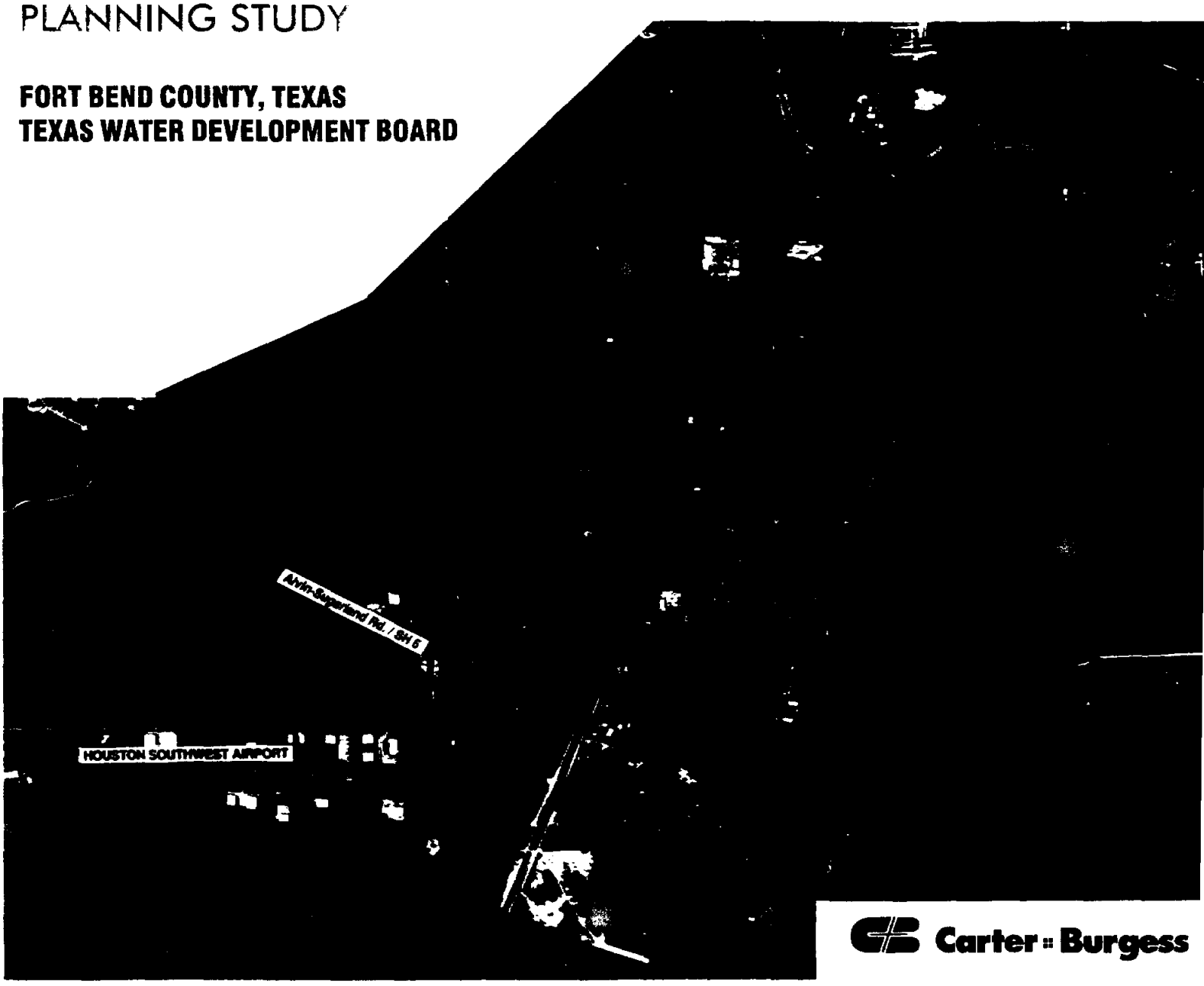
ARCOLA-FRESNO REGIONAL WATER & WASTEWATER PLANNING STUDY

FORT BEND COUNTY, TEXAS
TEXAS WATER DEVELOPMENT BOARD



Carter : Burgess

ARCOLA-FRESNO REGIONAL WATER & WASTEWATER PLANNING STUDY
Fort Bend County, Texas

Contract #95-483-119

The following maps are not attached to this report. Due to their size, they could not be copied. They are located in the official file and may be copied upon request.

Water Mode Layout – Project No. 95-3009-010 April 96

Sewer Overall –Project No. 95-3009 May 96 Exhibit 10.1

Sewer Overall – Project No.95-3009 May 96 Exhibit 10.2

Sewer Overall – Project No. 95-3009 May 96 Exhibit 10.3

Sewer Overall – Project No. 95-3009 May 96 Exhibit 10.4

The complete File was Kept because of Colored Maps.

Please contact Research and Planning Fund Grants Management Division at (512) 463-7926 for copies.

Carter :: Burgess

June 2, 1997

Mr. Kirk Turner
Community Development
309 South Fourth Street, Suite 740
Richmond, Texas 77469

Re: Regional Arcola/Fresno
Review Comments

Dear Mr. Turner:

Responses to the Texas Water Development Board comments on the Regional Fresno/Arcola planning study are as follows:

Item No. 2 - Comments concerning the SRT in the plant were made in the regional report based upon the findings in the RLJA report prepared and submitted to the TWDB by the receiver.

Item No. 3 - The receiver is performing on-going I/I correction within the system at this time. The flows represented within the regional report were based upon data available at the time the planning study was performed.

Item No. 4 - Flow projections presented in the study were based upon characteristic wastewater contributions developed for the Arcola facility. The flow is predominantly residential, but includes any commercial and industrial flows currently going to the plant. Assumptions were made that the area would stay predominantly residential.

Item No. 5 - Currently, there is no public water system present in the planning area. Therefore, improvements to the water system constitute new development 100 gpcd is appropriate for new systems in accordance with design criteria guidance.

Item No. 6 - The application of on-site/innovative and alternative type systems will require some type of decentralized operation & maintenance by the service provider. Based upon studies conducted as part of the Texas Water Development Board's Texas Rural Program, anticipated O&M costs will stay close to $10/month for these systems. This value is reasonably close to anticipated conventional systems. The main advantage to this type of approach, therefore, is potential capital cost savings associated with eliminating the need for long cross-country lines in sparsely populated areas and providing pressurized systems in low lying flood prone areas.

Item No. 7 - ½ acre septic tank drain field requirement is appropriate for soils with characteristically low infiltration capabilities. This is the case in the planning area. It may be appropriate to apply systems on lots that are less than a½ acre if they are specifically engineered and approved for site specific conditions.

Carter & Burgess, Inc. Suite 300 55 Waugh Drive Houston, Texas 77007-5833
Mailing address: PO Box 131487 Houston, Texas 77219-1487 (713) 869-7900 Fax (713) 869-5502

Item No. 8 - When the water conservation plan is developed for implementation by the regional service providers, the sample ordinance package will be modified in accordance with current requirements and submitted for approval by the TWDB.

Hopefully, these responses will satisfy the review comments submitted by the TWDB to the County. As you know, Fort Bend County FWSD No.1 has been created by vote since the completion of the Regional Fresno/Arcola Report. The regional study has proven to be a very effective tool in helping the District plan its future course of action in the Fresno/Arcola area. If you have any further questions, please feel free to call.

Sincerely,

CARTER & BURGESS, INC.

Eric W. Hall

Eric W. Hall, P.E.
Senior Water Resources Engineer

EWH/glj

S:\PROJADM\97LET\EWH97.L02

ORDINANCE NO. _____

AN ORDINANCE OF _____ TEXAS, AMENDING ORDINANCE _____ , THE PLUMBING ORDINANCE BY AMENDING _____ , BY ADDING THERETO A NEW PARAGRAPH (I) IN ORDER TO PROVIDE A WATER CONSERVATION PROGRAM. PROVIDING A REPEALING CLAUSE; PROVIDING PENALTIES FOR VIOLATION OF THIS ORDINANCE NOT TO EXCEED THE SUM OF FIVE HUNDRED DOLLARS ($500.00) FOR EACH OFFENSE; AND DECLARING AN EFFECTIVE DATE.

WHEREAS: In order to comply with state agency requirements, it is necessary to enact a water conservation plan, therefore;

BE IT ORDAINED BY THE _____
TEXAS:

SECTION 1 Ordinance _____ , is hereby amended by adding thereto a new paragraph (I) so that _____ reads as follows:

(I) In order to provide a water conservation program the following limitations shall be mandatory:

1.	Shower Heads	No more than 2.75 gallons per minute at 80 pounds per square inch of pressure (psi).
2.	Lavatory and Sinks	No more than 2.2 gallons per minute at 50 pounds psi.
3.	Wall-mounted, Flushometer Toilets	No more than 2.0 gallons per flush.
4.	All Other Toilets	No more than 1.6 gallons per flush.
5.	Urinals	No more than 1.0 gallons per flush
6.	Drinking Water Fountains	Must be self closing.

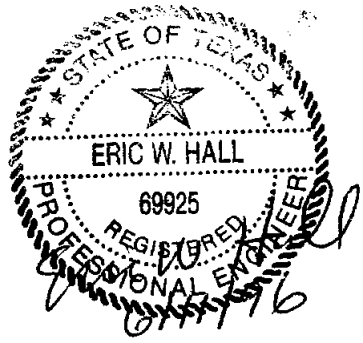
SECTION 2 That all ordinances of the _____ in conflict with the provisions of this ordinance be, and the same are hereby, repealed and all other ordinances of the _____ not in conflict with provisions of this.

Arcola-Fresno Regional Water & Wastewater Planning Study

Fort Bend County, Texas

Texas Water Development Board

May 1996



6-11-96

Prepared By:

Carter Burgess

Consultants in Engineering, Architecture, Planning
and the Environment
55 Waugh Drive, Suite 300
Houston, Texas 77007

Eric W. Hall, P.E.
Texas Registration Number 69925

Michael C. Shannon, P.E.
Texas Registration Number 71459

ARCOLA-FRESNO REGIONAL PLANNING STUDY
FORT BEND COUNTY, TEXAS
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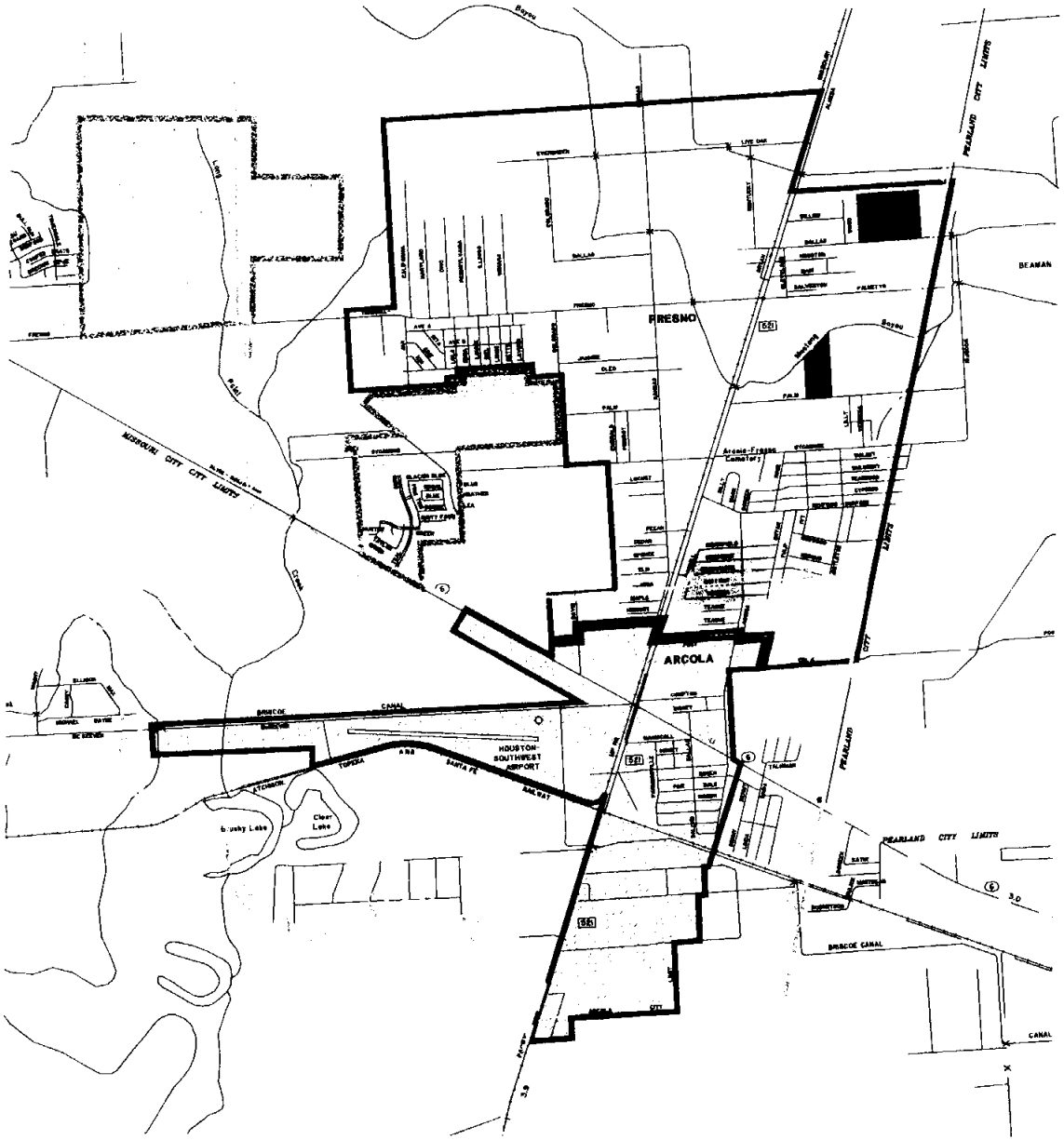
LIST OF EXHIBITS



APPROXIMATE FRESNO COMMUNITY SERVICE AREA

CITY OF ARCOLA INCORPORATED AREA AND CITY LIMITS

APPROXIMATE PROPOSED REGIONAL SERVICE AREA BOUNDARY

CITY OF PEARLAND CITY LIMITS

MISSOURI CITY CITY LIMITS

HOUSTON EXTRA-TERRITORIAL JURISDICTION

ARCOLA EXTRA-TERRITORIAL JURISDICTION

CCN#	CCN NAME
12195	TURNER WATER SERVICE, (WATER) PWS 0790190
11888	ASTRO COMMERCIAL ENTERPRISES, (WATER PWS 0790261
20622	ASTRO COMMERCIAL ENTERPRISES, (SEWER)
11982	ORBIT SYSTEMS, INC., (WATER) PWS 0790013

MUD#	MUD NAME
23	TEAL RUN
54	

N

3000 0 3000

GRAPHIC SCALE IN FEET

FORT BEND COUNTY PROJECT STUDY JURISDICTION IDENTIFICATION EXHIBIT NO. 2.1

Carter Burgess
Consultants in Engineering, Architecture, Planning and the Environment
CARTER & BURGESS, INC.
55 WAUGH DRIVE, SUITE 300
HOUSTON, TX 77007-5842

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ARCOLA-FRESNO REGIONAL PLANNING STUDY
FORT BEND COUNTY, TEXAS

1. Background Information

Carter and Burgess has been authorized to perform a study which evaluates the potable water and sanitary service needs for the City of Arcola and the adjacent area of Fresno Texas. Combined funding for this project is provided in part by a County Development Block Grant with additional funding supplied by the Texas Water Development Board. The benefit of this report to the community is the alleviation of health problems by identifying an economically feasible plan designed to provide the capacities necessary for present and future water and wastewater service.

2. Area Description

The study area lies south of the City of Houston along the FM 521 corridor east of Missouri City and west of Pearland. It contains the City of Arcola corporate limits and the Fresno area located to the north of Arcola. There are approximately 4,600 acres in the study area bounded by the Fort Bend County/Brazoria County line on the east, Evergreen Road on the north, Long Point Creek and Fort Bend County MUD 23 on the east, and the City of Arcola's southern city limit on the south. Single family homes, mobile homes and a few commercial businesses make up the development.

Most of the area is sparsely populated and remote from neighboring city services. Census information indicates that the 1990 population of Arcola is 666 and Fresno is 3,182. The average per capita income for Arcola is $3,708 and Fresno $27,540.

The entire Fresno area is essentially within the City of Houston's extra-territorial jurisdiction. Exhibit 2.1 shows the study area and the jurisdictional boundaries of the adjacent municipalities.

3. Existing Facilities

Currently, there is no comprehensive system for water supply to the study area of Fresno and Arcola. With exception of three small water supply companies, the majority of all water is provided by private water wells. Based on citizen feedback there appears to be water quality problems with the shallower wells (less than 80 feet deep). These problems diminish as the well depth increases.

Wastewater service to the study area is partially supplied by a collection system and treatment facility which supports the City of Arcola and extends slightly into the adjacent areas of Fresno and Rosharon. An additional treatment plant, operated by Astro Commercial Co. provides wastewater service to a mobile home development in northwest Fresno. The remaining residents have no extensive wastewater treatment system. Wastewater treatment is generally accomplished through the use of private septic tanks. Unfortunately, lot sizes are often too small to provide the adequate drain field area required to maintain a proper functioning system. The Fort Bend County Health Department reports serious health concerns resulting from malfunctioning septic systems in the study area.

A. Existing Water Facilities

Within Fresno there are three small water service providers, Turner Water Service (water), Orbit Water System (water), and the Astro Commercial Co. (water and wastewater).

The Turner Water Service serves 8 connections in the northeast portion of the Fresno area. Turner's water plant consists of a 50 g.p.m. well and a 525 gal pressure tank. TNRCC inspections have noted the following deficiencies: no certified operator, insufficient chlorine residual, no master meter, poor facility maintenance, and lack of barbed wire fencing.

The Orbit Water Service provides water to 38 single family connections in the Teleview Terrace Subdivision located east of 521 and north of the Arcola city limit. The water plant contains a 60 g.p.m. well and two 1,000 gallon pressure tanks . TNRCC inspections have noted the following deficiencies: pressure tanks which have been relocated from another facility lack ASME coding, sampling is unsuitable, a plumbing ordinance is required and a sanitary easement is required.

Astro Commercial Co. currently serves approximately 35 mobile homes in the Niagra Subdivision located in Fresno, east of 521 and south of Mustang Bayou. The water plant contains a 2,400 gallon pressure tank and the capacity of the water well is unknown. TNRCC inspections have listed the following deficiencies: no certified operator, pressure tank inspection needed, leak at discharge flange and manway on pressure storage tank, leak at check valve coupling on well discharge, broken site gauge, no casing vent, fencing in need of repair, cutting of grass and brush removal required, no ownership sign, no well meter, and insufficient sealing of the well head.

B. Existing Wastewater Facilities

The City of Arcola recently constructed a 0.125 MGD sewage treatment plant and collection system which provides sewage service for the City of Arcola as well as a small portion of Fresno west of 521.

Rust Lichliter/Jameson, Inc. performed a study for the City of Arcola to determine if a Certificate of Substantial Completion could be provided for both the wastewater treatment plant and the collection system[1]. Rust found that the treatment plant was constructed in general conformance with the plans and specifications. However, a hydraulic analysis of the plant indicated a solids retention time of 10 days which is less than the 20 days required by state criteria.

Rust concluded that the collection system was not constructed in agreement with plans and specifications. According to the report, not all connections were made and manhole and line testing were deficient. A serious inflow and/or infiltration problem exists in addition to a discrepancy between the line lengths found in the field and those shown on the plans.

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[1] Findings and Recommendations for the Wastewater Treatment Plant and Collection System City of Arcola, prepared by Rust Lichliter/Jameson, February 1995.

Rust recommended minor modifications to the treatment plant for improved hydraulics and maintenance. For the collection system Rust recommended testing the remaining manholes and sewer segments, seal and vent manholes in ditches, reconstruct several manholes, and replace all cleanouts with broken or missing caps.[2]

4. Population Projections

Population projections for the service area were generated from county wide projections obtained from the Texas Water Development Board. The Fort Bend projections were broken down for larger municipalities within the county, while the remaining areas were classified by "county-other". The expected growth pattern for Arcola and Fresno was felt to closely follow the trends indicated by the category "county other". An exponential relationship was developed for the "county other" data and was then applied to the study area to predict population growth. Table 4.1 shows the Texas Water Development Board projections for Fort Bend County.

Table 4.1 Fort Bend County Population Consensus 1996 Consensus Texas Water Plan Population for Cities and Counties, 1990-2050; Source TWDB

	1990	2000	2010	2020	2030	2040	2050
Katy	709	1,499	2,204	3,076	4,107	5,235	6,673
Needville	2,199	3,018	4,055	5,366	6,941	8,716	10,945
Meadows	4,606	5,517	6,885	8,667	10,854	13,414	16,578
Stafford	8,090	10,388	13,481	17,438	22,231	27,723	34,572
Richmond	10,042	11,775	15,368	19,985	25,993	32,122	39,696
Rosenberg	20,183	22,871	27,557	33,802	41,584	50,930	62,377
Sugar Land	24,528	45,441	60,914	80,489	103,993	130,534	159,214
Houston	27,032	51,378	71,751	97,235	127,570	161,304	203,958
Missouri City	32,219	39,095	50,000	64,041	81,119	100,840	125,355
County-Other	**95,813**	**116,938**	**160,550**	**215,314**	**280,292**	**353,712**	**419,500**
Population Tota	225,421	307,920	412,765	545,413	704,684	884,530	1,078,868

By comparing wastewater service records for the Arcola wastewater plant, and census information, an average population density of 3.233 people per connection was determined.

---

2 Findings And Recommendations For The Wastewater Treatment Plant and Collection System City of Arcola, prepared by Rust Lichliter/Jameson, February 1995.

The study area was then divided into 8 subareas shown in Exhibit 4.1. Divisions were made to isolate specific subdivisions or areas of similar characteristics. House counts were estimated by aerial photography and field verified. Population growth was predicted by utilizing the exponential growth pattern determined from county data. The growth equation was formulated as follows.

$$y(t)= y(t_o)\, e^{\mu(t-to)}$$

where y(t) is the projected population at year t
$y(t_o)$ is the initial population at year t_o
$\mu = .02556$

The projected population for each subarea is summarized in Table 4.2. The following Chart 4.2 illustrates the population growth through the year 2015. For the purpose of this study it was assumed that the current population of the planning area is 4,568 based on a house count of 1,413 and a population density of 3.233 per dwelling. By the year 2015 it is conservatively predicted that the population of the study area will grow to 7,616.

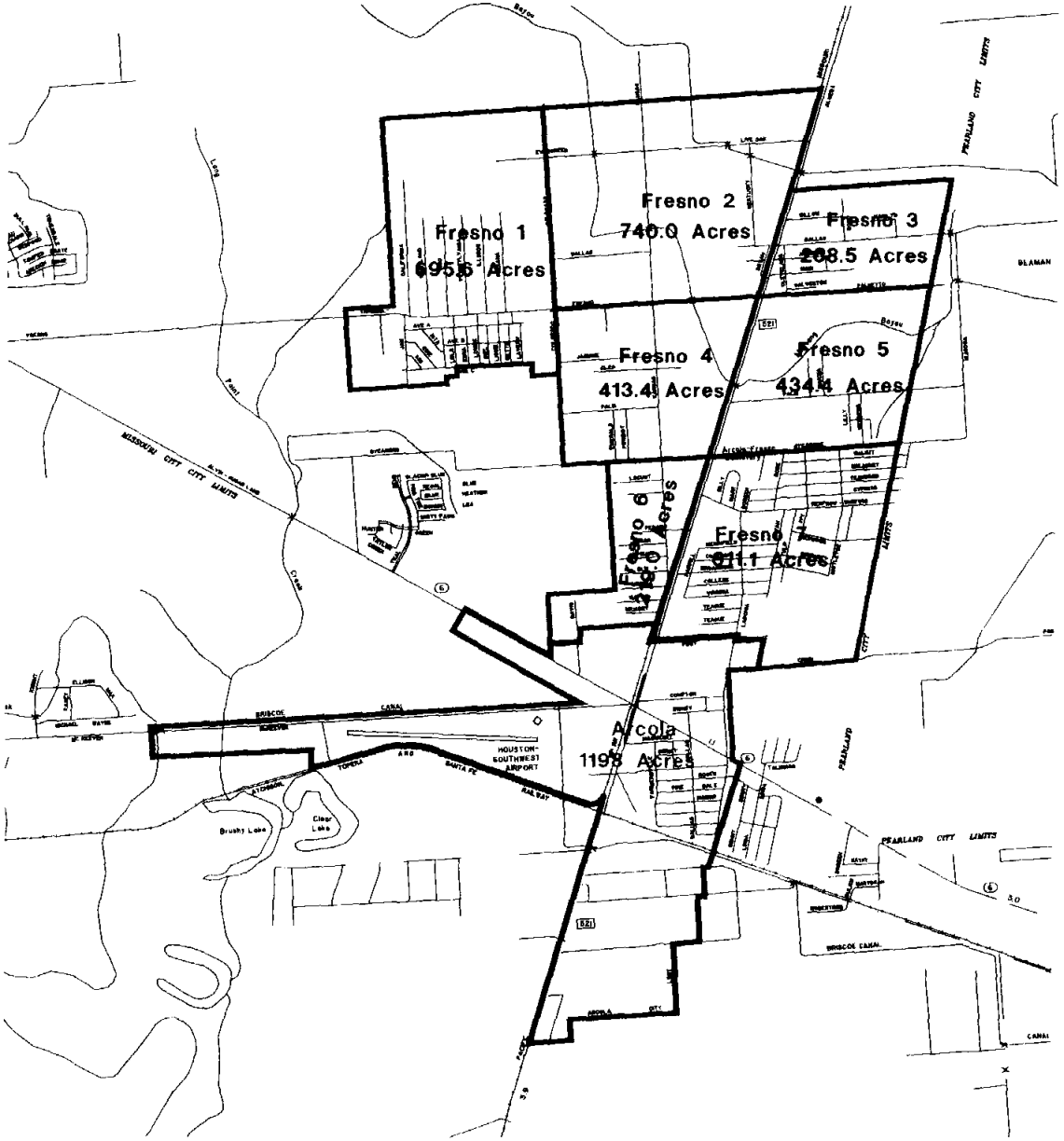
Table 4.2 Population Projections for Arcola and Fresno

Year	Fresno 1	Fresno 2	Fresno 3	Fresno 4	Fresno 5	Fresno 6	Fresno 7	Arcola	Total
1995	1,060	572	411	530	385	136	627	847	4,568
2000	1,204	650	467	602	437	155	712	962	5,191
2005	1,369	739	531	684	497	176	810	1,094	5,898
2010	1,555	839	603	778	565	200	920	1,243	6,702
2015	1,767	954	685	884	642	227	1045	1,412	7,616

Assuming 3.233 people per house

In comparison with a previous report, the population projections developed in this report are significantly higher. A prior study estimated that 600 households existed in the Fresno area in 1994 and predicted 1,000 households by the year 2010[3]. The findings of this report identify a 1995 field verified dwelling count of 1,413 which already exceeds the 1,000 dwelling prediction of the previous study. Census information from 1990 indicated an Arcola population of 666 people and a Fresno population of 3,182.

[3] Engineering Report Water and Sanitary Sewer Service to Fresno area of Fort Bend County A Feasibility Study prepared by George H. Neil and Associates, Inc. Authorized 1994. page 9.



FORT BEND COUNTY
PROJECT STUDY
PLANNING AREAS
EXHIBIT NO. 4.1

Carter :: Burgess
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55 WAUGH DRIVE, SUITE 300
HOUSTON, TX 77007-5843

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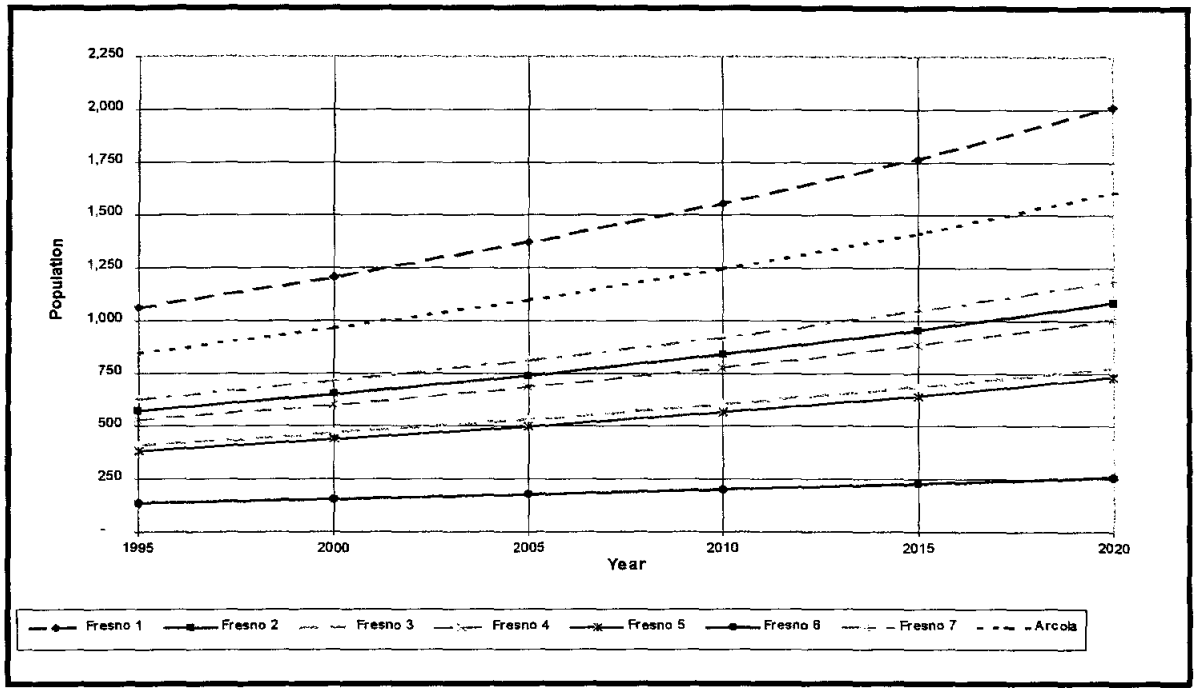
Chart 4.2 Population Projections for Arcola and Fresno Subareas Through 2020



5.1 Water Characterization

For the purpose of this study the criteria outlined in Chapter 290.45 of the Texas Administrative Code for minimum water system capacity requirements are utilized. Table 5.1 summarizes the criteria.

Table 5.1 Water Plant Criteria

Number of Connections	Well	Pressure Tank	Total Storage	Elevated Storage	Booster Pump Capacity
Less than 50 w/o ground storage	1.5 gpm/conn.	50 gal/conn.			
Less than 50 w/ ground storage	0.6 gpm/conn.	20 gal/conn.	200 gal/conn.		2 gpm/conn.
50 to 250	0.6 gpm/conn.	20 gal/conn	200 gal/conn.		2 gpm/conn.
More than 250	0.6 gpm/conn. (2 wells or interconnect)	20 gal/conn. up to 30,000 gal	200 gal/conn.	100 gal/conn. for >2500 conn	2 gpm/conn. (1000 gpm)

In addition to the preceding criteria, a normal operating pressure of least at 35 psi must be maintained. During fire fighting, line flushing and other unusual conditions, a pressure of 20 psi is required. Auxiliary power is required for systems serving more than 250 connections.

6. Wastewater Characterization

Wastewater flow information from the City of Arcola and from Fort Bend County MUD 23 were analyzed to estimate the anticipated average daily flow characteristics from the study area. Table 6.1 compares the two systems. The Arcola system shows an average daily per capita use of 132.5 gallons and a peaking factor of 3.03 compared to 84.1 gallons per capita and 1.86 peaking factor for MUD 23. The difference between peaking factors can be attributed to infiltration and inflow to Arcola's collection system.

An average daily per capita flow of 132.5 gpcd will be used for the purpose of this study. A standard peaking factor of 4.0 replaces 3.03 providing a more conservative approach to estimating peak conditions in consideration of the overflow history at the Arcola wastewater treatment plant. TNRCC also requires that a peaking factor of at least 4.0 be applied for any new systems.

Table 6.1 Wastewater Characterization

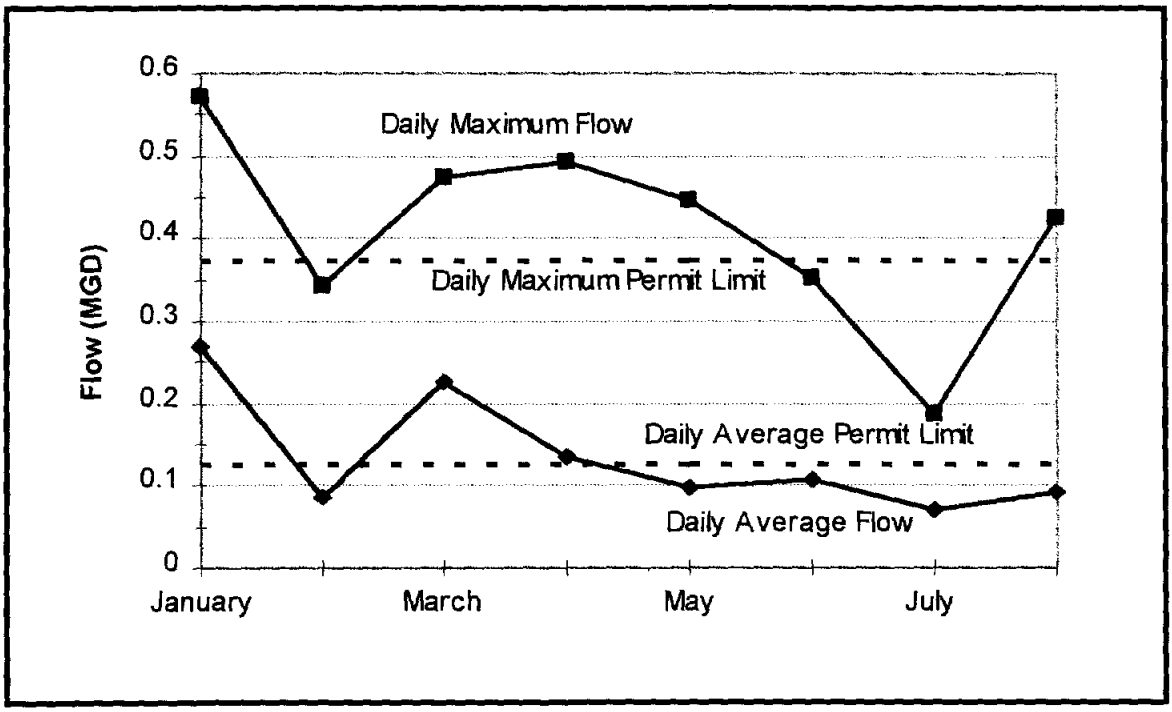
Area	Arcola Service Area	Teal Run, MUD 23
Daily Average Flow (M.G.D.) Daily Maximum Flow (M.G.D.)	0.1358 0.4119	0.0644 0.1195
Dwellings Estimated Person/ Dwelling Estimated Population (Based on Arcola Billing Info.)	317 3.233 1025	255 3.00 765
Average Flow (GPCD) Maximum Flow (GPCD) Maximum Flow Factor	132.5 401.9 3.03	84.1 156.2 1.86

Tables 6.2 and 6.3 show monthly self reporting data from January through August of 1995 for the Arcola and M.U.D. 23 wastewater treatment plants. Charts 6.2 and 6.3 graph the self reporting data, provided by the TNRCC, in relationship with the permit limits of 0.125 MGD for an average daily flow and 0.374 MGD for a maximum daily flow. Chart 6.2 indicates that Arcola plant flows exceed the maximum daily flow limits for 5 out of the 8 months investigated. Average daily flow limits for the Arcola wastewater plant are exceeded 3 out of 8 months during the study period.

Table 6.2 City of Arcola Treatment Plant Self Reporting Flow Data

Month	Daily Average Flow (MGD)	Daily Maximum Flow (MGD)
January	0.27	0.573
February	0.086	0.344
March	0.226	0.476
April	0.135	0.492
May	0.099	0.446
June	0.108	0.352
July	0.07	0.186
August	0.092	0.426
8 Month Average	0.13575	0.411875

Chart 6.2 City of Arcola Treatment Plant Self Reporting Flow Data



A previous investigation of the Arcola wastewater flows from May 1994 to December 1994 indicated an average flow of 0.194 MGD which also exceeds the permit limit. The permitted maximum plant flow was exceeded 4 times during the same time period[4]. Copies of the self reporting flow information are found in Appendix F.

4 Findings and Recommendations for the Wastewater Treatment Plant and Collection System City of Arcola, prepared by Rust Lichliter/Jameson, February 1995, Appendix D.

Table 6.3 MUD 23 Treatment Plant Self Reporting Flow Data

Month	Daily Average Flow (MGD)	Daily Maximum Flow (MGD)
January	0.27	0.573
February	0.086	0.344
March	0.226	0.476
April	0.135	0.492
May	0.099	0.446
June	0.108	0.352
July	0.07	0.186
August	0.092	0.426
8 Month Average	0.13575	0.411875

Chart 6.3 MUD 23 Treatment Plant Self Reporting Flow Data

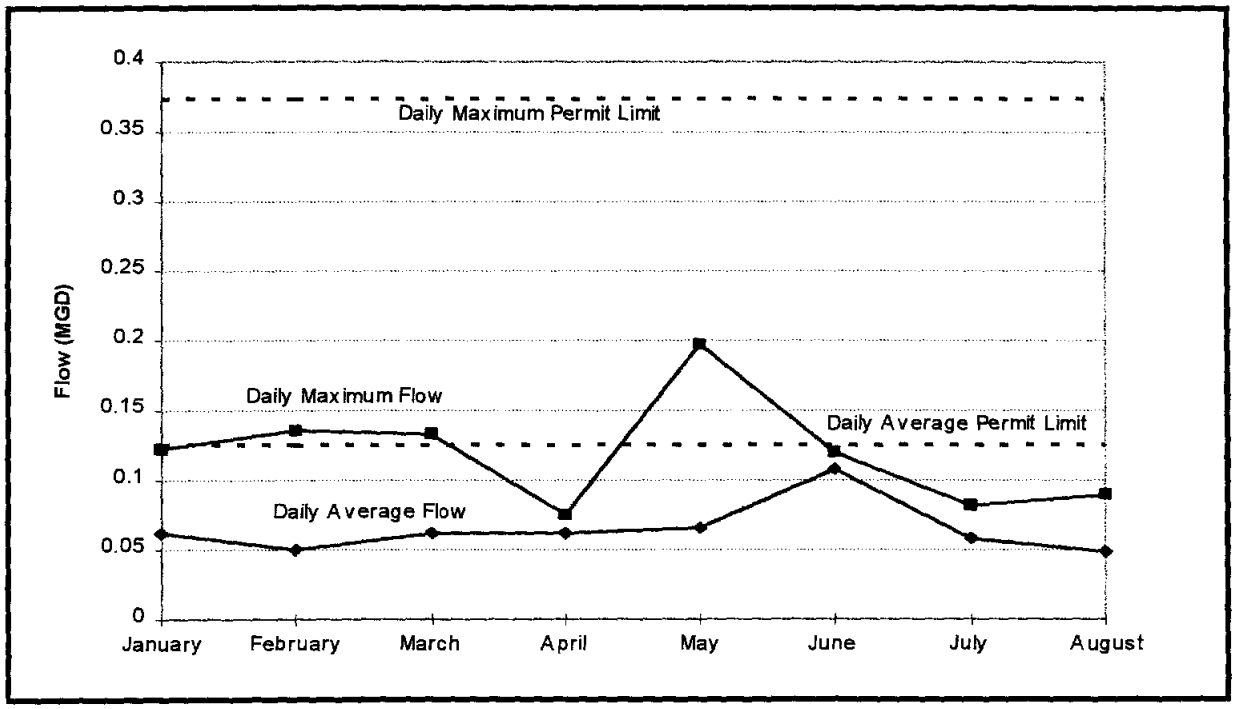


Chart 6.4 Wastewater Flow Projections

Area	1995		2015		2020	
	Ave Daily MGD	Peak MGD	Ave Daily MGD	Peak MGD	Ave Daily MGD	Peak MGD
Fresno 1	0.141	0.564	0.235	0.94	0.267	1.068
Fresno 2	0.076	0.304	0.127	0.507	0.144	0.577
Fresno 3	0.055	0.219	0.091	0.365	0.104	0.414
Fresno 4	0.071	0.282	0.118	0.47	0.135	0.534
Fresno 5	0.051	0.205	0.085	0.342	0.097	0.388
Fresno 6	0.018	0.072	0.03	0.121	0.034	0.137
Fresno 7	0.083	0.334	0.139	0.556	0.158	0.632
Arcola	0.113	0.451	0.188	0.751	0.213	0.854
Total	0.608	2.431	1.013	4.052	1.152	4.604

Chart 6.3 applies an average daily wastewater use of 133 gallons per capita per day over the projected population shown in table 4.2. A factor of 4.0 is used to estimate peak flow conditions. The flow conditions developed within this chart will be used as wastewater system planning values throughout the remainder of this study.

7. Health Department Wastewater Concerns

The magnitude of health concerns relating to wastewater disposal in the Fresno area has alarmed Health Department officials throughout the years. The situation is such that if improvements are not made, some residents may need to be relocated from the areas which pose the greatest health risks.

As previously discussed, most Fresno residences utilize onsite septic systems for sanitary treatment. However, the drain field size is frequently limited by the available lot area. As a result, septic tank effluent cannot be efficiently absorbed and causing drainage problems to occur. In many cases, drainpipes are extended to allow excess effluent to flow into drainage ditches. County health workers report that exposed septic drain lines can be identified on nearly every road in the area.

The Fort Bend County Health Department collects complaints for the area's sanitary systems and conducts site investigations, which in most cases result in health department violations. The system owners are then notified of the problem and required to take action.

The severity of complaints vary from reports of mild odor problems to free flowing wastewater. However, most reports frequently involve the collection of effluent in roadside drainage ditches. Additional complaints are listed as follows;

1. Construction of septic tanks from unapproved materials i.e. bricks and mortar
2. Draining septic tanks into a neighbors yard
3. The collection of standing effluent in poor low areas of drain fields
4. Septic tanks with cracked and exposed lids
5. Broken or overflowing septic tanks
6. Utilizing an unapproved septic system
7. Utilizing no sanitary system

In general, the reported problems are scattered at an even frequency throughout the study area. The complaint concentration is illustrated in Exhibit 7.1 where highlighted roads identify the location of events. A list of addresses which document where County Health Department complaints have occurred is provided in Exhibit 7.2.

The subdivision of Teleview Terrace appears to have a concentration of reports as does Fresno Ranches in northwest portion of the study area. These subdivisions should be considered for immediate attention as well as all other areas of high resident concentration.

It is additionally noted that a particularly disturbing violation was recorded in the trailer park subdivision of Niagara when a concerned resident reported a sewer manhole continuously overflowing into his yard. As a solution, the private wastewater system operator suggested that the property owner dig a trench allowing the wastewater to drain to a roadside ditch. To our knowledge, a backup problem still exists with this system and the presence of wastewater can be detected in area ditches.

AREAS OF HEALTH DEPARTMENT COMPLAINTS

3000 0 3000

GRAPHIC SCALE IN FEET

FORT BEND COUNTY
PROJECT STUDY
HEALTH DEPT. COMPLAINTS
EXHIBIT NO. 7.1

Carter & Burgess
Consultants in Engineering, Architecture, Planning and the Environment
CARTER & BURGESS, INC.
55 WAUGH DRIVE, SUITE 300
HOUSTON, TX 77007-5842

Exhibit 7.2 Fort Bend County Health Department Complaints for Fresno, Arcola and Rosharon

Date	No.	Street	City
10/7/94	4303 1/2	Billy Lane	Fresno
2/21/94	4327	Billy Lane	Fresno
9/27/94	4303	Billy Lane	Fresno
12/1/94		Broadmore	Fresno
5/4/95		Broadmore	Arcola
5/4/94	4600	Bryan Street	Fresno
2/1/94	2925	California Street	Fresno
1/10/95	6027	Cheryl Lane	Rosharon
2/17/95	6023	Cheryl Lane	Rosharon
7/13/95	6019	Cheryl Lane	Rosharon
5/2/94		Cleo	Fresno
2/3/94	222	College Road	Fresno
7/15/94		Dallas and Disney	Arcola
6/28/94	415	East Dallas	Fresno
7/5/95	523	East Dallas	Fresno
3/3/94		Emerald Street	Fresno
5/10/94	450	Evergreen	Fresno
7/17/95	650	Evergreen	Fresno
	7730	FM 521	Rosharon
6/28/94		FM 521	Fresno
8/15/94	4715	FM 521	Fresno
10/13/94	4715	FM 521	Fresno
4/19/94		Fairhill	Fresno
4/7/93	1111	Fenn Road	Rosharon
2/24/94	907	Fenn Road	Rosharon
4/5/95	3126	Fifth Street	Fresno
4/11/95	6106	Gussie Mae	Rosharon
10/27/94	3823	Hamid	Fresno
3/8/93	3038	Indiana Street	Fresno
11/21/94	3615	Inez	Fresno
5/2/94		Jasmine	Fresno
3/16/94		Kansas	Fresno
5/2/94		Linden Street	Fresno
7/25/94		Linden Street	Fresno

Date	No.	Street	City
10/12/94		Linden Street	Fresno
10/12/94		Linden Street	Fresno
6/19/95		Lissie	Fresno
1/15/93	514	Marilyn	Fresno
7/29/94	518	Marilyn	Fresno
		Maryland	Fresno
8/22/94	3401	Maryland	Fresno
1/4/95	3846	Marzia	Fresno
7/11/94		Marnfield & Fairhill	Fresno
4/25/95		Marnfield Road	Fresno
8/2/94	4322	Mistletoe	Fresno
10/13/94	4602	N Teague Road	Rosharon
4/16/94	4650 B	N Teague Road	Rosharon
5/19/94	4612	N Teague Road	Rosharon
5/19/94	4618	N Teague Road	Rosharon
5/19/94	4674	N Teague Road	Rosharon
11/15/94	615	N Locust	Fresno
7/18/94	3210	Ohio Street	Fresno
10/5/94	815	One Oak Chase	Rosharon
6/24/94		Pennsylvania	Fresno
4/19/95	3310	Pennsylvania	Fresno
2/16/93	874E	Rita Road	Fresno
11/21/94	3627	Rita Road	Fresno
6/23/94	4023	School Road	Fresno
7/8/94	Corner	School Road & Jasmine	Fresno
5/2/94		Sears Street	Arcola
6/7/94		Sycamore	Fresno
9/15/94	4602	Teague	Rosharon
8/26/94	1318 1/2	Trammel Fresno	Fresno
3/31/93	1615	Trammel Fresno	Fresno
5/12/94	100	Trammel Fresno	Fresno
4/22/94		Vermont Street	Fresno
1/12/93	13311	West Brasos Bend Dr.	Rosharon
5/2/94		West Palm	Fresno

8. Soil and Flood Plain Identification

A. Soil Identification

According to Fort Bend County soil identification maps, nine soil types appear to be present in the Fresno/Arcola study area. These soils are generally slow draining with slow to very slow percolation rates. The poor absorption capacities also limit their suitability for use as septic tank drain fields. Table 8.1 lists the different soils, subareas locations and drain field suitability. Exhibit 8.1 shows the study area and the soil series locations.

Two hydric soil types exist in the study area, Beaumont clay and Waller Soils. Beaumont clay is classified as hydric only because of saturation, while Waller Soils are frequently ponded for a long duration or very long duration during the growing season. Two bands of Waller Series soils extend across the Fresno area with isolated pockets occurring throughout the remainder of the study area. Only one pocket of Beaumont exists in the study area which can be found on the southern boundary of Fresno extending slightly into the Arcola City Limit, east of Highway 521.

Table 8.1 Fresno / Arcola Soil Type Locations and Characteristics

Symbol	Series Name	Subarea Location	Depth to Seasonal High Water Table (ft)	Permeability (in/hr)	Septic Tank Absorption Suitability
Ba	Beaumont Clay	7	0 to 2.0	0.06 to 0.2	Hydric, Severe-Wetness, Percs Slowly
Bb	Bernard Clay	A	0 to 3.0	0.06 to 0.2	Severe- Wetness, Percs Slowly
Be	Bernard Edna Complex	1, 2, 3, 6, 7, A	0 to 1.5	0.6 to 2.0	Severe- Wetness, Percs Slowly
Ea	Edna Fine Sand Loam	1, 2, 3, 4, 5, 6, 7	0 to 1.5	0.6 to 2.0	Severe- Wetness, Percs Slowly
Gp	Gravel	5			
Ha	Hockley Loamy Fine Sand	5	3.5 to 5.0	2.0 to 6.0	Severe- Wetness, Percs Slowly
Ka	Katy Fine Sandy Loam	2, 4	0 to 2.5	0.6 to 2.0	Severe- Wetness, Percs Slowly
La	Lake Charles Clay	1, 3, 4, 6, 7, A	0 to 2.0	0.06 to 0.2	Severe- Wetness, Percs Slowly
Wa	Waller Soils	1, 2, 4, 5, 6, 7	0 to 2.5	0.6 to 2.0	Hydric, Severe- Wetness, Percs Slowly

B. Flood Plains

Exhibit 8.2 illustrates the flood plain regions identified digitized from the Federal Emergency Management Agency (FEMA) rate map, panel number 48157C0290 H dated September 30,1992. 100-year flood plain and flood way areas are concentrated along Mustang Bayou to the north and the West Fork of Chocolate Bayou to the south.

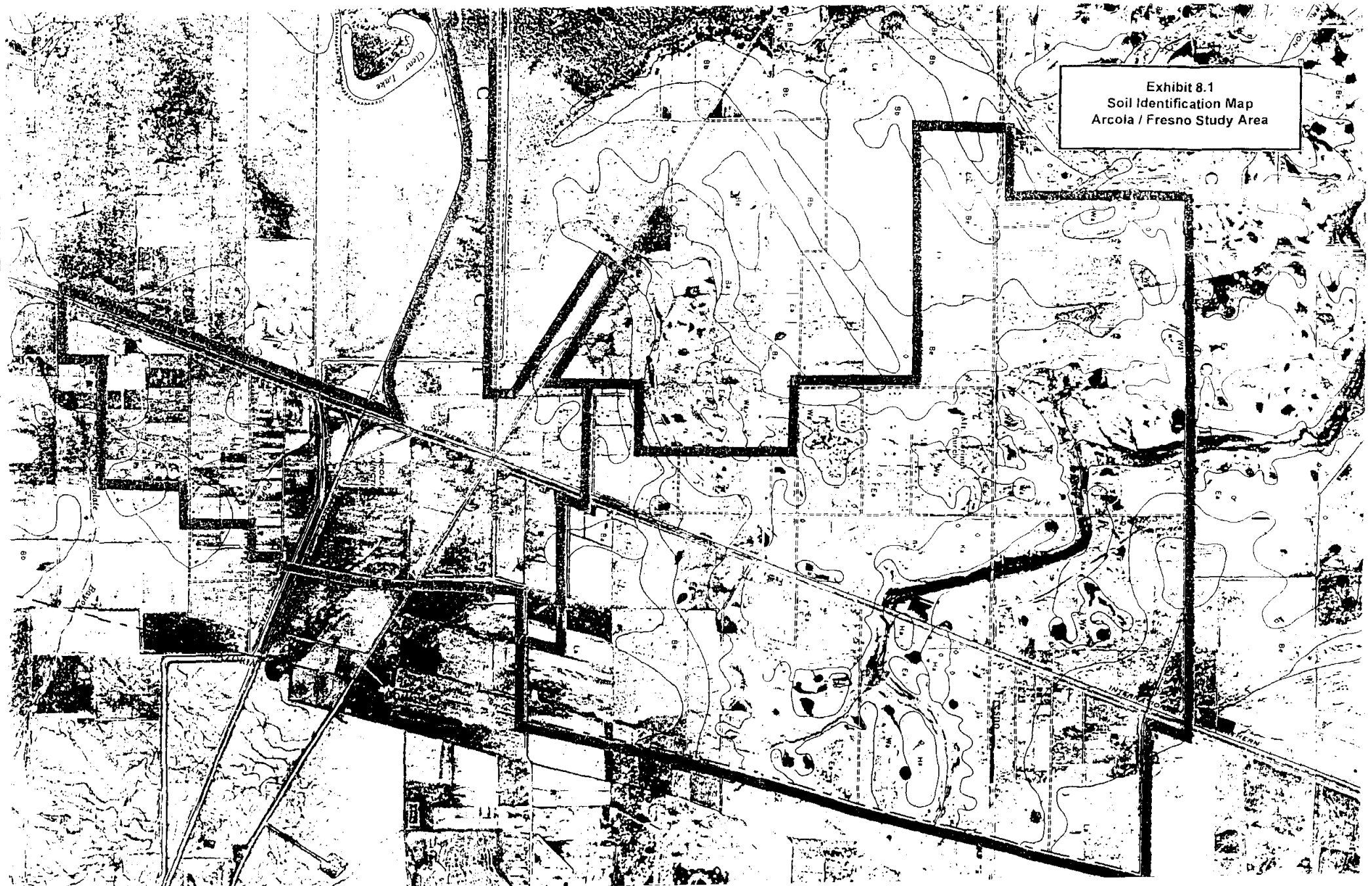


Exhibit 8.1
Soil Identification Map
Arcola / Fresno Study Area

LEGEND

SPECIAL FLOOD HAZARD AREAS INUNDATED BY 100-YR FLOOD

AREAS OF 500-YR FLOOD; AREAS OF 100-YR FLOOD WITH AVERAGE DEPTH LESS THAN 1 FOOT OR WITH DRAINAGE AREAS LESS THAN 1 SQUARE MILE; AND AREAS PROTECTED BY LEVEES FROM 100-YR FLOOD.

FLOODWAY AREAS

N

3000 0 3000

GRAPHIC SCALE IN FEET

EXHIBIT 8.2
FLOOD PLAIN MAP

FORT BEND COUNTY
PROJECT STUDY AREAS

Carter-Burgess

CARTER & BURGESS, INC.

SCALE: SHOWN PROJECT NO.: 95-3009
DESIGNED: _____ DATE: 6-10-96
DRAWN BY: EMB SHEET NO.:

9. Water System Evaluation

A. Water Supply

1. Surface Water

In 1990, the City of Arcola, with assistance from Neill Engineering Corp. and the Gulf Coast Water Authority, investigated the use of surface water to supply the needs of the City. It was concluded that operationally as well as financially a mid-sized surface water plant would not be feasible.

A regional surface water plant located within the Missouri City Water Supply Corporation's jurisdiction is being considered, but not yet planning stages.

2. Ground Water

The Fort Bend County Subsidence District currently has no restrictions on ground water withdrawal and has no immediate plans to mandate any restrictions. At this time ground water wells within the study area are the most viable option for water supply.

The nearest public water supply well serves Fort Bend County M.U.D. 23. This well is drilled to 1,320 feet with 300 feet of screening from 880 to 1,320 feet. The water bearing unit is the Chico-Evangeline which consists of alternating sand and shale layers. From the ground surface to 495 feet, clay and sand layers predominate. In addition, the well is capable of discharging 1,632 gpm with a draw down of 57 feet. The water level in the well has been recorded at 229 feet[5].

3. Purchase Treated Water

With the exception of Fort Bend County M.U.D. 23 there are presently no existing water sources available in reasonable proximity to the Fresno/Arcola area.

Development in M.U.D. 23 is growing at such a rate that the District is not willing to sell the little excess capacity that they currently have. However, the District is receptive to working with Arcola and Fresno in the development of additional water capacity and a potential emergency interconnect between the two systems. M.U.D. 23 was recently awarded a bid to construct a 500 gpm backup water well to reach compliance with TNRCC regulations for minimum water system capacity requirements.

4. Recommended Water Source

Because of the lack of an existing source to purchase treated water and the operational difficulties involved with a water plant, ground water wells within the service area are recommended.

Based on the population projections, a total of two water wells with individual capacities of at least 700 gpm would be required by the year 2015. The

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[5] Ground-Water Withdrawals, Water-Level Changes, Land-Surface Subsidence, Ground Water Quality in Fort Bend County, Texas, 1969-87, U.S. Geological Survey Water-Resources Investigations Report 90-4012, prepared by Glenn L. Locke in cooperation with Fort Bend County.

TNRCC requires at least two wells or an interconnect for systems with more than 250 connections.

Two future water plant sites have been identified for the service area - one in Arcola and one in Fresno. The proposed Arcola water plant site is located along the east side of 518 between North Pine and the Railroad. The City of Arcola owns the site and is using the eastern portion of the tract for the sewage treatment plant site. Based on aerial photographs it appears that there is sufficient buffer distance (500') between the sewage treatment plant and the proposed water well. Exhibit 9.1 illustrates the preliminary site layout for the Arcola water Plant.

The proposed Fresno water plant is located along the east side of Kansas between Palm and Sycamore. Provisions would need to be made in the final design to protect the well from the 100-yr flood. This could be accomplished by constructing the well head and vent above the 100-year flood plain level. The property would have to be acquired by the water providing entity. According to Fort Bend County tax records a five acre tract at this location is owned by Almeda Development Corporation. The assessed value for the five acre tract is $27,290. A one acre site from the five acre tract would be sufficient for the plant site. Exhibit 9.2 illustrates the proposed Fresno plant site layout at this location.

Cost estimates for the water plants are included in Appendix A. In summary, the construction cost of the Arcola water plant is estimated to be $828,000, the construction cost of the backup well at the Arcola City Hall site is estimated to be $556,200 and the construction cost of the Fresno water plant is estimated to be $1,044,000. The backup well at the Arcola City Hall site would only be required after 250 connections are on the system and the Fresno water plant has not been constructed. If the Fresno water plant is constructed and in service when 250 connections are on the system, the backup well is not required.

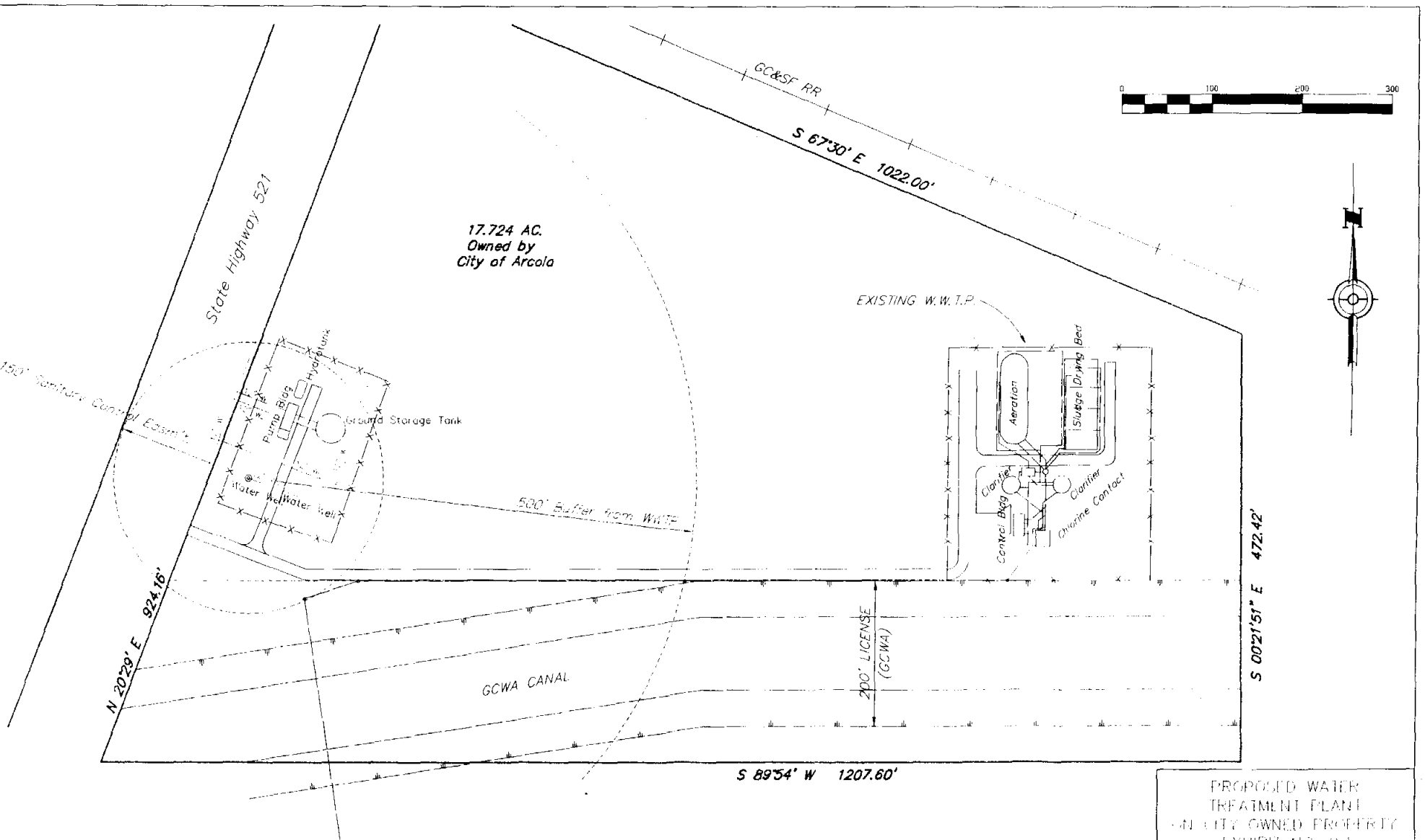
Construction of the Fresno water plant could be phased so that an additional ground storage tank and booster pump could be added as connections are added to the system.

B. Water Distribution System

The recommended water distribution system is comprised of 6" to 12" water mains. Plant components are sized based on the TNRCC minimum water system capacity requirements. Exhibit 9.3 shows the recommended overall water distribution system. Cost estimates, as well as a phasing plan, are shown in Appendix A. The total estimated cost of the overall water distribution system and water plants is $13,471,598.

1. Water Distribution System Model

The proposed water distribution system for the Arcola and Fresno area was modeled using the computer program Cybernet Version 2.5. This program computes the flow rates, head losses and pressures within the distribution system for various conditions. Two types of simulations were run for the project. One was a static model and the other an extended period model. The static model shows a snap shot of the water system while the extended

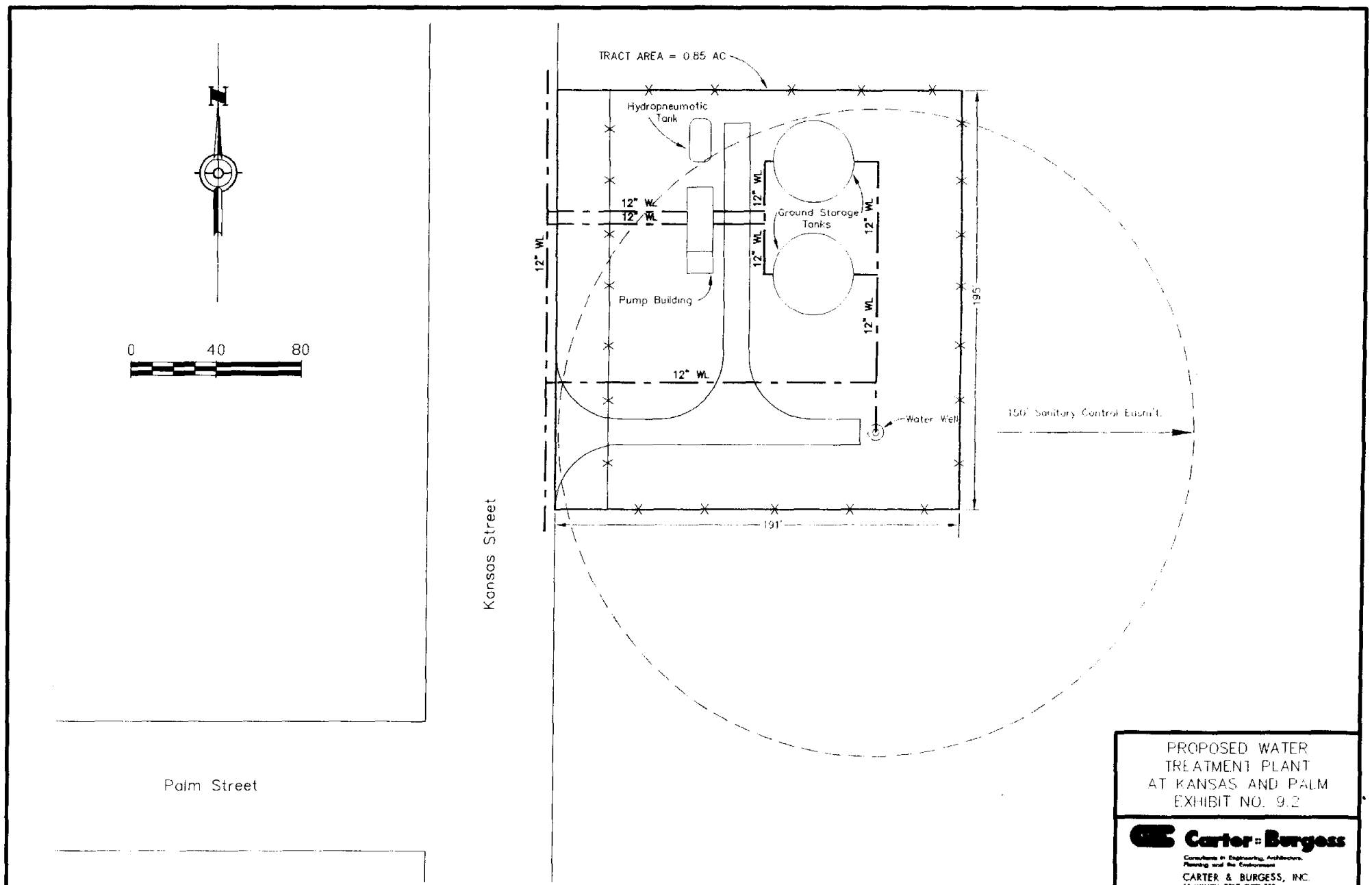


PROPOSED WATER
TREATMENT PLANT
ON CITY OWNED PROPERTY
EXHIBIT NO. 9.1

Carter Burgess

Consultants in Engineering, Architecture, Planning and the Environment

CARTER & BURGESS, INC.
55 Waugh Drive, Suite 300
Houston, TX 77007-5842


N
0
40
80
TRACT AREA = 0.85 AC
Hydropneumatic Tank
Ground Storage Tanks
Pump Building
Water Well
12" WL
195'
191'
150' Sanitary Control Easm't.
Kansas Street
Palm Street
PROPOSED WATER TREATMENT PLANT
AT KANSAS AND PALM
EXHIBIT NO. 9.2
Carter Burgess
CARTER & BURGESS, INC.
55 WALUGH DRIVE, SUITE 300
HOUSTON, TX 77007-5842

period model shows the effect of time on the system and how each component of the water plant functions. A layout of the water model is shown in Exhibit 9.8.

For the water system model the following assumptions were used:

Water demand was determined for the years 1995 and 2015 based on the population census information and the population projections as presented in Section 4 of this report. It was assumed for average daily demand that 100 gallons per capita per day were used, peak daily demand is two times the average daily demand, and peak hour demand is four times the average daily demand.

All junction node elevations were assumed to be equal and a value of 10 feet was assigned. Based on the USGS contour map, there is an elevation difference of approximately 14 feet across the study area. This elevation difference corresponds to a pressure difference of approximately 6 psi. This pressure difference does not significantly affect the results of the model study.

For the model, both water plants use a single water storage tank when actually it is proposed that Water Plant No. 2 will have two tanks. The single tank modeled for Water Plant No. 2 is of equivalent diameter to store the same volume as required by two tanks in the design. This assumption allows for a less complicated model system and will not effect the output.

For the model process, minor losses were ignored. To calculate friction losses, a Hazen Williams coefficient of 130 was used. Head losses were calculated as part of the output data.
The following simulations were run with water demand varying for each scenario. The results of each simulation are in Appendix D.

1. Static Simulation - 1995 Average Daily Demand
2. Static Simulation - 1995 Peak Day Demand
3. Static Simulation - 1995 Peak Hour Demand
4. Extended Period Simulation - 1995 Peak Hour Demand with Fire Flow
5. Static Simulation - 2015 Peak Hour Demand
6. Extended Period Simulation - 2015 Peak Hour Demand with Fire Flow

The extended period simulations were run for 2 hours with peak hour demands and a fire flow of 500 g.p.m. located at junction node 260.

The distribution system pressures varied from a low of 45.8 psi to a high of 62.7 psi. No one simulation showed a pressure difference greater than 9 psi throughout the system.

In summary, the results show that the water distribution system and its plant components can deliver the anticipated demands and meet the pressure requirements. The model shows that a 12-inch main is required at each plant and between the two water plants. During preliminary design of the water distribution system the sizing of the water lines at the edge of the distribution system can be studied further to ensure that the system is neither under-sized or over-sized.

2. Phasing Plan

A phasing plan for the development of the proposed water system was produced and summarized below. The cost associated with each phase are developed in Appendix A.

Phase 1- The first phase of water system implementation includes the construction of water plant and distribution system for Arcola in addition to a back up well. The estimated cost for this phase is $4,512,153.

Phase 2- This plan implements a Fresno water plant and provides service to the areas of Fresno 6 and 7. The estimated cost for this phase is $3,751,894.

Phase 3- This plan adds water service to the areas of Fresno 1 and 4. The estimated costs for this phase is $3,168,169.

Phase 4- The final phase of the project provides water service the areas of Fresno 2, 3 and 5. The estimated cost for this phase is $2,676,787.

C. User Cost Summary

Based on preliminary discussions, the anticipated funding sources have been assumed for the user cost impact analysis.

1.	$700,000	County Community Development Block Grant
2.	$700,000	City of Arcola Community Development Block Grant
3.	$1,000,000	20 year zero percent loan from State of Texas
4.	50/50 or 90/10	Grant/Loan ratio - Grant from Farmers Home

Table 9.1 shows the breakdown of capital costs for each phase and the amount required to be funded for each phase. Tables 9.2 and 9.3 show the debt service and monthly user cost for each phase for a 50/50 and 90/10 grant to loan distribution. The tables show that as connections are added with each phase, the monthly user cost decreases. If construction of the entire water system were to occur in one phase, the resulting monthly user costs would be the lowest.

Table 9.1 User Cost Summary for Water System

Area	Phase 1	Phase 2	Phase 3	Phase 4	Total
Arcola Distribution System	$2,405,352				$2,405,352
Arcola Water Plant	$828,000				$828,000
Backup Well	$556,200				
Fresno Water Plant		$1,044,000			$1,044,000
Fresno 1			$1,482,480		$1,482,480
Fresno 2				$983,640	$983,640
Fresno 3				$552,480	$552,480
Fresno 4			$1,167,720		$1,167,720
Fresno 5				$712,560	$712,560
Fresno 6		$589,800			$589,800
Fresno 7		$1,541,640			$1,541,640
Subtotal	**$3,789,552**	**$3,175,440**	**$2,650,200**	**$2,248,680**	**$11,307,672**
Engineering Design	$378,955	$317,544	$265,020	$224,868	$1,130,767
Surveying	$169,326	$112,840	$131,040	$99,800	$513,006
Geotechnical	$87,160	$73,035	$60,955	$51,720	$260,076
Construction Administration	$87,160	$73,035	$60,955	$51,720	$260,076
Project Phasing Totals	**$4,512,153**	**$3,751,894**	**$3,168,169**	**$2,676,787**	**$13,471,598**
Grant Distribution					
Arcola CDBG	($700,000)				($700,000)
County CDBG		($700,000)			($700,000)
Economic Development Agency	($350,000)	($350,000)			($700,000)
Total	**$3,462,153**	**$2,701,894**	**$3,168,169**	**$2,676,787**	**$11,371,598**
Loan Distribution					
0 %, 20 Year, State Loan	($1,000,000)				($1,000,000)
Total Amount To Be Funded	**$2,462,153**	**$2,701,894**	**$3,168,169**	**$2,676,787**	**$10,371,598**

Table 9.2 50/50 Grant to Loan Option With Cost Per Connection

Grant / Loan Amount	Phase I	Phase 2	Phase 3	Phase 4	Total
50 % Grant - Farmers Home	$1,231,076	$1,350,947	$1,584,085	$1,338,394	$5,185,799
50 % Loan - 40 Years at 5.5%	$1,231,076	$1,350,947	$1,584,085	$1,338,394	$5,185,799
Total	**$2,462,153**	**$2,701,894**	**$3,168,169**	**$2,676,787**	**$10,371,598**
Debt Service					
50% Loan 40 Years, 5.5%	($76,721)	($84,191)	($98,721)	($83,409)	($323,181)
$1,000,000 Loan, 20 Years, 0%	($50,000)				($50,000)
Yearly Debt Service	**($126,721)**	**($84,191)**	**($98,721)**	**($83,409)**	**($373,181)**
Combined Debt Service					
Phase 1 Debt	($126,721)	($126,721)	($126,721)	($126,721)	
Phase 2 Debt		($84,191)	($84,191)	($84,191)	
Phase 3 Debt			($98,721)	($98,721)	
Phase 4 Debt				($83,409)	
Yearly Combined Debt Service	**($126,721)**	**($210,913)**	**($309,633)**	**($393,042)**	**($373,181)**
No. of Connections (1995)	**262**	**498**	**990**	**1413**	**1413**
Monthly User Cost / Connection	**$40.31**	**$35.29**	**$26.06**	**$23.18**	**$22.01**

Table 9.3 90/10 Grant To Loan Option With Cost Per Connection

Grant / Loan Amount	Phase I	Phase 2	Phase 3	Phase 4	Total
90% Grant - Farmers Home	$2,215,937	$2,431,705	$2,851,352	$2,409,109	$9,334,438
10% Loan - 40 Years at 5.5%	$246,215	$270,189	$316,817	$267,679	$1,037,160
Total	**$2,462,153**	**$2,701,894**	**$3,168,169**	**$2,676,787**	**$10,371,598**
Debt Service					
10% Loan, 40 Years, 5.5%	($15,344)	($16,838)	($19,744)	($16,682)	($64,636)
$1,000,000 Loan, 20 Years, 0%	($50,000)				($50,000)
Yearly Debt Service	**($65,344)**	**($16,838)**	**($19,744)**	**($16,682)**	**($114,636)**
Combined Debt Service					
Phase 1 Debt	($65,344)	($65,344)	($65,344)	($65,344)	
Phase 2 Debt		($16,838)	($16,838)	($16,838)	
Phase 3 Debt			($19,744)	($19,744)	
Phase 4 Debt				($16,682)	
Yearly Combined Debt Service	**($65,344)**	**($82,183)**	**($101,927)**	**($118,608)**	**($114,636)**
No. of Connections (1995)	**262**	**498**	**990**	**1413**	**1413**
Monthly User Cost / Connection	**$20.78**	**$13.75**	**$8.58**	**$7.00**	**$6.76**

10. Wastewater System Evaluation

A. Wastewater Treatment Options

Three wastewater treatment alternatives were identified for the Fresno/Arcola service area. The possible treatment options are:

Option 1- Expand the existing Arcola wastewater treatment plant
Option 2- Construct a new treatment plant in Fresno
Option 3- Purchase wastewater treatment capacity from Fort Bend County MUD 23.

1. Expand Arcola Plant

This option investigates expanding the existing Arcola wastewater treatment plant to provide treatment capacity for current Arcola residents as well as the future addition of the Fresno service area. The existing wastewater treatment plant which serves the City of Arcola is located along FM 521 just south of the railroad tracks and bordered by Brisco Canal. The plant site which is owned by the City includes 17.7 acres allowing for the possible expansion of the facility without requiring additional land acquisition.

The water system recommendations in section 9 propose a water plant to be located on the western portion of the property. Any wastewater plant expansions would be required to maintain the necessary buffer between the two facilities required by state regulations.

2. Construct Fresno Plant

The second option investigates the construction of a new treatment plant to be located at Palm & 521 in Fresno. With the construction of a new treatment facility which is centrally located along FM 521, Fresno residents could receive sewer service while the existing Arcola plant would remain utilized without disruption. A potential treatment plant site is identified at the intersection of Palm and FM 521 adjacent to Mustang Bayou. The 4 acre tract is owned by Grocers Supply and is valued at $53,920 according to Fort Bend County tax records. There are no improvements on this property. The Flood Insurance Rate Map dated September 30, 1992 indicates that a small portion of this site lies within a 100-yr flood plain.

3. Purchase Treatment Capacity

The third wastewater treatment option involves purchasing wastewater treatment capacity from the neighboring MUD District. Fort Bend County M.U.D. 23 currently leases a 125,000 gpd package wastewater treatment plant. The district plans to lease an additional 125,000 gpd plant in the immediate future to satisfy the wastewater demands produced by the growing community. Despite the planned expansion, the M.U.D. district engineer indicates that there is no excess treatment capacity available for purchase.

B. Conventional Wastewater Collection System Options

1. Conventional Gravity Flow Sewer

A conventional sewer is designed to receive and transport water-borne waste by gravity, utilizing 6 inch and larger pipe laid at grades or slopes steep enough to insure a velocity of 2 fps or higher at the design flow. In the State of Texas the sewage pipe is laid at a uniform grade and in a straight alignment between manholes, with additional manholes at all side branch connections. The grades may vary with pipe size; that is, using 0.013 Manning's roughness coefficient and accepting a minimum velocity of 2 fps, an 8" pipe has a minimum grade of 0.33%, etc.

The advantages of the conventional sewage collection system include:

a. Proven long term component life;
b. Simple maintenance, no moving parts;
c. Simple connection for new homes;
d. Tolerant of short term high flow rates;
e. Low overall cost where connection density is high, surface topography has gentle slopes with no isolated low points and system installation is done prior to street construction.

Disadvantages of the conventional sewage collection system include:

a. Collection system layout is largely controlled by topography;
b. Minimum pipe size (usually 8") is unnecessary until a large number of connections are contributing flow;
c. Requires use of manholes;
d. Illegal connections are relatively easy to make;
e. Excavation costs, particularly in an established neighborhood, can be high and construction damage can be extensive.

2. Conventional Gravity Flow Sewer With Lift Stations

The conventional collection system can be used with aid of lift stations to overcome the disadvantages of very flat or hilly terrain. The lift station raises the hydraulic grade line to near the ground surface allowing flow to travel avoiding excessively deep cuts. Although the use of lift stations to convey wastewater is standard in flat coastal areas, their use does increase the system cost and complexity.

