3	65.79
0	J332	0	167.47	319.23	65.76
0	J334	0	167.47	313.99	63.49
0	J336	0	167.47	311.87	62.57
0	J338	0	167.47	311.67	62.48
0	J34	0	134	268.02	58.07
0	J340	0	167.47	311.55	62.43
0	J36	0	137	269.29	57.32
0	J38	79.7	90.2	267.54	76.84
0	J40	138.2	90	267.63	76.97
0	J42	137.88	101	267.49	72.14
0	J44	93.74	111	267.47	67.8
0	J46	79.04	113	267.47	66.93
0	J48	76.62	114.7	267.51	66.21
0	J50	76.58	120	267.6	63.96
0	J52	152.52	126	267.73	61.41
0	J54	76.28	127.6	267.11	60.45
0	J56	70.04	121.9	267.57	63.12
0	J58	97.94	126	266.88	61.04
0	J60	43.14	124.5	267.5	61.96

0	J62	94.12	122	267.48	63.04
0	J64	69.8	127	266.58	60.48
0	J66	44.72	130.5	266.53	58.94
0	J68	45.14	88	268.4	78.17
0	J70	92.66	97.5	268.52	74.1
0	J72	105.24	102	268.89	72.31
0	J74	104.58	108	269.03	69.77
0	J76	92.9	128	269.37	61.26
0	J78	160.7	126	269.37	62.12
0	J82	0	126.4	268.55	61.59
0	J84	23.7	76	268.58	83.45
0	J86	49.12	78	268.86	82.7
0	J88	42.04	88.4	269.17	78.33
0	J90	52.46	104	269.25	71.6
0	J92	53.12	98	269	74.09
0	J94	50.48	107	269.6	70.45
0	J96	40.96	116	270.01	66.73

	ID	Flow (gpm)	Head (ft)
0	RES9010	-9,299.99	171.44

	ID	Elevation (ft)	Upstream Pre	Downstream	Flow (gpm)	Head Gain (ft	Status	Setting	Available NPS	Cavitation Inc
0	U7002	153.8	6.81	74.46	2,598.89	156.12	Open	1	48.85	0
0	U7004	153.8	6.78	74.34	2,600.95	155.92	Open	1	48.78	0
0	U7006	153.8	6.77	74.31	2,601.39	155.88	Open	1	48.76	0
0	U7008	153.8	6.92	70.29	1,498.76	146.23	Open	1	49.08	0
0	U7010	153.8	7.13	68.49	0	0	Closed	0	0	0
0	U7012	153.8	7.13	68.4	0	0	Closed	0	0	0
0	U7014	153.8	7.13	68.35	0	0	Closed	0	0	0

	ID	Diameter (in)	Elevation (ft)	Upstream Pre	Downstream	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	Status	Setting
0	V8000	8	122	63.04	68.04	0	0	11.54	Open	5
0	V8002	8	122	63.09	68.04	0	0	0	Closed	5
0	V8008	10	132	61.16	66.16	0	0	11.54	Open	2
0	V8010	10	132	59.17	66.16	0	0	0	Closed	2
0	V8012	8	118	64.79	59.81	0	0	0	Closed	5
0	V8014	8	118	64.81	59.81	0	0	11.54	Open	5
0	V8016	8	115.5	65.87	70.87	0	0	11.54	Open	5
0	V8018	8	115.5	65.87	70.87	0	0	0	Closed	5
0	V8020	8	128	60.59	65.59	0	0	11.54	Open	5
0	V8022	8	128	60.53	65.59	0	0	0	Closed	5
0	V8024	8	98	73.46	78.46	0	0	0	Closed	5
0	V8026	8	98	73.46	78.46	0	0	11.54	Open	5
0	V8028	10	120	63.9	68.9	0	0	0	Closed	2
0	V8032	8	123	62.61	67.61	0	0	11.54	Open	5
0	V8034	8	123	62.6	67.61	0	0	0	Closed	5
0	V8036	8	94	75.65	70.62	0	0	0	Closed	5
0	V8038	8	94	75.62	70.62	0	0	11.54	Open	5
0	V8042	10	118	65.73	60.73	0	0	11.54	Open	2
0	V8044	10	118	65.51	60.73	0	0	0	Closed	2
0	V8052	10	100	73.02	78.09	0	0	0	Closed	2
0	V8054	10	100	73.09	78.09	0	0	11.54	Open	2
0	V8056	8	102	71.71	66.71	0	0	11.54	Open	5
0	V8058	8	102	71.73	66.71	0	0	0	Closed	5
0	V8060	8	100	73.3	78.34	0	0	0	Closed	5
0	V8062	8	100	73.34	78.34	0	0	11.54	Open	5
0	V8070	10	120	63.9	68.9	0	0	11.54	Open	2

	ID	From Node	To Node	Length (ft)	Diameter (in)	Roughness	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	HL/1000 (ft/k
0	P101	J72	J92	810.17	12	130	-204.07	0.58	0.11	0.13
0	P103	J92	J90	1,241.83	12	130	-257.19	0.73	0.25	0.2

0	P105	J90	J94	1,132.34	16	130	-677.97	1.08	0.34	0.3
0	P107	J94	J96	1,204.53	16	130	-728.45	1.16	0.42	0.35
0	P111	J78	J100	1,067.79	16	130	-1,486.94	2.37	1.39	1.3
0	P115	J96	J100	886.7	16	130	-1,177.39	1.88	0.75	0.84
0	P117	J100	J102	789.56	20	130	-2,765.03	2.82	1.09	1.38
0	P119	J102	J104	941.88	20	130	-2,765.03	2.82	1.3	1.38
0	P121	J104	J300	1,197.93	20	130	-2,774.35	2.83	1.67	1.39
0	P123	J300	J302	147.08	20	130	-2,774.35	2.83	0.2	1.39
0	P125	J302	J304	2,260.56	20	130	-2,774.35	2.83	3.15	1.39
0	P139	J122	J124	627.68	12	130	-26.54	0.08	0	0
0	P141	J124	J60	1,242.80	12	130	-93.3	0.26	0.04	0.03
0	P145	J34	J126	846.23	20	130	1,037.43	1.06	0.19	0.23
0	P149	J66	J128	522.48	8	130	-172.15	1.1	0.37	0.7
0	P155	J126	J130	441.09	8	130	172.15	1.1	0.31	0.7
0	P157	J128	J130	886.05	8	130	-172.15	1.1	0.62	0.7
0	P159	J126	J32	843.52	20	130	865.27	0.88	0.14	0.16
0	P161	J66	J132	415.81	8	130	883.28	5.64	6.04	14.52
0	P163	J64	J136	338.87	8	130	616.72	3.94	2.53	7.46
0	P165	J136	J134	525.67	8	130	616.72	3.94	3.92	7.46
0	P167	J132	J134	848.01	8	130	133.28	0.85	0.37	0.44
0	P17	J20	J22	1,133.08	16	130	19.02	0.03	0	0
0	P171	V8000	J138	423.5	10	130	0	0	0	0
0	P173	J138	J140	355.5	10	130	0	0	0	0
0	P177	V8002	J140	603.42	10	130	0	0	0	0
0	P179	J30	V8002	454.21	10	130	0	0	0	0
0	P181	J62	V8000	384.46	10	130	0	0	0	0
0	P19	J22	J26	1,147.36	16	130	-22.84	0.04	0	0
0	P193	J104	V8008	482.89	12	130	0	0	0	0
0	P195	J82	V8010	213.6	12	130	0	0	0	0
0	P197	V8010	J146	842.68	12	130	0	0	0	0
0	P199	J146	J148	514.03	12	130	0	0	0	0
0	P201	V8008	J148	1,114.81	12	130	0	0	0	0
0	P203	J26	V8012	268.73	10	130	0	0	0	0
0	P205	J28	V8014	295.03	10	130	0	0	0	0
0	P207	V8014	J152	482.16	10	130	0	0	0	0
0	P209	V8012	J150	236	10	130	0	0	0	0
0	P21	J26	J28	1,118.04	16	130	-231.96	0.37	0.05	0.04
0	P211	J152	J150	798.51	10	130	0	0	0	0
0	P213	J20	J154	348.19	12	130	-63.08	0.18	0.01	0.02
0	P215	J154	J38	842.54	12	130	-63.08	0.18	0.01	0.02
0	P217	J26	V8016	273.58	10	130	0	0	0	0
0	P219	J22	V8018	229.2	10	130	0	0	0	0
0	P221	V8018	J156	462.48	10	130	0	0	0	0
0	P223	V8016	J158	716.7	10	130	0	0	0	0
0	P225	J158	J156	802.77	10	130	0	0	0	0
0	P227	J32	V8022	269.66	10	130	0	0	0	0
0	P229	V8022	J160	385.74	10	130	0	0	0	0
0	P23	J28	J30	679.9	16	130	-266.75	0.43	0.04	0.05
0	P231	J126	V8020	259.39	10	130	0	0	0	0
0	P233	V8020	J162	510.51	10	130	0	0	0	0
0	P235	J160	J162	392.51	10	130	0	0	0	0
0	P237	J38	V8024	301.75	10	130	0	0	0	0
0	P239	J154	V8026	160.09	10	130	0	0	0	0
0	P241	V8026	J166	918.28	10	130	0	0	0	0
0	P243	J166	J164	455.03	10	130	0	0	0	0
0	P245	V8024	J164	882.35	10	130	0	0	0	0
0	P247	J46	J168	532.6	12	130	49.24	0.14	0.01	0.01
0	P249	J168	J122	563.66	12	130	49.24	0.14	0.01	0.01
0	P25	J30	J32	1,229.93	16	130	-311.17	0.5	0.09	0.07
0	P251	J168	V8028	209.52	12	130	0	0	0	0
0	P253	V8028	J170	652.72	12	130	0	0	0	0