C. Innovative & Alternative Wastewater System Options

Because the Fresno area is within the extra-territorial jurisdiction of the City of Houston approval from the City of Houston is required for the design plans. The City's design manual does not address innovative and alternative collection systems and conversations with personnel at the City have indicated a reluctance to approve these types of systems. These options are included in this report to present available alternatives to conventional collection systems and to demonstrate cost savings for appropriate systems.

1. Pressure Sewer Collection Systems

There are two types of pressure sewers - grinder pump and septic tank effluent pump (STEP) systems.

Grinder pump pressure sewers typically incorporate the use of a grinder pump located within a small fiberglass wet well (about 80 gallons) at each connection. Small diameter (2" to 4") plastic pipe is used for the collection system network[6]:

Advantages of the grinder pump powered pressure sewer include:

a. Provides a collection system layout that is virtually independent of topography;
b. Allows for a uniform depth ditch when placing the small diameter pipe.
c. Eliminates infiltration and exfiltration problems in a properly built and inspected installation;
d. Causes minimal disturbance in an established neighborhood.

Disadvantages of the grinder pump powered pressure sewer are;

a. Requires grinder pump, with 3/4 or 1 HP motor, small sump tank and power source at each connection;
b. Increased maintenance skills required;
c. Disrupts service almost immediately during power or pump outages.

The STEP system typically consists of a conventional septic tank, a small (300 to 500 gallons) wet well, a 1/3 to ½ HP submersible pump, and the same small diameter pipe collection system as described for the grinder pump system[7].

Advantages of the STEP system include:

a. Same as listed for the grinder pump type pressure system and;
b. Provides emergency storage in the wet well;
c. Delivers wastewater to the treatment or disposal facility that is relatively free of large solids and grease, and with a reduced BOD;
d. Makes use of any good quality septic tanks on the served lots.

Disadvantages of the STEP system include:

a. Requires a good quality septic tank and wet well at each connection, in addition to the pump and power source;
b. Requires periodic removal (3 to 5 years) of septage from septic tank;
c. Delivers wastewater to the treatment or disposal facility that is septic, has entrained gases, and is corrosive.

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6 Environmental Zone " Design Handbook-Low Pressure Sewer Systems"

7 USEPA /Small Flows Clearing House Sponsored Short Course "Alternative Sewers at the University of Wisconsin-Milwaukee, 1989.

Disadvantages of Onsite Systems include:

a. Require periodic removal (3 to 5 years) of septage from septic tank;
b. Dependant on local soil conditions;
c. Require large area for absorption bed (½ acre).

As discussed earlier in sections 2 and 7 of this report septic tanks in the study area are failing.

D. Collection System Alternatives

Sanitary sewer layouts and cost estimates were developed utilizing conventional gravity transport with lift stations, and combining conventional collection systems and lift stations with STEP collection systems. The STEP system was selected for costing due to its increased reliability in a power outage over grinder systems and because of the limitations of the other innovative and alternative collection systems.

Layouts and cost estimates were developed for the treatment alternative relating to the expansion of the Arcola wastewater treatment plant and for the implementation of a new wastewater treatment facility at Palm & 521. Exhibits 10.1, 10.2, 10.3 and 10.4 illustrate the system layouts. Sanitary sewer service was not extended to the northern reaches of the study area because these areas typically have larger lots where there are no documented problems with the existing onsite septic systems.

The costs associated with upgrading the Arcola wastewater treatment plant and expanding the current collection system are shown in Appendix B. The costs associated with constructing a new wastewater treatment plant and collection system at Palm and 521 are shown in Appendix C.

E. Recommended Wastewater System

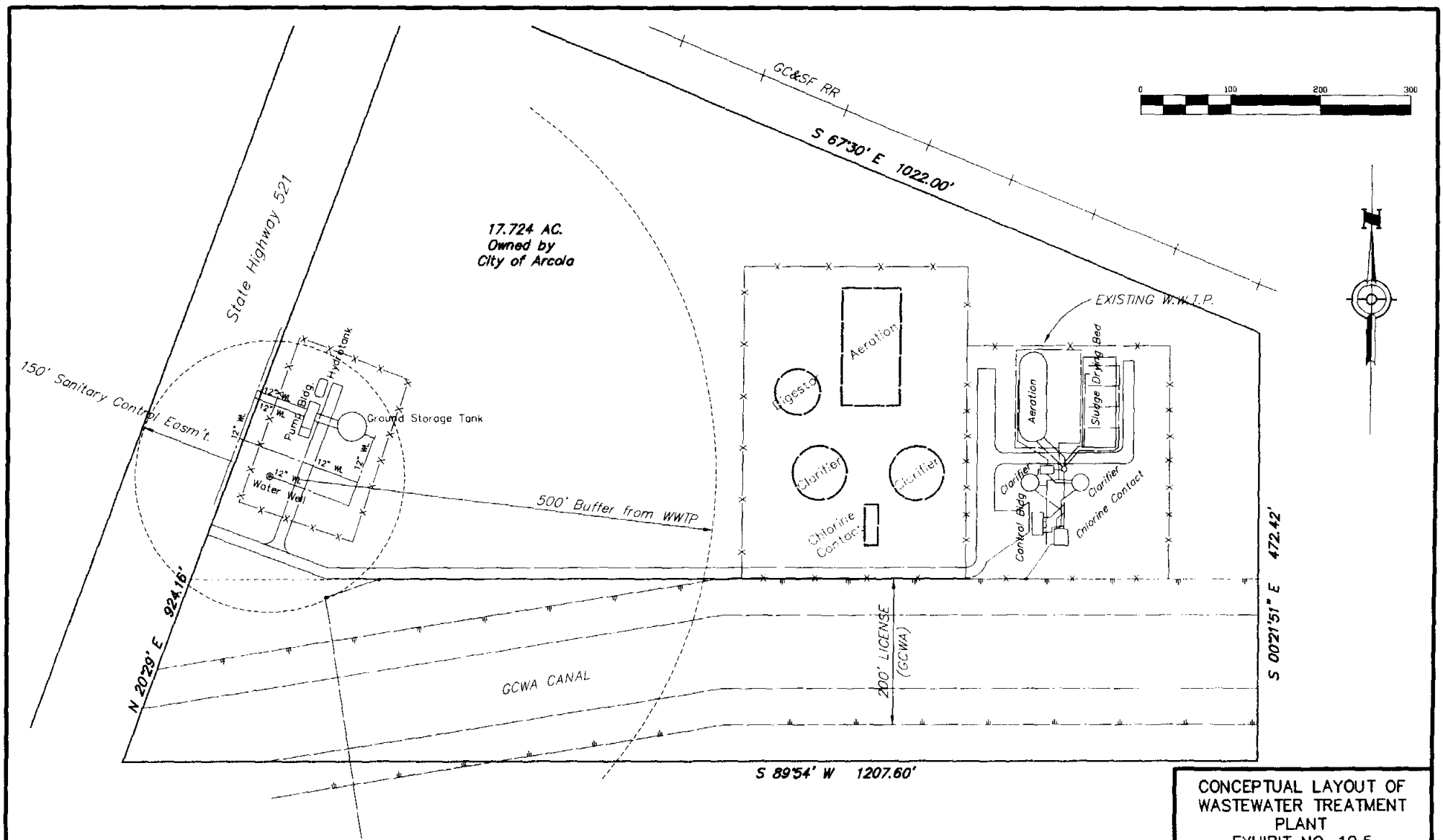
The recommended system includes expanding the existing Arcola wastewater treatment plant, and constructing a combination of conventional, and STEP sewers which utilize lift stations to convey wastewater to the Arcola plant. This recommendation is shown in exhibit 10.1. Treatment plant siting issues, land acquisition, permitting issues as well as cost make this the most desirable alternative.

A wastewater phasing plan was developed for the system and is shown below.

Phase 1 includes upgrading the existing Arcola wastewater treatment plant to provide an additional 0.5 mgd average daily flow, and constructing the sewer collection system in Fresno 7. The estimated cost for this phase is $3,938,177. Exhibit 10.5 shows a conceptual layout of the Arcola wastewater treatment plant expansion.

Phase 2 includes constructing the related collection system for Fresno 4, 5, and 6. The estimated cost for this phase is $2,916,116.

The third and final phase includes constructing another 0.5 mgd upgrade to the Arcola wastewater treatment plant and the collection system for Fresno 1, 2, and 3. The estimated cost for this phase is $6,197,364.



CONCEPTUAL LAYOUT OF WASTEWATER TREATMENT PLANT
EXHIBIT NO. 10.5

Carter :: Burgess
Consultants in Engineering, Architecture, Planning and the Environment
CARTER & BURGESS, INC.
55 WAUGH DRIVE, SUITE 300
HOUSTON, TX 77007-5842

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The total estimated cost for the recommended wastewater system is $13,051,657. Using 1995 connection counts and assuming a 20 year loan at 4.5%, the monthly cost per connection is as follows:

Table 10.1 - User Cost Summary for Wastewater

Area	Phase 1	Phase 2	Phase 3	Total
Arcola Plant Upgrade	$1,500,000		$1,500,000	$3,000,000
Fresno 1			$2,284,019	$2,284,019
Fresno 2			$299,310	$299,310
Fresno 3			$1,201,718	$1,201,718
Fresno 4		$1,456,386		$1,456,386
Fresno 5		$551,190		$551,190
Fresno 6		$460,675		$460,675
Fresno 7	$1,893,959			$1,893,959
Subtotal	$3,393,959	$2,468,251	$5,285,047	$11,147,257
Engineering Design	$339,396	$246,825	$528,505	$1,114,726
Surveying	$48,700	$87,500	$140,700	$276,900
Geotechnical	$78,061	$56,770	$121,556	$256,387
Construction Administration	$78,061	$56,770	$121,556	$256,387
Project Phasing Totals	$3,938,177	$2,916,116	$6,197,364	$13,051,657
*Existing Arcola Sewer Debt	$ -	$ -	$ -	$ -
Total Amount to be Financed	$3,938,177	$2,916,116	$6,197,364	$13,051,657
Debt Service (SRF 20yr Loan @4.5%)				
Phase 1 Debt	($302,752)	($302,752)	($302,752)	($1,003,361)
Phase 2 Debt		($224,180)	($224,180)	
Phase 3 Debt			($476,429)	
Phase 4 Debt				
Yearly Combined Debt Service	($302,752)	($526,932)	($1,003,361)	($1,003,361)
No. of Connections	381	597	1072	1072
Monthly Sewer Cost//Connection	**$66.22**	**$73.55**	**$78.00**	**$78.00**

* For this analysis it is assumed that the existing City of Arcola sewer system has no remaining debt.

11. Implementation Of Recommendations

It is recommended that the project be staged into four phases. The first phase would be to construct the entire water distribution system and two water plants. Phase 2 through 4 would include the wastewater improvements as discussed in Section 10 of this report. By providing the water as the first phase of improvements, a funding stream is created to help finance future wastewater improvements.

Table 11.1 shows the costs associated with phasing the water and sewer improvements. Assumptions have been made with regard to available grants and financing rates. The table also shows the effects of assumming the City of Arcola's existing debt for the wastewater improvements. Operation and maintenance costs have been estimated based on similar sized systems.

Table 11.1 - User Cost Summary for Water & Wastewater

	Phase 1	Phase 2	Phase 3	Phase 4	Total
Construction Cost	$11,307,672	$3,393,959	$2,468,251	$5,285,047	$22,454,929
Engineering Design	$1,130,767	$339,396	$246,825	$528,505	$2,245,493
Surveying	$513,006	$48,700	$87,500	$140,700	$789,906
Geotechnical	$260,076	$78,061	$56,770	$121,556	$516,463
Construction Administration	$260,076	$78,061	$56,770	$121,556	$516,463
Project Phasing Totals	$13,471,598	$3,938,177	$2,916,116	$6,197,364	$26,523,254
Arcola CDBG	($700,000)				($700,000)
County CDBG	($700,000)				($700,000)
Economic Development Agency	($700,000)				($700,000)
	$11,371,598				$24,423,255
0 %, 20 Year, State Loan	($1,000,000)				($1,000,000)
	$10,371,598				$23,423,255
RECD 50/50 Grant/Loan	$5,185,799	$1,969,089	$1,458,058	$3,098,682	$11,711,627
Amount to be Financed 40 yrs @ 5.5 %	$5,185,799	$1,969,089	$1,458,058	$3,098,682	$11,711,627
Phase 1 Debt	($323,181)	($323,181)	($323,181)	($323,181)	($323,181)
Phase 1 Debt ($1,000,000 0% loan)	($50,000)	($50,000)	($50,000)	($50,000)	($50,000)
Phase 2 Debt		($122,714)	($122,714)	($122,714)	($122,714)
Phase 3 Debt			($90,867)	($90,867)	($90,867)
Phase 4 Debt				($193,111)	($193,111)
*City of Arcola Debt	($37,164)	($37,164)	($37,164)	($37,164)	($37,164)
Yearly Combined Debt Service	($410,345)	($533,059)	($623,926)	($817,037)	($817,037)
No. of Connections	1413	1413	1413	1413	1413
Monthly Debt Service/Conn.	$24.20	$31.44	$36.80	$48.19	$48.19
Estimated O&M Cost/Conn.	$10.00	$10.00	$10.00	$10.00	$10.00
Monthly Sewer Cost/Connection	**$34.20**	**$41.44**	**$46.80**	**$58.19**	**$58.19**

* The City of Arcola currently has a 20 year loan at 4.896% with annual payments of $37,164 until the year 2017.

It is recommended that a Special Legislative District or Water Supply Corporation be formed to provide the services in the area. Both of these types of organizations are eligible to receive TWDB, Community Development Block Grant and Rural Economic Community Development financing. The formation of any service providing entity will have to address the concerns of the residents through public meetings, local newspaper articles, mailings, etc.

12. Water Conservation and Drought Contingency Plan

The proposed owning entity of the water system will be required to develop a water conservation and drought contingency plan. The following plans have been prepared in accordance with guidelines set forth by the TWDB and could be adopted by the owning entity.

A. Water Conservation Plan

1. Overview

A variety of elements are incorporated into developing a water conservation plan. The proposed plan will use the categories listed by the TWDB in their *Guidelines for Municipal Water Conservation and Emergency Water Demand Management.* The following water conservation methods were considered in preparing the plan:

- Public Education and Information Program
- Water Conservation Rate Structure
- Universal Metering and Meter Maintenance Program
- Leak Detection and Repair Program
- Water Conserving Landscaping
- Water Conservation Plumbing Codes
- Water Conservation Retrofit Program
- Water Recycling and Reuse
- Plan Implementation and Enforcement

2. Public Education and Information

The water services provider will promote water conservation by informing the public of methods to conserve water. The education of the residents, as to water conservation practices and methods, will be accomplished through a program of direct mailings or distributions, utility bill stuffers, and local newspaper articles.

First Year

The first year program will consist of the distribution of educational materials including brochures, flyers, and/or newsletters to all customers every three (3) months. The initial distribution of information will explain the water conservation program. This first notice will be accompanied by an article in the local newspaper. Notices will continue as scheduled unless other circumstances warrant additional information.

The notices for the water conservation plan will be distributed to customers via mail in the billing notices and newspaper and newsletter articles. Other

forms of advertisement such as billboards, radio messages and posters will be considered as the need is required.

Under the first year plan guidelines, all new customers will receive the initial conservation education material that describes the water conservation plan and other general conservation information when service is initiated.

Long Term

As part of the long term conservation plan, educational material will be distributed concerning water usage during peak periods of summer months and winter months. Summer peak information will be sent out at the beginning of June and will cover such items as preferred lawn watering times. Winter information material will be distributed at the beginning of November and will include such tips as insulating water pipes instead of dripping during periods of freezing temperatures.

3. Water Conservation Rate Structure

The rate structure proposed by the Arcola/Fresno entity must be designed so that it does not promote excessive water waste.

4. Universal Metering and Meter Maintenance Program

The proposed system will be metered at every service connection. An accounting system that tracks water consumption for each meter should be implemented. Should an individual meter register an unusual reading for a period, either an increase or decrease from the norm, the meter will be tested and appropriate action taken. Besides the monitoring of meters, the following testing schedule for all meters is proposed:

Meter Type	Testing Frequency
Production Meters	once a year
Meters larger than 1 ½"	once a year
Meters 1 ½" or smaller	every ten (10) years

Metering and meter maintenance along with accounting information, shall help identify and quickly control leaks in the water distribution system and thereby help with water conservation.

5. Leak Detection and Repair Program

In addition to visual inspections and citizen reports to help detect and control leaks, annual water audits and sonic leak detection devices could be used to detect leaks. A better leak detection program will help find damaged lines or illegal hookups more quickly and allow for appropriate actions to be taken. Areas prone to failures shall be scheduled for replacement as soon as possible. A good quality leak detection program will pay for itself if operated properly.

6. Water Conserving Landscaping

Through the public education and information program, suggestions on landscaping and irrigation practices that promote water conservation will be

distributed to the customers. These notices will show how better conservation ideas can reduce water consumption and therefore reduce water bill, a definite incentive to the customer. During the summer months, it is not uncommon for fifty (50) percent of the water used in urban areas to be applied to lawns and gardens. Nurseries and other businesses that sell outdoor plants and irrigation systems, will be encouraged to make readily available to the public products that conserve water.

7. Water Conservation Plumbing Codes

A plumbing ordinance for the service area that shall require the use of water saving fixtures for all new construction. The following guidelines are in agreement with the TWDB guidelines:

Fixture	Standard
Shower Heads	No more than 2.75 gallons per minute at 80 pounds per square inch (psi)
Lavatory and Sinks Faucets and Aerators	No more than 2.2 gallons per minute at 60 pounds psi
Wall-mounted, Flushometer Toilets	No more than 2.0 gallons per flush
All other Toilets	No more than 1.6 gallons per flush
Urinals	No more than 1.0 gallons per flush
Drinking Water Fountains	Must be self-closing

8. Water Conservation Retrofit Program

Customers and owners of buildings and businesses that do not have water conserving plumbing devices will be encouraged to retrofit their old fixtures. Along with the public education and information program, citizens will be informed of the advantages of installing water saving devices as well as the availability of these items. Customers will be informed customers of inexpensive water conservation kits available to them. Local plumbers will be encouraged to install water conserving equipment as well.

9. Water Recycling and Reuse

At this time, there are no major forms of water recycling and reuse available.

10. Plan Implementation and Enforcement

The water service provider will select the Administrator of the water conservation plan. The Administrator will oversee the execution and implementation of the plan as well as all record keeping for program verification. To initiate the water conservation plan, the following documents will be implemented:

- A resolution stating water conservation goal and adoption of the water conservation plan.
- An ordinance to implement the legal documents necessary to enforce this water conservation plan.

- Adoption of new plumbing regulations regarding water conserving plumbing fixtures and retrofit devices.

Examples of such documents as discussed above, may be viewed in Appendix of this water conservation plan. The examples are taken from the TWDB publication *Example Water Conservation Plans and Adoption Ordinances for Cities.*

The Administrator will be responsible for the submission of an annual report to the Executive administrator of the Texas Water Development Board, through out the life of the loan. The report will include the following items:

- Progress made in the implementation of the water conservation program
- Public response to the water conservation program
- Actual quantitative effectiveness of the water conservation program

B. Drought Contingency Plan

1. Overview

A drought or other emergency conditions can disrupt the normal workings of the City's water supply system. As part of the overall conservation program, a drought contingency plan should be prepared for such times. The drought plan deals with temporary, all be it sometimes drastic actions, methods to control the emergency situation as it unfolds. The drought contingency plan will include the following items as outlined by the TWDB:

- Trigger conditions signaling the onset of an emergency, and the basis for setting various levels of severity.
- Emergency water demand management measures associated with respective trigger conditions
- Information and education
- Initiation procedures
- Termination procedures
- Means of implementation

2. Trigger Conditions

Mild Conditions

When demand reaches eighty-five (85) percent of the capacity of the water distribution system. The water supply is still adequate, but the water levels are low enough that there is a possibility that the supply situation may become critical if the drought or emergency continues.

Moderate Conditions

When demand reaches ninety-five (95) percent of the capacity of the water distribution system. Failure of a pump or some other piece of equipment could cause a serious disruption of service to all or part of the system.

Severe Conditions

When demand reaches one hundred (100) percent or greater of the capacity of the water distribution system. The imminent or actual failure of a major component of the system has occurred which will cause an immediate health or safety hazard.

3. Emergency Water Demand Management Measures

Mild Conditions

- Inform the public through the news media that trigger conditions have been reached and that they should look for ways to voluntarily reduce water use. Specific recommendations shall be provided through the news media.

- Advertise a voluntary lawn watering schedule and reduce the watering at public parks to a minimum level.

Moderate Conditions

- Continue implementation of all relevant actions in preceding phase.

- Institute a mandatory lawn watering schedule as follows:

Customers with even numbered street addresses may water on even days of the month.

Customers with odd numbered street addresses may water on odd days of the month.

Watering shall occur only between the hours of 6 am to 10 am and 8 pm to 10 pm.

- Public water uses, not essential to the healthy or safety of the community, shall be prohibited such as hydrant flushing, filling of pools, and park watering.

Severe Conditions

- Continue implementation of all relevant actions in the preceding phase.

- All outdoor water use will be prohibited which is not required for health and safety such as lawn watering and car washing. The Administrator shall have the authority to grant a variance to businesses such as nurseries for limited outdoor watering.

Consider adoption of an emergency ordinance to implement water rationing or a surcharges for excessive water use.

4. Information and Education

Mild Conditions

- Article in local newspaper informing the public of the need to conserve water and that a trigger condition has been reached. Inform the public of future possible actions if the condition continues to get worse.

Moderate Conditions

- Advise the public that the next trigger condition has been reached. Inform the public of future possible actions if the condition continues to get worse.

- Public notice of mandatory watering schedule and enforcement measures in the local newspaper.

Severe Conditions

- Advise the public that the next trigger condition has been reached. Update the public daily on the situation through local news media.

5. Initiation Procedures

The Administrator shall monitor the water usage of the distribution system. When a trigger condition is reached, the Administrator will notify the proper authority to begin the implementation of the appropriate step in the drought contingency plan.

6. Termination Procedures

When the emergency situation has passed for at least five consecutive days, then the Administrator shall notify the public of the downgrade in trigger conditions or the removal of the drought contingency plan completely. The notification shall be made through the local news media.

7. Means of Implementation

The drought contingency plan shall be implemented through an appropriate resolution passed by the owning entity and the passage of an ordinance establishing the excess water use rate, the lawn watering schedule, the prohibition against all outside water use, the conditions under which each can be initiated by the Administrator and the enforcement of penalties and fines for violations.

Appendix A

Water Treatment and Distribution System Cost Estimate

90/10 Grant To Loan Ratio With User Cost Summary

Grant / Loan Amount	Phase I	Phase 2	Phase 3	Phase 4	Total
90% Grant - Farmers Home	$2,665,937	$1,981,705	$2,851,352	$2,409,109	$9,334,438
10% Loan - 40 Years at 5.5%	$296,215	$220,189	$316,817	$267,679	$1,037,160
Total	**$2,962,153**	**$2,201,894**	**$3,168,169**	**$2,676,787**	**$10,371,598**
Debt Service					
10% Loan, 40 Years, 5.5%	($18,460)	($13,722)	($19,744)	($16,682)	($64,636)
$1,000,000 Loan, 20 Years, 0%	($25,000)	($25,000)			($50,000)
Yearly Debt Service	**($43,460)**	**($38,722)**	**($19,744)**	**($16,682)**	**($114,636)**
Combined Debt Service					
Phase 1 Debt	($43,460)	($43,460)	($43,460)	($43,460)	
Phase 2 Debt		($38,722)	($38,722)	($38,722)	
Phase 3 Debt			($19,744)	($19,744)	
Phase 4 Debt				($16,682)	
Yearly Combined Debt Service	**($43,460)**	**($82,183)**	**($101,927)**	**($118,608)**	**($114,636)**
No. of Connections (1995)	**262**	**498**	**990**	**1413**	**1413**
Monthly User Cost / Connection	**$13.82**	**$13.75**	**$8.58**	**$7.00**	**$6.76**

50/50 Grant to Loan Option With User Cost Summary

Grant / Loan Amount	Phase I	Phase 2	Phase 3	Phase 4	Total
50 % Grant - Farmers Home	$1,481,076	$1,100,947	$1,584,085	$1,338,394	$5,185,799
50 % Loan - 40 Years at 5.5%	$1,481,076	$1,100,947	$1,584,085	$1,338,394	$5,185,799
Total	**$2,962,153**	**$2,201,894**	**$3,168,169**	**$2,676,787**	**$10,371,598**
Debt Service					
50% Loan 40 Years, 5.5%	($92,301)	($68,611)	($98,721)	($83,409)	($323,181)
$1,000,000 Loan, 20 Years, 0%	($25,000)	($25,000)			($50,000)
Yearly Debt Service	**($117,301)**	**($93,611)**	**($98,721)**	**($83,409)**	**($373,181)**
Combined Debt Service					
Phase 1 Debt	($117,301)	($117,301)	($117,301)	($117,301)	
Phase 2 Debt		($93,611)	($93,611)	($93,611)	
Phase 3 Debt			($98,721)	($98,721)	
Phase 4 Debt				($83,409)	
Yearly Combined Debt Service	**($117,301)**	**($210,913)**	**($309,633)**	**($393,042)**	**($373,181)**
No. of Connections (1995)	**262**	**498**	**990**	**1413**	**1413**
Monthly User Cost / Connection	**$37.31**	**$35.29**	**$26.06**	**$23.18**	**$22.01**

Water Distribution System Phasing Costs

Area	Phase 1	Phase 2	Phase 3	Phase 4	Total
Arcola Distribution System	$2,405,352				$2,405,352
Arcola Water Plant	$828,000				$828,000
Backup Well	$556,200				
Fresno Water Plant		$1,044,000			$1,044,000
Fresno 1			$1,482,480		$1,482,480
Fresno 2				$983,640	$983,640
Fresno 3				$552,480	$552,480
Fresno 4			$1,167,720		$1,167,720
Fresno 5				$712,560	$712,560
Fresno 6		$589,800			$589,800
Fresno 7		$1,541,640			$1,541,640
Subtotal	**$3,789,552**	**$3,175,440**	**$2,650,200**	**$2,248,680**	**$11,307,672**
Engineering Design	$378,955	$317,544	$265,020	$224,868	$1,130,767
Surveying	$169,326	$112,840	$131,040	$99,800	$513,006
Geotechnical	$87,160	$73,035	$60,955	$51,720	$260,076
Construction Administration	$87,160	$73,035	$60,955	$51,720	$260,076
Project Phasing Totals	**$4,512,153**	**$3,751,894**	**$3,168,169**	**$2,676,787**	**$13,471,598**
Grant Distribution					
Arcola CDBG	($700,000)				($700,000)
County CDBG		($700,000)			($700,000)
Economic Development Agency	($350,000)	($350,000)			($700,000)
Total	**$3,462,153**	**$2,701,894**	**$3,168,169**	**$2,676,787**	**$11,371,598**
Loan Distribution					
0 %, 20 Year, State Loan	($500,000)	($500,000)			($1,000,000)
Total Amount To Be Funded	**$2,962,153**	**$2,201,894**	**$3,168,169**	**$2,676,787**	**$10,371,598**

Water System Cost Estimate For Arcola

Distribution System

Item	Quantity	Unit	Unit Price	Total
6" PVC Waterline	7860	lf	$18.00	$141,480
8" PVC Waterline	43510	lf	$20.00	$870,200
12" PVC Water line	12530	lf	$26.00	$325,780
6" Valve	40	ea	$300.00	$12,000
8" Valve	220	ea	$400.00	$88,000
12" Valve	60	ea	$750.00	$45,000
Fire Hydrants	95	ea	$1,800.00	$171,000
Blow-Off Valve	50	ea	$200.00	$10,000
Service Lines	341	ea	$1,000.00	$341,000
Subtotal				$2,004,460
Contingency 20%				$400,892
Total Arcola Distribution				**$2,405,352**

Water Plant

Item	Quantity	Unit	Unit Price	Total
700 gpm Water Well	1	ea	$400,000.00	$400,000
Booster Pumps	4	ea	$10,000.00	$40,000
Pump Bldg	1	ls	$20,000.00	$20,000
100,000 gal ground storage tank	1	ea	$40,000.00	$40,000
Hydrotank 10,000 gal	1	ea	$25,000.00	$25,000
Chlorinator	2	ea	$7,500.00	$15,000
Misc Piping	1	ls	$30,000.00	$30,000
Electrical controls	1	ls	$40,000.00	$40,000
Backup Generator	1	ls	$80,000.00	$80,000
Land	0	acre	$20,000.00	$0
Subtotal				$690,000
Contingency 20%				$138,000
Total Water Plant				**$828,000**

Backup Well (if required)

Item	Quantity	Unit	Unit Price	Total
Backup Well	1	ea	$400,000.00	$400,000
Chlorinator & Bldg	1	ea	$13,500.00	$13,500
Electrical controls	1	ls	$40,000.00	$40,000
Land	0.5	acre	$20,000.00	$10,000
Subtotal				$463,500
Contingency 20%				$92,700
Total Backup Well				**$556,200**

Interconnect with M.U.D. 23

Item	Quantity	Unit	Unit Price	Total
12" PVC Water line	7000	lf	$26.00	$182,000
Meter & Box	1	ea	$15,000.00	$15,000
Subtotal				$197,000
Contingency 20%				$39,400
Total M.U.D. Interconnect				**$236,400**

Total Construction Cost For Arcola (excluding interconnect)	**$3,789,552**
Engineering Design	$378,955
Surveying	$169,326
Geotechnical	$87,160
Construction Administration	$87,160
Project Total	**$4,512,153**

Fresno Water Plant

Item	Quantity	Unit	Unit Price	Total
700 gpm Water Well	1	ea	$400,000.00	$400,000
Booster Pumps	4	ea	$10,000.00	$40,000
Pump Bldg	1	ls	$20,000.00	$20,000
200,000 gal ground storage tank	2	ea	$80,000.00	$160,000
Hydrotank 20,000 gal	1	ea	$45,000.00	$45,000
Chlorinator	2	ea	$7,500.00	$15,000
Misc Piping	1	ls	$30,000.00	$30,000
Electrical controls	1	ls	$60,000.00	$60,000
Backup Generator	1	ls	$80,000.00	$80,000
Land	1	acre	$20,000.00	$20,000
Subtotal				$870,000
Contingency 20%				$174,000
Total Water System Cost For Fresno 6				**$1,044,000**

Water System Cost Estimate For Fresno 1

Item	Quantity	Unit	Unit Price	Total
6" PVC Waterline	13750	lf	$18.00	$247,500
8" PVC Waterline	22650	lf	$20.00	$453,000
12" PVC Water line	5400	lf	$26.00	$140,400
6" Valve	70	ea	$300.00	$21,000
8" Valve	110	ea	$400.00	$44,000
12" Valve	30	ea	$750.00	$22,500
Fire Hydrants	70	ea	$1,800.00	$126,000
Blow-Off Valve		ea	$200.00	$0
Service Lines	181	ea	$1,000.00	$181,000
Subtotal				$1,235,400
Contingency 20%				$247,080
Total Water System For Fresno 1				**$1,482,480**

Water System Cost Estimate For Fresno 2

Item	Quantity	Unit	Unit Price	Total
6" PVC Waterline	2300	lf	$18.00	$41,400
8" PVC Waterline	19400	lf	$20.00	$388,000
12" PVC Water line	5500	lf	$36.00	$198,000
6" Valve	10	ea	$300.00	$3,000
8" Valve	100	ea	$400.00	$40,000
12" Valve	30	ea	$750.00	$22,500
Fire Hydrants	46	ea	$1,800.00	$82,800
Blow-Off Valve		ea	$200.00	$0
Service lines, meters	44	ea	$1,000.00	$44,000
Subtotal				$819,700
Contingency 20%				$163,940
Total Water System Cost For Fresno 2				**$983,640**

Water System Cost Estimate For Fresno 3

Item	Quantity	Unit	Unit Price	Total
6" PVC Waterline	5800	lf	$18.00	$104,400.00
8" PVC Waterline	8850	lf	$20.00	$177,000.00
12" PVC Water line	0	lf	$26.00	$0.00
6" Valve	30	ea	$300.00	$9,000.00
8" Valve	40	ea	$400.00	$16,000.00
12" Valve	0	ea	$750.00	$0.00
Fire Hydrants	25	ea	$1,800.00	$45,000.00
Blow-Off Valve		ea	$200.00	$0.00
Service Lines, Meters	109	ea	$1,000.00	$109,000.00
Subtotal				$460,400
Contingency 20%				$92,080
Total Water System Cost For Fresno 3				**$552,480**

Water System Cost Estimate For Fresno 4

Item	Quantity	Unit	Unit Price	Total
6" PVC Waterline	4400	lf	$18.00	$79,200.00
8" PVC Waterline	12800	lf	$20.00	$256,000.00
12" PVC Water line	10900	lf	$26.00	$283,400.00
6" Valve	20	ea	$300.00	$6,000.00
8" Valve	60	ea	$400.00	$24,000.00
12" Valve	50	ea	$750.00	$37,500.00
Fire Hydrants	70	ea	$1,800.00	$126,000.00
Blow-Off Valve	0	ea	$200.00	$0.00
Service Lines, Meters	161	ea	$1,000.00	$161,000.00
Subtotal				$973,100
Contingency 20%				$194,620
Total Water System Cost For Fresno 4				**$1,167,720**

Water System Cost Estimate For Fresno 5

Item	Quantity	Unit	Unit Price	Total
6" PVC Waterline	2000	lf	$18.00	$36,000.00
8" PVC Waterline	11900	lf	$20.00	$238,000.00
12" PVC Water line	4200	lf	$26.00	$109,200.00
6" Valve	10	ea	$300.00	$3,000.00
8" Valve	60	ea	$400.00	$24,000.00
12" Valve	20	ea	$750.00	$15,000.00
Fire Hydrants	32	ea	$1,800.00	$57,600.00
Blow-Off Valve		ea	$200.00	$0.00
Short Service Lines	111	ea	$1,000.00	$111,000.00
Subtotal				$593,800
Contingency 20%				$118,760
Total Water System Cost For Fresno 5				**$712,560**

Water System Cost Estimate For Fresno 6

Item	Quantity	Unit	Unit Price	Total
6" PVC Waterline	9050	lf	$18.00	$162,900.00
8" PVC Waterline	9700	lf	$20.00	$194,000.00
12" PVC Water line	0	lf	$26.00	$0.00
6" Valve	50	ea	$300.00	$15,000.00
8" Valve	50	ea	$400.00	$20,000.00
12" Valve	0	ea	$750.00	$0.00
Fire Hydrants	32	ea	$1,800.00	$57,600.00
Blow-Off Valve		ea	$200.00	$0.00
Service Lines, Meters	42	ea	$1,000.00	$42,000.00
Subtotal				$491,500
Contingency 20%				$98,300
Total Water System Cost For Fresno 6				**$589,800**

Water System Cost Estimate For Fresno 7

Item	Quantity	Unit	Unit Price	Total
6" PVC Waterline	12100	lf	$18.00	$217,800.00
8" PVC Waterline	25950	lf	$20.00	$519,000.00
12" PVC Water line	5000	lf	$26.00	$130,000.00
6" Valve	60	ea	$300.00	$18,000.00
8" Valve	130	ea	$400.00	$52,000.00
12" Valve	30	ea	$750.00	$22,500.00
Fire Hydrants	73	ea	$1,800.00	$131,400.00
Blow-Off Valve		ea	$200.00	$0.00
Service Lines, Meters	194	ea	$1,000.00	$194,000.00
Subtotal				$1,284,700
Contingency 20%				$256,940
Total Water System Cost For Fresno 7				**$1,541,640**

Appendix B

Arcola Wastewater Plant Upgrade and Collection System Cost Estimate

Cost Estimate for Arcola Wastewater Treatment Plant Expansion

Area	Exhibit 10.2 Conventional	Exhibit 10.1 W/Step
Fresno 1	$ 2,284,018.80	$ 2,284,018.80
Fresno 2	$ 548,948.40	$ 299,310.00
Fresno 3	$ 1,201,718.40	$ 1,201,718.40
Fresno 4	$ 1,446,171.60	$ 1,456,386.00
Fresno 5	$ 1,023,343.20	$ 551,190.00
Fresno 6	$ 460,675.20	$ 460,675.20
Fresno 7	$ 1,893,958.80	$ 1,893,958.80
Other Costs	$ 3,000,000.00	$ 3,000,000.00
Total	$ 11,858,834.40	$ 11,147,257.20

Cost Estimate for Arcola WWTP Expansion with Gravity Collection and Step

Exhibit 10.1

Area	Phase 1	Phase 2	Phase 3	Total
Arcola Plant Upgrade	$ 3,000,000.00			$ 3,000,000.00
Fresno 1			$ 2,284,018.80	$ 2,284,018.80
Fresno 2			$ 299,310.00	$ 299,310.00
Fresno 3			$ 1,201,718.40	$ 1,201,718.40
Fresno 4		$ 1,456,386.00		$ 1,456,386.00
Fresno 5		$ 551,190.00		$ 551,190.00
Fresno 6		$ 460,675.20		$ 460,675.20
Fresno 7	$ 1,893,958.80			$ 1,893,958.80
Subtotal	$4,893,959	$2,468,251	$3,785,047	$11,147,257
Engineering Design	$489,396	$246,825	$378,505	$1,114,726
Surveying	$ 48,700.00	$ 87,500.00	$ 140,700.00	$276,900
Geotechnical	$112,561	$56,770	$87,056	$256,387
Construction Administration	$112,561	$56,770	$87,056	$256,387
Project Phasing Totals	$5,657,177	$2,916,116	$4,478,364	$13,051,657
*Existing Arcola SewerDebt	$ -	$ -	$ -	$ -
Total Amount to be Financed	$5,657,177	$2,916,116	$4,478,364	$13,051,657
Debt Service (SRF 20yr Loan @4.5%)				
Phase 1 Debt	($434,901.94)	($434,901.94)	($434,901.94)	($1,003,361.05)
Phase 2 Debt		($224,179.74)	($224,179.74)	
Phase 3 Debt			($344,279.36)	
Phase 4 Debt				
Yearly Combined Debt Service	($434,901.94)	($659,081.68)	($1,003,361.05)	($1,003,361.05)
No. of Connections	381	597	1072	1414
Monthly Sewer Cost/Connection	**$95.12**	**$92.00**	**$78.00**	**$59.13**

* For this analysis it is assumed that the existing City of Arcola sewer system has no remaining debt

Subarea- Fresno 1
Cost Estimate for Conventional Sanitary Sewer Collection System

Item	Description	Quantity	Unit	Unit Price	Total
1	6" Sanitary Sewer (0'-8')	5,192	LF	$ 15.00	$ 77,880.00
2	6" Sanitary Sewer (8'-10')	3,902	LF	$ 17.00	$ 66,334.00
3	6" Sanitary Sewer (10'-12')	3,117	LF	$ 20.00	$ 62,340.00
4	6" Sanitary Sewer (12'-14')	2,095	LF	$ 30.00	$ 62,850.00
5	6" Sanitary Sewer (14'-16')	403	LF	$ 35.00	$ 14,105.00
6	6" Sanitary Sewer (16'-18')	151	LF	$ 40.00	$ 6,040.00
7	6" Sanitary Sewer (18'+)	0	LF	$ 55.00	$ -
8	8" Sanitary Sewer (0'-8')	8242	LF	$ 20.00	$ 164,840.00
9	8" Sanitary Sewer (8'-10')	3844	LF	$ 22.00	$ 84,568.00
10	8" Sanitary Sewer (10'-12')	3664	LF	$ 28.00	$ 102,592.00
11	8" Sanitary Sewer (12'-14')	4091	LF	$ 35.00	$ 143,185.00
12	8" Sanitary Sewer (14'-16')	3105	LF	$ 40.00	$ 124,200.00
13	8" Sanitary Sewer (16'-18')	677	LF	$ 45.00	$ 30,465.00
14	8" Sanitary Sewer (18'+)	668	LF	$ 58.00	$ 38,744.00
15	10" Sanitary Sewer (0'-8')	0	LF	$ 28.00	$ -
16	10" Sanitary Sewer (8'-10')	0	LF	$ 30.00	$ -
17	10" Sanitary Sewer (10'-12')	0	LF	$ 35.00	$ -
18	10" Sanitary Sewer (12'-14')	0	LF	$ 43.00	$ -
19	10" Sanitary Sewer (14'-16')	223	LF	$ 48.00	$ 10,704.00
20	10" Sanitary Sewer (16'-18')	806	LF	$ 53.00	$ 42,718.00
21	10" Sanitary Sewer (18'+)	671	LF	$ 64.00	$ 42,944.00
22	12" Sanitary Sewer (0'-8')	0	LF	$ 33.00	$ -
23	12" Sanitary Sewer (8'-10')	0	LF	$ 35.00	$ -
24	12" Sanitary Sewer (10'-12')	0	LF	$ 42.00	$ -
25	12" Sanitary Sewer (12'-14')	0	LF	$ 50.00	$ -
26	12" Sanitary Sewer (14'-16')	0	LF	$ 55.00	$ -
27	12" Sanitary Sewer (16'-18')	0	LF	$ 60.00	$ -
28	12" Sanitary Sewer (18'+)	1000	LF	$ 70.00	$ 70,000.00
29	Lift Station #1	1	LS	$ 120,000.00	$ 120,000.00
30	Lift Station #2		LS	$ 120,000.00	$ -
31	Lift Station #3		LS	$ 120,000.00	$ -
32	Lift Station #4		LS	$ 120,000.00	$ -
33	Lift Station #5		LS	$ 120,000.00	$ -
34	Lift Station #6		LS	$ 100,000.00	$ -
35	4" Force Main		LF	$ 15.00	$ -
36	6" Force Main	2800	LF	$ 18.00	$ 50,400.00
37	8" Force Main		LF	$ 22.00	$ -
38	75 Feet of 4" Service Lead	320	EA	$ 1,000.00	$ 320,000.00
39	Manhole 0'-8' Depth	103	EA	$ 1,600.00	$ 164,800.00
40	Extra Depth on Manholes	258	LF	$ 100.00	$ 25,800.00
41	Trench Safety System	38,920	LF	$ 2.00	$ 77,840.00
42	STEP for 8		LS	$ 31,700.00	$ -
	Collection System Subtotal				$ 1,903,349.00
	Contingencies (20%)				$ 380,669.80
	Total Fresno 1				**$ 2,284,018.80**

Sub Area- Fresno 2

STEP Collection System

Item	Description	Quantity	Unit	Unit Price	Total
1	2" PVC Collection Line	5,900	LF	$ 4.00	$ 23,600.00
2	3" PVC Collection Line	1,600	LF	$ 4.50	$ 7,200.00
3	4" PVC Collection Line	1,300	LF	$ 5.00	$ 6,500.00
4	Tanks Pumps and Controls	64	LF	$ 3,100.00	$ 198,400.00
5	Cleanouts	8	LF	$ 75.00	$ 600.00
6	Ball Valves	7	LF	$ 75.00	$ 525.00
7	Service Connections	63	LF	$ 200.00	$ 12,600.00
	Collection System Subtotal				$ 249,425.00
	Contingencies (20%)				$ 49,885.00
	Total Fresno 2				**$ 299,310.00**

Subarea- Fresno 3
Cost Estimate for Conventional Sanitary Sewer Collection System

Item	Description	Quantity	Unit	Unit Price	Total
1	6" Sanitary Sewer (0'-8')	4,177	LF	$ 15.00	$ 62,655.00
2	6" Sanitary Sewer (8'-10')	1,369	LF	$ 17.00	$ 23,273.00
3	6" Sanitary Sewer (10'-12')	615	LF	$ 20.00	$ 12,300.00
4	6" Sanitary Sewer (12'-14')	377	LF	$ 30.00	$ 11,310.00
5	6" Sanitary Sewer (14'-16')	262	LF	$ 35.00	$ 9,170.00
6	6" Sanitary Sewer (16'-18')	0	LF	$ 40.00	$ -
7	6" Sanitary Sewer (18'+)	0	LF	$ 55.00	
8	8" Sanitary Sewer (0'-8')	3655	LF	$ 20.00	$ 73,100.00
9	8" Sanitary Sewer (8'-10')	2009	LF	$ 22.00	$ 44,198.00
10	8" Sanitary Sewer (10'-12')	1500	LF	$ 28.00	$ 42,000.00
11	8" Sanitary Sewer (12'-14')	1364	LF	$ 35.00	$ 47,740.00
12	8" Sanitary Sewer (14'-16')	909	LF	$ 40.00	$ 36,360.00
13	8" Sanitary Sewer (16'-18')	64	LF	$ 45.00	$ 2,880.00
14	8" Sanitary Sewer (18'+')	0	LF	$ 58.00	$ -
15	10" Sanitary Sewer (0'-8')	0	LF	$ 28.00	$ -
16	10" Sanitary Sewer (8'-10')	0	LF	$ 30.00	$ -
17	10" Sanitary Sewer (10'-12')	0	LF	$ 35.00	$ -
18	10" Sanitary Sewer (12'-14')	0	LF	$ 43.00	$ -
19	10" Sanitary Sewer (14'-16')	606	LF	$ 48.00	$ 29,088.00
20	10" Sanitary Sewer (16'-18')	1212	LF	$ 53.00	$ 64,236.00
21	10" Sanitary Sewer (18'+)	1482	LF	$ 64.00	$ 94,848.00
22	12" Sanitary Sewer (0'-8')	0	LF	$ 33.00	$ -
23	12" Sanitary Sewer (8'-10')	0	LF	$ 35.00	$ -
24	12" Sanitary Sewer (10'-12')	0	LF	$ 42.00	$ -
25	12" Sanitary Sewer (12'-14')	0	LF	$ 50.00	$ -
26	12" Sanitary Sewer (14'-16')	0	LF	$ 55.00	$ -
27	12" Sanitary Sewer (16'-18')	0	LF	$ 60.00	$ -
28	12" Sanitary Sewer (18'+)	0	LF	$ 70.00	$ -
29	Lift Station #1		LS	$ 120,000.00	$ -
30	Lift Station #2		LS	$ 120,000.00	$ -
31	Lift Station #3	1	LS	$ 120,000.00	$ 120,000.00
32	Lift Station #4		LS	$ 120,000.00	$ -
33	Lift Station #5		LS	$ 120,000.00	$ -
34	Lift Station #6		LS	$ 100,000.00	$ -
35	4" Force Main		LF	$ 15.00	$ -
36	6" Force Main	4100	LF	$ 18.00	$ 73,800.00
37	8" Force Main		LF	$ 22.00	$ -
38	75 Feet of 4" Service Lead	127	EA	$ 1,000.00	$ 127,000.00
39	Manhole 0'-8' Depth	48	EA	$ 1,600.00	$ 76,800.00
40	Extra Depth on Manholes	153	LF	$ 100.00	$ 15,300.00
41	Trench Safety System	17,687	LF	$ 2.00	$ 35,374.00
42	STEP for 8		LS	$ 31,700.00	$ -
	Collection System Subtotal				$ 1,001,432.00
	Contingencies (20%)				$ 200,286.40
	Total Fresno 3				**$ 1,201,718.40**

Subarea- Fresno 4
Cost Estimate for Step/Conventional Sanitary Sewer Collection System

Item	Description	Quantity	Unit	Unit Price	Total
1	6" Sanitary Sewer (0'-8')	1,615	LF	$ 15.00	$ 24,225.00
2	6" Sanitary Sewer (8'-10')	35	LF	$ 17.00	$ 595.00
3	6" Sanitary Sewer (10'-12')	0	LF	$ 20.00	$ -
4	6" Sanitary Sewer (12'-14')	0	LF	$ 30.00	$ -
5	6" Sanitary Sewer (14'-16')	0	LF	$ 35.00	$ -
6	6" Sanitary Sewer (16'-18')	0	LF	$ 40.00	$ -
7	6" Sanitary Sewer (18'+)	0	LF	$ 55.00	
8	8" Sanitary Sewer (0'-8')	5455	LF	$ 20.00	$ 109,100.00
9	8" Sanitary Sewer (8'-10')	2500	LF	$ 22.00	$ 55,000.00
10	8" Sanitary Sewer (10'-12')	1600	LF	$ 28.00	$ 44,800.00
11	8" Sanitary Sewer (12'-14')	1364	LF	$ 35.00	$ 47,740.00
12	8" Sanitary Sewer (14'-16')	1109	LF	$ 40.00	$ 44,360.00
13	8" Sanitary Sewer (16'-18')	455	LF	$ 45.00	$ 20,475.00
14	8" Sanitary Sewer (18'+)	618	LF	$ 58.00	$ 35,844.00
15	10" Sanitary Sewer (0'-8')	0	LF	$ 28.00	$ -
16	10" Sanitary Sewer (8'-10')	0	LF	$ 30.00	$ -
17	10" Sanitary Sewer (10'-12')	0	LF	$ 35.00	$ -
18	10" Sanitary Sewer (12'-14')	0	LF	$ 43.00	$ -
19	10" Sanitary Sewer (14'-16')	0	LF	$ 48.00	$ -
20	10" Sanitary Sewer (16'-18')	0	LF	$ 53.00	$ -
21	10" Sanitary Sewer (18'+)	0	LF	$ 64.00	$ -
22	12" Sanitary Sewer (0'-8')	0	LF	$ 33.00	$ -
23	12" Sanitary Sewer (8'-10')	0	LF	$ 35.00	$ -
24	12" Sanitary Sewer (10'-12')	0	LF	$ 42.00	$ -
25	12" Sanitary Sewer (12'-14')	0	LF	$ 50.00	$ -
26	12" Sanitary Sewer (14'-16')	46	LF	$ 55.00	$ 2,530.00
27	12" Sanitary Sewer (16'-18')	769	LF	$ 60.00	$ 46,140.00
28	12" Sanitary Sewer (18'+)	1735	LF	$ 70.00	$ 121,450.00
29	15" Sanitary Sewer (0'-8')	1316	LF	$ 54.00	$ 71,064.00
30	15" Sanitary Sewer (8'-10')	384	LF	$ 57.00	$ 21,888.00
31	15" Sanitary Sewer (10'-12')	505	LF	$ 62.00	$ 31,310.00
32	15" Sanitary Sewer (12'-14')	445	LF	$ 70.00	$ 31,150.00
33	15" Sanitary Sewer (14'-16')	526	LF	$ 75.00	$ 39,450.00
34	15" Sanitary Sewer (16'-18')	774	LF	$ 80.00	$ 61,920.00
35	15" Sanitary Sewer (18'+)	0	LF	$ 90.00	$ -
36	18" Sanitary Sewer (0'-8')	0	LF	$ 70.00	$ -
37	18" Sanitary Sewer (8'-10')	0	LF	$ 75.00	$ -
38	18" Sanitary Sewer (10'-12')	0	LF	$ 85.00	$ -
39	18" Sanitary Sewer (12'-14')	0	LF	$ 90.00	$ -
40	18" Sanitary Sewer (14'-16')	0	LF	$ 95.00	$ -
41	18" Sanitary Sewer (16'-18')	0	LF	$ 100.00	$ -
42	18" Sanitary Sewer (18'+)	0	LF	$ 110.00	$ -
43	Lift Station #1		LS	$ 120,000.00	$ -
44	Lift Station #2	1	LS	$ 120,000.00	$ 120,000.00
45	Lift Station #3		LS	$ 120,000.00	$ -
46	Lift Station #4		LS	$ 120,000.00	$ -
47	Lift Station #5		LS	$ 120,000.00	$ -
48	Lift Station #6		LS	$ 100,000.00	$ -
49	4" Force Main		LF	$ 15.00	$ -
50	6" Force Main		LF	$ 18.00	$ -
51	8" Force Main		LF	$ 22.00	$ -
52	75 Feet of 4" Service Lead	120	EA	$ 1,000.00	$ 120,000.00
53	Manhole 0'-8' Depth	49	EA	$ 1,600.00	$ 78,400.00
54	Extra Depth on Manholes	138	LF	$ 100.00	$ 13,800.00
55	Trench Safety System	20,107	LF	$ 2.00	$ 40,214.00
56	2" PVC Collection Line	2,200	LF	$ 4.00	$ 8,800.00
57	3" PVC Collection Line	0	LF	$ 4.50	$ -
58	4" PVC Collection Line	0	LF	$ 5.00	$ -
59	Tanks Pumps and Controls	7	LF	$ 3,100.00	$ 21,700.00
60	Cleanouts	2	LF	$ 75.00	$ 150.00
61	Ball Valves	2	LF	$ 75.00	$ 150.00
62	Service Lines	7	LF	$ 200.00	$ 1,400.00
	Collection System Subtotal				$ 1,213,655.00
	Contingencies (20%)				$ 242,731.00
	Total Fresno 4				**$ 1,456,386.00**

Subarea- Fresno 5
STEP Collection System for Palm Road

Item	Description	Quantity	Unit	Unit Price	Total
1	2" PVC Collection Line	1,400	LF	$ 4.00	$ 5,600.00
2	3" PVC Collection Line	5,400	LF	$ 4.50	$ 24,300.00
3	4" PVC Collection Line	4,500	LF	$ 5.00	$ 22,500.00
4	Tanks Pumps and Controls	108	LF	$ 3,100.00	$ 334,800.00
5	Cleanouts	6	LF	$ 75.00	$ 450.00
6	Ball Valves	5	LF	$ 75.00	$ 375.00
7	Service Lines (50')	111	LF	$ 200.00	$ 22,200.00
	Collection System Subtotal				$ 410,225.00

Subarea- Fresno 5
STEP Collection System for Arcola-Fresno

Item	Description	Quantity	Unit	Unit Price	Total
1	2" PVC Collection Line	2,300	LF	$ 4.00	$ 9,200.00
2	3" PVC Collection Line	0	LF	$ 4.50	$ -
3	4" PVC Collection Line	0	LF	$ 5.00	$ -
4	Tanks Pumps and Controls	12	LF	$ 3,100.00	$ 37,200.00
5	Cleanouts	2	LF	$ 75.00	$ 150.00
6	Ball Valves	2	LF	$ 75.00	$ 150.00
7	Service lines (50')	12	LF	$ 200.00	$ 2,400.00
	STEP System Subtotal for Arcola Fresno Road				$ 49,100.00
	STEP System Subtotal for Palm Road				$ 410,225.00
	Contingencies (20%)				$ 91,865.00
	Total Fresno 5				**$ 551,190.00**

Subarea- Fresno 6
Cost Estimate for Conventional Sanitary Sewer Collection System

Item	Description	Quantity	Unit	Unit Price	Total
1	6" Sanitary Sewer (0'-8')	1,563	LF	$ 15.00	$ 23,445.00
2	6" Sanitary Sewer (8'-10')	1,231	LF	$ 17.00	$ 20,927.00
3	6" Sanitary Sewer (10'-12')	806	LF	$ 20.00	$ 16,120.00
4	6" Sanitary Sewer (12'-14')	0	LF	$ 30.00	$ -
5	6" Sanitary Sewer (14'-16')	0	LF	$ 35.00	$ -
6	6" Sanitary Sewer (16'-18')	0	LF	$ 40.00	$ -
7	6" Sanitary Sewer (18'+)	0	LF	$ 55.00	
8	8" Sanitary Sewer (0'-8')	909	LF	$ 20.00	$ 18,180.00
9	8" Sanitary Sewer (8'-10')	455	LF	$ 22.00	$ 10,010.00
10	8" Sanitary Sewer (10'-12')	455	LF	$ 28.00	$ 12,740.00
11	8" Sanitary Sewer (12'-14')	455	LF	$ 35.00	$ 15,925.00
12	8" Sanitary Sewer (14'-16')	455	LF	$ 40.00	$ 18,200.00
13	8" Sanitary Sewer (16'-18')	455	LF	$ 45.00	$ 20,475.00
14	8" Sanitary Sewer (18'+')	218	LF	$ 58.00	$ 12,644.00
15	10" Sanitary Sewer (0'-8')	0	LF	$ 28.00	$ -
16	10" Sanitary Sewer (8'-10')	0	LF	$ 30.00	$ -
17	10" Sanitary Sewer (10'-12')	0	LF	$ 35.00	$ -
18	10" Sanitary Sewer (12'-14')	0	LF	$ 43.00	$ -
19	10" Sanitary Sewer (14'-16')	0	LF	$ 48.00	$ -
20	10" Sanitary Sewer (16'-18')	0	LF	$ 53.00	$ -
21	10" Sanitary Sewer (18'+)	0	LF	$ 64.00	$ -
22	12" Sanitary Sewer (0'-8')	0	LF	$ 33.00	$ -
23	12" Sanitary Sewer (8'-10')	0	LF	$ 35.00	$ -
24	12" Sanitary Sewer (10'-12')	0	LF	$ 42.00	$ -
25	12" Sanitary Sewer (12'-14')	0	LF	$ 50.00	$ -
26	12" Sanitary Sewer (14'-16')	0	LF	$ 55.00	$ -
27	12" Sanitary Sewer (16'-18')	0	LF	$ 60.00	$ -
28	12" Sanitary Sewer (18'+)	0	LF	$ 70.00	$ -
29	Lift Station #1		LS	$ 120,000.00	$ -
30	Lift Station #2		LS	$ 120,000.00	$ -
31	Lift Station #3		LS	$ 120,000.00	$ -
32	Lift Station #4	1	LS	$ 120,000.00	$ 120,000.00
33	Lift Station #5		LS	$ 120,000.00	$ -
34	Lift Station #6		LS	$ 100,000.00	$ -
35	4" Force Main		LF	$ 15.00	$ -
36	6" Force Main		LF	$ 18.00	$ -
37	8" Force Main		LF	$ 22.00	$ -
38	75 Feet of 4" Service Lead	42	EA	$ 1,000.00	$ 42,000.00
39	Manhole 0'-8' Depth	21	EA	$ 1,600.00	$ 33,600.00
40	Extra Depth on Manholes	39	LF	$ 100.00	$ 3,900.00
41	Trench Safety System	7,865	LF	$ 2.00	$ 15,730.00
42	STEP for 8		LS	$ 31,700.00	$ -
	Collection System Subtotal				$ 383,896.00
	Contingencies (20%)				$ 76,779.20
	Total Fresno 6				**$ 460,675.20**

Subarea- Fresno 7
Cost Estimate for Conventional Sanitary Sewer Collection System

Item	Description	Quantity	Unit	Unit Price	Total
1	6" Sanitary Sewer (0'-8')	3,262	LF	$ 15.00	$ 48,930.00
2	6" Sanitary Sewer (8'-10')	912	LF	$ 17.00	$ 15,504.00
3	6" Sanitary Sewer (10'-12')	277	LF	$ 20.00	$ 5,540.00
4	6" Sanitary Sewer (12'-14')	0	LF	$ 30.00	$ -
5	6" Sanitary Sewer (14'-16')	0	LF	$ 35.00	$ -
6	6" Sanitary Sewer (16'-18')	0	LF	$ 40.00	$ -
7	6" Sanitary Sewer (18'+)	0	LF	$ 55.00	
8	8" Sanitary Sewer (0'-8')	5455	LF	$ 20.00	$ 109,100.00
9	8" Sanitary Sewer (8'-10')	1902	LF	$ 22.00	$ 41,844.00
10	8" Sanitary Sewer (10'-12')	2318	LF	$ 28.00	$ 64,904.00
11	8" Sanitary Sewer (12'-14')	2727	LF	$ 35.00	$ 95,445.00
12	8" Sanitary Sewer (14'-16')	2323	LF	$ 40.00	$ 92,920.00
13	8" Sanitary Sewer (16'-18')	1507	LF	$ 45.00	$ 67,815.00
14	8" Sanitary Sewer (18'+')	1268	LF	$ 58.00	$ 73,544.00
15	10" Sanitary Sewer (0'-8')	0	LF	$ 28.00	$ -
16	10" Sanitary Sewer (8'-10')	0	LF	$ 30.00	$ -
17	10" Sanitary Sewer (10'-12')	0	LF	$ 35.00	$ -
18	10" Sanitary Sewer (12'-14')	0	LF	$ 43.00	$ -
19	10" Sanitary Sewer (14'-16')	0	LF	$ 48.00	$ -
20	10" Sanitary Sewer (16'-18')	0	LF	$ 53.00	$ -
21	10" Sanitary Sewer (18'+)	0	LF	$ 64.00	$ -
22	12" Sanitary Sewer (0'-8')	0	LF	$ 33.00	$ -
23	12" Sanitary Sewer (8'-10')	0	LF	$ 35.00	$ -
24	12" Sanitary Sewer (10'-12')	0	LF	$ 42.00	$ -
25	12" Sanitary Sewer (12'-14')	0	LF	$ 50.00	$ -
26	12" Sanitary Sewer (14'-16')	0	LF	$ 55.00	$ -
27	12" Sanitary Sewer (16'-18')	0	LF	$ 60.00	$ -
28	12" Sanitary Sewer (18'+)	0	LF	$ 70.00	$ -
29	15" Sanitary Sewer (0'-8')	0	LF	$ 54.00	$ -
30	15" Sanitary Sewer (8'-10')	0	LF	$ 57.00	$ -
31	15" Sanitary Sewer (10'-12')	0	LF	$ 62.00	$ -
32	15" Sanitary Sewer (12'-14')	0	LF	$ 70.00	$ -
33	15" Sanitary Sewer (14'-16')	0	LF	$ 75.00	$ -
34	15" Sanitary Sewer (16'-18')	0	LF	$ 80.00	$ -
35	15" Sanitary Sewer (18'+)	0	LF	$ 90.00	$ -
36	18" Sanitary Sewer (0'-8')	0	LF	$ 70.00	$ -
37	18" Sanitary Sewer (8'-10')	0	LF	$ 75.00	$ -
38	18" Sanitary Sewer (10'-12')	0	LF	$ 85.00	$ -
39	18" Sanitary Sewer (12'-14')	0	LF	$ 90.00	$ -
40	18" Sanitary Sewer (14'-16')	179	LF	$ 95.00	$ 17,005.00
41	18" Sanitary Sewer (16'-18')	1053	LF	$ 100.00	$ 105,300.00
42	18" Sanitary Sewer (18'+)	1168	LF	$ 110.00	$ 128,480.00
43	Lift Station #1		LS	$ 120,000.00	$ -
44	Lift Station #2		LS	$ 120,000.00	$ -
45	Lift Station #3		LS	$ 120,000.00	$ -
46	Lift Station #4		LS	$ 120,000.00	$ -
47	Lift Station #5	1	LS	$ 120,000.00	$ 120,000.00
48	Lift Station #6		LS	$ 100,000.00	$ -
49	4" Force Main		LF	$ 15.00	$ -
50	6" Force Main		LF	$ 18.00	$ -
51	8" Force Main		LF	$ 22.00	$ -
52	12" Force Main	6850	LF	$ 35.00	$ 239,750.00
53	75 Feet of 4" Service Lead	185	EA	$ 1,000.00	$ 185,000.00
54	Manhole 0'-8' Depth	64	EA	$ 1,600.00	$ 102,400.00
55	Extra Depth on Manholes	210	LF	$ 100.00	$ 21,000.00
56	Trench Safety System	21,909	LF	$ 2.00	$ 43,818.00
57	STEP for 8		LS	$ 31,700.00	$ -
	Collection System Subtotal				$ 1,578,299.00
	Contingencies (20%)				$ 315,659.80
	Total Fresno 7				**$ 1,893,958.80**

Cost Estimate for Arcola Plant Upgrade

Item	Description	Quantity	Unit	Unit Price	Total
1	Treatment Plant Upgrade 1.0 mgd	1	EA	$ 2,500,000.00	$ 2,500,000.00
	Contingencies (20%)				$ 500,000.00
	Total Fresno 2				**$ 3,000,000.00**

Cost Estimate for Arcola Wastewater Treatment Plant Expansion with Gravity Collection

Exhibit 10.2

Area	Phase 1	Phase 2	Phase 3	Total
Arcola Plant Upgrade	$ 3,000,000.00			$ 3,000,000.00
Fresno 1			$ 2,284,018.80	$ 2,284,018.80
Fresno 2			$ 548,948.40	$ 548,948.40
Fresno 3			$ 1,201,718.40	$ 1,201,718.40
Fresno 4		$ 1,446,171.60		$ 1,446,171.60
Fresno 5		$ 1,023,343.20		$ 1,023,343.20
Fresno 6		$ 460,675.20		$ 460,675.20
Fresno 7	$ 1,893,958.80			$ 1,893,958.80
Subtotal	$4,893,959	$2,930,190	$4,034,686	$ 11,858,834.40
Engineering Design	$489,396	$293,019	$403,469	$1,185,883
Surveying	$48,700	$88,100	$140,500	$277,300
Geotechnical	$112,561	$67,394	$92,798	$272,753
Construction Administration	$112,561	$67,394	$92,798	$272,753
Project Phasing Totals	$5,657,177	$3,446,098	$4,764,250	$13,867,524
*Existing Arcola Sewer Debt	$ -	$ -	$ -	$ -
Total Amount to be Financed	$5,657,177	$3,446,098	$4,764,250	$13,867,524
Debt Service (SRF 20yr Loan @4.5%)				
Phase 1 Debt	($473,388.76)	($434,901.94)	($434,901.94)	($1,066,081.79)
Phase 2 Debt		($264,922.71)	($264,922.71)	
Phase 3 Debt			($366,257.15)	
Phase 4 Debt				
Yearly Combined Debt Service	($473,388.76)	($699,824.65)	($1,066,081.79)	($1,066,081.79)
No. of Connections	381	597	1072	1414
Monthly Sewer Cost/Connection	**$103.54**	**$97.69**	**$82.87**	**$62.83**

* For this analysis it is assumed that the existing City of Arcola sewer system has no remaining debt

Subarea- Fresno 1
Cost Estimate for Conventional Sanitary Sewer Collection System

Item	Description	Quantity	Unit	Unit Price	Total
1	6" Sanitary Sewer (0'-8')	5,192	LF	$ 15.00	$ 77,880.00
2	6" Sanitary Sewer (8'-10')	3,902	LF	$ 17.00	$ 66,334.00
3	6" Sanitary Sewer (10'-12')	3,117	LF	$ 20.00	$ 62,340.00
4	6" Sanitary Sewer (12'-14')	2,095	LF	$ 30.00	$ 62,850.00
5	6" Sanitary Sewer (14'-16')	403	LF	$ 35.00	$ 14,105.00
6	6" Sanitary Sewer (16'-18')	151	LF	$ 40.00	$ 6,040.00
7	6" Sanitary Sewer (18'+)	0	LF	$ 55.00	$ -
8	8" Sanitary Sewer (0'-8')	8242	LF	$ 20.00	$ 164,840.00
9	8" Sanitary Sewer (8'-10')	3844	LF	$ 22.00	$ 84,568.00
10	8" Sanitary Sewer (10'-12')	3664	LF	$ 28.00	$ 102,592.00
11	8" Sanitary Sewer (12'-14')	4091	LF	$ 35.00	$ 143,185.00
12	8" Sanitary Sewer (14'-16')	3105	LF	$ 40.00	$ 124,200.00
13	8" Sanitary Sewer (16'-18')	677	LF	$ 45.00	$ 30,465.00
14	8" Sanitary Sewer (18'+')	668	LF	$ 58.00	$ 38,744.00
15	10" Sanitary Sewer (0'-8')	0	LF	$ 28.00	$ -
16	10" Sanitary Sewer (8'-10')	0	LF	$ 30.00	$ -
17	10" Sanitary Sewer (10'-12')	0	LF	$ 35.00	$ -
18	10" Sanitary Sewer (12'-14')	0	LF	$ 43.00	$ -
19	10" Sanitary Sewer (14'-16')	223	LF	$ 48.00	$ 10,704.00
20	10" Sanitary Sewer (16'-18')	806	LF	$ 53.00	$ 42,718.00
21	10" Sanitary Sewer (18'+)	671	LF	$ 64.00	$ 42,944.00
22	12" Sanitary Sewer (0'-8')	0	LF	$ 33.00	$ -
23	12" Sanitary Sewer (8'-10')	0	LF	$ 35.00	$ -
24	12" Sanitary Sewer (10'-12')	0	LF	$ 42.00	$ -
25	12" Sanitary Sewer (12'-14')	0	LF	$ 50.00	$ -
26	12" Sanitary Sewer (14'-16')	0	LF	$ 55.00	$ -
27	12" Sanitary Sewer (16'-18')	0	LF	$ 60.00	$ -
28	12" Sanitary Sewer (18'+)	1000	LF	$ 70.00	$ 70,000.00
29	Lift Station #1	1	LS	$ 120,000.00	$ 120,000.00
30	Lift Station #2		LS	$ 120,000.00	$ -
31	Lift Station #3		LS	$ 120,000.00	$ -
32	Lift Station #4		LS	$ 120,000.00	$ -
33	Lift Station #5		LS	$ 120,000.00	$ -
34	Lift Station #6		LS	$ 100,000.00	$ -
35	4" Force Main		LF	$ 15.00	$ -
36	6" Force Main	2800	LF	$ 18.00	$ 50,400.00
37	8" Force Main		LF	$ 22.00	$ -
38	75 Feet of 4" Service Lead	320	EA	$ 1,000.00	$ 320,000.00
39	Manhole 0'-8' Depth	103	EA	$ 1,600.00	$ 164,800.00
40	Extra Depth on Manholes	258	LF	$ 100.00	$ 25,800.00
41	Trench Safety System	38,920	LF	$ 2.00	$ 77,840.00
42	STEP for 8		LS	$ 31,700.00	$ -
	Collection System Subtotal				$ 1,903,349.00
	Contingencies (20%)				$ 380,669.80
	Total Fresno 1				**$ 2,284,018.80**

Subarea- Fresno 2
Cost Estimate for Conventional Sanitary Sewer Collection System

Item	Description	Quantity	Unit	Unit Price	Total
1	6" Sanitary Sewer (0'-8')	2,731	LF	$ 15.00	$ 40,965.00
2	6" Sanitary Sewer (8'-10')	219	LF	$ 17.00	$ 3,723.00
3	6" Sanitary Sewer (10'-12')	0	LF	$ 20.00	$ -
4	6" Sanitary Sewer (12'-14')	0	LF	$ 30.00	$ -
5	6" Sanitary Sewer (14'-16')	0	LF	$ 35.00	$ -
6	6" Sanitary Sewer (16'-18')	0	LF	$ 40.00	$ -
7	6" Sanitary Sewer (18'+)	0	LF	$ 55.00	
8	8" Sanitary Sewer (0'-8')	909	LF	$ 20.00	$ 18,180.00
9	8" Sanitary Sewer (8'-10')	41	LF	$ 22.00	$ 902.00
10	8" Sanitary Sewer (10'-12')	0	LF	$ 28.00	$ -
11	8" Sanitary Sewer (12'-14')	0	LF	$ 35.00	$ -
12	8" Sanitary Sewer (14'-16')	0	LF	$ 40.00	$ -
13	8" Sanitary Sewer (16'-18')	0	LF	$ 45.00	$ -
14	8" Sanitary Sewer (18'+')	0	LF	$ 58.00	$ -
15	10" Sanitary Sewer (0'-8')	0	LF	$ 28.00	$ -
16	10" Sanitary Sewer (8'-10')	552	LF	$ 30.00	$ 16,560.00
17	10" Sanitary Sewer (10'-12')	606	LF	$ 35.00	$ 21,210.00
18	10" Sanitary Sewer (12'-14')	42	LF	$ 43.00	$ 1,806.00
19	10" Sanitary Sewer (14'-16')	0	LF	$ 48.00	$ -
20	10" Sanitary Sewer (16'-18')	0	LF	$ 53.00	$ -
21	10" Sanitary Sewer (18'+)	0	LF	$ 64.00	$ -
22	12" Sanitary Sewer (0'-8')	0	LF	$ 33.00	$ -
23	12" Sanitary Sewer (8'-10')	0	LF	$ 35.00	$ -
24	12" Sanitary Sewer (10'-12')	0	LF	$ 42.00	$ -
25	12" Sanitary Sewer (12'-14')	715	LF	$ 50.00	$ 35,750.00
26	12" Sanitary Sewer (14'-16')	769	LF	$ 55.00	$ 42,295.00
27	12" Sanitary Sewer (16'-18')	769	LF	$ 60.00	$ 46,140.00
28	12" Sanitary Sewer (18'+)	1546	LF	$ 70.00	$ 108,220.00
29	Lift Station #1		LS	$ 120,000.00	$ -
30	Lift Station #2		LS	$ 120,000.00	$ -
31	Lift Station #3		LS	$ 120,000.00	$ -
32	Lift Station #4		LS	$ 120,000.00	$ -
33	Lift Station #5		LS	$ 120,000.00	$ -
34	Lift Station #6		LS	$ 100,000.00	$ -
35	4" Force Main		LF	$ 15.00	$ -
36	6" Force Main		LF	$ 18.00	$ -
37	8" Force Main		LF	$ 22.00	$ -
38	75 Feet of 4" Service Lead	63	EA	$ 1,000.00	$ 63,000.00
39	Manhole 0'-8' Depth	21	EA	$ 1,600.00	$ 33,600.00
40	Extra Depth on Manholes	93	LF	$ 100.00	$ 9,300.00
41	Trench Safety System	7,903	LF	$ 2.00	$ 15,806.00
42	STEP for 8		LS	$ 31,700.00	$ -
	Collection System Subtotal				$ 457,457.00
	Contingencies (20%)				$ 91,491.40
	Total Fresno 2				**$ 548,948.40**

Subarea- Fresno 3
Cost Estimate for Conventional Sanitary Sewer Collection System

Item	Description	Quantity	Unit	Unit Price	Total
1	6" Sanitary Sewer (0'-8')	4,177	LF	$ 15.00	$ 62,655.00
2	6" Sanitary Sewer (8'-10')	1,369	LF	$ 17.00	$ 23,273.00
3	6" Sanitary Sewer (10'-12')	615	LF	$ 20.00	$ 12,300.00
4	6" Sanitary Sewer (12'-14')	377	LF	$ 30.00	$ 11,310.00
5	6" Sanitary Sewer (14'-16')	262	LF	$ 35.00	$ 9,170.00
6	6" Sanitary Sewer (16'-18')	0	LF	$ 40.00	$ -
7	6" Sanitary Sewer (18'+)	0	LF	$ 55.00	
8	8" Sanitary Sewer (0'-8')	3655	LF	$ 20.00	$ 73,100.00
9	8" Sanitary Sewer (8'-10')	2009	LF	$ 22.00	$ 44,198.00
10	8" Sanitary Sewer (10'-12')	1500	LF	$ 28.00	$ 42,000.00
11	8" Sanitary Sewer (12'-14')	1364	LF	$ 35.00	$ 47,740.00
12	8" Sanitary Sewer (14'-16')	909	LF	$ 40.00	$ 36,360.00
13	8" Sanitary Sewer (16'-18')	64	LF	$ 45.00	$ 2,880.00
14	8" Sanitary Sewer (18'+')	0	LF	$ 58.00	$ -
15	10" Sanitary Sewer (0'-8')	0	LF	$ 28.00	$ -
16	10" Sanitary Sewer (8'-10')	0	LF	$ 30.00	$ -
17	10" Sanitary Sewer (10'-12')	0	LF	$ 35.00	$ -
18	10" Sanitary Sewer (12'-14')	0	LF	$ 43.00	$ -
19	10" Sanitary Sewer (14'-16')	606	LF	$ 48.00	$ 29,088.00
20	10" Sanitary Sewer (16'-18')	1212	LF	$ 53.00	$ 64,236.00
21	10" Sanitary Sewer (18'+)	1482	LF	$ 64.00	$ 94,848.00
22	12" Sanitary Sewer (0'-8')	0	LF	$ 33.00	$ -
23	12" Sanitary Sewer (8'-10')	0	LF	$ 35.00	$ -
24	12" Sanitary Sewer (10'-12')	0	LF	$ 42.00	$ -
25	12" Sanitary Sewer (12'-14')	0	LF	$ 50.00	$ -
26	12" Sanitary Sewer (14'-16')	0	LF	$ 55.00	$ -
27	12" Sanitary Sewer (16'-18')	0	LF	$ 60.00	$ -
28	12" Sanitary Sewer (18'+)	0	LF	$ 70.00	$ -
29	Lift Station #1		LS	$ 120,000.00	$ -
30	Lift Station #2		LS	$ 120,000.00	$ -
31	Lift Station #3	1	LS	$ 120,000.00	$ 120,000.00
32	Lift Station #4		LS	$ 120,000.00	$ -
33	Lift Station #5		LS	$ 120,000.00	$ -
34	Lift Station #6		LS	$ 100,000.00	$ -
35	4" Force Main		LF	$ 15.00	$ -
36	6" Force Main	4100	LF	$ 18.00	$ 73,800.00
37	8" Force Main		LF	$ 22.00	$ -
38	75 Feet of 4" Service Lead	127	EA	$ 1,000.00	$ 127,000.00
39	Manhole 0'-8' Depth	48	EA	$ 1,600.00	$ 76,800.00
40	Extra Depth on Manholes	153	LF	$ 100.00	$ 15,300.00
41	Trench Safety System	17,687	LF	$ 2.00	$ 35,374.00
42	STEP for 8		LS	$ 31,700.00	$ -
	Collection System Subtotal				$ 1,001,432.00
	Contingencies (20%)				$ 200,286.40
	Total Fresno 3				**$ 1,201,718.40**

Subarea- Fresno 4
Cost Estimate for Conventional Sanitary Sewer Collection System