0	P255	J170	J172	387.16	12	130	0	0	0	0
0	P261	J60	V8032	268.68	10	130	0	0	0	0
0	P263	V8032	J174	918.23	10	130	0	0	0	0
0	P265	J174	J176	448.57	10	130	0	0	0	0
0	P267	J62	V8034	292.8	10	130	0	0	0	0
0	P269	V8034	J176	916.13	10	130	0	0	0	0
0	P271	J70	V8038	242.57	10	130	0	0	0	0
0	P273	J84	V8036	324.38	10	130	0	0	0	0
0	P275	V8036	J180	319.74	10	130	0	0	0	0
0	P277	J180	J178	347.95	10	130	0	0	0	0
0	P279	V8038	J178	632.77	10	130	0	0	0	0
0	P281	J76	J182	613.97	12	130	306.81	0.87	0.17	0.28
0	P283	J182	J74	589.22	12	130	306.81	0.87	0.17	0.28
0	P287	V8042	J184	372.65	12	130	0	0	0	0
0	P289	J184	J186	299.52	12	130	0	0	0	0
0	P29	J34	J36	2,325.70	20	130	-1,669.78	1.71	1.27	0.54
0	P295	J182	V8044	226.67	12	130	0	0	0	0
0	P297	V8044	J186	240.53	12	130	0	0	0	0
0	P299	J52	J188	313.33	8	130	47.52	0.3	0.02	0.06
0	P301	J188	J190	664.92	8	130	47.52	0.3	0.04	0.06
0	P303	J56	J194	178.12	8	130	-47.52	0.3	0.01	0.06
0	P305	J194	J192	667.8	8	130	-47.52	0.3	0.04	0.06
0	P307	J192	J190	657.08	8	130	-47.52	0.3	0.04	0.06
0	P309	J72	J196	736.36	12	130	301.06	0.85	0.2	0.27
0	P311	J196	J70	609.66	12	130	301.06	0.85	0.17	0.27
0	P313	J40	J198	1,129.17	12	130	135.73	0.39	0.07	0.06
0	P315	J198	J42	1,043.66	12	130	135.73	0.39	0.07	0.06
0	P329	J70	V8052	185.71	12	130	0	0	0	0
0	P33	J38	J40	1,179.71	12	130	-142.78	0.41	0.08	0.07
0	P331	V8052	J206	525.44	12	130	0	0	0	0
0	P333	J196	V8054	178.3	12	130	0	0	0	0
0	P335	V8054	J208	525.19	12	130	0	0	0	0
0	P337	J208	J206	475.84	12	130	0	0	0	0
0	P341	J198	V8058	154.71	10	130	0	0	0	0
0	P343	V8058	J214	421.16	10	130	0	0	0	0
0	P345	J214	J210	577.05	10	130	0	0	0	0
0	P347	J42	V8056	297.78	10	130	0	0	0	0
0	P349	V8056	J212	569.55	10	130	0	0	0	0
0	P351	J212	J210	1,312.90	10	130	0	0	0	0
0	P353	J88	V8060	266.49	10	130	0	0	0	0
0	P355	V8060	J216	322.62	10	130	0	0	0	0
0	P357	J90	V8062	226.9	10	130	0	0	0	0
0	P359	V8062	J218	739.72	10	130	0	0	0	0
0	P361	J218	J216	604.58	10	130	0	0	0	0
0	P363	J56	J222	1,322.36	12	130	130.98	0.37	0.08	0.06
0	P365	J222	J220	621.17	12	130	80.58	0.23	0.01	0.02
0	P367	J220	J44	1,095.19	12	130	29.64	0.08	0	0
0	P37	J26	J46	1,141.00	12	130	120.93	0.34	0.06	0.05
0	P379	J76	J224	678.87	12	130	-407.98	1.16	0.33	0.48
0	P381	J224	V8042	158.85	12	130	0	0	0	0
0	P39	J46	J44	879.87	12	130	-7.35	0.02	0	0
0	P393	J226	J36	1,733.97	20	130	1,669.78	1.71	0.94	0.54
0	P395	J96	J224	650.52	12	130	407.98	1.16	0.31	0.48
0	P399	J232	J230	2,608.50	18	130	2,774.35	3.5	6.07	2.33
0	P401	J230	J304	2,813.67	18	130	2,774.35	3.5	6.55	2.33
0	P403	J232	J228	7,230.92	16	130	1,669.78	2.66	11.67	1.61
0	P405	J228	J226	5,520.22	16	130	1,669.78	2.66	8.91	1.61
0	P41	J44	J42	1,067.11	12	130	-71.45	0.2	0.02	0.02
0	P415	J220	V8070	127.05	12	130	0	0	0	0
0	P417	V8070	J172	78.54	12	130	0	0	0	0
0	P421	J240	J236	955.52	36	130	7,153.74	2.25	0.44	0.46

0	P423	J236	J238	5,398.38	24	130	4,725.81	3.35	8.3	1.54
0	P425	J238	J246	9,066.36	24	130	3,511.84	2.49	8.04	0.89
0	P427	J246	J244	5,073.87	24	130	2,297.87	1.63	2.05	0.4
0	P429	J240	J242	7,163.69	16	130	2,146.26	3.42	18.4	2.57
0	P43	J42	J48	1,096.37	12	130	-73.6	0.21	0.02	0.02
0	P431	J242	J232	213.31	16	130	2,146.26	3.42	0.55	2.57
0	P433	J244	J232	281.24	24	130	2,297.87	1.63	0.11	0.4
0	P439	RES9010	J310	68.78	1,100.00	130	9,299.99	0	0	0
0	P441	J310	J308	18	36	130	9,299.99	2.93	0.45	25.21
0	P443	J308	J298	106.2	36	130	9,299.99	2.93	0.24	2.25
0	P445	J298	J296	55.4	36	130	9,299.99	2.93	0.39	7.01
0	P447	J296	J294	78.5	36	130	9,299.99	2.93	0.11	1.43
0	P449	J294	J292	19	30	130	9,300.00	4.22	0.19	9.97
0	P45	J48	J50	1,194.62	12	130	-150.22	0.43	0.09	0.08
0	P451	J292	J290	9.2	30	130	6,701.10	3.04	0.07	7.23
0	P453	J290	J288	9.2	30	130	4,100.16	1.86	0.03	2.74
0	P455	J288	J286	9.2	30	130	1,498.76	0.68	0	0.37
0	P461	J282	J280	9.2	30	130	0	0	0	0
0	P463	J280	J278	9.2	30	130	0	0	0	0
0	P465	J292	U7002	20.6	18	130	2,598.89	3.28	0.54	26.34
0	P469	J290	U7004	20.6	18	130	2,600.95	3.28	0.54	26.38
0	P47	J50	J52	765.09	12	130	-226.8	0.64	0.12	0.16
0	P473	J288	U7006	20.6	18	130	2,601.39	3.28	0.54	26.39
0	P477	J286	U7008	20.6	18	130	1,498.76	1.89	0.18	8.82
0	P481	J282	U7010	12.1	18	130	0	0	0	0
0	P485	J280	U7012	12.1	18	130	0	0	0	0
0	P489	J278	U7014	12.1	18	130	0	0	0	0
0	P49	J32	J62	1,463.77	16	130	460.63	0.74	0.22	0.15
0	P493	J276	J274	4.9	16	130	2,598.89	4.15	0.12	25.45
0	P495	J274	J272	4.2	16	130	2,598.89	4.15	0.16	39.27
0	P497	J272	J270	4.7	30	130	5,199.84	2.36	0.04	7.98
0	P499	J270	J268	4.7	30	130	5,199.84	2.36	0.04	7.98
0	P501	J268	J266	4.7	30	130	7,801.23	3.54	0.08	17.88
0	P503	J266	J264	4.7	30	130	7,801.23	3.54	0.08	17.88
0	P505	J264	J262	60.6	30	130	9,299.99	4.22	1.32	21.72
0	P507	J262	J260	20.3	36	130	9,299.99	2.93	0.04	2.06
0	P509	J260	J252	30.38	36	130	9,299.99	2.93	0.05	1.63
0	P51	J34	J66	1,373.58	12	130	632.35	1.79	1.49	1.08
0	P511	J252	J240	90.5	36	130	9,299.99	2.93	0.31	3.4
0	P513	J294	J312	36.2	30	130	0	0	0	0
0	P515	J312	J282	31.2	30	130	0	0	0	0
0	P517	U7002	J328	15	12	130	2,598.89	7.37	6.06	404.18
0	P519	J328	J276	9.1	14	130	2,598.89	5.42	7.58	832.96
0	P521	U7004	J330	15	12	130	2,600.95	7.38	6.07	404.82
0	P523	J330	J272	9.1	14	130	2,600.95	5.42	7.59	834.27
0	P525	U7006	J332	15	12	130	2,601.39	7.38	6.07	404.96
0	P527	J332	J268	9.1	14	130	2,601.39	5.42	7.59	834.56
0	P529	U7008	J334	15	12	130	1,498.76	4.25	2.02	134.84
0	P53	J66	J64	862.35	12	130	-123.5	0.35	0.05	0.05
0	P531	J334	J264	9.1	14	130	1,498.76	3.12	2.52	277.22
0	P533	U7010	J336	15	12	130	0	0	0	0
0	P535	J336	J274	9.1	14	130	0	0	0	0
0	P537	U7012	J338	15	12	130	0	0	0	0
0	P539	J338	J270	9.1	14	130	0	0	0	0
0	P541	U7014	J340	15	12	130	0	0	0	0
0	P543	J340	J266	9.1	14	130	0	0	0	0
0	P55	J62	J64	1,082.76	12	130	547.86	1.55	0.9	0.83
0	P57	J62	J60	691.6	16	130	-181.35	0.29	0.02	0.03
0	P59	J64	J58	1,424.22	12	130	-262.16	0.74	0.3	0.21
0	P61	J60	J56	890.62	16	130	-317.79	0.51	0.07	0.07
0	P67	J56	J52	1,036.48	16	130	-471.29	0.75	0.16	0.15

0	P69	J52	J54	1,131.15	12	130	436.38	1.24	0.62	0.55
0	P71	J58	J54	591.64	12	130	-360.1	1.02	0.23	0.38
0	P73	J40	J68	1,551.82	12	130	-416.72	1.18	0.78	0.5
0	P75	J68	J70	838.54	12	130	-208.4	0.59	0.12	0.14
0	P79	J72	J74	1,086.50	12	130	-202.23	0.57	0.14	0.13
0	P83	J76	J78	765.46	12	130	8.27	0.02	0	0
0	P89	J52	J82	771.55	16	130	-1,334.51	2.13	0.82	1.07
0	P91	J82	J78	774.7	16	130	-1,334.51	2.13	0.83	1.07
0	P93	J68	J84	890.35	12	130	-253.46	0.72	0.18	0.2
0	P95	J84	J86	1,204.21	12	130	-277.16	0.79	0.28	0.24
0	P97	J86	J88	946.69	12	130	-326.28	0.93	0.3	0.32
0	P99	J88	J90	874.98	16	130	-368.32	0.59	0.09	0.1

Run EB14

	ID	Demand (gpr	Elevation (ft)	Head (ft)	Pressure (psi)
0	J100	100.7	122	245.24	53.4
0	J102	0	125.5	247.09	52.68
0	J104	9.32	129.8	249.28	51.77
0	J122	75.78	117.5	238.37	52.37
0	J124	66.76	119.5	238.4	51.52
0	J126	0	130	238.06	46.82
0	J128	0	133	238.41	45.68
0	J130	0	134	238.18	45.14
0	J132	0	131	238.55	46.6
0	J134	0	131	238.55	46.6
0	J136	0	131	238.55	46.6
0	J138	0	122	226.85	45.43
0	J140	0	122	226.85	45.43
0	J146	0	132	260.82	55.82
0	J148	0	132	260.82	55.82
0	J150	0	118	249.62	57.03
0	J152	0	118	249.62	57.03
0	J154	0	90.3	238.35	64.15
0	J156	0	115.5	249.71	58.15
0	J158	0	115.5	249.71	58.15
0	J160	1,500.00	128	221.69	40.6
0	J162	1,500.00	128	221.68	40.59
0	J164	0	98	226.81	55.81
0	J166	0	98	226.81	55.81
0	J168	0	115.25	238.37	53.35
0	J170	0	120	227.07	46.4
0	J172	0	120	227.07	46.4
0	J174	0	123	226.99	45.06
0	J176	0	123	226.99	45.06
0	J178	0	94	229.81	58.85
0	J180	0	94	229.81	58.85
0	J182	0	118	242.59	53.98
0	J184	0	118	254.97	59.35
0	J186	0	118	254.97	59.35
0	J188	0	126	239.39	49.13
0	J190	0	126	239.23	49.06
0	J192	0	126	239.07	48.99
0	J194	0	126	238.91	48.92
0	J196	0	99.75	241.7	61.51
0	J198	0	95.5	238.9	62.13
0	J20	44.06	90.4	238.26	64.07
0	J206	0	100	230.16	56.4
0	J208	0	100	230.16	56.4
0	J210	0	102	250.31	64.26
0	J212	0	102	250.31	64.26
0	J214	0	102	250.31	64.26

0	J216	0	100	231.2	56.85
0	J218	0	100	231.2	56.85
0	J22	41.86	118.5	238.21	51.87
0	J220	50.94	116	238.61	53.13
0	J222	50.4	119.1	238.67	51.81
0	J224	0	118	243.43	54.35
0	J226	0	130	242.64	48.81
0	J228	0	116	258.37	61.69
0	J230	0	147	268.75	52.76
0	J232	0	148	278.97	56.75
0	J236	2,427.93	166	307.28	61.22
0	J238	1,213.97	181	295.62	49.67
0	J240	0	164	307.83	62.32
0	J242	0	148	279.8	57.11
0	J244	0	148	279.18	56.84
0	J246	1,213.97	146	283.08	59.4
0	J252	0	164.3	308.25	62.37
0	J26	88.2	115.5	238.17	53.15
0	J260	0	164.48	308.31	62.32
0	J262	0	164.48	308.37	62.35
0	J264	0	167.47	310.14	61.82
0	J266	0	167.47	310.29	61.88
0	J268	0	167.47	310.44	61.95
0	J270	0	167.47	310.52	61.98
0	J272	0	167.47	310.61	62.02
0	J274	0	167.47	311.26	62.31
0	J276	0	167.47	311.39	62.36
0	J278	0	164.48	169.76	2.29
0	J28	34.78	118.6	238.08	51.77
0	J280	0	164.48	169.76	2.29
0	J282	0	164.48	169.76	2.29
0	J286	0	164.48	169.63	2.23
0	J288	0	164.48	169.63	2.23
0	J290	0	164.48	169.64	2.24
0	J292	0	164.48	169.69	2.26
0	J294	0	164.48	169.84	2.32
0	J296	0	164.57	169.99	2.35
0	J298	0	164.22	170.51	2.72
0	J30	44.42	122.2	238.03	50.19
0	J300	0	127.5	252.09	53.99
0	J302	0	128	252.44	53.92
0	J304	0	142	257.73	50.15
0	J308	0	163	170.83	3.39
0	J310	0	165.5	171.44	2.57
0	J312	0	164.48	169.77	2.29
0	J32	93.48	126	237.96	48.51
0	J328	0	167.47	318.98	65.65
0	J330	0	167.47	318.24	65.33
0	J332	0	167.47	318.08	65.26
0	J334	0	167.47	310.3	61.89
0	J336	0	167.47	318.87	65.6
0	J338	0	167.47	310.52	61.98
0	J34	0	134	238.74	45.38
0	J340	0	167.47	310.29	61.88
0	J36	0	137	240.97	45.05
0	J38	79.7	90.2	238.56	64.28
0	J40	138.2	90	239.03	64.57
0	J42	137.88	101	238.77	59.7
0	J44	93.74	111	238.56	55.27
0	J46	79.04	113	238.36	54.32
0	J48	76.62	114.7	238.91	53.82

0	J50	76.58	120	239.19	51.64
0	J52	152.52	126	239.47	49.16
0	J54	76.28	127.6	238.95	48.25
0	J56	70.04	121.9	238.87	50.68
0	J58	97.94	126	238.77	48.86
0	J60	43.14	124.5	238.53	49.41
0	J62	94.12	122	238.39	50.43
0	J64	69.8	127	238.54	48.33
0	J66	44.72	130.5	238.55	46.82
0	J68	45.14	88	241.04	66.31
0	J70	92.66	97.5	241.35	62.33
0	J72	105.24	102	242.12	60.71
0	J74	104.58	108	242.35	58.21
0	J76	92.9	128	242.83	49.76
0	J78	160.7	126	242.81	50.61
0	J82	0	126.4	241.13	49.71
0	J84	23.7	76	241.43	71.68
0	J86	49.12	78	242.02	71.07
0	J88	42.04	88.4	242.59	66.81
0	J90	52.46	104	242.74	60.12
0	J92	53.12	98	242.32	62.53
0	J94	50.48	107	243.32	59.07
0	J96	40.96	116	244	55.46

	ID	Flow (gpm)	Head (ft)
0	RES9010	-10,799.99	171.44

	ID	Elevation (ft)	Upstream Pre	Downstream	Flow (gpm)	Head Gain (ft	Status	Setting	Available NPS	Cavitation Inc
0	U7002	153.8	6.65	74.2	2,601.11	155.91	Open	1	48.48	0
0	U7004	153.8	6.63	73.9	2,607.63	155.25	Open	1	48.43	0
0	U7006	153.8	6.62	73.83	2,609.01	155.11	Open	1	48.42	0
0	U7008	153.8	6.85	67.87	379.25	140.82	Open	1	48.9	0
0	U7010	153.8	6.69	74.16	2,603.00	155.71	Open	1	48.57	0
0	U7012	153.8	6.92	67.91	0	0	Closed	0	0	0
0	U7014	153.8	6.92	67.81	0	0	Closed	0	0	0

	ID	Diameter (in)	Elevation (ft)	Upstream Pre	Downstream	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	Status	Setting
0	V8000	8	122	50.43	45.43	0	0	11.54	Open	5
0	V8002	8	122	50.27	45.43	0	0	0	Closed	5
0	V8008	10	132	50.82	55.82	0	0	11.54	Open	2
0	V8010	10	132	47.29	55.82	0	0	0	Closed	2
0	V8012	8	118	52.07	57.03	0	0	0	Closed	5
0	V8014	8	118	52.03	57.03	0	0	11.54	Open	5
0	V8016	8	115.5	53.15	58.15	0	0	11.54	Open	5
0	V8018	8	115.5	53.17	58.15	0	0	0	Closed	5
0	V8020	8	128	46.32	43.28	1,443.77	9.22	7.02	Open	5
0	V8022	8	128	46.01	42.93	1,556.23	9.93	7.11	Open	5
0	V8024	8	98	60.9	55.81	0	0	0	Closed	5
0	V8026	8	98	60.81	55.81	0	0	11.54	Open	5
0	V8028	10	120	51.29	46.4	0	0	0	Closed	2
0	V8032	8	123	50.06	45.06	0	0	11.54	Open	5
0	V8034	8	123	50	45.06	0	0	0	Closed	5
0	V8036	8	94	63.88	58.85	0	0	0	Closed	5
0	V8038	8	94	63.85	58.85	0	0	11.54	Open	5
0	V8042	10	118	54.35	59.35	0	0	11.54	Open	2
0	V8044	10	118	53.98	59.35	0	0	0	Closed	2
0	V8052	10	100	61.25	56.4	0	0	0	Closed	2
0	V8054	10	100	61.4	56.4	0	0	11.54	Open	2
0	V8056	8	102	59.26	64.26	0	0	11.54	Open	5
0	V8058	8	102	59.32	64.26	0	0	0	Closed	5
0	V8060	8	100	61.78	56.85	0	0	0	Closed	5