Item	Description	Quantity	Unit	Unit Price	Total
1	6" Sanitary Sewer (0'-8')	1,215	LF	$ 15.00	$ 18,225.00
2	6" Sanitary Sewer (8'-10')	35	LF	$ 17.00	$ 595.00
3	6" Sanitary Sewer (10'-12')	0	LF	$ 20.00	$ -
4	6" Sanitary Sewer (12'-14')	0	LF	$ 30.00	$ -
5	6" Sanitary Sewer (14'-16')	0	LF	$ 35.00	$ -
6	6" Sanitary Sewer (16'-18')	0	LF	$ 40.00	$ -
7	6" Sanitary Sewer (18'+)	0	LF	$ 55.00	
8	8" Sanitary Sewer (0'-8')	6364	LF	$ 20.00	$ 127,280.00
9	8" Sanitary Sewer (8'-10')	2791	LF	$ 22.00	$ 61,402.00
10	8" Sanitary Sewer (10'-12')	1600	LF	$ 28.00	$ 44,800.00
11	8" Sanitary Sewer (12'-14')	1364	LF	$ 35.00	$ 47,740.00
12	8" Sanitary Sewer (14'-16')	1109	LF	$ 40.00	$ 44,360.00
13	8" Sanitary Sewer (16'-18')	455	LF	$ 45.00	$ 20,475.00
14	8" Sanitary Sewer (18'+')	618	LF	$ 58.00	$ 35,844.00
15	10" Sanitary Sewer (0'-8')	0	LF	$ 28.00	$ -
16	10" Sanitary Sewer (8'-10')	0	LF	$ 30.00	$ -
17	10" Sanitary Sewer (10'-12')	0	LF	$ 35.00	$ -
18	10" Sanitary Sewer (12'-14')	0	LF	$ 43.00	$ -
19	10" Sanitary Sewer (14'-16')	0	LF	$ 48.00	$ -
20	10" Sanitary Sewer (16'-18')	0	LF	$ 53.00	$ -
21	10" Sanitary Sewer (18'+)	0	LF	$ 64.00	$ -
22	12" Sanitary Sewer (0'-8')	0	LF	$ 33.00	$ -
23	12" Sanitary Sewer (8'-10')	0	LF	$ 35.00	$ -
24	12" Sanitary Sewer (10'-12')	0	LF	$ 42.00	$ -
25	12" Sanitary Sewer (12'-14')	0	LF	$ 50.00	$ -
26	12" Sanitary Sewer (14'-16')	46	LF	$ 55.00	$ 2,530.00
27	12" Sanitary Sewer (16'-18')	769	LF	$ 60.00	$ 46,140.00
28	12" Sanitary Sewer (18'+)	1735	LF	$ 70.00	$ 121,450.00
29	15" Sanitary Sewer (0'-8')	1316	LF	$ 54.00	$ 71,064.00
30	15" Sanitary Sewer (8'-10')	384	LF	$ 57.00	$ 21,888.00
31	15" Sanitary Sewer (10'-12')	505	LF	$ 62.00	$ 31,310.00
32	15" Sanitary Sewer (12'-14')	445	LF	$ 70.00	$ 31,150.00
33	15" Sanitary Sewer (14'-16')	526	LF	$ 75.00	$ 39,450.00
34	15" Sanitary Sewer (16'-18')	774	LF	$ 80.00	$ 61,920.00
35	15" Sanitary Sewer (18'+)	0	LF	$ 90.00	$ -
36	18" Sanitary Sewer (0'-8')	0	LF	$ 70.00	$ -
37	18" Sanitary Sewer (8'-10')	0	LF	$ 75.00	$ -
38	18" Sanitary Sewer (10'-12')	0	LF	$ 85.00	$ -
39	18" Sanitary Sewer (12'-14')	0	LF	$ 90.00	$ -
40	18" Sanitary Sewer (14'-16')	0	LF	$ 95.00	$ -
41	18" Sanitary Sewer (16'-18')	0	LF	$ 100.00	$ -
42	18" Sanitary Sewer (18'+)	0	LF	$ 110.00	$ -
43	Lift Station #1		LS	$ 120,000.00	$ -
44	Lift Station #2	1	LS	$ 120,000.00	$ 120,000.00
45	Lift Station #3		LS	$ 120,000.00	$ -
46	Lift Station #4		LS	$ 120,000.00	$ -
47	Lift Station #5		LS	$ 120,000.00	$ -
48	Lift Station #6		LS	$ 100,000.00	$ -
49	4" Force Main		LF	$ 15.00	$ -
50	6" Force Main		LF	$ 18.00	$ -
51	8" Force Main		LF	$ 22.00	$ -
52	75 Feet of 4" Service Lead	120	EA	$ 1,000.00	$ 120,000.00
53	Manhole 0'-8' Depth	51	EA	$ 1,600.00	$ 81,600.00
54	Extra Depth on Manholes	138	LF	$ 100.00	$ 13,800.00
55	Trench Safety System	21,060	LF	$ 2.00	$ 42,120.00
56	STEP for 8		LS	$ 31,700.00	$ -
	Collection System Subtotal				$ 1,205,143.00
	Contingencies (20%)				$ 241,028.60
	Total Fresno 4				**$ 1,446,171.60**

Subarea- Fresno 5
Cost Estimate for Conventional Sanitary Sewer Collection System

Item	Description	Quantity	Unit	Unit Price	Total
1	6" Sanitary Sewer (0'-8')	0	LF	$ 15.00	$ -
2	6" Sanitary Sewer (8'-10')	0	LF	$ 17.00	$ -
3	6" Sanitary Sewer (10'-12')	0	LF	$ 20.00	$ -
4	6" Sanitary Sewer (12'-14')	0	LF	$ 30.00	$ -
5	6" Sanitary Sewer (14'-16')	0	LF	$ 35.00	$ -
6	6" Sanitary Sewer (16'-18')	0	LF	$ 40.00	$ -
7	6" Sanitary Sewer (18'+)	0	LF	$ 55.00	
8	8" Sanitary Sewer (0'-8')	6405	LF	$ 20.00	$ 128,100.00
9	8" Sanitary Sewer (8'-10')	1759	LF	$ 22.00	$ 38,698.00
10	8" Sanitary Sewer (10'-12')	455	LF	$ 28.00	$ 12,740.00
11	8" Sanitary Sewer (12'-14')	182	LF	$ 35.00	$ 6,370.00
12	8" Sanitary Sewer (14'-16')	0	LF	$ 40.00	$ -
13	8" Sanitary Sewer (16'-18')	0	LF	$ 45.00	$ -
14	8" Sanitary Sewer (18'+')	0	LF	$ 58.00	$ -
15	10" Sanitary Sewer (0'-8')	0	LF	$ 28.00	$ -
16	10" Sanitary Sewer (8'-10')	18	LF	$ 30.00	$ 540.00
17	10" Sanitary Sewer (10'-12')	606	LF	$ 35.00	$ 21,210.00
18	10" Sanitary Sewer (12'-14')	606	LF	$ 43.00	$ 26,058.00
19	10" Sanitary Sewer (14'-16')	606	LF	$ 48.00	$ 29,088.00
20	10" Sanitary Sewer (16'-18')	606	LF	$ 53.00	$ 32,118.00
21	10" Sanitary Sewer (18'+)	958	LF	$ 64.00	$ 61,312.00
22	12" Sanitary Sewer (0'-8')	0	LF	$ 33.00	$ -
23	12" Sanitary Sewer (8'-10')	0	LF	$ 35.00	$ -
24	12" Sanitary Sewer (10'-12')	0	LF	$ 42.00	$ -
25	12" Sanitary Sewer (12'-14')	0	LF	$ 50.00	$ -
26	12" Sanitary Sewer (14'-16')	0	LF	$ 55.00	$ -
27	12" Sanitary Sewer (16'-18')	0	LF	$ 60.00	$ -
28	12" Sanitary Sewer (18'+)	0	LF	$ 70.00	$ -
29	15" Sanitary Sewer (0'-8')	0	LF	$ 54.00	$ -
30	15" Sanitary Sewer (8'-10')	0	LF	$ 57.00	$ -
31	15" Sanitary Sewer (10'-12')	0	LF	$ 62.00	$ -
32	15" Sanitary Sewer (12'-14')	0	LF	$ 70.00	$ -
33	15" Sanitary Sewer (14'-16')	0	LF	$ 75.00	$ -
34	15" Sanitary Sewer (16'-18')	0	LF	$ 80.00	$ -
35	15" Sanitary Sewer (18'+)	0	LF	$ 90.00	$ -
36	18" Sanitary Sewer (0'-8')	1400	LF	$ 70.00	$ 98,000.00
37	18" Sanitary Sewer (8'-10')	0	LF	$ 75.00	$ -
38	18" Sanitary Sewer (10'-12')	0	LF	$ 85.00	$ -
39	18" Sanitary Sewer (12'-14')	632	LF	$ 90.00	$ 56,880.00
40	18" Sanitary Sewer (14'-16')	468	LF	$ 95.00	$ 44,460.00
41	18" Sanitary Sewer (16'-18')	0	LF	$ 100.00	$ -
42	18" Sanitary Sewer (18'+)	0	LF	$ 110.00	$ -
43	Lift Station #1		LS	$ 120,000.00	$ -
44	Lift Station #2		LS	$ 120,000.00	$ -
45	Lift Station #3		LS	$ 120,000.00	$ -
46	Lift Station #4		LS	$ 120,000.00	$ -
47	Lift Station #5		LS	$ 120,000.00	$ -
48	Lift Station #6	1	LS	$ 100,000.00	$ 100,000.00
49	4" Force Main		LF	$ 15.00	$ -
50	6" Force Main		LF	$ 18.00	$ -
51	8" Force Main		LF	$ 22.00	$ -
52	75 Feet of 4" Service Lead	100	EA	$ 1,000.00	$ 100,000.00
53	Manhole 0'-8' Depth	39	EA	$ 1,600.00	$ 62,400.00
54	Extra Depth on Manholes	101	LF	$ 100.00	$ 10,100.00
55	Trench Safety System	12,356	LF	$ 2.00	$ 24,712.00
56	STEP for 8		LS	$ 31,700.00	$ -
	Collection System Subtotal				$ 852,786.00
	Contingencies (20%)				$ 170,557.20
	Total Fresno 5				**$ 1,023,343.20**

Subarea- Fresno 6
Cost Estimate for Conventional Sanitary Sewer Collection System

Item	Description	Quantity	Unit	Unit Price	Total
1	6" Sanitary Sewer (0'-8')	1,563	LF	$ 15.00	$ 23,445.00
2	6" Sanitary Sewer (8'-10')	1,231	LF	$ 17.00	$ 20,927.00
3	6" Sanitary Sewer (10'-12')	806	LF	$ 20.00	$ 16,120.00
4	6" Sanitary Sewer (12'-14')	0	LF	$ 30.00	$ -
5	6" Sanitary Sewer (14'-16')	0	LF	$ 35.00	$ -
6	6" Sanitary Sewer (16'-18')	0	LF	$ 40.00	$ -
7	6" Sanitary Sewer (18'+)	0	LF	$ 55.00	
8	8" Sanitary Sewer (0'-8')	909	LF	$ 20.00	$ 18,180.00
9	8" Sanitary Sewer (8'-10')	455	LF	$ 22.00	$ 10,010.00
10	8" Sanitary Sewer (10'-12')	455	LF	$ 28.00	$ 12,740.00
11	8" Sanitary Sewer (12'-14')	455	LF	$ 35.00	$ 15,925.00
12	8" Sanitary Sewer (14'-16')	455	LF	$ 40.00	$ 18,200.00
13	8" Sanitary Sewer (16'-18')	455	LF	$ 45.00	$ 20,475.00
14	8" Sanitary Sewer (18'+')	218	LF	$ 58.00	$ 12,644.00
15	10" Sanitary Sewer (0'-8')	0	LF	$ 28.00	$ -
16	10" Sanitary Sewer (8'-10')	0	LF	$ 30.00	$ -
17	10" Sanitary Sewer (10'-12')	0	LF	$ 35.00	$ -
18	10" Sanitary Sewer (12'-14')	0	LF	$ 43.00	$ -
19	10" Sanitary Sewer (14'-16')	0	LF	$ 48.00	$ -
20	10" Sanitary Sewer (16'-18')	0	LF	$ 53.00	$ -
21	10" Sanitary Sewer (18'+)	0	LF	$ 64.00	$ -
22	12" Sanitary Sewer (0'-8')	0	LF	$ 33.00	$ -
23	12" Sanitary Sewer (8'-10')	0	LF	$ 35.00	$ -
24	12" Sanitary Sewer (10'-12')	0	LF	$ 42.00	$ -
25	12" Sanitary Sewer (12'-14')	0	LF	$ 50.00	$ -
26	12" Sanitary Sewer (14'-16')	0	LF	$ 55.00	$ -
27	12" Sanitary Sewer (16'-18')	0	LF	$ 60.00	$ -
28	12" Sanitary Sewer (18'+)	0	LF	$ 70.00	$ -
29	Lift Station #1		LS	$ 120,000.00	$ -
30	Lift Station #2		LS	$ 120,000.00	$ -
31	Lift Station #3		LS	$ 120,000.00	$ -
32	Lift Station #4	1	LS	$ 120,000.00	$ 120,000.00
33	Lift Station #5		LS	$ 120,000.00	$ -
34	Lift Station #6		LS	$ 100,000.00	$ -
35	4" Force Main		LF	$ 15.00	$ -
36	6" Force Main		LF	$ 18.00	$ -
37	8" Force Main		LF	$ 22.00	$ -
38	75 Feet of 4" Service Lead	42	EA	$ 1,000.00	$ 42,000.00
39	Manhole 0'-8' Depth	21	EA	$ 1,600.00	$ 33,600.00
40	Extra Depth on Manholes	39	LF	$ 100.00	$ 3,900.00
41	Trench Safety System	7,865	LF	$ 2.00	$ 15,730.00
42	STEP for 8		LS	$ 31,700.00	$ -
	Collection System Subtotal				$ 383,896.00
	Contingencies (20%)				$ 76,779.20
	Total Fresno 6				**$ 460,675.20**

Subarea- Fresno 7
Cost Estimate for Conventional Sanitary Sewer Collection System

Item	Description	Quantity	Unit	Unit Price	Total
1	6" Sanitary Sewer (0'-8')	3,262	LF	$ 15.00	$ 48,930.00
2	6" Sanitary Sewer (8'-10')	912	LF	$ 17.00	$ 15,504.00
3	6" Sanitary Sewer (10'-12')	277	LF	$ 20.00	$ 5,540.00
4	6" Sanitary Sewer (12'-14')	0	LF	$ 30.00	$ -
5	6" Sanitary Sewer (14'-16')	0	LF	$ 35.00	$ -
6	6" Sanitary Sewer (16'-18')	0	LF	$ 40.00	$ -
7	6" Sanitary Sewer (18'+)	0	LF	$ 55.00	
8	8" Sanitary Sewer (0'-8')	5455	LF	$ 20.00	$ 109,100.00
9	8" Sanitary Sewer (8'-10')	1902	LF	$ 22.00	$ 41,844.00
10	8" Sanitary Sewer (10'-12')	2318	LF	$ 28.00	$ 64,904.00
11	8" Sanitary Sewer (12'-14')	2727	LF	$ 35.00	$ 95,445.00
12	8" Sanitary Sewer (14'-16')	2323	LF	$ 40.00	$ 92,920.00
13	8" Sanitary Sewer (16'-18')	1507	LF	$ 45.00	$ 67,815.00
14	8" Sanitary Sewer (18'+')	1268	LF	$ 58.00	$ 73,544.00
15	10" Sanitary Sewer (0'-8')	0	LF	$ 28.00	$ -
16	10" Sanitary Sewer (8'-10')	0	LF	$ 30.00	$ -
17	10" Sanitary Sewer (10'-12')	0	LF	$ 35.00	$ -
18	10" Sanitary Sewer (12'-14')	0	LF	$ 43.00	$ -
19	10" Sanitary Sewer (14'-16')	0	LF	$ 48.00	$ -
20	10" Sanitary Sewer (16'-18')	0	LF	$ 53.00	$ -
21	10" Sanitary Sewer (18'+)	0	LF	$ 64.00	$ -
22	12" Sanitary Sewer (0'-8')	0	LF	$ 33.00	$ -
23	12" Sanitary Sewer (8'-10')	0	LF	$ 35.00	$ -
24	12" Sanitary Sewer (10'-12')	0	LF	$ 42.00	$ -
25	12" Sanitary Sewer (12'-14')	0	LF	$ 50.00	$ -
26	12" Sanitary Sewer (14'-16')	0	LF	$ 55.00	$ -
27	12" Sanitary Sewer (16'-18')	0	LF	$ 60.00	$ -
28	12" Sanitary Sewer (18'+)	0	LF	$ 70.00	$ -
29	15" Sanitary Sewer (0'-8')	0	LF	$ 54.00	$ -
30	15" Sanitary Sewer (8'-10')	0	LF	$ 57.00	$ -
31	15" Sanitary Sewer (10'-12')	0	LF	$ 62.00	$ -
32	15" Sanitary Sewer (12'-14')	0	LF	$ 70.00	$ -
33	15" Sanitary Sewer (14'-16')	0	LF	$ 75.00	$ -
34	15" Sanitary Sewer (16'-18')	0	LF	$ 80.00	$ -
35	15" Sanitary Sewer (18'+)	0	LF	$ 90.00	$ -
36	18" Sanitary Sewer (0'-8')	0	LF	$ 70.00	$ -
37	18" Sanitary Sewer (8'-10')	0	LF	$ 75.00	$ -
38	18" Sanitary Sewer (10'-12')	0	LF	$ 85.00	$ -
39	18" Sanitary Sewer (12'-14')	0	LF	$ 90.00	$ -
40	18" Sanitary Sewer (14'-16')	179	LF	$ 95.00	$ 17,005.00
41	18" Sanitary Sewer (16'-18')	1053	LF	$ 100.00	$ 105,300.00
42	18" Sanitary Sewer (18'+)	1168	LF	$ 110.00	$ 128,480.00
43	Lift Station #1		LS	$ 120,000.00	$ -
44	Lift Station #2		LS	$ 120,000.00	$ -
45	Lift Station #3		LS	$ 120,000.00	$ -
46	Lift Station #4		LS	$ 120,000.00	$ -
47	Lift Station #5	1	LS	$ 120,000.00	$ 120,000.00
48	Lift Station #6		LS	$ 100,000.00	$ -
49	4" Force Main		LF	$ 15.00	$ -
50	6" Force Main		LF	$ 18.00	$ -
51	8" Force Main		LF	$ 22.00	$ -
52	12" Force Main	6850	LF	$ 35.00	$ 239,750.00
53	75 Feet of 4" Service Lead	185	EA	$ 1,000.00	$ 185,000.00
54	Manhole 0'-8' Depth	64	EA	$ 1,600.00	$ 102,400.00
55	Extra Depth on Manholes	210	LF	$ 100.00	$ 21,000.00
56	Trench Safety System	21,909	LF	$ 2.00	$ 43,818.00
57	STEP for 8		LS	$ 31,700.00	$ -
	Collection System Subtotal				$ 1,578,299.00
	Contingencies (20%)				$ 315,659.80
	Total Fresno 7				**$ 1,893,958.80**

Cost Estimate for Arcola Plant Upgrade

Item	Description	Quantity	Unit	Unit Price	Total
1	Treatment Plant Upgrade 1.0 mgd	1	EA	$ 2,500,000.00	$ 2,500,000.00
	Contingencies (20%)				$ 500,000.00
	Total Fresno 2				**$ 3,000,000.00**

Appendix C

Fresno Wastewater Plant and Collection System Cost Estimate

Cost Estimate for Palm & FM 521 Treatment Plant with Alternative Options

Area	Exhibit 10.3 W / STEP	Exhibit 10.4 Conventional
Fresno 1	$2,241,762	$2,275,979
Fresno 2	$297,102	$548,948
Fresno 3	$1,129,988	$1,129,988
Fresno 4	$804,362	$892,420
Fresno 5	$741,269	$941,638
Fresno 6	$506,028	$506,028
Fresno 7	$1,295,448	$1,295,448
Trunk Line North of Plant	$1,307,030	$1,307,030
Trunk Line South of Plant	$158,491	$158,491
Fresno/Arcola Plant	$2,785,320	$2,785,320
	$11,266,801	$11,841,290

Cost Estimate for Palm & FM 521 Treatment Plant with Alternative Options
Exhibit 10.3

Area	Phase 1	Phase 2	Phase 3	Phase 4	Total
Fresno Arcola Plant	$2,785,320				$2,785,320
Trunk Line North of Plant			$1,307,030		$1,307,030
Trunk Line South of Plant		$158,491			$158,491
Fresno 1			$2,241,762		$2,241,762
Fresno 2				$297,102	$297,102
Fresno 3			$1,129,988		$1,129,988
Fresno 4				$804,362	$804,362
Fresno 5	$741,269				$741,269
Fresno 6		$506,028			$506,028
Fresno 7		$1,295,448			$1,295,448
Subtotal	$3,526,589	$1,959,967	$4,678,780	$1,101,464	$11,266,801
Engineering Design	$352,659	$195,997	$467,878	$110,146	$1,126,680
Surveying	$24,500	$64,418	$127,934	$56,980	$273,832
Geotechnical	$81,112	$45,079	$107,612	$25,334	$259,136
Construction Administration	$81,112	$45,079	$107,612	$25,334	$259,136
Project Phasing Totals	$4,065,971	$2,310,540	$5,489,816	$1,319,258	$13,185,586
*Existing Arcola SewerDebt	$ -	$ -	$ -	$ -	$ -
Total Amount to be Financed	$4,065,971	$2,310,540	$5,489,816	$1,319,258	$13,185,586
Debt Service (SRF 20yr Loan @4.5%)					
Phase 1 Debt	($312,576.16)	($312,576.16)	($312,576.16)	($312,576.16)	($1,013,656.99)
Phase 2 Debt		($177,625.44)	($177,625.44)	($177,625.44)	
Phase 3 Debt			($422,035.91)	($422,035.91)	
Phase 4 Debt				($101,419.48)	
Yearly Combined Debt Service	($312,576.16)	($490,201.59)	($912,237.51)	($1,013,656.99)	($1,013,656.99)
No. of Connections	381	597	1072	1414	1414
Monthly Sewer Cost/Connection	**$68.37**	**$68.43**	**$70.91**	**$59.74**	**$59.74**

* For this analysis it is assumed that the existing City of Arcola sewer system has no remaining debt

Subarea- Fresno 1
Cost Estimate for Conventional Sanitary Sewer Collection System with STEP

Item	Description	Quantity	Unit	Unit Price	Total
1	6" Sanitary Sewer (0'-8')	5,192	LF	$ 15.00	$ 77,880.00
2	6" Sanitary Sewer (8'-10')	3,902	LF	$ 17.00	$ 66,334.00
3	6" Sanitary Sewer (10'-12')	3,117	LF	$ 20.00	$ 62,340.00
4	6" Sanitary Sewer (12'-14')	2,095	LF	$ 30.00	$ 62,850.00
5	6" Sanitary Sewer (14'-16')	403	LF	$ 35.00	$ 14,105.00
6	6" Sanitary Sewer (16'-18')	151	LF	$ 40.00	$ 6,040.00
7	6" Sanitary Sewer (18'+)	0	LF	$ 55.00	$ -
8	8" Sanitary Sewer (0'-8')	8,242	LF	$ 20.00	$ 164,840.00
9	8" Sanitary Sewer (8'-10')	3,844	LF	$ 22.00	$ 84,568.00
10	8" Sanitary Sewer (10'-12')	3,664	LF	$ 28.00	$ 102,592.00
11	8" Sanitary Sewer (12'-14')	4,091	LF	$ 35.00	$ 143,185.00
12	8" Sanitary Sewer (14'-16')	3,105	LF	$ 40.00	$ 124,200.00
13	8" Sanitary Sewer (16'-18')	495	LF	$ 45.00	$ 22,275.00
14	8" Sanitary Sewer (18'+')	0	LF	$ 58.00	$ -
15	10" Sanitary Sewer (0'-8')	0	LF	$ 28.00	$ -
16	10" Sanitary Sewer (8'-10')	0	LF	$ 30.00	$ -
17	10" Sanitary Sewer (10'-12')	0	LF	$ 35.00	$ -
18	10" Sanitary Sewer (12'-14')	0	LF	$ 43.00	$ -
19	10" Sanitary Sewer (14'-16')	223	LF	$ 48.00	$ 10,704.00
20	10" Sanitary Sewer (16'-18')	806	LF	$ 53.00	$ 42,718.00
21	10" Sanitary Sewer (18'+)	671	LF	$ 64.00	$ 42,944.00
22	12" Sanitary Sewer (0'-8')	0	LF	$ 33.00	$ -
23	12" Sanitary Sewer (8'-10')	0	LF	$ 35.00	$ -
24	12" Sanitary Sewer (10'-12')	0	LF	$ 42.00	$ -
25	12" Sanitary Sewer (12'-14')	0	LF	$ 50.00	$ -
26	12" Sanitary Sewer (14'-16')	0	LF	$ 55.00	$ -
27	12" Sanitary Sewer (16'-18')	308	LF	$ 60.00	$ 18,480.00
28	12" Sanitary Sewer (18'+)	692	LF	$ 70.00	$ 48,440.00
29	Lift Station #1	1	LS	$ 120,000.00	$ 120,000.00
30	Lift Station #2		LS	$ 120,000.00	$ -
31	Lift Station #3		LS	$ 120,000.00	$ -
32	Lift Station #4		LS	$ 120,000.00	$ -
33	Lift Station #5		LS	$ 120,000.00	$ -
34	Lift Station #6		LS	$ 100,000.00	$ -
35	4" Force Main		LF	$ 15.00	$ -
36	6" Force Main	2,800	LF	$ 18.00	$ 50,400.00
37	8" Force Main		LF	$ 22.00	$ -
38	75 Feet of 4" Service Lead	312	EA	$ 1,000.00	$ 312,000.00
39	Manhole 0'-8' Depth	101	EA	$ 1,600.00	$ 161,600.00
40	Extra Depth on Manholes	218	LF	$ 100.00	$ 21,800.00
41	Trench Safety System	38,070	LF	$ 2.00	$ 76,140.00
42	STEP for 8	1	LS	$ 31,700.00	$ 31,700.00
	Collection System Subtotal				$ 1,868,135.00
	Contingencies (20%)				$ 373,627.00
	Total Fresno 1				**$ 2,241,762.00**

Sub Area- Fresno 2
STEP Collection System

Item	Description	Quantity	Unit	Unit Price	Total
1	2" PVC Collection Line	5,440	LF	$ 4.00	$ 21,760.00
2	3" PVC Collection Line	1,600	LF	$ 4.50	$ 7,200.00
3	4" PVC Collection Line	1,300	LF	$ 5.00	$ 6,500.00
4	Tanks Pumps and Controls	64	LF	$ 3,100.00	$ 198,400.00
5	Cleanouts	8	LF	$ 75.00	$ 600.00
6	Ball Valves	7	LF	$ 75.00	$ 525.00
7	Service Connections	63	LF	$ 200.00	$ 12,600.00
	Collection System Subtotal				$ 247,585.00
	Contingencies (20%)				$ 49,517.00
	Total Fresno 2				**$ 297,102.00**

Subarea- Fresno 3
Cost Estimate for Conventional Sanitary Sewer Collection System

Item	Description	Quantity	Unit	Unit Price	Total
1	6" Sanitary Sewer (0'-8')	4,777	LF	$ 15.00	$ 71,655.00
2	6" Sanitary Sewer (8'-10')	1,392	LF	$ 17.00	$ 23,664.00
3	6" Sanitary Sewer (10'-12')	892	LF	$ 20.00	$ 17,840.00
4	6" Sanitary Sewer (12'-14')	377	LF	$ 30.00	$ 11,310.00
5	6" Sanitary Sewer (14'-16')	262	LF	$ 35.00	$ 9,170.00
6	6" Sanitary Sewer (16'-18')	0	LF	$ 40.00	$ -
7	6" Sanitary Sewer (18'+)	0	LF	$ 55.00	$ -
8	8" Sanitary Sewer (0'-8')	3,655	LF	$ 20.00	$ 73,100.00
9	8" Sanitary Sewer (8'-10')	2,009	LF	$ 22.00	$ 44,198.00
10	8" Sanitary Sewer (10'-12')	1,500	LF	$ 28.00	$ 42,000.00
11	8" Sanitary Sewer (12'-14')	1,364	LF	$ 35.00	$ 47,740.00
12	8" Sanitary Sewer (14'-16')	909	LF	$ 40.00	$ 36,360.00
13	8" Sanitary Sewer (16'-18')	64	LF	$ 45.00	$ 2,880.00
14	8" Sanitary Sewer (18'+')	0	LF	$ 58.00	$ -
15	10" Sanitary Sewer (0'-8')	0	LF	$ 28.00	$ -
16	10" Sanitary Sewer (8'-10')	0	LF	$ 30.00	$ -
17	10" Sanitary Sewer (10'-12')	0	LF	$ 35.00	$ -
18	10" Sanitary Sewer (12'-14')	0	LF	$ 43.00	$ -
19	10" Sanitary Sewer (14'-16')	606	LF	$ 48.00	$ 29,088.00
20	10" Sanitary Sewer (16'-18')	1,212	LF	$ 53.00	$ 64,236.00
21	10" Sanitary Sewer (18'+)	1,082	LF	$ 64.00	$ 69,248.00
22	12" Sanitary Sewer (0'-8')	0	LF	$ 33.00	$ -
23	12" Sanitary Sewer (8'-10')	0	LF	$ 35.00	$ -
24	12" Sanitary Sewer (10'-12')	0	LF	$ 42.00	$ -
25	12" Sanitary Sewer (12'-14')	0	LF	$ 50.00	$ -
26	12" Sanitary Sewer (14'-16')	0	LF	$ 55.00	$ -
27	12" Sanitary Sewer (16'-18')	0	LF	$ 60.00	$ -
28	12" Sanitary Sewer (18'+)	0	LF	$ 70.00	$ -
29	Lift Station #1	0	LS	$ 120,000.00	$ -
30	Lift Station #2		LS	$ 120,000.00	$ -
31	Lift Station #3	1	LS	$ 120,000.00	$ 120,000.00
32	Lift Station #4		LS	$ 120,000.00	$ -
33	Lift Station #5		LS	$ 120,000.00	$ -
34	Lift Station #6		LS	$ 100,000.00	$ -
35	4" Force Main		LF	$ 15.00	$ -
36	6" Force Main	1,500	LF	$ 18.00	$ 27,000.00
37	8" Force Main		LF	$ 22.00	$ -
38	75 Feet of 4" Service Lead	127	EA	$ 1,000.00	$ 127,000.00
39	Manhole 0'-8' Depth	47	EA	$ 1,600.00	$ 75,200.00
40	Extra Depth on Manholes	139	LF	$ 100.00	$ 13,900.00
41	Trench Safety System	18,034	LF	$ 2.00	$ 36,068.00
42	STEP for 8	0	LS	$ 31,700.00	$ -
	Collection System Subtotal				$ 941,657.00
	Contingencies (20%)				$ 188,331.40
	Total Fresno 3				**$ 1,129,988.40**

Subarea- Fresno 4
Cost Estimate for Conventional Sanitary Sewer Collection System and STEP

Item	Description	Quantity	Unit	Unit Price	Total
1	6" Sanitary Sewer (0'-8')	600	LF	$ 15.00	$ 9,000.00
2	6" Sanitary Sewer (8'-10')	0	LF	$ 17.00	$ -
3	6" Sanitary Sewer (10'-12')	0	LF	$ 20.00	$ -
4	6" Sanitary Sewer (12'-14')	0	LF	$ 30.00	$ -
5	6" Sanitary Sewer (14'-16')	0	LF	$ 35.00	$ -
6	6" Sanitary Sewer (16'-18')	0	LF	$ 40.00	$ -
7	6" Sanitary Sewer (18'+)	0	LF	$ 55.00	$ -
8	8" Sanitary Sewer (0'-8')	4,845	LF	$ 20.00	$ 96,900.00
9	8" Sanitary Sewer (8'-10')	2,209	LF	$ 22.00	$ 48,598.00
10	8" Sanitary Sewer (10'-12')	1,818	LF	$ 28.00	$ 50,904.00
11	8" Sanitary Sewer (12'-14')	1,695	LF	$ 35.00	$ 59,325.00
12	8" Sanitary Sewer (14'-16')	1,336	LF	$ 40.00	$ 53,440.00
13	8" Sanitary Sewer (16'-18')	909	LF	$ 45.00	$ 40,905.00
14	8" Sanitary Sewer (18'+')	836	LF	$ 58.00	$ 48,488.00
15	10" Sanitary Sewer (0'-8')	0	LF	$ 28.00	$ -
16	10" Sanitary Sewer (8'-10')	0	LF	$ 30.00	$ -
17	10" Sanitary Sewer (10'-12')	0	LF	$ 35.00	$ -
18	10" Sanitary Sewer (12'-14')	0	LF	$ 43.00	$ -
19	10" Sanitary Sewer (14'-16')	0	LF	$ 48.00	$ -
20	10" Sanitary Sewer (16'-18')	0	LF	$ 53.00	$ -
21	10" Sanitary Sewer (18'+)	0	LF	$ 64.00	$ -
22	12" Sanitary Sewer (0'-8')	0	LF	$ 33.00	$ -
23	12" Sanitary Sewer (8'-10')	0	LF	$ 35.00	$ -
24	12" Sanitary Sewer (10'-12')	0	LF	$ 42.00	$ -
25	12" Sanitary Sewer (12'-14')	0	LF	$ 50.00	$ -
26	12" Sanitary Sewer (14'-16')	0	LF	$ 55.00	$ -
27	12" Sanitary Sewer (16'-18')	0	LF	$ 60.00	$ -
28	12" Sanitary Sewer (18'+)	0	LF	$ 70.00	$ -
29	Lift Station #1		LS	$ 120,000.00	$ -
30	Lift Station #2		LS	$ 120,000.00	$ -
31	Lift Station #3		LS	$ 120,000.00	$ -
32	Lift Station #4		LS	$ 120,000.00	$ -
33	Lift Station #5		LS	$ 120,000.00	$ -
34	Lift Station #6		LS	$ 100,000.00	$ -
35	4" Force Main		LF	$ 15.00	$ -
36	6" Force Main		LF	$ 18.00	$ -
37	8" Force Main		LF	$ 22.00	$ -
38	75 Feet of 4" Service Lead	120	EA	$ 1,000.00	$ 120,000.00
39	Manhole 0'-8' Depth	47	EA	$ 1,600.00	$ 75,200.00
40	Extra Depth on Manholes	123	LF	$ 100.00	$ 12,300.00
41	Trench Safety System	11,596	LF	$ 2.00	$ 23,192.00
42	STEP for 8	0	LS	$ 31,700.00	$ -
	Collection System Subtotal				$ 638,252.00

Subarea- Fresno 4
STEP Collection System for Arcola-Fresno Road

Item	Description	Quantity	Unit	Unit Price	Total
1	2" PVC Collection Line	2,200	LF	$ 4.00	$ 8,800.00
2	Tanks Pumps and Controls	7	LF	$ 3,100.00	$ 21,700.00
3	Cleanouts	1	LF	$ 75.00	$ 75.00
4	Ball Valves	1	LF	$ 75.00	$ 75.00
5	Service Lines	7	LF	$ 200.00	$ 1,400.00
	STEP Collection System Subtotal				$ 32,050.00
	Conventional System Subtotal				$ 638,252.00
	Contingencies (20%)				$ 134,060.40
	Total Fresno 4				**$ 804,362.40**

Subarea- Fresno 5
STEP Collection System for Palm Road

Item	Description	Quantity	Unit	Unit Price	Total
1	2" PVC Collection Line	1,400	LF	$ 4.00	$ 5,600.00
2	3" PVC Collection Line	5,400	LF	$ 4.50	$ 24,300.00
3	4" PVC Collection Line	3,400	LF	$ 5.00	$ 17,000.00
4	Tanks Pumps and Controls	108	LF	$ 3,100.00	$ 334,800.00
5	Cleanouts	6	LF	$ 75.00	$ 450.00
6	Ball Valves	5	LF	$ 75.00	$ 375.00
7	Service Lines (50')	111	LF	$ 200.00	$ 22,200.00
	Collection System Subtotal				$ 404,725.00

Subarea- Fresno 5
STEP Collection System for Arcola-Fresno

Item	Description	Quantity	Unit	Unit Price	Total
1	2" PVC Collection Line	2,300	LF	$ 4.00	$ 9,200.00
2	3" PVC Collection Line	0	LF	$ 4.50	$ -
3	4" PVC Collection Line	0	LF	$ 5.00	$ -
4	Tanks Pumps and Controls	12	LF	$ 3,100.00	$ 37,200.00
5	Cleanouts	2	LF	$ 75.00	$ 150.00
6	Ball Valves	2	LF	$ 75.00	$ 150.00
7	Service lines (50')	12	LF	$ 200.00	$ 2,400.00
	STEP System Subtotal for Arcola Fresno Road				$ 49,100.00

Gravity Line From Plant to Arcola Fresno Road

Item	Description	Quantity	Unit	Unit Price	Total
1	12" Sanitary Sewer (8'-10')	0	LF	$ 54.00	$ -
2	12" Sanitary Sewer (10'-12')	538	LF	$ 57.00	$ 30,666.00
3	12" Sanitary Sewer (12'-14')	769	LF	$ 62.00	$ 47,678.00
4	12" Sanitary Sewer (14'-16')	769	LF	$ 70.00	$ 53,830.00
5	12" Sanitary Sewer (16'-18')	423	LF	$ 75.00	$ 31,725.00
	Gravity Line Total				$ 163,899.00
	STEP for Palm Road				$ 404,725.00
	STEP for Arcola Fresno Road				$ 49,100.00
	Contingencies (20%)				$ 123,544.80
	Total Fresno 5				**$ 741,268.80**

Subarea- Fresno 6
Cost Estimate for Conventional Sanitary Sewer Collection System

Item	Description	Quantity	Unit	Unit Price	Total
1	6" Sanitary Sewer (0'-8')	1,397	LF	$ 15.00	$ 20,955.00
2	6" Sanitary Sewer (8'-10')	923	LF	$ 17.00	$ 15,691.00
3	6" Sanitary Sewer (10'-12')	680	LF	$ 20.00	$ 13,600.00
4	6" Sanitary Sewer (12'-14')	0	LF	$ 30.00	$ -
5	6" Sanitary Sewer (14'-16')	0	LF	$ 35.00	$ -
6	6" Sanitary Sewer (16'-18')	0	LF	$ 40.00	$ -
7	6" Sanitary Sewer (18'+)	0	LF	$ 55.00	$ -
8	8" Sanitary Sewer (0'-8')	1,509	LF	$ 20.00	$ 30,180.00
9	8" Sanitary Sewer (8'-10')	868	LF	$ 22.00	$ 19,096.00
10	8" Sanitary Sewer (10'-12')	641	LF	$ 28.00	$ 17,948.00
11	8" Sanitary Sewer (12'-14')	455	LF	$ 35.00	$ 15,925.00
12	8" Sanitary Sewer (14'-16')	455	LF	$ 40.00	$ 18,200.00
13	8" Sanitary Sewer (16'-18')	455	LF	$ 45.00	$ 20,475.00
14	8" Sanitary Sewer (18'+')	218	LF	$ 58.00	$ 12,644.00
15	10" Sanitary Sewer (0'-8')	0	LF	$ 28.00	$ -
16	10" Sanitary Sewer (8'-10')	0	LF	$ 30.00	$ -
17	10" Sanitary Sewer (10'-12')	0	LF	$ 35.00	$ -
18	10" Sanitary Sewer (12'-14')	0	LF	$ 43.00	$ -
19	10" Sanitary Sewer (14'-16')	0	LF	$ 48.00	$ -
20	10" Sanitary Sewer (16'-18')	0	LF	$ 53.00	$ -
21	10" Sanitary Sewer (18'+)	0	LF	$ 64.00	$ -
22	12" Sanitary Sewer (0'-8')	0	LF	$ 33.00	$ -
23	12" Sanitary Sewer (8'-10')	0	LF	$ 35.00	$ -
24	12" Sanitary Sewer (10'-12')	0	LF	$ 42.00	$ -
25	12" Sanitary Sewer (12'-14')	0	LF	$ 50.00	$ -
26	12" Sanitary Sewer (14'-16')	0	LF	$ 55.00	$ -
27	12" Sanitary Sewer (16'-18')	0	LF	$ 60.00	$ -
28	12" Sanitary Sewer (18'+)	0	LF	$ 70.00	$ -
29	Lift Station #1		LS	$ 120,000.00	$ -
30	Lift Station #2		LS	$ 120,000.00	$ -
31	Lift Station #3		LS	$ 120,000.00	$ -
32	Lift Station #4	1	LS	$ 120,000.00	$ 120,000.00
33	Lift Station #5		LS	$ 120,000.00	$ -
34	Lift Station #6		LS	$ 100,000.00	$ -
35	4" Force Main	1,800	LF	$ 15.00	$ 27,000.00
36	6" Force Main		LF	$ 18.00	$ -
37	8" Force Main		LF	$ 22.00	$ -
38	75 Feet of 4" Service Lead	42	EA	$ 1,000.00	$ 42,000.00
39	Manhole 0'-8' Depth	19	EA	$ 1,600.00	$ 30,400.00
40	Extra Depth on Manholes	39	LF	$ 100.00	$ 3,900.00
41	Trench Safety System	6,838	LF	$ 2.00	$ 13,676.00
42	STEP for 8	0	LS	$ 31,700.00	$ -
	Collection System Subtotal				$ 421,690.00
	Contingencies (20%)				$ 84,338.00
	Total Fresno 6				**$ 506,028.00**

Subarea- Fresno 7
Cost Estimate for Conventional Sanitary Sewer Collection System

Item	Description	Quantity	Unit	Unit Price	Total
1	6" Sanitary Sewer (0'-8')	6,292	LF	$ 15.00	$ 94,380.00
2	6" Sanitary Sewer (8'-10')	3,760	LF	$ 17.00	$ 63,920.00
3	6" Sanitary Sewer (10'-12')	2,441	LF	$ 20.00	$ 48,820.00
4	6" Sanitary Sewer (12'-14')	1,831	LF	$ 30.00	$ 54,930.00
5	6" Sanitary Sewer (14'-16')	1,200	LF	$ 35.00	$ 42,000.00
6	6" Sanitary Sewer (16'-18')	476	LF	$ 40.00	$ 19,040.00
7	6" Sanitary Sewer (18'+)	0	LF	$ 55.00	$ -
8	8" Sanitary Sewer (0'-8')	764	LF	$ 20.00	$ 15,280.00
9	8" Sanitary Sewer (8'-10')	909	LF	$ 22.00	$ 19,998.00
10	8" Sanitary Sewer (10'-12')	1,391	LF	$ 28.00	$ 38,948.00
11	8" Sanitary Sewer (12'-14')	1,723	LF	$ 35.00	$ 60,305.00
12	8" Sanitary Sewer (14'-16')	1,364	LF	$ 40.00	$ 54,560.00
13	8" Sanitary Sewer (16'-18')	150	LF	$ 45.00	$ 6,750.00
14	8" Sanitary Sewer (18'+')	0	LF	$ 58.00	$ -
15	10" Sanitary Sewer (0'-8')	0	LF	$ 28.00	$ -
16	10" Sanitary Sewer (8'-10')	0	LF	$ 30.00	$ -
17	10" Sanitary Sewer (10'-12')	0	LF	$ 35.00	$ -
18	10" Sanitary Sewer (12'-14')	0	LF	$ 43.00	$ -
19	10" Sanitary Sewer (14'-16')	0	LF	$ 48.00	$ -
20	10" Sanitary Sewer (16'-18')	539	LF	$ 53.00	$ 28,567.00
21	10" Sanitary Sewer (18'+)	961	LF	$ 64.00	$ 61,504.00
22	12" Sanitary Sewer (0'-8')	0	LF	$ 33.00	$ -
23	12" Sanitary Sewer (8'-10')	0	LF	$ 35.00	$ -
24	12" Sanitary Sewer (10'-12')	0	LF	$ 42.00	$ -
25	12" Sanitary Sewer (12'-14')	0	LF	$ 50.00	$ -
26	12" Sanitary Sewer (14'-16')	0	LF	$ 55.00	$ -
27	12" Sanitary Sewer (16'-18')	0	LF	$ 60.00	$ -
28	12" Sanitary Sewer (18'+)	0	LF	$ 70.00	$ -
29	Lift Station #1		LS	$ 120,000.00	$ -
30	Lift Station #2		LS	$ 120,000.00	$ -
31	Lift Station #3		LS	$ 120,000.00	$ -
32	Lift Station #4		LS	$ 120,000.00	$ -
33	Lift Station #5	1	LS	$ 120,000.00	$ 120,000.00
34	Lift Station #6		LS	$ 100,000.00	$ -
35	4" Force Main		LF	$ 15.00	$ -
36	6" Force Main	1,000	LF	$ 18.00	$ 18,000.00
37	8" Force Main		LF	$ 22.00	$ -
38	75 Feet of 4" Service Lead	185	EA	$ 1,000.00	$ 185,000.00
39	Manhole 0'-8' Depth	53	EA	$ 1,600.00	$ 84,800.00
40	Extra Depth on Manholes	176	LF	$ 100.00	$ 17,600.00
41	Trench Safety System	22,569	LF	$ 2.00	$ 45,138.00
42	STEP for 8	0	LS	$ 31,700.00	$ -
	Collection System Subtotal				$ 1,079,540.00
	Contingencies (20%)				$ 215,908.00
	Total Fresno 7				**$ 1,295,448.00**

Trunk Line Costs for 521 South of Treatment Plant

Item	Description	Quantity	Unit	Unit Price	Total
1	8" Sanitary Sewer (0'-8')	909	LF	$ 20.00	$ 18,180.00
2	8" Sanitary Sewer (8'-10')	455	LF	$ 22.00	$ 10,010.00
3	8" Sanitary Sewer (10'-12')	455	LF	$ 28.00	$ 12,740.00
4	8" Sanitary Sewer (8'-10')	182	LF	$ 35.00	$ 6,370.00
5	10" Sanitary Sewer (12'-14')	364	LF	$ 43.00	$ 15,652.00
6	10" Sanitary Sewer (14'-16')	606	LF	$ 48.00	$ 29,088.00
7	10" Sanitary Sewer (16'-18')	30	LF	$ 53.00	$ 1,590.00
8	Manhole 0'-8' Depth	13	EA	$ 1,600.00	$ 20,800.00
9	Extra Depth on Manholes	21	LF	$ 100.00	$ 2,100.00
10	Trench Safety System	2,773	LF	$ 2.00	$ 5,546.00
11	Railroad Crossing 8" gravity	1	EA	$ 10,000.00	$ 10,000.00
	Trunk Cost Subtotal				$ 132,076.00
	Contingencies (20%)				$ 26,415.20
	Total Trunk Costs				**$ 158,491.20**

Trunk Line Costs 521 North of Treatment Plant

Item	Description	Quantity	Unit	Unit Price	Total
1	6" Sanitary Sewer (8'-10')	600	LF	$ 17.00	$ 10,200.00
2	12" Sanitary Sewer (14'-16')	46	LF	$ 55.00	$ 2,530.00
3	12" Sanitary Sewer (16'-18')	769	LF	$ 60.00	$ 46,140.00
4	12" Sanitary Sewer (18'+)	1,735	LF	$ 70.00	$ 121,450.00
6	15" Sanitary Sewer (0'-8')	1,579	LF	$ 54.00	$ 85,266.00
7	15" Sanitary Sewer (8'-10')	1,053	LF	$ 57.00	$ 60,021.00
8	15" Sanitary Sewer (10'-12')	168	LF	$ 62.00	$ 10,416.00
9	Lift Station #2	1	LS	$ 120,000.00	$ 120,000.00
10	Force Main 8"	2,900	EA	$ 22.00	$ 63,800.00
11	Bayou Crossing 15" gravity	1	EA	$ 35,000.00	$ 35,000.00
12	Trench Safety System	5,796	LF	$ 2.00	$ 11,592.00
13	75 Feet of 4" Service Lead	41	EA	$ 1,000.00	$ 41,000.00
14	Bayou Crossing 8" FM	1	EA	$ 5,000.00	$ 5,000.00
15	Rail road Crossing 8" F.M	1	EA	$ 10,000.00	$ 10,000.00
16	Manhole 0'-8' Depth	17	EA	$ 1,600.00	$ 27,200.00
17	Extra Depth on Manholes	90	LF	$ 100.00	$ 9,000.00
	Trunk Cost Subtotal				$ 648,415.00
	Contingencies (20%)				$ 658,615.00
	Total Trunk Costs				**$ 1,307,030.00**

Fresno / Arcola Plant Costs

Item	Description	Quantity	Unit	Unit Price	Total
1	Lift Station- Plant	1	LS	$ 200,000.00	$ 200,000.00
2	10" Force Main	50	LF	$ 22.00	$ 1,100.00
3	Treatment Plant (0.8 mgd)	1	LF	$ 2,000,000.00	$ 2,000,000.00
4	Land Acquisition	1	LS	$ 120,000.00	$ 120,000.00
	Plant Cost Subtotal				$ 2,321,100.00
	Contingencies (20%)				$ 464,220.00
	Total Plant Costs				**$ 2,785,320.00**

Cost Estimate for Palm & FM 521 Treatment Plant with Gravity Collection
Exhibit 10.4

Area	Phase 1	Phase 2	Phase 3	Phase 4	Total
Fresno Arcola Plant	$2,785,320				$2,785,320
Trunk Line North of Plant			$1,307,030		$1,307,030
Trunk Line South of Plant		$158,491			$158,491
Fresno 1			$2,275,979		$2,275,979
Fresno 2				$548,948	$548,948
Fresno 3			$1,129,988		$1,129,988
Fresno 4				$892,420	$892,420
Fresno 5	$941,638				$941,638
Fresno 6		$506,028			$506,028
Fresno 7		$1,295,448			$1,295,448
Subtotal	$3,726,958	$1,959,967	$4,712,997	$1,441,368	$11,841,290
Engineering Design	$372,696	$195,997	$471,300	$144,137	$1,184,129
Surveying	$25,000	$64,418	$127,934	$58,000	$275,352
Geotechnical	$85,720	$45,079	$108,399	$33,151	$272,350
Construction Administration	$85,720	$45,079	$108,399	$33,151	$272,350
Project Phasing Totals	$4,296,093	$2,310,540	$5,529,029	$1,709,808	$13,845,470
*Existing Arcola SewerDebt	$ -	$ -	$ -	$ -	$ -
Total Amount to be Financed	$4,296,093	$2,310,540	$5,529,029	$1,709,808	$13,845,470
Debt Service (SRF 20yr Loan @4.5%)					
Phase 1 Debt	($330,267.10)	($330,267.10)	($330,267.10)	($330,267.10)	($1,064,386.38)
Phase 2 Debt		($177,625.44)	($177,625.44)	($177,625.44)	
Phase 3 Debt			($425,050.42)	($425,050.42)	
Phase 4 Debt				($131,443.43)	
Yearly Combined Debt Service	($330,267.10)	($507,892.54)	($932,942.95)	($1,064,386.38)	($1,064,386.38)
No. of Connections	381	597	1072	1414	1414
Monthly Sewer Cost/Connection	**$72.24**	**$70.90**	**$72.52**	**$62.73**	**$62.73**

* For this analysis it is assumed that the existing City of Arcola sewer system has no remaining debt

Subarea- Fresno 1
Cost Estimate for Conventional Sanitary Sewer Collection System

Item	Description	Quantity	Unit	Unit Price	Total
1	6" Sanitary Sewer (0'-8')	5,192	LF	$ 15.00	$ 77,880.00
2	6" Sanitary Sewer (8'-10')	3,902	LF	$ 17.00	$ 66,334.00
3	6" Sanitary Sewer (10'-12')	3,117	LF	$ 20.00	$ 62,340.00
4	6" Sanitary Sewer (12'-14')	2,095	LF	$ 30.00	$ 62,850.00
5	6" Sanitary Sewer (14'-16')	403	LF	$ 35.00	$ 14,105.00
6	6" Sanitary Sewer (16'-18')	151	LF	$ 40.00	$ 6,040.00
7	6" Sanitary Sewer (18'+)	0	LF	$ 55.00	$ -
8	8" Sanitary Sewer (0'-8')	8,242	LF	$ 20.00	$ 164,840.00
9	8" Sanitary Sewer (8'-10')	3,844	LF	$ 22.00	$ 84,568.00
10	8" Sanitary Sewer (10'-12')	3,664	LF	$ 28.00	$ 102,592.00
11	8" Sanitary Sewer (12'-14')	4,091	LF	$ 35.00	$ 143,185.00
12	8" Sanitary Sewer (14'-16')	3,105	LF	$ 40.00	$ 124,200.00
13	8" Sanitary Sewer (16'-18')	677	LF	$ 45.00	$ 30,465.00
14	8" Sanitary Sewer (18'+')	618	LF	$ 58.00	$ 35,844.00
15	10" Sanitary Sewer (0'-8')	0	LF	$ 28.00	$ -
16	10" Sanitary Sewer (8'-10')	0	LF	$ 30.00	$ -
17	10" Sanitary Sewer (10'-12')	0	LF	$ 35.00	$ -
18	10" Sanitary Sewer (12'-14')	0	LF	$ 43.00	$ -
19	10" Sanitary Sewer (14'-16')	223	LF	$ 48.00	$ 10,704.00
20	10" Sanitary Sewer (16'-18')	806	LF	$ 53.00	$ 42,718.00
21	10" Sanitary Sewer (18'+)	671	LF	$ 64.00	$ 42,944.00
22	12" Sanitary Sewer (0'-8')	0	LF	$ 33.00	$ -
23	12" Sanitary Sewer (8'-10')	0	LF	$ 35.00	$ -
24	12" Sanitary Sewer (10'-12')	0	LF	$ 42.00	$ -
25	12" Sanitary Sewer (12'-14')	0	LF	$ 50.00	$ -
26	12" Sanitary Sewer (14'-16')	0	LF	$ 55.00	$ -
27	12" Sanitary Sewer (16'-18')	0	LF	$ 60.00	$ -
28	12" Sanitary Sewer (18'+)	1,000	LF	$ 70.00	$ 70,000.00
29	Lift Station #1	1	LS	$ 120,000.00	$ 120,000.00
30	Lift Station #2		LS	$ 120,000.00	$ -
31	Lift Station #3		LS	$ 120,000.00	$ -
32	Lift Station #4		LS	$ 120,000.00	$ -
33	Lift Station #5		LS	$ 120,000.00	$ -
34	Lift Station #6		LS	$ 100,000.00	$ -
35	4" Force Main		LF	$ 15.00	$ -
36	6" Force Main	2,800	LF	$ 18.00	$ 50,400.00
37	8" Force Main		LF	$ 22.00	$ -
38	75 Feet of 4" Service Lead	320	EA	$ 1,000.00	$ 320,000.00
39	Manhole 0'-8' Depth	101	EA	$ 1,600.00	$ 161,600.00
40	Extra Depth on Manholes	253	LF	$ 100.00	$ 25,300.00
41	Trench Safety System	38,870	LF	$ 2.00	$ 77,740.00
42	STEP for 8	0	LS	$ 31,700.00	$ -
	Collection System Subtotal				$ 1,896,649.00
	Contingencies (20%)				$ 379,329.80
	Total Fresno 1				**$ 2,275,978.80**

Subarea- Fresno 2
Cost Estimate for Conventional Sanitary Sewer Collection System

Item	Description	Quantity	Unit	Unit Price	Total
1	6" Sanitary Sewer (0'-8')	2,731	LF	$ 15.00	$ 40,965.00
2	6" Sanitary Sewer (8'-10')	219	LF	$ 17.00	$ 3,723.00
3	6" Sanitary Sewer (10'-12')	0	LF	$ 20.00	$ -
4	6" Sanitary Sewer (12'-14')	0	LF	$ 30.00	$ -
5	6" Sanitary Sewer (14'-16')	0	LF	$ 35.00	$ -
6	6" Sanitary Sewer (16'-18')	0	LF	$ 40.00	$ -
7	6" Sanitary Sewer (18'+)	0	LF	$ 55.00	$ -
8	8" Sanitary Sewer (0'-8')	909	LF	$ 20.00	$ 18,180.00
9	8" Sanitary Sewer (8'-10')	41	LF	$ 22.00	$ 902.00
10	8" Sanitary Sewer (10'-12')	0	LF	$ 28.00	$ -
11	8" Sanitary Sewer (12'-14')	0	LF	$ 35.00	$ -
12	8" Sanitary Sewer (14'-16')	0	LF	$ 40.00	$ -
13	8" Sanitary Sewer (16'-18')	0	LF	$ 45.00	$ -
14	8" Sanitary Sewer (18'+')	0	LF	$ 58.00	$ -
15	10" Sanitary Sewer (0'-8')	0	LF	$ 28.00	$ -
16	10" Sanitary Sewer (8'-10')	552	LF	$ 30.00	$ 16,560.00
17	10" Sanitary Sewer (10'-12')	606	LF	$ 35.00	$ 21,210.00
18	10" Sanitary Sewer (12'-14')	42	LF	$ 43.00	$ 1,806.00
19	10" Sanitary Sewer (14'-16')	0	LF	$ 48.00	$ -
20	10" Sanitary Sewer (16'-18')	0	LF	$ 53.00	$ -
21	10" Sanitary Sewer (18'+)	0	LF	$ 64.00	$ -
22	12" Sanitary Sewer (0'-8')	0	LF	$ 33.00	$ -
23	12" Sanitary Sewer (8'-10')	0	LF	$ 35.00	$ -
24	12" Sanitary Sewer (10'-12')	0	LF	$ 42.00	$ -
25	12" Sanitary Sewer (12'-14')	715	LF	$ 50.00	$ 35,750.00
26	12" Sanitary Sewer (14'-16')	769	LF	$ 55.00	$ 42,295.00
27	12" Sanitary Sewer (16'-18')	769	LF	$ 60.00	$ 46,140.00
28	12" Sanitary Sewer (18'+)	1,546	LF	$ 70.00	$ 108,220.00
29	Lift Station #1	0	LS	$ 120,000.00	$ -
30	Lift Station #2		LS	$ 120,000.00	$ -
31	Lift Station #3		LS	$ 120,000.00	$ -
32	Lift Station #4		LS	$ 120,000.00	$ -
33	Lift Station #5		LS	$ 120,000.00	$ -
34	Lift Station #6		LS	$ 100,000.00	$ -
35	4" Force Main		LF	$ 15.00	$ -
36	6" Force Main	0	LF	$ 18.00	$ -
37	8" Force Main		LF	$ 22.00	$ -
38	75 Feet of 4" Service Lead	63	EA	$ 1,000.00	$ 63,000.00
39	Manhole 0'-8' Depth	21	EA	$ 1,600.00	$ 33,600.00
40	Extra Depth on Manholes	93	LF	$ 100.00	$ 9,300.00
41	Trench Safety System	7,903	LF	$ 2.00	$ 15,806.00
42	STEP for 8	0	LS	$ 31,700.00	$ -
	Collection System Subtotal				$ 457,457.00
	Contingencies (20%)				$ 91,491.40
	Total Fresno 2				**$ 548,948.40**

Exhibit 10.4

Subarea- Fresno 3
Cost Estimate for Conventional Sanitary Sewer Collection System

Item	Description	Quantity	Unit	Unit Price	Total
1	6" Sanitary Sewer (0'-8')	4,777	LF	$ 15.00	$ 71,655.00
2	6" Sanitary Sewer (8'-10')	1,392	LF	$ 17.00	$ 23,664.00
3	6" Sanitary Sewer (10'-12')	892	LF	$ 20.00	$ 17,840.00
4	6" Sanitary Sewer (12'-14')	377	LF	$ 30.00	$ 11,310.00
5	6" Sanitary Sewer (14'-16')	262	LF	$ 35.00	$ 9,170.00
6	6" Sanitary Sewer (16'-18')	0	LF	$ 40.00	$ -
7	6" Sanitary Sewer (18'+)	0	LF	$ 55.00	$ -
8	8" Sanitary Sewer (0'-8')	3,655	LF	$ 20.00	$ 73,100.00
9	8" Sanitary Sewer (8'-10')	2,009	LF	$ 22.00	$ 44,198.00
10	8" Sanitary Sewer (10'-12')	1,500	LF	$ 28.00	$ 42,000.00
11	8" Sanitary Sewer (12'-14')	1,364	LF	$ 35.00	$ 47,740.00
12	8" Sanitary Sewer (14'-16')	909	LF	$ 40.00	$ 36,360.00
13	8" Sanitary Sewer (16'-18')	64	LF	$ 45.00	$ 2,880.00
14	8" Sanitary Sewer (18'+')	0	LF	$ 58.00	$ -
15	10" Sanitary Sewer (0'-8')	0	LF	$ 28.00	$ -
16	10" Sanitary Sewer (8'-10')	0	LF	$ 30.00	$ -
17	10" Sanitary Sewer (10'-12')	0	LF	$ 35.00	$ -
18	10" Sanitary Sewer (12'-14')	0	LF	$ 43.00	$ -
19	10" Sanitary Sewer (14'-16')	606	LF	$ 48.00	$ 29,088.00
20	10" Sanitary Sewer (16'-18')	1,212	LF	$ 53.00	$ 64,236.00
21	10" Sanitary Sewer (18'+)	1,082	LF	$ 64.00	$ 69,248.00
22	12" Sanitary Sewer (0'-8')	0	LF	$ 33.00	$ -
23	12" Sanitary Sewer (8'-10')	0	LF	$ 35.00	$ -
24	12" Sanitary Sewer (10'-12')	0	LF	$ 42.00	$ -
25	12" Sanitary Sewer (12'-14')	0	LF	$ 50.00	$ -
26	12" Sanitary Sewer (14'-16')	0	LF	$ 55.00	$ -
27	12" Sanitary Sewer (16'-18')	0	LF	$ 60.00	$ -
28	12" Sanitary Sewer (18'+)	0	LF	$ 70.00	$ -
29	Lift Station #1	0	LS	$ 120,000.00	$ -
30	Lift Station #2		LS	$ 120,000.00	$ -
31	Lift Station #3	1	LS	$ 120,000.00	$ 120,000.00
32	Lift Station #4		LS	$ 120,000.00	$ -
33	Lift Station #5		LS	$ 120,000.00	$ -
34	Lift Station #6		LS	$ 100,000.00	$ -
35	4" Force Main		LF	$ 15.00	$ -
36	6" Force Main	1,500	LF	$ 18.00	$ 27,000.00
37	8" Force Main		LF	$ 22.00	$ -
38	75 Feet of 4" Service Lead	127	EA	$ 1,000.00	$ 127,000.00
39	Manhole 0'-8' Depth	47	EA	$ 1,600.00	$ 75,200.00
40	Extra Depth on Manholes	139	LF	$ 100.00	$ 13,900.00
41	Trench Safety System	18,034	LF	$ 2.00	$ 36,068.00
42	STEP for 8	0	LS	$ 31,700.00	$ -
	Collection System Subtotal				$ 941,657.00
	Contingencies (20%)				$ 188,331.40
	Total Fresno 3				**$ 1,129,988.40**

Subarea- Fresno 4
Cost Estimate for Conventional Sanitary Sewer Collection System

Item	Description	Quantity	Unit	Unit Price	Total
1	6" Sanitary Sewer (0'-8')	600	LF	$ 15.00	$ 9,000.00
2	6" Sanitary Sewer (8'-10')	0	LF	$ 17.00	$ -
3	6" Sanitary Sewer (10'-12')	0	LF	$ 20.00	$ -
4	6" Sanitary Sewer (12'-14')	0	LF	$ 30.00	$ -
5	6" Sanitary Sewer (14'-16')	0	LF	$ 35.00	$ -
6	6" Sanitary Sewer (16'-18')	0	LF	$ 40.00	$ -
7	6" Sanitary Sewer (18'+)	0	LF	$ 55.00	$ -
8	8" Sanitary Sewer (0'-8')	4,855	LF	$ 20.00	$ 97,100.00
9	8" Sanitary Sewer (8'-10')	2,664	LF	$ 22.00	$ 58,608.00
10	8" Sanitary Sewer (10'-12')	2,273	LF	$ 28.00	$ 63,644.00
11	8" Sanitary Sewer (12'-14')	2,273	LF	$ 35.00	$ 79,555.00
12	8" Sanitary Sewer (14'-16')	2,218	LF	$ 40.00	$ 88,720.00
13	8" Sanitary Sewer (16'-18')	1,232	LF	$ 45.00	$ 55,440.00
14	8" Sanitary Sewer (18'+')	836	LF	$ 58.00	$ 48,488.00
15	10" Sanitary Sewer (0'-8')	0	LF	$ 28.00	$ -
16	10" Sanitary Sewer (8'-10')	0	LF	$ 30.00	$ -
17	10" Sanitary Sewer (10'-12')	0	LF	$ 35.00	$ -
18	10" Sanitary Sewer (12'-14')	0	LF	$ 43.00	$ -
19	10" Sanitary Sewer (14'-16')	0	LF	$ 48.00	$ -
20	10" Sanitary Sewer (16'-18')	0	LF	$ 53.00	$ -
21	10" Sanitary Sewer (18'+)	0	LF	$ 64.00	$ -
22	12" Sanitary Sewer (0'-8')	0	LF	$ 33.00	$ -
23	12" Sanitary Sewer (8'-10')	0	LF	$ 35.00	$ -
24	12" Sanitary Sewer (10'-12')	0	LF	$ 42.00	$ -
25	12" Sanitary Sewer (12'-14')	0	LF	$ 50.00	$ -
26	12" Sanitary Sewer (14'-16')	0	LF	$ 55.00	$ -
27	12" Sanitary Sewer (16'-18')	0	LF	$ 60.00	$ -
28	12" Sanitary Sewer (18'+)	0	LF	$ 70.00	$ -
29	Lift Station #1		LS	$ 120,000.00	$ -
30	Lift Station #2		LS	$ 120,000.00	$ -
31	Lift Station #3		LS	$ 120,000.00	$ -
32	Lift Station #4		LS	$ 120,000.00	$ -
33	Lift Station #5		LS	$ 120,000.00	$ -
34	Lift Station #6		LS	$ 100,000.00	$ -
35	4" Force Main		LF	$ 15.00	$ -
36	6" Force Main		LF	$ 18.00	$ -
37	8" Force Main		LF	$ 22.00	$ -
38	75 Feet of 4" Service Lead	120	EA	$ 1,000.00	$ 120,000.00
39	Manhole 0'-8' Depth	47	EA	$ 1,600.00	$ 75,200.00
40	Extra Depth on Manholes	157	LF	$ 100.00	$ 15,700.00
41	Trench Safety System	16,114	LF	$ 2.00	$ 32,228.00
42	STEP for 8	0	LS	$ 31,700.00	$ -
	Collection System Subtotal				$ 743,683.00
	Contingencies (20%)				$ 148,736.60
	Total Fresno 4				**$ 892,419.60**

Subarea- Fresno 5
Cost Estimate for Conventional Sanitary Sewer Collection System

Item	Description	Quantity	Unit	Unit Price	Total
1	6" Sanitary Sewer (0'-8')	615	LF	$ 15.00	$ 9,225.00
2	6" Sanitary Sewer (8'-10')	308	LF	$ 17.00	$ 5,236.00
3	6" Sanitary Sewer (10'-12')	308	LF	$ 20.00	$ 6,160.00
4	6" Sanitary Sewer (12'-14')	308	LF	$ 30.00	$ 9,240.00
5	6" Sanitary Sewer (14'-16')	62	LF	$ 35.00	$ 2,170.00
6	6" Sanitary Sewer (16'-18')	0	LF	$ 40.00	$ -
7	6" Sanitary Sewer (18'+)	0	LF	$ 55.00	
8	8" Sanitary Sewer (0'-8')	5,145	LF	$ 20.00	$ 102,900.00
9	8" Sanitary Sewer (8'-10')	1,255	LF	$ 22.00	$ 27,610.00
10	8" Sanitary Sewer (10'-12')	0	LF	$ 28.00	$ -
11	8" Sanitary Sewer (12'-14')	0	LF	$ 35.00	$ -
12	8" Sanitary Sewer (14'-16')	0	LF	$ 40.00	$ -
13	8" Sanitary Sewer (16'-18')	0	LF	$ 45.00	$ -
14	8" Sanitary Sewer (18'+')	0	LF	$ 58.00	$ -
15	10" Sanitary Sewer (0'-8')	0	LF	$ 28.00	$ -
16	10" Sanitary Sewer (8'-10')	52	LF	$ 30.00	$ 1,560.00
17	10" Sanitary Sewer (10'-12')	606	LF	$ 35.00	$ 21,210.00
18	10" Sanitary Sewer (12'-14')	606	LF	$ 43.00	$ 26,058.00
19	10" Sanitary Sewer (14'-16')	606	LF	$ 48.00	$ 29,088.00
20	10" Sanitary Sewer (16'-18')	606	LF	$ 53.00	$ 32,118.00
21	10" Sanitary Sewer (18'+)	1,374	LF	$ 64.00	$ 87,936.00
22	12" Sanitary Sewer (0'-8')	0	LF	$ 33.00	$ -
23	12" Sanitary Sewer (8'-10')	0	LF	$ 35.00	$ -
24	12" Sanitary Sewer (10'-12')	538	LF	$ 42.00	$ 22,596.00
25	12" Sanitary Sewer (12'-14')	769	LF	$ 50.00	$ 38,450.00
26	12" Sanitary Sewer (14'-16')	769	LF	$ 55.00	$ 42,295.00
27	12" Sanitary Sewer (16'-18')	423	LF	$ 60.00	$ 25,380.00
28	12" Sanitary Sewer (18'+)	0	LF	$ 70.00	$ -
29	Lift Station #1		LS	$ 120,000.00	$ -
30	Lift Station #2		LS	$ 120,000.00	$ -
31	Lift Station #3		LS	$ 120,000.00	$ -
32	Lift Station #4		LS	$ 120,000.00	$ -
33	Lift Station #5		LS	$ 120,000.00	$ -
34	Lift Station #6	1	LS	$ 100,000.00	$ 100,000.00
35	4" Force Main	500	LF	$ 15.00	$ 7,500.00
36	6" Force Main		LF	$ 18.00	$ -
37	8" Force Main		LF	$ 22.00	$ -
38	75 Feet of 4" Service Lead	100	EA	$ 1,000.00	$ 100,000.00
39	Manhole 0'-8' Depth	34	EA	$ 1,600.00	$ 54,400.00
40	Extra Depth on Manholes	76	LF	$ 100.00	$ 7,600.00
41	Trench Safety System	12,983	LF	$ 2.00	$ 25,966.00
42	STEP for 8	0	LS	$ 31,700.00	$ -
	Collection System Subtotal				$ 784,698.00
	Contingencies (20%)				$ 156,939.60
	Total Fresno 5				**$ 941,637.60**

Subarea- Fresno 6
Cost Estimate for Conventional Sanitary Sewer Collection System

Item	Description	Quantity	Unit	Unit Price	Total
1	6" Sanitary Sewer (0'-8')	1,397	LF	$ 15.00	$ 20,955.00
2	6" Sanitary Sewer (8'-10')	923	LF	$ 17.00	$ 15,691.00
3	6" Sanitary Sewer (10'-12')	680	LF	$ 20.00	$ 13,600.00
4	6" Sanitary Sewer (12'-14')	0	LF	$ 30.00	$ -
5	6" Sanitary Sewer (14'-16')	0	LF	$ 35.00	$ -
6	6" Sanitary Sewer (16'-18')	0	LF	$ 40.00	$ -
7	6" Sanitary Sewer (18'+)	0	LF	$ 55.00	$ -
8	8" Sanitary Sewer (0'-8')	1,509	LF	$ 20.00	$ 30,180.00
9	8" Sanitary Sewer (8'-10')	868	LF	$ 22.00	$ 19,096.00
10	8" Sanitary Sewer (10'-12')	641	LF	$ 28.00	$ 17,948.00
11	8" Sanitary Sewer (12'-14')	455	LF	$ 35.00	$ 15,925.00
12	8" Sanitary Sewer (14'-16')	455	LF	$ 40.00	$ 18,200.00
13	8" Sanitary Sewer (16'-18')	455	LF	$ 45.00	$ 20,475.00
14	8" Sanitary Sewer (18'+')	218	LF	$ 58.00	$ 12,644.00
15	10" Sanitary Sewer (0'-8')	0	LF	$ 28.00	$ -
16	10" Sanitary Sewer (8'-10')	0	LF	$ 30.00	$ -
17	10" Sanitary Sewer (10'-12')	0	LF	$ 35.00	$ -
18	10" Sanitary Sewer (12'-14')	0	LF	$ 43.00	$ -
19	10" Sanitary Sewer (14'-16')	0	LF	$ 48.00	$ -
20	10" Sanitary Sewer (16'-18')	0	LF	$ 53.00	$ -
21	10" Sanitary Sewer (18'+)	0	LF	$ 64.00	$ -
22	12" Sanitary Sewer (0'-8')	0	LF	$ 33.00	$ -
23	12" Sanitary Sewer (8'-10')	0	LF	$ 35.00	$ -
24	12" Sanitary Sewer (10'-12')	0	LF	$ 42.00	$ -
25	12" Sanitary Sewer (12'-14')	0	LF	$ 50.00	$ -
26	12" Sanitary Sewer (14'-16')	0	LF	$ 55.00	$ -
27	12" Sanitary Sewer (16'-18')	0	LF	$ 60.00	$ -
28	12" Sanitary Sewer (18'+)	0	LF	$ 70.00	$ -
29	Lift Station #1		LS	$ 120,000.00	$ -
30	Lift Station #2		LS	$ 120,000.00	$ -
31	Lift Station #3		LS	$ 120,000.00	$ -
32	Lift Station #4	1	LS	$ 120,000.00	$ 120,000.00
33	Lift Station #5		LS	$ 120,000.00	$ -
34	Lift Station #6		LS	$ 100,000.00	$ -
35	4" Force Main	1,800	LF	$ 15.00	$ 27,000.00
36	6" Force Main		LF	$ 18.00	$ -
37	8" Force Main		LF	$ 22.00	$ -
38	75 Feet of 4" Service Lead	42	EA	$ 1,000.00	$ 42,000.00
39	Manhole 0'-8' Depth	19	EA	$ 1,600.00	$ 30,400.00
40	Extra Depth on Manholes	39	LF	$ 100.00	$ 3,900.00
41	Trench Safety System	6,838	LF	$ 2.00	$ 13,676.00
42	STEP for 8	0	LS	$ 31,700.00	$ -
	Collection System Subtotal				$ 421,690.00
	Contingencies (20%)				$ 84,338.00
	Total Fresno 6				**$ 506,028.00**

Subarea- Fresno 7
Cost Estimate for Conventional Sanitary Sewer Collection System

Item	Description	Quantity	Unit	Unit Price	Total
1	6" Sanitary Sewer (0'-8')	6,292	LF	$ 15.00	$ 94,380.00
2	6" Sanitary Sewer (8'-10')	3,760	LF	$ 17.00	$ 63,920.00
3	6" Sanitary Sewer (10'-12')	2,441	LF	$ 20.00	$ 48,820.00
4	6" Sanitary Sewer (12'-14')	1,831	LF	$ 30.00	$ 54,930.00
5	6" Sanitary Sewer (14'-16')	1,200	LF	$ 35.00	$ 42,000.00
6	6" Sanitary Sewer (16'-18')	476	LF	$ 40.00	$ 19,040.00
7	6" Sanitary Sewer (18'+)	0	LF	$ 55.00	$ -
8	8" Sanitary Sewer (0'-8')	764	LF	$ 20.00	$ 15,280.00
9	8" Sanitary Sewer (8'-10')	909	LF	$ 22.00	$ 19,998.00
10	8" Sanitary Sewer (10'-12')	1,391	LF	$ 28.00	$ 38,948.00
11	8" Sanitary Sewer (12'-14')	1,723	LF	$ 35.00	$ 60,305.00
12	8" Sanitary Sewer (14'-16')	1,364	LF	$ 40.00	$ 54,560.00
13	8" Sanitary Sewer (16'-18')	150	LF	$ 45.00	$ 6,750.00
14	8" Sanitary Sewer (18'+')	0	LF	$ 58.00	$ -
15	10" Sanitary Sewer (0'-8')	0	LF	$ 28.00	$ -
16	10" Sanitary Sewer (8'-10')	0	LF	$ 30.00	$ -
17	10" Sanitary Sewer (10'-12')	0	LF	$ 35.00	$ -
18	10" Sanitary Sewer (12'-14')	0	LF	$ 43.00	$ -
19	10" Sanitary Sewer (14'-16')	0	LF	$ 48.00	$ -
20	10" Sanitary Sewer (16'-18')	539	LF	$ 53.00	$ 28,567.00
21	10" Sanitary Sewer (18'+)	961	LF	$ 64.00	$ 61,504.00
22	12" Sanitary Sewer (0'-8')	0	LF	$ 33.00	$ -
23	12" Sanitary Sewer (8'-10')	0	LF	$ 35.00	$ -
24	12" Sanitary Sewer (10'-12')	0	LF	$ 42.00	$ -
25	12" Sanitary Sewer (12'-14')	0	LF	$ 50.00	$ -
26	12" Sanitary Sewer (14'-16')	0	LF	$ 55.00	$ -
27	12" Sanitary Sewer (16'-18')	0	LF	$ 60.00	$ -
28	12" Sanitary Sewer (18'+)	0	LF	$ 70.00	$ -
29	Lift Station #1		LS	$ 120,000.00	$ -
30	Lift Station #2		LS	$ 120,000.00	$ -
31	Lift Station #3		LS	$ 120,000.00	$ -
32	Lift Station #4		LS	$ 120,000.00	$ -
33	Lift Station #5	1	LS	$ 120,000.00	$ 120,000.00
34	Lift Station #6		LS	$ 100,000.00	$ -
35	4" Force Main		LF	$ 15.00	$ -
36	6" Force Main	1,000	LF	$ 18.00	$ 18,000.00
37	8" Force Main		LF	$ 22.00	$ -
38	75 Feet of 4" Service Lead	185	EA	$ 1,000.00	$ 185,000.00
39	Manhole 0'-8' Depth	53	EA	$ 1,600.00	$ 84,800.00
40	Extra Depth on Manholes	176	LF	$ 100.00	$ 17,600.00
41	Trench Safety System	22,569	LF	$ 2.00	$ 45,138.00
42	STEP for 8	0	LS	$ 31,700.00	$ -
	Collection System Subtotal				$ 1,079,540.00
	Contingencies (20%)				$ 215,908.00
	Total Fresno 7				**$ 1,295,448.00**

Trunk Line Costs for 521 South of Treatment Plant

Item	Description	Quantity	Unit	Unit Price	Total
1	8" Sanitary Sewer (0'-8')	909	LF	$ 20.00	$ 18,180.00
2	8" Sanitary Sewer (8'-10')	455	LF	$ 22.00	$ 10,010.00
3	8" Sanitary Sewer (10'-12')	455	LF	$ 28.00	$ 12,740.00
4	8" Sanitary Sewer (8'-10')	182	LF	$ 35.00	$ 6,370.00
5	10" Sanitary Sewer (12'-14')	364	LF	$ 43.00	$ 15,652.00
6	10" Sanitary Sewer (14'-16')	606	LF	$ 48.00	$ 29,088.00
7	10" Sanitary Sewer (16'-18')	30	LF	$ 53.00	$ 1,590.00
8	Manhole 0'-8' Depth	13	EA	$ 1,600.00	$ 20,800.00
9	Extra Depth on Manholes	21	LF	$ 100.00	$ 2,100.00
10	Trench Safety System	2,773	LF	$ 2.00	$ 5,546.00
11	Railroad Crossing 8" gravity	1	EA	$ 10,000.00	$ 10,000.00
	Trunk Cost Subtotal				$ 132,076.00
	Contingencies (20%)				$ 26,415.20
	Total Trunk Costs				**$ 158,491.20**

Trunk Line Costs 521 North of Treatment Plant

Item	Description	Quantity	Unit	Unit Price	Total
1	6" Sanitary Sewer (8'-10')	600	LF	$ 17.00	$ 10,200.00
2	12" Sanitary Sewer (14'-16')	46	LF	$ 55.00	$ 2,530.00
3	12" Sanitary Sewer (16'-18')	769	LF	$ 60.00	$ 46,140.00
4	12" Sanitary Sewer (18'+)	1,735	LF	$ 70.00	$ 121,450.00
6	15" Sanitary Sewer (0'-8')	1,579	LF	$ 54.00	$ 85,266.00
7	15" Sanitary Sewer (8'-10')	1,053	LF	$ 57.00	$ 60,021.00
8	15" Sanitary Sewer (10'-12')	168	LF	$ 62.00	$ 10,416.00
9	Lift Station #2	1	LS	$ 120,000.00	$ 120,000.00
10	Force Main 8"	2,900	EA	$ 22.00	$ 63,800.00
11	Bayou Crossing 15" gravity	1	EA	$ 35,000.00	$ 35,000.00
12	Trench Safety System	5,796	LF	$ 2.00	$ 11,592.00
13	75 Feet of 4" Service Lead	41	EA	$ 1,000.00	$ 41,000.00
14	Bayou Crossing 8" FM	1	EA	$ 5,000.00	$ 5,000.00
15	Rail road Crossing 8" F.M	1	EA	$ 10,000.00	$ 10,000.00
16	Manhole 0'-8' Depth	17	EA	$ 1,600.00	$ 27,200.00
17	Extra Depth on Manholes	90	LF	$ 100.00	$ 9,000.00
	Trunk Cost Subtotal				$ 648,415.00
	Contingencies (20%)				$ 658,615.00
	Total Trunk Costs				**$ 1,307,030.00**

Fresno / Arcola Plant Costs

Item	Description	Quantity	Unit	Unit Price	Total
1	Lift Station- Plant	1	LS	$ 200,000.00	$ 200,000.00
2	10" Force Main	50	LF	$ 22.00	$ 1,100.00
3	Treatment Plant (0.8 mgd)	1	LF	$ 2,000,000.00	$ 2,000,000.00
4	Land Acquisition	1	LS	$ 120,000.00	$ 120,000.00
	Plant Cost Subtotal				$ 2,321,100.00
	Contingencies (20%)				$ 464,220.00
	Total Plant Costs				**$ 2,785,320.00**

Appendix D

Cybernet Water System Modeling Results

MAXIMUM DIMENSIONS	
Number of pipes	250
Number of pumps	62
Number junction nodes	250
Flow meters	62
Boundary nodes	25
Variable storage tanks	62
Pressure switches	62
Regulating Valves	62
Items for limited output	250
limit for non-consecutive numbering	2572

Cybernet version 2.5. SN: 1312500348-250

Extended Description: Static Simulation
1995 - Average Daily Demand

U N I T S S P E C I F I E D

FLOWRATE ..... = gallons/minute
HEAD (HGL) ..... = feet
PRESSURE ..... = psig

O U T P U T O P T I O N D A T A

OUTPUT SELECTION: ALL RESULTS ARE INCLUDED IN THE TABULATED OUTPUT

S Y S T E M C O N F I G U R A T I O N

NUMBER OF PIPES .....(p) = 250
NUMBER OF JUNCTION NODES .....(j) = 183
NUMBER OF PRIMARY LOOPS .....(l) = 66
NUMBER OF BOUNDARY NODES .....(f) = 2
NUMBER OF SUPPLY ZONES .....(z) = 1

****
S I M U L A T I O N R E S U L T S
****

The results are obtained after 10 trials with an accuracy = 0.00112

S I M U L A T I O N D E S C R I P T I O N

CyberNet Version 2.5. Copyright 1991,92 Haestad Methods Inc.