0	V8062	8	100	61.85	56.85	0	0	11.54	Open	5
0	V8070	10	120	51.4	46.4	0	0	11.54	Open	2

	ID	From Node	To Node	Length (ft)	Diameter (in)	Roughness	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	HL/1000 (ft/k
0	P101	J72	J92	810.17	12	130	-286.57	0.81	0.2	0.25
0	P103	J92	J90	1,241.83	12	130	-339.69	0.96	0.43	0.34
0	P105	J90	J94	1,132.34	16	130	-894.9	1.43	0.58	0.51
0	P107	J94	J96	1,204.53	16	130	-945.38	1.51	0.68	0.56
0	P111	J78	J100	1,067.79	16	130	-2,014.35	3.21	2.44	2.28
0	P115	J96	J100	886.7	16	130	-1,549.79	2.47	1.25	1.41
0	P117	J100	J102	789.56	20	130	-3,664.84	3.74	1.84	2.33
0	P119	J102	J104	941.88	20	130	-3,664.84	3.74	2.2	2.33
0	P121	J104	J300	1,197.93	20	130	-3,674.16	3.75	2.81	2.34
0	P123	J300	J302	147.08	20	130	-3,674.16	3.75	0.34	2.34
0	P125	J302	J304	2,260.56	20	130	-3,674.16	3.75	5.3	2.34
0	P139	J122	J124	627.68	12	130	-112.81	0.32	0.03	0.04
0	P141	J124	J60	1,242.80	12	130	-179.57	0.51	0.13	0.11
0	P145	J34	J126	846.23	20	130	2,064.03	2.11	0.68	0.81
0	P149	J66	J128	522.48	8	130	102.27	0.65	0.14	0.27
0	P155	J126	J130	441.09	8	130	-102.27	0.65	0.12	0.27
0	P157	J128	J130	886.05	8	130	102.27	0.65	0.24	0.27
0	P159	J126	J32	843.52	20	130	722.53	0.74	0.1	0.12
0	P161	J66	J132	415.81	8	130	0	0	0	0
0	P163	J64	J136	338.87	8	130	0	0	0	0
0	P165	J136	J134	525.67	8	130	0	0	0	0
0	P167	J132	J134	848.01	8	130	0	0	0	0
0	P17	J20	J22	1,133.08	16	130	243.52	0.39	0.05	0.05
0	P171	V8000	J138	423.5	10	130	0	0	0	0
0	P173	J138	J140	355.5	10	130	0	0	0	0
0	P177	V8002	J140	603.42	10	130	0	0	0	0
0	P179	J30	V8002	454.21	10	130	0	0	0	0
0	P181	J62	V8000	384.46	10	130	0	0	0	0
0	P19	J22	J26	1,147.36	16	130	201.66	0.32	0.04	0.03
0	P193	J104	V8008	482.89	12	130	0	0	0	0
0	P195	J82	V8010	213.6	12	130	0	0	0	0
0	P197	V8010	J146	842.68	12	130	0	0	0	0
0	P199	J146	J148	514.03	12	130	0	0	0	0
0	P201	V8008	J148	1,114.81	12	130	0	0	0	0
0	P203	J26	V8012	268.73	10	130	0	0	0	0
0	P205	J28	V8014	295.03	10	130	0	0	0	0
0	P207	V8014	J152	482.16	10	130	0	0	0	0
0	P209	V8012	J150	236	10	130	0	0	0	0
0	P21	J26	J28	1,118.04	16	130	343.92	0.55	0.1	0.09
0	P211	J152	J150	798.51	10	130	0	0	0	0
0	P213	J20	J154	348.19	12	130	-287.58	0.82	0.09	0.25
0	P215	J154	J38	842.54	12	130	-287.58	0.82	0.21	0.25
0	P217	J26	V8016	273.58	10	130	0	0	0	0
0	P219	J22	V8018	229.2	10	130	0	0	0	0
0	P221	V8018	J156	462.48	10	130	0	0	0	0
0	P223	V8016	J158	716.7	10	130	0	0	0	0
0	P225	J158	J156	802.77	10	130	0	0	0	0
0	P227	J32	V8022	269.66	10	130	1,556.23	6.36	3.77	13.97
0	P229	V8022	J160	385.74	10	130	1,556.23	6.36	5.39	13.97
0	P23	J28	J30	679.9	16	130	309.14	0.49	0.05	0.07
0	P231	J126	V8020	259.39	10	130	1,443.77	5.9	3.15	12.16
0	P233	V8020	J162	510.51	10	130	1,443.77	5.9	6.21	12.16
0	P235	J160	J162	392.51	10	130	56.23	0.23	0.01	0.03
0	P237	J38	V8024	301.75	10	130	0	0	0	0
0	P239	J154	V8026	160.09	10	130	0	0	0	0
0	P241	V8026	J166	918.28	10	130	0	0	0	0
0	P243	J166	J164	455.03	10	130	0	0	0	0

0	P245	V8024	J164	882.35	10	130	0	0	0	0
0	P247	J46	J168	532.6	12	130	-37.03	0.11	0	0.01
0	P249	J168	J122	563.66	12	130	-37.03	0.11	0	0.01
0	P25	J30	J32	1,229.93	16	130	264.72	0.42	0.07	0.05
0	P251	J168	V8028	209.52	12	130	0	0	0	0
0	P253	V8028	J170	652.72	12	130	0	0	0	0
0	P255	J170	J172	387.16	12	130	0	0	0	0
0	P261	J60	V8032	268.68	10	130	0	0	0	0
0	P263	V8032	J174	918.23	10	130	0	0	0	0
0	P265	J174	J176	448.57	10	130	0	0	0	0
0	P267	J62	V8034	292.8	10	130	0	0	0	0
0	P269	V8034	J176	916.13	10	130	0	0	0	0
0	P271	J70	V8038	242.57	10	130	0	0	0	0
0	P273	J84	V8036	324.38	10	130	0	0	0	0
0	P275	V8036	J180	319.74	10	130	0	0	0	0
0	P277	J180	J178	347.95	10	130	0	0	0	0
0	P279	V8038	J178	632.77	10	130	0	0	0	0
0	P281	J76	J182	613.97	12	130	369.46	1.05	0.25	0.4
0	P283	J182	J74	589.22	12	130	369.46	1.05	0.24	0.4
0	P287	V8042	J184	372.65	12	130	0	0	0	0
0	P289	J184	J186	299.52	12	130	0	0	0	0
0	P29	J34	J36	2,325.70	20	130	-2,269.96	2.32	2.23	0.96
0	P295	J182	V8044	226.67	12	130	0	0	0	0
0	P297	V8044	J186	240.53	12	130	0	0	0	0
0	P299	J52	J188	313.33	8	130	96.56	0.62	0.08	0.24
0	P301	J188	J190	664.92	8	130	96.56	0.62	0.16	0.24
0	P303	J56	J194	178.12	8	130	-96.56	0.62	0.04	0.24
0	P305	J194	J192	667.8	8	130	-96.56	0.62	0.16	0.24
0	P307	J192	J190	657.08	8	130	-96.56	0.62	0.16	0.24
0	P309	J72	J196	736.36	12	130	446.22	1.27	0.42	0.57
0	P311	J196	J70	609.66	12	130	446.22	1.27	0.35	0.57
0	P313	J40	J198	1,129.17	12	130	190.83	0.54	0.13	0.12
0	P315	J198	J42	1,043.66	12	130	190.83	0.54	0.12	0.12
0	P329	J70	V8052	185.71	12	130	0	0	0	0
0	P33	J38	J40	1,179.71	12	130	-367.28	1.04	0.47	0.4
0	P331	V8052	J206	525.44	12	130	0	0	0	0
0	P333	J196	V8054	178.3	12	130	0	0	0	0
0	P335	V8054	J208	525.19	12	130	0	0	0	0
0	P337	J208	J206	475.84	12	130	0	0	0	0
0	P341	J198	V8058	154.71	10	130	0	0	0	0
0	P343	V8058	J214	421.16	10	130	0	0	0	0
0	P345	J214	J210	577.05	10	130	0	0	0	0
0	P347	J42	V8056	297.78	10	130	0	0	0	0
0	P349	V8056	J212	569.55	10	130	0	0	0	0
0	P351	J212	J210	1,312.90	10	130	0	0	0	0
0	P353	J88	V8060	266.49	10	130	0	0	0	0
0	P355	V8060	J216	322.62	10	130	0	0	0	0
0	P357	J90	V8062	226.9	10	130	0	0	0	0
0	P359	V8062	J218	739.72	10	130	0	0	0	0
0	P361	J218	J216	604.58	10	130	0	0	0	0
0	P363	J56	J222	1,322.36	12	130	216.73	0.61	0.2	0.15
0	P365	J222	J220	621.17	12	130	166.33	0.47	0.06	0.09
0	P367	J220	J44	1,095.19	12	130	115.39	0.33	0.05	0.05
0	P37	J26	J46	1,141.00	12	130	-230.46	0.65	0.19	0.17
0	P379	J76	J224	678.87	12	130	-563.44	1.6	0.59	0.88
0	P381	J224	V8042	158.85	12	130	0	0	0	0
0	P39	J46	J44	879.87	12	130	-272.47	0.77	0.2	0.23
0	P393	J226	J36	1,733.97	20	130	2,269.96	2.32	1.67	0.96
0	P395	J96	J224	650.52	12	130	563.44	1.6	0.57	0.88
0	P399	J232	J230	2,608.50	18	130	3,674.16	4.63	10.21	3.92
0	P401	J230	J304	2,813.67	18	130	3,674.16	4.63	11.02	3.92