Run Description: Year 1955 - Average Day

Drawing: CYBER

P I P E L I N E R E S U L T S

STATUS CODE: XX -CLOSED PIPE BN -BOUNDARY NODE PU -PUMP LINE
CV -CHECK VALVE RV -REGULATING VALVE TK -STORAGE TANK

PIPE NUMBER	NODE NOS. #1	#2	FLOWRATE (gpm)	HEAD LOSS (ft)	PUMP HEAD (ft)	MINOR LOSS (ft)	LINE VELO. (ft/s)	HL/ 1000 (ft/ft)
10	10	20	-172.15	0.00	0.00	0.00	0.49	0.10
20	30	10	0.00	0.00	0.00	0.00	0.00	0.00
30-XXPU	30	40						
40	50	40	0.00	0.00	0.00	0.00	0.00	0.00
50	10	60	0.00	0.00	0.00	0.00	0.00	0.00
60-XXPU	60	70						
70	80	10	0.00	0.00	0.00	0.00	0.00	0.00
80-XXPU	80	90						
90	50	90	0.00	0.00	0.00	0.00	0.00	0.00
100	100	10	-172.15	0.02	0.00	0.00	1.10	0.70
110-PU	100	110	172.15	0.01	120.42	0.00	1.10	0.70
120	50	110	-172.15	0.01	0.00	0.00	1.10	0.70
130	120	50	-172.15	0.02	0.00	0.00	0.49	0.10
140	50	70	0.00	0.00	0.00	0.00	0.00	0.00
150	140	130	-173.47	0.02	0.00	0.00	1.11	0.71
160	150	140	0.00	0.00	0.00	0.00	0.00	0.00
170-XXPU	150	160						
180	170	160	0.00	0.00	0.00	0.00	0.00	0.00
190	140	180	0.00	0.00	0.00	0.00	0.00	0.00
200-XXPU	180	190						
210	170	190	0.00	0.00	0.00	0.00	0.00	0.00
220	200	140	0.00	0.00	0.00	0.00	0.00	0.00
230-XXPU	200	210						
240	170	210	0.00	0.00	0.00	0.00	0.00	0.00
250	220	140	-173.47	0.01	0.00	0.00	1.11	0.71
260-PU	220	230	173.47	0.01	120.25	0.00	1.11	0.71
270	170	230	-173.47	0.01	0.00	0.00	1.11	0.71
280	240	170	-173.47	0.02	0.00	0.00	1.11	0.71
290	250	260	2.47	0.00	0.00	0.00	0.02	0.00
300	270	250	2.25	0.00	0.00	0.00	0.01	0.00
310	280	270	6.06	0.00	0.00	0.00	0.02	0.00
320	280	250	3.36	0.00	0.00	0.00	0.02	0.00
330	290	280	11.89	0.00	0.00	0.00	0.03	0.00
340	300	290	-2.24	0.00	0.00	0.00	0.01	0.00
350	310	290	17.94	0.00	0.00	0.00	0.05	0.00
360	310	300	4.39	0.00	0.00	0.00	0.03	0.00
370	320	310	28.16	0.00	0.00	0.00	0.08	0.00
380	320	300	5.71	0.01	0.00	0.00	0.04	0.00
390	120	320	38.13	0.01	0.00	0.00	0.11	0.01
400	330	120	-134.02	0.10	0.00	0.00	0.38	0.06
410	340	330	-32.61	0.03	0.00	0.00	0.21	0.03
420	340	350	21.08	0.01	0.00	0.00	0.13	0.01
430	360	350	-2.58	0.00	0.00	0.00	0.02	0.00
440	360	370	1.68	0.00	0.00	0.00	0.01	0.00
450	380	370	0.88	0.00	0.00	0.00	0.01	0.00
460	350	380	3.70	0.00	0.00	0.00	0.02	0.00
470	380	390	2.37	0.00	0.00	0.00	0.02	0.00
480	390	400	0.40	0.00	0.00	0.00	0.00	0.00
490	370	400	0.99	0.00	0.00	0.00	0.01	0.00
500	410	400	0.18	0.00	0.00	0.00	0.00	0.00
510	390	410	0.85	0.00	0.00	0.00	0.01	0.00
520	420	350	-13.90	0.00	0.00	0.00	0.09	0.01
530	430	340	-9.51	0.00	0.00	0.00	0.06	0.00
540	420	430	-23.17	0.02	0.00	0.00	0.15	0.02
550	430	440	-14.78	0.01	0.00	0.00	0.09	0.01
560	440	330	-100.29	0.03	0.00	0.00	0.28	0.04
570	450	440	-85.05	0.02	0.00	0.00	0.24	0.03
580	450	420	-19.43	0.00	0.00	0.00	0.06	0.00
590	460	420	-16.97	0.01	0.00	0.00	0.11	0.01
600	460	470	14.50	0.01	0.00	0.00	0.09	0.01

610	480	470	-13.15	0.00	0.00	0.00	0.08	0.01
620	480	490	-9.71	0.01	0.00	0.00	0.06	0.00
630	490	450	-79.53	0.01	0.00	0.00	0.23	0.02
640	500	450	-23.17	0.00	0.00	0.00	0.15	0.02
650	510	500	-1.79	0.00	0.00	0.00	0.01	0.00
660	520	500	-20.26	0.02	0.00	0.00	0.13	0.01
670	530	490	-68.70	0.03	0.00	0.00	0.19	0.02
680	520	540	16.00	0.01	0.00	0.00	0.10	0.01
690	540	550	9.94	0.01	0.00	0.00	0.06	0.00
700	560	530	-60.27	0.01	0.00	0.00	0.17	0.01
710	550	560	-14.74	0.00	0.00	0.00	0.09	0.01
720	530	570	5.29	0.00	0.00	0.00	0.03	0.00
730	570	480	-21.51	0.02	0.00	0.00	0.14	0.01
740	580	570	-23.21	0.02	0.00	0.00	0.15	0.02
750	580	590	4.42	0.00	0.00	0.00	0.03	0.00
760	600	560	-44.63	0.01	0.00	0.00	0.13	0.01
770	550	610	20.64	0.01	0.00	0.00	0.13	0.01
780	620	610	-6.94	0.00	0.00	0.00	0.04	0.00
790	630	620	-2.68	0.00	0.00	0.00	0.03	0.00
800	640	650	3.63	0.00	0.00	0.00	0.02	0.00
810	650	630	1.84	0.00	0.00	0.00	0.02	0.00
820	630	660	2.05	0.00	0.00	0.00	0.02	0.00
830	670	660	0.76	0.00	0.00	0.00	0.01	0.00
840	680	670	2.11	0.00	0.00	0.00	0.01	0.00
850	660	690	0.79	0.00	0.00	0.00	0.01	0.00
860	690	700	-1.45	0.00	0.00	0.00	0.01	0.00
870	610	640	11.68	0.00	0.00	0.00	0.07	0.00
880	640	680	7.38	0.00	0.00	0.00	0.05	0.00
890	680	700	4.37	0.00	0.00	0.00	0.03	0.00
900	710	580	-12.29	0.00	0.00	0.00	0.08	0.01
910	590	710	0.83	0.00	0.00	0.00	0.01	0.00
920	710	720	5.67	0.00	0.00	0.00	0.04	0.00
930	730	720	-4.55	0.00	0.00	0.00	0.03	0.00
940	740	710	-6.10	0.00	0.00	0.00	0.04	0.00
950	740	730	4.81	0.00	0.00	0.00	0.03	0.00
960	750	740	6.28	0.00	0.00	0.00	0.04	0.00
970	600	750	18.79	0.00	0.00	0.00	0.12	0.01
980	760	770	-2.32	0.00	0.00	0.00	0.03	0.00
990	750	770	9.82	0.00	0.00	0.00	0.06	0.00
1000	760	740	-4.89	0.00	0.00	0.00	0.03	0.00
1010	780	760	-3.47	0.00	0.00	0.00	0.02	0.00
1020	790	760	-1.72	0.00	0.00	0.00	0.02	0.00
1030	790	730	-0.88	0.00	0.00	0.00	0.01	0.00
1040	800	790	-2.38	0.00	0.00	0.00	0.02	0.00
1050	780	800	3.20	0.00	0.00	0.00	0.02	0.00
1060	770	780	4.80	0.00	0.00	0.00	0.03	0.00
1070	810	600	-24.05	0.00	0.00	0.00	0.07	0.00
1080	820	810	4.23	0.00	0.00	0.00	0.03	0.00
1090	820	700	-2.25	0.00	0.00	0.00	0.01	0.00
1100	830	810	-26.93	0.00	0.00	0.00	0.08	0.00
1110	830	840	4.37	0.00	0.00	0.00	0.03	0.00
1120	840	850	2.65	0.00	0.00	0.00	0.02	0.00
1130	850	860	1.68	0.00	0.00	0.00	0.01	0.00
1140	860	870	3.84	0.00	0.00	0.00	0.02	0.00
1150	870	800	-4.23	0.00	0.00	0.00	0.03	0.00
1160	860	780	-3.06	0.00	0.00	0.00	0.02	0.00
1170	730	880	7.35	0.00	0.00	0.00	0.05	0.00
1180	880	890	3.01	0.00	0.00	0.00	0.02	0.00
1190	890	900	0.67	0.00	0.00	0.00	0.00	0.00
1200	910	890	-2.12	0.00	0.00	0.00	0.02	0.00
1210	880	920	4.34	0.00	0.00	0.00	0.03	0.00
1220	910	920	-3.89	0.00	0.00	0.00	0.02	0.00
1230	930	910	-5.56	0.00	0.00	0.00	0.04	0.00
1240	870	930	6.95	0.00	0.00	0.00	0.04	0.00
1250	940	930	-11.84	0.00	0.00	0.00	0.08	0.00
1260	950	940	-10.49	0.00	0.00	0.00	0.07	0.00
1270	950	960	-6.01	0.00	0.00	0.00	0.04	0.00

1280	960	970	-6.68	0.00	0.00	0.00	0.04	0.00
1290	970	980	0.67	0.00	0.00	0.00	0.00	0.00
1300	970	990	-9.37	0.00	0.00	0.00	0.06	0.00
1310	850	1810	0.52	0.00	0.00	0.00	0.00	0.00
1320	1000	830	-22.11	0.00	0.00	0.00	0.06	0.00
1330	1010	1000	42.70	0.01	0.00	0.00	0.12	0.01
1340	820	1020	-5.12	0.00	0.00	0.00	0.03	0.00
1350	1030	1010	-11.18	0.00	0.00	0.00	0.07	0.00
1360	1020	1030	-7.59	0.00	0.00	0.00	0.05	0.00
1370	1040	990	-54.31	0.02	0.00	0.00	0.15	0.01
1380	1040	1050	6.15	0.00	0.00	0.00	0.04	0.00
1390	1050	1060	1.44	0.00	0.00	0.00	0.01	0.00
1400	1060	1070	-6.19	0.00	0.00	0.00	0.04	0.00
1410	1070	1080	-4.62	0.00	0.00	0.00	0.03	0.00
1420	1080	1090	-1.42	0.00	0.00	0.00	0.01	0.00
1430	1090	1100	-3.44	0.00	0.00	0.00	0.02	0.00
1440	1110	1120	-14.93	0.00	0.00	0.00	0.10	0.01
1450	1080	1110	-4.31	0.00	0.00	0.00	0.03	0.00
1460	1130	1070	3.82	0.00	0.00	0.00	0.02	0.00
1470	1130	1110	-5.61	0.00	0.00	0.00	0.04	0.00
1480	1110	1100	4.11	0.00	0.00	0.00	0.03	0.00
1490	1120	950	-16.50	0.01	0.00	0.00	0.11	0.01
1500	1010	240	-66.57	0.02	0.00	0.00	0.19	0.02
1510	240	1140	106.90	0.01	0.00	0.00	0.30	0.04
1520	1140	1150	19.52	0.01	0.00	0.00	0.12	0.01
1530	1160	1010	-12.69	0.00	0.00	0.00	0.08	0.01
1540	1160	1150	-1.73	0.00	0.00	0.00	0.02	0.00
1550	1170	1160	-13.08	0.00	0.00	0.00	0.08	0.01
1560	1180	1170	-1.06	0.00	0.00	0.00	0.01	0.00
1570	1150	1180	16.44	0.00	0.00	0.00	0.10	0.01
1580	1190	1170	-10.67	0.01	0.00	0.00	0.07	0.00
1590	1180	1190	15.02	0.01	0.00	0.00	0.10	0.01
1600	1190	1200	22.33	0.02	0.00	0.00	0.14	0.02
1610	1200	1210	-10.44	0.01	0.00	0.00	0.07	0.00
1620	1220	1210	81.33	0.01	0.00	0.00	0.23	0.02
1630	1140	1220	87.16	0.03	0.00	0.00	0.25	0.03
1640	1230	1240	-44.58	0.01	0.00	0.00	0.13	0.01
1650	1240	1040	-45.25	0.01	0.00	0.00	0.13	0.01
1660	1210	1250	67.97	0.02	0.00	0.00	0.19	0.02
1670	1250	1230	-4.25	0.00	0.00	0.00	0.03	0.00
1680	1260	1250	-44.01	0.02	0.00	0.00	0.12	0.01
1690	1200	1260	28.28	0.03	0.00	0.00	0.18	0.02
1700	1270	1260	-64.90	0.02	0.00	0.00	0.18	0.02
1710	1280	1270	-7.53	0.01	0.00	0.00	0.05	0.00
1720	1280	1290	3.94	0.00	0.00	0.00	0.04	0.00
1730	1300	1290	2.40	0.00	0.00	0.00	0.03	0.00
1740	1300	1310	-36.97	0.00	0.00	0.00	0.10	0.01
1750	1310	1270	-54.00	0.00	0.00	0.00	0.15	0.01
1760	1320	1310	-16.82	0.00	0.00	0.00	0.11	0.01
1770	1330	1300	-31.88	0.00	0.00	0.00	0.09	0.00
1780	1340	1330	-3.65	0.00	0.00	0.00	0.04	0.00
1790	1320	1340	6.01	0.00	0.00	0.00	0.04	0.00
1800	1350	1320	-4.58	0.00	0.00	0.00	0.03	0.00
1810	1360	1350	-3.91	0.00	0.00	0.00	0.02	0.00
1820	1370	1360	-2.79	0.00	0.00	0.00	0.02	0.00
1830	1380	1370	-1.22	0.00	0.00	0.00	0.01	0.00
1840	1380	1320	-4.66	0.00	0.00	0.00	0.03	0.00
1850	1390	1380	-2.52	0.00	0.00	0.00	0.03	0.00
1860	1390	1400	-2.69	0.00	0.00	0.00	0.02	0.00
1870	1340	1400	6.97	0.00	0.00	0.00	0.04	0.00
1880	1410	1330	-27.33	0.00	0.00	0.00	0.08	0.00
1890	1420	1410	-21.51	0.00	0.00	0.00	0.06	0.00
1900	1400	1420	-4.18	0.00	0.00	0.00	0.03	0.00
1910	1400	1430	5.99	0.00	0.00	0.00	0.04	0.00
1920	1430	1440	1.91	0.00	0.00	0.00	0.01	0.00
1930	1440	1450	0.79	0.00	0.00	0.00	0.01	0.00
1940	1430	1450	3.18	0.00	0.00	0.00	0.02	0.00

1950	1450	1460	1.95	0.00	0.00	0.00	0.01	0.00
1960	1470	1460	3.60	0.00	0.00	0.00	0.02	0.00
1970	1470	1480	-4.72	0.00	0.00	0.00	0.01	0.00
1980	1480	1490	-6.62	0.00	0.00	0.00	0.02	0.00
1990	1490	1500	-13.46	0.00	0.00	0.00	0.04	0.00
2000	1500	1420	-16.65	0.00	0.00	0.00	0.05	0.00
2010	1460	1510	4.43	0.00	0.00	0.00	0.03	0.00
2020	1520	1510	0.01	0.00	0.00	0.00	0.00	0.00
2030	1510	1530	2.64	0.00	0.00	0.00	0.02	0.00
2040	1530	1520	-1.17	0.00	0.00	0.00	0.01	0.00
2050	1520	1390	-2.74	0.00	0.00	0.00	0.03	0.00
2060	1480	1540	-0.12	0.00	0.00	0.00	0.00	0.00
2070	1550	1540	-2.25	0.00	0.00	0.00	0.03	0.00
2080	1560	1550	-0.57	0.00	0.00	0.00	0.01	0.00
2090	1570	1560	2.52	0.00	0.00	0.00	0.03	0.00
2100	1290	1570	2.53	0.00	0.00	0.00	0.03	0.00
2110	1550	1490	-2.13	0.00	0.00	0.00	0.01	0.00
2120	1500	1560	1.40	0.00	0.00	0.00	0.02	0.00
2130	1570	1410	-3.58	0.00	0.00	0.00	0.02	0.00
2140	1580	1540	9.09	0.02	0.00	0.00	0.06	0.00
2150	1590	1580	3.32	0.00	0.00	0.00	0.02	0.00
2160	1600	1580	10.26	0.01	0.00	0.00	0.07	0.00
2170	1610	1590	11.39	0.01	0.00	0.00	0.07	0.00
2180	1610	1600	5.59	0.00	0.00	0.00	0.04	0.00
2190	1250	1610	21.48	0.02	0.00	0.00	0.14	0.01
2200	1620	1600	7.81	0.01	0.00	0.00	0.05	0.00
2210	1620	1630	-10.95	0.01	0.00	0.00	0.07	0.00
2220	1630	1640	-12.30	0.00	0.00	0.00	0.08	0.01
2230	1640	1650	-14.99	0.00	0.00	0.00	0.10	0.01
2240	1660	1650	-5.22	0.00	0.00	0.00	0.03	0.00
2250	1670	1660	-4.10	0.00	0.00	0.00	0.03	0.00
2260	1680	1670	-1.86	0.00	0.00	0.00	0.01	0.00
2270	1690	1680	5.54	0.00	0.00	0.00	0.04	0.00
2280	1650	1690	1.10	0.00	0.00	0.00	0.01	0.00
2290	1700	1690	6.01	0.00	0.00	0.00	0.04	0.00
2300	1710	1700	-0.18	0.00	0.00	0.00	0.00	0.00
2310	1720	1640	-2.47	0.00	0.00	0.00	0.02	0.00
2320	1650	1730	-21.53	0.00	0.00	0.00	0.06	0.00
2330	1730	1740	-24.56	0.00	0.00	0.00	0.07	0.00
2340	1730	1700	2.37	0.00	0.00	0.00	0.03	0.00
2350	1750	1700	5.39	0.00	0.00	0.00	0.03	0.00
2360	1750	1740	-3.57	0.00	0.00	0.00	0.04	0.00
2370	1710	1750	-3.18	0.00	0.00	0.00	0.02	0.00
2380	1740	1230	-29.03	0.00	0.00	0.00	0.08	0.00
2390	1760	1750	6.36	0.00	0.00	0.00	0.04	0.00
2400	1230	1760	9.73	0.00	0.00	0.00	0.06	0.00
2410	1770	1830	-0.67	0.00	0.00	0.00	0.01	0.00
2420	1680	1780	5.38	0.00	0.00	0.00	0.03	0.00
2430	1060	1790	5.16	0.00	0.00	0.00	0.03	0.00
2440	1050	1800	2.69	0.00	0.00	0.00	0.02	0.00
2450	1810	1820	-0.60	0.00	0.00	0.00	0.01	0.00
2460	840	1820	1.50	0.00	0.00	0.00	0.01	0.00
2470	990	1000	-64.14	0.00	0.00	0.00	0.18	0.02
2480	1760	1830	2.02	0.00	0.00	0.00	0.01	0.00
2490-BN	130	0	-173.47	0.00	0.00	0.00	0.49	0.10
2500-BN	20	0	-172.15	0.00	0.00	0.00	0.49	0.10

J U N C T I O N N O D E R E S U L T S

JUNCTION NUMBER	JUNCTION TITLE	EXTERNAL DEMAND (gpm)	HYDRAULIC GRADE (ft)	JUNCTION ELEVATION (ft)	PRESSURE HEAD (ft)	JUNCTION PRESSURE (psi)
10-1		0.00	22.00	10.00	12.00	5.20
20-1		0.00	22.00	10.00	12.00	5.20

30-1	0.00	22.00	10.00	12.00	5.20
40-1	0.00	142.37	10.00	132.37	57.36
50-1	0.00	142.37	10.00	132.37	57.36
60-1	0.00	22.00	10.00	12.00	5.20
70-1	0.00	142.37	10.00	132.37	57.36
80-1	0.00	22.00	10.00	12.00	5.20
90-1	0.00	142.37	10.00	132.37	57.36
100-1	0.00	21.98	10.00	11.98	5.19
110-1	0.00	142.39	10.00	132.39	57.37
120-1	0.00	142.35	10.00	132.35	57.35
130-1	0.00	22.00	10.00	12.00	5.20
140-1	0.00	21.98	10.00	11.98	5.19
150-1	0.00	21.98	10.00	11.98	5.19
160-1	0.00	142.19	10.00	132.19	57.28
170-1	0.00	142.19	10.00	132.19	57.28
180-1	0.00	21.98	10.00	11.98	5.19
190-1	0.00	142.19	10.00	132.19	57.28
200-1	0.00	21.98	10.00	11.98	5.19
210-1	0.00	142.19	10.00	132.19	57.28
220-1	0.00	21.96	10.00	11.96	5.18
230-1	0.00	142.21	10.00	132.21	57.29
240-1	0.00	142.17	10.00	132.17	57.27
250-1	3.14	142.34	10.00	132.34	57.35
260-1	2.47	142.34	10.00	132.34	57.35
270-1	3.81	142.34	10.00	132.34	57.35
280-1	2.47	142.34	10.00	132.34	57.35
290-1	3.81	142.34	10.00	132.34	57.35
300-1	12.34	142.34	10.00	132.34	57.35
310-1	5.83	142.34	10.00	132.34	57.35
320-1	4.26	142.35	10.00	132.35	57.35
330-1	1.12	142.26	10.00	132.26	57.31
340-1	2.02	142.22	10.00	132.22	57.30
350-1	0.90	142.21	10.00	132.21	57.29
360-1	0.90	142.21	10.00	132.21	57.29
370-1	1.57	142.21	10.00	132.21	57.29
380-1	0.45	142.21	10.00	132.21	57.29
390-1	1.12	142.21	10.00	132.21	57.29
400-1	1.57	142.21	10.00	132.21	57.29
410-1	0.67	142.21	10.00	132.21	57.29
420-1	0.67	142.21	10.00	132.21	57.29
430-1	1.12	142.22	10.00	132.22	57.30
440-1	0.45	142.23	10.00	132.23	57.30
450-1	1.79	142.20	10.00	132.20	57.29
460-1	2.47	142.20	10.00	132.20	57.29
470-1	1.35	142.19	10.00	132.19	57.28
480-1	1.35	142.19	10.00	132.19	57.28
490-1	1.12	142.20	10.00	132.20	57.29
500-1	1.12	142.20	10.00	132.20	57.29
510-1	1.79	142.20	10.00	132.20	57.29
520-1	4.26	142.18	10.00	132.18	57.28
530-1	3.14	142.17	10.00	132.17	57.27
540-1	6.06	142.17	10.00	132.17	57.27
550-1	4.04	142.16	10.00	132.16	57.27
560-1	0.90	142.16	10.00	132.16	57.27
570-1	3.59	142.17	10.00	132.17	57.27
580-1	6.50	142.15	10.00	132.15	57.26
590-1	3.59	142.15	10.00	132.15	57.26
600-1	1.79	142.15	10.00	132.15	57.27
610-1	2.02	142.15	10.00	132.15	57.27
620-1	4.26	142.15	10.00	132.15	57.27
630-1	2.47	142.15	10.00	132.15	57.27
640-1	0.67	142.15	10.00	132.15	57.27
650-1	1.79	142.15	10.00	132.15	57.27
660-1	2.02	142.15	10.00	132.15	57.27
670-1	1.35	142.15	10.00	132.15	57.27
680-1	0.90	142.15	10.00	132.15	57.27
690-1	2.24	142.15	10.00	132.15	57.27

1370-1	1.57	142.06	10.00	132.06	57.22
1380-1	3.36	142.06	10.00	132.06	57.22
1390-1	2.47	142.05	10.00	132.05	57.22
1400-1	2.47	142.05	10.00	132.05	57.22
1410-1	2.24	142.06	10.00	132.06	57.22
1420-1	0.67	142.05	10.00	132.05	57.22
1430-1	0.90	142.05	10.00	132.05	57.22
1440-1	1.12	142.05	10.00	132.05	57.22
1450-1	2.02	142.05	10.00	132.05	57.22
1460-1	1.12	142.05	10.00	132.05	57.22
1470-1	1.12	142.05	10.00	132.05	57.22
1480-1	2.02	142.05	10.00	132.05	57.22
1490-1	4.71	142.05	10.00	132.05	57.22
1500-1	1.79	142.05	10.00	132.05	57.22
1510-1	1.79	142.05	10.00	132.05	57.22
1520-1	1.57	142.05	10.00	132.05	57.22
1530-1	3.81	142.05	10.00	132.05	57.22
1540-1	6.73	142.05	10.00	132.05	57.22
1550-1	3.81	142.05	10.00	132.05	57.22
1560-1	4.49	142.05	10.00	132.05	57.22
1570-1	3.59	142.05	10.00	132.05	57.22
1580-1	4.49	142.07	10.00	132.07	57.23
1590-1	8.07	142.07	10.00	132.07	57.23
1600-1	3.14	142.08	10.00	132.08	57.23
1610-1	4.49	142.08	10.00	132.08	57.24
1620-1	3.14	142.09	10.00	132.09	57.24
1630-1	1.35	142.10	10.00	132.10	57.24
1640-1	0.22	142.10	10.00	132.10	57.24
1650-1	0.22	142.10	10.00	132.10	57.24
1660-1	1.12	142.10	10.00	132.10	57.24
1670-1	2.24	142.10	10.00	132.10	57.24
1680-1	2.02	142.10	10.00	132.10	57.24
1690-1	1.57	142.10	10.00	132.10	57.24
1700-1	1.57	142.10	10.00	132.10	57.24
1710-1	3.36	142.10	10.00	132.10	57.24
1720-1	2.47	142.10	10.00	132.10	57.24
1730-1	0.67	142.10	10.00	132.10	57.24
1740-1	0.90	142.10	10.00	132.10	57.24
1750-1	1.35	142.10	10.00	132.10	57.24
1760-1	1.35	142.10	10.00	132.10	57.24
1770-1	0.67	142.10	10.00	132.10	57.24
1780-1	5.38	142.10	10.00	132.10	57.24
1790-1	5.16	142.12	10.00	132.12	57.25
1800-1	2.69	142.12	10.00	132.12	57.25
1810-1	1.12	142.15	10.00	132.15	57.26
1820-1	0.90	142.15	10.00	132.15	57.26
1830-1	1.35	142.10	10.00	132.10	57.24

S U M M A R Y O F I N F L O W S A N D O U T F L O W S

(+) INFLOWS INTO THE SYSTEM FROM BOUNDARY NODES
(-) OUTFLOWS FROM THE SYSTEM INTO BOUNDARY NODES

PIPE NUMBER	FLOWRATE (gpm)
2490	173.47
2500	172.15

NET SYSTEM INFLOW = 345.62
NET SYSTEM OUTFLOW = 0.00
NET SYSTEM DEMAND = 345.62

**** CYBERNET SIMULATION COMPLETED **** DATE: 3/28/1996 TIME: 13:34:51

700-1	0.67	142.15	10.00	132.15	57.27
710-1	1.35	142.15	10.00	132.15	57.26
720-1	1.12	142.15	10.00	132.15	57.26
730-1	1.12	142.15	10.00	132.15	57.26
740-1	2.69	142.15	10.00	132.15	57.26
750-1	2.69	142.15	10.00	132.15	57.26
760-1	2.02	142.15	10.00	132.15	57.26
770-1	2.69	142.15	10.00	132.15	57.26
780-1	2.02	142.15	10.00	132.15	57.26
790-1	0.22	142.15	10.00	132.15	57.26
800-1	1.35	142.15	10.00	132.15	57.26
810-1	1.35	142.15	10.00	132.15	57.27
820-1	3.14	142.15	10.00	132.15	57.27
830-1	0.45	142.15	10.00	132.15	57.26
840-1	0.22	142.15	10.00	132.15	57.26
850-1	0.45	142.15	10.00	132.15	57.26
860-1	0.90	142.15	10.00	132.15	57.26
870-1	1.12	142.15	10.00	132.15	57.26
880-1	0.00	142.15	10.00	132.15	57.26
890-1	0.22	142.15	10.00	132.15	57.26
900-1	0.67	142.15	10.00	132.15	57.26
910-1	0.45	142.14	10.00	132.14	57.26
920-1	0.45	142.15	10.00	132.15	57.26
930-1	0.67	142.14	10.00	132.14	57.26
940-1	1.35	142.14	10.00	132.14	57.26
950-1	0.00	142.14	10.00	132.14	57.26
960-1	0.67	142.14	10.00	132.14	57.26
970-1	2.02	142.14	10.00	132.14	57.26
980-1	0.67	142.14	10.00	132.14	57.26
990-1	0.45	142.14	10.00	132.14	57.26
1000-1	0.67	142.14	10.00	132.14	57.26
1010-1	0.00	142.15	10.00	132.15	57.27
1020-1	2.47	142.15	10.00	132.15	57.27
1030-1	3.59	142.15	10.00	132.15	57.27
1040-1	2.92	142.13	10.00	132.13	57.26
1050-1	2.02	142.12	10.00	132.12	57.25
1060-1	2.47	142.12	10.00	132.12	57.25
1070-1	2.24	142.12	10.00	132.12	57.25
1080-1	1.12	142.13	10.00	132.13	57.25
1090-1	2.02	142.13	10.00	132.13	57.25
1100-1	0.67	142.13	10.00	132.13	57.25
1110-1	0.90	142.13	10.00	132.13	57.25
1120-1	1.57	142.13	10.00	132.13	57.26
1130-1	1.79	142.13	10.00	132.13	57.25
1140-1	0.22	142.16	10.00	132.16	57.27
1150-1	1.35	142.15	10.00	132.15	57.27
1160-1	1.35	142.15	10.00	132.15	57.27
1170-1	1.35	142.15	10.00	132.15	57.26
1180-1	2.47	142.15	10.00	132.15	57.26
1190-1	3.36	142.14	10.00	132.14	57.26
1200-1	4.49	142.12	10.00	132.12	57.25
1210-1	2.92	142.13	10.00	132.13	57.25
1220-1	5.83	142.13	10.00	132.13	57.26
1230-1	1.57	142.10	10.00	132.10	57.25
1240-1	0.67	142.12	10.00	132.12	57.25
1250-1	6.73	142.10	10.00	132.10	57.24
1260-1	7.40	142.08	10.00	132.08	57.24
1270-1	3.36	142.06	10.00	132.06	57.23
1280-1	3.59	142.06	10.00	132.06	57.22
1290-1	3.81	142.05	10.00	132.05	57.22
1300-1	2.69	142.06	10.00	132.06	57.22
1310-1	0.22	142.06	10.00	132.06	57.23
1320-1	1.57	142.06	10.00	132.06	57.22
1330-1	0.90	142.06	10.00	132.06	57.22
1340-1	2.69	142.06	10.00	132.06	57.22
1350-1	0.67	142.06	10.00	132.06	57.22
1360-1	1.12	142.06	10.00	132.06	57.22

MAXIMUM DIMENSIONS	
Number of pipes	250
Number of pumps	62
Number junction nodes	250
Flow meters	62
Boundary nodes	25
Variable storage tanks	62
Pressure switches	62
Regulating Valves	62
Items for limited output	250
limit for non-consecutive numbering	2572

Cybernet version 2.5. SN: 1312500348-250

Extended Description: Static Simulation
1995 - Peak Day Demand

U N I T S S P E C I F I E D

FLOWRATE ..... = gallons/minute
HEAD (HGL) ..... = feet
PRESSURE ..... = psig

O U T P U T O P T I O N D A T A

OUTPUT SELECTION: ALL RESULTS ARE INCLUDED IN THE TABULATED OUTPUT

S Y S T E M C O N F I G U R A T I O N

NUMBER OF PIPES .....(p) = 250
NUMBER OF JUNCTION NODES .....(j) = 183
NUMBER OF PRIMARY LOOPS .....(l) = 66
NUMBER OF BOUNDARY NODES .....(f) = 2
NUMBER OF SUPPLY ZONES .....(z) = 1

****
S I M U L A T I O N R E S U L T S
****

The results are obtained after 9 trials with an accuracy = 0.00138

S I M U L A T I O N D E S C R I P T I O N

CyberNet Version 2.5. Copyright 1991,92 Haestad Methods Inc.

Run Description: Year 1995 - Peak Day

Drawing: CYBER

P I P E L I N E R E S U L T S

STATUS CODE: XX -CLOSED PIPE BN -BOUNDARY NODE PU -PUMP LINE
CV -CHECK VALVE RV -REGULATING VALVE TK -STORAGE TANK

PIPE NUMBER	NODE NOS. #1	#2	FLOWRATE (gpm)	HEAD LOSS (ft)	PUMP HEAD (ft)	MINOR LOSS (ft)	LINE VELO. (ft/s)	HL/ 1000 (ft/ft)
10	10	20	-478.61	0.02	0.00	0.00	1.36	0.65
20	30	10	0.00	0.00	0.00	0.00	0.00	0.00
30-XXPU	30	40						
40	50	40	0.00	0.00	0.00	0.00	0.00	0.00
50	10	60	0.00	0.00	0.00	0.00	0.00	0.00
60-XXPU	60	70						
70	80	10	-239.37	0.01	0.00	0.00	1.53	1.29
80-PU	80	90	239.37	0.01	110.13	0.00	1.53	1.29
90	50	90	-239.37	0.03	0.00	0.00	1.53	1.29
100	100	10	-239.25	0.04	0.00	0.00	1.53	1.29
110-PU	100	110	239.25	0.01	110.16	0.00	1.53	1.29
120	50	110	-239.25	0.03	0.00	0.00	1.53	1.29
130	120	50	-478.61	0.13	0.00	0.00	1.36	0.65
140	50	70	0.00	0.00	0.00	0.00	0.00	0.00
150	140	130	-212.63	0.03	0.00	0.00	1.36	1.04
160	150	140	0.00	0.00	0.00	0.00	0.00	0.00
170-XXPU	150	160						
180	170	160	0.00	0.00	0.00	0.00	0.00	0.00
190	140	180	0.00	0.00	0.00	0.00	0.00	0.00
200-XXPU	180	190						
210	170	190	0.00	0.00	0.00	0.00	0.00	0.00
220	200	140	0.00	0.00	0.00	0.00	0.00	0.00
230-XXPU	200	210						
240	170	210	0.00	0.00	0.00	0.00	0.00	0.00
250	220	140	-212.63	0.02	0.00	0.00	1.36	1.04
260-PU	220	230	212.63	0.01	115.26	0.00	1.36	1.04
270	170	230	-212.63	0.02	0.00	0.00	1.36	1.04
280	240	170	-212.63	0.00	0.00	0.00	0.60	0.14
290	250	260	4.94	0.00	0.00	0.00	0.03	0.00
300	270	250	4.49	0.00	0.00	0.00	0.03	0.00
310	280	270	12.11	0.00	0.00	0.00	0.03	0.00
320	280	250	6.73	0.00	0.00	0.00	0.04	0.00
330	290	280	23.78	0.00	0.00	0.00	0.07	0.00
340	300	290	-4.47	0.00	0.00	0.00	0.03	0.00
350	310	290	35.87	0.01	0.00	0.00	0.10	0.01
360	310	300	8.78	0.01	0.00	0.00	0.06	0.00
370	320	310	56.31	0.01	0.00	0.00	0.16	0.01
380	320	300	11.43	0.02	0.00	0.00	0.07	0.00
390	120	320	76.26	0.02	0.00	0.00	0.22	0.02
400	330	120	-402.35	0.74	0.00	0.00	1.14	0.47
410	340	330	-97.09	0.25	0.00	0.00	0.62	0.24
420	340	350	62.12	0.10	0.00	0.00	0.40	0.11
430	360	350	-5.15	0.00	0.00	0.00	0.03	0.00
440	360	370	3.35	0.00	0.00	0.00	0.02	0.00
450	380	370	1.77	0.00	0.00	0.00	0.02	0.00
460	350	380	7.41	0.00	0.00	0.00	0.05	0.00
470	380	390	4.74	0.00	0.00	0.00	0.03	0.00
480	390	400	0.80	0.00	0.00	0.00	0.01	0.00
490	370	400	1.98	0.00	0.00	0.00	0.01	0.00
500	410	400	0.37	0.00	0.00	0.00	0.00	0.00
510	390	410	1.71	0.00	0.00	0.00	0.01	0.00
520	420	350	-47.76	0.05	0.00	0.00	0.30	0.07
530	430	340	-30.93	0.02	0.00	0.00	0.20	0.03
540	420	430	-70.93	0.13	0.00	0.00	0.45	0.14
550	430	440	-42.24	0.04	0.00	0.00	0.27	0.05
560	440	330	-303.02	0.23	0.00	0.00	0.86	0.28
570	450	440	-259.88	0.19	0.00	0.00	0.74	0.21
580	450	420	-65.90	0.03	0.00	0.00	0.19	0.02
590	460	420	-51.45	0.05	0.00	0.00	0.33	0.08
600	460	470	46.51	0.06	0.00	0.00	0.30	0.06

610	480	470	-43.81	0.02	0.00	0.00	0.28	0.06
620	480	490	-29.34	0.06	0.00	0.00	0.19	0.03
630	490	450	-255.62	0.05	0.00	0.00	0.73	0.20
640	500	450	-66.58	0.02	0.00	0.00	0.42	0.12
650	510	500	-3.58	0.00	0.00	0.00	0.02	0.00
660	520	500	-60.76	0.15	0.00	0.00	0.39	0.10
670	530	490	-224.05	0.25	0.00	0.00	0.64	0.16
680	520	540	52.24	0.10	0.00	0.00	0.33	0.08
690	540	550	40.12	0.10	0.00	0.00	0.26	0.05
700	560	530	-204.23	0.07	0.00	0.00	0.58	0.13
710	550	560	-39.33	0.01	0.00	0.00	0.25	0.05
720	530	570	13.54	0.01	0.00	0.00	0.09	0.01
730	570	480	-70.45	0.20	0.00	0.00	0.45	0.13
740	580	570	-76.80	0.17	0.00	0.00	0.49	0.16
750	580	590	13.87	0.01	0.00	0.00	0.09	0.01
760	600	560	-163.10	0.11	0.00	0.00	0.46	0.09
770	550	610	71.37	0.08	0.00	0.00	0.46	0.14
780	620	610	-20.17	0.01	0.00	0.00	0.13	0.01
790	630	620	-11.65	0.02	0.00	0.00	0.13	0.02
800	640	650	9.95	0.00	0.00	0.00	0.06	0.00
810	650	630	6.37	0.00	0.00	0.00	0.07	0.01
820	630	660	13.07	0.01	0.00	0.00	0.15	0.02
830	670	660	-0.65	0.00	0.00	0.00	0.01	0.00
840	680	670	2.05	0.00	0.00	0.00	0.01	0.00
850	660	690	8.39	0.01	0.00	0.00	0.10	0.01
860	690	700	3.91	0.00	0.00	0.00	0.02	0.00
870	610	640	47.16	0.02	0.00	0.00	0.30	0.06
880	640	680	35.87	0.02	0.00	0.00	0.23	0.04
890	680	700	32.02	0.01	0.00	0.00	0.20	0.03
900	710	580	-49.94	0.02	0.00	0.00	0.32	0.07
910	590	710	6.69	0.01	0.00	0.00	0.08	0.01
920	710	720	23.08	0.01	0.00	0.00	0.15	0.02
930	730	720	-20.84	0.00	0.00	0.00	0.13	0.01
940	740	710	-30.85	0.01	0.00	0.00	0.20	0.03
950	740	730	17.27	0.01	0.00	0.00	0.11	0.01
960	750	740	16.15	0.01	0.00	0.00	0.10	0.01
970	600	750	50.51	0.02	0.00	0.00	0.32	0.07
980	760	770	-6.83	0.01	0.00	0.00	0.08	0.01
990	750	770	28.99	0.01	0.00	0.00	0.18	0.03
1000	760	740	-24.34	0.01	0.00	0.00	0.16	0.02
1010	780	760	-21.63	0.00	0.00	0.00	0.14	0.02
1020	790	760	-5.50	0.00	0.00	0.00	0.06	0.00
1030	790	730	-12.01	0.00	0.00	0.00	0.08	0.01
1040	800	790	-17.08	0.00	0.00	0.00	0.11	0.01
1050	780	800	8.70	0.00	0.00	0.00	0.06	0.00
1060	770	780	16.78	0.01	0.00	0.00	0.11	0.01
1070	810	600	-109.01	0.05	0.00	0.00	0.31	0.04
1080	820	810	-12.01	0.00	0.00	0.00	0.08	0.01
1090	820	700	-34.59	0.02	0.00	0.00	0.22	0.04
1100	830	810	-94.30	0.03	0.00	0.00	0.27	0.03
1110	830	840	-21.27	0.01	0.00	0.00	0.14	0.01
1120	840	850	-18.39	0.00	0.00	0.00	0.12	0.01
1130	850	860	-26.65	0.00	0.00	0.00	0.17	0.02
1140	860	870	-2.79	0.00	0.00	0.00	0.02	0.00
1150	870	800	-23.07	0.02	0.00	0.00	0.15	0.02
1160	860	780	-25.67	0.02	0.00	0.00	0.16	0.02
1170	730	880	23.86	0.01	0.00	0.00	0.15	0.02
1180	880	890	9.13	0.00	0.00	0.00	0.06	0.00
1190	890	900	1.34	0.00	0.00	0.00	0.01	0.00
1200	910	890	-7.35	0.01	0.00	0.00	0.08	0.01
1210	880	920	14.73	0.01	0.00	0.00	0.09	0.01
1220	910	920	-13.83	0.00	0.00	0.00	0.09	0.01
1230	930	910	-20.28	0.02	0.00	0.00	0.13	0.01
1240	870	930	18.05	0.02	0.00	0.00	0.12	0.01
1250	940	930	-36.98	0.04	0.00	0.00	0.24	0.04
1260	950	940	-34.28	0.02	0.00	0.00	0.22	0.04
1270	950	960	-4.31	0.00	0.00	0.00	0.03	0.00

1280	960	970	-5.65	0.00	0.00	0.00	0.04	0.00
1290	970	980	1.34	0.00	0.00	0.00	0.01	0.00
1300	970	990	-11.03	0.01	0.00	0.00	0.07	0.00
1310	850	1810	7.36	0.00	0.00	0.00	0.05	0.00
1320	1000	830	-114.68	0.05	0.00	0.00	0.33	0.05
1330	1010	1000	14.38	0.00	0.00	0.00	0.04	0.00
1340	820	1020	40.31	0.05	0.00	0.00	0.26	0.05
1350	1030	1010	28.19	0.01	0.00	0.00	0.18	0.02
1360	1020	1030	35.37	0.01	0.00	0.00	0.23	0.04
1370	1040	990	-115.78	0.07	0.00	0.00	0.33	0.05
1380	1040	1050	6.70	0.00	0.00	0.00	0.04	0.00
1390	1050	1060	-2.72	0.00	0.00	0.00	0.02	0.00
1400	1060	1070	-17.98	0.01	0.00	0.00	0.11	0.01
1410	1070	1080	-12.50	0.00	0.00	0.00	0.08	0.01
1420	1080	1090	-4.29	0.00	0.00	0.00	0.03	0.00
1430	1090	1100	-8.33	0.00	0.00	0.00	0.05	0.00
1440	1110	1120	-35.46	0.02	0.00	0.00	0.23	0.04
1450	1080	1110	-10.45	0.00	0.00	0.00	0.07	0.00
1460	1130	1070	9.96	0.00	0.00	0.00	0.06	0.00
1470	1130	1110	-13.54	0.00	0.00	0.00	0.09	0.01
1480	1110	1100	9.67	0.00	0.00	0.00	0.06	0.00
1490	1120	950	-38.60	0.03	0.00	0.00	0.25	0.04
1500	1010	240	-25.36	0.00	0.00	0.00	0.07	0.00
1510	240	1140	187.27	0.03	0.00	0.00	0.53	0.11
1520	1140	1150	25.63	0.02	0.00	0.00	0.16	0.02
1530	1160	1010	-39.17	0.04	0.00	0.00	0.25	0.05
1540	1160	1150	5.89	0.01	0.00	0.00	0.07	0.01
1550	1170	1160	-30.58	0.01	0.00	0.00	0.20	0.03
1560	1180	1170	-5.49	0.01	0.00	0.00	0.06	0.00
1570	1150	1180	28.83	0.01	0.00	0.00	0.18	0.03
1580	1190	1170	-22.39	0.04	0.00	0.00	0.14	0.02
1590	1180	1190	29.38	0.04	0.00	0.00	0.19	0.03
1600	1190	1200	45.04	0.08	0.00	0.00	0.29	0.06
1610	1200	1210	-19.03	0.03	0.00	0.00	0.12	0.01
1620	1220	1210	149.53	0.03	0.00	0.00	0.42	0.08
1630	1140	1220	161.19	0.08	0.00	0.00	0.46	0.09
1640	1230	1240	-101.90	0.07	0.00	0.00	0.29	0.04
1650	1240	1040	-103.24	0.04	0.00	0.00	0.29	0.04
1660	1210	1250	124.67	0.07	0.00	0.00	0.35	0.05
1670	1250	1230	-18.91	0.03	0.00	0.00	0.12	0.01
1680	1260	1250	-88.71	0.07	0.00	0.00	0.25	0.03
1690	1200	1260	55.09	0.11	0.00	0.00	0.35	0.09
1700	1270	1260	-129.00	0.07	0.00	0.00	0.37	0.06
1710	1280	1270	-14.99	0.02	0.00	0.00	0.10	0.01
1720	1280	1290	7.81	0.00	0.00	0.00	0.09	0.01
1730	1300	1290	4.77	0.01	0.00	0.00	0.05	0.00
1740	1300	1310	-73.40	0.01	0.00	0.00	0.21	0.02
1750	1310	1270	-107.29	0.01	0.00	0.00	0.30	0.04
1760	1320	1310	-33.46	0.01	0.00	0.00	0.21	0.03
1770	1330	1300	-63.25	0.00	0.00	0.00	0.18	0.02
1780	1340	1330	-7.28	0.00	0.00	0.00	0.08	0.01
1790	1320	1340	11.89	0.00	0.00	0.00	0.08	0.00
1800	1350	1320	-9.15	0.00	0.00	0.00	0.06	0.00
1810	1360	1350	-7.81	0.00	0.00	0.00	0.05	0.00
1820	1370	1360	-5.57	0.00	0.00	0.00	0.04	0.00
1830	1380	1370	-2.43	0.00	0.00	0.00	0.02	0.00
1840	1380	1320	-9.28	0.00	0.00	0.00	0.06	0.00
1850	1390	1380	-4.99	0.00	0.00	0.00	0.06	0.00
1860	1390	1400	-5.41	0.00	0.00	0.00	0.03	0.00
1870	1340	1400	13.79	0.00	0.00	0.00	0.09	0.01
1880	1410	1330	-54.17	0.00	0.00	0.00	0.15	0.01
1890	1420	1410	-42.56	0.00	0.00	0.00	0.12	0.01
1900	1400	1420	-8.41	0.00	0.00	0.00	0.05	0.00
1910	1400	1430	11.85	0.00	0.00	0.00	0.08	0.00
1920	1430	1440	3.79	0.00	0.00	0.00	0.02	0.00
1930	1440	1450	1.55	0.00	0.00	0.00	0.02	0.00
1940	1430	1450	6.25	0.00	0.00	0.00	0.04	0.00

1950	1450	1460	3.77	0.00	0.00	0.00	0.02	0.00
1960	1470	1460	7.35	0.00	0.00	0.00	0.05	0.00
1970	1470	1480	-9.59	0.00	0.00	0.00	0.03	0.00
1980	1480	1490	-12.74	0.00	0.00	0.00	0.04	0.00
1990	1490	1500	-26.44	0.00	0.00	0.00	0.08	0.00
2000	1500	1420	-32.81	0.00	0.00	0.00	0.09	0.00
2010	1460	1510	8.88	0.00	0.00	0.00	0.06	0.00
2020	1520	1510	0.04	0.00	0.00	0.00	0.00	0.00
2030	1510	1530	5.34	0.00	0.00	0.00	0.03	0.00
2040	1530	1520	-2.28	0.00	0.00	0.00	0.03	0.00
2050	1520	1390	-5.46	0.00	0.00	0.00	0.06	0.00
2060	1480	1540	-0.89	0.00	0.00	0.00	0.01	0.00
2070	1550	1540	-4.63	0.00	0.00	0.00	0.05	0.00
2080	1560	1550	-1.29	0.00	0.00	0.00	0.01	0.00
2090	1570	1560	4.91	0.00	0.00	0.00	0.06	0.00
2100	1290	1570	4.96	0.00	0.00	0.00	0.06	0.00
2110	1550	1490	-4.28	0.00	0.00	0.00	0.03	0.00
2120	1500	1560	2.78	0.00	0.00	0.00	0.03	0.00
2130	1570	1410	-7.13	0.00	0.00	0.00	0.05	0.00
2140	1580	1540	18.98	0.06	0.00	0.00	0.12	0.01
2150	1590	1580	6.62	0.00	0.00	0.00	0.04	0.00
2160	1600	1580	21.34	0.04	0.00	0.00	0.14	0.01
2170	1610	1590	22.76	0.04	0.00	0.00	0.15	0.02
2180	1610	1600	9.66	0.01	0.00	0.00	0.06	0.00
2190	1250	1610	41.40	0.07	0.00	0.00	0.26	0.05
2200	1620	1600	17.96	0.03	0.00	0.00	0.11	0.01
2210	1620	1630	-24.24	0.05	0.00	0.00	0.15	0.02
2220	1630	1640	-26.94	0.01	0.00	0.00	0.17	0.02
2230	1640	1650	-32.32	0.01	0.00	0.00	0.21	0.03
2240	1660	1650	-10.43	0.00	0.00	0.00	0.07	0.00
2250	1670	1660	-8.19	0.00	0.00	0.00	0.05	0.00
2260	1680	1670	-3.71	0.00	0.00	0.00	0.02	0.00
2270	1690	1680	11.09	0.01	0.00	0.00	0.07	0.00
2280	1650	1690	1.54	0.00	0.00	0.00	0.01	0.00
2290	1700	1690	12.68	0.00	0.00	0.00	0.08	0.01
2300	1710	1700	-0.17	0.00	0.00	0.00	0.00	0.00
2310	1720	1640	-4.94	0.00	0.00	0.00	0.03	0.00
2320	1650	1730	-44.74	0.00	0.00	0.00	0.13	0.01
2330	1730	1740	-50.83	0.00	0.00	0.00	0.14	0.01
2340	1730	1700	4.75	0.00	0.00	0.00	0.05	0.00
2350	1750	1700	11.24	0.00	0.00	0.00	0.07	0.00
2360	1750	1740	-7.29	0.00	0.00	0.00	0.08	0.01
2370	1710	1750	-6.55	0.00	0.00	0.00	0.04	0.00
2380	1740	1230	-59.91	0.01	0.00	0.00	0.17	0.01
2390	1760	1750	13.21	0.00	0.00	0.00	0.08	0.01
2400	1230	1760	19.95	0.01	0.00	0.00	0.13	0.01
2410	1770	1830	-1.34	0.00	0.00	0.00	0.02	0.00
2420	1680	1780	10.76	0.01	0.00	0.00	0.07	0.00
2430	1060	1790	10.32	0.00	0.00	0.00	0.07	0.00
2440	1050	1800	5.38	0.00	0.00	0.00	0.03	0.00
2450	1810	1820	5.12	0.00	0.00	0.00	0.06	0.00
2460	840	1820	-3.32	0.00	0.00	0.00	0.02	0.00
2470	990	1000	-127.72	0.01	0.00	0.00	0.36	0.06
2480	1760	1830	4.04	0.00	0.00	0.00	0.03	0.00
2490-BN	130	0	-212.63	0.00	0.00	0.00	0.60	0.14
2500-BN	20	0	-478.61	0.01	0.00	0.00	1.36	0.65

J U N C T I O N N O D E R E S U L T S

JUNCTION NUMBER	JUNCTION TITLE	EXTERNAL DEMAND (gpm)	HYDRAULIC GRADE (ft)	JUNCTION ELEVATION (ft)	PRESSURE HEAD (ft)	JUNCTION PRESSURE (psi)
10-1		0.00	33.97	10.00	23.97	10.39
20-1		0.00	33.99	10.00	23.99	10.40

30-1	0.00	33.97	10.00	23.97	10.39
40-1	0.00	144.06	10.00	134.06	58.09
50-1	0.00	144.06	10.00	134.06	58.09
60-1	0.00	33.97	10.00	23.97	10.39
70-1	0.00	144.06	10.00	134.06	58.09
80-1	0.00	33.96	10.00	23.96	10.38
90-1	0.00	144.08	10.00	134.08	58.10
100-1	0.00	33.94	10.00	23.94	10.37
110-1	0.00	144.08	10.00	134.08	58.10
120-1	0.00	143.93	10.00	133.93	58.03
130-1	0.00	27.00	10.00	17.00	7.37
140-1	0.00	26.97	10.00	16.97	7.35
150-1	0.00	26.97	10.00	16.97	7.35
160-1	0.00	142.18	10.00	132.18	57.28
170-1	0.00	142.18	10.00	132.18	57.28
180-1	0.00	26.97	10.00	16.97	7.35
190-1	0.00	142.18	10.00	132.18	57.28
200-1	0.00	26.97	10.00	16.97	7.35
210-1	0.00	142.18	10.00	132.18	57.28
220-1	0.00	26.95	10.00	16.95	7.34
230-1	0.00	142.20	10.00	132.20	57.29
240-1	0.00	142.17	10.00	132.17	57.27
250-1	6.28	143.88	10.00	133.88	58.01
260-1	4.94	143.88	10.00	133.88	58.01
270-1	7.62	143.88	10.00	133.88	58.02
280-1	4.94	143.88	10.00	133.88	58.02
290-1	7.62	143.89	10.00	133.89	58.02
300-1	24.68	143.88	10.00	133.88	58.02
310-1	11.66	143.89	10.00	133.89	58.02
320-1	8.52	143.90	10.00	133.90	58.02
330-1	2.24	143.19	10.00	133.19	57.71
340-1	4.04	142.94	10.00	132.94	57.61
350-1	1.80	142.84	10.00	132.84	57.56
360-1	1.80	142.84	10.00	132.84	57.56
370-1	3.14	142.84	10.00	132.84	57.56
380-1	0.90	142.84	10.00	132.84	57.56
390-1	2.24	142.84	10.00	132.84	57.56
400-1	3.14	142.84	10.00	132.84	57.56
410-1	1.34	142.84	10.00	132.84	57.56
420-1	1.34	142.79	10.00	132.79	57.54
430-1	2.24	142.92	10.00	132.92	57.60
440-1	0.90	142.96	10.00	132.96	57.61
450-1	3.58	142.77	10.00	132.77	57.53
460-1	4.94	142.74	10.00	132.74	57.52
470-1	2.70	142.69	10.00	132.69	57.50
480-1	2.70	142.66	10.00	132.66	57.49
490-1	2.24	142.72	10.00	132.72	57.51
500-1	2.24	142.74	10.00	132.74	57.52
510-1	3.58	142.74	10.00	132.74	57.52
520-1	8.52	142.59	10.00	132.59	57.45
530-1	6.28	142.47	10.00	132.47	57.40
540-1	12.12	142.49	10.00	132.49	57.41
550-1	8.08	142.40	10.00	132.40	57.37
560-1	1.80	142.41	10.00	132.41	57.38
570-1	7.18	142.46	10.00	132.46	57.40
580-1	13.00	142.29	10.00	132.29	57.33
590-1	7.18	142.28	10.00	132.28	57.32
600-1	3.58	142.29	10.00	132.29	57.33
610-1	4.04	142.31	10.00	132.31	57.34
620-1	8.52	142.31	10.00	132.31	57.33
630-1	4.94	142.29	10.00	132.29	57.32
640-1	1.34	142.29	10.00	132.29	57.33
650-1	3.58	142.29	10.00	132.29	57.33
660-1	4.04	142.28	10.00	132.28	57.32
670-1	2.70	142.28	10.00	132.28	57.32
680-1	1.80	142.28	10.00	132.28	57.32
690-1	4.48	142.26	10.00	132.26	57.31

700-1	1.34	142.26	10.00	132.26	57.31
710-1	2.70	142.27	10.00	132.27	57.32
720-1	2.24	142.25	10.00	132.25	57.31
730-1	2.24	142.25	10.00	132.25	57.31
740-1	5.38	142.26	10.00	132.26	57.31
750-1	5.38	142.27	10.00	132.27	57.32
760-1	4.04	142.25	10.00	132.25	57.31
770-1	5.38	142.26	10.00	132.26	57.31
780-1	4.04	142.25	10.00	132.25	57.31
790-1	0.44	142.25	10.00	132.25	57.31
800-1	2.70	142.24	10.00	132.24	57.31
810-1	2.70	142.24	10.00	132.24	57.31
820-1	6.28	142.24	10.00	132.24	57.30
830-1	0.90	142.21	10.00	132.21	57.29
840-1	0.44	142.22	10.00	132.22	57.30
850-1	0.90	142.22	10.00	132.22	57.30
860-1	1.80	142.23	10.00	132.23	57.30
870-1	2.24	142.23	10.00	132.23	57.30
880-1	0.00	142.24	10.00	132.24	57.31
890-1	0.44	142.24	10.00	132.24	57.31
900-1	1.34	142.24	10.00	132.24	57.31
910-1	0.90	142.23	10.00	132.23	57.30
920-1	0.90	142.24	10.00	132.24	57.30
930-1	1.34	142.21	10.00	132.21	57.29
940-1	2.70	142.18	10.00	132.18	57.28
950-1	0.00	142.15	10.00	132.15	57.27
960-1	1.34	142.15	10.00	132.15	57.27
970-1	4.04	142.16	10.00	132.16	57.27
980-1	1.34	142.16	10.00	132.16	57.27
990-1	0.90	142.16	10.00	132.16	57.27
1000-1	1.34	142.17	10.00	132.17	57.27
1010-1	0.00	142.17	10.00	132.17	57.27
1020-1	4.94	142.19	10.00	132.19	57.28
1030-1	7.18	142.18	10.00	132.18	57.28
1040-1	5.84	142.09	10.00	132.09	57.24
1050-1	4.04	142.09	10.00	132.09	57.24
1060-1	4.94	142.09	10.00	132.09	57.24
1070-1	4.48	142.10	10.00	132.10	57.24
1080-1	2.24	142.10	10.00	132.10	57.24
1090-1	4.04	142.10	10.00	132.10	57.24
1100-1	1.34	142.10	10.00	132.10	57.24
1110-1	1.80	142.10	10.00	132.10	57.24
1120-1	3.14	142.13	10.00	132.13	57.25
1130-1	3.58	142.10	10.00	132.10	57.24
1140-1	0.44	142.14	10.00	132.14	57.26
1150-1	2.70	142.12	10.00	132.12	57.25
1160-1	2.70	142.13	10.00	132.13	57.26
1170-1	2.70	142.12	10.00	132.12	57.25
1180-1	4.94	142.11	10.00	132.11	57.25
1190-1	6.72	142.08	10.00	132.08	57.23
1200-1	8.98	142.00	10.00	132.00	57.20
1210-1	5.84	142.03	10.00	132.03	57.21
1220-1	11.66	142.06	10.00	132.06	57.22
1230-1	3.14	141.99	10.00	131.99	57.20
1240-1	1.34	142.06	10.00	132.06	57.22
1250-1	13.46	141.96	10.00	131.96	57.18
1260-1	14.80	141.88	10.00	131.88	57.15
1270-1	6.72	141.81	10.00	131.81	57.12
1280-1	7.18	141.79	10.00	131.79	57.11
1290-1	7.62	141.79	10.00	131.79	57.11
1300-1	5.38	141.80	10.00	131.80	57.11
1310-1	0.44	141.80	10.00	131.80	57.11
1320-1	3.14	141.79	10.00	131.79	57.11
1330-1	1.80	141.79	10.00	131.79	57.11
1340-1	5.38	141.79	10.00	131.79	57.11
1350-1	1.34	141.79	10.00	131.79	57.11
1360-1	2.24	141.79	10.00	131.79	57.11

1370-1	3.14	141.79	10.00	131.79	57.11
1380-1	6.72	141.79	10.00	131.79	57.11
1390-1	4.94	141.78	10.00	131.78	57.11
1400-1	4.94	141.79	10.00	131.79	57.11
1410-1	4.48	141.79	10.00	131.79	57.11
1420-1	1.34	141.79	10.00	131.79	57.11
1430-1	1.80	141.78	10.00	131.78	57.11
1440-1	2.24	141.78	10.00	131.78	57.11
1450-1	4.04	141.78	10.00	131.78	57.11
1460-1	2.24	141.78	10.00	131.78	57.11
1470-1	2.24	141.78	10.00	131.78	57.11
1480-1	4.04	141.78	10.00	131.78	57.11
1490-1	9.42	141.78	10.00	131.78	57.11
1500-1	3.58	141.79	10.00	131.79	57.11
1510-1	3.58	141.78	10.00	131.78	57.11
1520-1	3.14	141.78	10.00	131.78	57.11
1530-1	7.62	141.78	10.00	131.78	57.11
1540-1	13.46	141.78	10.00	131.78	57.11
1550-1	7.62	141.78	10.00	131.78	57.11
1560-1	8.98	141.78	10.00	131.78	57.11
1570-1	7.18	141.78	10.00	131.78	57.11
1580-1	8.98	141.84	10.00	131.84	57.13
1590-1	16.14	141.85	10.00	131.85	57.13
1600-1	6.28	141.88	10.00	131.88	57.15
1610-1	8.98	141.89	10.00	131.89	57.15
1620-1	6.28	141.91	10.00	131.91	57.16
1630-1	2.70	141.96	10.00	131.96	57.18
1640-1	0.44	141.97	10.00	131.97	57.19
1650-1	0.44	141.98	10.00	131.98	57.19
1660-1	2.24	141.97	10.00	131.97	57.19
1670-1	4.48	141.97	10.00	131.97	57.19
1680-1	4.04	141.97	10.00	131.97	57.19
1690-1	3.14	141.98	10.00	131.98	57.19
1700-1	3.14	141.98	10.00	131.98	57.19
1710-1	6.72	141.98	10.00	131.98	57.19
1720-1	4.94	141.97	10.00	131.97	57.19
1730-1	1.34	141.98	10.00	131.98	57.19
1740-1	1.80	141.98	10.00	131.98	57.19
1750-1	2.70	141.98	10.00	131.98	57.19
1760-1	2.70	141.98	10.00	131.98	57.19
1770-1	1.34	141.98	10.00	131.98	57.19
1780-1	10.76	141.96	10.00	131.96	57.18
1790-1	10.32	142.09	10.00	132.09	57.24
1800-1	5.38	142.09	10.00	132.09	57.24
1810-1	2.24	142.22	10.00	132.22	57.30
1820-1	1.80	142.22	10.00	132.22	57.30
1830-1	2.70	141.98	10.00	131.98	57.19

S U M M A R Y O F I N F L O W S A N D O U T F L O W S

(+) INFLOWS INTO THE SYSTEM FROM BOUNDARY NODES
(-) OUTFLOWS FROM THE SYSTEM INTO BOUNDARY NODES

PIPE NUMBER	FLOWRATE (gpm)
2490	212.63
2500	478.61

NET SYSTEM INFLOW = 691.24
NET SYSTEM OUTFLOW = 0.00
NET SYSTEM DEMAND = 691.24
**** CYBERNET SIMULATION COMPLETED ****
DATE: 4/02/1996
TIME: 10:07:20

MAXIMUM DIMENSIONS	
Number of pipes	250
Number of pumps	62
Number junction nodes	250
Flow meters	62
Boundary nodes	25
Variable storage tanks	62
Pressure switches	62
Regulating Valves	62
Items for limited output	250
limit for non-consecutive numbering	2572

Cybernet version 2.5. SN: 1312500348-250

Extended Description: Static Simulation
1995 - Peak Hour Demand

U N I T S S P E C I F I E D

FLOWRATE ..... = gallons/minute
HEAD (HGL) ..... = feet
PRESSURE ..... = psig

O U T P U T O P T I O N D A T A

OUTPUT SELECTION: ALL RESULTS ARE INCLUDED IN THE TABULATED OUTPUT

S Y S T E M C O N F I G U R A T I O N

NUMBER OF PIPES .....(p) = 250
NUMBER OF JUNCTION NODES .....(j) = 183
NUMBER OF PRIMARY LOOPS .....(l) = 66
NUMBER OF BOUNDARY NODES .....(f) = 2
NUMBER OF SUPPLY ZONES .....(z) = 1

****
S I M U L A T I O N R E S U L T S
****

The results are obtained after 8 trials with an accuracy = 0.00254

S I M U L A T I O N D E S C R I P T I O N

CyberNet Version 2.5. Copyright 1991,92 Haestad Methods Inc.

Run Description: Year 1995 - Peak Hour

Drawing: CYBER

P I P E L I N E R E S U L T S

STATUS CODE: XX -CLOSED PIPE BN -BOUNDARY NODE PU -PUMP LINE
CV -CHECK VALVE RV -REGULATING VALVE TK -STORAGE TANK

PIPE NUMBER	NODE NOS. #1	#2	FLOWRATE (gpm)	HEAD LOSS (ft)	PUMP HEAD (ft)	MINOR LOSS (ft)	LINE VELO. (ft/s)	HL/ 1000 (ft/ft)
10	10	20	-254.51	0.01	0.00	0.00	0.72	0.20
20	30	10	0.00	0.00	0.00	0.00	0.00	0.00
30-XXPU	30	40						
40	50	40	0.00	0.00	0.00	0.00	0.00	0.00
50	10	60	0.00	0.00	0.00	0.00	0.00	0.00
60-XXPU	60	70						
70	80	10	0.00	0.00	0.00	0.00	0.00	0.00
80-XXPU	80	90						
90	50	90	0.00	0.00	0.00	0.00	0.00	0.00
100	100	10	-254.51	0.04	0.00	0.00	1.62	1.45
110-PU	100	110	254.51	0.01	106.80	0.00	1.62	1.45
120	50	110	-254.51	0.03	0.00	0.00	1.62	1.45
130	120	50	-254.51	0.04	0.00	0.00	0.72	0.20
140	50	70	0.00	0.00	0.00	0.00	0.00	0.00
150	140	130	-1127.97	0.68	0.00	0.00	7.20	22.83
160	150	140	0.00	0.00	0.00	0.00	0.00	0.00
170-XXPU	150	160						
180	170	160	0.00	0.00	0.00	0.00	0.00	0.00
190	140	180	924.71	0.32	0.00	0.00	5.90	15.80
200-PU	180	190	924.71	0.16	117.57	0.00	5.90	15.80
210	170	190	-924.71	0.32	0.00	0.00	5.90	15.80
220	200	140	0.00	0.00	0.00	0.00	0.00	0.00
230-XXPU	200	210						
240	170	210	0.00	0.00	0.00	0.00	0.00	0.00
250	220	140	-203.25	0.02	0.00	0.00	1.30	0.96
260-PU	220	230	203.25	0.01	116.83	0.00	1.30	0.96
270	170	230	-203.25	0.02	0.00	0.00	1.30	0.96
280	240	170	-1127.97	0.68	0.00	0.00	7.20	22.83
290	250	260	9.88	0.01	0.00	0.00	0.06	0.00
300	270	250	8.98	0.00	0.00	0.00	0.06	0.00
310	280	270	24.22	0.00	0.00	0.00	0.07	0.00
320	280	250	13.46	0.01	0.00	0.00	0.09	0.01
330	290	280	47.56	0.01	0.00	0.00	0.13	0.01
340	300	290	-8.95	0.02	0.00	0.00	0.06	0.00
350	310	290	71.75	0.03	0.00	0.00	0.20	0.02
360	310	300	17.55	0.04	0.00	0.00	0.11	0.01
370	320	310	112.62	0.03	0.00	0.00	0.32	0.04
380	320	300	22.86	0.07	0.00	0.00	0.15	0.02
390	120	320	152.52	0.09	0.00	0.00	0.43	0.08
400	330	120	-101.99	0.06	0.00	0.00	0.29	0.04
410	340	330	-26.45	0.02	0.00	0.00	0.17	0.02
420	340	350	17.17	0.01	0.00	0.00	0.11	0.01
430	360	350	-10.30	0.00	0.00	0.00	0.07	0.00
440	360	370	6.70	0.00	0.00	0.00	0.04	0.00
450	380	370	3.53	0.00	0.00	0.00	0.04	0.00
460	350	380	14.82	0.00	0.00	0.00	0.09	0.01
470	380	390	9.49	0.00	0.00	0.00	0.06	0.00
480	390	400	1.61	0.00	0.00	0.00	0.02	0.00
490	370	400	3.95	0.00	0.00	0.00	0.03	0.00
500	410	400	0.72	0.00	0.00	0.00	0.00	0.00
510	390	410	3.40	0.00	0.00	0.00	0.02	0.00
520	420	350	11.55	0.00	0.00	0.00	0.07	0.00
530	430	340	-1.20	0.00	0.00	0.00	0.01	0.00
540	420	430	-13.13	0.01	0.00	0.00	0.08	0.01
550	430	440	-16.41	0.01	0.00	0.00	0.10	0.01
560	440	330	-71.06	0.02	0.00	0.00	0.20	0.02
570	450	440	-52.85	0.01	0.00	0.00	0.15	0.01
580	450	420	17.17	0.00	0.00	0.00	0.05	0.00
590	460	420	-16.07	0.01	0.00	0.00	0.10	0.01
600	460	470	6.19	0.00	0.00	0.00	0.04	0.00

610	480	470	-0.79	0.00	0.00	0.00	0.01	0.00
620	480	490	-10.98	0.01	0.00	0.00	0.07	0.00
630	490	450	3.90	0.00	0.00	0.00	0.01	0.00
640	500	450	-32.42	0.01	0.00	0.00	0.21	0.03
650	510	500	-7.16	0.00	0.00	0.00	0.05	0.00
660	520	500	-20.78	0.02	0.00	0.00	0.13	0.01
670	530	490	19.36	0.00	0.00	0.00	0.05	0.00
680	520	540	3.74	0.00	0.00	0.00	0.02	0.00
690	540	550	-20.50	0.03	0.00	0.00	0.13	0.01
700	560	530	46.41	0.00	0.00	0.00	0.13	0.01
710	550	560	-35.00	0.01	0.00	0.00	0.22	0.04
720	530	570	14.50	0.01	0.00	0.00	0.09	0.01
730	570	480	-6.37	0.00	0.00	0.00	0.04	0.00
740	580	570	-6.50	0.00	0.00	0.00	0.04	0.00
750	580	590	7.45	0.00	0.00	0.00	0.05	0.00
760	600	560	85.01	0.03	0.00	0.00	0.24	0.03
770	550	610	-1.66	0.00	0.00	0.00	0.01	0.00
780	620	610	-11.74	0.00	0.00	0.00	0.07	0.00
790	630	620	5.30	0.00	0.00	0.00	0.06	0.00
800	640	650	10.07	0.00	0.00	0.00	0.06	0.00
810	650	630	2.91	0.00	0.00	0.00	0.03	0.00
820	630	660	-12.27	0.01	0.00	0.00	0.14	0.02
830	670	660	7.13	0.01	0.00	0.00	0.08	0.01
840	680	670	12.53	0.00	0.00	0.00	0.08	0.01
850	660	690	-13.21	0.03	0.00	0.00	0.15	0.02
860	690	700	-22.17	0.01	0.00	0.00	0.14	0.02
870	610	640	-21.48	0.01	0.00	0.00	0.14	0.01
880	640	680	-34.23	0.01	0.00	0.00	0.22	0.04
890	680	700	-50.36	0.03	0.00	0.00	0.32	0.07
900	710	580	26.95	0.01	0.00	0.00	0.17	0.02
910	590	710	-6.91	0.01	0.00	0.00	0.08	0.01
920	710	720	-12.41	0.00	0.00	0.00	0.08	0.01
930	730	720	16.89	0.00	0.00	0.00	0.11	0.01
940	740	710	26.85	0.01	0.00	0.00	0.17	0.02
950	740	730	0.06	0.00	0.00	0.00	0.00	0.00
960	750	740	19.00	0.02	0.00	0.00	0.12	0.01
970	600	750	52.41	0.02	0.00	0.00	0.33	0.08
980	760	770	-6.28	0.01	0.00	0.00	0.07	0.01
990	750	770	22.65	0.01	0.00	0.00	0.14	0.02
1000	760	740	18.67	0.00	0.00	0.00	0.12	0.01
1010	780	760	22.78	0.01	0.00	0.00	0.15	0.02
1020	790	760	-2.31	0.00	0.00	0.00	0.03	0.00
1030	790	730	17.81	0.00	0.00	0.00	0.11	0.01
1040	800	790	16.38	0.00	0.00	0.00	0.10	0.01
1050	780	800	8.15	0.00	0.00	0.00	0.05	0.00
1060	770	780	5.61	0.00	0.00	0.00	0.04	0.00
1070	810	600	144.58	0.08	0.00	0.00	0.41	0.07
1080	820	810	35.05	0.02	0.00	0.00	0.22	0.04
1090	820	700	75.22	0.10	0.00	0.00	0.48	0.15
1100	830	810	114.93	0.04	0.00	0.00	0.33	0.05
1110	830	840	74.44	0.08	0.00	0.00	0.48	0.15
1120	840	850	54.08	0.03	0.00	0.00	0.35	0.08
1130	850	860	63.68	0.02	0.00	0.00	0.41	0.11
1140	860	870	26.68	0.03	0.00	0.00	0.17	0.02
1150	870	800	13.63	0.01	0.00	0.00	0.09	0.01
1160	860	780	33.40	0.03	0.00	0.00	0.21	0.03
1170	730	880	-3.50	0.00	0.00	0.00	0.02	0.00
1180	880	890	0.96	0.00	0.00	0.00	0.01	0.00
1190	890	900	2.68	0.00	0.00	0.00	0.02	0.00
1200	910	890	2.60	0.00	0.00	0.00	0.03	0.00
1210	880	920	-4.45	0.00	0.00	0.00	0.03	0.00
1220	910	920	6.25	0.00	0.00	0.00	0.04	0.00
1230	930	910	10.66	0.01	0.00	0.00	0.07	0.00
1240	870	930	8.57	0.00	0.00	0.00	0.05	0.00
1250	940	930	4.76	0.00	0.00	0.00	0.03	0.00
1260	950	940	10.16	0.00	0.00	0.00	0.06	0.00
1270	950	960	-46.50	0.06	0.00	0.00	0.30	0.06

1280	960	970	-49.18	0.07	0.00	0.00	0.31	0.07
1290	970	980	2.68	0.00	0.00	0.00	0.02	0.00
1300	970	990	-59.94	0.13	0.00	0.00	0.38	0.10
1310	850	1810	-11.40	0.00	0.00	0.00	0.07	0.00
1320	1000	830	191.17	0.12	0.00	0.00	0.54	0.12
1330	1010	1000	412.15	0.65	0.00	0.00	1.17	0.49
1340	820	1020	-122.83	0.37	0.00	0.00	0.78	0.38
1350	1030	1010	-147.07	0.28	0.00	0.00	0.94	0.52
1360	1020	1030	-132.71	0.14	0.00	0.00	0.85	0.43
1370	1040	990	-156.56	0.12	0.00	0.00	0.44	0.08
1380	1040	1050	54.27	0.17	0.00	0.00	0.35	0.08
1390	1050	1060	35.43	0.01	0.00	0.00	0.23	0.04
1400	1060	1070	4.91	0.00	0.00	0.00	0.03	0.00
1410	1070	1080	-0.73	0.00	0.00	0.00	0.00	0.00
1420	1080	1090	2.27	0.00	0.00	0.00	0.01	0.00
1430	1090	1100	-5.81	0.00	0.00	0.00	0.04	0.00
1440	1110	1120	-30.05	0.02	0.00	0.00	0.19	0.03
1450	1080	1110	-7.48	0.00	0.00	0.00	0.05	0.00
1460	1130	1070	3.32	0.00	0.00	0.00	0.02	0.00
1470	1130	1110	-10.48	0.00	0.00	0.00	0.07	0.00
1480	1110	1100	8.49	0.00	0.00	0.00	0.05	0.00
1490	1120	950	-36.33	0.02	0.00	0.00	0.23	0.04
1500	1010	240	-543.90	0.86	0.00	0.00	1.54	0.82
1510	240	1140	584.06	0.26	0.00	0.00	1.66	0.94
1520	1140	1150	141.48	0.41	0.00	0.00	0.90	0.49
1530	1160	1010	15.32	0.01	0.00	0.00	0.10	0.01
1540	1160	1150	-33.72	0.18	0.00	0.00	0.38	0.14
1550	1170	1160	-13.00	0.00	0.00	0.00	0.08	0.01
1560	1180	1170	23.86	0.10	0.00	0.00	0.27	0.07
1570	1150	1180	102.37	0.09	0.00	0.00	0.65	0.27
1580	1190	1170	-31.46	0.08	0.00	0.00	0.20	0.03
1590	1180	1190	68.62	0.18	0.00	0.00	0.44	0.13
1600	1190	1200	86.65	0.26	0.00	0.00	0.55	0.20
1610	1200	1210	-55.50	0.22	0.00	0.00	0.35	0.09
1620	1220	1210	418.38	0.18	0.00	0.00	1.19	0.50
1630	1140	1220	441.70	0.54	0.00	0.00	1.25	0.56
1640	1230	1240	-87.93	0.05	0.00	0.00	0.25	0.03
1650	1240	1040	-90.61	0.03	0.00	0.00	0.26	0.03
1660	1210	1250	351.20	0.49	0.00	0.00	1.00	0.37
1670	1250	1230	56.84	0.26	0.00	0.00	0.36	0.09
1680	1240	1250	-171.19	0.25	0.00	0.00	0.49	0.10
1690	1200	1260	124.19	0.52	0.00	0.00	0.79	0.38
1700	1270	1260	-265.77	0.28	0.00	0.00	0.75	0.22
1710	1280	1270	-30.70	0.07	0.00	0.00	0.20	0.03
1720	1300	1290	16.34	0.02	0.00	0.00	0.19	0.04
1730	1300	1290	9.73	0.04	0.00	0.00	0.11	0.01
1740	1300	1310	-151.98	0.02	0.00	0.00	0.43	0.08
1750	1310	1270	-221.63	0.03	0.00	0.00	0.63	0.16
1760	1320	1310	-68.78	0.03	0.00	0.00	0.44	0.13
1770	1330	1300	-131.48	0.02	0.00	0.00	0.37	0.06
1780	1340	1330	-14.80	0.01	0.00	0.00	0.17	0.03
1790	1320	1340	25.00	0.01	0.00	0.00	0.16	0.02
1800	1350	1320	-18.58	0.00	0.00	0.00	0.12	0.01
1810	1360	1350	-15.90	0.00	0.00	0.00	0.10	0.01
1820	1370	1360	-11.42	0.01	0.00	0.00	0.07	0.00
1830	1380	1370	-5.14	0.00	0.00	0.00	0.03	0.00
1840	1380	1320	-18.91	0.01	0.00	0.00	0.12	0.01
1850	1390	1380	-10.62	0.02	0.00	0.00	0.12	0.02
1860	1390	1400	-10.80	0.00	0.00	0.00	0.07	0.00
1870	1340	1400	29.04	0.02	0.00	0.00	0.19	0.03
1880	1410	1330	-113.08	0.01	0.00	0.00	0.32	0.04
1890	1420	1410	-89.56	0.01	0.00	0.00	0.25	0.03
1900	1400	1420	-16.47	0.00	0.00	0.00	0.11	0.01
1910	1400	1430	24.84	0.01	0.00	0.00	0.16	0.02
1920	1430	1440	7.89	0.00	0.00	0.00	0.05	0.00
1930	1440	1450	3.41	0.00	0.00	0.00	0.04	0.00
1940	1430	1450	13.35	0.00	0.00	0.00	0.09	0.01

1950	1450	1460	8.68	0.00	0.00	0.00	0.06	0.00
1960	1470	1460	12.95	0.00	0.00	0.00	0.08	0.01
1970	1470	1480	-17.43	0.00	0.00	0.00	0.05	0.00
1980	1480	1490	-29.68	0.00	0.00	0.00	0.08	0.00
1990	1490	1500	-57.43	0.01	0.00	0.00	0.16	0.01
2000	1500	1420	-70.41	0.00	0.00	0.00	0.20	0.02
2010	1460	1510	17.15	0.00	0.00	0.00	0.11	0.01
2020	1520	1510	0.67	0.00	0.00	0.00	0.01	0.00
2030	1510	1530	10.66	0.00	0.00	0.00	0.07	0.00
2040	1530	1520	-4.58	0.00	0.00	0.00	0.05	0.00
2050	1520	1390	-11.53	0.01	0.00	0.00	0.13	0.02
2060	1480	1540	4.17	0.00	0.00	0.00	0.03	0.00
2070	1550	1540	-7.43	0.00	0.00	0.00	0.08	0.01
2080	1560	1550	-1.11	0.00	0.00	0.00	0.01	0.00
2090	1570	1560	11.04	0.01	0.00	0.00	0.13	0.02
2100	1290	1570	10.83	0.01	0.00	0.00	0.12	0.02
2110	1550	1490	-8.91	0.01	0.00	0.00	0.06	0.00
2120	1500	1560	5.82	0.01	0.00	0.00	0.07	0.01
2130	1570	1410	-14.56	0.02	0.00	0.00	0.09	0.01
2140	1580	1540	30.19	0.14	0.00	0.00	0.19	0.03
2150	1590	1580	13.83	0.02	0.00	0.00	0.09	0.01
2160	1600	1580	34.32	0.09	0.00	0.00	0.22	0.04
2170	1610	1590	46.11	0.15	0.00	0.00	0.29	0.06
2180	1610	1600	32.18	0.08	0.00	0.00	0.21	0.03
2190	1250	1610	96.25	0.32	0.00	0.00	0.61	0.24
2200	1620	1600	14.70	0.02	0.00	0.00	0.09	0.01
2210	1620	1630	-27.26	0.06	0.00	0.00	0.17	0.02
2220	1630	1640	-32.66	0.01	0.00	0.00	0.21	0.03
2230	1640	1650	-43.42	0.01	0.00	0.00	0.28	0.05
2240	1660	1650	-20.94	0.01	0.00	0.00	0.13	0.01
2250	1670	1660	-16.46	0.01	0.00	0.00	0.11	0.01
2260	1680	1670	-7.50	0.00	0.00	0.00	0.05	0.00
2270	1690	1680	22.10	0.02	0.00	0.00	0.14	0.02
2280	1650	1690	8.86	0.00	0.00	0.00	0.06	0.00
2290	1700	1690	19.52	0.00	0.00	0.00	0.12	0.01
2300	1710	1700	-1.76	0.00	0.00	0.00	0.02	0.00
2310	1720	1640	-9.88	0.00	0.00	0.00	0.06	0.00
2320	1650	1730	-74.10	0.01	0.00	0.00	0.21	0.02
2330	1730	1740	-86.15	0.01	0.00	0.00	0.24	0.03
2340	1730	1700	9.37	0.00	0.00	0.00	0.11	0.01
2350	1750	1700	18.19	0.00	0.00	0.00	0.12	0.01
2360	1750	1740	-13.24	0.01	0.00	0.00	0.15	0.02
2370	1710	1750	-11.68	0.01	0.00	0.00	0.07	0.00
2380	1740	1230	-102.99	0.02	0.00	0.00	0.29	0.04
2390	1760	1750	22.03	0.01	0.00	0.00	0.14	0.02
2400	1230	1760	35.51	0.02	0.00	0.00	0.23	0.04
2410	1770	1830	-2.68	0.00	0.00	0.00	0.03	0.00
2420	1680	1780	21.52	0.02	0.00	0.00	0.14	0.01
2430	1060	1790	20.64	0.02	0.00	0.00	0.13	0.01
2440	1050	1800	10.76	0.00	0.00	0.00	0.07	0.00
2450	1810	1820	-15.88	0.01	0.00	0.00	0.18	0.03
2460	840	1820	19.48	0.01	0.00	0.00	0.12	0.01
2470	990	1000	-218.30	0.02	0.00	0.00	0.62	0.15
2480	1760	1830	8.08	0.01	0.00	0.00	0.05	0.00
2490-BN	130	0	-1127.97	0.03	0.00	0.00	3.20	3.17
2500-BN	20	0	-254.51	0.00	0.00	0.00	0.72	0.20

J U N C T I O N N O D E R E S U L T S

JUNCTION NUMBER	JUNCTION TITLE	EXTERNAL DEMAND (gpm)	HYDRAULIC GRADE (ft)	JUNCTION ELEVATION (ft)	PRESSURE HEAD (ft)	JUNCTION PRESSURE (psi)
10-1		0.00	33.99	10.00	23.99	10.40
20-1		0.00	34.00	10.00	24.00	10.40

30-1	0.00	33.99	10.00	23.99	10.40
40-1	0.00	140.71	10.00	130.71	56.64
50-1	0.00	140.71	10.00	130.71	56.64
60-1	0.00	33.99	10.00	23.99	10.40
70-1	0.00	140.71	10.00	130.71	56.64
80-1	0.00	33.99	10.00	23.99	10.40
90-1	0.00	140.71	10.00	130.71	56.64
100-1	0.00	33.95	10.00	23.95	10.38
110-1	0.00	140.73	10.00	130.73	56.65
120-1	0.00	140.67	10.00	130.67	56.62
130-1	0.00	26.97	10.00	16.97	7.35
140-1	0.00	26.28	10.00	16.28	7.06
150-1	0.00	26.28	10.00	16.28	7.06
160-1	0.00	143.06	10.00	133.06	57.66
170-1	0.00	143.06	10.00	133.06	57.66
180-1	0.00	25.97	10.00	15.97	6.92
190-1	0.00	143.38	10.00	133.38	57.80
200-1	0.00	26.28	10.00	16.28	7.06
210-1	0.00	143.06	10.00	133.06	57.66
220-1	0.00	26.26	10.00	16.26	7.05
230-1	0.00	143.08	10.00	133.08	57.67
240-1	0.00	142.38	10.00	132.38	57.36
250-1	12.56	140.50	10.00	130.50	56.55
260-1	9.88	140.50	10.00	130.50	56.55
270-1	15.24	140.51	10.00	130.51	56.55
280-1	9.88	140.51	10.00	130.51	56.55
290-1	15.24	140.52	10.00	130.52	56.56
300-1	49.36	140.50	10.00	130.50	56.55
310-1	23.32	140.55	10.00	130.55	56.57
320-1	17.04	140.58	10.00	130.58	56.58
330-1	4.48	140.61	10.00	130.61	56.60
340-1	8.08	140.58	10.00	130.58	56.59
350-1	3.60	140.58	10.00	130.58	56.58
360-1	3.60	140.57	10.00	130.57	56.58
370-1	6.28	140.57	10.00	130.57	56.58
380-1	1.80	140.57	10.00	130.57	56.58
390-1	4.48	140.57	10.00	130.57	56.58
400-1	6.28	140.57	10.00	130.57	56.58
410-1	2.68	140.57	10.00	130.57	56.58
420-1	2.68	140.58	10.00	130.58	56.58
430-1	4.48	140.58	10.00	130.58	56.59
440-1	1.80	140.59	10.00	130.59	56.59
450-1	7.16	140.58	10.00	130.58	56.59
460-1	9.88	140.57	10.00	130.57	56.58
470-1	5.40	140.57	10.00	130.57	56.58
480-1	5.40	140.57	10.00	130.57	56.58
490-1	4.48	140.58	10.00	130.58	56.59
500-1	4.48	140.57	10.00	130.57	56.58
510-1	7.16	140.57	10.00	130.57	56.58
520-1	17.04	140.55	10.00	130.55	56.57
530-1	12.56	140.58	10.00	130.58	56.59
540-1	24.24	140.55	10.00	130.55	56.57
550-1	16.16	140.58	10.00	130.58	56.58
560-1	3.60	140.59	10.00	130.59	56.59
570-1	14.36	140.57	10.00	130.57	56.58
580-1	26.00	140.57	10.00	130.57	56.58
590-1	14.36	140.56	10.00	130.56	56.58
600-1	7.16	140.62	10.00	130.62	56.60
610-1	8.08	140.58	10.00	130.58	56.58
620-1	17.04	140.58	10.00	130.58	56.58
630-1	9.88	140.58	10.00	130.58	56.59
640-1	2.68	140.59	10.00	130.59	56.59
650-1	7.16	140.58	10.00	130.58	56.59
660-1	8.08	140.59	10.00	130.59	56.59
670-1	5.40	140.60	10.00	130.60	56.59
680-1	3.60	140.60	10.00	130.60	56.59
690-1	8.96	140.62	10.00	130.62	56.60

700-1	2.68	140.63	10.00	130.63	56.61
710-1	5.40	140.57	10.00	130.57	56.58
720-1	4.48	140.58	10.00	130.58	56.58
730-1	4.48	140.58	10.00	130.58	56.59
740-1	10.76	140.58	10.00	130.58	56.59
750-1	10.76	140.60	10.00	130.60	56.59
760-1	8.08	140.59	10.00	130.59	56.59
770-1	10.76	140.59	10.00	130.59	56.59
780-1	8.08	140.59	10.00	130.59	56.59
790-1	0.88	140.59	10.00	130.59	56.59
800-1	5.40	140.59	10.00	130.59	56.59
810-1	5.40	140.70	10.00	130.70	56.64
820-1	12.56	140.73	10.00	130.73	56.65
830-1	1.80	140.75	10.00	130.75	56.66
840-1	0.88	140.67	10.00	130.67	56.62
850-1	1.80	140.64	10.00	130.64	56.61
860-1	3.60	140.62	10.00	130.62	56.60
870-1	4.48	140.59	10.00	130.59	56.59
880-1	0.00	140.58	10.00	130.58	56.59
890-1	0.88	140.58	10.00	130.58	56.59
900-1	2.68	140.58	10.00	130.58	56.59
910-1	1.80	140.58	10.00	130.58	56.59
920-1	1.80	140.58	10.00	130.58	56.59
930-1	2.68	140.59	10.00	130.59	56.59
940-1	5.40	140.59	10.00	130.59	56.59
950-1	0.00	140.59	10.00	130.59	56.59
960-1	2.68	140.65	10.00	130.65	56.61
970-1	8.08	140.72	10.00	130.72	56.65
980-1	2.68	140.72	10.00	130.72	56.65
990-1	1.80	140.85	10.00	130.85	56.70
1000-1	2.68	140.87	10.00	130.87	56.71
1010-1	0.00	141.52	10.00	131.52	56.99
1020-1	9.88	141.10	10.00	131.10	56.81
1030-1	14.36	141.24	10.00	131.24	56.87
1040-1	11.68	140.73	10.00	130.73	56.65
1050-1	8.08	140.56	10.00	130.56	56.58
1060-1	9.88	140.55	10.00	130.55	56.57
1070-1	8.96	140.55	10.00	130.55	56.57
1080-1	4.48	140.55	10.00	130.55	56.57
1090-1	8.08	140.55	10.00	130.55	56.57
1100-1	2.68	140.55	10.00	130.55	56.57
1110-1	3.60	140.55	10.00	130.55	56.57
1120-1	6.28	140.57	10.00	130.57	56.58
1130-1	7.16	140.55	10.00	130.55	56.57
1140-1	0.88	142.12	10.00	132.12	57.25
1150-1	5.40	141.71	10.00	131.71	57.07
1160-1	5.40	141.53	10.00	131.53	56.99
1170-1	5.40	141.52	10.00	131.52	56.99
1180-1	9.88	141.62	10.00	131.62	57.04
1190-1	13.44	141.44	10.00	131.44	56.96
1200-1	17.96	141.18	10.00	131.18	56.85
1210-1	11.68	141.40	10.00	131.40	56.94
1220-1	23.32	141.58	10.00	131.58	57.02
1230-1	6.28	140.66	10.00	130.66	56.62
1240-1	2.68	140.71	10.00	130.71	56.64
1250-1	26.92	140.91	10.00	130.91	56.73
1260-1	29.60	140.67	10.00	130.67	56.62
1270-1	13.44	140.38	10.00	130.38	56.50
1280-1	14.36	140.31	10.00	130.31	56.47
1290-1	15.24	140.29	10.00	130.29	56.46
1300-1	10.76	140.33	10.00	130.33	56.47
1310-1	0.88	140.35	10.00	130.35	56.48
1320-1	6.28	140.31	10.00	130.31	56.47
1330-1	3.60	140.31	10.00	130.31	56.47
1340-1	10.76	140.30	10.00	130.30	56.46
1350-1	2.68	140.31	10.00	130.31	56.47
1360-1	4.48	140.31	10.00	130.31	56.47

1370-1	6.28	140.30	10.00	130.30	56.46
1380-1	13.44	140.30	10.00	130.30	56.46
1390-1	9.88	140.28	10.00	130.28	56.46
1400-1	9.88	140.29	10.00	130.29	56.46
1410-1	8.96	140.30	10.00	130.30	56.46
1420-1	2.68	140.29	10.00	130.29	56.46
1430-1	3.60	140.28	10.00	130.28	56.45
1440-1	4.48	140.28	10.00	130.28	56.45
1450-1	8.08	140.28	10.00	130.28	56.45
1460-1	4.48	140.28	10.00	130.28	56.45
1470-1	4.48	140.28	10.00	130.28	56.45
1480-1	8.08	140.28	10.00	130.28	56.45
1490-1	18.84	140.28	10.00	130.28	56.45
1500-1	7.16	140.29	10.00	130.29	56.46
1510-1	7.16	140.27	10.00	130.27	56.45
1520-1	6.28	140.27	10.00	130.27	56.45
1530-1	15.24	140.27	10.00	130.27	56.45
1540-1	26.92	140.28	10.00	130.28	56.45
1550-1	15.24	140.27	10.00	130.27	56.45
1560-1	17.96	140.27	10.00	130.27	56.45
1570-1	14.36	140.28	10.00	130.28	56.46
1580-1	17.96	140.42	10.00	130.42	56.51
1590-1	32.28	140.44	10.00	130.44	56.52
1600-1	12.56	140.51	10.00	130.51	56.55
1610-1	17.96	140.59	10.00	130.59	56.59
1620-1	12.56	140.53	10.00	130.53	56.56
1630-1	5.40	140.59	10.00	130.59	56.59
1640-1	0.88	140.60	10.00	130.60	56.59
1650-1	0.88	140.61	10.00	130.61	56.60
1660-1	4.48	140.60	10.00	130.60	56.60
1670-1	8.96	140.59	10.00	130.59	56.59
1680-1	8.08	140.59	10.00	130.59	56.59
1690-1	6.28	140.61	10.00	130.61	56.60
1700-1	6.28	140.62	10.00	130.62	56.60
1710-1	13.44	140.62	10.00	130.62	56.60
1720-1	9.88	140.60	10.00	130.60	56.59
1730-1	2.68	140.62	10.00	130.62	56.60
1740-1	3.60	140.63	10.00	130.63	56.61
1750-1	5.40	140.62	10.00	130.62	56.60
1760-1	5.40	140.63	10.00	130.63	56.61
1770-1	2.68	140.62	10.00	130.62	56.60
1780-1	21.52	140.57	10.00	130.57	56.58
1790-1	20.64	140.53	10.00	130.53	56.56
1800-1	10.76	140.56	10.00	130.56	56.58
1810-1	4.48	140.65	10.00	130.65	56.61
1820-1	3.60	140.66	10.00	130.66	56.62
1830-1	5.40	140.63	10.00	130.63	56.60

S U M M A R Y O F I N F L O W S A N D O U T F L O W S

(+) INFLOWS INTO THE SYSTEM FROM BOUNDARY NODES
(-) OUTFLOWS FROM THE SYSTEM INTO BOUNDARY NODES

PIPE NUMBER	FLOWRATE (gpm)
2490	1127.97
2500	254.51

NET SYSTEM INFLOW = 1382.48
NET SYSTEM OUTFLOW = 0.00
NET SYSTEM DEMAND = 1382.48

**** CYBERNET SIMULATION COMPLETED ****
DATE: 3/28/1996 TIME: 13:31:34

MAXIMUM DIMENSIONS	
Number of pipes	250
Number of pumps	62
Number junction nodes	250
Flow meters	62
Boundary nodes	25
Variable storage tanks	62
Pressure switches	62
Regulating Valves	62
Items for limited output	250
limit for non-consecutive numbering	2572

Cybernet version 2.5. SN: 1312500348-250

Extended Description: Extended Period Simulation
1995 - Peak Hour Demand
Fire Flow Junction J260

U N I T S S P E C I F I E D

FLOWRATE ..... = gallons/minute
HEAD (HGL) ..... = feet
PRESSURE ..... = psig
METERED FLOW ..... = gallons

O U T P U T O P T I O N D A T A

OUTPUT SELECTION: ALL RESULTS ARE INCLUDED IN THE TABULATED OUTPUT

E P S D A T A

TOTAL TIME FOR SIMULATION = 2.000
NORMAL TIME PERIOD = 1.000

V A R I A B L E H E A D T A N K D A T A

TANK NUMBER (*)	PIPE NUMBER	MAXIMUM ELEVATION (ft)	MINIMUM ELEVATION (ft)	TANK CAPACITY (gal)	INITIAL VOLUME (gal)	EXTERNAL FLOW (gpm)
1-1	2500	34.00	10.00	99776.	99776.	700.00
2-1	2490	34.00	10.00	399103.	282698.	700.00

* TANK TYPE: 1 - CONSTANT DIAMETER 2 - VARIABLE AREA

S Y S T E M C O N F I G U R A T I O N

NUMBER OF PIPES .....(p) = 250
NUMBER OF JUNCTION NODES .....(j) = 183
NUMBER OF PRIMARY LOOPS .....(l) = 66
NUMBER OF BOUNDARY NODES .....(f) = 2
NUMBER OF SUPPLY ZONES .....(z) = 1

****
S I M U L A T I O N R E S U L T S
****

TIME FROM INITIATION OF EPS = 0.0000 HOURS
The results are obtained after 8 trials with an accuracy = 0.00447

S I M U L A T I O N D E S C R I P T I O N

CyberNet Version 2.5. Copyright 1991,92 Haestad Methods Inc.

EPS Run Description: Year 1995 - Peak Hour for 2 Hours

Drawing: CYBER

P I P E L I N E R E S U L T S

STATUS CODE: XX -CLOSED PIPE BN -BOUNDARY NODE PU -PUMP LINE
CV -CHECK VALVE RV -REGULATING VALVE TK -STORAGE TANK

PIPE NUMBER	NODE NOS. #1	#2	FLOWRATE (gpm)	HEAD LOSS (ft)	PUMP HEAD (ft)	MINOR LOSS (ft)	LINE VELO. (ft/s)	HL/ 1000 (ft/ft)
10	10	20	-1042.48	0.08	0.00	0.00	2.96	2.74
20	30	10	0.00	0.00	0.00	0.00	0.00	0.00
30-XXPU	30	40						
40	50	40	0.00	0.00	0.00	0.00	0.00	0.00
50	10	60	872.12	0.43	0.00	0.00	5.57	14.18
60-PU	60	70	872.12	0.14	121.45	0.00	5.57	14.18
70	80	10	0.00	0.00	0.00	0.00	0.00	0.00
80-XXPU	80	90						
90	50	90	0.00	0.00	0.00	0.00	0.00	0.00
100	100	10	-170.36	0.02	0.00	0.00	1.09	0.69
110-PU	100	110	170.36	0.01	120.64	0.00	1.09	0.69
120	50	110	-170.36	0.01	0.00	0.00	1.09	0.69
130	120	50	-1042.48	0.55	0.00	0.00	2.96	2.74
140	50	70	-872.12	0.28	0.00	0.00	5.57	14.18
150	140	130	-840.00	0.40	0.00	0.00	5.36	13.23
160	150	140	-735.48	0.21	0.00	0.00	4.69	10.34
170-PU	150	160	735.48	0.10	127.57	0.00	4.69	10.34
180	170	160	-735.48	0.21	0.00	0.00	4.69	10.34
190	140	180	0.00	0.00	0.00	0.00	0.00	0.00
200-XXPU	180	190						
210	170	190	0.00	0.00	0.00	0.00	0.00	0.00
220	200	140	0.00	0.00	0.00	0.00	0.00	0.00
230-XXPU	200	210						
240	170	210	0.00	0.00	0.00	0.00	0.00	0.00
250	220	140	-104.52	0.01	0.00	0.00	0.67	0.28
260-PU	220	230	104.52	0.00	127.07	0.00	0.67	0.28
270	170	230	-104.52	0.01	0.00	0.00	0.67	0.28
280	240	170	-840.00	0.40	0.00	0.00	5.36	13.23
290	250	260	509.88	8.00	0.00	0.00	3.25	5.25
300	270	250	239.47	1.81	0.00	0.00	1.53	1.29
310	280	270	254.71	0.25	0.00	0.00	0.72	0.20
320	280	250	282.97	2.06	0.00	0.00	1.81	1.76
330	290	280	547.56	0.99	0.00	0.00	1.55	0.83
340	300	290	68.30	0.73	0.00	0.00	0.44	0.13
350	310	290	494.50	0.90	0.00	0.00	1.40	0.69
360	310	300	36.68	0.17	0.00	0.00	0.23	0.04
370	320	310	554.50	0.60	0.00	0.00	1.57	0.85

[illegible]	320	300	80.98	0.77	0.00	0.00	0.52	0.17
390	120	320	652.52	1.29	0.00	0.00	1.85	1.15
400	330	120	-389.96	0.70	0.00	0.00	1.11	0.44
410	340	330	-95.70	0.24	0.00	0.00	0.61	0.24
420	340	350	62.37	0.10	0.00	0.00	0.40	0.11
430	360	350	-10.30	0.00	0.00	0.00	0.07	0.00
440	360	370	6.70	0.00	0.00	0.00	0.04	0.00
450	380	370	3.53	0.00	0.00	0.00	0.04	0.00
460	350	380	14.82	0.00	0.00	0.00	0.09	0.01
470	380	390	9.49	0.00	0.00	0.00	0.06	0.00
480	390	400	1.61	0.00	0.00	0.00	0.02	0.00
490	370	400	3.95	0.00	0.00	0.00	0.03	0.00
500	410	400	0.72	0.00	0.00	0.00	0.00	0.00
510	390	410	3.40	0.00	0.00	0.00	0.02	0.00
520	420	350	-33.65	0.03	0.00	0.00	0.21	0.03
530	430	340	-25.25	0.02	0.00	0.00	0.16	0.02
540	420	430	-65.97	0.11	0.00	0.00	0.42	0.12
550	430	440	-45.20	0.04	0.00	0.00	0.29	0.06
560	440	330	-289.78	0.21	0.00	0.00	0.82	0.26
570	450	440	-242.78	0.17	0.00	0.00	0.69	0.18
580	450	420	-47.80	0.01	0.00	0.00	0.14	0.01
590	460	420	-49.14	0.05	0.00	0.00	0.31	0.07
600	460	470	39.26	0.04	0.00	0.00	0.25	0.05
610	480	470	-33.86	0.01	0.00	0.00	0.22	0.03
620	480	490	-28.41	0.05	0.00	0.00	0.18	0.02
630	490	450	-213.64	0.03	0.00	0.00	0.61	0.15
640	500	450	-69.79	0.03	0.00	0.00	0.45	0.13
650	510	500	-7.16	0.00	0.00	0.00	0.05	0.00
660	520	500	-58.15	0.14	0.00	0.00	0.37	0.09
670	530	490	-180.75	0.17	0.00	0.00	0.51	0.11
680	520	540	41.11	0.06	0.00	0.00	0.26	0.05
690	540	550	16.87	0.02	0.00	0.00	0.11	0.01
700	560	530	-148.96	0.04	0.00	0.00	0.42	0.07
710	550	560	-46.28	0.01	0.00	0.00	0.30	0.06
720	530	570	19.22	0.02	0.00	0.00	0.12	0.01
730	570	480	-56.87	0.14	0.00	0.00	0.36	0.09
740	580	570	-61.73	0.11	0.00	0.00	0.39	0.11
750	580	590	11.30	0.01	0.00	0.00	0.07	0.00
760	600	560	-99.08	0.05	0.00	0.00	0.28	0.04
770	550	610	46.99	0.04	0.00	0.00	0.30	0.06
780	620	610	-20.42	0.01	0.00	0.00	0.13	0.01
790	630	620	-3.38	0.00	0.00	0.00	0.04	0.00
800	640	650	12.32	0.00	0.00	0.00	0.08	0.01
810	650	630	5.16	0.00	0.00	0.00	0.06	0.00
820	630	660	-1.34	0.00	0.00	0.00	0.02	0.00
830	670	660	5.15	0.00	0.00	0.00	0.06	0.00
840	680	670	10.55	0.00	0.00	0.00	0.07	0.00
850	660	690	-4.27	0.00	0.00	0.00	0.05	0.00
860	690	700	-13.23	0.00	0.00	0.00	0.08	0.01
870	610	640	18.49	0.00	0.00	0.00	0.12	0.01
880	640	680	3.49	0.00	0.00	0.00	0.02	0.00
890	680	700	-10.66	0.00	0.00	0.00	0.07	0.00
900	710	580	-24.44	0.01	0.00	0.00	0.16	0.02
910	590	710	-3.06	0.00	0.00	0.00	0.03	0.00
920	710	720	12.78	0.00	0.00	0.00	0.08	0.01
930	730	720	-8.30	0.00	0.00	0.00	0.05	0.00
940	740	710	-3.19	0.00	0.00	0.00	0.02	0.00
950	740	730	13.24	0.01	0.00	0.00	0.08	0.01
960	750	740	23.15	0.02	0.00	0.00	0.15	0.02
970	600	750	67.57	0.04	0.00	0.00	0.43	0.12
980	760	770	-7.90	0.01	0.00	0.00	0.09	0.01
990	750	770	33.66	0.01	0.00	0.00	0.21	0.03
1000	760	740	-2.34	0.00	0.00	0.00	0.01	0.00
1010	780	760	6.97	0.00	0.00	0.00	0.04	0.00
1020	790	760	-9.12	0.01	0.00	0.00	0.10	0.01
1030	790	730	6.24	0.00	0.00	0.00	0.04	0.00
1040	800	790	-2.01	0.00	0.00	0.00	0.01	0.00

1050	780	800	12.47	0.01	0.00	0.00	0.08	0.01
1060	770	780	15.00	0.01	0.00	0.00	0.10	0.01
1070	810	600	-24.35	0.00	0.00	0.00	0.07	0.00
1080	820	810	21.00	0.01	0.00	0.00	0.13	0.01
1090	820	700	26.57	0.01	0.00	0.00	0.17	0.02
1100	830	810	-39.96	0.01	0.00	0.00	0.11	0.01
1110	830	840	44.80	0.03	0.00	0.00	0.29	0.06
1120	840	850	31.28	0.01	0.00	0.00	0.20	0.03
1130	850	860	34.04	0.01	0.00	0.00	0.22	0.03
1140	860	870	17.92	0.01	0.00	0.00	0.11	0.01
1150	870	800	-9.08	0.00	0.00	0.00	0.06	0.00
1160	860	780	12.52	0.00	0.00	0.00	0.08	0.01
1170	730	880	23.30	0.00	0.00	0.00	0.15	0.02
1180	880	890	9.96	0.00	0.00	0.00	0.06	0.00
1190	890	900	2.68	0.00	0.00	0.00	0.02	0.00
1200	910	890	-6.40	0.01	0.00	0.00	0.07	0.01
1210	880	920	13.34	0.01	0.00	0.00	0.09	0.01
1220	910	920	-11.54	0.00	0.00	0.00	0.07	0.00
1230	930	910	-16.14	0.01	0.00	0.00	0.10	0.01
1240	870	930	22.52	0.02	0.00	0.00	0.14	0.02
1250	940	930	-35.98	0.04	0.00	0.00	0.23	0.04
1260	950	940	-30.58	0.02	0.00	0.00	0.20	0.03
1270	950	960	-28.30	0.02	0.00	0.00	0.18	0.02
1280	960	970	-30.98	0.03	0.00	0.00	0.20	0.03
1290	970	980	2.68	0.00	0.00	0.00	0.02	0.00
1300	970	990	-41.74	0.07	0.00	0.00	0.27	0.05
1310	850	1810	-4.56	0.00	0.00	0.00	0.03	0.00
1320	1000	830	6.64	0.00	0.00	0.00	0.02	0.00
1330	1010	1000	249.38	0.26	0.00	0.00	0.71	0.19
1340	820	1020	-60.14	0.10	0.00	0.00	0.38	0.10
1350	1030	1010	-84.38	0.10	0.00	0.00	0.54	0.19
1360	1020	1030	-70.02	0.04	0.00	0.00	0.45	0.13
1370	1040	990	-196.52	0.18	0.00	0.00	0.56	0.12
1380	1040	1050	31.72	0.06	0.00	0.00	0.20	0.03
1390	1050	1060	12.88	0.00	0.00	0.00	0.08	0.01
1400	1060	1070	-17.64	0.01	0.00	0.00	0.11	0.01
1410	1070	1080	-14.28	0.00	0.00	0.00	0.09	0.01
1420	1080	1090	-3.84	0.00	0.00	0.00	0.02	0.00
1430	1090	1100	-11.92	0.00	0.00	0.00	0.08	0.01
1440	1110	1120	-52.60	0.05	0.00	0.00	0.34	0.08
1450	1080	1110	-14.91	0.01	0.00	0.00	0.10	0.01
1460	1130	1070	12.33	0.00	0.00	0.00	0.08	0.01
1470	1130	1110	-19.49	0.00	0.00	0.00	0.12	0.01
1480	1110	1100	14.60	0.00	0.00	0.00	0.09	0.01
1490	1120	950	-58.88	0.06	0.00	0.00	0.38	0.10
1500	1010	240	-363.99	0.41	0.00	0.00	1.03	0.39
1510	240	1140	476.01	0.18	0.00	0.00	1.35	0.64
1520	1140	1150	98.59	0.21	0.00	0.00	0.63	0.25
1530	1160	1010	-30.23	0.02	0.00	0.00	0.19	0.03
1540	1160	1150	-15.81	0.04	0.00	0.00	0.18	0.03
1550	1170	1160	-40.65	0.02	0.00	0.00	0.26	0.05
1560	1180	1170	6.27	0.01	0.00	0.00	0.07	0.01
1570	1150	1180	77.38	0.05	0.00	0.00	0.49	0.16
1580	1190	1170	-41.51	0.13	0.00	0.00	0.26	0.05
1590	1180	1190	61.23	0.14	0.00	0.00	0.39	0.10
1600	1190	1200	89.30	0.28	0.00	0.00	0.57	0.21
1610	1200	1210	-45.26	0.15	0.00	0.00	0.29	0.06
1620	1220	1210	353.22	0.13	0.00	0.00	1.00	0.37
1630	1140	1220	376.54	0.40	0.00	0.00	1.07	0.42
1640	1230	1240	-150.44	0.14	0.00	0.00	0.43	0.08
1650	1240	1040	-153.12	0.08	0.00	0.00	0.43	0.08
1660	1210	1250	296.28	0.36	0.00	0.00	0.84	0.27
1670	1250	1230	8.91	0.01	0.00	0.00	0.06	0.00
1680	1260	1250	-173.51	0.25	0.00	0.00	0.49	0.10
1690	1200	1260	116.60	0.46	0.00	0.00	0.74	0.34
1700	1270	1260	-260.51	0.27	0.00	0.00	0.74	0.21
1710	1280	1270	-30.20	0.07	0.00	0.00	0.19	0.03

1720	1290	1290	15.84	0.02	0.00	0.00	0.18	0.03
1730	1300	1290	9.59	0.04	0.00	0.00	0.11	0.01
1740	1300	1310	-148.43	0.02	0.00	0.00	0.42	0.07
1750	1310	1270	-216.87	0.03	0.00	0.00	0.62	0.15
1760	1320	1310	-67.55	0.03	0.00	0.00	0.43	0.12
1770	1330	1300	-128.08	0.01	0.00	0.00	0.36	0.06
1780	1340	1330	-14.66	0.01	0.00	0.00	0.17	0.03
1790	1320	1340	24.14	0.01	0.00	0.00	0.15	0.02
1800	1350	1320	-18.46	0.00	0.00	0.00	0.12	0.01
1810	1360	1350	-15.78	0.00	0.00	0.00	0.10	0.01
1820	1370	1360	-11.30	0.01	0.00	0.00	0.07	0.00
1830	1380	1370	-5.02	0.00	0.00	0.00	0.03	0.00
1840	1380	1320	-18.67	0.01	0.00	0.00	0.12	0.01
1850	1390	1380	-10.26	0.02	0.00	0.00	0.12	0.02
1860	1390	1400	-10.85	0.00	0.00	0.00	0.07	0.00
1870	1340	1400	28.03	0.02	0.00	0.00	0.18	0.02
1880	1410	1330	-109.82	0.01	0.00	0.00	0.31	0.04
1890	1420	1410	-86.54	0.01	0.00	0.00	0.25	0.03
1900	1400	1420	-16.72	0.00	0.00	0.00	0.11	0.01
1910	1400	1430	24.03	0.01	0.00	0.00	0.15	0.02
1920	1430	1440	7.67	0.00	0.00	0.00	0.05	0.00
1930	1440	1450	3.19	0.00	0.00	0.00	0.04	0.00
1940	1430	1450	12.75	0.00	0.00	0.00	0.08	0.01
1950	1450	1460	7.87	0.00	0.00	0.00	0.05	0.00
1960	1470	1460	14.07	0.00	0.00	0.00	0.09	0.01
1970	1470	1480	-18.55	0.00	0.00	0.00	0.05	0.00
1980	1480	1490	-26.93	0.00	0.00	0.00	0.08	0.00
1990	1490	1500	-54.38	0.01	0.00	0.00	0.15	0.01
2000	1500	1420	-67.14	0.00	0.00	0.00	0.19	0.02
2010	1460	1510	17.45	0.00	0.00	0.00	0.11	0.01
2020	1520	1510	0.52	0.00	0.00	0.00	0.01	0.00
2030	1510	1530	10.82	0.00	0.00	0.00	0.07	0.00
2040	1530	1520	-4.42	0.00	0.00	0.00	0.05	0.00
2050	1520	1390	-11.23	0.01	0.00	0.00	0.13	0.02
2060	1480	1540	0.30	0.00	0.00	0.00	0.00	0.00
2070	1550	1540	-8.83	0.01	0.00	0.00	0.10	0.01
2080	1560	1550	-2.20	0.00	0.00	0.00	0.03	0.00
2090	1570	1560	10.15	0.01	0.00	0.00	0.12	0.02
2100	1290	1570	10.19	0.01	0.00	0.00	0.12	0.02
2110	1550	1490	-8.61	0.01	0.00	0.00	0.05	0.00
2120	1500	1560	5.60	0.01	0.00	0.00	0.06	0.01
2130	1570	1410	-14.32	0.02	0.00	0.00	0.09	0.01
2140	1580	1540	35.45	0.19	0.00	0.00	0.23	0.04
2150	1590	1580	13.21	0.02	0.00	0.00	0.08	0.01
2160	1600	1580	40.20	0.12	0.00	0.00	0.26	0.05
2170	1610	1590	45.49	0.15	0.00	0.00	0.29	0.06
2180	1610	1600	23.49	0.05	0.00	0.00	0.15	0.02
2190	1250	1610	86.94	0.27	0.00	0.00	0.55	0.20
2200	1620	1600	29.27	0.07	0.00	0.00	0.19	0.03
2210	1620	1630	-41.83	0.14	0.00	0.00	0.27	0.05
2220	1630	1640	-47.23	0.02	0.00	0.00	0.30	0.06
2230	1640	1650	-57.99	0.02	0.00	0.00	0.37	0.09
2240	1660	1650	-20.89	0.01	0.00	0.00	0.13	0.01
2250	1670	1660	-16.41	0.01	0.00	0.00	0.10	0.01
2260	1680	1670	-7.45	0.00	0.00	0.00	0.05	0.00
2270	1690	1680	22.15	0.03	0.00	0.00	0.14	0.02
2280	1650	1690	4.93	0.00	0.00	0.00	0.03	0.00
2290	1700	1690	23.50	0.01	0.00	0.00	0.15	0.02
2300	1710	1700	-0.86	0.00	0.00	0.00	0.01	0.00
2310	1720	1640	-9.88	0.00	0.00	0.00	0.06	0.00
2320	1650	1730	-84.69	0.01	0.00	0.00	0.24	0.03
2330	1730	1740	-96.82	0.01	0.00	0.00	0.27	0.03
2340	1730	1700	9.46	0.00	0.00	0.00	0.11	0.01
2350	1750	1700	21.19	0.01	0.00	0.00	0.14	0.01
2360	1750	1740	-14.14	0.01	0.00	0.00	0.16	0.03
2370	1710	1750	-12.58	0.01	0.00	0.00	0.08	0.01
2380	1740	1230	-114.56	0.03	0.00	0.00	0.32	0.05

2390	1760	1750	25.03	0.01	0.00	0.00	0.16	0.02
2400	1230	1760	38.51	0.03	0.00	0.00	0.25	0.04
2410	1770	1830	-2.68	0.00	0.00	0.00	0.03	0.00
2420	1680	1780	21.52	0.02	0.00	0.00	0.14	0.01
2430	1060	1790	20.64	0.02	0.00	0.00	0.13	0.01
2440	1050	1800	10.76	0.00	0.00	0.00	0.07	0.00
2450	1810	1820	-9.04	0.01	0.00	0.00	0.10	0.01
2460	840	1820	12.64	0.00	0.00	0.00	0.08	0.01
2470	990	1000	-240.06	0.02	0.00	0.00	0.68	0.18
2480	1760	1830	8.08	0.01	0.00	0.00	0.05	0.00
2490-TK	130	0	-840.00	0.02	0.00	0.00	2.38	1.84
2500-TK	20	0	-1042.48	0.03	0.00	0.00	2.96	2.74

J U N C T I O N N O D E R E S U L T S

JUNCTION NUMBER	JUNCTION TITLE	EXTERNAL DEMAND (gpm)	HYDRAULIC GRADE (ft)	JUNCTION ELEVATION (ft)	PRESSURE HEAD (ft)	JUNCTION PRESSURE (psi)
10-1		0.00	33.89	10.00	23.89	10.35
20-1		0.00	33.97	10.00	23.97	10.39
30-1		0.00	33.89	10.00	23.89	10.35
40-1		0.00	154.49	10.00	144.49	62.61
50-1		0.00	154.49	10.00	144.49	62.61
60-1		0.00	33.47	10.00	23.47	10.17
70-1		0.00	154.78	10.00	144.78	62.74
80-1		0.00	33.89	10.00	23.89	10.35
90-1		0.00	154.49	10.00	144.49	62.61
100-1		0.00	33.87	10.00	23.87	10.34
110-1		0.00	154.51	10.00	144.51	62.62
120-1		0.00	153.94	10.00	143.94	62.38
130-1		0.00	26.98	10.00	16.98	7.36
140-1		0.00	26.58	10.00	16.58	7.19
150-1		0.00	26.38	10.00	16.38	7.10
160-1		0.00	153.85	10.00	143.85	62.33
170-1		0.00	153.64	10.00	143.64	62.24
180-1		0.00	26.58	10.00	16.58	7.19
190-1		0.00	153.64	10.00	143.64	62.24
200-1		0.00	26.58	10.00	16.58	7.19
210-1		0.00	153.64	10.00	143.64	62.24
220-1		0.00	26.58	10.00	16.58	7.18
230-1		0.00	153.64	10.00	143.64	62.25
240-1		0.00	153.24	10.00	143.24	62.07
250-1		12.56	148.11	10.00	138.11	59.85
260-1		509.88	140.11	10.00	130.11	56.38
270-1		15.24	149.92	10.00	139.92	60.63
280-1		9.88	150.17	10.00	140.17	60.74
290-1		15.24	151.15	10.00	141.15	61.17
300-1		49.36	151.89	10.00	141.89	61.49
310-1		23.32	152.05	10.00	142.05	61.56
320-1		17.04	152.65	10.00	142.65	61.82
330-1		4.48	153.25	10.00	143.25	62.07
340-1		8.08	153.01	10.00	143.01	61.97
350-1		3.60	152.91	10.00	142.91	61.93
360-1		3.60	152.90	10.00	142.90	61.93
370-1		6.28	152.90	10.00	142.90	61.92
380-1		1.80	152.91	10.00	142.91	61.93
390-1		4.48	152.90	10.00	142.90	61.92
400-1		6.28	152.90	10.00	142.90	61.92
410-1		2.68	152.90	10.00	142.90	61.92
420-1		2.68	152.88	10.00	142.88	61.92
430-1		4.48	152.99	10.00	142.99	61.96
440-1		1.80	153.03	10.00	143.03	61.98
450-1		7.16	152.87	10.00	142.87	61.91
460-1		9.88	152.84	10.00	142.84	61.90

470-1	5.40	152.79	10.00	142.79	61.88
480-1	5.40	152.78	10.00	142.78	61.87
490-1	4.48	152.83	10.00	142.83	61.90
500-1	4.48	152.84	10.00	142.84	61.90
510-1	7.16	152.84	10.00	142.84	61.90
520-1	17.04	152.70	10.00	142.70	61.84
530-1	12.56	152.67	10.00	142.67	61.82
540-1	24.24	152.64	10.00	142.64	61.81
550-1	16.16	152.62	10.00	142.62	61.80
560-1	3.60	152.63	10.00	142.63	61.81
570-1	14.36	152.64	10.00	142.64	61.81
580-1	26.00	152.53	10.00	142.53	61.76
590-1	14.36	152.52	10.00	142.52	61.76
600-1	7.16	152.59	10.00	142.59	61.79
610-1	8.08	152.58	10.00	142.58	61.78
620-1	17.04	152.57	10.00	142.57	61.78
630-1	9.88	152.57	10.00	142.57	61.78
640-1	2.68	152.58	10.00	142.58	61.78
650-1	7.16	152.57	10.00	142.57	61.78
660-1	8.08	152.57	10.00	142.57	61.78
670-1	5.40	152.57	10.00	142.57	61.78
680-1	3.60	152.58	10.00	142.58	61.78
690-1	8.96	152.57	10.00	142.57	61.78
700-1	2.68	152.58	10.00	142.58	61.78
710-1	5.40	152.52	10.00	142.52	61.76
720-1	4.48	152.52	10.00	142.52	61.76
730-1	4.48	152.52	10.00	142.52	61.76
740-1	10.76	152.52	10.00	142.52	61.76
750-1	10.76	152.55	10.00	142.55	61.77
760-1	8.08	152.52	10.00	142.52	61.76
770-1	10.76	152.54	10.00	142.54	61.77
780-1	8.08	152.52	10.00	142.52	61.76
790-1	0.88	152.52	10.00	142.52	61.76
800-1	5.40	152.52	10.00	142.52	61.76
810-1	5.40	152.58	10.00	142.58	61.79
820-1	12.56	152.59	10.00	142.59	61.79
830-1	1.80	152.58	10.00	142.58	61.78
840-1	0.88	152.55	10.00	142.55	61.77
850-1	1.80	152.54	10.00	142.54	61.77
860-1	3.60	152.53	10.00	142.53	61.76
870-1	4.48	152.52	10.00	142.52	61.76
880-1	0.00	152.51	10.00	142.51	61.76
890-1	0.88	152.51	10.00	142.51	61.76
900-1	2.68	152.51	10.00	142.51	61.76
910-1	1.80	152.50	10.00	142.50	61.75
920-1	1.80	152.51	10.00	142.51	61.75
930-1	2.68	152.49	10.00	142.49	61.75
940-1	5.40	152.46	10.00	142.46	61.73
950-1	0.00	152.44	10.00	142.44	61.72
960-1	2.68	152.46	10.00	142.46	61.73
970-1	8.08	152.49	10.00	142.49	61.75
980-1	2.68	152.49	10.00	142.49	61.75
990-1	1.80	152.56	10.00	142.56	61.77
1000-1	2.68	152.58	10.00	142.58	61.78
1010-1	0.00	152.83	10.00	142.83	61.89
1020-1	9.88	152.69	10.00	142.69	61.83
1030-1	14.36	152.73	10.00	142.73	61.85
1040-1	11.68	152.38	10.00	142.38	61.70
1050-1	8.08	152.32	10.00	142.32	61.67
1060-1	9.88	152.32	10.00	142.32	61.67
1070-1	8.96	152.32	10.00	142.32	61.67
1080-1	4.48	152.32	10.00	142.32	61.67
1090-1	8.08	152.32	10.00	142.32	61.67
1100-1	2.68	152.33	10.00	142.33	61.68
1110-1	3.60	152.33	10.00	142.33	61.68
1120-1	6.28	152.38	10.00	142.38	61.70
1130-1	7.16	152.33	10.00	142.33	61.67

1140-1	0.88	153.07	10.00	143.07	62.00
1150-1	5.40	152.86	10.00	142.86	61.90
1160-1	5.40	152.81	10.00	142.81	61.88
1170-1	5.40	152.79	10.00	142.79	61.88
1180-1	9.88	152.80	10.00	142.80	61.88
1190-1	13.44	152.66	10.00	142.66	61.82
1200-1	17.96	152.38	10.00	142.38	61.70
1210-1	11.68	152.53	10.00	142.53	61.76
1220-1	23.32	152.66	10.00	142.66	61.82
1230-1	6.28	152.17	10.00	142.17	61.61
1240-1	2.68	152.30	10.00	142.30	61.66
1250-1	26.92	152.17	10.00	142.17	61.61
1260-1	29.60	151.92	10.00	141.92	61.50
1270-1	13.44	151.65	10.00	141.65	61.38
1280-1	14.36	151.58	10.00	141.58	61.35
1290-1	15.24	151.56	10.00	141.56	61.34
1300-1	10.76	151.60	10.00	141.60	61.36
1310-1	0.88	151.62	10.00	141.62	61.37
1320-1	6.28	151.58	10.00	141.58	61.35
1330-1	3.60	151.58	10.00	141.58	61.35
1340-1	10.76	151.57	10.00	141.57	61.35
1350-1	2.68	151.58	10.00	141.58	61.35
1360-1	4.48	151.58	10.00	141.58	61.35
1370-1	6.28	151.57	10.00	141.57	61.35
1380-1	13.44	151.57	10.00	141.57	61.35
1390-1	9.88	151.55	10.00	141.55	61.34
1400-1	9.88	151.56	10.00	141.56	61.34
1410-1	8.96	151.57	10.00	141.57	61.35
1420-1	2.68	151.56	10.00	141.56	61.34
1430-1	3.60	151.55	10.00	141.55	61.34
1440-1	4.48	151.55	10.00	141.55	61.34
1450-1	8.08	151.55	10.00	141.55	61.34
1460-1	4.48	151.55	10.00	141.55	61.34
1470-1	4.48	151.55	10.00	141.55	61.34
1480-1	8.08	151.55	10.00	141.55	61.34
1490-1	18.84	151.55	10.00	141.55	61.34
1500-1	7.16	151.56	10.00	141.56	61.34
1510-1	7.16	151.54	10.00	141.54	61.34
1520-1	6.28	151.54	10.00	141.54	61.34
1530-1	15.24	151.54	10.00	141.54	61.33
1540-1	26.92	151.55	10.00	141.55	61.34
1550-1	15.24	151.55	10.00	141.55	61.34
1560-1	17.96	151.55	10.00	141.55	61.34
1570-1	14.36	151.55	10.00	141.55	61.34
1580-1	17.96	151.74	10.00	141.74	61.42
1590-1	32.28	151.76	10.00	141.76	61.43
1600-1	12.56	151.86	10.00	141.86	61.47
1610-1	17.96	151.91	10.00	141.91	61.49
1620-1	12.56	151.93	10.00	141.93	61.51
1630-1	5.40	152.07	10.00	142.07	61.56
1640-1	0.88	152.09	10.00	142.09	61.57
1650-1	0.88	152.12	10.00	142.12	61.58
1660-1	4.48	152.11	10.00	142.11	61.58
1670-1	8.96	152.09	10.00	142.09	61.57
1680-1	8.08	152.09	10.00	142.09	61.57
1690-1	6.28	152.12	10.00	142.12	61.58
1700-1	6.28	152.12	10.00	142.12	61.59
1710-1	13.44	152.12	10.00	142.12	61.59
1720-1	9.88	152.09	10.00	142.09	61.57
1730-1	2.68	152.13	10.00	142.13	61.59
1740-1	3.60	152.14	10.00	142.14	61.59
1750-1	5.40	152.13	10.00	142.13	61.59
1760-1	5.40	152.14	10.00	142.14	61.59
1770-1	2.68	152.13	10.00	142.13	61.59
1780-1	21.52	152.07	10.00	142.07	61.56
1790-1	20.64	152.30	10.00	142.30	61.66
1800-1	10.76	152.31	10.00	142.31	61.67

1810-1	4.48	152.54	10.00	142.54	61.77
1820-1	3.60	152.54	10.00	142.54	61.77
1830-1	5.40	152.13	10.00	142.13	61.59

S U M M A R Y O F I N F L O W S A N D O U T F L O W S

(+) INFLOWS INTO THE SYSTEM FROM BOUNDARY NODES
(-) OUTFLOWS FROM THE SYSTEM INTO BOUNDARY NODES

PIPE NUMBER	FLOWRATE (gpm)
2490	840.00
2500	1042.48

NET SYSTEM INFLOW = 1882.48
NET SYSTEM OUTFLOW = 0.00
NET SYSTEM DEMAND = 1882.48

T A N K S T A T U S R E P O R T (time = 0.0000 hours)

TANK NUMBER (*)	PIPE NUMBER	NET FLOW (gpm)	WATER ELEVATION (ft)	TANK DEPTH (ft)	TANK VOLUME (gal)	TANK VOLUME (%)	TANK STATUS	PROJECTED DEPTH (ft)
1-1	2500	-342.48	34.00	24.00	99776.	100.0	DRAINING	19.06
2-1	2490	-140.00	27.00	17.00	282698.	70.8	DRAINING	16.49

* TANK TYPE: 1 - CONSTANT DIAMETER 2 - VARIABLE AREA

****
S I M U L A T I O N R E S U L T S
****

TIME FROM INITIATION OF EPS = 1.0000 HOURS
The results are obtained after 3 trials with an accuracy = 0.00200

P I P E L I N E R E S U L T S

STATUS CODE: XX -CLOSED PIPE BN -BOUNDARY NODE PU -PUMP LINE
CV -CHECK VALVE RV -REGULATING VALVE TK -STORAGE TANK

PIPE NUMBER	NODE NOS. #1	#2	FLOWRATE (gpm)	HEAD LOSS (ft)	PUMP HEAD (ft)	MINOR LOSS (ft)	LINE VELO. (ft/s)	HL/ 1000 (ft/ft)
10	10	20	-983.67	0.07	0.00	0.00	2.79	2.46
20	30	10	0.00	0.00	0.00	0.00	0.00	0.00
30-XXPU	30	40						
40	50	40	0.00	0.00	0.00	0.00	0.00	0.00
50	10	60	831.05	0.39	0.00	0.00	5.30	12.97
60-PU	60	70	831.05	0.13	123.47	0.00	5.30	12.97
70	80	10	0.00	0.00	0.00	0.00	0.00	0.00
80-XXPU	80	90						
90	50	90	0.00	0.00	0.00	0.00	0.00	0.00
100	100	10	-152.62	0.02	0.00	0.00	0.97	0.56
110-PU	100	110	152.62	0.01	122.72	0.00	0.97	0.56
120	50	110	-152.62	0.01	0.00	0.00	0.97	0.56
130	120	50	-983.67	0.49	0.00	0.00	2.79	2.46

140	50	70	-831.05	0.26	0.00	0.00	5.30	12.97
150	140	130	-898.81	0.45	0.00	0.00	5.74	14.99
160	150	140	-773.98	0.23	0.00	0.00	4.94	11.37
170-PU	150	160	773.98	0.11	126.02	0.00	4.94	11.37
180	170	160	-773.98	0.23	0.00	0.00	4.94	11.37
190	140	180	0.00	0.00	0.00	0.00	0.00	0.00
200-XXPU	180	190						
210	170	190	0.00	0.00	0.00	0.00	0.00	0.00
220	200	140	0.00	0.00	0.00	0.00	0.00	0.00
230-XXPU	200	210						
240	170	210	0.00	0.00	0.00	0.00	0.00	0.00
250	220	140	-124.82	0.01	0.00	0.00	0.80	0.39
260-PU	220	230	124.82	0.00	125.46	0.00	0.80	0.39
270	170	230	-124.82	0.01	0.00	0.00	0.80	0.39
280	240	170	-898.81	0.45	0.00	0.00	5.74	14.99
290	250	260	509.88	8.00	0.00	0.00	3.25	5.25
300	270	250	239.47	1.81	0.00	0.00	1.53	1.29
310	280	270	254.71	0.25	0.00	0.00	0.72	0.20
320	280	250	282.97	2.06	0.00	0.00	1.81	1.76
330	290	280	547.56	0.99	0.00	0.00	1.55	0.83
340	300	290	68.30	0.73	0.00	0.00	0.44	0.13
350	310	290	494.50	0.90	0.00	0.00	1.40	0.69
360	310	300	36.68	0.17	0.00	0.00	0.23	0.04
370	320	310	554.50	0.60	0.00	0.00	1.57	0.85
380	320	300	80.98	0.77	0.00	0.00	0.52	0.17
390	120	320	652.52	1.29	0.00	0.00	1.85	1.15
400	330	120	-331.15	0.51	0.00	0.00	0.94	0.33
410	340	330	-81.68	0.18	0.00	0.00	0.52	0.18
420	340	350	53.41	0.07	0.00	0.00	0.34	0.08
430	360	350	-10.31	0.00	0.00	0.00	0.07	0.00
440	360	370	6.71	0.00	0.00	0.00	0.04	0.00
450	380	370	3.54	0.00	0.00	0.00	0.04	0.00
460	350	380	14.81	0.00	0.00	0.00	0.09	0.01
470	380	390	9.47	0.00	0.00	0.00	0.06	0.00
480	390	400	1.57	0.00	0.00	0.00	0.02	0.00
490	370	400	3.97	0.00	0.00	0.00	0.03	0.00
500	410	400	0.75	0.00	0.00	0.00	0.00	0.00
510	390	410	3.43	0.00	0.00	0.00	0.02	0.00
520	420	350	-24.69	0.01	0.00	0.00	0.16	0.02
530	430	340	-20.18	0.01	0.00	0.00	0.13	0.01
540	420	430	-55.23	0.08	0.00	0.00	0.35	0.09
550	430	440	-39.52	0.03	0.00	0.00	0.25	0.05
560	440	330	-245.00	0.16	0.00	0.00	0.69	0.19
570	450	440	-203.68	0.12	0.00	0.00	0.58	0.13
580	450	420	-35.39	0.01	0.00	0.00	0.10	0.01
590	460	420	-41.85	0.03	0.00	0.00	0.27	0.05
600	460	470	31.97	0.03	0.00	0.00	0.20	0.03
610	480	470	-26.57	0.01	0.00	0.00	0.17	0.02
620	480	490	-24.52	0.04	0.00	0.00	0.16	0.02
630	490	450	-171.73	0.02	0.00	0.00	0.49	0.10
640	500	450	-60.18	0.02	0.00	0.00	0.38	0.10
650	510	500	-7.16	0.00	0.00	0.00	0.05	0.00
660	520	500	-48.54	0.10	0.00	0.00	0.31	0.07
670	530	490	-142.72	0.11	0.00	0.00	0.40	0.07
680	520	540	31.50	0.04	0.00	0.00	0.20	0.03
690	540	550	7.26	0.00	0.00	0.00	0.05	0.00
700	560	530	-110.68	0.02	0.00	0.00	0.31	0.04
710	550	560	-45.71	0.01	0.00	0.00	0.29	0.06
720	530	570	19.48	0.02	0.00	0.00	0.12	0.01
730	570	480	-45.70	0.09	0.00	0.00	0.29	0.06
740	580	570	-50.82	0.08	0.00	0.00	0.32	0.07
750	580	590	10.13	0.01	0.00	0.00	0.06	0.00
760	600	560	-61.37	0.02	0.00	0.00	0.17	0.01
770	550	610	36.81	0.02	0.00	0.00	0.23	0.04
780	620	610	-18.75	0.01	0.00	0.00	0.12	0.01
790	630	620	-1.71	0.00	0.00	0.00	0.02	0.00
800	640	650	12.35	0.00	0.00	0.00	0.08	0.01

810	650	630	5.19	0.00	0.00	0.00	0.06	0.00
820	630	660	-2.98	0.00	0.00	0.00	0.03	0.00
830	670	660	5.28	0.00	0.00	0.00	0.06	0.00
840	680	670	10.68	0.00	0.00	0.00	0.07	0.00
850	660	690	-5.78	0.01	0.00	0.00	0.07	0.01
860	690	700	-14.74	0.00	0.00	0.00	0.09	0.01
870	610	640	9.98	0.00	0.00	0.00	0.06	0.00
880	640	680	-5.05	0.00	0.00	0.00	0.03	0.00
890	680	700	-19.33	0.00	0.00	0.00	0.12	0.01
900	710	580	-14.69	0.00	0.00	0.00	0.09	0.01
910	590	710	-4.23	0.00	0.00	0.00	0.05	0.00
920	710	720	11.35	0.00	0.00	0.00	0.07	0.00
930	730	720	-6.87	0.00	0.00	0.00	0.04	0.00
940	740	710	6.29	0.00	0.00	0.00	0.04	0.00
950	740	730	12.48	0.00	0.00	0.00	0.08	0.01
960	750	740	24.27	0.02	0.00	0.00	0.15	0.02
970	600	750	69.51	0.04	0.00	0.00	0.44	0.13
980	760	770	-8.36	0.01	0.00	0.00	0.09	0.01
990	750	770	34.48	0.01	0.00	0.00	0.22	0.04
1000	760	740	5.26	0.00	0.00	0.00	0.03	0.00
1010	780	760	10.50	0.00	0.00	0.00	0.07	0.00
1020	790	760	-5.52	0.00	0.00	0.00	0.06	0.00
1030	790	730	6.32	0.00	0.00	0.00	0.04	0.00
1040	800	790	1.68	0.00	0.00	0.00	0.01	0.00
1050	780	800	12.85	0.01	0.00	0.00	0.08	0.01
1060	770	780	15.36	0.01	0.00	0.00	0.10	0.01
1070	810	600	15.30	0.00	0.00	0.00	0.04	0.00
1080	820	810	22.94	0.01	0.00	0.00	0.15	0.02
1090	820	700	36.75	0.03	0.00	0.00	0.23	0.04
1100	830	810	-2.24	0.00	0.00	0.00	0.01	0.00
1110	830	840	49.70	0.04	0.00	0.00	0.32	0.07
1120	840	850	35.04	0.01	0.00	0.00	0.22	0.04
1130	850	860	38.94	0.01	0.00	0.00	0.25	0.04
1140	860	870	19.28	0.01	0.00	0.00	0.12	0.01
1150	870	800	-5.77	0.00	0.00	0.00	0.04	0.00
1160	860	780	16.07	0.01	0.00	0.00	0.10	0.01
1170	730	880	21.19	0.00	0.00	0.00	0.14	0.01
1180	880	890	9.24	0.00	0.00	0.00	0.06	0.00
1190	890	900	2.68	0.00	0.00	0.00	0.02	0.00
1200	910	890	-5.68	0.01	0.00	0.00	0.06	0.01
1210	880	920	11.95	0.01	0.00	0.00	0.08	0.01
1220	910	920	-10.15	0.00	0.00	0.00	0.06	0.00
1230	930	910	-14.03	0.01	0.00	0.00	0.09	0.01
1240	870	930	20.56	0.02	0.00	0.00	0.13	0.01
1250	940	930	-31.91	0.03	0.00	0.00	0.20	0.03
1260	950	940	-26.51	0.01	0.00	0.00	0.17	0.02
1270	950	960	-29.60	0.02	0.00	0.00	0.19	0.03
1280	960	970	-32.28	0.03	0.00	0.00	0.21	0.03
1290	970	980	2.68	0.00	0.00	0.00	0.02	0.00
1300	970	990	-43.04	0.07	0.00	0.00	0.27	0.05
1310	850	1810	-5.70	0.00	0.00	0.00	0.04	0.00
1320	1000	830	49.26	0.01	0.00	0.00	0.14	0.01
1330	1010	1000	283.56	0.33	0.00	0.00	0.80	0.25
1340	820	1020	-72.26	0.14	0.00	0.00	0.46	0.14
1350	1030	1010	-96.50	0.13	0.00	0.00	0.62	0.24
1360	1020	1030	-82.14	0.06	0.00	0.00	0.52	0.18
1370	1040	990	-186.78	0.16	0.00	0.00	0.53	0.11
1380	1040	1050	34.49	0.07	0.00	0.00	0.22	0.04
1390	1050	1060	15.65	0.00	0.00	0.00	0.10	0.01
1400	1060	1070	-14.87	0.00	0.00	0.00	0.09	0.01
1410	1070	1080	-12.64	0.00	0.00	0.00	0.08	0.01
1420	1080	1090	-3.12	0.00	0.00	0.00	0.02	0.00
1430	1090	1100	-11.20	0.00	0.00	0.00	0.07	0.00
1440	1110	1120	-49.83	0.05	0.00	0.00	0.32	0.07
1450	1080	1110	-14.01	0.00	0.00	0.00	0.09	0.01
1460	1130	1070	11.19	0.00	0.00	0.00	0.07	0.00
1470	1130	1110	-18.35	0.00	0.00	0.00	0.12	0.01

1480	1110	1100	13.88	0.00	0.00	0.00	0.09	0.01
1490	1120	950	-56.11	0.05	0.00	0.00	0.36	0.09
1500	1010	240	-401.67	0.49	0.00	0.00	1.14	0.47
1510	240	1140	497.13	0.19	0.00	0.00	1.41	0.70
1520	1140	1150	107.07	0.25	0.00	0.00	0.68	0.29
1530	1160	1010	-21.62	0.01	0.00	0.00	0.14	0.02
1540	1160	1150	-19.46	0.07	0.00	0.00	0.22	0.05
1550	1170	1160	-35.68	0.01	0.00	0.00	0.23	0.04
1560	1180	1170	10.08	0.02	0.00	0.00	0.11	0.01
1570	1150	1180	82.21	0.06	0.00	0.00	0.52	0.18
1580	1190	1170	-40.36	0.13	0.00	0.00	0.26	0.05
1590	1180	1190	62.25	0.15	0.00	0.00	0.40	0.11
1600	1190	1200	89.17	0.28	0.00	0.00	0.57	0.21
1610	1200	1210	-46.97	0.16	0.00	0.00	0.30	0.06
1620	1220	1210	365.87	0.14	0.00	0.00	1.04	0.39
1630	1140	1220	389.19	0.43	0.00	0.00	1.10	0.44
1640	1230	1240	-137.93	0.12	0.00	0.00	0.39	0.06
1650	1240	1040	-140.61	0.07	0.00	0.00	0.40	0.07
1660	1210	1250	307.22	0.38	0.00	0.00	0.87	0.29
1670	1250	1230	19.88	0.04	0.00	0.00	0.13	0.01
1680	1260	1250	-172.54	0.25	0.00	0.00	0.49	0.10
1690	1200	1260	118.17	0.47	0.00	0.00	0.75	0.35
1700	1270	1260	-261.11	0.27	0.00	0.00	0.74	0.21
1710	1280	1270	-30.26	0.07	0.00	0.00	0.19	0.03
1720	1280	1290	15.90	0.02	0.00	0.00	0.18	0.03
1730	1300	1290	9.62	0.04	0.00	0.00	0.11	0.01
1740	1300	1310	-148.89	0.02	0.00	0.00	0.42	0.07
1750	1310	1270	-217.41	0.03	0.00	0.00	0.62	0.15
1760	1320	1310	-67.64	0.03	0.00	0.00	0.43	0.12
1770	1330	1300	-128.51	0.01	0.00	0.00	0.36	0.06
1780	1340	1330	-14.65	0.01	0.00	0.00	0.17	0.03
1790	1320	1340	24.29	0.01	0.00	0.00	0.16	0.02
1800	1350	1320	-18.38	0.00	0.00	0.00	0.12	0.01
1810	1360	1350	-15.70	0.00	0.00	0.00	0.10	0.01
1820	1370	1360	-11.22	0.01	0.00	0.00	0.07	0.00
1830	1380	1370	-4.94	0.00	0.00	0.00	0.03	0.00
1840	1380	1320	-18.69	0.01	0.00	0.00	0.12	0.01
1850	1390	1380	-10.19	0.02	0.00	0.00	0.12	0.02
1860	1390	1400	-10.73	0.00	0.00	0.00	0.07	0.00
1870	1340	1400	28.18	0.02	0.00	0.00	0.18	0.02
1880	1410	1330	-110.26	0.01	0.00	0.00	0.31	0.04
1890	1420	1410	-86.94	0.01	0.00	0.00	0.25	0.03
1900	1400	1420	-16.65	0.00	0.00	0.00	0.11	0.01
1910	1400	1430	24.22	0.01	0.00	0.00	0.15	0.02
1920	1430	1440	7.73	0.00	0.00	0.00	0.05	0.00
1930	1440	1450	3.25	0.00	0.00	0.00	0.04	0.00
1940	1430	1450	12.90	0.00	0.00	0.00	0.08	0.01
1950	1450	1460	8.06	0.00	0.00	0.00	0.05	0.00
1960	1470	1460	14.06	0.00	0.00	0.00	0.09	0.01
1970	1470	1480	-18.54	0.00	0.00	0.00	0.05	0.00
1980	1480	1490	-27.47	0.00	0.00	0.00	0.08	0.00
1990	1490	1500	-54.80	0.01	0.00	0.00	0.16	0.01
2000	1500	1420	-67.60	0.00	0.00	0.00	0.19	0.02
2010	1460	1510	17.64	0.00	0.00	0.00	0.11	0.01
2020	1520	1510	0.01	0.00	0.00	0.00	0.00	0.00
2030	1510	1530	10.48	0.00	0.00	0.00	0.07	0.00
2040	1530	1520	-4.76	0.00	0.00	0.00	0.05	0.00
2050	1520	1390	-11.04	0.01	0.00	0.00	0.13	0.02
2060	1480	1540	0.85	0.00	0.00	0.00	0.01	0.00
2070	1550	1540	-8.78	0.01	0.00	0.00	0.10	0.01
2080	1560	1550	-2.03	0.00	0.00	0.00	0.02	0.00
2090	1570	1560	10.29	0.01	0.00	0.00	0.12	0.02
2100	1290	1570	10.28	0.01	0.00	0.00	0.12	0.02
2110	1550	1490	-8.49	0.01	0.00	0.00	0.05	0.00
2120	1500	1560	5.64	0.01	0.00	0.00	0.06	0.01
2130	1570	1410	-14.36	0.02	0.00	0.00	0.09	0.01
2140	1580	1540	34.85	0.18	0.00	0.00	0.22	0.04

2150	1590	1580	13.21	0.02	0.00	0.00	0.08	0.01
2160	1600	1580	39.59	0.12	0.00	0.00	0.25	0.05
2170	1610	1590	45.49	0.15	0.00	0.00	0.29	0.06
2180	1610	1600	24.43	0.05	0.00	0.00	0.16	0.02
2190	1250	1610	87.88	0.27	0.00	0.00	0.56	0.20
2200	1620	1600	27.73	0.07	0.00	0.00	0.18	0.02
2210	1620	1630	-40.29	0.13	0.00	0.00	0.26	0.05
2220	1630	1640	-45.69	0.02	0.00	0.00	0.29	0.06
2230	1640	1650	-56.45	0.02	0.00	0.00	0.36	0.09
2240	1660	1650	-20.89	0.01	0.00	0.00	0.13	0.01
2250	1670	1660	-16.41	0.01	0.00	0.00	0.10	0.01
2260	1680	1670	-7.45	0.00	0.00	0.00	0.05	0.00
2270	1690	1680	22.15	0.03	0.00	0.00	0.14	0.02
2280	1650	1690	5.35	0.00	0.00	0.00	0.03	0.00
2290	1700	1690	23.07	0.01	0.00	0.00	0.15	0.02
2300	1710	1700	-0.97	0.00	0.00	0.00	0.01	0.00
2310	1720	1640	-9.88	0.00	0.00	0.00	0.06	0.00
2320	1650	1730	-83.57	0.01	0.00	0.00	0.24	0.03
2330	1730	1740	-95.70	0.01	0.00	0.00	0.27	0.03
2340	1730	1700	9.45	0.00	0.00	0.00	0.11	0.01
2350	1750	1700	20.88	0.01	0.00	0.00	0.13	0.01
2360	1750	1740	-14.04	0.01	0.00	0.00	0.16	0.03
2370	1710	1750	-12.47	0.01	0.00	0.00	0.08	0.01
2380	1740	1230	-113.34	0.03	0.00	0.00	0.32	0.04
2390	1760	1750	24.71	0.01	0.00	0.00	0.16	0.02
2400	1230	1760	38.19	0.03	0.00	0.00	0.24	0.04
2410	1770	1830	-2.68	0.00	0.00	0.00	0.03	0.00
2420	1680	1780	21.52	0.02	0.00	0.00	0.14	0.01
2430	1060	1790	20.64	0.02	0.00	0.00	0.13	0.01
2440	1050	1800	10.76	0.00	0.00	0.00	0.07	0.00
2450	1810	1820	-10.18	0.01	0.00	0.00	0.12	0.02
2460	840	1820	13.78	0.00	0.00	0.00	0.09	0.01
2470	990	1000	-231.61	0.02	0.00	0.00	0.66	0.17
2480	1760	1830	8.08	0.01	0.00	0.00	0.05	0.00
2490-TK	130	0	-898.81	0.02	0.00	0.00	2.55	2.08
2500-TK	20	0	-983.67	0.02	0.00	0.00	2.79	2.46

J U N C T I O N N O D E R E S U L T S

JUNCTION NUMBER	JUNCTION TITLE	EXTERNAL DEMAND (gpm)	HYDRAULIC GRADE (ft)	JUNCTION ELEVATION (ft)	PRESSURE HEAD (ft)	JUNCTION PRESSURE (psi)
10-1		0.00	28.96	10.00	18.96	8.22
20-1		0.00	29.03	10.00	19.03	8.25
30-1		0.00	28.96	10.00	18.96	8.22
40-1		0.00	151.65	10.00	141.65	61.38
50-1		0.00	151.65	10.00	141.65	61.38
60-1		0.00	28.57	10.00	18.57	8.05
70-1		0.00	151.91	10.00	141.91	61.49
80-1		0.00	28.96	10.00	18.96	8.22
90-1		0.00	151.65	10.00	141.65	61.38
100-1		0.00	28.94	10.00	18.94	8.21
110-1		0.00	151.66	10.00	141.66	61.39
120-1		0.00	151.15	10.00	141.15	61.17
130-1		0.00	26.47	10.00	16.47	7.14
140-1		0.00	26.02	10.00	16.02	6.94
150-1		0.00	25.80	10.00	15.80	6.85
160-1		0.00	151.70	10.00	141.70	61.40
170-1		0.00	151.47	10.00	141.47	61.30
180-1		0.00	26.02	10.00	16.02	6.94
190-1		0.00	151.47	10.00	141.47	61.30
200-1		0.00	26.02	10.00	16.02	6.94
210-1		0.00	151.47	10.00	141.47	61.30
220-1		0.00	26.02	10.00	16.02	6.94