0	P403	J232	J228	7,230.92	16	130	2,269.96	3.62	20.6	2.85
0	P405	J228	J226	5,520.22	16	130	2,269.96	3.62	15.73	2.85
0	P41	J44	J42	1,067.11	12	130	-250.82	0.71	0.21	0.2
0	P415	J220	V8070	127.05	12	130	0	0	0	0
0	P417	V8070	J172	78.54	12	130	0	0	0	0
0	P421	J240	J236	955.52	36	130	8,105.76	2.55	0.55	0.58
0	P423	J236	J238	5,398.38	24	130	5,677.83	4.03	11.66	2.16
0	P425	J238	J246	9,066.36	24	130	4,463.86	3.17	12.54	1.38
0	P427	J246	J244	5,073.87	24	130	3,249.89	2.3	3.9	0.77
0	P429	J240	J242	7,163.69	16	130	2,694.23	4.3	28.03	3.91
0	P43	J42	J48	1,096.37	12	130	-197.87	0.56	0.14	0.13
0	P431	J242	J232	213.31	16	130	2,694.23	4.3	0.83	3.91
0	P433	J244	J232	281.24	24	130	3,249.89	2.3	0.22	0.77
0	P439	RES9010	J310	68.78	1,100.00	130	10,799.99	0	0	0
0	P441	J310	J308	18	36	130	10,799.99	3.4	0.61	33.97
0	P443	J308	J298	106.2	36	130	10,799.99	3.4	0.32	3.02
0	P445	J298	J296	55.4	36	130	10,799.99	3.4	0.52	9.43
0	P447	J296	J294	78.5	36	130	10,799.99	3.4	0.15	1.9
0	P449	J294	J292	19	30	130	8,196.99	3.72	0.15	7.77
0	P45	J48	J50	1,194.62	12	130	-274.49	0.78	0.28	0.23
0	P451	J292	J290	9.2	30	130	5,595.88	2.54	0.05	5.06
0	P453	J290	J288	9.2	30	130	2,988.25	1.36	0.01	1.46
0	P455	J288	J286	9.2	30	130	379.25	0.17	0	0.02
0	P461	J282	J280	9.2	30	130	0	0	0	0
0	P463	J280	J278	9.2	30	130	0	0	0	0
0	P465	J292	U7002	20.6	18	130	2,601.11	3.28	0.54	26.38
0	P469	J290	U7004	20.6	18	130	2,607.63	3.29	0.55	26.51
0	P47	J50	J52	765.09	12	130	-351.07	1	0.28	0.36
0	P473	J288	U7006	20.6	18	130	2,609.01	3.29	0.55	26.54
0	P477	J286	U7008	20.6	18	130	379.25	0.48	0.01	0.57
0	P481	J282	U7010	12.1	18	130	2,603.00	3.28	0.53	43.53
0	P485	J280	U7012	12.1	18	130	0	0	0	0
0	P489	J278	U7014	12.1	18	130	0	0	0	0
0	P49	J32	J62	1,463.77	16	130	-662.46	1.06	0.43	0.29
0	P493	J276	J274	4.9	16	130	2,601.11	4.15	0.12	25.5
0	P495	J274	J272	4.2	16	130	5,204.11	8.3	0.66	156
0	P497	J272	J270	4.7	30	130	7,811.74	3.55	0.08	17.93
0	P499	J270	J268	4.7	30	130	7,811.74	3.55	0.08	17.93
0	P501	J268	J266	4.7	30	130	10,420.74	4.73	0.15	31.8
0	P503	J266	J264	4.7	30	130	10,420.74	4.73	0.15	31.8
0	P505	J264	J262	60.6	30	130	10,799.99	4.9	1.77	29.24
0	P507	J262	J260	20.3	36	130	10,799.99	3.4	0.06	2.76
0	P509	J260	J252	30.38	36	130	10,799.99	3.4	0.07	2.17
0	P51	J34	J66	1,373.58	12	130	205.93	0.58	0.19	0.14
0	P511	J252	J240	90.5	36	130	10,799.99	3.4	0.41	4.56
0	P513	J294	J312	36.2	30	130	2,603.00	1.18	0.07	1.85
0	P515	J312	J282	31.2	30	130	2,603.00	1.18	0.01	0.31
0	P517	U7002	J328	15	12	130	2,601.11	7.38	6.07	404.87
0	P519	J328	J276	9.1	14	130	2,601.11	5.42	7.59	834.37
0	P521	U7004	J330	15	12	130	2,607.63	7.4	6.1	406.9
0	P523	J330	J272	9.1	14	130	2,607.63	5.43	7.63	838.56
0	P525	U7006	J332	15	12	130	2,609.01	7.4	6.11	407.33
0	P527	J332	J268	9.1	14	130	2,609.01	5.44	7.64	839.45
0	P529	U7008	J334	15	12	130	379.25	1.08	0.13	8.71
0	P53	J66	J64	862.35	12	130	58.94	0.17	0.01	0.01
0	P531	J334	J264	9.1	14	130	379.25	0.79	0.16	17.79
0	P533	U7010	J336	15	12	130	2,603.00	7.38	6.08	405.46
0	P535	J336	J274	9.1	14	130	2,603.00	5.43	7.6	835.59
0	P537	U7012	J338	15	12	130	0	0	0	0
0	P539	J338	J270	9.1	14	130	0	0	0	0
0	P541	U7014	J340	15	12	130	0	0	0	0

0	P543	J340	J266	9.1	14	130	0	0	0	0
0	P55	J62	J64	1,082.76	12	130	-211.73	0.6	0.15	0.14
0	P57	J62	J60	691.6	16	130	-544.85	0.87	0.14	0.2
0	P59	J64	J58	1,424.22	12	130	-222.59	0.63	0.22	0.16
0	P61	J60	J56	890.62	16	130	-767.56	1.22	0.34	0.38
0	P67	J56	J52	1,036.48	16	130	-957.77	1.53	0.6	0.58
0	P69	J52	J54	1,131.15	12	130	396.81	1.13	0.52	0.46
0	P71	J58	J54	591.64	12	130	-320.53	0.91	0.18	0.31
0	P73	J40	J68	1,551.82	12	130	-696.31	1.98	2.01	1.3
0	P75	J68	J70	838.54	12	130	-353.55	1	0.31	0.37
0	P79	J72	J74	1,086.50	12	130	-264.88	0.75	0.24	0.22
0	P83	J76	J78	765.46	12	130	101.08	0.29	0.03	0.04
0	P89	J52	J82	771.55	16	130	-1,954.73	3.12	1.67	2.16
0	P91	J82	J78	774.7	16	130	-1,954.73	3.12	1.67	2.16
0	P93	J68	J84	890.35	12	130	-387.89	1.1	0.39	0.44
0	P95	J84	J86	1,204.21	12	130	-411.59	1.17	0.59	0.49
0	P97	J86	J88	946.69	12	130	-460.71	1.31	0.57	0.6
0	P99	J88	J90	874.98	16	130	-502.75	0.8	0.15	0.17

A.5 BUILDOUT MODEL BOUNDARY CONDITIONS

B&C Starting Boundary Conditions								
		Ground El	Buildout MDD		Buildout MDD+4,000 gpm FF		Buildout PHD	
		ft.	Head, ft	Head, psi	Head, ft	Head, psi	Head, ft	Head, psi
A		110.00	254.41	62.57	254.41	62.57	254.41	62.57
B	Jackson, Eagles Nest	130.00	298.36	72.95	277.29	63.82	282.92	66.26
C	Kiefer, Eagles Nest	142.00	299.19	68.11	280.84	60.16	287.51	63.05
D		172.00	301.00	55.89	284.30	48.66	295.49	53.51
E		90.00	285.25	84.60	260.61	73.92	262.95	74.94
F		136.00	298.78	70.53	278.82	61.88	284.38	64.29
G		140.00	299.30	69.02	280.96	61.07	287.50	63.91
Existing - Assume Same HGLs as B&C								
Same HGL as C	Assume Kiefer & Sunrise	150.00	299.19	64.64	280.84	56.69	287.51	59.58
				55.00		50.00		45.00
SCWA Starting Boundary Conditions								
B	Jackson, Eagles Nest	130.00	291.56	70.00	280.02	65.00	268.48	60.00
C	Kiefer, Eagles Nest	142.00	303.56	70.00	292.02	65.00	280.48	60.00
Use in Modeling								
B	Jackson, Eagles Nest	130.00	291.56	70.00	277.29	63.82	268.48	60.00
C	Kiefer, Eagles Nest	142.00	299.19	68.11	280.84	60.16	280.48	60.00

From:	Grinstead, Michael
To:	Stephen AuClair; Smith, Mark
Cc:	Gardner, Bob
Subject:	FW: Jackson Township Model Cutout
Date:	Tuesday, February 23, 2016 6:59:27 AM

Steve and Mark,
Below are links to the Jackson Township model. The contractor tried to send them over yesterday, but we couldn't get the email. Let me know if you have issues downloading the files.
Thanks,
Mike

Hi Mike, Attached is the Jackson Township model cutout from the Zone 40 hydraulic model. Also included is a MS Word doc with a table that lists the nodes and pipes and elevation, flow, and head data for maximum day demands (MDD), MDD plus fireflow, and peak hour conditions. Included in MS Word doc are some snips from the model to illustrate where the boundary condition points are located in the model. The pipe and node numbers in the table can be found when the modeler opens the model. For the boundary conditions I followed your map that identified the desired model cut-out polygon with red dashed ink (attached as a PDF). I added a few additional locations for where pipes are entering the Jackson township area and the boundary conditions are needed at those locations in order for the modeler to run the Jackson Township cutout model.
3 files were sent to you.

Jackson Township Boundary Node conditions_022216.docx

ModelCutoutSketch_withLetters.pdf

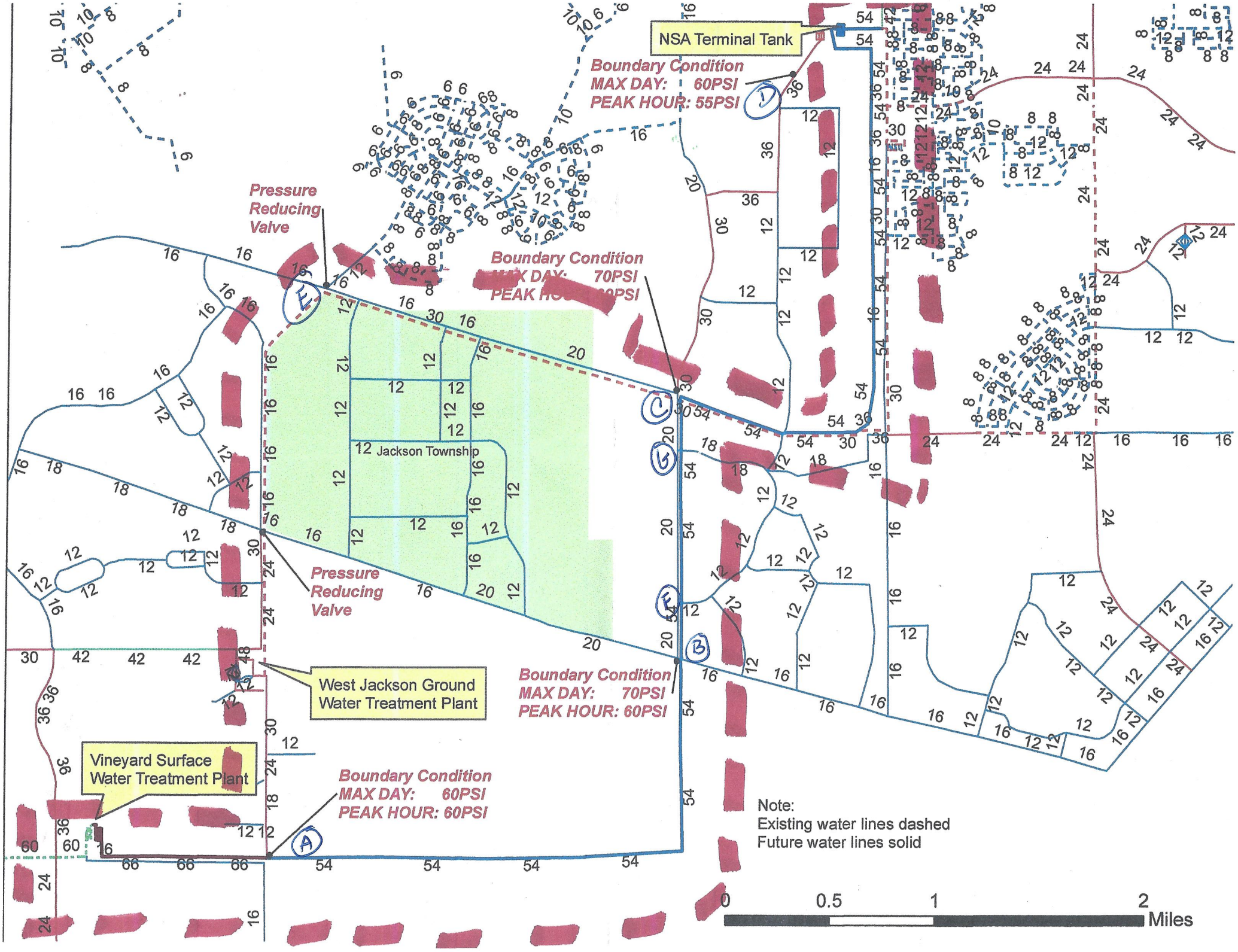
Zone40_Water_Model8_JT.zip

Download Files

Size: **13.49 MB** Files will be available for download until **March 08, 2016 06:31 PST**.

At Brown and Caldwell, we appreciate your business. If you have any questions or comments, please visit us at http://www.brownandcaldwell.com.

Powered by Hightail


NSA Terminal Tank
Boundary Condition
MAX DAY: 60PSI
PEAK HOUR: 55PSI
Pressure Reducing Valve
Boundary Condition
MAX DAY: 70PSI
Jackson Township
Pressure Reducing Valve
West Jackson Ground Water Treatment Plant
Boundary Condition
MAX DAY: 70PSI
PEAK HOUR: 60PSI
Vineyard Surface Water Treatment Plant
Boundary Condition
MAX DAY: 60PSI
PEAK HOUR: 60PSI
A
B
C
D
E
F
G
Note:
Existing water lines dashed
Future water lines solid
0
0.5
1
2
Miles

Jackson Township Model Cutout Boundary Node Conditions at MDD, MDD+FF, and PHD

Boundary node no. (Pipe no. for flow)		Boundary node ground elevation, ft	Buildout MDD conditions		Buildout MDD + 4,000 gpm FF (at node J-4763)		Buildout PHD	
			Flow, gpm	Head, ft	Flow, gpm	Head, ft	Flow, gpm	Head, ft
A	J-4416(P-6324)	110	46,890 (from WTP)	254.41	46,890 (from WTP)	254.41	46,890 (from WTP)	254.41
B	J-4599(P-6533)	130	974.64 (to JT)	298.36	1817.31 (to JT)	277.29	1,394.76 (to JT)	282.92
C	J-4607(P-6541)	142	1926.39 (to JT)	299.19	3,601.41 (to JT)	280.84	4,600.87 (to JT)	287.51
D	J-4588(P-6522)	172	5,211.9 (to JT)	301.00	6,370.23 (to JT)	284.30	11,151.34 (to JT)	295.49
E	J-4880(P-7160)	90	1,732.3 (away from JT)	285.25	1,381.55 (away from JT)	260.61	1,803.15 (away from JT)	262.95
F	J-4598(P-6654)	136	428.25 (to JT)	298.78	806.02 (to JT)	278.82	407.17 (to JT)	284.38
G	J-4608(P-6543)	140	1,528.33 (to JT)	299.34	2,282.12 (to JT)	280.96	1,925.55 (to JT)	287.50