230-1	0.00	151.48	10.00	141.48	61.31
240-1	0.00	151.02	10.00	141.02	61.11
250-1	12.56	145.32	10.00	135.32	58.64
260-1	509.88	137.32	10.00	127.32	55.17
270-1	15.24	147.13	10.00	137.13	59.42
280-1	9.88	147.38	10.00	137.38	59.53
290-1	15.24	148.36	10.00	138.36	59.96
300-1	49.36	149.10	10.00	139.10	60.28
310-1	23.32	149.26	10.00	139.26	60.35
320-1	17.04	149.87	10.00	139.87	60.61
330-1	4.48	150.64	10.00	140.64	60.94
340-1	8.08	150.46	10.00	140.46	60.87
350-1	3.60	150.39	10.00	140.39	60.83
360-1	3.60	150.38	10.00	140.38	60.83
370-1	6.28	150.38	10.00	140.38	60.83
380-1	1.80	150.38	10.00	140.38	60.83
390-1	4.48	150.38	10.00	140.38	60.83
400-1	6.28	150.38	10.00	140.38	60.83
410-1	2.68	150.38	10.00	140.38	60.83
420-1	2.68	150.37	10.00	140.37	60.83
430-1	4.48	150.45	10.00	140.45	60.86
440-1	1.80	150.48	10.00	140.48	60.88
450-1	7.16	150.36	10.00	140.36	60.82
460-1	9.88	150.34	10.00	140.34	60.81
470-1	5.40	150.31	10.00	140.31	60.80
480-1	5.40	150.30	10.00	140.30	60.80
490-1	4.48	150.34	10.00	140.34	60.81
500-1	4.48	150.34	10.00	140.34	60.82
510-1	7.16	150.34	10.00	140.34	60.81
520-1	17.04	150.24	10.00	140.24	60.77
530-1	12.56	150.23	10.00	140.23	60.77
540-1	24.24	150.20	10.00	140.20	60.75
550-1	16.16	150.20	10.00	140.20	60.75
560-1	3.60	150.21	10.00	140.21	60.76
570-1	14.36	150.21	10.00	140.21	60.76
580-1	26.00	150.13	10.00	140.13	60.72
590-1	14.36	150.12	10.00	140.12	60.72
600-1	7.16	150.19	10.00	140.19	60.75
610-1	8.08	150.18	10.00	140.18	60.74
620-1	17.04	150.17	10.00	140.17	60.74
630-1	9.88	150.17	10.00	140.17	60.74
640-1	2.68	150.17	10.00	140.17	60.74
650-1	7.16	150.17	10.00	140.17	60.74
660-1	8.08	150.17	10.00	140.17	60.74
670-1	5.40	150.17	10.00	140.17	60.74
680-1	3.60	150.17	10.00	140.17	60.74
690-1	8.96	150.17	10.00	140.17	60.74
700-1	2.68	150.18	10.00	140.18	60.74
710-1	5.40	150.13	10.00	140.13	60.72
720-1	4.48	150.12	10.00	140.12	60.72
730-1	4.48	150.12	10.00	140.12	60.72
740-1	10.76	150.13	10.00	140.13	60.72
750-1	10.76	150.15	10.00	140.15	60.73
760-1	8.08	150.13	10.00	140.13	60.72
770-1	10.76	150.14	10.00	140.14	60.73
780-1	8.08	150.13	10.00	140.13	60.72
790-1	0.88	150.12	10.00	140.12	60.72
800-1	5.40	150.12	10.00	140.12	60.72
810-1	5.40	150.19	10.00	140.19	60.75
820-1	12.56	150.21	10.00	140.21	60.76
830-1	1.80	150.19	10.00	140.19	60.75
840-1	0.88	150.16	10.00	140.16	60.73
850-1	1.80	150.15	10.00	140.15	60.73
860-1	3.60	150.14	10.00	140.14	60.73
870-1	4.48	150.12	10.00	140.12	60.72
880-1	0.00	150.12	10.00	140.12	60.72
890-1	0.88	150.12	10.00	140.12	60.72

900-1	2.68	150.12	10.00	140.12	60.72
910-1	1.80	150.11	10.00	140.11	60.72
920-1	1.80	150.11	10.00	140.11	60.72
930-1	2.68	150.10	10.00	140.10	60.71
940-1	5.40	150.07	10.00	140.07	60.70
950-1	0.00	150.06	10.00	140.06	60.69
960-1	2.68	150.08	10.00	140.08	60.70
970-1	8.08	150.12	10.00	140.12	60.72
980-1	2.68	150.12	10.00	140.12	60.72
990-1	1.80	150.19	10.00	140.19	60.75
1000-1	2.68	150.20	10.00	140.20	60.76
1010-1	0.00	150.53	10.00	140.53	60.90
1020-1	9.88	150.34	10.00	140.34	60.82
1030-1	14.36	150.40	10.00	140.40	60.84
1040-1	11.68	150.03	10.00	140.03	60.68
1050-1	8.08	149.95	10.00	139.95	60.65
1060-1	9.88	149.95	10.00	139.95	60.64
1070-1	8.96	149.95	10.00	139.95	60.65
1080-1	4.48	149.96	10.00	139.96	60.65
1090-1	8.08	149.96	10.00	139.96	60.65
1100-1	2.68	149.96	10.00	139.96	60.65
1110-1	3.60	149.96	10.00	139.96	60.65
1120-1	6.28	150.01	10.00	140.01	60.67
1130-1	7.16	149.96	10.00	139.96	60.65
1140-1	0.88	150.83	10.00	140.83	61.03
1150-1	5.40	150.58	10.00	140.58	60.92
1160-1	5.40	150.52	10.00	140.52	60.89
1170-1	5.40	150.51	10.00	140.51	60.89
1180-1	9.88	150.53	10.00	140.53	60.89
1190-1	13.44	150.38	10.00	140.38	60.83
1200-1	17.96	150.10	10.00	140.10	60.71
1210-1	11.68	150.26	10.00	140.26	60.78
1220-1	23.32	150.40	10.00	140.40	60.84
1230-1	6.28	149.84	10.00	139.84	60.60
1240-1	2.68	149.96	10.00	139.96	60.65
1250-1	26.92	149.88	10.00	139.88	60.61
1260-1	29.60	149.63	10.00	139.63	60.51
1270-1	13.44	149.36	10.00	139.36	60.39
1280-1	14.36	149.28	10.00	139.28	60.36
1290-1	15.24	149.27	10.00	139.27	60.35
1300-1	10.76	149.30	10.00	139.30	60.36
1310-1	0.88	149.32	10.00	139.32	60.37
1320-1	6.28	149.29	10.00	139.29	60.36
1330-1	3.60	149.29	10.00	139.29	60.36
1340-1	10.76	149.28	10.00	139.28	60.35
1350-1	2.68	149.29	10.00	139.29	60.36
1360-1	4.48	149.28	10.00	139.28	60.36
1370-1	6.28	149.28	10.00	139.28	60.35
1380-1	13.44	149.28	10.00	139.28	60.35
1390-1	9.88	149.26	10.00	139.26	60.35
1400-1	9.88	149.26	10.00	139.26	60.35
1410-1	8.96	149.28	10.00	139.28	60.35
1420-1	2.68	149.27	10.00	139.27	60.35
1430-1	3.60	149.26	10.00	139.26	60.35
1440-1	4.48	149.26	10.00	139.26	60.34
1450-1	8.08	149.26	10.00	139.26	60.34
1460-1	4.48	149.25	10.00	139.25	60.34
1470-1	4.48	149.26	10.00	139.26	60.34
1480-1	8.08	149.26	10.00	139.26	60.34
1490-1	18.84	149.26	10.00	139.26	60.35
1500-1	7.16	149.26	10.00	139.26	60.35
1510-1	7.16	149.25	10.00	139.25	60.34
1520-1	6.28	149.25	10.00	139.25	60.34
1530-1	15.24	149.25	10.00	139.25	60.34
1540-1	26.92	149.26	10.00	139.26	60.34
1550-1	15.24	149.25	10.00	139.25	60.34
1560-1	17.96	149.25	10.00	139.25	60.34

1570-1	14.36	149.26	10.00	139.26	60.35
1580-1	17.96	149.44	10.00	139.44	60.42
1590-1	32.28	149.46	10.00	139.46	60.43
1600-1	12.56	149.56	10.00	139.56	60.48
1610-1	17.96	149.61	10.00	139.61	60.50
1620-1	12.56	149.62	10.00	139.62	60.50
1630-1	5.40	149.75	10.00	139.75	60.56
1640-1	0.88	149.77	10.00	139.77	60.57
1650-1	0.88	149.79	10.00	139.79	60.58
1660-1	4.48	149.78	10.00	139.78	60.57
1670-1	8.96	149.77	10.00	139.77	60.57
1680-1	8.08	149.77	10.00	139.77	60.57
1690-1	6.28	149.79	10.00	139.79	60.58
1700-1	6.28	149.80	10.00	139.80	60.58
1710-1	13.44	149.80	10.00	139.80	60.58
1720-1	9.88	149.77	10.00	139.77	60.57
1730-1	2.68	149.80	10.00	139.80	60.58
1740-1	3.60	149.82	10.00	139.82	60.59
1750-1	5.40	149.81	10.00	139.81	60.58
1760-1	5.40	149.82	10.00	139.82	60.59
1770-1	2.68	149.81	10.00	139.81	60.58
1780-1	21.52	149.75	10.00	139.75	60.56
1790-1	20.64	149.93	10.00	139.93	60.64
1800-1	10.76	149.95	10.00	139.95	60.64
1810-1	4.48	150.15	10.00	140.15	60.73
1820-1	3.60	150.15	10.00	140.15	60.73
1830-1	5.40	149.81	10.00	139.81	60.58

S U M M A R Y O F I N F L O W S A N D O U T F L O W S

(+) INFLOWS INTO THE SYSTEM FROM BOUNDARY NODES
(-) OUTFLOWS FROM THE SYSTEM INTO BOUNDARY NODES

PIPE NUMBER	FLOWRATE (gpm)
2490	898.81
2500	983.67

NET SYSTEM INFLOW = 1882.48
NET SYSTEM OUTFLOW = 0.00
NET SYSTEM DEMAND = 1882.48

T A N K S T A T U S R E P O R T (time = 1.0000 hours)

TANK NUMBER (*)	PIPE NUMBER	NET FLOW (gpm)	WATER ELEVATION (ft)	TANK DEPTH (ft)	TANK VOLUME (gal)	TANK VOLUME (%)	TANK STATUS	PROJECTED DEPTH (ft)
1-1	2500	-283.67	29.06	19.06	79227.	79.4	DRAINING	14.96
2-1	2490	-198.81	26.49	16.49	274298.	68.7	DRAINING	15.78

* TANK TYPE: 1 - CONSTANT DIAMETER 2 - VARIABLE AREA

****
S I M U L A T I O N R E S U L T S
****

TIME FROM INITIATION OF EPS = 2.0000 HOURS
The results are obtained after 3 trials with an accuracy = 0.00093

P I P E L I N E R E S U L T S

STATUS CODE: XX -CLOSED PIPE BN -BOUNDARY NODE PU -PUMP LINE
CV -CHECK VALVE RV -REGULATING VALVE TK -STORAGE TANK

PIPE NUMBER	NODE NOS. #1	#2	FLOWRATE (gpm)	HEAD LOSS (ft)	PUMP HEAD (ft)	MINOR LOSS (ft)	LINE VELO. (ft/s)	HL/ 1000 (ft/ft)
10	10	20	-938.70	0.07	0.00	0.00	2.66	2.26
20	30	10	0.00	0.00	0.00	0.00	0.00	0.00
30-XXPU	30	40						
40	50	40	0.00	0.00	0.00	0.00	0.00	0.00
50	10	60	800.13	0.36	0.00	0.00	5.11	12.09
60-PU	60	70	800.13	0.12	124.88	0.00	5.11	12.09
70	80	10	0.00	0.00	0.00	0.00	0.00	0.00
80-XXPU	80	90						
90	50	90	0.00	0.00	0.00	0.00	0.00	0.00
100	100	10	-138.57	0.01	0.00	0.00	0.88	0.47
110-PU	100	110	138.57	0.00	124.19	0.00	0.88	0.47
120	50	110	-138.57	0.01	0.00	0.00	0.88	0.47
130	120	50	-938.70	0.45	0.00	0.00	2.66	2.26
140	50	70	-800.13	0.24	0.00	0.00	5.11	12.09
150	140	130	-943.78	0.49	0.00	0.00	6.02	16.41
160	150	140	-804.39	0.24	0.00	0.00	5.13	12.21
170-PU	150	160	804.39	0.12	124.69	0.00	5.13	12.21
180	170	160	-804.39	0.24	0.00	0.00	5.13	12.21
190	140	180	0.00	0.00	0.00	0.00	0.00	0.00
200-XXPU	180	190						
210	170	190	0.00	0.00	0.00	0.00	0.00	0.00
220	200	140	0.00	0.00	0.00	0.00	0.00	0.00
230-XXPU	200	210						
240	170	210	0.00	0.00	0.00	0.00	0.00	0.00
250	220	140	-139.39	0.01	0.00	0.00	0.89	0.48
260-PU	220	230	139.39	0.00	124.11	0.00	0.89	0.48
270	170	230	-139.39	0.01	0.00	0.00	0.89	0.48
280	240	170	-943.78	0.49	0.00	0.00	6.02	16.41
290	250	260	509.88	8.00	0.00	0.00	3.25	5.25
300	270	250	239.47	1.81	0.00	0.00	1.53	1.29
310	280	270	254.71	0.25	0.00	0.00	0.72	0.20
320	280	250	282.97	2.06	0.00	0.00	1.81	1.76
330	290	280	547.56	0.99	0.00	0.00	1.55	0.83
340	300	290	68.30	0.73	0.00	0.00	0.44	0.13
350	310	290	494.50	0.90	0.00	0.00	1.40	0.69
360	310	300	36.68	0.17	0.00	0.00	0.23	0.04
370	320	310	554.50	0.60	0.00	0.00	1.57	0.85
380	320	300	80.98	0.77	0.00	0.00	0.52	0.17
390	120	320	652.52	1.29	0.00	0.00	1.85	1.15
400	330	120	-286.18	0.39	0.00	0.00	0.81	0.25
410	340	330	-70.92	0.14	0.00	0.00	0.45	0.14
420	340	350	46.46	0.06	0.00	0.00	0.30	0.06
430	360	350	-10.31	0.00	0.00	0.00	0.07	0.00
440	360	370	6.71	0.00	0.00	0.00	0.04	0.00
450	380	370	3.54	0.00	0.00	0.00	0.04	0.00
460	350	380	14.81	0.00	0.00	0.00	0.09	0.01
470	380	390	9.47	0.00	0.00	0.00	0.06	0.00
480	390	400	1.57	0.00	0.00	0.00	0.02	0.00
490	370	400	3.97	0.00	0.00	0.00	0.03	0.00
500	410	400	0.75	0.00	0.00	0.00	0.00	0.00
510	390	410	3.43	0.00	0.00	0.00	0.02	0.00
520	420	350	-17.74	0.01	0.00	0.00	0.11	0.01
530	430	340	-16.38	0.01	0.00	0.00	0.10	0.01
540	420	430	-47.02	0.06	0.00	0.00	0.30	0.06
550	430	440	-35.12	0.03	0.00	0.00	0.22	0.04
560	440	330	-210.78	0.12	0.00	0.00	0.60	0.14
570	450	440	-173.86	0.09	0.00	0.00	0.49	0.10

580	450	420	-25.57	0.00	0.00	0.00	0.07	0.00
590	460	420	-36.52	0.03	0.00	0.00	0.23	0.04
600	460	470	26.64	0.02	0.00	0.00	0.17	0.02
610	480	470	-21.24	0.01	0.00	0.00	0.14	0.01
620	480	490	-21.77	0.03	0.00	0.00	0.14	0.02
630	490	450	-139.99	0.01	0.00	0.00	0.40	0.07
640	500	450	-52.28	0.02	0.00	0.00	0.33	0.08
650	510	500	-7.16	0.00	0.00	0.00	0.05	0.00
660	520	500	-40.64	0.07	0.00	0.00	0.26	0.05
670	530	490	-113.74	0.07	0.00	0.00	0.32	0.05
680	520	540	23.60	0.02	0.00	0.00	0.15	0.02
690	540	550	-0.64	0.00	0.00	0.00	0.00	0.00
700	560	530	-81.22	0.01	0.00	0.00	0.23	0.02
710	550	560	-46.36	0.01	0.00	0.00	0.30	0.06
720	530	570	19.97	0.03	0.00	0.00	0.13	0.01
730	570	480	-37.61	0.06	0.00	0.00	0.24	0.04
740	580	570	-43.21	0.06	0.00	0.00	0.28	0.05
750	580	590	9.62	0.01	0.00	0.00	0.06	0.00
760	600	560	-31.26	0.01	0.00	0.00	0.09	0.00
770	550	610	29.56	0.02	0.00	0.00	0.19	0.03
780	620	610	-17.50	0.01	0.00	0.00	0.11	0.01
790	630	620	-0.46	0.00	0.00	0.00	0.01	0.00
800	640	650	12.14	0.00	0.00	0.00	0.08	0.01
810	650	630	4.98	0.00	0.00	0.00	0.06	0.00
820	630	660	-4.44	0.00	0.00	0.00	0.05	0.00
830	670	660	5.47	0.00	0.00	0.00	0.06	0.00
840	680	670	10.87	0.00	0.00	0.00	0.07	0.00
850	660	690	-7.05	0.01	0.00	0.00	0.08	0.01
860	690	700	-16.01	0.01	0.00	0.00	0.10	0.01
870	610	640	3.97	0.00	0.00	0.00	0.03	0.00
880	640	680	-10.84	0.00	0.00	0.00	0.07	0.00
890	680	700	-25.31	0.01	0.00	0.00	0.16	0.02
900	710	580	-7.59	0.00	0.00	0.00	0.05	0.00
910	590	710	-4.74	0.01	0.00	0.00	0.05	0.00
920	710	720	8.55	0.00	0.00	0.00	0.05	0.00
930	730	720	-4.07	0.00	0.00	0.00	0.03	0.00
940	740	710	11.10	0.00	0.00	0.00	0.07	0.00
950	740	730	11.12	0.00	0.00	0.00	0.07	0.00
960	750	740	24.54	0.03	0.00	0.00	0.16	0.02
970	600	750	69.54	0.04	0.00	0.00	0.44	0.13
980	760	770	-8.44	0.01	0.00	0.00	0.10	0.01
990	750	770	34.24	0.01	0.00	0.00	0.22	0.04
1000	760	740	8.44	0.00	0.00	0.00	0.05	0.00
1010	780	760	13.09	0.00	0.00	0.00	0.08	0.01
1020	790	760	-5.01	0.00	0.00	0.00	0.06	0.00
1030	790	730	8.34	0.00	0.00	0.00	0.05	0.00
1040	800	790	4.21	0.00	0.00	0.00	0.03	0.00
1050	780	800	12.48	0.01	0.00	0.00	0.08	0.01
1060	770	780	15.04	0.01	0.00	0.00	0.10	0.01
1070	810	600	45.45	0.01	0.00	0.00	0.13	0.01
1080	820	810	25.15	0.01	0.00	0.00	0.16	0.02
1090	820	700	44.00	0.04	0.00	0.00	0.28	0.06
1100	830	810	25.70	0.00	0.00	0.00	0.07	0.00
1110	830	840	53.14	0.04	0.00	0.00	0.34	0.08
1120	840	850	37.68	0.01	0.00	0.00	0.24	0.04
1130	850	860	42.38	0.01	0.00	0.00	0.27	0.05
1140	860	870	20.17	0.02	0.00	0.00	0.13	0.01
1150	870	800	-2.87	0.00	0.00	0.00	0.02	0.00
1160	860	780	18.61	0.01	0.00	0.00	0.12	0.01
1170	730	880	19.05	0.00	0.00	0.00	0.12	0.01
1180	880	890	8.51	0.00	0.00	0.00	0.05	0.00
1190	890	900	2.68	0.00	0.00	0.00	0.02	0.00
1200	910	890	-4.95	0.00	0.00	0.00	0.06	0.00
1210	880	920	10.54	0.00	0.00	0.00	0.07	0.00
1220	910	920	-8.74	0.00	0.00	0.00	0.06	0.00
1230	930	910	-11.89	0.01	0.00	0.00	0.08	0.00
1240	870	930	18.56	0.02	0.00	0.00	0.12	0.01

1250	940	930	-27.77	0.02	0.00	0.00	0.18	0.02
1260	950	940	-22.37	0.01	0.00	0.00	0.14	0.02
1270	950	960	-31.24	0.03	0.00	0.00	0.20	0.03
1280	960	970	-33.92	0.04	0.00	0.00	0.22	0.03
1290	970	980	2.68	0.00	0.00	0.00	0.02	0.00
1300	970	990	-44.68	0.07	0.00	0.00	0.29	0.06
1310	850	1810	-6.50	0.00	0.00	0.00	0.04	0.00
1320	1000	830	80.64	0.02	0.00	0.00	0.23	0.02
1330	1010	1000	309.54	0.38	0.00	0.00	0.88	0.29
1340	820	1020	-81.71	0.17	0.00	0.00	0.52	0.18
1350	1030	1010	-105.95	0.15	0.00	0.00	0.68	0.29
1360	1020	1030	-91.59	0.07	0.00	0.00	0.58	0.22
1370	1040	990	-179.75	0.15	0.00	0.00	0.51	0.11
1380	1040	1050	36.99	0.08	0.00	0.00	0.24	0.04
1390	1050	1060	18.15	0.00	0.00	0.00	0.12	0.01
1400	1060	1070	-12.37	0.00	0.00	0.00	0.08	0.01
1410	1070	1080	-11.17	0.00	0.00	0.00	0.07	0.00
1420	1080	1090	-2.46	0.00	0.00	0.00	0.02	0.00
1430	1090	1100	-10.54	0.00	0.00	0.00	0.07	0.00
1440	1110	1120	-47.33	0.04	0.00	0.00	0.30	0.06
1450	1080	1110	-13.19	0.00	0.00	0.00	0.08	0.01
1460	1130	1070	10.16	0.00	0.00	0.00	0.06	0.00
1470	1130	1110	-17.32	0.00	0.00	0.00	0.11	0.01
1480	1110	1100	13.22	0.00	0.00	0.00	0.08	0.01
1490	1120	950	-53.61	0.05	0.00	0.00	0.34	0.08
1500	1010	240	-430.19	0.56	0.00	0.00	1.22	0.53
1510	240	1140	513.58	0.20	0.00	0.00	1.46	0.74
1520	1140	1150	113.70	0.28	0.00	0.00	0.73	0.33
1530	1160	1010	-14.70	0.01	0.00	0.00	0.09	0.01
1540	1160	1150	-22.30	0.08	0.00	0.00	0.25	0.06
1550	1170	1160	-31.60	0.01	0.00	0.00	0.20	0.03
1560	1180	1170	12.92	0.03	0.00	0.00	0.15	0.02
1570	1150	1180	85.99	0.06	0.00	0.00	0.55	0.19
1580	1190	1170	-39.12	0.12	0.00	0.00	0.25	0.05
1590	1180	1190	63.20	0.15	0.00	0.00	0.40	0.11
1600	1190	1200	88.88	0.28	0.00	0.00	0.57	0.21
1610	1200	1210	-48.42	0.17	0.00	0.00	0.31	0.07
1620	1220	1210	375.69	0.15	0.00	0.00	1.07	0.41
1630	1140	1220	399.01	0.45	0.00	0.00	1.13	0.46
1640	1230	1240	-128.40	0.10	0.00	0.00	0.36	0.06
1650	1240	1040	-131.08	0.06	0.00	0.00	0.37	0.06
1660	1210	1250	315.58	0.40	0.00	0.00	0.90	0.30
1670	1250	1230	27.70	0.07	0.00	0.00	0.18	0.02
1680	1260	1250	-172.00	0.25	0.00	0.00	0.49	0.10
1690	1200	1260	119.34	0.48	0.00	0.00	0.76	0.36
1700	1270	1260	-261.74	0.28	0.00	0.00	0.74	0.21
1710	1280	1270	-30.32	0.07	0.00	0.00	0.19	0.03
1720	1280	1290	15.96	0.02	0.00	0.00	0.18	0.03
1730	1300	1290	9.63	0.04	0.00	0.00	0.11	0.01
1740	1300	1310	-149.30	0.02	0.00	0.00	0.42	0.07
1750	1310	1270	-217.97	0.03	0.00	0.00	0.62	0.15
1760	1320	1310	-67.79	0.03	0.00	0.00	0.43	0.13
1770	1330	1300	-128.91	0.01	0.00	0.00	0.37	0.06
1780	1340	1330	-14.67	0.01	0.00	0.00	0.17	0.03
1790	1320	1340	24.39	0.01	0.00	0.00	0.16	0.02
1800	1350	1320	-18.40	0.00	0.00	0.00	0.12	0.01
1810	1360	1350	-15.72	0.00	0.00	0.00	0.10	0.01
1820	1370	1360	-11.24	0.01	0.00	0.00	0.07	0.00
1830	1380	1370	-4.96	0.00	0.00	0.00	0.03	0.00
1840	1380	1320	-18.72	0.01	0.00	0.00	0.12	0.01
1850	1390	1380	-10.24	0.02	0.00	0.00	0.12	0.02
1860	1390	1400	-10.73	0.00	0.00	0.00	0.07	0.00
1870	1340	1400	28.30	0.02	0.00	0.00	0.18	0.02
1880	1410	1330	-110.64	0.01	0.00	0.00	0.31	0.04
1890	1420	1410	-87.30	0.01	0.00	0.00	0.25	0.03
1900	1400	1420	-16.63	0.00	0.00	0.00	0.11	0.01
1910	1400	1430	24.32	0.01	0.00	0.00	0.16	0.02

1340-1	10.76	147.05	10.00	137.05	59.39
1350-1	2.68	147.06	10.00	137.06	59.39
1360-1	4.48	147.06	10.00	137.06	59.39
1370-1	6.28	147.05	10.00	137.05	59.39
1380-1	13.44	147.05	10.00	137.05	59.39
1390-1	9.88	147.03	10.00	137.03	59.38
1400-1	9.88	147.04	10.00	137.04	59.38
1410-1	8.96	147.05	10.00	137.05	59.39
1420-1	2.68	147.04	10.00	137.04	59.38
1430-1	3.60	147.03	10.00	137.03	59.38
1440-1	4.48	147.03	10.00	137.03	59.38
1450-1	8.08	147.03	10.00	137.03	59.38
1460-1	4.48	147.03	10.00	137.03	59.38
1470-1	4.48	147.03	10.00	137.03	59.38
1480-1	8.08	147.03	10.00	137.03	59.38
1490-1	18.84	147.03	10.00	137.03	59.38
1500-1	7.16	147.04	10.00	137.04	59.38
1510-1	7.16	147.02	10.00	137.02	59.38
1520-1	6.28	147.02	10.00	137.02	59.38
1530-1	15.24	147.02	10.00	137.02	59.38
1540-1	26.92	147.03	10.00	137.03	59.38
1550-1	15.24	147.02	10.00	137.02	59.38
1560-1	17.96	147.02	10.00	137.02	59.38
1570-1	14.36	147.03	10.00	137.03	59.38
1580-1	17.96	147.21	10.00	137.21	59.46
1590-1	32.28	147.22	10.00	137.22	59.46
1600-1	12.56	147.32	10.00	137.32	59.51
1610-1	17.96	147.37	10.00	137.37	59.53
1620-1	12.56	147.38	10.00	137.38	59.53
1630-1	5.40	147.50	10.00	137.50	59.58
1640-1	0.88	147.52	10.00	137.52	59.59
1650-1	0.88	147.54	10.00	137.54	59.60
1660-1	4.48	147.53	10.00	137.53	59.59
1670-1	8.96	147.51	10.00	137.51	59.59
1680-1	8.08	147.51	10.00	137.51	59.59
1690-1	6.28	147.54	10.00	137.54	59.60
1700-1	6.28	147.54	10.00	137.54	59.60
1710-1	13.44	147.54	10.00	137.54	59.60
1720-1	9.88	147.51	10.00	137.51	59.59
1730-1	2.68	147.55	10.00	137.55	59.60
1740-1	3.60	147.56	10.00	137.56	59.61
1750-1	5.40	147.55	10.00	137.55	59.60
1760-1	5.40	147.56	10.00	137.56	59.61
1770-1	2.68	147.55	10.00	137.55	59.61
1780-1	21.52	147.49	10.00	137.49	59.58
1790-1	20.64	147.64	10.00	137.64	59.64
1800-1	10.76	147.66	10.00	137.66	59.65
1810-1	4.48	147.83	10.00	137.83	59.73
1820-1	3.60	147.84	10.00	137.84	59.73
1830-1	5.40	147.55	10.00	137.55	59.61

S U M M A R Y O F I N F L O W S A N D O U T F L O W S

(+) INFLOWS INTO THE SYSTEM FROM BOUNDARY NODES
(-) OUTFLOWS FROM THE SYSTEM INTO BOUNDARY NODES

PIPE NUMBER	FLOWRATE (gpm)
2490	943.78
2500	938.70

NET SYSTEM INFLOW = 1882.48
NET SYSTEM OUTFLOW = 0.00
NET SYSTEM DEMAND = 1882.48

T A N K S T A T U S R E P O R T (time = 2.0000 hours)

TANK NUMBER (*)	PIPE NUMBER	NET FLOW (gpm)	WATER ELEVATION (ft)	TANK DEPTH (ft)	TANK VOLUME (gal)	TANK VOLUME (%)	TANK STATUS	PROJECTED DEPTH (ft)
1-1	2500	-238.70	24.96	14.96	62206.	62.3	DRAINING	11.52
2-1	2490	-243.78	25.78	15.78	262370.	65.7	DRAINING	14.90

* TANK TYPE: 1 - CONSTANT DIAMETER 2 - VARIABLE AREA

**** CYBERNET SIMULATION COMPLETED ****

EPS PRESSURE SUMMARY

SELECTED JUNCTION NODE PRESSURE SUMMARY

JUNCTION NODE	MAXIMUM PRESSURE	TIME	MINIMUM PRESSURE	TIME
1830	61.591	0.000	59.606	2.000

DATE: 3/28/1996
TIME: 13:19:17

MAXIMUM DIMENSIONS	
Number of pipes	250
Number of pumps	62
Number junction nodes	250
Flow meters	62
Boundary nodes	25
Variable storage tanks	62
Pressure switches	62
Regulating Valves	62
Items for limited output	250
limit for non-consecutive numbering	2572

Cybernet version 2.5. SN: 1312500348-250

Extended Description: Extended Period Simulation
2015 Projected Demand - Peak Hour Demand
Fire Flow Junction J260

U N I T S S P E C I F I E D

FLOWRATE ..... = gallons/minute
HEAD (HGL) ..... = feet
PRESSURE ..... = psig
METERED FLOW ..... = gallons

O U T P U T O P T I O N D A T A

OUTPUT SELECTION: ALL RESULTS ARE INCLUDED IN THE TABULATED OUTPUT

E P S D A T A

TOTAL TIME FOR SIMULATION = 2.000
NORMAL TIME PERIOD = 1.000

V A R I A B L E H E A D T A N K D A T A

TANK NUMBER (*)	PIPE NUMBER	MAXIMUM ELEVATION (ft)	MINIMUM ELEVATION (ft)	TANK CAPACITY (gal)	INITIAL VOLUME (gal)	EXTERNAL FLOW (gpm)
1-1	2500	34.00	10.00	99776.	99776.	700.00
2-1	2490	34.00	10.00	399103.	282698.	700.00

* TANK TYPE: 1 - CONSTANT DIAMETER 2 - VARIABLE AREA

S Y S T E M C O N F I G U R A T I O N

NUMBER OF PIPES .....(p) = 250
NUMBER OF JUNCTION NODES .....(j) = 183
NUMBER OF PRIMARY LOOPS .....(l) = 66
NUMBER OF BOUNDARY NODES .....(f) = 2

NUMBER OF SUPPLY ZONES .....(z) = 1

****
S I M U L A T I O N R E S U L T S
****

TIME FROM INITIATION OF EPS = 0.0000 HOURS
The results are obtained after 7 trials with an accuracy = 0.00430

S I M U L A T I O N D E S C R I P T I O N

CyberNet Version 2.5. Copyright 1991,92 Haestad Methods Inc.

EPS Run Description: Year 2015 Projection-Peak Hour for 2 Hours w/Fire

Drawing: CYBER

P I P E L I N E R E S U L T S

STATUS CODE: XX -CLOSED PIPE BN -BOUNDARY NODE PU -PUMP LINE
CV -CHECK VALVE RV -REGULATING VALVE TK -STORAGE TANK

PIPE NUMBER	NODE NOS. #1	#2	FLOWRATE (gpm)	HEAD LOSS (ft)	PUMP HEAD (ft)	MINOR LOSS (ft)	LINE VELO. (ft/s)	HL/ 1000 (ft/ft)
10	10	20	-1462.30	0.15	0.00	0.00	4.15	5.13
20	30	10	0.00	0.00	0.00	0.00	0.00	0.00
30-XXPU	30	40						
40	50	40	0.00	0.00	0.00	0.00	0.00	0.00
50	10	60	1002.52	0.55	0.00	0.00	6.40	18.35
60-PU	60	70	1002.52	0.18	113.10	0.00	6.40	18.35
70	80	10	-229.95	0.01	0.00	0.00	1.47	1.20
80-PU	80	90	229.95	0.01	112.05	0.00	1.47	1.20
90	50	90	-229.95	0.02	0.00	0.00	1.47	1.20
100	100	10	-229.83	0.04	0.00	0.00	1.47	1.20
110-PU	100	110	229.83	0.01	112.07	0.00	1.47	1.20
120	50	110	-229.83	0.02	0.00	0.00	1.47	1.20
130	120	50	-1462.30	1.03	0.00	0.00	4.15	5.13
140	50	70	-1002.52	0.37	0.00	0.00	6.40	18.35
150	140	130	-1155.55	0.72	0.00	0.00	7.38	23.88
160	150	140	-945.23	0.33	0.00	0.00	6.03	16.46
170-PU	150	160	945.23	0.16	116.43	0.00	6.03	16.46
180	170	160	-945.23	0.33	0.00	0.00	6.03	16.46
190	140	180	0.00	0.00	0.00	0.00	0.00	0.00
200-XXPU	180	190						
210	170	190	0.00	0.00	0.00	0.00	0.00	0.00
220	200	140	0.00	0.00	0.00	0.00	0.00	0.00
230-XXPU	200	210						
240	170	210	0.00	0.00	0.00	0.00	0.00	0.00
250	220	140	-210.32	0.02	0.00	0.00	1.34	1.02
260-PU	220	230	210.32	0.01	115.66	0.00	1.34	1.02
270	170	230	-204.21	0.02	0.00	0.00	1.30	0.96
280	240	170	-1149.44	0.71	0.00	0.00	7.34	23.64
290	250	260	515.09	8.15	0.00	0.00	3.29	5.35
300	270	250	244.42	1.88	0.00	0.00	1.56	1.34
310	280	270	267.70	0.27	0.00	0.00	0.76	0.22
320	280	250	289.86	2.15	0.00	0.00	1.85	1.84
330	290	280	572.65	1.07	0.00	0.00	1.62	0.90
340	300	290	68.01	0.73	0.00	0.00	0.43	0.13

350	310	290	527.92	1.02	0.00	0.00	1.50	0.78
360	310	300	49.39	0.29	0.00	0.00	0.32	0.07
370	320	310	612.93	0.72	0.00	0.00	1.74	1.02
380	320	300	94.02	1.01	0.00	0.00	0.60	0.23
390	120	320	732.97	1.60	0.00	0.00	2.08	1.43
400	330	120	-729.33	2.22	0.00	0.00	2.07	1.41
410	340	330	-177.99	0.76	0.00	0.00	1.14	0.75
420	340	350	115.39	0.31	0.00	0.00	0.74	0.33
430	360	350	-15.71	0.01	0.00	0.00	0.10	0.01
440	360	370	10.21	0.00	0.00	0.00	0.07	0.00
450	380	370	5.36	0.00	0.00	0.00	0.06	0.00
460	350	380	22.66	0.00	0.00	0.00	0.14	0.02
470	380	390	14.55	0.00	0.00	0.00	0.09	0.01
480	390	400	2.57	0.00	0.00	0.00	0.03	0.00
490	370	400	5.98	0.00	0.00	0.00	0.04	0.00
500	410	400	1.05	0.00	0.00	0.00	0.01	0.00
510	390	410	5.14	0.00	0.00	0.00	0.03	0.00
520	420	350	-71.52	0.10	0.00	0.00	0.46	0.14
530	430	340	-50.25	0.05	0.00	0.00	0.32	0.07
540	420	430	-125.22	0.36	0.00	0.00	0.80	0.39
550	430	440	-81.81	0.13	0.00	0.00	0.52	0.18
560	440	330	-544.50	0.69	0.00	0.00	1.54	0.82
570	450	440	-459.94	0.54	0.00	0.00	1.30	0.60
580	450	420	-100.52	0.06	0.00	0.00	0.29	0.04
590	460	420	-92.13	0.15	0.00	0.00	0.59	0.22
600	460	470	77.04	0.15	0.00	0.00	0.49	0.16
610	480	470	-68.79	0.05	0.00	0.00	0.44	0.13
620	480	490	-52.84	0.17	0.00	0.00	0.34	0.08
630	490	450	-421.83	0.11	0.00	0.00	1.20	0.51
640	500	450	-127.69	0.08	0.00	0.00	0.81	0.40
650	510	500	-10.94	0.01	0.00	0.00	0.07	0.00
660	520	500	-109.91	0.46	0.00	0.00	0.70	0.31
670	530	490	-362.14	0.61	0.00	0.00	1.03	0.39
680	520	540	83.88	0.23	0.00	0.00	0.54	0.19
690	540	550	46.85	0.13	0.00	0.00	0.30	0.06
700	560	530	-312.16	0.14	0.00	0.00	0.89	0.29
710	550	560	-80.62	0.04	0.00	0.00	0.51	0.17
720	530	570	30.79	0.06	0.00	0.00	0.20	0.03
730	570	480	-113.38	0.49	0.00	0.00	0.72	0.32
740	580	570	-122.24	0.40	0.00	0.00	0.78	0.37
750	580	590	23.00	0.03	0.00	0.00	0.15	0.02
760	600	560	-226.04	0.21	0.00	0.00	0.64	0.16
770	550	610	102.79	0.16	0.00	0.00	0.66	0.27
780	620	610	-37.30	0.02	0.00	0.00	0.24	0.04
790	630	620	-11.28	0.02	0.00	0.00	0.13	0.02
800	640	650	19.97	0.01	0.00	0.00	0.13	0.01
810	650	630	9.04	0.01	0.00	0.00	0.10	0.01
820	630	660	5.22	0.00	0.00	0.00	0.06	0.00
830	670	660	5.13	0.00	0.00	0.00	0.06	0.00
840	680	670	13.38	0.00	0.00	0.00	0.09	0.01
850	660	690	-2.00	0.00	0.00	0.00	0.02	0.00
860	690	700	-15.68	0.01	0.00	0.00	0.10	0.01
870	610	640	53.15	0.03	0.00	0.00	0.34	0.08
880	640	680	29.08	0.01	0.00	0.00	0.19	0.03
890	680	700	10.21	0.00	0.00	0.00	0.07	0.00
900	710	580	-59.53	0.03	0.00	0.00	0.38	0.10
910	590	710	1.07	0.00	0.00	0.00	0.01	0.00
920	710	720	27.64	0.02	0.00	0.00	0.18	0.02
930	730	720	-20.80	0.00	0.00	0.00	0.13	0.01
940	740	710	-24.70	0.01	0.00	0.00	0.16	0.02
950	740	730	25.07	0.02	0.00	0.00	0.16	0.02
960	750	740	35.94	0.05	0.00	0.00	0.23	0.04
970	600	750	108.05	0.09	0.00	0.00	0.69	0.30
980	760	770	-14.59	0.04	0.00	0.00	0.17	0.03
990	750	770	55.68	0.03	0.00	0.00	0.36	0.09
1000	760	740	-19.14	0.00	0.00	0.00	0.12	0.01
1010	780	760	-10.32	0.00	0.00	0.00	0.07	0.00

1020	790	760	-11.07	0.02	0.00	0.00	0.13	0.02
1030	790	730	1.78	0.00	0.00	0.00	0.01	0.00
1040	800	790	-7.94	0.00	0.00	0.00	0.05	0.00
1050	780	800	20.47	0.01	0.00	0.00	0.13	0.01
1060	770	780	24.65	0.03	0.00	0.00	0.16	0.02
1070	810	600	-107.05	0.05	0.00	0.00	0.30	0.04
1080	820	810	31.44	0.02	0.00	0.00	0.20	0.03
1090	820	700	9.57	0.00	0.00	0.00	0.06	0.00
1100	830	810	-130.25	0.06	0.00	0.00	0.37	0.06
1110	830	840	45.65	0.03	0.00	0.00	0.29	0.06
1120	840	850	30.41	0.01	0.00	0.00	0.19	0.03
1130	850	860	29.22	0.01	0.00	0.00	0.19	0.03
1140	860	870	25.88	0.03	0.00	0.00	0.17	0.02
1150	870	800	-20.17	0.01	0.00	0.00	0.13	0.01
1160	860	780	-2.16	0.00	0.00	0.00	0.01	0.00
1170	730	880	40.80	0.01	0.00	0.00	0.26	0.05
1180	880	890	16.99	0.00	0.00	0.00	0.11	0.01
1190	890	900	4.09	0.00	0.00	0.00	0.03	0.00
1200	910	890	-11.55	0.02	0.00	0.00	0.13	0.02
1210	880	920	23.82	0.02	0.00	0.00	0.15	0.02
1220	910	920	-21.07	0.00	0.00	0.00	0.13	0.01
1230	930	910	-29.87	0.04	0.00	0.00	0.19	0.03
1240	870	930	39.20	0.07	0.00	0.00	0.25	0.05
1250	940	930	-64.97	0.11	0.00	0.00	0.41	0.12
1260	950	940	-56.72	0.06	0.00	0.00	0.36	0.09
1270	950	960	-39.87	0.04	0.00	0.00	0.25	0.05
1280	960	970	-43.96	0.06	0.00	0.00	0.28	0.06
1290	970	980	4.09	0.00	0.00	0.00	0.03	0.00
1300	970	990	-60.40	0.13	0.00	0.00	0.39	0.10
1310	850	1810	-1.56	0.00	0.00	0.00	0.01	0.00
1320	1000	830	-81.84	0.02	0.00	0.00	0.23	0.02
1330	1010	1000	306.99	0.38	0.00	0.00	0.87	0.28
1340	820	1020	-60.20	0.10	0.00	0.00	0.38	0.10
1350	1030	1010	-97.22	0.13	0.00	0.00	0.62	0.24
1360	1020	1030	-75.29	0.05	0.00	0.00	0.48	0.15
1370	1040	990	-321.60	0.44	0.00	0.00	0.91	0.31
1380	1040	1050	41.80	0.11	0.00	0.00	0.27	0.05
1390	1050	1060	13.03	0.00	0.00	0.00	0.08	0.01
1400	1060	1070	-33.59	0.02	0.00	0.00	0.21	0.03
1410	1070	1080	-25.72	0.01	0.00	0.00	0.16	0.02
1420	1080	1090	-7.59	0.00	0.00	0.00	0.05	0.00
1430	1090	1100	-19.93	0.01	0.00	0.00	0.13	0.01
1440	1110	1120	-87.00	0.13	0.00	0.00	0.56	0.20
1450	1080	1110	-24.97	0.01	0.00	0.00	0.16	0.02
1460	1130	1070	21.56	0.01	0.00	0.00	0.14	0.01
1470	1130	1110	-32.50	0.01	0.00	0.00	0.21	0.03
1480	1110	1100	24.03	0.00	0.00	0.00	0.15	0.02
1490	1120	950	-96.59	0.15	0.00	0.00	0.62	0.24
1500	1010	240	-469.00	0.65	0.00	0.00	1.33	0.62
1510	240	1140	680.43	0.34	0.00	0.00	1.93	1.24
1520	1140	1150	131.70	0.36	0.00	0.00	0.84	0.43
1530	1160	1010	-64.79	0.10	0.00	0.00	0.41	0.11
1540	1160	1150	-16.62	0.05	0.00	0.00	0.19	0.04
1550	1170	1160	-73.15	0.05	0.00	0.00	0.47	0.14
1560	1180	1170	-0.42	0.00	0.00	0.00	0.00	0.00
1570	1150	1180	106.83	0.10	0.00	0.00	0.68	0.29
1580	1190	1170	-64.48	0.30	0.00	0.00	0.41	0.11
1590	1180	1190	92.16	0.30	0.00	0.00	0.59	0.22
1600	1190	1200	136.11	0.61	0.00	0.00	0.87	0.45
1610	1200	1210	-65.84	0.30	0.00	0.00	0.42	0.12
1620	1220	1210	511.77	0.26	0.00	0.00	1.45	0.73
1630	1140	1220	547.39	0.81	0.00	0.00	1.55	0.83
1640	1230	1240	-257.86	0.37	0.00	0.00	0.73	0.21
1650	1240	1040	-261.95	0.21	0.00	0.00	0.74	0.21
1660	1210	1250	428.09	0.71	0.00	0.00	1.21	0.53
1670	1250	1230	-13.05	0.02	0.00	0.00	0.08	0.01
1680	1260	1250	-267.84	0.56	0.00	0.00	0.76	0.22

1690	1200	1260	174.52	0.97	0.00	0.00	1.11	0.72
1700	1270	1260	-397.15	0.60	0.00	0.00	1.13	0.46
1710	1280	1270	-46.07	0.16	0.00	0.00	0.29	0.06
1720	1280	1290	24.13	0.04	0.00	0.00	0.27	0.07
1730	1300	1290	14.65	0.08	0.00	0.00	0.17	0.03
1740	1300	1310	-226.26	0.05	0.00	0.00	0.64	0.16
1750	1310	1270	-330.55	0.07	0.00	0.00	0.94	0.33
1760	1320	1310	-102.94	0.07	0.00	0.00	0.66	0.27
1770	1330	1300	-195.18	0.03	0.00	0.00	0.55	0.12
1780	1340	1330	-22.35	0.02	0.00	0.00	0.25	0.06
1790	1320	1340	36.80	0.02	0.00	0.00	0.23	0.04
1800	1350	1320	-28.05	0.01	0.00	0.00	0.18	0.02
1810	1360	1350	-23.95	0.01	0.00	0.00	0.15	0.02
1820	1370	1360	-17.11	0.01	0.00	0.00	0.11	0.01
1830	1380	1370	-7.52	0.00	0.00	0.00	0.05	0.00
1840	1380	1320	-28.50	0.03	0.00	0.00	0.18	0.03
1850	1390	1380	-15.49	0.04	0.00	0.00	0.18	0.03
1860	1390	1400	-16.68	0.01	0.00	0.00	0.11	0.01
1870	1340	1400	42.71	0.03	0.00	0.00	0.27	0.05
1880	1410	1330	-167.33	0.02	0.00	0.00	0.47	0.09
1890	1420	1410	-131.76	0.02	0.00	0.00	0.37	0.06
1900	1400	1420	-25.64	0.01	0.00	0.00	0.16	0.02
1910	1400	1430	36.58	0.01	0.00	0.00	0.23	0.04
1920	1430	1440	11.70	0.00	0.00	0.00	0.07	0.00
1930	1440	1450	4.86	0.00	0.00	0.00	0.06	0.00
1940	1430	1450	19.38	0.01	0.00	0.00	0.12	0.01
1950	1450	1460	11.90	0.00	0.00	0.00	0.08	0.00
1960	1470	1460	21.68	0.01	0.00	0.00	0.14	0.02
1970	1470	1480	-28.52	0.00	0.00	0.00	0.08	0.00
1980	1480	1490	-40.76	0.00	0.00	0.00	0.12	0.01
1990	1490	1500	-82.51	0.01	0.00	0.00	0.23	0.02
2000	1500	1420	-102.03	0.00	0.00	0.00	0.29	0.04
2010	1460	1510	26.73	0.01	0.00	0.00	0.17	0.02
2020	1520	1510	0.51	0.00	0.00	0.00	0.01	0.00
2030	1510	1530	16.30	0.01	0.00	0.00	0.10	0.01
2040	1530	1520	-6.97	0.01	0.00	0.00	0.08	0.01
2050	1520	1390	-17.08	0.02	0.00	0.00	0.19	0.04
2060	1480	1540	-0.10	0.00	0.00	0.00	0.00	0.00
2070	1550	1540	-13.71	0.01	0.00	0.00	0.16	0.03
2080	1560	1550	-3.40	0.00	0.00	0.00	0.04	0.00
2090	1570	1560	15.45	0.02	0.00	0.00	0.18	0.03
2100	1290	1570	15.50	0.02	0.00	0.00	0.18	0.03
2110	1550	1490	-12.97	0.02	0.00	0.00	0.08	0.01
2120	1500	1560	8.58	0.03	0.00	0.00	0.10	0.01
2130	1570	1410	-21.89	0.04	0.00	0.00	0.14	0.02
2140	1580	1540	54.93	0.43	0.00	0.00	0.35	0.08
2150	1590	1580	20.30	0.03	0.00	0.00	0.13	0.01
2160	1600	1580	62.06	0.27	0.00	0.00	0.40	0.11
2170	1610	1590	69.61	0.33	0.00	0.00	0.44	0.13
2180	1610	1600	35.14	0.10	0.00	0.00	0.22	0.04
2190	1250	1610	132.18	0.58	0.00	0.00	0.84	0.43
2200	1620	1600	46.11	0.17	0.00	0.00	0.29	0.06
2210	1620	1630	-65.29	0.31	0.00	0.00	0.42	0.12
2220	1630	1640	-73.54	0.05	0.00	0.00	0.47	0.15
2230	1640	1650	-89.98	0.05	0.00	0.00	0.57	0.21
2240	1660	1650	-31.90	0.02	0.00	0.00	0.20	0.03
2250	1670	1660	-25.06	0.03	0.00	0.00	0.16	0.02
2260	1680	1670	-11.37	0.00	0.00	0.00	0.07	0.00
2270	1690	1680	33.84	0.05	0.00	0.00	0.22	0.03
2280	1650	1690	7.15	0.00	0.00	0.00	0.05	0.00
2290	1700	1690	36.29	0.01	0.00	0.00	0.23	0.04
2300	1710	1700	-1.21	0.00	0.00	0.00	0.01	0.00
2310	1720	1640	-15.09	0.01	0.00	0.00	0.10	0.01
2320	1650	1730	-130.37	0.02	0.00	0.00	0.37	0.06
2330	1730	1740	-148.92	0.03	0.00	0.00	0.42	0.07
2340	1730	1700	14.45	0.01	0.00	0.00	0.16	0.03
2350	1750	1700	32.64	0.01	0.00	0.00	0.21	0.03

2360	1750	1740	-21.68	0.03	0.00	0.00	0.25	0.06
2370	1710	1750	-19.32	0.01	0.00	0.00	0.12	0.01
2380	1740	1230	-176.10	0.06	0.00	0.00	0.50	0.10
2390	1760	1750	38.52	0.02	0.00	0.00	0.25	0.04
2400	1230	1760	59.11	0.06	0.00	0.00	0.38	0.10
2410	1770	1830	-4.09	0.00	0.00	0.00	0.05	0.00
2420	1680	1780	32.87	0.04	0.00	0.00	0.21	0.03
2430	1060	1790	31.53	0.04	0.00	0.00	0.20	0.03
2440	1050	1800	16.44	0.01	0.00	0.00	0.10	0.01
2450	1810	1820	-8.40	0.00	0.00	0.00	0.10	0.01
2460	840	1820	13.90	0.00	0.00	0.00	0.09	0.01
2470	990	1000	-384.74	0.05	0.00	0.00	1.09	0.43
2480	1760	1830	12.34	0.01	0.00	0.00	0.08	0.01
2490-TK	130	0	-1155.55	0.03	0.00	0.00	3.28	3.31
2500-TK	20	0	-1462.30	0.05	0.00	0.00	4.15	5.13

J U N C T I O N N O D E R E S U L T S

JUNCTION NUMBER	JUNCTION TITLE	EXTERNAL DEMAND (gpm)	HYDRAULIC GRADE (ft)	JUNCTION ELEVATION (ft)	PRESSURE HEAD (ft)	JUNCTION PRESSURE (psi)
10-1		0.00	33.79	10.00	23.79	10.31
20-1		0.00	33.95	10.00	23.95	10.38
30-1		0.00	33.79	10.00	23.79	10.31
40-1		0.00	145.80	10.00	135.80	58.84
50-1		0.00	145.80	10.00	135.80	58.84
60-1		0.00	33.24	10.00	23.24	10.07
70-1		0.00	146.16	10.00	136.16	59.00
80-1		0.00	33.78	10.00	23.78	10.31
90-1		0.00	145.82	10.00	135.82	58.86
100-1		0.00	33.76	10.00	23.76	10.30
110-1		0.00	145.82	10.00	135.82	58.86
120-1		0.00	144.77	10.00	134.77	58.40
130-1		0.00	26.97	10.00	16.97	7.35
140-1		0.00	26.25	10.00	16.25	7.04
150-1		0.00	25.92	10.00	15.92	6.90
160-1		0.00	142.19	10.00	132.19	57.28
170-1		0.00	141.86	10.00	131.86	57.14
180-1		0.00	26.25	10.00	16.25	7.04
190-1		0.00	141.86	10.00	131.86	57.14
200-1		0.00	26.25	10.00	16.25	7.04
210-1		0.00	141.86	10.00	131.86	57.14
220-1		0.00	26.23	10.00	16.23	7.03
230-1		6.11	141.88	10.00	131.88	57.15
240-1		0.00	141.15	10.00	131.15	56.83
250-1		19.19	138.21	10.00	128.21	55.56
260-1		515.09	130.06	10.00	120.06	52.03
270-1		23.28	140.09	10.00	130.09	56.37
280-1		15.09	140.36	10.00	130.36	56.49
290-1		23.28	141.43	10.00	131.43	56.95
300-1		75.40	142.16	10.00	132.16	57.27
310-1		35.62	142.45	10.00	132.45	57.39
320-1		26.03	143.17	10.00	133.17	57.71
330-1		6.84	142.55	10.00	132.55	57.44
340-1		12.34	141.79	10.00	131.79	57.11
350-1		5.50	141.48	10.00	131.48	56.97
360-1		5.50	141.47	10.00	131.47	56.97
370-1		9.59	141.47	10.00	131.47	56.97
380-1		2.75	141.47	10.00	131.47	56.97
390-1		6.84	141.47	10.00	131.47	56.97
400-1		9.59	141.47	10.00	131.47	56.97
410-1		4.09	141.47	10.00	131.47	56.97
420-1		4.09	141.38	10.00	131.38	56.93
430-1		6.84	141.73	10.00	131.73	57.08

440-1	2.75	141.86	10.00	131.86	57.14
450-1	10.94	141.32	10.00	131.32	56.90
460-1	15.09	141.23	10.00	131.23	56.87
470-1	8.25	141.08	10.00	131.08	56.80
480-1	8.25	141.03	10.00	131.03	56.78
490-1	6.84	141.20	10.00	131.20	56.85
500-1	6.84	141.24	10.00	131.24	56.87
510-1	10.94	141.23	10.00	131.23	56.87
520-1	26.03	140.77	10.00	130.77	56.67
530-1	19.19	140.60	10.00	130.60	56.59
540-1	37.03	140.54	10.00	130.54	56.57
550-1	24.68	140.42	10.00	130.42	56.51
560-1	5.50	140.45	10.00	130.45	56.53
570-1	21.93	140.54	10.00	130.54	56.57
580-1	39.72	140.14	10.00	130.14	56.39
590-1	21.93	140.11	10.00	130.11	56.38
600-1	10.94	140.24	10.00	130.24	56.44
610-1	12.34	140.25	10.00	130.25	56.44
620-1	26.03	140.23	10.00	130.23	56.43
630-1	15.09	140.21	10.00	130.21	56.42
640-1	4.09	140.23	10.00	130.23	56.43
650-1	10.94	140.22	10.00	130.22	56.43
660-1	12.34	140.21	10.00	130.21	56.42
670-1	8.25	140.21	10.00	130.21	56.43
680-1	5.50	140.22	10.00	130.22	56.43
690-1	13.69	140.21	10.00	130.21	56.42
700-1	4.09	140.21	10.00	130.21	56.43
710-1	8.25	140.11	10.00	130.11	56.38
720-1	6.84	140.09	10.00	130.09	56.37
730-1	6.84	140.08	10.00	130.08	56.37
740-1	16.44	140.10	10.00	130.10	56.38
750-1	16.44	140.15	10.00	130.15	56.40
760-1	12.34	140.10	10.00	130.10	56.38
770-1	16.44	140.12	10.00	130.12	56.39
780-1	12.34	140.10	10.00	130.10	56.37
790-1	1.34	140.08	10.00	130.08	56.37
800-1	8.25	140.08	10.00	130.08	56.37
810-1	8.25	140.20	10.00	130.20	56.42
820-1	19.19	140.22	10.00	130.22	56.43
830-1	2.75	140.14	10.00	130.14	56.39
840-1	1.34	140.11	10.00	130.11	56.38
850-1	2.75	140.10	10.00	130.10	56.38
860-1	5.50	140.10	10.00	130.10	56.37
870-1	6.84	140.07	10.00	130.07	56.36
880-1	0.00	140.07	10.00	130.07	56.36
890-1	1.34	140.07	10.00	130.07	56.36
900-1	4.09	140.07	10.00	130.07	56.36
910-1	2.75	140.04	10.00	130.04	56.35
920-1	2.75	140.05	10.00	130.05	56.35
930-1	4.09	140.00	10.00	130.00	56.33
940-1	8.25	139.90	10.00	129.90	56.29
950-1	0.00	139.84	10.00	129.84	56.26
960-1	4.09	139.88	10.00	129.88	56.28
970-1	12.34	139.94	10.00	129.94	56.31
980-1	4.09	139.94	10.00	129.94	56.31
990-1	2.75	140.07	10.00	130.07	56.36
1000-1	4.09	140.12	10.00	130.12	56.38
1010-1	0.00	140.50	10.00	130.50	56.55
1020-1	15.09	140.32	10.00	130.32	56.47
1030-1	21.93	140.37	10.00	130.37	56.49
1040-1	17.84	139.63	10.00	129.63	56.17
1050-1	12.34	139.53	10.00	129.53	56.13
1060-1	15.09	139.52	10.00	129.52	56.13
1070-1	13.69	139.55	10.00	129.55	56.14
1080-1	6.84	139.55	10.00	129.55	56.14
1090-1	12.34	139.55	10.00	129.55	56.14
1100-1	4.09	139.56	10.00	129.56	56.14

1110-1	5.50	139.57	10.00	129.57	56.14
1120-1	9.59	139.69	10.00	129.69	56.20
1130-1	10.94	139.56	10.00	129.56	56.14
1140-1	1.34	140.81	10.00	130.81	56.68
1150-1	8.25	140.45	10.00	130.45	56.53
1160-1	8.25	140.40	10.00	130.40	56.51
1170-1	8.25	140.35	10.00	130.35	56.49
1180-1	15.09	140.35	10.00	130.35	56.49
1190-1	20.53	140.05	10.00	130.05	56.35
1200-1	27.43	139.44	10.00	129.44	56.09
1210-1	17.84	139.74	10.00	129.74	56.22
1220-1	35.62	140.00	10.00	130.00	56.33
1230-1	9.59	139.05	10.00	129.05	55.92
1240-1	4.09	139.42	10.00	129.42	56.08
1250-1	41.12	139.03	10.00	129.03	55.91
1260-1	45.21	138.47	10.00	128.47	55.67
1270-1	20.53	137.87	10.00	127.87	55.41
1280-1	21.93	137.72	10.00	127.72	55.34
1290-1	23.28	137.68	10.00	127.68	55.33
1300-1	16.44	137.76	10.00	127.76	55.36
1310-1	1.34	137.80	10.00	127.80	55.38
1320-1	9.59	137.73	10.00	127.73	55.35
1330-1	5.50	137.73	10.00	127.73	55.35
1340-1	16.44	137.71	10.00	127.71	55.34
1350-1	4.09	137.72	10.00	127.72	55.35
1360-1	6.84	137.72	10.00	127.72	55.34
1370-1	9.59	137.70	10.00	127.70	55.34
1380-1	20.53	137.70	10.00	127.70	55.34
1390-1	15.09	137.67	10.00	127.67	55.32
1400-1	15.09	137.68	10.00	127.68	55.33
1410-1	13.69	137.70	10.00	127.70	55.34
1420-1	4.09	137.68	10.00	127.68	55.33
1430-1	5.50	137.66	10.00	127.66	55.32
1440-1	6.84	137.66	10.00	127.66	55.32
1450-1	12.34	137.66	10.00	127.66	55.32
1460-1	6.84	137.65	10.00	127.65	55.32
1470-1	6.84	137.66	10.00	127.66	55.32
1480-1	12.34	137.66	10.00	127.66	55.32
1490-1	28.78	137.66	10.00	127.66	55.32
1500-1	10.94	137.68	10.00	127.68	55.33
1510-1	10.94	137.65	10.00	127.65	55.31
1520-1	9.59	137.65	10.00	127.65	55.31
1530-1	23.28	137.64	10.00	127.64	55.31
1540-1	41.12	137.66	10.00	127.66	55.32
1550-1	23.28	137.65	10.00	127.65	55.31
1560-1	27.43	137.65	10.00	127.65	55.31
1570-1	21.93	137.66	10.00	127.66	55.32
1580-1	27.43	138.09	10.00	128.09	55.51
1590-1	49.31	138.12	10.00	128.12	55.52
1600-1	19.19	138.36	10.00	128.36	55.62
1610-1	27.43	138.46	10.00	128.46	55.66
1620-1	19.19	138.53	10.00	128.53	55.69
1630-1	8.25	138.84	10.00	128.84	55.83
1640-1	1.34	138.89	10.00	128.89	55.85
1650-1	1.34	138.94	10.00	128.94	55.87
1660-1	6.84	138.92	10.00	128.92	55.86
1670-1	13.69	138.89	10.00	128.89	55.85
1680-1	12.34	138.89	10.00	128.89	55.85
1690-1	9.59	138.94	10.00	128.94	55.87
1700-1	9.59	138.95	10.00	128.95	55.88
1710-1	20.53	138.95	10.00	128.95	55.88
1720-1	15.09	138.89	10.00	128.89	55.85
1730-1	4.09	138.96	10.00	128.96	55.88
1740-1	5.50	138.99	10.00	128.99	55.90
1750-1	8.25	138.97	10.00	128.97	55.89
1760-1	8.25	138.99	10.00	128.99	55.90
1770-1	4.09	138.97	10.00	128.97	55.89

1780-1	32.87	138.84	10.00	128.84	55.83
1790-1	31.53	139.49	10.00	129.49	56.11
1800-1	16.44	139.52	10.00	129.52	56.12
1810-1	6.84	140.10	10.00	130.10	56.38
1820-1	5.50	140.11	10.00	130.11	56.38
1830-1	8.25	138.98	10.00	128.98	55.89

S U M M A R Y O F I N F L O W S A N D O U T F L O W S

(+) INFLOWS INTO THE SYSTEM FROM BOUNDARY NODES
(-) OUTFLOWS FROM THE SYSTEM INTO BOUNDARY NODES

PIPE NUMBER	FLOWRATE (gpm)
2490	1155.55
2500	1462.30

NET SYSTEM INFLOW = 2617.85
NET SYSTEM OUTFLOW = 0.00
NET SYSTEM DEMAND = 2617.85

T A N K S T A T U S R E P O R T (time = 0.0000 hours)

TANK NUMBER (*)	PIPE NUMBER	NET FLOW (gpm)	WATER ELEVATION (ft)	TANK DEPTH (ft)	TANK VOLUME (gal)	TANK VOLUME (%)	TANK STATUS	PROJECTED DEPTH (ft)
1-1	2500	-762.30	34.00	24.00	99776.	100.0	DRAINING	13.00
2-1	2490	-455.55	27.00	17.00	282698.	70.8	DRAINING	15.36

* TANK TYPE: 1 - CONSTANT DIAMETER 2 - VARIABLE AREA

****
S I M U L A T I O N R E S U L T S
****

TIME FROM INITIATION OF EPS = 1.0000 HOURS
The results are obtained after 2 trials with an accuracy = 0.00370

P I P E L I N E R E S U L T S

STATUS CODE: XX -CLOSED PIPE BN -BOUNDARY NODE PU -PUMP LINE
CV -CHECK VALVE RV -REGULATING VALVE TK -STORAGE TANK

PIPE NUMBER	NODE NOS. #1	#2	FLOWRATE (gpm)	HEAD LOSS (ft)	PUMP HEAD (ft)	MINOR LOSS (ft)	LINE VELO. (ft/s)	HL/ 1000 (ft/ft)
10	10	20	-1370.39	0.14	0.00	0.00	3.89	4.55
20	30	10	0.00	0.00	0.00	0.00	0.00	0.00
30-XXPU	30	40						
40	50	40	0.00	0.00	0.00	0.00	0.00	0.00
50	10	60	946.79	0.50	0.00	0.00	6.04	16.51
60-PU	60	70	946.79	0.17	116.34	0.00	6.04	16.51
70	80	10	-211.86	0.01	0.00	0.00	1.35	1.03
80-PU	80	90	211.86	0.01	115.39	0.00	1.35	1.03
90	50	90	-211.86	0.02	0.00	0.00	1.35	1.03
100	100	10	-211.74	0.03	0.00	0.00	1.35	1.03

110-PU	100	110	211.74	0.01	115.41	0.00	1.35	1.03
120	50	110	-211.74	0.02	0.00	0.00	1.35	1.03
130	120	50	-1370.39	0.91	0.00	0.00	3.89	4.55
140	50	70	-946.79	0.33	0.00	0.00	6.04	16.51
150	140	130	-1247.46	0.83	0.00	0.00	7.96	27.51
160	150	140	-1014.69	0.38	0.00	0.00	6.48	18.77
170-PU	150	160	1014.69	0.19	112.37	0.00	6.48	18.77
180	170	160	-1014.69	0.38	0.00	0.00	6.48	18.77
190	140	180	0.00	0.00	0.00	0.00	0.00	0.00
200-XXPU	180	190						
210	170	190	0.00	0.00	0.00	0.00	0.00	0.00
220	200	140	0.00	0.00	0.00	0.00	0.00	0.00
230-XXPU	200	210						
240	170	210	0.00	0.00	0.00	0.00	0.00	0.00
250	220	140	-232.76	0.02	0.00	0.00	1.49	1.23
260-PU	220	230	232.76	0.01	111.49	0.00	1.49	1.23
270	170	230	-226.65	0.02	0.00	0.00	1.45	1.17
280	240	170	-1241.35	0.82	0.00	0.00	7.92	27.26
290	250	260	515.09	8.15	0.00	0.00	3.29	5.35
300	270	250	244.42	1.88	0.00	0.00	1.56	1.34
310	280	270	267.70	0.27	0.00	0.00	0.76	0.22
320	280	250	289.86	2.15	0.00	0.00	1.85	1.84
330	290	280	572.65	1.07	0.00	0.00	1.62	0.90
340	300	290	68.01	0.73	0.00	0.00	0.43	0.13
350	310	290	527.92	1.02	0.00	0.00	1.50	0.78
360	310	300	49.39	0.29	0.00	0.00	0.32	0.07
370	320	310	612.93	0.72	0.00	0.00	1.74	1.02
380	320	300	94.02	1.01	0.00	0.00	0.60	0.23
390	120	320	732.97	1.60	0.00	0.00	2.08	1.43
400	330	120	-637.41	1.73	0.00	0.00	1.81	1.10
410	340	330	-156.12	0.60	0.00	0.00	1.00	0.59
420	340	350	101.57	0.24	0.00	0.00	0.65	0.26
430	360	350	-15.75	0.01	0.00	0.00	0.10	0.01
440	360	370	10.25	0.00	0.00	0.00	0.07	0.00
450	380	370	5.40	0.00	0.00	0.00	0.06	0.00
460	350	380	22.62	0.00	0.00	0.00	0.14	0.02
470	380	390	14.47	0.00	0.00	0.00	0.09	0.01
480	390	400	2.40	0.00	0.00	0.00	0.03	0.00
490	370	400	6.06	0.00	0.00	0.00	0.04	0.00
500	410	400	1.14	0.00	0.00	0.00	0.01	0.00
510	390	410	5.23	0.00	0.00	0.00	0.03	0.00
520	420	350	-57.70	0.07	0.00	0.00	0.37	0.09
530	430	340	-42.21	0.04	0.00	0.00	0.27	0.05
540	420	430	-108.40	0.27	0.00	0.00	0.69	0.30
550	430	440	-73.04	0.10	0.00	0.00	0.47	0.14
560	440	330	-474.45	0.53	0.00	0.00	1.35	0.64
570	450	440	-398.66	0.42	0.00	0.00	1.13	0.46
580	450	420	-81.67	0.04	0.00	0.00	0.23	0.02
590	460	420	-80.34	0.11	0.00	0.00	0.51	0.17
600	460	470	65.25	0.11	0.00	0.00	0.42	0.12
610	480	470	-57.00	0.04	0.00	0.00	0.36	0.09
620	480	490	-46.29	0.13	0.00	0.00	0.30	0.06
630	490	450	-356.14	0.08	0.00	0.00	1.01	0.37
640	500	450	-113.25	0.07	0.00	0.00	0.72	0.32
650	510	500	-10.94	0.01	0.00	0.00	0.07	0.00
660	520	500	-95.47	0.36	0.00	0.00	0.61	0.24
670	530	490	-303.00	0.44	0.00	0.00	0.86	0.28
680	520	540	69.45	0.16	0.00	0.00	0.44	0.13
690	540	550	32.42	0.06	0.00	0.00	0.21	0.03
700	560	530	-254.22	0.10	0.00	0.00	0.72	0.20
710	550	560	-72.88	0.03	0.00	0.00	0.47	0.14
720	530	570	29.59	0.05	0.00	0.00	0.19	0.03
730	570	480	-95.05	0.36	0.00	0.00	0.61	0.23
740	580	570	-102.71	0.29	0.00	0.00	0.66	0.27
750	580	590	18.61	0.02	0.00	0.00	0.12	0.01
760	600	560	-175.84	0.13	0.00	0.00	0.50	0.10
770	550	610	80.62	0.10	0.00	0.00	0.51	0.17

780	620	610	-32.81	0.02	0.00	0.00	0.21	0.03
790	630	620	-6.78	0.01	0.00	0.00	0.08	0.01
800	640	650	18.92	0.01	0.00	0.00	0.12	0.01
810	650	630	7.98	0.01	0.00	0.00	0.09	0.01
820	630	660	-0.33	0.00	0.00	0.00	0.00	0.00
830	670	660	7.34	0.01	0.00	0.00	0.08	0.01
840	680	670	15.58	0.01	0.00	0.00	0.10	0.01
850	660	690	-5.34	0.00	0.00	0.00	0.06	0.00
860	690	700	-19.02	0.01	0.00	0.00	0.12	0.01
870	610	640	35.47	0.01	0.00	0.00	0.23	0.04
880	640	680	12.45	0.00	0.00	0.00	0.08	0.01
890	680	700	-8.63	0.00	0.00	0.00	0.06	0.00
900	710	580	-44.39	0.02	0.00	0.00	0.28	0.06
910	590	710	-3.33	0.00	0.00	0.00	0.04	0.00
920	710	720	22.53	0.01	0.00	0.00	0.14	0.02
930	730	720	-15.69	0.00	0.00	0.00	0.10	0.01
940	740	710	-10.27	0.00	0.00	0.00	0.07	0.00
950	740	730	22.80	0.01	0.00	0.00	0.15	0.02
960	750	740	35.11	0.05	0.00	0.00	0.22	0.04
970	600	750	103.18	0.09	0.00	0.00	0.66	0.27
980	760	770	-11.99	0.03	0.00	0.00	0.14	0.02
990	750	770	51.63	0.02	0.00	0.00	0.33	0.08
1000	760	740	-6.15	0.00	0.00	0.00	0.04	0.00
1010	780	760	4.16	0.00	0.00	0.00	0.03	0.00
1020	790	760	-9.95	0.01	0.00	0.00	0.11	0.01
1030	790	730	5.35	0.00	0.00	0.00	0.03	0.00
1040	800	790	-3.26	0.00	0.00	0.00	0.02	0.00
1050	780	800	20.65	0.01	0.00	0.00	0.13	0.01
1060	770	780	23.21	0.02	0.00	0.00	0.15	0.02
1070	810	600	-61.72	0.02	0.00	0.00	0.18	0.01
1080	820	810	32.11	0.02	0.00	0.00	0.20	0.03
1090	820	700	31.75	0.02	0.00	0.00	0.20	0.03
1100	830	810	-85.59	0.03	0.00	0.00	0.24	0.03
1110	830	840	62.68	0.06	0.00	0.00	0.40	0.11
1120	840	850	43.37	0.02	0.00	0.00	0.28	0.05
1130	850	860	46.25	0.01	0.00	0.00	0.30	0.06
1140	860	870	26.80	0.03	0.00	0.00	0.17	0.02
1150	870	800	-15.66	0.01	0.00	0.00	0.10	0.01
1160	860	780	13.94	0.01	0.00	0.00	0.09	0.01
1170	730	880	37.00	0.01	0.00	0.00	0.24	0.04
1180	880	890	15.70	0.00	0.00	0.00	0.10	0.01
1190	890	900	4.09	0.00	0.00	0.00	0.03	0.00
1200	910	890	-10.26	0.02	0.00	0.00	0.12	0.02
1210	880	920	21.31	0.02	0.00	0.00	0.14	0.01
1220	910	920	-18.56	0.00	0.00	0.00	0.12	0.01
1230	930	910	-26.07	0.03	0.00	0.00	0.17	0.02
1240	870	930	35.62	0.06	0.00	0.00	0.23	0.04
1250	940	930	-57.59	0.08	0.00	0.00	0.37	0.09
1260	950	940	-49.34	0.04	0.00	0.00	0.31	0.07
1270	950	960	-42.50	0.05	0.00	0.00	0.27	0.05
1280	960	970	-46.60	0.07	0.00	0.00	0.30	0.06
1290	970	980	4.09	0.00	0.00	0.00	0.03	0.00
1300	970	990	-63.03	0.14	0.00	0.00	0.40	0.11
1310	850	1810	-5.62	0.00	0.00	0.00	0.04	0.00
1320	1000	830	-20.16	0.00	0.00	0.00	0.06	0.00
1330	1010	1000	357.01	0.50	0.00	0.00	1.01	0.38
1340	820	1020	-83.05	0.18	0.00	0.00	0.53	0.18
1350	1030	1010	-120.07	0.19	0.00	0.00	0.77	0.36
1360	1020	1030	-98.14	0.08	0.00	0.00	0.63	0.25
1370	1040	990	-307.29	0.41	0.00	0.00	0.87	0.29
1380	1040	1050	46.55	0.13	0.00	0.00	0.30	0.06
1390	1050	1060	17.77	0.00	0.00	0.00	0.11	0.01
1400	1060	1070	-28.85	0.02	0.00	0.00	0.18	0.03
1410	1070	1080	-22.92	0.01	0.00	0.00	0.15	0.02
1420	1080	1090	-6.37	0.00	0.00	0.00	0.04	0.00
1430	1090	1100	-18.71	0.01	0.00	0.00	0.12	0.01
1440	1110	1120	-82.25	0.12	0.00	0.00	0.52	0.18

1450	1080	1110	-23.40	0.01	0.00	0.00	0.15	0.02
1460	1130	1070	19.61	0.01	0.00	0.00	0.13	0.01
1470	1130	1110	-30.55	0.01	0.00	0.00	0.19	0.03
1480	1110	1100	22.81	0.00	0.00	0.00	0.15	0.02
1490	1120	950	-91.85	0.13	0.00	0.00	0.59	0.22
1500	1010	240	-529.09	0.82	0.00	0.00	1.50	0.78
1510	240	1140	712.25	0.37	0.00	0.00	2.02	1.35
1520	1140	1150	144.69	0.43	0.00	0.00	0.92	0.51
1530	1160	1010	-52.01	0.07	0.00	0.00	0.33	0.08
1540	1160	1150	-21.64	0.08	0.00	0.00	0.25	0.06
1550	1170	1160	-65.41	0.04	0.00	0.00	0.42	0.12
1560	1180	1170	6.80	0.01	0.00	0.00	0.08	0.01
1570	1150	1180	114.80	0.11	0.00	0.00	0.73	0.33
1580	1190	1170	-63.96	0.30	0.00	0.00	0.41	0.11
1590	1180	1190	92.91	0.31	0.00	0.00	0.59	0.22
1600	1190	1200	136.34	0.61	0.00	0.00	0.87	0.46
1610	1200	1210	-68.04	0.32	0.00	0.00	0.43	0.13
1620	1220	1210	530.60	0.28	0.00	0.00	1.51	0.78
1630	1140	1220	566.22	0.86	0.00	0.00	1.61	0.88
1640	1230	1240	-238.81	0.32	0.00	0.00	0.68	0.18
1650	1240	1040	-242.90	0.18	0.00	0.00	0.69	0.18
1660	1210	1250	444.72	0.76	0.00	0.00	1.26	0.57
1670	1250	1230	5.23	0.00	0.00	0.00	0.03	0.00
1680	1260	1250	-265.88	0.56	0.00	0.00	0.75	0.22
1690	1200	1260	176.95	0.99	0.00	0.00	1.13	0.74
1700	1270	1260	-397.62	0.60	0.00	0.00	1.13	0.46
1710	1280	1270	-46.12	0.16	0.00	0.00	0.29	0.06
1720	1280	1290	24.18	0.04	0.00	0.00	0.27	0.08
1730	1300	1290	14.66	0.08	0.00	0.00	0.17	0.03
1740	1300	1310	-226.60	0.05	0.00	0.00	0.64	0.16
1750	1310	1270	-330.97	0.07	0.00	0.00	0.94	0.33
1760	1320	1310	-103.02	0.07	0.00	0.00	0.66	0.27
1770	1330	1300	-195.50	0.03	0.00	0.00	0.55	0.12
1780	1340	1330	-22.34	0.02	0.00	0.00	0.25	0.06
1790	1320	1340	36.90	0.02	0.00	0.00	0.24	0.04
1800	1350	1320	-28.04	0.01	0.00	0.00	0.18	0.02
1810	1360	1350	-23.95	0.01	0.00	0.00	0.15	0.02
1820	1370	1360	-17.10	0.01	0.00	0.00	0.11	0.01
1830	1380	1370	-7.51	0.00	0.00	0.00	0.05	0.00
1840	1380	1320	-28.49	0.03	0.00	0.00	0.18	0.03
1850	1390	1380	-15.47	0.04	0.00	0.00	0.18	0.03
1860	1390	1400	-16.39	0.01	0.00	0.00	0.10	0.01
1870	1340	1400	42.80	0.03	0.00	0.00	0.27	0.05
1880	1410	1330	-167.67	0.02	0.00	0.00	0.48	0.09
1890	1420	1410	-132.07	0.02	0.00	0.00	0.37	0.06
1900	1400	1420	-25.49	0.01	0.00	0.00	0.16	0.02
1910	1400	1430	36.81	0.01	0.00	0.00	0.23	0.04
1920	1430	1440	11.75	0.00	0.00	0.00	0.08	0.00
1930	1440	1450	4.91	0.00	0.00	0.00	0.06	0.00
1940	1430	1450	19.56	0.01	0.00	0.00	0.12	0.01
1950	1450	1460	12.13	0.00	0.00	0.00	0.08	0.01
1960	1470	1460	21.76	0.01	0.00	0.00	0.14	0.02
1970	1470	1480	-28.60	0.00	0.00	0.00	0.08	0.00
1980	1480	1490	-41.21	0.00	0.00	0.00	0.12	0.01
1990	1490	1500	-82.95	0.01	0.00	0.00	0.24	0.03
2000	1500	1420	-102.49	0.00	0.00	0.00	0.29	0.04
2010	1460	1510	27.04	0.01	0.00	0.00	0.17	0.02
2020	1520	1510	-0.09	0.00	0.00	0.00	0.00	0.00
2030	1510	1530	16.02	0.01	0.00	0.00	0.10	0.01
2040	1530	1520	-7.26	0.01	0.00	0.00	0.08	0.01
2050	1520	1390	-16.77	0.02	0.00	0.00	0.19	0.04
2060	1480	1540	0.26	0.00	0.00	0.00	0.00	0.00
2070	1550	1540	-13.60	0.01	0.00	0.00	0.15	0.03
2080	1560	1550	-3.29	0.00	0.00	0.00	0.04	0.00
2090	1570	1560	15.54	0.02	0.00	0.00	0.18	0.03
2100	1290	1570	15.57	0.02	0.00	0.00	0.18	0.03
2110	1550	1490	-12.97	0.02	0.00	0.00	0.08	0.01