MDD = maximum day demand

FF=fire flow

PHD = peak hour demand

JT= Jackson Township

gpm= gallons per minute

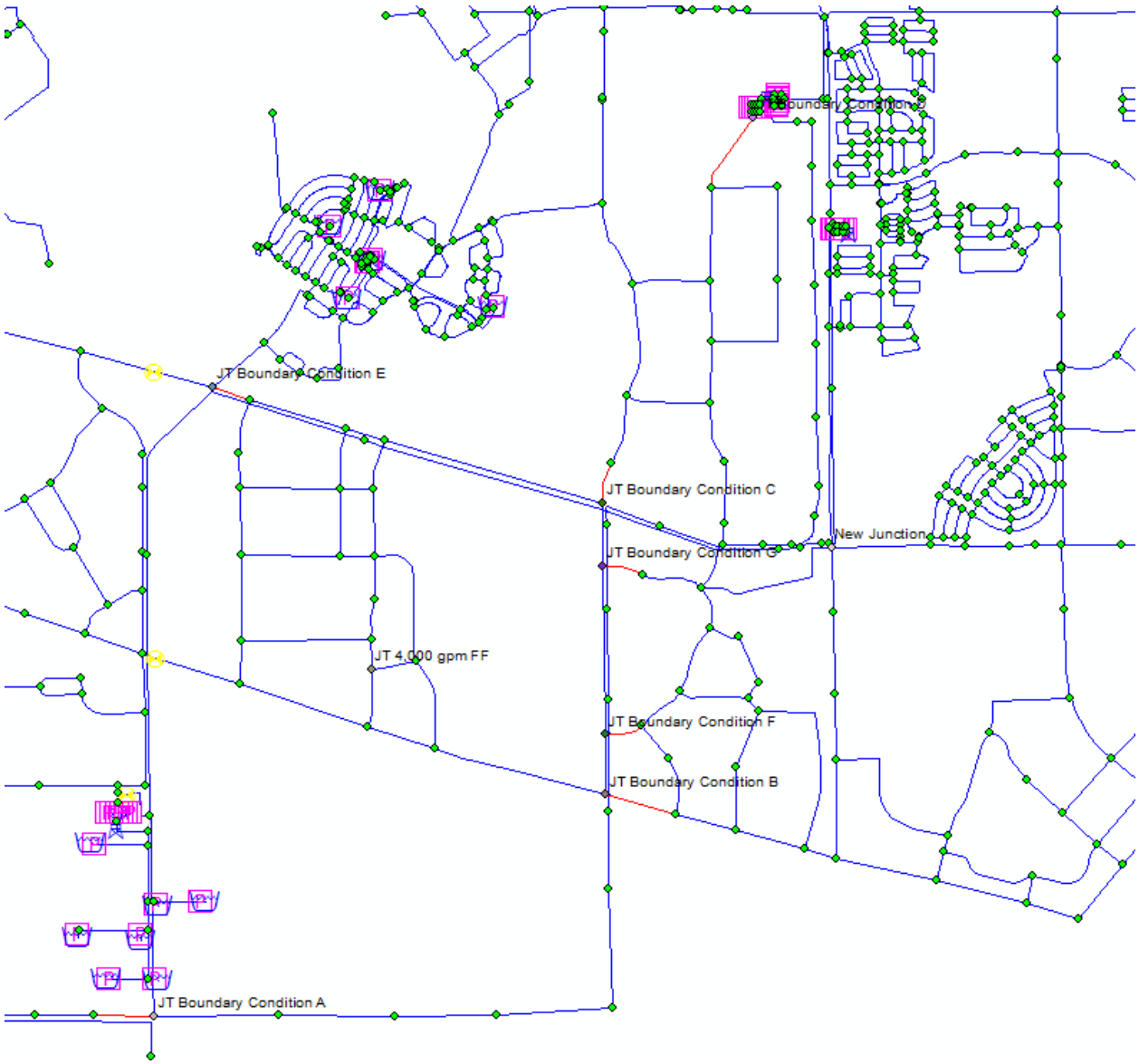


Figure 1. Location of Boundary Nodes and Fire Flow Node

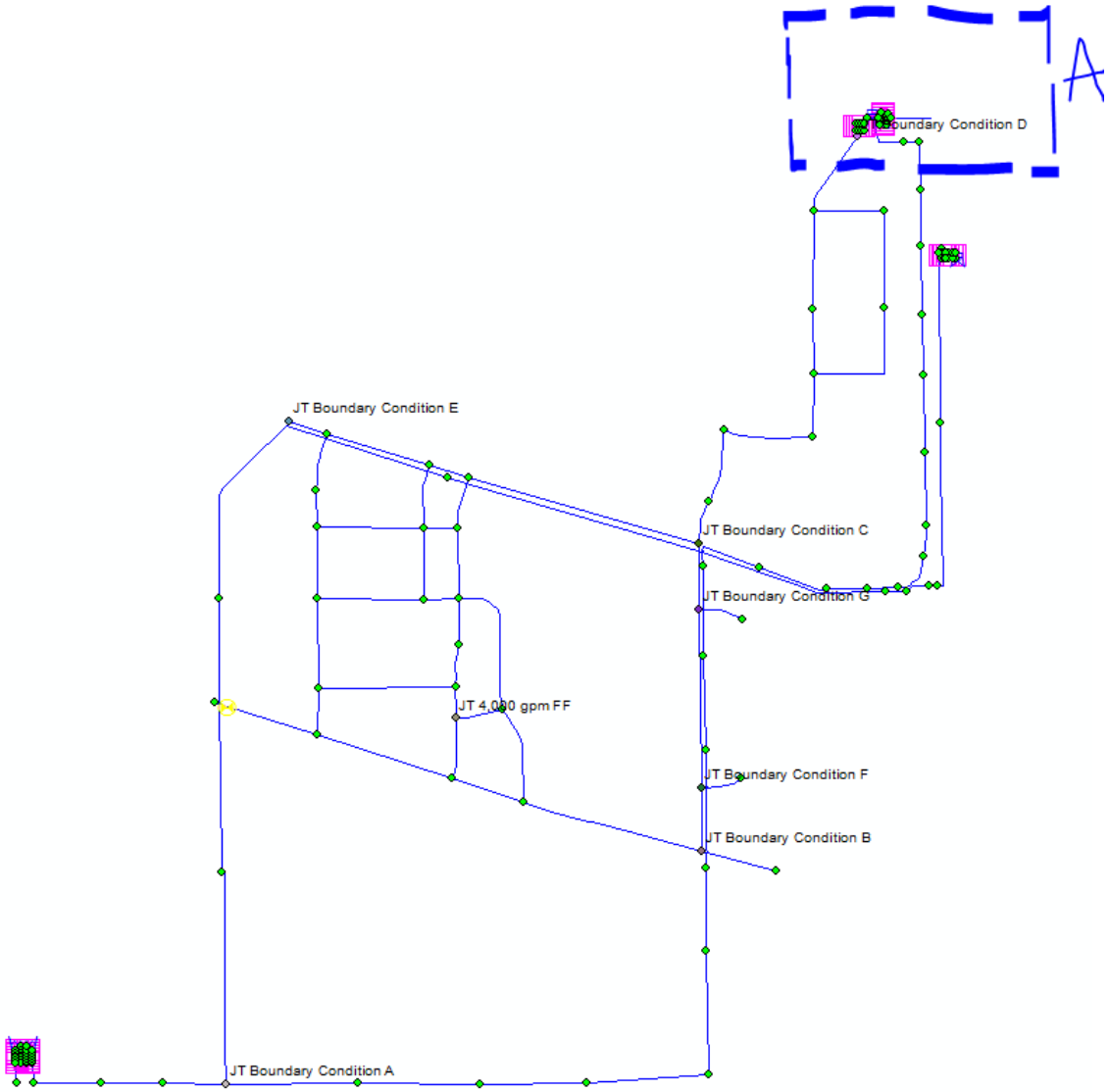


Figure 2. Jackson Township Model Cutout

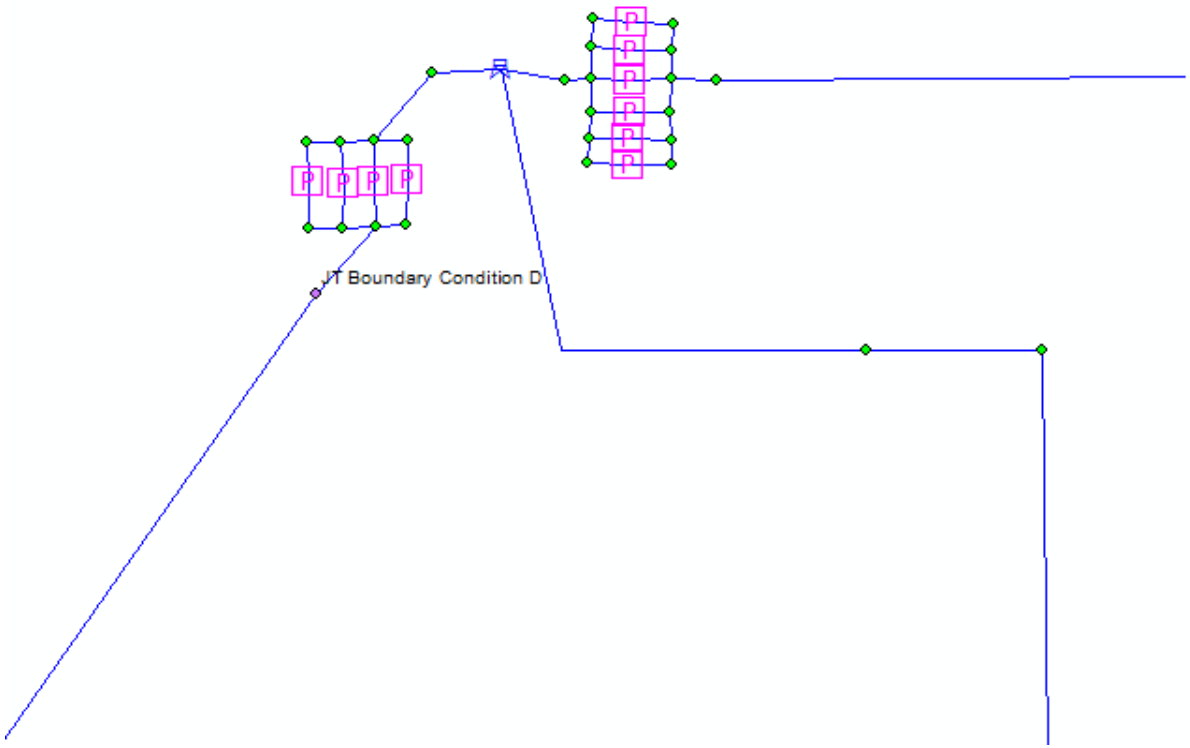


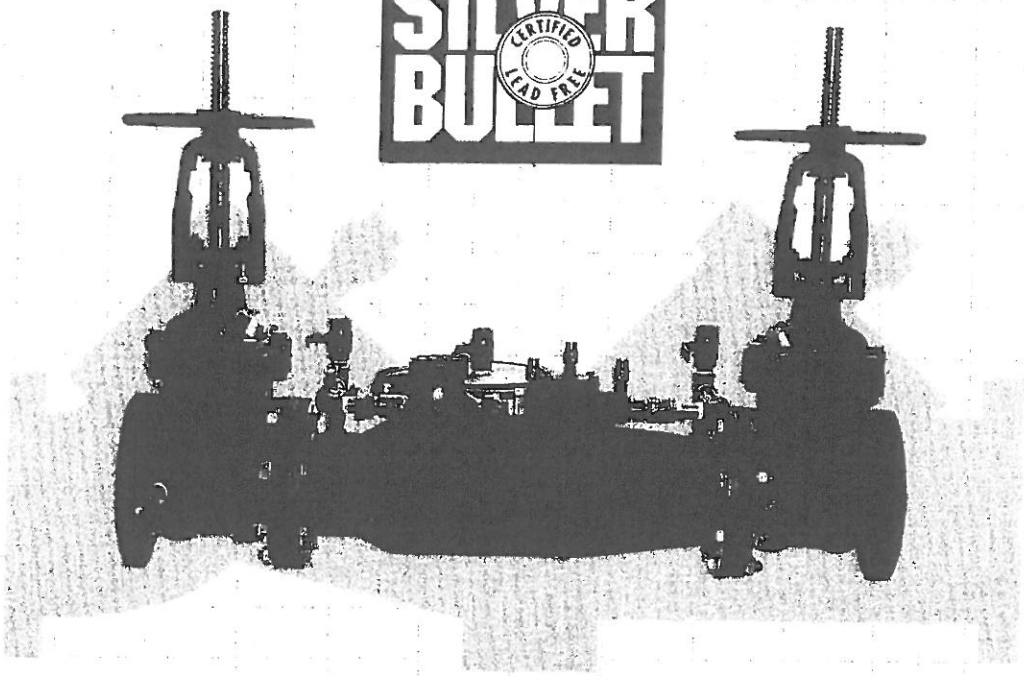
Figure 3. A - Zoom

A.6 TYPICAL FIRE LOOP BACKFLOW PREVENTER INFORMATION

MODEL 3000ss Double Check Detector Assembly

SILVER BULLET

CERTIFIED LEAD FREE



FOR FIRE PROTECTION SYSTEMS

The Ames Backflow Preventer: Lighter, Shorter, Better Flowing Than Any Other

Application

The Ames 3000ss protects the potable water system by preventing backflow from fire protection systems. The device also detects leaks or unauthorized use of water from fire protection lines.

Operation

In the incidence of minimal water flow, the valve clapper remains closed so that the water flows through the bypass loop. When major water flow is required, the water pressure will open the main valves to allow full water flow.

Installation

The 3000ss should be installed with adequate clearance and easy accessibility for maintenance and testing. The 3000ss may be installed vertically or horizontally. Refer to local codes for specific installation requirements.

Features

- *Lowest documented head loss.*
- *Non-Corrosive 300 series stainless steel (lead free) construction.*
- *40% shorter end to end dimensions for compact, inexpensive installation.*
- *Excellent for retrofit installations.*
- *50% lighter in weight, reduces installation and handling costs.*
- *Fully serviceable inline, no special tools.*
- *Pretested cam-check (patented)* assembly for long term reliability, low head loss, ease of serviceability.*
- *Single two-bolt grooved style cover for quick and easy access.*
- *Only ASSE 1048 approved assembly for vertical and horizontal applications.*
- *Made in U.S.A.*
- *Head loss equal to less than single detector check valve.*

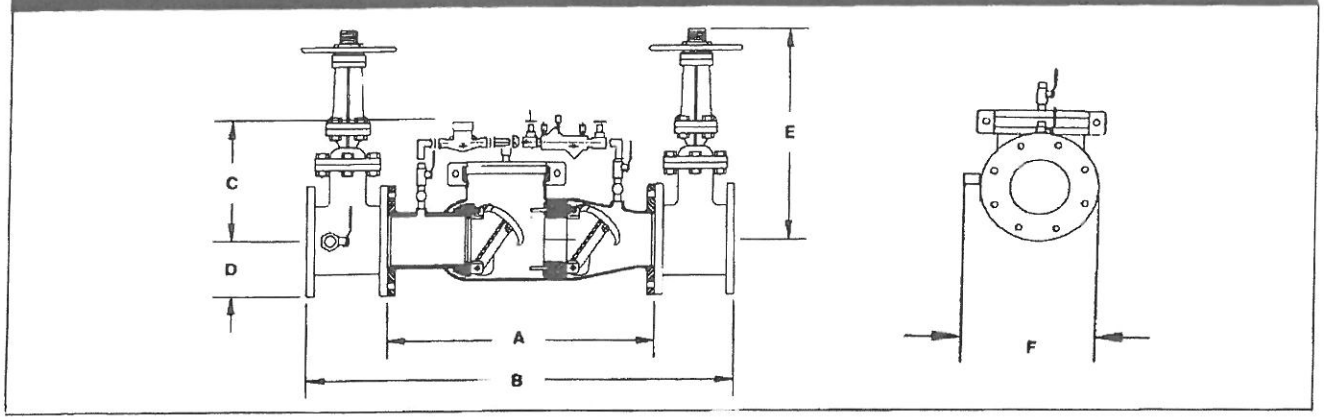
National Approvals

*Approved by national approval agencies.***

AMES CO.
FLUID CONTROL SYSTEMS

*Pat. #5,046,525

MODEL 3000ss Double Check Detector Assembly



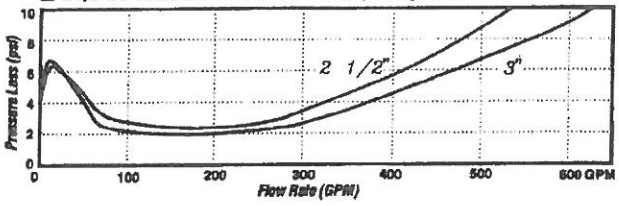
Ames 3000ss - Weights & Dimensions (inches)