2120	1500	1560	8.60	0.03	0.00	0.00	0.10	0.01
2130	1570	1410	-21.91	0.04	0.00	0.00	0.14	0.02
2140	1580	1540	54.46	0.42	0.00	0.00	0.35	0.08
2150	1590	1580	20.21	0.03	0.00	0.00	0.13	0.01
2160	1600	1580	61.69	0.27	0.00	0.00	0.39	0.10
2170	1610	1590	69.52	0.33	0.00	0.00	0.44	0.13
2180	1610	1600	35.53	0.10	0.00	0.00	0.23	0.04
2190	1250	1610	132.48	0.58	0.00	0.00	0.85	0.43
2200	1620	1600	45.34	0.16	0.00	0.00	0.29	0.06
2210	1620	1630	-64.53	0.30	0.00	0.00	0.41	0.11
2220	1630	1640	-72.77	0.05	0.00	0.00	0.46	0.14
2230	1640	1650	-89.21	0.05	0.00	0.00	0.57	0.21
2240	1660	1650	-31.90	0.02	0.00	0.00	0.20	0.03
2250	1670	1660	-25.06	0.03	0.00	0.00	0.16	0.02
2260	1680	1670	-11.37	0.00	0.00	0.00	0.07	0.00
2270	1690	1680	33.84	0.05	0.00	0.00	0.22	0.03
2280	1650	1690	7.36	0.00	0.00	0.00	0.05	0.00
2290	1700	1690	36.07	0.01	0.00	0.00	0.23	0.04
2300	1710	1700	-1.27	0.00	0.00	0.00	0.01	0.00
2310	1720	1640	-15.09	0.01	0.00	0.00	0.10	0.01
2320	1650	1730	-129.81	0.02	0.00	0.00	0.37	0.06
2330	1730	1740	-148.36	0.03	0.00	0.00	0.42	0.07
2340	1730	1700	14.45	0.01	0.00	0.00	0.16	0.03
2350	1750	1700	32.49	0.01	0.00	0.00	0.21	0.03
2360	1750	1740	-21.63	0.03	0.00	0.00	0.25	0.06
2370	1710	1750	-19.26	0.01	0.00	0.00	0.12	0.01
2380	1740	1230	-175.49	0.06	0.00	0.00	0.50	0.10
2390	1760	1750	38.36	0.02	0.00	0.00	0.24	0.04
2400	1230	1760	58.95	0.06	0.00	0.00	0.38	0.10
2410	1770	1830	-4.09	0.00	0.00	0.00	0.05	0.00
2420	1680	1780	32.87	0.04	0.00	0.00	0.21	0.03
2430	1060	1790	31.53	0.04	0.00	0.00	0.20	0.03
2440	1050	1800	16.44	0.01	0.00	0.00	0.10	0.01
2450	1810	1820	-12.46	0.01	0.00	0.00	0.14	0.02
2460	840	1820	17.96	0.01	0.00	0.00	0.11	0.01
2470	990	1000	-373.07	0.04	0.00	0.00	1.06	0.41
2480	1760	1830	12.34	0.01	0.00	0.00	0.08	0.01
2490-TK	130	0	-1247.46	0.04	0.00	0.00	3.54	3.82
2500-TK	20	0	-1370.39	0.05	0.00	0.00	3.89	4.55

J U N C T I O N N O D E R E S U L T S

JUNCTION NUMBER	JUNCTION TITLE	EXTERNAL DEMAND (gpm)	HYDRAULIC GRADE (ft)	JUNCTION ELEVATION (ft)	PRESSURE HEAD (ft)	JUNCTION PRESSURE (psi)
10-1		0.00	22.82	10.00	12.82	5.55
20-1		0.00	22.95	10.00	12.95	5.61
30-1		0.00	22.82	10.00	12.82	5.55
40-1		0.00	138.17	10.00	128.17	55.54
50-1		0.00	138.17	10.00	128.17	55.54
60-1		0.00	22.32	10.00	12.32	5.34
70-1		0.00	138.50	10.00	128.50	55.68
80-1		0.00	22.81	10.00	12.81	5.55
90-1		0.00	138.19	10.00	128.19	55.55
100-1		0.00	22.79	10.00	12.79	5.54
110-1		0.00	138.19	10.00	128.19	55.55
120-1		0.00	137.26	10.00	127.26	55.15
130-1		0.00	25.32	10.00	15.32	6.64
140-1		0.00	24.49	10.00	14.49	6.28
150-1		0.00	24.12	10.00	14.12	6.12
160-1		0.00	136.30	10.00	126.30	54.73
170-1		0.00	135.92	10.00	125.92	54.57
180-1		0.00	24.49	10.00	14.49	6.28
190-1		0.00	135.92	10.00	125.92	54.57

200-1	0.00	24.49	10.00	14.49	6.28
210-1	0.00	135.92	10.00	125.92	54.57
220-1	0.00	24.47	10.00	14.47	6.27
230-1	6.11	135.94	10.00	125.94	54.58
240-1	0.00	135.10	10.00	125.10	54.21
250-1	19.19	130.70	10.00	120.70	52.30
260-1	515.09	122.55	10.00	112.55	48.77
270-1	23.28	132.58	10.00	122.58	53.12
280-1	15.09	132.85	10.00	122.85	53.23
290-1	23.28	133.92	10.00	123.92	53.70
300-1	75.40	134.65	10.00	124.65	54.02
310-1	35.62	134.94	10.00	124.94	54.14
320-1	26.03	135.66	10.00	125.66	54.45
330-1	6.84	135.53	10.00	125.53	54.40
340-1	12.34	134.93	10.00	124.93	54.14
350-1	5.50	134.69	10.00	124.69	54.03
360-1	5.50	134.68	10.00	124.68	54.03
370-1	9.59	134.68	10.00	124.68	54.03
380-1	2.75	134.68	10.00	124.68	54.03
390-1	6.84	134.68	10.00	124.68	54.03
400-1	9.59	134.68	10.00	124.68	54.03
410-1	4.09	134.68	10.00	124.68	54.03
420-1	4.09	134.62	10.00	124.62	54.00
430-1	6.84	134.89	10.00	124.89	54.12
440-1	2.75	135.00	10.00	125.00	54.17
450-1	10.94	134.58	10.00	124.58	53.98
460-1	15.09	134.50	10.00	124.50	53.95
470-1	8.25	134.40	10.00	124.40	53.91
480-1	8.25	134.36	10.00	124.36	53.89
490-1	6.84	134.50	10.00	124.50	53.95
500-1	6.84	134.51	10.00	124.51	53.96
510-1	10.94	134.51	10.00	124.51	53.95
520-1	26.03	134.16	10.00	124.16	53.80
530-1	19.19	134.06	10.00	124.06	53.76
540-1	37.03	134.00	10.00	124.00	53.73
550-1	24.68	133.93	10.00	123.93	53.70
560-1	5.50	133.96	10.00	123.96	53.72
570-1	21.93	134.01	10.00	124.01	53.74
580-1	39.72	133.71	10.00	123.71	53.61
590-1	21.93	133.69	10.00	123.69	53.60
600-1	10.94	133.83	10.00	123.83	53.66
610-1	12.34	133.83	10.00	123.83	53.66
620-1	26.03	133.81	10.00	123.81	53.65
630-1	15.09	133.80	10.00	123.80	53.65
640-1	4.09	133.81	10.00	123.81	53.65
650-1	10.94	133.81	10.00	123.81	53.65
660-1	12.34	133.80	10.00	123.80	53.65
670-1	8.25	133.81	10.00	123.81	53.65
680-1	5.50	133.81	10.00	123.81	53.65
690-1	13.69	133.81	10.00	123.81	53.65
700-1	4.09	133.81	10.00	123.81	53.65
710-1	8.25	133.70	10.00	123.70	53.60
720-1	6.84	133.68	10.00	123.68	53.60
730-1	6.84	133.68	10.00	123.68	53.60
740-1	16.44	133.70	10.00	123.70	53.60
750-1	16.44	133.74	10.00	123.74	53.62
760-1	12.34	133.70	10.00	123.70	53.60
770-1	16.44	133.72	10.00	123.72	53.61
780-1	12.34	133.69	10.00	123.69	53.60
790-1	1.34	133.68	10.00	123.68	53.60
800-1	8.25	133.68	10.00	123.68	53.60
810-1	8.25	133.81	10.00	123.81	53.65
820-1	19.19	133.83	10.00	123.83	53.66
830-1	2.75	133.79	10.00	123.79	53.64
840-1	1.34	133.73	10.00	123.73	53.62
850-1	2.75	133.71	10.00	123.71	53.61
860-1	5.50	133.70	10.00	123.70	53.60

870-1	6.84	133.67	10.00	123.67	53.59
880-1	0.00	133.67	10.00	123.67	53.59
890-1	1.34	133.67	10.00	123.67	53.59
900-1	4.09	133.67	10.00	123.67	53.59
910-1	2.75	133.65	10.00	123.65	53.58
920-1	2.75	133.65	10.00	123.65	53.58
930-1	4.09	133.62	10.00	123.62	53.57
940-1	8.25	133.53	10.00	123.53	53.53
950-1	0.00	133.49	10.00	123.49	53.51
960-1	4.09	133.54	10.00	123.54	53.53
970-1	12.34	133.60	10.00	123.60	53.56
980-1	4.09	133.60	10.00	123.60	53.56
990-1	2.75	133.74	10.00	123.74	53.62
1000-1	4.09	133.79	10.00	123.79	53.64
1010-1	0.00	134.29	10.00	124.29	53.86
1020-1	15.09	134.01	10.00	124.01	53.74
1030-1	21.93	134.09	10.00	124.09	53.77
1040-1	17.84	133.34	10.00	123.34	53.45
1050-1	12.34	133.21	10.00	123.21	53.39
1060-1	15.09	133.21	10.00	123.21	53.39
1070-1	13.69	133.22	10.00	123.22	53.40
1080-1	6.84	133.23	10.00	123.23	53.40
1090-1	12.34	133.23	10.00	123.23	53.40
1100-1	4.09	133.24	10.00	123.24	53.40
1110-1	5.50	133.24	10.00	123.24	53.40
1120-1	9.59	133.35	10.00	123.35	53.45
1130-1	10.94	133.23	10.00	123.23	53.40
1140-1	1.34	134.73	10.00	124.73	54.05
1150-1	8.25	134.30	10.00	124.30	53.86
1160-1	8.25	134.22	10.00	124.22	53.83
1170-1	8.25	134.18	10.00	124.18	53.81
1180-1	15.09	134.19	10.00	124.19	53.82
1190-1	20.53	133.88	10.00	123.88	53.68
1200-1	27.43	133.27	10.00	123.27	53.42
1210-1	17.84	133.60	10.00	123.60	53.56
1220-1	35.62	133.87	10.00	123.87	53.68
1230-1	9.59	132.83	10.00	122.83	53.23
1240-1	4.09	133.16	10.00	123.16	53.37
1250-1	41.12	132.84	10.00	122.84	53.23
1260-1	45.21	132.28	10.00	122.28	52.99
1270-1	20.53	131.68	10.00	121.68	52.73
1280-1	21.93	131.53	10.00	121.53	52.66
1290-1	23.28	131.49	10.00	121.49	52.64
1300-1	16.44	131.56	10.00	121.56	52.68
1310-1	1.34	131.61	10.00	121.61	52.70
1320-1	9.59	131.54	10.00	121.54	52.67
1330-1	5.50	131.53	10.00	121.53	52.66
1340-1	16.44	131.52	10.00	121.52	52.66
1350-1	4.09	131.53	10.00	121.53	52.66
1360-1	6.84	131.53	10.00	121.53	52.66
1370-1	9.59	131.51	10.00	121.51	52.66
1380-1	20.53	131.51	10.00	121.51	52.66
1390-1	15.09	131.47	10.00	121.47	52.64
1400-1	15.09	131.48	10.00	121.48	52.64
1410-1	13.69	131.51	10.00	121.51	52.65
1420-1	4.09	131.49	10.00	121.49	52.65
1430-1	5.50	131.47	10.00	121.47	52.64
1440-1	6.84	131.47	10.00	121.47	52.64
1450-1	12.34	131.46	10.00	121.46	52.63
1460-1	6.84	131.46	10.00	121.46	52.63
1470-1	6.84	131.47	10.00	121.47	52.64
1480-1	12.34	131.47	10.00	121.47	52.64
1490-1	28.78	131.47	10.00	121.47	52.64
1500-1	10.94	131.48	10.00	121.48	52.64
1510-1	10.94	131.45	10.00	121.45	52.63
1520-1	9.59	131.45	10.00	121.45	52.63
1530-1	23.28	131.45	10.00	121.45	52.63

1540-1	41.12	131.47	10.00	121.47	52.64
1550-1	23.28	131.46	10.00	121.46	52.63
1560-1	27.43	131.46	10.00	121.46	52.63
1570-1	21.93	131.47	10.00	121.47	52.64
1580-1	27.43	131.89	10.00	121.89	52.82
1590-1	49.31	131.93	10.00	121.93	52.83
1600-1	19.19	132.16	10.00	122.16	52.93
1610-1	27.43	132.26	10.00	122.26	52.98
1620-1	19.19	132.32	10.00	122.32	53.01
1630-1	8.25	132.62	10.00	122.62	53.14
1640-1	1.34	132.67	10.00	122.67	53.16
1650-1	1.34	132.72	10.00	122.72	53.18
1660-1	6.84	132.70	10.00	122.70	53.17
1670-1	13.69	132.67	10.00	122.67	53.16
1680-1	12.34	132.67	10.00	122.67	53.16
1690-1	9.59	132.72	10.00	122.72	53.18
1700-1	9.59	132.74	10.00	122.74	53.19
1710-1	20.53	132.74	10.00	122.74	53.19
1720-1	15.09	132.67	10.00	122.67	53.16
1730-1	4.09	132.75	10.00	122.75	53.19
1740-1	5.50	132.78	10.00	122.78	53.20
1750-1	8.25	132.75	10.00	122.75	53.19
1760-1	8.25	132.77	10.00	122.77	53.20
1770-1	4.09	132.76	10.00	122.76	53.19
1780-1	32.87	132.62	10.00	122.62	53.14
1790-1	31.53	133.17	10.00	123.17	53.37
1800-1	16.44	133.20	10.00	123.20	53.39
1810-1	6.84	133.71	10.00	123.71	53.61
1820-1	5.50	133.72	10.00	123.72	53.61
1830-1	8.25	132.76	10.00	122.76	53.20

S U M M A R Y O F I N F L O W S A N D O U T F L O W S

(+) INFLOWS INTO THE SYSTEM FROM BOUNDARY NODES
(-) OUTFLOWS FROM THE SYSTEM INTO BOUNDARY NODES

PIPE NUMBER	FLOWRATE (gpm)
2490	1247.46
2500	1370.39

NET SYSTEM INFLOW = 2617.85
NET SYSTEM OUTFLOW = 0.00
NET SYSTEM DEMAND = 2617.85

T A N K S T A T U S R E P O R T (time = 1.0000 hours)

TANK NUMBER (*)	PIPE NUMBER	NET FLOW (gpm)	WATER ELEVATION (ft)	TANK DEPTH (ft)	TANK VOLUME (gal)	TANK VOLUME (%)	TANK STATUS	PROJECTED DEPTH (ft)
1-1	2500	-670.39	23.00	13.00	54038.	54.2	DRAINING	3.32
2-1	2490	-547.46	25.36	15.36	255365.	64.0	DRAINING	13.38

* TANK TYPE: 1 - CONSTANT DIAMETER 2 - VARIABLE AREA

****
S I M U L A T I O N R E S U L T S
****

TIME FROM INITIATION OF EPS = 2.0000 HOURS
The results are obtained after 4 trials with an accuracy = 0.00004

P I P E L I N E R E S U L T S

STATUS CODE: XX -CLOSED PIPE BN -BOUNDARY NODE PU -PUMP LINE
CV -CHECK VALVE RV -REGULATING VALVE TK -STORAGE TANK

PIPE NUMBER	NODE NOS. #1	#2	FLOWRATE (gpm)	HEAD LOSS (ft)	PUMP HEAD (ft)	MINOR LOSS (ft)	LINE VELO. (ft/s)	HL/ 1000 (ft/ft)
10	10	20	-1294.49	0.12	0.00	0.00	3.67	4.09
20	30	10	0.00	0.00	0.00	0.00	0.00	0.00
30-XXPU	30	40						
40	50	40	0.00	0.00	0.00	0.00	0.00	0.00
50	10	60	902.14	0.45	0.00	0.00	5.76	15.10
60-PU	60	70	902.14	0.15	118.79	0.00	5.76	15.10
70	80	10	-196.24	0.01	0.00	0.00	1.25	0.90
80-PU	80	90	196.24	0.01	117.92	0.00	1.25	0.90
90	50	90	-196.24	0.02	0.00	0.00	1.25	0.90
100	100	10	-196.12	0.03	0.00	0.00	1.25	0.89
110-PU	100	110	196.12	0.01	117.94	0.00	1.25	0.89
120	50	110	-196.12	0.02	0.00	0.00	1.25	0.89
130	120	50	-1294.49	0.82	0.00	0.00	3.67	4.09
140	50	70	-902.14	0.30	0.00	0.00	5.76	15.10
150	140	130	-1323.35	0.92	0.00	0.00	8.45	30.69
160	150	140	-1072.99	0.42	0.00	0.00	6.85	20.81
170-PU	150	160	1072.99	0.21	108.72	0.00	6.85	20.81
180	170	160	-1072.99	0.42	0.00	0.00	6.85	20.81
190	140	180	0.00	0.00	0.00	0.00	0.00	0.00
200-XXPU	180	190						
210	170	190	0.00	0.00	0.00	0.00	0.00	0.00
220	200	140	0.00	0.00	0.00	0.00	0.00	0.00
230-XXPU	200	210						
240	170	210	0.00	0.00	0.00	0.00	0.00	0.00
250	220	140	-250.37	0.03	0.00	0.00	1.60	1.41
260-PU	220	230	250.37	0.01	107.74	0.00	1.60	1.41
270	170	230	-244.26	0.03	0.00	0.00	1.56	1.34
280	240	170	-1317.24	0.91	0.00	0.00	8.41	30.43
290	250	260	515.09	8.15	0.00	0.00	3.29	5.35
300	270	250	244.42	1.88	0.00	0.00	1.56	1.34
310	280	270	267.70	0.27	0.00	0.00	0.76	0.22
320	280	250	289.86	2.15	0.00	0.00	1.85	1.84
330	290	280	572.65	1.07	0.00	0.00	1.62	0.90
340	300	290	68.01	0.73	0.00	0.00	0.43	0.13
350	310	290	527.92	1.02	0.00	0.00	1.50	0.78
360	310	300	49.39	0.29	0.00	0.00	0.32	0.07
370	320	310	612.93	0.72	0.00	0.00	1.74	1.02
380	320	300	94.02	1.01	0.00	0.00	0.60	0.23
390	120	320	732.97	1.60	0.00	0.00	2.08	1.43
400	330	120	-561.52	1.37	0.00	0.00	1.59	0.87
410	340	330	-138.05	0.48	0.00	0.00	0.88	0.47
420	340	350	90.09	0.20	0.00	0.00	0.57	0.21
430	360	350	-15.75	0.01	0.00	0.00	0.10	0.01
440	360	370	10.25	0.00	0.00	0.00	0.07	0.00
450	380	370	5.40	0.00	0.00	0.00	0.06	0.00
460	350	380	22.62	0.00	0.00	0.00	0.14	0.02
470	380	390	14.47	0.00	0.00	0.00	0.09	0.01
480	390	400	2.40	0.00	0.00	0.00	0.03	0.00
490	370	400	6.06	0.00	0.00	0.00	0.04	0.00
500	410	400	1.14	0.00	0.00	0.00	0.01	0.00
510	390	410	5.23	0.00	0.00	0.00	0.03	0.00
520	420	350	-46.22	0.05	0.00	0.00	0.29	0.06
530	430	340	-35.62	0.03	0.00	0.00	0.23	0.04

540	420	430	-94.53	0.21	0.00	0.00	0.60	0.23
550	430	440	-65.75	0.09	0.00	0.00	0.42	0.12
560	440	330	-416.63	0.42	0.00	0.00	1.18	0.50
570	450	440	-348.13	0.32	0.00	0.00	0.99	0.36
580	450	420	-65.88	0.03	0.00	0.00	0.19	0.02
590	460	420	-70.77	0.09	0.00	0.00	0.45	0.14
600	460	470	55.68	0.08	0.00	0.00	0.36	0.09
610	480	470	-47.43	0.03	0.00	0.00	0.30	0.06
620	480	490	-41.07	0.11	0.00	0.00	0.26	0.05
630	490	450	-301.97	0.06	0.00	0.00	0.86	0.28
640	500	450	-101.10	0.05	0.00	0.00	0.65	0.26
650	510	500	-10.94	0.01	0.00	0.00	0.07	0.00
660	520	500	-83.32	0.28	0.00	0.00	0.53	0.18
670	530	490	-254.06	0.31	0.00	0.00	0.72	0.20
680	520	540	57.29	0.11	0.00	0.00	0.37	0.09
690	540	550	20.26	0.03	0.00	0.00	0.13	0.01
700	560	530	-205.58	0.07	0.00	0.00	0.58	0.14
710	550	560	-69.71	0.03	0.00	0.00	0.44	0.13
720	530	570	29.30	0.05	0.00	0.00	0.19	0.03
730	570	480	-80.25	0.26	0.00	0.00	0.51	0.17
740	580	570	-87.61	0.22	0.00	0.00	0.56	0.20
750	580	590	16.47	0.02	0.00	0.00	0.11	0.01
760	600	560	-130.37	0.08	0.00	0.00	0.37	0.06
770	550	610	65.29	0.07	0.00	0.00	0.42	0.12
780	620	610	-30.11	0.02	0.00	0.00	0.19	0.03
790	630	620	-4.08	0.00	0.00	0.00	0.05	0.00
800	640	650	18.87	0.01	0.00	0.00	0.12	0.01
810	650	630	7.94	0.01	0.00	0.00	0.09	0.01
820	630	660	-3.07	0.00	0.00	0.00	0.03	0.00
830	670	660	7.98	0.01	0.00	0.00	0.09	0.01
840	680	670	16.22	0.01	0.00	0.00	0.10	0.01
850	660	690	-7.44	0.01	0.00	0.00	0.08	0.01
860	690	700	-21.12	0.01	0.00	0.00	0.13	0.01
870	610	640	22.84	0.01	0.00	0.00	0.15	0.02
880	640	680	-0.13	0.00	0.00	0.00	0.00	0.00
890	680	700	-21.86	0.01	0.00	0.00	0.14	0.02
900	710	580	-31.43	0.01	0.00	0.00	0.20	0.03
910	590	710	-5.47	0.01	0.00	0.00	0.06	0.00
920	710	720	19.63	0.01	0.00	0.00	0.13	0.01
930	730	720	-12.78	0.00	0.00	0.00	0.08	0.01
940	740	710	1.91	0.00	0.00	0.00	0.01	0.00
950	740	730	20.60	0.01	0.00	0.00	0.13	0.01
960	750	740	35.75	0.05	0.00	0.00	0.23	0.04
970	600	750	103.85	0.09	0.00	0.00	0.66	0.28
980	760	770	-12.26	0.03	0.00	0.00	0.14	0.02
990	750	770	51.66	0.02	0.00	0.00	0.33	0.08
1000	760	740	3.20	0.00	0.00	0.00	0.02	0.00
1010	780	760	12.30	0.00	0.00	0.00	0.08	0.01
1020	790	760	-9.02	0.01	0.00	0.00	0.10	0.01
1030	790	730	7.81	0.00	0.00	0.00	0.05	0.00
1040	800	790	0.13	0.00	0.00	0.00	0.00	0.00
1050	780	800	19.89	0.01	0.00	0.00	0.13	0.01
1060	770	780	22.97	0.02	0.00	0.00	0.15	0.02
1070	810	600	-15.58	0.00	0.00	0.00	0.04	0.00
1080	820	810	32.68	0.02	0.00	0.00	0.21	0.03
1090	820	700	47.07	0.04	0.00	0.00	0.30	0.06
1100	830	810	-40.01	0.01	0.00	0.00	0.11	0.01
1110	830	840	72.12	0.07	0.00	0.00	0.46	0.14
1120	840	850	50.61	0.02	0.00	0.00	0.32	0.07
1130	850	860	55.69	0.02	0.00	0.00	0.36	0.09
1140	860	870	28.62	0.03	0.00	0.00	0.18	0.03
1150	870	800	-11.52	0.00	0.00	0.00	0.07	0.00
1160	860	780	21.57	0.01	0.00	0.00	0.14	0.01
1170	730	880	34.35	0.01	0.00	0.00	0.22	0.04
1180	880	890	14.79	0.00	0.00	0.00	0.09	0.01
1190	890	900	4.09	0.00	0.00	0.00	0.03	0.00
1200	910	890	-9.35	0.02	0.00	0.00	0.11	0.01

1210	880	920	19.56	0.01	0.00	0.00	0.12	0.01
1220	910	920	-16.81	0.00	0.00	0.00	0.11	0.01
1230	930	910	-23.41	0.03	0.00	0.00	0.15	0.02
1240	870	930	33.29	0.05	0.00	0.00	0.21	0.03
1250	940	930	-52.61	0.07	0.00	0.00	0.34	0.08
1260	950	940	-44.36	0.04	0.00	0.00	0.28	0.06
1270	950	960	-43.97	0.05	0.00	0.00	0.28	0.06
1280	960	970	-48.06	0.07	0.00	0.00	0.31	0.07
1290	970	980	4.09	0.00	0.00	0.00	0.03	0.00
1300	970	990	-64.50	0.15	0.00	0.00	0.41	0.11
1310	850	1810	-7.83	0.00	0.00	0.00	0.05	0.00
1320	1000	830	34.86	0.01	0.00	0.00	0.10	0.01
1330	1010	1000	400.69	0.62	0.00	0.00	1.14	0.47
1340	820	1020	-98.94	0.25	0.00	0.00	0.63	0.25
1350	1030	1010	-135.97	0.24	0.00	0.00	0.87	0.45
1360	1020	1030	-114.03	0.11	0.00	0.00	0.73	0.33
1370	1040	990	-294.49	0.38	0.00	0.00	0.84	0.26
1380	1040	1050	50.07	0.15	0.00	0.00	0.32	0.07
1390	1050	1060	21.29	0.01	0.00	0.00	0.14	0.01
1400	1060	1070	-25.33	0.01	0.00	0.00	0.16	0.02
1410	1070	1080	-20.86	0.00	0.00	0.00	0.13	0.01
1420	1080	1090	-5.45	0.00	0.00	0.00	0.03	0.00
1430	1090	1100	-17.79	0.01	0.00	0.00	0.11	0.01
1440	1110	1120	-78.73	0.11	0.00	0.00	0.50	0.16
1450	1080	1110	-22.25	0.01	0.00	0.00	0.14	0.02
1460	1130	1070	18.16	0.01	0.00	0.00	0.12	0.01
1470	1130	1110	-29.10	0.01	0.00	0.00	0.19	0.03
1480	1110	1100	21.88	0.00	0.00	0.00	0.14	0.02
1490	1120	950	-88.33	0.12	0.00	0.00	0.56	0.20
1500	1010	240	-577.94	0.96	0.00	0.00	1.64	0.92
1510	240	1140	739.31	0.40	0.00	0.00	2.10	1.45
1520	1140	1150	155.48	0.49	0.00	0.00	0.99	0.58
1530	1160	1010	-41.28	0.04	0.00	0.00	0.26	0.05
1540	1160	1150	-26.25	0.11	0.00	0.00	0.30	0.09
1550	1170	1160	-59.27	0.03	0.00	0.00	0.38	0.10
1560	1180	1170	11.81	0.03	0.00	0.00	0.13	0.02
1570	1150	1180	120.98	0.12	0.00	0.00	0.77	0.37
1580	1190	1170	-62.84	0.29	0.00	0.00	0.40	0.11
1590	1180	1190	94.08	0.32	0.00	0.00	0.60	0.23
1600	1190	1200	136.38	0.61	0.00	0.00	0.87	0.46
1610	1200	1210	-70.08	0.34	0.00	0.00	0.45	0.13
1620	1220	1210	546.87	0.29	0.00	0.00	1.55	0.83
1630	1140	1220	582.49	0.91	0.00	0.00	1.65	0.93
1640	1230	1240	-222.49	0.28	0.00	0.00	0.63	0.16
1650	1240	1040	-226.59	0.16	0.00	0.00	0.64	0.16
1660	1210	1250	458.94	0.80	0.00	0.00	1.30	0.60
1670	1250	1230	20.17	0.04	0.00	0.00	0.13	0.01
1680	1260	1250	-264.41	0.55	0.00	0.00	0.75	0.22
1690	1200	1260	179.03	1.02	0.00	0.00	1.14	0.76
1700	1270	1260	-398.23	0.60	0.00	0.00	1.13	0.46
1710	1280	1270	-46.17	0.16	0.00	0.00	0.29	0.06
1720	1280	1290	24.24	0.04	0.00	0.00	0.28	0.08
1730	1300	1290	14.67	0.08	0.00	0.00	0.17	0.03
1740	1300	1310	-227.01	0.05	0.00	0.00	0.64	0.16
1750	1310	1270	-331.53	0.07	0.00	0.00	0.94	0.33
1760	1320	1310	-103.17	0.07	0.00	0.00	0.66	0.27
1770	1330	1300	-195.90	0.03	0.00	0.00	0.56	0.12
1780	1340	1330	-22.36	0.02	0.00	0.00	0.25	0.07
1790	1320	1340	37.00	0.02	0.00	0.00	0.24	0.04
1800	1350	1320	-28.06	0.01	0.00	0.00	0.18	0.02
1810	1360	1350	-23.97	0.01	0.00	0.00	0.15	0.02
1820	1370	1360	-17.12	0.01	0.00	0.00	0.11	0.01
1830	1380	1370	-7.53	0.00	0.00	0.00	0.05	0.00
1840	1380	1320	-28.52	0.03	0.00	0.00	0.18	0.03
1850	1390	1380	-15.52	0.04	0.00	0.00	0.18	0.03
1860	1390	1400	-16.39	0.01	0.00	0.00	0.10	0.01
1870	1340	1400	42.92	0.03	0.00	0.00	0.27	0.05

1880	1410	1330	-168.04	0.02	0.00	0.00	0.48	0.09
1890	1420	1410	-132.43	0.02	0.00	0.00	0.38	0.06
1900	1400	1420	-25.46	0.01	0.00	0.00	0.16	0.02
1910	1400	1430	36.91	0.01	0.00	0.00	0.24	0.04
1920	1430	1440	11.78	0.00	0.00	0.00	0.08	0.00
1930	1440	1450	4.93	0.00	0.00	0.00	0.06	0.00
1940	1430	1450	19.63	0.01	0.00	0.00	0.13	0.01
1950	1450	1460	12.22	0.00	0.00	0.00	0.08	0.01
1960	1470	1460	21.62	0.01	0.00	0.00	0.14	0.02
1970	1470	1480	-28.46	0.00	0.00	0.00	0.08	0.00
1980	1480	1490	-41.59	0.00	0.00	0.00	0.12	0.01
1990	1490	1500	-83.33	0.01	0.00	0.00	0.24	0.03
2000	1500	1420	-102.87	0.00	0.00	0.00	0.29	0.04
2010	1460	1510	26.99	0.01	0.00	0.00	0.17	0.02
2020	1520	1510	-0.04	0.00	0.00	0.00	0.00	0.00
2030	1510	1530	16.02	0.01	0.00	0.00	0.10	0.01
2040	1530	1520	-7.26	0.01	0.00	0.00	0.08	0.01
2050	1520	1390	-16.82	0.02	0.00	0.00	0.19	0.04
2060	1480	1540	0.79	0.00	0.00	0.00	0.01	0.00
2070	1550	1540	-13.52	0.01	0.00	0.00	0.15	0.03
2080	1560	1550	-3.20	0.00	0.00	0.00	0.04	0.00
2090	1570	1560	15.62	0.02	0.00	0.00	0.18	0.03
2100	1290	1570	15.63	0.02	0.00	0.00	0.18	0.03
2110	1550	1490	-12.96	0.02	0.00	0.00	0.08	0.01
2120	1500	1560	8.61	0.03	0.00	0.00	0.10	0.01
2130	1570	1410	-21.93	0.04	0.00	0.00	0.14	0.02
2140	1580	1540	53.85	0.41	0.00	0.00	0.34	0.08
2150	1590	1580	20.17	0.03	0.00	0.00	0.13	0.01
2160	1600	1580	61.11	0.26	0.00	0.00	0.39	0.10
2170	1610	1590	69.48	0.33	0.00	0.00	0.44	0.13
2180	1610	1600	36.33	0.10	0.00	0.00	0.23	0.04
2190	1250	1610	133.24	0.59	0.00	0.00	0.85	0.44
2200	1620	1600	43.97	0.15	0.00	0.00	0.28	0.06
2210	1620	1630	-63.16	0.29	0.00	0.00	0.40	0.11
2220	1630	1640	-71.41	0.05	0.00	0.00	0.46	0.14
2230	1640	1650	-87.84	0.05	0.00	0.00	0.56	0.20
2240	1660	1650	-31.91	0.02	0.00	0.00	0.20	0.03
2250	1670	1660	-25.06	0.03	0.00	0.00	0.16	0.02
2260	1680	1670	-11.38	0.00	0.00	0.00	0.07	0.00
2270	1690	1680	33.84	0.05	0.00	0.00	0.22	0.03
2280	1650	1690	7.74	0.00	0.00	0.00	0.05	0.00
2290	1700	1690	35.70	0.01	0.00	0.00	0.23	0.04
2300	1710	1700	-1.36	0.00	0.00	0.00	0.02	0.00
2310	1720	1640	-15.09	0.01	0.00	0.00	0.10	0.01
2320	1650	1730	-128.83	0.02	0.00	0.00	0.37	0.06
2330	1730	1740	-147.36	0.03	0.00	0.00	0.42	0.07
2340	1730	1700	14.44	0.01	0.00	0.00	0.16	0.03
2350	1750	1700	32.21	0.01	0.00	0.00	0.21	0.03
2360	1750	1740	-21.55	0.03	0.00	0.00	0.24	0.06
2370	1710	1750	-19.16	0.01	0.00	0.00	0.12	0.01
2380	1740	1230	-174.41	0.06	0.00	0.00	0.49	0.10
2390	1760	1750	38.08	0.02	0.00	0.00	0.24	0.04
2400	1230	1760	58.67	0.06	0.00	0.00	0.37	0.10
2410	1770	1830	-4.09	0.00	0.00	0.00	0.05	0.00
2420	1680	1780	32.87	0.04	0.00	0.00	0.21	0.03
2430	1060	1790	31.53	0.04	0.00	0.00	0.20	0.03
2440	1050	1800	16.44	0.01	0.00	0.00	0.10	0.01
2450	1810	1820	-14.67	0.01	0.00	0.00	0.17	0.03
2460	840	1820	20.17	0.01	0.00	0.00	0.13	0.01
2470	990	1000	-361.74	0.04	0.00	0.00	1.03	0.39
2480	1760	1830	12.34	0.01	0.00	0.00	0.08	0.01
2490-TK	130	0	-1323.35	0.04	0.00	0.00	3.75	4.26
2500-TK	20	0	-1294.49	0.04	0.00	0.00	3.67	4.09

J U N C T I O N N O D E R E S U L T S

JUNCTION NUMBER	JUNCTION TITLE	EXTERNAL DEMAND (gpm)	HYDRAULIC GRADE (ft)	JUNCTION ELEVATION (ft)	PRESSURE HEAD (ft)	JUNCTION PRESSURE (psi)
10-1		0.00	13.16	10.00	3.16	1.37
20-1		0.00	13.28	10.00	3.28	1.42
30-1		0.00	13.16	10.00	3.16	1.37
40-1		0.00	131.05	10.00	121.05	52.45
50-1		0.00	131.05	10.00	121.05	52.45
60-1		0.00	12.71	10.00	2.71	1.17
70-1		0.00	131.35	10.00	121.35	52.59
80-1		0.00	13.15	10.00	3.15	1.37
90-1		0.00	131.07	10.00	121.07	52.46
100-1		0.00	13.13	10.00	3.13	1.36
110-1		0.00	131.07	10.00	121.07	52.46
120-1		0.00	130.23	10.00	120.23	52.10
130-1		0.00	23.34	10.00	13.34	5.78
140-1		0.00	22.42	10.00	12.42	5.38
150-1		0.00	22.00	10.00	12.00	5.20
160-1		0.00	130.51	10.00	120.51	52.22
170-1		0.00	130.09	10.00	120.09	52.04
180-1		0.00	22.42	10.00	12.42	5.38
190-1		0.00	130.09	10.00	120.09	52.04
200-1		0.00	22.42	10.00	12.42	5.38
210-1		0.00	130.09	10.00	120.09	52.04
220-1		0.00	22.39	10.00	12.39	5.37
230-1		6.11	130.12	10.00	120.12	52.05
240-1		0.00	129.18	10.00	119.18	51.64
250-1		19.19	123.67	10.00	113.67	49.26
260-1		515.09	115.52	10.00	105.52	45.72
270-1		23.28	125.55	10.00	115.55	50.07
280-1		15.09	125.82	10.00	115.82	50.19
290-1		23.28	126.89	10.00	116.89	50.65
300-1		75.40	127.62	10.00	117.62	50.97
310-1		35.62	127.91	10.00	117.91	51.09
320-1		26.03	128.63	10.00	118.63	51.41
330-1		6.84	128.86	10.00	118.86	51.51
340-1		12.34	128.39	10.00	118.39	51.30
350-1		5.50	128.19	10.00	118.19	51.22
360-1		5.50	128.18	10.00	118.18	51.21
370-1		9.59	128.18	10.00	118.18	51.21
380-1		2.75	128.19	10.00	118.19	51.21
390-1		6.84	128.18	10.00	118.18	51.21
400-1		9.59	128.18	10.00	118.18	51.21
410-1		4.09	128.18	10.00	118.18	51.21
420-1		4.09	128.14	10.00	118.14	51.20
430-1		6.84	128.36	10.00	118.36	51.29
440-1		2.75	128.44	10.00	118.44	51.33
450-1		10.94	128.12	10.00	118.12	51.18
460-1		15.09	128.06	10.00	118.06	51.16
470-1		8.25	127.97	10.00	117.97	51.12
480-1		8.25	127.95	10.00	117.95	51.11
490-1		6.84	128.06	10.00	118.06	51.16
500-1		6.84	128.07	10.00	118.07	51.16
510-1		10.94	128.06	10.00	118.06	51.16
520-1		26.03	127.79	10.00	117.79	51.04
530-1		19.19	127.74	10.00	117.74	51.02
540-1		37.03	127.68	10.00	117.68	50.99
550-1		24.68	127.65	10.00	117.65	50.98
560-1		5.50	127.68	10.00	117.68	50.99
570-1		21.93	127.69	10.00	117.69	51.00
580-1		39.72	127.47	10.00	117.47	50.90
590-1		21.93	127.46	10.00	117.46	50.90
600-1		10.94	127.60	10.00	117.60	50.96
610-1		12.34	127.58	10.00	117.58	50.95
620-1		26.03	127.56	10.00	117.56	50.94
630-1		15.09	127.56	10.00	117.56	50.94

640-1	4.09	127.57	10.00	117.57	50.95
650-1	10.94	127.57	10.00	117.57	50.95
660-1	12.34	127.56	10.00	117.56	50.94
670-1	8.25	127.57	10.00	117.57	50.95
680-1	5.50	127.57	10.00	117.57	50.95
690-1	13.69	127.57	10.00	117.57	50.95
700-1	4.09	127.58	10.00	117.58	50.95
710-1	8.25	127.46	10.00	117.46	50.90
720-1	6.84	127.45	10.00	117.45	50.90
730-1	6.84	127.45	10.00	117.45	50.90
740-1	16.44	127.46	10.00	117.46	50.90
750-1	16.44	127.51	10.00	117.51	50.92
760-1	12.34	127.46	10.00	117.46	50.90
770-1	16.44	127.49	10.00	117.49	50.91
780-1	12.34	127.46	10.00	117.46	50.90
790-1	1.34	127.45	10.00	117.45	50.90
800-1	8.25	127.45	10.00	117.45	50.90
810-1	8.25	127.60	10.00	117.60	50.96
820-1	19.19	127.62	10.00	117.62	50.97
830-1	2.75	127.59	10.00	117.59	50.96
840-1	1.34	127.52	10.00	117.52	50.92
850-1	2.75	127.50	10.00	117.50	50.91
860-1	5.50	127.48	10.00	117.48	50.91
870-1	6.84	127.45	10.00	117.45	50.89
880-1	0.00	127.44	10.00	117.44	50.89
890-1	1.34	127.44	10.00	117.44	50.89
900-1	4.09	127.44	10.00	117.44	50.89
910-1	2.75	127.42	10.00	117.42	50.88
920-1	2.75	127.43	10.00	117.43	50.88
930-1	4.09	127.40	10.00	117.40	50.87
940-1	8.25	127.33	10.00	117.33	50.84
950-1	0.00	127.29	10.00	117.29	50.83
960-1	4.09	127.34	10.00	117.34	50.85
970-1	12.34	127.41	10.00	117.41	50.88
980-1	4.09	127.41	10.00	117.41	50.88
990-1	2.75	127.56	10.00	117.56	50.94
1000-1	4.09	127.60	10.00	117.60	50.96
1010-1	0.00	128.22	10.00	118.22	51.23
1020-1	15.09	127.87	10.00	117.87	51.08
1030-1	21.93	127.98	10.00	117.98	51.12
1040-1	17.84	127.18	10.00	117.18	50.78
1050-1	12.34	127.04	10.00	117.04	50.72
1060-1	15.09	127.03	10.00	117.03	50.71
1070-1	13.69	127.04	10.00	117.04	50.72
1080-1	6.84	127.05	10.00	117.05	50.72
1090-1	12.34	127.05	10.00	117.05	50.72
1100-1	4.09	127.06	10.00	117.06	50.72
1110-1	5.50	127.06	10.00	117.06	50.73
1120-1	9.59	127.17	10.00	117.17	50.77
1130-1	10.94	127.05	10.00	117.05	50.72
1140-1	1.34	128.78	10.00	118.78	51.47
1150-1	8.25	128.29	10.00	118.29	51.26
1160-1	8.25	128.18	10.00	118.18	51.21
1170-1	8.25	128.14	10.00	118.14	51.20
1180-1	15.09	128.17	10.00	118.17	51.21
1190-1	20.53	127.85	10.00	117.85	51.07
1200-1	27.43	127.24	10.00	117.24	50.81
1210-1	17.84	127.58	10.00	117.58	50.95
1220-1	35.62	127.88	10.00	117.88	51.08
1230-1	9.59	126.74	10.00	116.74	50.59
1240-1	4.09	127.02	10.00	117.02	50.71
1250-1	41.12	126.78	10.00	116.78	50.60
1260-1	45.21	126.23	10.00	116.23	50.37
1270-1	20.53	125.63	10.00	115.63	50.11
1280-1	21.93	125.47	10.00	115.47	50.04
1290-1	23.28	125.43	10.00	115.43	50.02
1300-1	16.44	125.51	10.00	115.51	50.05

1310-1	1.34	125.56	10.00	115.56	50.07
1320-1	9.59	125.48	10.00	115.48	50.04
1330-1	5.50	125.48	10.00	115.48	50.04
1340-1	16.44	125.46	10.00	115.46	50.03
1350-1	4.09	125.48	10.00	115.48	50.04
1360-1	6.84	125.47	10.00	115.47	50.04
1370-1	9.59	125.46	10.00	115.46	50.03
1380-1	20.53	125.46	10.00	115.46	50.03
1390-1	15.09	125.42	10.00	115.42	50.01
1400-1	15.09	125.43	10.00	115.43	50.02
1410-1	13.69	125.46	10.00	115.46	50.03
1420-1	4.09	125.43	10.00	115.43	50.02
1430-1	5.50	125.42	10.00	115.42	50.01
1440-1	6.84	125.41	10.00	115.41	50.01
1450-1	12.34	125.41	10.00	115.41	50.01
1460-1	6.84	125.41	10.00	115.41	50.01
1470-1	6.84	125.41	10.00	115.41	50.01
1480-1	12.34	125.41	10.00	115.41	50.01
1490-1	28.78	125.42	10.00	115.42	50.01
1500-1	10.94	125.43	10.00	115.43	50.02
1510-1	10.94	125.40	10.00	115.40	50.01
1520-1	9.59	125.40	10.00	115.40	50.01
1530-1	23.28	125.39	10.00	115.39	50.00
1540-1	41.12	125.41	10.00	115.41	50.01
1550-1	23.28	125.40	10.00	115.40	50.01
1560-1	27.43	125.40	10.00	115.40	50.01
1570-1	21.93	125.42	10.00	115.42	50.01
1580-1	27.43	125.83	10.00	115.83	50.19
1590-1	49.31	125.86	10.00	115.86	50.21
1600-1	19.19	126.09	10.00	116.09	50.31
1610-1	27.43	126.19	10.00	116.19	50.35
1620-1	19.19	126.24	10.00	116.24	50.37
1630-1	8.25	126.53	10.00	116.53	50.50
1640-1	1.34	126.59	10.00	116.59	50.52
1650-1	1.34	126.63	10.00	116.63	50.54
1660-1	6.84	126.61	10.00	116.61	50.53
1670-1	13.69	126.58	10.00	116.58	50.52
1680-1	12.34	126.58	10.00	116.58	50.52
1690-1	9.59	126.63	10.00	116.63	50.54
1700-1	9.59	126.65	10.00	116.65	50.55
1710-1	20.53	126.65	10.00	116.65	50.55
1720-1	15.09	126.58	10.00	116.58	50.52
1730-1	4.09	126.65	10.00	116.65	50.55
1740-1	5.50	126.68	10.00	116.68	50.56
1750-1	8.25	126.66	10.00	116.66	50.55
1760-1	8.25	126.68	10.00	116.68	50.56
1770-1	4.09	126.66	10.00	116.66	50.55
1780-1	32.87	126.53	10.00	116.53	50.50
1790-1	31.53	126.99	10.00	116.99	50.70
1800-1	16.44	127.03	10.00	117.03	50.71
1810-1	6.84	127.50	10.00	117.50	50.92
1820-1	5.50	127.51	10.00	117.51	50.92
1830-1	8.25	126.67	10.00	116.67	50.56

S U M M A R Y O F I N F L O W S A N D O U T F L O W S

(+) INFLOWS INTO THE SYSTEM FROM BOUNDARY NODES
(-) OUTFLOWS FROM THE SYSTEM INTO BOUNDARY NODES

PIPE NUMBER	FLOWRATE (gpm)
2490	1323.35
2500	1294.49

NET SYSTEM INFLOW = 2617.85
NET SYSTEM OUTFLOW = 0.00
NET SYSTEM DEMAND = 2617.85

T A N K S T A T U S R E P O R T (time = 2.0000 hours)

TANK NUMBER (*)	PIPE NUMBER	NET FLOW (gpm)	WATER ELEVATION (ft)	TANK DEPTH (ft)	TANK VOLUME (gal)	TANK VOLUME (%)	TANK STATUS	PROJECTED DEPTH (ft)
1-1	2500	-594.49	13.32	3.32	13814.	13.8	DRAINING	0.00
2-1	2490	-623.35	23.38	13.38	222518.	55.8	DRAINING	12.51

* TANK TYPE: 1 - CONSTANT DIAMETER 2 - VARIABLE AREA

**** CYBERNET SIMULATION COMPLETED ****

EPS PRESSURE SUMMARY

SELECTED JUNCTION NODE PRESSURE SUMMARY

JUNCTION NODE	MAXIMUM PRESSURE	TIME	MINIMUM PRESSURE	TIME
1830	55.890	0.000	50.556	2.000

DATE: 3/28/1996
TIME: 12:47:10

Appendix E

Sample Plumbing Code

Sample Plumbing Code Ordinance

ORDINANCE NO. _____

AN ORDINANCE OF . . TEXAS, AMENDING ORDINANCE , THE PLUMBING ORDINANCE BY AMENDING BY ADDING THERETO A NEW PARAGRAPH (I) IN ORDER TO PROVIDE A WATER CONSERVATION PROGRAM. PROVIDING A REPEALING CLAUSE; PROVIDING A SEVERABILITY CLAUSE; PROVIDING PENALTIES FOR VIOLATION OF THIS ORDINANCE NOT TO EXCEED THE SUM OF FIVE HUNDRED DOLLARS ($500.00) FOR EACH OFFENSE; AND DECLARING AN EFFECTIVE DATE.

WHEREAS; In order to comply with state agency requirements it is necessary to enact a water conservation plan, therefore;

BE IT ORDAINED BY THE . TEXAS:

SECTION 1 Ordinance _, is hereby amended by adding thereto a new paragraph (I) so that reads as follows:

(I) In order to provide a water conservation program the following limitations shall be mandatory:

1.	Tank-type toilets	No more than 3.5 gallons per flush
2.	Flush valve toilets	No more than 3.0 gallons per flush
3.	Tank-type urinals	No more than 3.0 gallons per flush
4.	Shower heads	No more than 3.0 gallons per minute
5.	Lavatory and kitchen faucets	No more than 2.75 gallons per minute
6.	All hot water lines	Insulated
7.	Swimming pools	New pools must have re-circulating filtration equipment

SECTION 2 That all ordinances of the in conflict with the provisions of this ordinance be, and the same are hereby, repealed and all other ordinances of the not in conflict with provisions of this

Sample Water Conservation and Drought Contingency Plan Resolution

RESOLUTION NO.

A RESOLUTION OF OF TEXAS ADOPTING THE DRAFT WATER CONSERVATION AND DROUGHT CONTINGENCY PROGRAM

WHEREAS, is undertaking planning efforts to meet the demands of its water customers for the present and future into the 21st century; and

WHEREAS, has developed a utility system capital improvements program to expand and upgrade wastewater treatment plant capacity, wastewater collection system and water distribution and storage facilities; and

WHEREAS, has entered into a contract with the to upgrade its wastewater treatment plant; and

WHEREAS, believes it is in the long-term best interests of the community to conserve potable water as well as use its water supply resources more efficiently; and

WHEREAS, the Texas Water Development Board has reviewed the Water Conservation and Drought Contingency Program; and

WHEREAS, the Texas Water Development Board loan requirements stipulate that uses these funds must have such a program; and

WHEREAS, the objective of the Water Conservation and Drought Contingency Program is to reduce the quantity required for water use activities through efficient water use practices; and

WHEREAS, the Drought Contingency Program provides procedures for voluntary and mandatory actions to be placed into effect to temporarily reduce the demand placed on the available water system during a water shortage emergency, and;

WHEREAS, has also developed with trigger conditions for mild, moderate, severe and critical emergency conditions;

NOW, THEREFORE, BE IT RESOLVED BY OF THE

SECTION 1 That the approves the Draft Water Conservation and Drought Contingency Program that is to be formally submitted to the Texas Water Development Board by project engineer, and reviewed by the Staff so that funds may be released for expansion of the wastewater treatment plant

DULY PASSED BY THE OF TEXAS
ON THE DAY OF

SEAL

ATTEST:

SECTION 3 Should any paragraph, sentence, subdivision, clause, phrase or section of this ordinance by adjudged or held to be unconstitutional, illegal or invalid, the same shall not affect the validity of this ordinance as a whole or any part of provision thereof other than the part so decided to be invalid, illegal or unconstitutional and shall not affect the validity of the remaining portions of this ordinance.

SECTION 4 Any person, firm or corporation violating any of the provisions or terms of this ordinance shall be subject to a fine not to exceed the sum of Five Hundred Dollars ($500.00) for each offense, and each day such violation shall continue to exist shall constitute a separate offense.

SECTION 5 This ordinance shall take effect immediately from and after its passage and publication of its caption, as the law in such cases provides.

DULY PASSED BY THE OF TEXAS,
THIS THE DAY OF , 19 .

_____

ATTEST:

_____

SEAL

Sample Water Conservation and Drought Contingency Program Ordinance

ORDINANCE NO. _____

AN ORDINANCE OF ADOPTING A WATER CONSERVATION AND DROUGHT CONTINGENCY PROGRAM; PROVIDING FOR THE REPEAL OF ALL ORDINANCES IN CONFLICT; PROVIDING A SEVERABILITY CLAUSE; PROVIDING FOR A PENALTY OF FINE NOT TO EXCEED THE SUM OF FIVE HUNDRED DOLLARS ($500.00) FOR EACH OFFENSE; AND PROVIDING FOR AN EFFECTIVE DATE.

WHEREAS, it is necessary that a Water Conservation and Drought Contingency Program be adopted by and

WHEREAS, such a program has been formally submitted to the Texas Water Development Board for approval in connection with a utility system capital improvements program to expand and upgrade wastewater treatment plant capacity, wastewater collection system, and water distribution and storage facilities; and

WHEREAS, believes that it is in the best interest of the to adopt such program; NOW, THEREFORE,

BE IT ORDAINED BY THE TEXAS:

SECTION 1.

That the Water Conservation and Drought Contingency Program attached and made part hereof for all purposes be, and the same is hereby, adopted as the official policy

SECTION 2.

That all ordinances in conflict with the provisions of this ordinance be, and the same are hereby, repealed and all other ordinances not in conflict with the provisions of this ordinance shall remain in full force and effect.

SECTION 3.

Should any paragraph, sentence, subdivision, clause, phrase or section of this ordinance be adjudged or held to be unconstitutional, illegal or invalid, the same shall not affect the validity of this ordinance as a whole or any part or provision thereof, other than the part so declared to be invalid, illegal or unconstitutional.

SECTION 4.

Any person, firm or corporation violating any of the provisions of the mandatory water use restrictions which have been formally initiated and contained in

the Water Conservation and Drought Contingency Program as adopted hereby shall be deemed guilty of a misdemeanor and, upon conviction in the Municipal Court of the . Texas, shall be punished by a fine not to exceed the sum of Five Hundred Dollars ($500.00) for each offense, and each and every day any such violation shall continue shall be deemed to constitute a separate offense.

SECTION 5.

This ordinance shall take effect immediately from and after its passage and the publication of the caption, as the law and charter in such cases provide.

DULY PASSED by Texas, on the _____ day of _____, 19 .

APPROVED:

_____

SEAL

ATTEST:

_____

APPROVED AS TO FORM:

_____

Appendix F

Self Reporting Monthly Effluent Reports

TEXAS NATURAL RESOURCE CONSERVATION COMMISSION

P.O. BOX 13087 – AUSTIN, TEXAS 78711-3087

MONTHLY EFFLUENT REPORT

FORT BEND CO. MUD 023
1001 FANNIN, 2800 1ST CITY TOWER
HOUSTON, TX 77002-6760

SYS	PERMIT NUMBER	SET
40B	WQ0011999-001	2

YEAR	MO.	EID
95	01	7716

THIS REPORT TO BE USED FOR: OTFL 001

TNRCC COPY

PARAMETER		EFFLUENT CONDITION VALUE	UNITS	NO. EX.	FREQUENCY OF ANALYSIS		SAMPLE TYPE	
000035342 DISCHARGE	REPORTED	31	DAYS		01		01	
DAYS/MTH	PERMITTED				01	NA	01	NA
000045342 BYPASS	REPORTED	0	DAYS		01		01	
DAYS/MTH	PERMITTED				01	NA	01	NA
003101024 BOD5	REPORTED	5.250	MG/L	0	14		03	
DLY. AVG.	PERMITTED	10.000			14	1/WEEK	03	GRABPKLOAD
003101030 BOD5	REPORTED	13.000	MG/L	0	14		03	
D. GRAB	PERMITTED	35.000			14	1/WEEK	03	GRABPKLOAD
3102024 BOD5	REPORTED	2.219	LBS/DAY	0	14		03	
DLY. AVG.	PERMITTED	10.000			14	1/WEEK	03	GRABPKLOAD
004006080 PH	REPORTED	7.880	STD UNIT	0	14	1/WEEK	03	
MAXIMUM	PERMITTED	9.000			17	1/MONTH	03	GRABPKLOAD
004006081 PH	REPORTED	6.740	STD UNIT	0	14	1/WEEK	03	
MINIMUM	PERMITTED	6.000			17	1/MONTH	03	GRABPKLOAD
005301024 TSS	REPORTED	7.250	MG/L	0	14		03	
DLY. AVG.	PERMITTED	15.000			14	1/WEEK	03	GRABPKLOAD
005301030 TSS	REPORTED	13.000	MG/L	0	14		03	
IND. GRAB	PERMITTED	60.000			14	1/WEEK	03	GRABPKLOAD
005302024 TSS	REPORTED	2.723	LBS/DAY	0	14		03	
DLY. AVG.	PERMITTED	16.000			14	1/WEEK	03	GRABPKLOAD
500497339 WW BYPAS	REPORTED	0	MG		01		01	
TOTAL	PERMITTED				01	NA	01	NA
500507124 FLOW	REPORTED	0.06157	MGD	0	10		11	TOTALZ
DLY. AVG.	PERMITTED	0.12500			10	5/WEEK	12	INSTANT

I CERTIFY THAT I AM FAMILIAR WITH THE INFORMATION CONTAINED IN THIS REPORT AND THAT TO THE BEST OF MY KNOWLEDGE AND SUCH INFORMATION IS TRUE, COMPLETE AND ACCURATE	NAME	SIGNATURE	DATE
	GARY SYZEK		95 02 16
TELEPHONE NUMBER	PLANT OPERATOR	PLANT OPERATOR	YEAR MO. DAY
(713) 772 1970	JOHN D. BROCK	John D Brock	95 02 16
AREA CODE NUMBER	EXECUTIVE OFFICER	EXECUTIVE OFFICER	YEAR MO. DAY

TEXAS NATURAL RESOURCE CONSERVATION COMMISSION

P.O. BOX 13087 – AUSTIN, TEXAS 78711-3087

MONTHLY EFFLUENT REPORT

FORT BEND CO. MUD 023
1001 FANNIN, 2800 1ST CITY TOWER
HOUSTON, TX 77002-6760

40B	WQ0011999-001	2	95	01	7716
SYS	PERMIT NUMBER	SET	YEAR	MO.	EID

THIS REPORT TO BE USED FOR OTFL 001
SEE BACK FOR INSTRUSTION AND DEFINITIONS

TNRCC COPY

PARAMETER		EFFLUENT CONDITION VALUE	UNITS	NO. EX.	FREQUENCY OF ANALYSIS		SAMPLE TYPE	
500507150 FLOW	REPORTED	0.123	MGD		10		11	TOTALZ
DLY. MAX.	PERMITTED				10	5/WEEK	12	INSTANT
500611080 CL2 RES	REPORTED	2.700	MG/L	0	10		03	
MAXIMUM	PERMITTED	4.000			10	5/WEEK	03	GRABPKLOAD
500611081 CL2 RES	REPORTED	1.600	MG/L	0	10		03	
MINIMUM	PERMITTED	1.000			10	5/WEEK	03	GRABPKLOAD
NUMBER OF OPERATOR	REPORTED	097-54-0070	NUMBER		01		01	
C[illegible]TIFICATE	PERMITTED				01	NA	01	NA
[illegible]ATION	REPORTED	96-01-22	DATE		01		01	
C[illegible] OPERATOR CERTIFICATE	PERMITTED				01	NA	01	NA
GRADE OF OPERATOR CERTIFICATE	REPORTED	B	LETTER		01		01	
	PERMITTED				01	NA	01	NA
	REPORTED							
	PERMITTED							
	REPORTED							
	PERMITTED							
	REPORTED							
	PERMITTED							
	REPORTED							
	PERMITTED							
	REPORTED							
	PERMITTED							
	REPORTED							
	PERMITTED							
	REPORTED							
	PERMITTED							

I CERTIFY THAT I AM FAMILIAR WITH THE INFORMATION CONTAINED IN THIS REPORT AND THAT TO THE BEST OF MY KNOWLEDGE AND [illegible]CH INFORMATION IS TRUE, COMPLETE AND ACCURATE.

TELEPHONE NUMBER			NAME	SIGNATURE	DATE		
			GARY SYZEK		95	02	16
			PLANT OPERATOR	PLANT OPERATOR	YEAR	MO.	DAY
(713)	772	1970	JOHN D. BROCK		95	02	16
AREA CODE		NUMBER	EXECUTIVE OFFICER	EXECUTIVE OFFICER	YEAR	MO.	DAY

TEXAS NATURAL RESOURCE CONSERVATION COMMISSION

P.O. BOX 13087 – AUSTIN, TEXAS 78711-3087

MONTHLY EFFLUENT REPORT

FORT BEND CO. MUD 023
1001 FANNIN, 2800 1ST CITY TOWER
HOUSTON, TX 77002-6760

SYS	PERMIT NUMBER	SET	YEAR	MO.	EID
40B	WQ0011999-001	2	95	02	7716

THIS REPORT TO BE USED FOR: OTFL 001

TNRCC COPY

PARAMETER	EFFLUENT CONDITION	VALUE	UNITS	NO. EX.	FREQUENCY OF ANALYSIS		SAMPLE TYPE	
000035342 DISCHARGE DAYS/MTH	REPORTED	28	DAYS		01		01	
	PERMITTED				01	NA	01	NA
000045342 BYPASS DAYS/MTH	REPORTED	0	DAYS		01		01	
	PERMITTED				01	NA	01	NA
003101024 BOD5 DLY. AVG.	REPORTED	5.000	MG/L	0	14		03	
	PERMITTED	10.000			14	1/WEEK	03	GRABPKLOAD
003101030 BOD5 GRAB	REPORTED	17.000	MG/L	0	14		03	
	PERMITTED	35.000			14	1/WEEK	03	GRABPKLOAD
02024 DOD5 DLY. AVG.	REPORTED	6.973	LBS/DAY	0	14		03	
	PERMITTED	10.000			14	1/WEEK	03	GRABPKLOAD
004006080 PH MAXIMUM	REPORTED	7.960	STD UNIT	0	14	1/WEEK	03	
	PERMITTED	9.000			17	1/MONTH	03	GRABPKLOAD
004006081 PH MINIMUM	REPORTED	7.490	STD UNIT	0	14	1/WEEK	03	
	PERMITTED	6.000			17	1/MONTH	03	GRABPKLOAD
005301024 TSS DLY. AVG.	REPORTED	3.800	MG/L	0	14		03	
	PERMITTED	15.000			14	1/WEEK	03	GRABPKLOAD
005301030 TSS IND. GRAB	REPORTED	5.000	MG/L	0	14		03	
	PERMITTED	60.000			14	1/WEEK	03	GRABPKLOAD
005302024 TSS DLY. AVG.	REPORTED	2.780	LBS/DAY	0	14		03	
	PERMITTED	16.000			14	1/WEEK	03	GRABPKLOAD
500497339 WW BYPAS TOTAL	REPORTED	0	MG		01		01	
	PERMITTED				01	NA	01	NA
500507124 FLOW DLY. AVG.	REPORTED	0.05049	MGD	0	10		11	TOTALZ
	PERMITTED	0.12500			10	5/WEEK	12	INSTANT

I CERTIFY THAT I AM FAMILIAR WITH THE INFORMATION CONTAINED IN THIS REPORT AND THAT TO THE BEST OF MY KNOWLEDGE AND BELIEF SUCH INFORMATION IS TRUE, COMPLETE AND ACCURATE.

TELEPHONE NUMBER	NAME	SIGNATURE	DATE		
	GARY SYZEK		95	03	17
AREA CODE NUMBER	PLANT OPERATOR	PLANT OPERATOR	YEAR	MO.	DAY
(713) 772 1970	JOHN D. BROCK	John D Brock	95	03	17
AREA CODE NUMBER	EXECUTIVE OFFICER	EXECUTIVE OFFICER	YEAR	MO.	DAY

TEXAS NATURAL RESOURCE CONSERVATION COMMISSION

P.O. BOX 13087 – AUSTIN, TEXAS 78711-3087

MONTHLY EFFLUENT REPORT

FORT BEND CO. MUD 023
1001 FANNIN, 2800 1ST CITY TOWER
HOUSTON, TX 77002-6760

SYS	PERMIT NUMBER	SET	YEAR	MO.	EID
40B	WQ0011999-001	2	95	02	7716

THIS REPORT TO BE USED FOR OTFL 001
SEE BACK FOR INSTRUSTION AND DEFINITIONS

TNRCC COPY

PARAMETER		EFFLUENT CONDITION VALUE	UNITS	NO. EX.	FREQUENCY OF ANALYSIS		SAMPLE TYPE	
500507150 FLOW DLY. MAX.	REPORTED	0.136	MGD		10		11	TOTALZ
	PERMITTED				10	5/WEEK	12	INSTANT
500611080 CL2 RES MAXIMUM	REPORTED	2.800	MG/L	0	10		03	
	PERMITTED	4.000			10	5/WEEK	03	GRABPKLOAD
500611081 CL2 RES MINIMUM	REPORTED	1.100	MG/L	0	10		03	
	PERMITTED	1.000			10	5/WEEK	03	GRABPKLOAD
NUMBER OF OPERATOR C. TIFICATE	REPORTED	097-54-0070	NUMBER		01		01	
	PERMITTED				01	NA	01	NA
RATION C. OPERATOR CERTIFICATE	REPORTED	96-01-22	DATE		01		01	
	PERMITTED				01	NA	01	NA
GRADE OF OPERATOR CERTIFICATE	REPORTED	B	LETTER		01		01	
	PERMITTED				01	NA	01	NA
	REPORTED							
	PERMITTED							
	REPORTED							
	PERMITTED							
	REPORTED							
	PERMITTED							
	REPORTED							
	PERMITTED							
	REPORTED							
	PERMITTED							
	REPORTED							
	PERMITTED							

I CERTIFY THAT I AM FAMILIAR WITH THE INFORMATION CONTAINED IN THIS REPORT AND THAT TO THE BEST OF MY KNOWLEDGE AND [illegible] SUCH INFORMATION IS TRUE, COMPLETE AND ACCURATE.

TELEPHONE NUMBER	NAME	SIGNATURE	DATE		
	GARY SYZEK		95	03	17
	PLANT OPERATOR	PLANT OPERATOR	YEAR	MO.	DAY
(713) 772 1970	JOHN D. BROCK	John D Brock	95	03	17
AREA CODE NUMBER	EXECUTIVE OFFICER	EXECUTIVE OFFICER	YEAR	MO.	DAY

TEXAS NATURAL RESOURCE CONSERVATION COMMISSION

P.O. BOX 13087 - AUSTIN, TEXAS 78711-3087

MONTHLY EFFLUENT REPORT

FORT BEND CO. MUD 023
1001 FANNIN, 2800 1ST CITY TOWER
HOUSTON, TX 77002-6760

SYS	PERMIT NUMBER	SET	YEAR	MO.	EID
40B	WQ0011999-001	2	95	03	7716

THIS REPORT TO BE USED FOR OTFL 001

TNRCC COPY

PARAMETER	EFFLUENT CONDITION	VALUE	UNITS	NO. EX.	FREQUENCY OF ANALYSIS		SAMPLE TYPE	
000035342 DISCHARGE DAYS/MTH	REPORTED	31	DAYS		01		01	
	PERMITTED				01	NA	01	NA
000045342 BYPASS DAYS/MTH	REPORTED	0	DAYS		01		01	
	PERMITTED				01	NA	01	NA
003101024 BOD5 DLY. AVG.	REPORTED	8.000	MG/L	0	14		03	
	PERMITTED	10.000			14	1/WEEK	03	GRABPKLOAD
003101030 BOD5 IND. GRAB	REPORTED	14.000	MG/L	0	14		03	
	PERMITTED	35.000			14	1/WEEK	03	GRABPKLOAD
003302024 BOD5 DLY. AVG.	REPORTED	3.868	LBS/DAY	0	14		03	
	PERMITTED	10.000			14	1/WEEK	03	GRABPKLOAD
004006080 PH MAXIMUM	REPORTED	7.990	STD UNIT	0	14	1/WEEK	03	
	PERMITTED	9.000			17	1/MONTH	03	GRABPKLOAD
004006081 PH MINIMUM	REPORTED	6.890	STD UNIT	0	14	1/WEEK	03	
	PERMITTED	6.000			17	1/MONTH	03	GRABPKLOAD
005301024 TSS DLY. AVG.	REPORTED	11.000	MG/L	0	14		03	
	PERMITTED	15.000			14	1/WEEK	03	GRABPKLOAD
005301030 TSS IND. GRAB	REPORTED	17.000	MG/L	0	14		03	
	PERMITTED	60.000			14	1/WEEK	03	GRABPKLOAD
005302024 TSS DLY. AVG.	REPORTED	6.424	LBS/DAY	0	14		03	
	PERMITTED	16.000			14	1/WEEK	03	GRABPKLOAD
500497339 WW BYPAS TOTAL	REPORTED	0	MG		01		01	
	PERMITTED				01	NA	01	NA
500507124 FLOW DLY. AVG.	REPORTED	0.06165	MGD	0	10		11	TOTALZ
	PERMITTED	0.12500			10	5/WEEK	12	INSTANT

I CERTIFY THAT I AM FAMILIAR WITH THE INFORMATION CONTAINED IN THIS REPORT AND THAT TO THE BEST OF MY KNOWLEDGE AND BELIEF SUCH INFORMATION IS TRUE, COMPLETE AND ACCURATE.	NAME	SIGNATURE	DATE
TELEPHONE NUMBER	GARY SYZEK	Gary Syzek	95 04 17
	PLANT OPERATOR	PLANT OPERATOR	YEAR MO. DAY
(713) 772 1970	JOHN D. BROCK	John D. Brock	95 04 17
AREA CODE NUMBER	EXECUTIVE OFFICER	EXECUTIVE OFFICER	YEAR MO. DAY

TEXAS NATURAL RESOURCE CONSERVATION COMMISSION

P.O. BOX 13087 – AUSTIN, TEXAS 78711-3087

MONTHLY EFFLUENT REPORT

FORT BEND CO. MUD 023
1001 FANNIN, 2800 1ST CITY TOWER
HOUSTON, TX 77002-6760

40B	WQ0011999-001	2
SYS	PERMIT NUMBER	SET

95	03	7716
YEAR	MO.	EID

THIS REPORT TO BE USED FOR OTFL 001

TNRCC COPY

PARAMETER		EFFLUENT CONDITION VALUE	UNITS	NO. EX.	FREQUENCY OF ANALYSIS		SAMPLE TYPE	
500507150 FLOW DLY. MAX.	REPORTED	0.133	MGD		10		11	TOTALZ
	PERMITTED				10	5/WEEK	12	INSTANT
500611080 CL2 RES MAXIMUM	REPORTED	2.900	MG/L	0	10		03	
	PERMITTED	4.000			10	5/WEEK	03	GRABPKLOAD
500611081 CL2 RES MINIMUM	REPORTED	1.400	MG/L	0	10		03	
	PERMITTED	1.000			10	5/WEEK	03	GRABPKLOAD
NUMBER OF OPERATOR CERTIFICATE	REPORTED	097-54-0070	NUMBER		01		01	
	PERMITTED				01	NA	01	NA
[illegible]RATION OPERATOR CERTIFICATE	REPORTED	96-01-22	DATE		01		01	
	PERMITTED				01	NA	01	NA
GRADE OF OPERATOR CERTIFICATE	REPORTED	B	LETTER		01		01	
	PERMITTED				01	NA	01	NA
	REPORTED							
	PERMITTED							
	REPORTED							
	PERMITTED							
	REPORTED							
	PERMITTED							
	REPORTED							
	PERMITTED							
	REPORTED							
	PERMITTED							
	REPORTED							
	PERMITTED							

I CERTIFY THAT I AM FAMILIAR WITH THE INFORMATION CONTAINED IN THIS REPORT AND THAT TO THE BEST OF MY KNOWLEDGE AND BELIEF SUCH INFORMATION IS TRUE, COMPLETE AND ACCURATE	NAME	SIGNATURE	DATE
TELEPHONE NUMBER	GARY SYZEK		95 04 17
	PLANT OPERATOR	PLANT OPERATOR	YEAR MO. DAY
(713) 772 1970	JOHN D. BROCK	John D Brock	95 04 17
AREA CODE NUMBER	EXECUTIVE OFFICER	EXECUTIVE OFFICER	YEAR MO. DAY

TEXAS NATURAL RESOURCE CONSERVATION COMMISSION

P.O BOX 13087 - AUSTIN, TEXAS 78711-3087

MONTHLY EFFLUENT REPORT

FORT BEND CO. MUD 023
1001 FANNIN, 2800 1ST CITY TOWER
HOUSTON, TX 77002-6760

SYS	PERMIT NUMBER	SET
40B	WQ0011999-001	2

YEAR	MO.	EID
95	04	7716

THIS REPORT TO BE USED FOR: OTFL 001

TNRCC COPY

PARAMETER		EFFLUENT CONDITION VALUE	UNITS	NO. EX.	FREQUENCY OF ANALYSIS		SAMPLE TYPE	
000035342 DISCHARGE DAYS/MTH	REPORTED	30	DAYS		01		01	
	PERMITTED				01	NA	01	NA
000045342 UNAU / DIS DAYS/MTH	REPORTED	0	DAYS		01		01	
	PERMITTED				01	NA	01	NA
003101024 BOD5 DLY. AVG.	REPORTED	6.000	MG/L	0	14		03	
	PERMITTED	10.000			14	1/WEEK	03	GRABPKLOAD
003101030 BOD5 GRAB	REPORTED	9.000	MG/L	0	14		03	
	PERMITTED	35.000			14	1/WEEK	03	GRABPKLOAD
02024 BOD5 DLY. AVG.	REPORTED	2.383	LBS/DAY	0	14		03	
	PERMITTED	10.000			14	1/WEEK	03	GRABPKLOAD
004006080 PH MAXIMUM	REPORTED	8.850	STD UNIT	0	14	1/WEEK	03	
	PERMITTED	9.000			17	1/MONTH	03	GRABPKLOAD
004006081 PH MINIMUM	REPORTED	7.160	STD UNIT	0	14	1/WEEK	03	
	PERMITTED	6.000			17	1/MONTH	03	GRABPKLOAD
005301024 TSS DLY. AVG.	REPORTED	7.250	MG/L	0	14		03	
	PERMITTED	15.000			14	1/WEEK	03	GRABPKLOAD
005301030 TSS IND. GRAB	REPORTED	16.000	MG/L	0	14		03	
	PERMITTED	60.000			14	1/WEEK	03	GRABPKLOAD
005302024 TSS DLY. AVG.	REPORTED	2.349	LBS/DAY	0	14		03	
	PERMITTED	16.000			14	1/WEEK	03	GRABPKLOAD
500497339 UNAU / DIS TOTAL	REPORTED	0	MG		01		01	
	PERMITTED				01	NA	01	NA
500507124 FLOW DLY. AVG.	REPORTED	0.06124	MGD	0	10		11	TOTALZ
	PERMITTED	0.12500			10	5/WEEK	12	INSTANT

I CERTIFY THAT I AM FAMILIAR WITH THE INFORMATION CONTAINED IN THIS REPORT AND THAT TO THE BEST OF MY KNOWLEDGE AND BELIEF SUCH INFORMATION IS TRUE, COMPLETE AND ACCURATE.

	NAME	SIGNATURE	DATE		
TELEPHONE NUMBER	GARY SYZEK		95	05	18
	PLANT OPERATOR	PLANT OPERATOR	YEAR	MO.	DAY
(713) 772 1970	JOHN D. BROCK		95	05	18
AREA CODE NUMBER	EXECUTIVE OFFICER	EXECUTIVE OFFICER	YEAR	MO.	DAY

TEXAS NATURAL RESOURCE CONSERVATION COMMISSION

P.O. BOX 13087 – AUSTIN, TEXAS 78711-3087

MONTHLY EFFLUENT REPORT

FORT BEND CO. MUD 023
1001 FANNIN, 2800 1ST CITY TOWER
HOUSTON, TX 77002-6760

40B	WQ0011999-001	2	95	04	7716
SYS	PERMIT NUMBER	SET	YEAR	MO.	EID

THIS REPORT TO BE USED FOR: OTFL 001

TNRCC COPY

PARAMETER		EFFLUENT CONDITION VALUE	UNITS	NO. EX.	FREQUENCY OF ANALYSIS		SAMPLE TYPE	
500507150 FLOW DLY. MAX.	REPORTED	0.075	MGD		10		11	TOTALZ
	PERMITTED				10	5/WEEK	12	INSTANT
500611080 CL2 RES MAXIMUM	REPORTED	2.900	MG/L	0	10		03	
	PERMITTED	4.000			10	5/WEEK	03	GRABPKLOAD
500611081 CL2 RES MINIMUM	REPORTED	1.400	MG/L	0	10		03	
	PERMITTED	1.000			10	5/WEEK	03	GRABPKLOAD
NUMBER OF OPERATOR CERTIFICATE	REPORTED	097-54-0070	NUMBER		01		01	
	PERMITTED				01	NA	01	NA
RATION OPERATOR CERTIFICATE	REPORTED	96-01-22	DATE		01		01	
	PERMITTED				01	NA	01	NA
GRADE OF OPERATOR CERTIFICATE	REPORTED	B	LETTER		01		01	
	PERMITTED				01	NA	01	NA
	REPORTED							
	PERMITTED							
	REPORTED							
	PERMITTED							
	REPORTED							
	PERMITTED							
	REPORTED							
	PERMITTED							
	REPORTED							
	PERMITTED							
	REPORTED							
	PERMITTED							

I CERTIFY THAT I AM FAMILIAR WITH THE INFORMATION CONTAINED IN THIS REPORT AND THAT TO THE BEST OF MY KNOWLEDGE AND BELIEF SUCH INFORMATION IS TRUE, COMPLETE AND ACCURATE.