SIZE	A	B	C	D	E (Open)	F	Net Wt. (lb.) w/Gates	Net Wt. (lb.) w/o Gates
2 1/2"	22"	38"	10"	3 1/2"	16"	12 1/2"	155#	68#
3"	22"	38"	10"	3 3/4"	22"	13"	230#	70#
4"	22"	40"	10"	4 1/2"	23 1/2"	14 1/2'	240#	73#
6"	27 1/2"	48 1/2"	15"	5 1/2"	30"	15 1/2'	390#	120#
8"	29 1/2"	52 1/2"	15"	6 3/4"	37 3/4"	18 1/4"	572#	180#
10"	29 1/2"	55 1/2"	15"	8"	48"	19 1/2"	774#	190#
12"	29 1/2"	57 1/2"	15"	9 1/2"	54"	21"	1044#	220#

Physical Characteristics

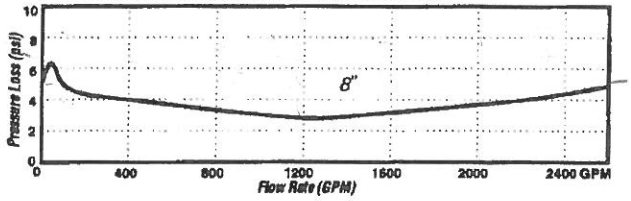
Sizes - 2 1/2", 3", 4", 6", 8", 10", 12"
Rated working pressure - 175 psi
Hydrostatic Pressure - 350 psi
Temperature range - 32°F - 110°F
Body material - 300 series stainless steel
Flange dimension in accordance with AWWA Class D
Assembly shall be ASSE 1048 approved for vertical installations,

2 1/2" & 3" Documented Flow Characteristics (including shut-off valves)

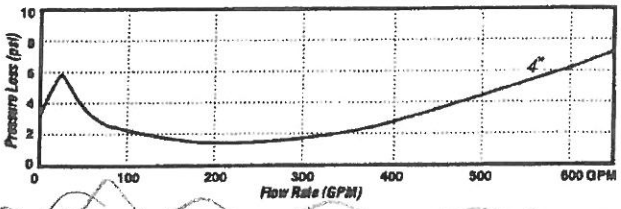


8" DCV

8" Documented Flow Characteristics (including shut-off valves) **

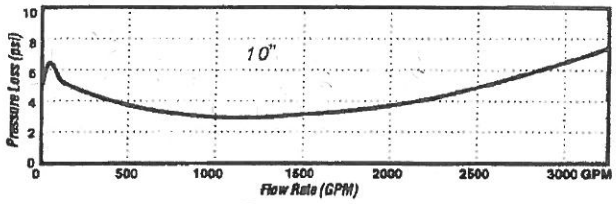


4" Documented Flow Characteristics (including shut-off valves)



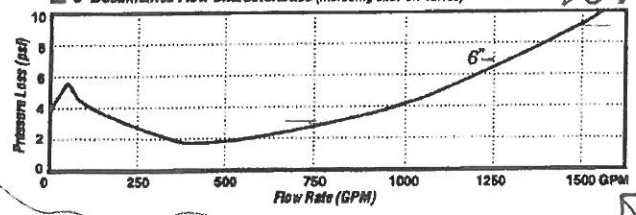
10" DCV

10" Documented Flow Characteristics (including shut-off valves) **

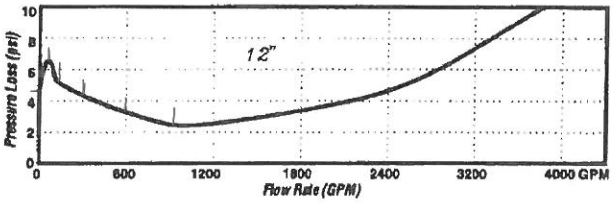


6" DCV

6" Documented Flow Characteristics (including shut-off valves)



12" Documented Flow Characteristics (including shut-off valves) **



Specifications

The double check detector assembly consists of two independently operating, spring loaded check valves, two UL, FM, OSY resilient wedge gate valves, and bypass assembly. The bypass assembly consists of a meter (cubic ft. or gallons), a double check including shut off valves and required test cocks. Each cam-check shall be internally loaded and provide a positive drip tight closure against reverse flow. Cam-check includes a stainless steel cam arm and spring, rubber faced disc and a replaceable seat. The body shall be manufactured from 300 series stainless steel, 100% lead free, through the water way, with a single two-bolt grooved style access cover. No special tools shall be required for servicing. Double check detector shall be 3000ss.

***Contact the factory for specific approvals*

916.666.2493 1485 Tanforan Avenue P.O. Box 1387 Woodland, CA 95776 **FAX 916.666.3914** MB2-54 3/95