NAME	SIGNATURE	DATE
GARY SYZEK		95 05 18
PLANT OPERATOR	PLANT OPERATOR	YEAR MO. DAY
JOHN D. BROCK		95 05 18
EXECUTIVE OFFICER	EXECUTIVE OFFICER	YEAR MO. DAY

TELEPHONE NUMBER		
(713)	772	1970
AREA CODE	NUMBER	

TEXAS NATURAL RESOURCE CONSERVATION COMMISSION

P.O. BOX 13087 • AUSTIN, TEXAS 78711-3087

MONTHLY EFFLUENT REPORT

FORT BEND CO MUD 023
2300 1ST CITY TOWER
HOUSTON, TX
77002-6760

40B	WQ0011999-001	3	9 5	4	7716
SYS	PERMIT NUMBER	SET	YEAR	MO.	EID

THIS REPORT TO BE USED FOR OTFL 001 Ft. Bend Co. MUD 023

SEE BACK FOR INSTRUCTIONS AND DEFINITIONS

TNRCC COPY

PARAMETER		EFFLUENT CONDITION VALUE	EFFLUENT CONDITION UNITS	NO. EX.	FREQUENCY OF ANALYSIS		SAMPLE TYPE	
000035342 DISCHRGE DAYS MTH	REPORTED		DAY					
	PERMITTED				01	NA	01	NA
000075342 UNAU/PLT DAYS MTH	REPORTED	0	DAY		01		01	
	PERMITTED				01	NA	01	NA
000077339 UNAU/PLT TOTAL	REPORTED	0	MG		01		01	
	PERMITTED				01	NA	01	NA
003001081 D.O. MINIMUM	REPORTED	7.100	MG/L	0	14		03	
	PERMITTED	4.000			14	1/WEEK	03	GRABPKLOAD
003101024 BOD5 DLY AVG	REPORTED		MG/L					
	PERMITTED	10.000			14	1/WEEK	03	GRABPKLOAD
003101030 BOD5 IND GRAB	REPORTED		MG/L					
	PERMITTED	35.000			14	1/WEEK	03	GRABPKLOAD
003102024 BOD5 DLY AVG	REPORTED		LBS/DAY					
	PERMITTED	10.000			14	1/WEEK	03	GRABPKLOAD
004006080 PH MAXIMUM	REPORTED		STD UNIT					
	PERMITTED	9.000			17	1/MONTH	03	GRABPKLOAD
004006081 PH MINIMUM	REPORTED		STD UNIT					
	PERMITTED	6.000			17	1/MONTH	03	GRABPKLOAD
005301024 TSS DLY AVG	REPORTED		MG/L					
	PERMITTED	15.000			14	1/WEEK	03	GRABPKLOAD
005301030 TSS IND GRAB	REPORTED		MG/L					
	PERMITTED	60.000			14	1/WEEK	03	GRABPKLOAD
005302024 TSS DLY AVG	REPORTED		LBS/DAY					
	PERMITTED	16.000			14	1/WEEK	03	GRABPKLOAD

...TY THAT I AM FAMILIAR WITH THE INFORMATION ... IN THIS REPORT AND THAT TO THE BEST OF MY KN... GE AND BELIEF SUCH INFORMATION IS TRUE AND COM... JETE AND ACCURATE.

	NAME	SIGNATURE	DATE		
	Gary Syzek		9 5	0 7	0 6
TELEPHONE NUMBER	PLANT OPERATOR	PLANT OPERATOR	YEAR	MO.	DAY
7 1 3 / 7 7 2 / 1 9 7 0	John D. Brock	John D. Brock	9 5	0 7	0 6
AREA CODE / NUMBER	EXECUTIVE OFFICER	EXECUTIVE OFFICER	YEAR	MO.	DAY

TNRCC LPS Form 0123A1 (Rev. 08-02-93)

TEXAS NATURAL RESOURCE CONSERVATION COMMISSION

P.O. BOX 3087 – AUSTIN, TEXAS 78711-3087

MONTHLY EFFLUENT REPORT

FORT BEND CO. MUD 023
1001 FANNIN, 2800 1ST CITY TOWER
HOUSTON, TX 77002-6760

SYS	PERMIT NUMBER	SET	YEAR	MO.	EID
40B	WQ0011999-001	3	95	05	7716

THIS REPORT TO BE USED FOR: OTFL 001 FT. BEND CO. MUD 023

TNRCC COPY

PARAMETER		EFFLUENT CONDITION VALUE	UNITS	NO. EX.	FREQUENCY OF ANALYSIS		SAMPLE TYPE	
500507124 FLOW DLY. AVG.	REPORTED	0.06520	MGD	0	10		11	TOTALZ
	PERMITTED	0.12500			10	5/WEEK	12	INSTANT
500507150 FLOW DLY. MAX.	REPORTED	0.198	MGD		10		11	TOTALZ
	PERMITTED				10	5/WEEK	12	INSTANT
500525342 UNAU / COL DAYS MTH	REPORTED	0	DAYS		01		01	
	PERMITTED				01	NA	01	NA
500527339 UNAU / COL TOTAL	REPORTED	0	MG		01		01	
	PERMITTED				01	NA	01	NA
1080 CL2 RES MAXIMUM	REPORTED	3.000	MG/L	0	10		03	
	PERMITTED	4.000			10	5/WEEK	03	GRABPKLOAD
500611081 CL2 RES MINIMUM	REPORTED	1.800	MG/L	0	10		03	
	PERMITTED	1.000			10	5/WEEK	03	GRABPKLOAD
NUMBER OF OPERATOR CERTIFICATE	REPORTED	097-54-0070	NUMBER		01		01	
	PERMITTED				01	NA	01	NA
EXPIRATION OF OPERATOR CERTIFICATE	REPORTED	96-01-22	DATE		01		01	
	PERMITTED				01	NA	01	NA
CLASS OF OPERATOR CERTIFICATE	REPORTED	B	LETTER		01		01	
	PERMITTED				01	NA	01	NA
	REPORTED							
	PERMITTED							
	REPORTED							
	PERMITTED							
	REPORTED							
	PERMITTED							

I CERTIFY THAT I AM FAMILIAR WITH THE INFORMATION CONTAINED IN THIS REPORT AND THAT TO THE BEST OF MY KNOWLEDGE AND BELIEF SUCH INFORMATION IS TRUE, COMPLETE AND ACCURATE.

TELEPHONE NUMBER			NAME	SIGNATURE	DATE		
			GARY SYZEK		95	06	15
			PLANT OPERATOR	PLANT OPERATOR	YEAR	MO.	DAY
(713)	772	1970	JOHN D. BROCK	John D Brock	95	06	15
AREA CODE		NUMBER	EXECUTIVE OFFICER	EXECUTIVE OFFICER	YEAR	MO.	DAY

TEXAS NATURAL RESOURCE CONSERVATION COMMISSION

P.O. BOX 13087 – AUSTIN, TEXAS 78711-3087

MONTHLY EFFLUENT REPORT

FORT BEND CO. MUD 023
1001 FANNIN, 2800 1ST CITY TOWER
HOUSTON, TX 77002-6760

SYS	PERMIT NUMBER	SET	YEAR	MO.	EID
40B	WQ0011999-001	3	95	05	7716

THIS REPORT TO BE USED FOR: OTFL 001 FT. BEND CO. MUD 023

TNRCC COPY

PARAMETER		EFFLUENT CONDITION VALUE	UNITS	NO. EX.	FREQUENCY OF ANALYSIS		SAMPLE TYPE	
000035342 DISCHARGE	REPORTED	31	DAYS		01		01	
DAYS/MTH	PERMITTED				01	NA	01	NA
000075342 UNAU / PLT	REPORTED	0	DAYS		01		01	
DAYS/MTH	PERMITTED				01	NA	01	NA
000077339 UNAU / PLT	REPORTED	0	MG		01		01	
TOTAL	PERMITTED				01	NA	01	NA
003001081 D.O.	REPORTED	7.300	MG/L	0	14		03	
MINIMUM	PERMITTED	4.000			14	1/WEEK	03	GRABPKLOAD
01024 BOD5	REPORTED	4.500	MG/L	0	14		03	
DLY. AVG.	PERMITTED	10.000			14	1/WEEK	03	GRABPKLOAD
003101030 BOD5	REPORTED	8.000	MG/L	0	14		03	
IND. GRAB	PERMITTED	35.000			14	1/WEEK	03	GRABPKLOAD
003102024 BOD5	REPORTED	1.850	LBS/DAY	0	14		03	
DLY. AVG.	PERMITTED	10.000			14	1/WEEK	03	GRABPKLOAD
004006080 PH	REPORTED	7.630	STD UNIT	0	14	1/WEEK	03	
MAXIMUM	PERMITTED	9.000			17	1/MONTH	03	GRABPKLOAD
004006081 PH	REPORTED	7.290	STD UNIT	0	14	1/WEEK	03	
MINIMUM	PERMITTED	6.000			17	1/MONTH	03	GRABPKLOAD
005301024 TSS	REPORTED	4.750	MG/L	0	14		03	
DLY. AVG.	PERMITTED	15.000			14	1/WEEK	03	GRABPKLOAD
005301030 TSS	REPORTED	6.000	MG/L	0	14		03	
IND. GRAB	PERMITTED	60.000			14	1/WEEK	03	GRABPKLOAD
005302024 TSS	REPORTED	1.508	LBS/DAY	0	14		03	
DLY. AVG.	PERMITTED	16.000			14	1/WEEK	03	GRABPKLOAD

I CERTIFY THAT I AM FAMILIAR WITH THE INFORMATION CONTAINED IN THIS REPORT AND THAT TO THE BEST OF MY KNOWLEDGE AND BELIEF SUCH INFORMATION IS TRUE, COMPLETE AND ACCURATE.

TELEPHONE NUMBER			NAME	SIGNATURE	DATE		
			GARY SYZEK		95	06	15
			PLANT OPERATOR	PLANT OPERATOR	YEAR	MO.	DAY
(713)	772	1970	JOHN D. BROCK		95	06	15
AREA CODE	NUMBER		EXECUTIVE OFFICER	EXECUTIVE OFFICER	YEAR	MO.	DAY

TEXAS NATURAL RESOURCE CONSERVATION COMMISSION

P.O. BOX 13087 – AUSTIN, TEXAS 78711-3087

MONTHLY EFFLUENT REPORT

FORT BEND CO. MUD 023
1001 FANNIN, 2800 1ST CITY TOWER
HOUSTON, TX 77002-6760

SYS	PERMIT NUMBER	SET	YEAR	MO.	EID
40B	WQ0011999-001	3	95	06	7716

THIS REPORT TO BE USED FOR: OTFL 001 FT. BEND CO. MUD 023

TNRCC COPY

PARAMETER		EFFLUENT CONDITION VALUE	UNITS	NO. EX.	FREQUENCY OF ANALYSIS		SAMPLE TYPE	
000035342 DISCHARGE	REPORTED	30	DAYS		01		01	
DAYS/MTH	PERMITTED				01	NA	01	NA
000075342 UNAU / PLT	REPORTED	0	DAYS		01		01	
DAYS/MTH	PERMITTED				01	NA	01	NA
000077339 UNAU / PLT	REPORTED	0	MG		01		01	
TOTAL	PERMITTED				01	NA	01	NA
003001081 D.O.	REPORTED	6.900	MG/L	0	14		03	
MINIMUM	PERMITTED	4.000			14	1/WEEK	03	GRABPKLOAD
003 01024 BOD5	REPORTED	7.400	MG/L	0	14		03	
DLY. AVG.	PERMITTED	10.000			14	1/WEEK	03	GRABPKLOAD
003101030 BOD5	REPORTED	24.000	MG/L	0	14		03	
IND. GRAB	PERMITTED	35.000			14	1/WEEK	03	GRABPKLOAD
003102024 BOD5	REPORTED	3.690	LBS/DAY	0	14		03	
DLY. AVG.	PERMITTED	10.000			14	1/WEEK	03	GRABPKLOAD
004006080 PH	REPORTED	7.690	STD UNIT	0	14	1/WEEK	03	
MAXIMUM	PERMITTED	9.000			17	1/MONTH	03	GRABPKLOAD
004006081 PH	REPORTED	6.690	STD UNIT	0	14	1/WEEK	03	
MINIMUM	PERMITTED	6.000			17	1/MONTH	03	GRABPKLOAD
005301024 TSS	REPORTED	4.600	MG/L	0	14		03	
DLY. AVG.	PERMITTED	15.000			14	1/WEEK	03	GRABPKLOAD
005301030 TSS	REPORTED	12.000	MG/L	0	14		03	
IND. GRAB	PERMITTED	60.000			14	1/WEEK	03	GRABPKLOAD
005302024 TSS	REPORTED	3.269	LBS/DAY	0	14		03	
DLY. AVG.	PERMITTED	16.000			14	1/WEEK	03	GRABPKLOAD

I CERTIFY THAT I AM FAMILIAR WITH THE INFORMATION CONTAINED IN THIS REPORT AND THAT TO THE BEST OF MY KNOWLEDGE AND BELIEF SUCH INFORMATION IS TRUE, COMPLETE AND ACCURATE	NAME	SIGNATURE	DATE
TELEPHONE NUMBER	GARY SYZEK PLANT OPERATOR	PLANT OPERATOR	95 07 18 YEAR MO. DAY
(713) 772 1970 AREA CODE NUMBER	JOHN D. BROCK EXECUTIVE OFFICER	EXECUTIVE OFFICER	95 07 18 YEAR MO. DAY

TEXAS NATURAL RESOURCE CONSERVATION COMMISSION

P.O. BOX 13087 – AUSTIN, TEXAS 78711-3087

MONTHLY EFFLUENT REPORT

FORT BEND CO. MUD 023
1001 FANNIN, 2800 1ST CITY TOWER
HOUSTON, TX 77002-6760

SYS	PERMIT NUMBER	SET	YEAR	MO.	EID
40B	WQ0011999-001	3	95	06	7716

THIS REPORT TO BE USED FOR: OTFL 001 FT. BEND CO. MUD 023

TNRCC COPY

PARAMETER		EFFLUENT CONDITION VALUE	UNITS	NO. EX.	FREQUENCY OF ANALYSIS		SAMPLE TYPE	
500507124 FLOW DLY. AVG.	REPORTED	0.06593	MGD	0	10		11	TOTALZ
	PERMITTED	0.12500			10	5/WEEK	12	INSTANT
500507150 FLOW DLY. MAX.	REPORTED	0.120	MGD		10		11	TOTALZ
	PERMITTED				10	5/WEEK	12	INSTANT
500525342 UNAU / COL DAYS MTH	REPORTED	0	DAYS		01		01	
	PERMITTED				01	NA	01	NA
500527339 UNAU / COL [illegible]AL	REPORTED	0	MG		01		01	
	PERMITTED				01	NA	01	NA
11080 CL2 RES MAXIMUM	REPORTED	3.000	MG/L	0	10		03	
	PERMITTED	4.000			10	5/WEEK	03	GRABPKLOAD
500611081 CL2 RES MINIMUM	REPORTED	1.300	MG/L	0	10		03	
	PERMITTED	1.000			10	5/WEEK	03	GRABPKLOAD
NUMBER OF OPERATOR CERTIFICATE	REPORTED	097-54-0070	NUMBER		01		01	
	PERMITTED				01	NA	01	NA
EXPIRATION OF OPERATOR CERTIFICATE	REPORTED	96-01-22	DATE		01		01	
	PERMITTED				01	NA	01	NA
CLASS OF OPERATOR CERTIFICATE	REPORTED	B	LETTER		01		01	
	PERMITTED				01	NA	01	NA
	REPORTED							
	PERMITTED							
	REPORTED							
	PERMITTED							
	REPORTED							
	PERMITTED							

I CERTIFY THAT I AM FAMILIAR WITH THE INFORMATION CONTAINED IN THIS REPORT AND THAT TO THE BEST OF MY KNOWLEDGE AND BELIEF SUCH INFORMATION IS TRUE, COMPLETE AND ACCURATE

	NAME	SIGNATURE	DATE		
TELEPHONE NUMBER	GARY SYZEK	[signature]	95	07	18
	PLANT OPERATOR	PLANT OPERATOR	YEAR	MO.	DAY
(713) 772 1970	JOHN D. BROCK	John D Brock	95	07	18
AREA CODE NUMBER	EXECUTIVE OFFICER	EXECUTIVE OFFICER	YEAR	MO.	DAY

TEXAS NATURAL RESOURCE CONSERVATION COMMISSION

P.O. BOX 13087 – AUSTIN, TEXAS 78711-3087

MONTHLY EFFLUENT REPORT

FORT BEND CO. MUD 023
1001 FANNIN, 2800 1ST CITY TOWER
HOUSTON, TX 77002-6760

SYS	PERMIT NUMBER	SET
40B	WQ0011999-001	4

YEAR	MO.	EID
95	07	7716

THIS REPORT TO BE USED FOR: OTFL 001 FT. BEND CO. MUD 023

TNRCC COPY

PARAMETER	EFFLUENT CONDITION	VALUE	UNITS	NO. EX.	FREQUENCY OF ANALYSIS		SAMPLE TYPE	
000035342 DISCHARGE DAYS/MTH	REPORTED	31	DAYS		01		01	
	PERMITTED				01	NA	01	NA
000075342 UNAU / PLT DAYS/MTH	REPORTED	0	DAYS		01		01	
	PERMITTED				01	NA	01	NA
000077339 UNAU / PLT TOTAL	REPORTED	0	MG		01		01	
	PERMITTED				01	NA	01	NA
003001081 D.O. MINIMUM	REPORTED	7.200	MG/L	0	14		03	
	PERMITTED	4.000			14	1/WEEK	03	GRABPKLOAD
006080 PH MAXIMUM	REPORTED	7.690	STD UNIT	0	14	1/WEEK	03	
	PERMITTED	9.000			17	1/MONTH	03	GRABPKLOAD
004006081 PH MINIMUM	REPORTED	7.290	STD UNIT	0	14	1/WEEK	03	
	PERMITTED	6.000			17	1/MONTH	03	GRABPKLOAD
005301024 TSS DLY. AVG.	REPORTED	4.400	MG/L	0	14		03	
	PERMITTED	15.000			14	1/WEEK	03	GRABPKLOAD
005301030 TSS IND. GRAB	REPORTED	8.000	MG/L	0	14		03	
	PERMITTED	60.000			14	1/WEEK	03	GRABPKLOAD
005302024 TSS DLY. AVG.	REPORTED	5.458	LBS/DAY	0	14		03	
	PERMITTED	16.000			14	1/WEEK	03	GRABPKLOAD
006101024 NH3-N DLY. AVG.	REPORTED	0.500		0	14		03	
	PERMITTED	3.000			14	1/WEEK	03	GRABPKLOAD
006101030 NH3-N IND. GRAB	REPORTED	0.500		0	14		03	
	PERMITTED	15.000			14	1/WEEK	03	GRABPKLOAD
006102024 NH3-N DLY. AVG.	REPORTED	0.590		0	14		03	
	PERMITTED	3.100			14	1/WEEK	03	GRABPKLOAD

I CERTIFY THAT I AM FAMILIAR WITH THE INFORMATION CONTAINED IN THIS REPORT AND THAT TO THE BEST OF MY KNOWLEDGE AND BELIEF SUCH INFORMATION IS TRUE, COMPLETE AND ACCURATE.

	NAME	SIGNATURE	DATE
TELEPHONE NUMBER	GARY SYZEK		95 08 17
	PLANT OPERATOR	PLANT OPERATOR	YEAR MO. DAY
(713) 772 1970	JOHN D. BROCK	John D Brock	95 08 17
AREA CODE NUMBER	EXECUTIVE OFFICER	EXECUTIVE OFFICER	YEAR MO. DAY

TEXAS NATURAL RESOURCE CONSERVATION COMMISSION

P.O. BOX 13087 – AUSTIN, TEXAS 78711-3087

MONTHLY EFFLUENT REPORT

FORT BEND CO. MUD 023
1001 FANNIN, 2800 1ST CITY TOWER
HOUSTON, TX 77002-6760

SYS	PERMIT NUMBER	SET	YEAR	MO.	EID
40B	WQ0011999-001	4	95	07	7716

THIS REPORT TO BE USED FOR: OTFL 001 FT. BEND CO. MUD 023

TNRCC COPY

PARAMETER		EFFLUENT CONDITION VALUE	UNITS	NO. EX.	FREQUENCY OF ANALYSIS		SAMPLE TYPE	
500507124 FLOW	REPORTED	0.05768	MGD	0	10		11	TOTALZ
DLY. AVG.	PERMITTED	0.12500			10	5/WEEK	12	INSTANT
500507150 FLOW	REPORTED	0.082	MGD		10		11	TOTALZ
DLY. MAX.	PERMITTED				10	5/WEEK	12	INSTANT
500525342 UNAU / COL	REPORTED	0	DAYS		01		01	
DAYS MTH	PERMITTED				01	NA	01	NA
500527339 UNAU / COL	REPORTED	0	MG		01		01	
TOTAL	PERMITTED				01	NA	01	NA
1080 CL RES	REPORTED	3.000	MG/L	0	10		03	
MAXIMUM	PERMITTED	4.000			10	5/WEEK	03	GRABPKLOAD
500611081 CL2 RES	REPORTED	1.300	MG/L	0	10		03	
MINIMUM	PERMITTED	1.000			10	5/WEEK	03	GRABPKLOAD
00310102 BOD CARB	REPORTED	3.000	MG/L	0	14		03	
DLY. AVG.	PERMITTED	10.000			14	1/WEEK	03	GRABPKLOAD
00310103 BOD CARB	REPORTED	5.000	MG/L	0	14		03	
IND. GRAB	PERMITTED	35.000			14	1/WEEK	03	GRABPKLOAD
00310202 BOD CARB	REPORTED	2.787	LBS/DAY	0	14		03	
DLY. AVG.	PERMITTED	10.000			14	1/WEEK	03	GRABPKLOAD
NUMBER OF OPERATOR	REPORTED	097-54-0070	NUMBER		01		01	
CERTIFICATE	PERMITTED				01	NA	01	NA
EXPIRATION OF OPERATOR	REPORTED	96-01-22	DATE		01		01	
CERTIFICATE	PERMITTED				01	NA	01	NA
CLASS OF OPERATOR	REPORTED	B	LETTER		01		01	
CERTIFICATE	PERMITTED				01	NA	01	NA

I CERTIFY THAT I AM FAMILIAR WITH THE INFORMATION CONTAINED IN THIS REPORT AND THAT TO THE BEST OF MY KNOWLEDGE AND BELIEF SUCH INFORMATION IS TRUE, COMPLETE AND ACCURATE.	NAME	SIGNATURE	DATE
	GARY SYZEK		95 08 17
TELEPHONE NUMBER: AREA CODE (713) NUMBER 772 1970	PLANT OPERATOR	PLANT OPERATOR	YEAR MO. DAY
	JOHN D. BROCK	John D Brock	95 08 17
	EXECUTIVE OFFICER	EXECUTIVE OFFICER	YEAR MO. DAY

TEXAS NATURAL RESOURCE CONSERVATION COMMISSION

P.O. BOX 13087 – AUSTIN, TEXAS 78711-3087

MONTHLY EFFLUENT REPORT

FORT BEND CO. MUD 023
1001 FANNIN, 2800 1ST CITY TOWER
HOUSTON, TX 77002-6760

SYS	PERMIT NUMBER	SET	YEAR	MO.	EID
40B	WQ0011999-001	4	95	08	7716

THIS REPORT TO BE USED FOR: OTFL 001 FT. BEND CO. MUD 023

TNRCC COPY

PARAMETER	EFFLUENT CONDITION	VALUE	UNITS	NO. EX.	FREQUENCY OF ANALYSIS		SAMPLE TYPE	
000035342 DISCHARGE DAYS/MTH	REPORTED	31	DAYS		01		01	
	PERMITTED				01	NA	01	NA
000075342 UNAU / PLT DAYS/MTH	REPORTED	0	DAYS		01		01	
	PERMITTED				01	NA	01	NA
000077339 UNAU / PLT TOTAL	REPORTED	0	MG		01		01	
	PERMITTED				01	NA	01	NA
003001081 D.O. MINIMUM	REPORTED	6.200	MG/L	0	14		03	
	PERMITTED	4.000			14	1/WEEK	03	GRABPKLOAD
004006080	REPORTED	7.330	STD UNIT	0	14	1/WEEK	03	
MAXIMUM	PERMITTED	9.000			17	1/MONTH	03	GRABPKLOAD
004006081 PH MINIMUM	REPORTED	7.120	STD UNIT	0	14	1/WEEK	03	
	PERMITTED	6.000			17	1/MONTH	03	GRABPKLOAD
005301024 TSS DLY. AVG.	REPORTED	5.000	MG/L	0	14		03	
	PERMITTED	15.000			14	1/WEEK	03	GRABPKLOAD
005301030 TSS IND. GRAB	REPORTED	7.000	MG/L	0	14		03	
	PERMITTED	60.000			14	1/WEEK	03	GRABPKLOAD
005302024 TSS DLY. AVG.	REPORTED	2.194	LBS/DAY	0	14		03	
	PERMITTED	16.000			14	1/WEEK	03	GRABPKLOAD
006101024 NH3-N DLY. AVG.	REPORTED	1.560		0	14		03	
	PERMITTED	3.000			14	1/WEEK	03	GRABPKLOAD
006101030 NH3-N IND. GRAB	REPORTED	5.500		0	14		03	
	PERMITTED	15.000			14	1/WEEK	03	GRABPKLOAD
006102024 NH3-N DLY. AVG.	REPORTED	0.647		0	14		03	
	PERMITTED	3.100			14	1/WEEK	03	GRABPKLOAD

I CERTIFY THAT I AM FAMILIAR WITH THE INFORMATION CONTAINED IN THIS REPORT AND THAT TO THE BEST OF MY KNOWLEDGE AND BELIEF SUCH INFORMATION IS TRUE, COMPLETE AND ACCURATE.	NAME	SIGNATURE	DATE
TELEPHONE NUMBER	GARY SYZEK PLANT OPERATOR	PLANT OPERATOR	95 09 20 YEAR MO. DAY
(713) 772 1970 AREA CODE NUMBER	JOHN D. BROCK EXECUTIVE OFFICER	EXECUTIVE OFFICER	95 09 20 YEAR MO. DAY

TEXAS NATURAL RESOURCE CONSERVATION COMMISSION

P.O. BOX 13087 – AUSTIN, TEXAS 78711-3087

MONTHLY EFFLUENT REPORT

FORT BEND CO. MUD 023
1001 FANNIN, 2800 1ST CITY TOWER
HOUSTON, TX 77002-6760

SYS	PERMIT NUMBER	SET	YEAR	MO.	EID
40B	WQ0011999-001	4	95	08	7716

THIS REPORT TO BE USED FOR: OTFL 001 FT. BEND CO. MUD 023

TNRCC COPY

PARAMETER		EFFLUENT CONDITION VALUE	UNITS	NO. EX.	FREQUENCY OF ANALYSIS		SAMPLE TYPE	
500507124 FLOW DLY. AVG.	REPORTED	0.04912	MGD	0	10		11	TOTALZ
	PERMITTED	0.12500			10	5/WEEK	12	INSTANT
500507150 FLOW DLY. MAX.	REPORTED	0.089	MGD		10		11	TOTALZ
	PERMITTED				10	5/WEEK	12	INSTANT
500525342 UNAU / COL DAYS MTH	REPORTED	0	DAYS		01		01	
	PERMITTED				01	NA	01	NA
500527339 UNAU / COL TOTAL	REPORTED	0	MG		01		01	
	PERMITTED				01	NA	01	NA
500611080 CL2 RES MAXIMUM	REPORTED	3.400	MG/L	0	10		03	
	PERMITTED	4.000			10	5/WEEK	03	GRABPKLOAD
500611081 CL2 RES MINIMUM	REPORTED	1.400	MG/L	0	10		03	
	PERMITTED	1.000			10	5/WEEK	03	GRABPKLOAD
800821024 BOD CARB DLY. AVG.	REPORTED	6.000	MG/L	0	14		03	
	PERMITTED	10.000			14	1/WEEK	03	GRABPKLOAD
800821030 BOD CARB IND. GRAB	REPORTED	10.000	MG/L	0	14		03	
	PERMITTED	35.000			14	1/WEEK	03	GRABPKLOAD
800822024 BOD CARB DLY. AVG.	REPORTED	2.565	LBS/DAY	0	14		03	
	PERMITTED	10.000			14	1/WEEK	03	GRABPKLOAD
NUMBER OF OPERATOR CERTIFICATE	REPORTED	097-54-0070	NUMBER		01		01	
	PERMITTED				01	NA	01	NA
EXPIRATION OF OPERATOR CERTIFICATE	REPORTED	96-01-22	DATE		01		01	
	PERMITTED				01	NA	01	NA
CLASS OF OPERATOR CERTIFICATE	REPORTED	B	LETTER		01		01	
	PERMITTED				01	NA	01	NA

I CERTIFY THAT I AM FAMILIAR WITH THE INFORMATION CONTAINED IN THIS REPORT AND THAT TO THE BEST OF MY KNOWLEDGE AND BELIEF SUCH INFORMATION IS TRUE, COMPLETE AND ACCURATE.	NAME	SIGNATURE	DATE
	GARY SYZEK		95 09 20
TELEPHONE NUMBER	PLANT OPERATOR	PLANT OPERATOR	YEAR MO. DAY
(713) 772 1970	JOHN D. BROCK	John D Brock	95 09 20
AREA CODE NUMBER	EXECUTIVE OFFICER	EXECUTIVE OFFICER	YEAR MO. DAY

TEXAS NATURAL RESOURCE CONSERVATION COMMISSION

P.O. BOX 13087 • AUSTIN, TEXAS 78711-3087

MONTHLY EFFLUENT REPORT

ARCOLA, CITY OF
13222 TEXAS HWY 6
ARCOLA, TX
77583-0000

40B	WQ0013367-001	2	9 5	1	8983
SYS	PERMIT NUMBER	SET	YEAR	MO.	EID

THIS REPORT TO BE USED FOR OTFL 001

SEE BACK FOR INSTRUCTIONS AND DEFINITIONS

TNRCC COPY

PARAMETER		EFFLUENT CONDITION VALUE	UNITS	NO. EX.	FREQUENCY OF ANALYSIS		SAMPLE TYPE	
000035342 DISCHRGE DAYS/MTH	REPORTED	31	DAYS					
	PERMITTED				01	NA	01	
000045342 BYPASS DAYS/MTH	REPORTED	0	DAYS					
	PERMITTED				01	NA	01	
003001081 D.O. MINIMUM	REPORTED	4.2	MG/L	0	14	5/Mo.	03	
	PERMITTED	2.000			14	1/WEEK	03	GRABPKLOAD
004006080 PH MUM	REPORTED	7.3	STD UNIT	0	14	6/Mo.	03	
	PERMITTED	9.000			17	1/MONTH	03	GRABPKLOAD
J06081 PH MINIMUM	REPORTED	7.0	STD UNIT	0	14	6/Mo.	03	
	PERMITTED	6.000			17	1/MONTH	03	GRABPKLOAD
005301024 TSS DLY.AVG.	REPORTED	26.6	MG/L	1	14		03	
	PERMITTED	20.000			14	1/WEEK	03	GRABPKLOAD
005301030 TSS IND.GRAB	REPORTED	53.0	MG/L	0	14		03	
	PERMITTED	65.000			14	1/WEEK	03	GRABPKLOAD
005302024 TSS DLY.AVG.	REPORTED	58.7	LBS/DAY	1	14		03	
	PERMITTED	21.000			14	1/WEEK	03	GRABPKLOAD
006101024 NH3-N DLY.AVG.	REPORTED	0.2	MG/L		14		03	
	PERMITTED				14	1/WEEK	03	GRABPKLOAD
006101030 NH3-N IND.GRAB	REPORTED	0.2	MG/L		14		03	
	PERMITTED				14	1/WEEK	03	GRABPKLOAD
J06102024 NH3-N DLY.AVG.	REPORTED	0.3	LB/DAY		14		03	
	PERMITTED				14	1/WEEK	03	GRABPKLOAD
500497339 JW BYPAS TOTAL	REPORTED	0	MG					
	PERMITTED				01	NA	01	

THAT I AM FAMILIAR WITH THE INFORMATION IN THIS REPORT AND THAT TO THE BEST OF MY KNOWLEDGE AND BELIEF SUCH INFORMATION IS TRUE AND COMPLETE AND ACCURATE.

	NAME	SIGNATURE	DATE
	Juan Gonzalez	Juan G. Gonzalez	9 5 0 2 1 4
TELEPHONE NUMBER	PLANT OPERATOR	PLANT OPERATOR	YEAR MO. DAY
7 1 3 2 4 0 1 7 0 0	Linda DeLeon	Linda DeLeon	9 5 0 2 1 4
AREA CODE NUMBER	EXECUTIVE OFFICER	EXECUTIVE OFFICER	YEAR MO. DAY

TNRCC LPS Form 0123A1 Rev. 09-02-93)

ARCOLA, CITY OF
13222 TEXAS HWY 6
ARCOLA, TX
77583-0000

40B	WQ0013367-001	2	95 | 1	8983
SYS	PERMIT NUMBER	SET	YEAR | MO.	EID

THIS REPORT TO BE USED FOR OTFL 001
SEE BACK FOR INSTRUCTIONS AND DEFINITIONS

TNRCC COPY

PARAMETER		EFFLUENT CONDITION VALUE	UNITS	NO. EX.	FREQUENCY OF ANALYSIS		SAMPLE TYPE	
500507124 FLOW DLY.AVG.	REPORTED	0.270	MGD	1	02	Cont.	11	Cont.
	PERMITTED	0.12500			10	5/WEEK	12	INSTANT
500507150 FLOW DLY.MAX.	REPORTED	0.573	MGD		02	Cont.	11	Cont.
	PERMITTED				10	5/WEEK	12	INSTANT
500611080 CL2RES MAXIMUM	REPORTED	3.2	MG/L	0	02	24/Mo.	03	
	PERMITTED	4.000			10	5/WEEK	03	GRABPKLOAD
500611081 CL2 RES MUM	REPORTED	1.0	MG/L	0	02	24/Mo.	03	
	PERMITTED	1.000			10	5/WEEK	03	GRABPKLOAD
800821024 BOD CARB DLY AVG	REPORTED	2.6	MG/L	0	14		03	
	PERMITTED	20.000			14	1/WEEK	03	GRABPKLOAD
800821030 BOD CARB IND.GRAB	REPORTED	4.8	MG/L	0	14		03	
	PERMITTED	65.000			14	1/WEEK	03	GRABPKLOAD
800822024 BOD CARB DLY AVG	REPORTED	4.2	LBS	0	14		03	
	PERMITTED	21.000			14	1/WEEK	03	GRABPKLOAD
NUMBER OF OPERATOR CERTIFICATE	REPORTED	466-21-4825	NUMBER					
	PERMITTED				01	NA	01	NA
EXPIRATION OF OPERATOR CERTIFICATE	REPORTED	97-04-12	DATE					
	PERMITTED				01	NA	01	NA
GRADE OF OPERATOR CERTIFICATE	REPORTED	C	LETTER					
	PERMITTED				01	NA	01	NA
	REPORTED							
	PERMITTED							
	REPORTED							
	PERMITTED							

I CERTIFY THAT I AM FAMILIAR WITH THE INFORMATION CONTAINED IN THIS REPORT AND THAT TO THE BEST OF MY KNOWLEDGE AND BELIEF SUCH INFORMATION IS TRUE AND COMPLETE AND ACCURATE.

TELEPHONE NUMBER	NAME	SIGNATURE	DATE
	Juan Gonzalez	Juan J. Gonzalez	95 | 02 | 14
	PLANT OPERATOR	PLANT OPERATOR	YEAR MO. DAY
713 | 264 | 1700	Linda DeLeon		95 | 02 | 14
AREA CODE | NUMBER	EXECUTIVE OFFICER	EXECUTIVE OFFICER	YEAR MO. DAY

TEXAS NATURAL RESOURCE CONSERVATION COMMISSION

P.O. BOX 13087 • AUSTIN, TEXAS 78711-3087

MONTHLY EFFLUENT REPORT

ARCOLA, CITY OF
13222 TEXAS HWY 6
ARCOLA, TX
77583-0000

40B	WQ0013367-001	2	9 5	2	8983
SYS	PERMIT NUMBER	SET	YEAR	MO.	EID

THIS REPORT TO BE USED FOR OTFL 001

SEE BACK FOR INSTRUCTIONS AND DEFINITIONS

TNRCC COPY

PARAMETER		EFFLUENT CONDITION VALUE	UNITS	NO. EX.	FREQUENCY OF ANALYSIS		SAMPLE TYPE	
000035342 DISCHRGE DAYS/MTH	REPORTED	28	DAYS					
	PERMITTED				01	NA	01	
000045342 BYPASS DAYS/MTH	REPORTED	0	DAYS					
	PERMITTED				01	NA	01	
003001081 D.O. MINIMUM	REPORTED	5.8	MG/L	0	14	4/Mo.	03	
	PERMITTED	2.000			14	1/WEEK	03	GRABPKLOAD
004006080 PH MUM	REPORTED	7.5	STD UNIT	0	14	4/Mo.	03	
	PERMITTED	9.000			17	1/MONTH	03	GRABPKLOAD
004006081 PH MINIMUM	REPORTED	7.4	STD UNIT	0	14	4/Mo.	03	
	PERMITTED	6.000			17	1/MONTH	03	GRABPKLOAD
005301024 TSS DLY.AVG.	REPORTED	17.8	MG/L	0	14		03	
	PERMITTED	20.000			14	1/WEEK	03	GRABPKLOAD
005301030 TSS IND.GRAB	REPORTED	29.0	MG/L	0	14		03	
	PERMITTED	65.000			14	1/WEEK	03	GRABPKLOAD
005302024 TSS DLY.AVG.	REPORTED	39.0	LBS/DAY	1	14		03	
	PERMITTED	21.000			14	1/WEEK	03	GRABPKLOAD
006101024 NH3-N DLY.AVG.	REPORTED	0.1	MG/L		14		03	
	PERMITTED				14	1/WEEK	03	GRABPKLOAD
006101030 NH3-N IND.GRAB	REPORTED	0.2	MG/L		14		03	
	PERMITTED				14	1/WEEK	03	GRABPKLOAD
006102024 NH3-N DLY.AVG.	REPORTED	0.3	LB/DAY		14		03	
	PERMITTED				14	1/WEEK	03	GRABPKLOAD
500497339 NW BYPAS TOTAL	REPORTED	0	MG					
	PERMITTED				01	NA	01	

I CERTIFY THAT I AM FAMILIAR WITH THE INFORMATION CONTAINED IN THIS REPORT AND THAT TO THE BEST OF MY KNOWLEDGE AND BELIEF SUCH INFORMATION IS TRUE AND COMPLETE AND ACCURATE.	NAME	SIGNATURE	DATE
	Juan Gonzalez	Juan A. Gonzalez	9 5 0 3 1 0
TELEPHONE NUMBER	PLANT OPERATOR	PLANT OPERATOR	YEAR MO. DAY
7 1 3 2 4 0 1 7 0 0	Linda DeLeon		9 5 0 3 1 0
AREA CODE NUMBER	EXECUTIVE OFFICER	EXECUTIVE OFFICER	YEAR MO. DAY

TEXAS NATURAL RESOURCE CONSERVATION COMMISSION

P.O. BOX 13087 • AUSTIN, TEXAS 78711-3087

MONTHLY EFFLUENT REPORT

ARCOLA, CITY OF
13222 TEXAS HWY 6
ARCOLA, TX
77583-0000

SYS	PERMIT NUMBER	SET	YEAR	MO.	EID
40B	WQ0013367-001	2	95	2	8983

THIS REPORT TO BE USED FOR OTFL 001

SEE BACK FOR INSTRUCTIONS AND DEFINITIONS

TNRCC COPY

PARAMETER		EFFLUENT CONDITION VALUE	UNITS	NO. EX.	FREQUENCY OF ANALYSIS		SAMPLE TYPE	
500507124 FLOW	REPORTED	0.086	MGD	0	02	Cont.	11	Cont.
DLY.AVG.	PERMITTED	0.12500			10	5/WEEK	12	INSTANT
500507150 FLOW	REPORTED	0.344	MGD		02	Cont.	11	Cont.
DLY.MAX.	PERMITTED				10	5/WEEK	12	INSTANT
500611080 CL2RES	REPORTED	2.9	MG/L	0	02	20/Mo.	03	
MAXIMUM	PERMITTED	4.000			10	5/WEEK	03	GRABPKLOAD
500611081 CL2 RES	REPORTED	1.1	MG/L	0	02	20/Mo.	03	
MUM	PERMITTED	1.000			10	5/WEEK	03	GRABPKLOAD
800821024 BOD CARB	REPORTED	2.0	MG/L	0	14		03	
DLY AVG	PERMITTED	20.000			14	1/WEEK	03	GRABPKLOAD
800821030 BOD CARB	REPORTED	2.0	MG/L	0	14		03	
IND.GRAB	PERMITTED	65.000			14	1/WEEK	03	GRABPKLOAD
800822024 BOD CARB	REPORTED	4.1	LBS	0	14		03	
DLY AVG	PERMITTED	21.000			14	1/WEEK	03	GRABPKLOAD
NUMBER OF OPERATOR	REPORTED	466-21-4825	NUMBER					
CERTIFICATE	PERMITTED				01	NA	01	NA
EXPIRATION OF OPERATOR	REPORTED	97-04-12	DATE					
CERTIFICATE	PERMITTED				01	NA	01	NA
GRADE OF OPERATOR	REPORTED	C	LETTER					
CERTIFICATE	PERMITTED				01	NA	01	NA
	REPORTED							
	PERMITTED							
	REPORTED							
	PERMITTED							

THAT I AM FAMILIAR WITH THE INFORMATION ... IN THIS REPORT AND THAT TO THE BEST OF MY ... OGE AND BELIEF SUCH INFORMATION IS TRUE AND ... COMPLETE AND ACCURATE.

NAME	SIGNATURE	DATE
Juan Gonzalez	Juan J. Gonzalez	95 03 10
PLANT OPERATOR	PLANT OPERATOR	YEAR MO. DAY
Linda DeLeon		95 03 10
EXECUTIVE OFFICER	EXECUTIVE OFFICER	YEAR MO. DAY

TELEPHONE NUMBER	
713	240 1700
AREA CODE	NUMBER

TEXAS NATURAL RESOURCE CONSERVATION COMMISSION

P.O. BOX 13087 • AUSTIN, TEXAS 78711-3087

MONTHLY EFFLUENT REPORT

ARCOLA, CITY OF
13222 TEXAS HWY 6
ARCOLA, TX
77583-0000

40B	WQ0013367-001	2	9 5	3	8983
SYS	PERMIT NUMBER	SET	YEAR	MO.	EID

THIS REPORT TO BE USED FOR OTFL 001

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PARAMETER		EFFLUENT CONDITION VALUE	UNITS	NO. EX.	FREQUENCY OF ANALYSIS		SAMPLE TYPE	
000035342 DISCHRGE	REPORTED	31	DAYS					
DAYS/MTH	PERMITTED				01	NA	01	
000045342 BYPASS	REPORTED	0	DAYS					
DAYS/MTH	PERMITTED				01	NA	01	
003001081 D.O.	REPORTED	4.9	MG/L	0	14	5/Mo.	03	
MINIMUM	PERMITTED	2.000			14	1/WEEK	03	GRABPKLOAD
004006080 PH	REPORTED	7.5	STD UNIT	0	14	5/Mo.	03	
MUM	PERMITTED	9.000			17	1/MONTH	03	GRABPKLOAD
004006081 PH	REPORTED	7.2	STD UNIT	0	14	5/Mo.	03	
MINIMUM	PERMITTED	6.000			17	1/MONTH	03	GRABPKLOAD
005301024 TSS	REPORTED	30.6	MG/L	1	14		03	
DLY.AVG.	PERMITTED	20.000			14	1/WEEK	03	GRABPKLOAD
005301030 TSS	REPORTED	67.0	MG/L	1	14		03	
IND.GRAB	PERMITTED	65.000			14	1/WEEK	03	GRABPKLOAD
005302024 TSS	REPORTED	75.6	LBS/DAY	1	14		03	
DLY.AVG.	PERMITTED	21.000			14	1/WEEK	03	GRABPKLOAD
006101024 NH3-N	REPORTED	0.2	MG/L		14		03	
DLY.AVG.	PERMITTED				14	1/WEEK	03	GRABPKLOAD
006101030 NH3-N	REPORTED	0.2	MG/L		14		03	
IND.GRAB	PERMITTED				14	1/WEEK	03	GRABPKLOAD
006102024 NH3-N	REPORTED	0.5	LB/DAY		14		03	
DLY.AVG.	PERMITTED				14	1/WEEK	03	GRABPKLOAD
500497339 WW BYPAS	REPORTED	0	MG					
TOTAL	PERMITTED				01	NA	01	

I CERTIFY THAT I AM FAMILIAR WITH THE INFORMATION CONTAINED IN THIS REPORT AND THAT TO THE BEST OF MY KNOWLEDGE AND BELIEF SUCH INFORMATION IS TRUE AND COMPLETE AND ACCURATE.	NAME	SIGNATURE	DATE
	Juan Gonzalez	Juan G. Gonzalez	9 5 0 4 1 8
TELEPHONE NUMBER	PLANT OPERATOR	PLANT OPERATOR	YEAR MO. DAY
7 1 3 | 2 4 0 | 1 7 0 0	Linda DeLeon		9 5 0 4 1 8
AREA CODE | NUMBER	EXECUTIVE OFFICER	EXECUTIVE OFFICER	YEAR MO. DAY

TEXAS NATURAL RESOURCE CONSERVATION COMMISSION

P.O. BOX 13087 • AUSTIN, TEXAS 78711-3087

MONTHLY EFFLUENT REPORT

ARCOLA, CITY OF
13222 TEXAS HWY 6
ARCOLA, TX
77583-0000

40B	WQ0013367-001	2	9 5	3	8983
SYS	PERMIT NUMBER	SET	YEAR	MO.	EID

THIS REPORT TO BE USED FOR OTFL 001

SEE BACK FOR INSTRUCTIONS AND DEFINITIONS

TNRCC COPY

PARAMETER		EFFLUENT CONDITION VALUE	UNITS	NO. EX.	FREQUENCY OF ANALYSIS	SAMPLE TYPE
500507124 FLOW DLY.AVG.	REPORTED	0.226	MGD	1	02 Cont.	// Cont.
	PERMITTED	0.12500			10 5/WEEK	12 INSTANT
500507150 FLOW DLY.MAX.	REPORTED	0.476	MGD		02 Cont.	// Cont.
	PERMITTED				10 5/WEEK	12 INSTANT
500611080 CL2RES MAXIMUM	REPORTED	2.7	MG/L	0	02 23/Mo.	03
	PERMITTED	4.000			10 5/WEEK	03 GRABPKLOAD
500611081 CL2 RES MAXIMUM	REPORTED	1.0	MG/L	0	02 23/Mo.	03
	PERMITTED	1.000			10 5/WEEK	03 GRABPKLOAD
800821024 BOD CARB DLY AVG	REPORTED	2.0	MG/L	0	14	03
	PERMITTED	20.000			14 1/WEEK	03 GRABPKLOAD
800821030 BOD CARB IND.GRAB	REPORTED	2.1	MG/L	0	14	03
	PERMITTED	65.000			14 1/WEEK	03 GRABPKLOAD
800822024 BOD CARB DLY AVG	REPORTED	4.7	LBS	0	14	03
	PERMITTED	21.000			14 1/WEEK	03 GRABPKLOAD
NUMBER OF OPERATOR CERTIFICATE	REPORTED	466-21-4825	NUMBER			
	PERMITTED				01 NA	01 NA
EXPIRATION OF OPERATOR CERTIFICATE	REPORTED	97-04-12	DATE			
	PERMITTED				01 NA	01 NA
GRADE OF OPERATOR CERTIFICATE	REPORTED	C	LETTER			
	PERMITTED				01 NA	01 NA
	REPORTED					
	PERMITTED					
	REPORTED					
	PERMITTED					

I CERTIFY THAT I AM FAMILIAR WITH THE INFORMATION CONTAINED IN THIS REPORT AND THAT TO THE BEST OF MY KNOWLEDGE AND BELIEF SUCH INFORMATION IS TRUE AND COMPLETE AND ACCURATE.

NAME	SIGNATURE	DATE
Juan Gonzalez	Juan J. Gonzalez	9 5 0 4 / 18
TELEPHONE NUMBER	PLANT OPERATOR	PLANT OPERATOR	YEAR MO. DAY
1 1 3 2 4 0 1 7 0 0	Linda DeLeon	9 5 0 4 / 18
AREA CODE NUMBER	EXECUTIVE OFFICER	EXECUTIVE OFFICER	YEAR MO. DAY

TCC LPS Form 0123A1 (Rev. 08-02-93)

[illegible]EXAS NATURAL RESOURCE CONSERVATION COMMISSION

P.O. BOX 13087 • AUSTIN, TEXAS 78711-3087

MONTHLY EFFLUENT REPORT

ARCOLA, CITY OF
13222 TEXAS HWY 6
ARCOLA, TX
77583-0000

SYS	PERMIT NUMBER	SET	YEAR	MO.	EID
40B	WQ0013367-001	2	95	5	8983

THIS REPORT TO BE USED FOR OTFL 001

SEE BACK FOR INSTRUCTIONS AND DEFINITIONS

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PARAMETER		EFFLUENT CONDITION VALUE	UNITS	NO. EX.	FREQUENCY OF ANALYSIS	SAMPLE TYPE
000035342 DISCHRGE DAYS/MTH	REPORTED	31	DAYS			
	PERMITTED				01 NA	01 NA
000045342 UNAU/DIS DAYS/MTH	REPORTED	0	DAYS			
	PERMITTED				01 NA	01 NA
003001081 D.O. MINIMUM	REPORTED	2.8	MG/L	0	14 5/Mo.	03
	PERMITTED	2.000			14 1/WEEK	03 GRABPKLOAD
004006080 PH [illegible]MUM	REPORTED	7.4	STD UNIT	0	14 5/Mo.	03
	PERMITTED	9.000			17 1/MONTH	03 GRABPKLOAD
[illegible]4006081 PH MINIMUM	REPORTED	7.1	STD UNIT	0	14 5/Mo.	03
	PERMITTED	6.000			17 1/MONTH	03 GRABPKLOAD
005301024 TSS DLY.AVG.	REPORTED	14.6	MG/L	0	14	03
	PERMITTED	20.000			14 1/WEEK	03 GRABPKLOAD
005301030 TSS IND.GRAB	REPORTED	20.0	MG/L	0	14	03
	PERMITTED	65.000			14 1/WEEK	03 GRABPKLOAD
005302024 TSS DLY.AVG.	REPORTED	34.0	LBS/DAY	1	14	03
	PERMITTED	21.000			14 1/WEEK	03 GRABPKLOAD
006101024 NH3-N DLY.AVG.	REPORTED	0.2	MG/L		14	03
	PERMITTED				14 1/WEEK	03 GRABPKLOAD
006101030 NH3-N IND.GRAB	REPORTED	0.2	MG/L		14	03
	PERMITTED				14 1/WEEK	03 GRABPKLOAD
006102024 NH3-N DLY.AVG.	REPORTED	0.4	LB/DAY		14	03
	PERMITTED				14 1/WEEK	03 GRABPKLOAD
500497339 UNAU/DIS TOTAL	REPORTED	0	MG			
	PERMITTED				01 NA	01 NA

[illegible] THAT I AM FAMILIAR WITH THE INFORMATION [illegible]D IN THIS REPORT AND THAT TO THE BEST OF MY [illegible]EDGE AND BELIEF SUCH INFORMATION IS TRUE AND COMPLETE AND ACCURATE.

	NAME	SIGNATURE	DATE (YEAR MO. DAY)
	Juan Gonzalez	Juan J. Gonzalez	95 06 09
TELEPHONE NUMBER	PLANT OPERATOR	PLANT OPERATOR	
713 240 1700	Linda DeLeon	L. DeL	95 06 19
AREA CODE / NUMBER	EXECUTIVE OFFICER	EXECUTIVE OFFICER	

TNRCC LPS Form [illegible]

TEXAS NATURAL RESOURCE CONSERVATION COMMISSION

P.O. BOX 13087 • AUSTIN, TEXAS 78711-3087

MONTHLY EFFLUENT REPORT

ARCOLA, CITY OF
13222 TEXAS HWY 6
ARCOLA, TX
77583-0000

40B	WQ0013367-001	2	9 5 | 5	8983
SYS	PERMIT NUMBER	SET	YEAR MO.	EID

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PARAMETER		EFFLUENT CONDITION VALUE	UNITS	NO. EX.	FREQUENCY OF ANALYSIS	SAMPLE TYPE
500507124 FLOW DLY.AVG.	REPORTED	0.099	MGD	0	02 Cont.	11 Cont.
	PERMITTED	0.12500			10 5/WEEK	12 INSTANT
500507150 FLOW DLY.MAX.	REPORTED	0.446	MGD		02 Cont.	11 Cont.
	PERMITTED				10 5/WEEK	12 INSTANT
500611080 CL2RES MAXIMUM	REPORTED	2.9	MG/L	0	02 23/Mo.	03
	PERMITTED	4.000			10 5/WEEK	03 GRABPKLOAD
500611081 CL2 RES MUM	REPORTED	1.0	MG/L	0	02 23/Mo.	03
	PERMITTED	1.000			10 5/WEEK	03 GRABPKLOAD
300821024 BOD CARB DLY AVG	REPORTED	2.1	MG/L	0	14	03
	PERMITTED	20.000			14 1/WEEK	03 GRABPKLOAD
300821030 BOD CARB IND.GRAB	REPORTED	2.4	MG/L	0	14	03
	PERMITTED	65.000			14 1/WEEK	03 GRABPKLOAD
300822024 BOD CARB DLY AVG	REPORTED	4.2	LBS	0	14	03
	PERMITTED	21.000			14 1/WEEK	03 GRABPKLOAD
NUMBER OF OPERATOR CERTIFICATE	REPORTED	466-21-4825	NUMBER			
	PERMITTED				01 NA	01 NA
EXPIRATION OF OPERATOR CERTIFICATE	REPORTED	97-04-12	DATE			
	PERMITTED				01 NA	01 NA
CLASS OF OPERATOR CERTIFICATE	REPORTED	C	LETTER			
	PERMITTED				01 NA	01 NA
	REPORTED					
	PERMITTED					
	REPORTED					
	PERMITTED					

THAT I AM FAMILIAR WITH THE INFORMATION IN THIS REPORT AND THAT TO THE BEST OF MY KNOWLEDGE AND BELIEF SUCH INFORMATION IS TRUE AND COMPLETE AND ACCURATE.

NAME	SIGNATURE	DATE
Juan Gonzalez	Juan J. Gonzalez	9 5 0 6 19
TELEPHONE NUMBER	PLANT OPERATOR	PLANT OPERATOR	YEAR MO. DAY
7 1 3 | 2 4 0 | 1 7 0 0	Linda DeLeon		9 5 0 6
AREA CODE | NUMBER	EXECUTIVE OFFICER	EXECUTIVE OFFICER	YEAR MO. DAY

TNRCC LPS Form 21024-1 Rev. 08-22-91

RESOURCE CONSERVATION COMMISSION

P.O. BOX 13087 • AUSTIN, TEXAS 78711-3087

MONTHLY EFFLUENT REPORT

ARCOLA, CITY OF
13222 TEXAS HWY 6
ARCOLA, TX
77583-0000

SYS	PERMIT NUMBER	SET	YEAR	MO.	EID
40B	WQ0013367-001	2	95	4	8983

THIS REPORT TO BE USED FOR OTFL 001

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PARAMETER		EFFLUENT CONDITION VALUE	EFFLUENT CONDITION UNITS	NO. EX.	FREQUENCY OF ANALYSIS		SAMPLE TYPE	
00035342 DISCHRGE DAYS/MTH	REPORTED	30	DAYS					
	PERMITTED				01	NA	01	NA
00045342 UNAU/DIS DAYS/MTH	REPORTED	0	DAYS					
	PERMITTED				01	NA	01	NA
03001081 D.O. MINIMUM	REPORTED	5.0	MG/L	0	14	4/Mo.	03	
	PERMITTED	2.000			14	1/WEEK	03	GRABPKLOAD
04006080 PH M MUM	REPORTED	7.4	STD UNIT	0	14	4/Mo.	03	
	PERMITTED	9.000			17	1/MONTH	03	GRABPKLOAD
06081 PH MINIMUM	REPORTED	7.2	STD UNIT	0	14	4/Mo.	03	
	PERMITTED	6.000			17	1/MONTH	03	GRABPKLOAD
05301024 TSS DLY.AVG.	REPORTED	13.5	MG/L	0	14		03	
	PERMITTED	20.000			14	1/WEEK	03	GRABPKLOAD
05301030 TSS IND.GRAB	REPORTED	16.0	MG/L	0	14		03	
	PERMITTED	65.000			14	1/WEEK	03	GRABPKLOAD
05302024 TSS DLY.AVG.	REPORTED	27.3	LBS/DAY	1	14		03	
	PERMITTED	21.000			14	1/WEEK	03	GRABPKLOAD
06101024 NH3-N DLY.AVG.	REPORTED	0.2	MG/L		14		03	
	PERMITTED				14	1/WEEK	03	GRABPKLOAD
06101030 NH3-N IND.GRAB	REPORTED	0.3	MG/L		14		03	
	PERMITTED				14	1/WEEK	03	GRABPKLOAD
06102024 NH3-N DLY.AVG.	REPORTED	0.4	LB/DAY		14		03	
	PERMITTED				14	1/WEEK	03	GRABPKLOAD
00497339 UNAU/DIS TOTAL	REPORTED	0	MG					
	PERMITTED				01	NA	01	NA

I CERTIFY THAT I AM FAMILIAR WITH THE INFORMATION CONTAINED IN THIS REPORT AND THAT TO THE BEST OF MY KNOWLEDGE AND BELIEF SUCH INFORMATION IS TRUE AND COMPLETE AND ACCURATE.

	NAME	SIGNATURE	DATE
TELEPHONE NUMBER	Juan Gonzalez	Juan J. Gonzalez	9 5 0 5 0 8
	PLANT OPERATOR	PLANT OPERATOR	YEAR MO. DAY
1 3 2 4 0 1 7 0 0	Linda DeLeon		9 5 0 5 1 5
AREA CODE NUMBER	EXECUTIVE OFFICER	EXECUTIVE OFFICER	YEAR MO. DAY

MONTHLY EFFLUENT REPORT

ARCOLA, CITY OF
13222 TEXAS HWY 6
ARCOLA, TX
77583-0000

40B	WQ0013367-001	2	9 5	4	8983
SYS	PERMIT NUMBER	SET	YEAR	MO.	EID

THIS REPORT TO BE USED FOR OTFL 001
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PARAMETER		EFFLUENT CONDITION VALUE	UNITS	NO. EX.	FREQUENCY OF ANALYSIS	SAMPLE TYPE
500507124 FLOW DLY.AVG.	REPORTED	0.135	MGD	1	02 Cont.	11 Cont.
	PERMITTED	0.12500			10 5/WEEK	12 INSTANT
500507150 FLOW DLY.MAX.	REPORTED	0.492	MGD		02 Cont.	11 Cont.
	PERMITTED				10 5/WEEK	12 INSTANT
500611080 CL2RES MAXIMUM	REPORTED	3.2	MG/L	0	02 20/Mo.	03
	PERMITTED	4.000			10 5/WEEK	03 GRABPKLOAD
500611081 CL2 RES M— MUM	REPORTED	1.0	MG/L	0	02 20/Mo.	03
	PERMITTED	1.000			10 5/WEEK	03 GRABPKLOAD
-21024 BOD CARB DLY AVG	REPORTED	2.2	MG/L	0	14	03
	PERMITTED	20.000			14 1/WEEK	03 GRABPKLOAD
800821030 BOD CARB IND.GRAB	REPORTED	2.6	MG/L	0	14	03
	PERMITTED	65.000			14 1/WEEK	03 GRABPKLOAD
800822024 BOD CARB DLY AVG	REPORTED	4.1	LBS	0	14	03
	PERMITTED	21.000			14 1/WEEK	03 GRABPKLOAD
NUMBER OF OPERATOR CERTIFICATE	REPORTED	466-21-4825	NUMBER			
	PERMITTED				01 NA	01 NA
EXPIRATION OF OPERATOR CERTIFICATE	REPORTED	97-04-12	DATE			
	PERMITTED				01 NA	01 NA
CLASS OF OPERATOR CERTIFICATE	REPORTED	C	LETTER			
	PERMITTED				01 NA	01 NA
	REPORTED					
	PERMITTED					
	REPORTED					
	PERMITTED					

I CERTIFY THAT I AM FAMILIAR WITH THE INFORMATION CONTAINED IN THIS REPORT AND THAT TO THE BEST OF MY KNOWLEDGE AND BELIEF SUCH INFORMATION IS TRUE AND COMPLETE AND ACCURATE.

NAME	SIGNATURE	DATE
Juan Gonzalez	Juan L. Gonzalez	9 5 0 5 0 8
TELEPHONE NUMBER	PLANT OPERATOR	PLANT OPERATOR — YEAR MO. DAY
7 1 3 2 4 0 1 7 0 0	Linda DeLeon	9 5 0 5 1 5
AREA CODE NUMBER	EXECUTIVE OFFICER	EXECUTIVE OFFICER — YEAR MO. DAY

TEXAS NATURAL RESOURCE CONSERVATION COMMISSION

P.O. BOX 13087 • AUSTIN, TEXAS 78711-3087

MONTHLY EFFLUENT REPORT

ARCOLA, CITY OF
13222 TEXAS HWY 6
ARCOLA, TX
77583-0000

SYS	PERMIT NUMBER	SET	YEAR	MO.	EID
40B	WQ0013367-001	2	95	6	8983

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PARAMETER		EFFLUENT CONDITION VALUE	UNITS	NO. EX.	FREQUENCY OF ANALYSIS		SAMPLE TYPE	
000035342 DISCHRGE DAYS/MTH	REPORTED	30	DAYS					
	PERMITTED				01	NA	01	NA
000045342 UNAU/DIS DAYS/MTH	REPORTED	0	DAYS					
	PERMITTED				01	NA	01	NA
003001081 D.O. MINIMUM	REPORTED	3.2	MG/L	0	14	4/Mo.	03	
	PERMITTED	2.000			14	1/WEEK	03	GRABPKLOAD
004006080 PH M MUM	REPORTED	7.3	STD UNIT	0	14	4/Mo.	03	
	PERMITTED	9.000			17	1/MONTH	03	GRABPKLOAD
0 006081 PH MINIMUM	REPORTED	7.1	STD UNIT	0	14	4/Mo.	03	
	PERMITTED	6.000			17	1/MONTH	03	GRABPKLOAD
005301024 TSS DLY.AVG.	REPORTED	6.8	MG/L	0	14		03	
	PERMITTED	20.000			14	1/WEEK	03	GRABPKLOAD
005301030 TSS IND.GRAB	REPORTED	8.0	MG/L	0	14		03	
	PERMITTED	65.000			14	1/WEEK	03	GRABPKLOAD
005302024 TSS DLY.AVG.	REPORTED	8.2	LBS/DAY	0	14		03	
	PERMITTED	21.000			14	1/WEEK	03	GRABPKLOAD
006101024 NH3-N DLY.AVG.	REPORTED	1.3	MG/L		14		03	
	PERMITTED				14	1/WEEK	03	GRABPKLOAD
006101030 NH3-N IND.GRAB	REPORTED	4.8	MG/L		14		03	
	PERMITTED				14	1/WEEK	03	GRABPKLOAD
006102024 NH3-N DLY.AVG.	REPORTED	2.0	LB/DAY		14		03	
	PERMITTED				14	1/WEEK	03	GRABPKLOAD
500497339 UNAU/DIS TOTAL	REPORTED	0	MG					
	PERMITTED				01	NA	01	NA

I CERTIFY THAT I AM FAMILIAR WITH THE INFORMATION IN THIS REPORT AND THAT TO THE BEST OF MY KNOWLEDGE AND BELIEF SUCH INFORMATION IS TRUE AND COMPLETE AND ACCURATE.

TELEPHONE NUMBER	NAME	SIGNATURE	DATE
	Juan Gonzalez	Juan L. Gonzalez	9 5 0 7 1 2
AREA CODE / NUMBER	PLANT OPERATOR	PLANT OPERATOR	YEAR MO. DAY
1 3 / 2 4 0 / 1 7 0 0	Linda DeLeon		9 5 0 7 1 7
AREA CODE / NUMBER	EXECUTIVE OFFICER	EXECUTIVE OFFICER	YEAR MO. DAY

TCEQ EPS Form 012341 Rev. 08-02-97)

MONTHLY EFFLUENT REPORT

ARCOLA, CITY OF
13222 TEXAS HWY 6
ARCOLA, TX
77583-0000

SYS	PERMIT NUMBER	SET	YEAR	MO.	EID
40B	WQ0013367-001	2	95	6	8983

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SEE BACK FOR INSTRUCTIONS AND DEFINITIONS

TNRCC COPY

PARAMETER		EFFLUENT CONDITION VALUE	UNITS	NO. EX.	FREQUENCY OF ANALYSIS		SAMPLE TYPE	
500507124 FLOW	REPORTED	0.108	MGD	0	02	Cont.	11	Cont.
DLY.AVG.	PERMITTED	0.12500			10	5/WEEK	12	INSTANT
500507150 FLOW	REPORTED	0.352	MGD		02	Cont.	11	Cont.
DLY.MAX.	PERMITTED				10	5/WEEK	12	INSTANT
500611080 CL2RES	REPORTED	3.5	MG/L	0	02	22/Mo.	03	
MAXIMUM	PERMITTED	4.000			10	5/WEEK	03	GRABPKLOAD
500611081 CL2 RES	REPORTED	1.1	MG/L	0	02	22/Mo.	03	
MUM	PERMITTED	1.000			10	5/WEEK	03	GRABPKLOAD
021024 BOD CARB	REPORTED	2.2	MG/L	0	14		03	
DLY AVG	PERMITTED	20.000			14	1/WEEK	03	GRABPKLOAD
800821030 BOD CARB	REPORTED	2.3	MG/L	0	14		03	
IND.GRAB	PERMITTED	65.000			14	1/WEEK	03	GRABPKLOAD
800822024 BOD CARB	REPORTED	2.7	LBS	0	14		03	
DLY AVG	PERMITTED	21.000			14	1/WEEK	03	GRABPKLOAD
NUMBER OF OPERATOR	REPORTED	466-21-4825	NUMBER					
CERTIFICATE	PERMITTED				01	NA	01	NA
EXPIRATION OF OPERATOR	REPORTED	97-04-12	DATE					
CERTIFICATE	PERMITTED				01	NA	01	NA
CLASS OF OPERATOR	REPORTED	C	LETTER					
CERTIFICATE	PERMITTED				01	NA	01	NA
	REPORTED							
	PERMITTED							
	REPORTED							
	PERMITTED							

I CERTIFY THAT I AM FAMILIAR WITH THE INFORMATION CONTAINED IN THIS REPORT AND THAT TO THE BEST OF MY KNOWLEDGE AND BELIEF SUCH INFORMATION IS TRUE AND COMPLETE AND ACCURATE.	NAME	SIGNATURE	DATE
TELEPHONE NUMBER	PLANT OPERATOR	PLANT OPERATOR	YEAR MO. DAY
713 240 1700	Juan Gonzalez	Juan L Gonzalez	95 07 12
AREA CODE NUMBER	EXECUTIVE OFFICER	EXECUTIVE OFFICER	YEAR MO. DAY
	Linda DeLeon		95 07 17

... RESOURCE CONSERVATION COMMISSION

P.O. BOX 13087 • AUSTIN, TEXAS 78711-3087

MONTHLY EFFLUENT REPORT

ARCOLA, CITY OF
13222 TEXAS HWY 6
ARCOLA, TX
77583-0000

SYS	PERMIT NUMBER	SET	YEAR	MO.	EID
40B	WQ0013367-001	2	9 5	7	8983

HIS REPORT TO BE USED FOR OTFL 001

EE BACK FOR INSTRUCTIONS AND DEFINITIONS

TNRCC COPY

PARAMETER	EFFLUENT CONDITION	VALUE	UNITS	NO. EX.	FREQUENCY OF ANALYSIS		SAMPLE TYPE	
000035342 DISCHRGE DAYS/MTH	REPORTED	31	DAYS					
	PERMITTED				01	NA	01	NA
000045342 UNAU/DIS DAYS/MTH	REPORTED	0	DAYS					
	PERMITTED				01	NA	01	NA
003001081 D.O. MINIMUM	REPORTED	2.9	MG/L	0	14	4/month	03	
	PERMITTED	2.000			14	1/WEEK	03	GRABPKLOAD
004006080 PH ...MUM	REPORTED	7.3	STD UNIT	0	14	4/month	03	
	PERMITTED	9.000			17	1/MONTH	03	GRABPKLOAD
...006081 PH MINIMUM	REPORTED	7.2	STD UNIT	0	14	4/month	03	
	PERMITTED	6.000			17	1/MONTH	03	GRABPKLOAD
.05301024 TSS .LY.AVG.	REPORTED	7.3	MG/L	0	14		03	
	PERMITTED	20.000			14	1/WEEK	03	GRABPKLOAD
.05301030 TSS .ND.GRAB	REPORTED	9.0	MG/L	0	14		03	
	PERMITTED	65.000			14	1/WEEK	03	GRABPKLOAD
.05302024 TSS .LY.AVG.	REPORTED	6.2	LBS/DAY	0	14		03	
	PERMITTED	21.000			14	1/WEEK	03	GRABPKLOAD
.06101024 NH3-N .LY.AVG.	REPORTED	0.2	MG/L		14		03	
	PERMITTED				14	1/WEEK	03	GRABPKLOAD
.06101030 NH3-N .ND.GRAB	REPORTED	0.2	MG/L		14		03	
	PERMITTED				14	1/WEEK	03	GRABPKLOAD
.06102024 NH3-N .LY.AVG.	REPORTED	0.1	LB/DAY		14		03	
	PERMITTED				14	1/WEEK	03	GRABPKLOAD
.00497339 .NAU/DIS TOTAL	REPORTED	0	MG					
	PERMITTED				01	NA	01	NA

... THAT I AM FAMILIAR WITH THE INFORMATION ... IN THIS REPORT AND THAT TO THE BEST OF MY ... LEDGE AND BELIEF SUCH INFORMATION IS TRUE AND ...MPLETE AND ACCURATE.	NAME	SIGNATURE	DATE
	Juan Gonzalez	[signature]	9 5 0 8 1 4
TELEPHONE NUMBER	PLANT OPERATOR	PLANT OPERATOR	YEAR MO. DAY
7 1 3 / 2 4 0 1 7 0 0	Linda DeLeon	[signature]	9 5 0 8 1 1
AREA CODE / NUMBER	EXECUTIVE OFFICER	EXECUTIVE OFFICER	YEAR MO. DAY

MONTHLY EFFLUENT REPORT

ARCOLA, CITY OF
13222 TEXAS HWY 6
ARCOLA, TX
77583-0000

SYS	PERMIT NUMBER	SET	YEAR	MO.	EID
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PARAMETER		EFFLUENT CONDITION VALUE	UNITS	NO. EX.	FREQUENCY OF ANALYSIS	SAMPLE TYPE
500507124 FLOW DLY.AVG.	REPORTED	0.070	MGD	0	02 Cont.	11 Cont.
	PERMITTED	0.12500			10 5/WEEK	12 INSTANT
500507150 FLOW DLY.MAX.	REPORTED	0.186	MGD	0	00 Cont.	11 Cont.
	PERMITTED				10 5/WEEK	12 INSTANT
500611080 CL2RES MAXIMUM	REPORTED	2.8	MG/L	0	02 21/month	03
	PERMITTED	4.000			10 5/WEEK	03 GRABPKLOAD
500611081 CL2 RES MUM	REPORTED	1.1	MG/L	0	12 21/month	03
	PERMITTED	1.000			10 5/WEEK	03 GRABPKLOAD
800821024 BOD CARB DLY AVG	REPORTED	2.0	MG/L	0	14	03
	PERMITTED	20.000			14 1/WEEK	03 GRABPKLOAD
800821030 BOD CARB IND.GRAB	REPORTED	2.1	MG/L	0	14	03
	PERMITTED	65.000			14 1/WEEK	03 GRABPKLOAD
800822024 BOD CARB DLY AVG	REPORTED	1.6	LBS	0	14	03
	PERMITTED	21.000			14 1/WEEK	03 GRABPKLOAD
NUMBER OF OPERATOR CERTIFICATE	REPORTED	466-21-4825	NUMBER			
	PERMITTED				01 NA	01 NA
EXPIRATION OF OPERATOR CERTIFICATE	REPORTED	97-04-12	DATE			
	PERMITTED				01 NA	01 NA
CLASS OF OPERATOR CERTIFICATE	REPORTED	C	LETTER			
	PERMITTED				01 NA	01 NA
	REPORTED					
	PERMITTED					
	REPORTED					
	PERMITTED					

I [illegible] THAT I AM FAMILIAR WITH THE INFORMATION C[illegible]ED IN THIS REPORT AND THAT TO THE BEST OF MY KI[illegible]LEDGE AND BELIEF SUCH INFORMATION IS TRUE AND COMPLETE AND ACCURATE.

NAME	SIGNATURE	DATE
Juan Gonzalez	Michael D Poole	9 5 0 8 14
TELEPHONE NUMBER	PLANT OPERATOR	PLANT OPERATOR	YEAR MO. DAY
7 1 3 2 4 0 1 7 0 0	Linda DeLeon	9 5 0 8 11
AREA CODE NUMBER	EXECUTIVE OFFICER	EXECUTIVE OFFICER	YEAR MO. DAY

TEXAS NATURAL RESOURCE CONSERVATION COMMISSION

P.O. BOX 13087 • AUSTIN, TEXAS 78711-3087

MONTHLY EFFLUENT REPORT

ARCOLA, CITY OF
13222 TEXAS HWY 6
ARCOLA, TX
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PARAMETER	EFFLUENT CONDITION	VALUE	UNITS	NO. EX.	FREQUENCY OF ANALYSIS		SAMPLE TYPE	
000035342 DISCHRGE DAYS/MTH	REPORTED	31	DAYS					
	PERMITTED				01	NA	01	NA
000045342 UNAU/DIS DAYS/MTH	REPORTED	1	DAYS	1				
	PERMITTED				01	NA	01	NA
003001081 D.O. MINIMUM	REPORTED	3.8	MG/L	0		18/month	03	
	PERMITTED	2.000			14	1/WEEK	03	GRABPKLOAD
004006080 PH MAXIMUM	REPORTED	8.5	STD UNIT	0		19/month	03	
	PERMITTED	9.000			17	1/MONTH	03	GRABPKLOAD
004006081 PH MINIMUM	REPORTED	6.9	STD UNIT	0		19/month	03	
	PERMITTED	6.000			17	1/MONTH	03	GRABPKLOAD
005301024 TSS DLY.AVG.	REPORTED	4.0	MG/L	0	14		03	
	PERMITTED	20.000			14	1/WEEK	03	GRABPKLOAD
005301030 TSS IND.GRAB	REPORTED	7.0	MG/L	0	14		03	
	PERMITTED	65.000			14	1/WEEK	03	GRABPKLOAD
005302024 TSS DLY.AVG.	REPORTED	2.4	LBS/DAY	0	14		03	
	PERMITTED	21.000			14	1/WEEK	03	GRABPKLOAD
006101024 NH3-N DLY.AVG.	REPORTED	0.1	MG/L		14		03	
	PERMITTED				14	1/WEEK	03	GRABPKLOAD
006101030 NH3-N IND.GRAB	REPORTED	0.1	MG/L		14		03	
	PERMITTED				14	1/WEEK	03	GRABPKLOAD
006102024 NH3-N DLY.AVG.	REPORTED	0.1	LB/DAY		14		03	
	PERMITTED				14	1/WEEK	03	GRABPKLOAD
000497339 UNAU/DIS TOTAL	REPORTED	.00015	MG					
	PERMITTED				01	NA	01	NA

I CERTIFY THAT I AM FAMILIAR WITH THE INFORMATION CONTAINED IN THIS REPORT AND THAT TO THE BEST OF MY KNOWLEDGE AND BELIEF SUCH INFORMATION IS TRUE AND COMPLETE AND ACCURATE.	NAME	SIGNATURE	DATE (YEAR MO. DAY)
	Paul Winebrenner, Jr.	Paul Winebrenner Jr	95 09 08
TELEPHONE NUMBER	PLANT OPERATOR	PLANT OPERATOR	YEAR MO. DAY
713 240 1700	Linda DeLeon	[signature]	95 09 08
AREA CODE / NUMBER	EXECUTIVE OFFICER	EXECUTIVE OFFICER	YEAR MO. DAY

MONTHLY EFFLUENT REPORT

ARCOLA, CITY OF
13222 TEXAS HWY 6
ARCOLA, TX
77583-0000

SYS	PERMIT NUMBER	SET	YEAR	MO.	EID
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PARAMETER		EFFLUENT CONDITION VALUE	UNITS	NO. EX.	FREQUENCY OF ANALYSIS		SAMPLE TYPE	
50050 7124 FLOW	REPORTED	0.092	MGD	0		Cont.		Cont.
DLY.AVG.	PERMITTED	0.12500			10	5/WEEK	12	INSTANT
50050 7150 FLOW	REPORTED	0.426	MGD			Cont.		Cont.
DLY.MAX.	PERMITTED				10	5/WEEK	12	INSTANT
50061 1080 CL2RES	REPORTED	3.4	MG/L	0		27/month	03	
MAXIMUM	PERMITTED	4.000			10	5/WEEK	03	GRABPRLOAD
50061 1081 CL2 RES	REPORTED	1.8	MG/L	0		27/month	03	
[illegible]IUM	PERMITTED	1.000			10	5/WEEK	03	GRABPRLOAD
3[illegible]21024 BOD CARB	REPORTED	2.0	MG/L	0	14		03	
DLY AVG	PERMITTED	20.000			14	1/WEEK	03	GRABPRLOAD
00821030 BOD CARB	REPORTED	2.0	MG/L	0	14		03	
IND.GRAB	PERMITTED	65.000			14	1/WEEK	03	GRABPRLOAD
00822024 BOD CARB	REPORTED	1.3	LBS	0	14		03	
DLY AVG	PERMITTED	21.000			14	1/WEEK	03	GRABPRLOAD
NUMBER OF OPERATOR CERTIFICATE	REPORTED	460-94-7253	NUMBER					
	PERMITTED				01	NA	01	NA
EXPIRATION OF OPERATOR CERTIFICATE	REPORTED	97-04-28	DATE					
	PERMITTED				01	NA	01	NA
CLASS OF OPERATOR CERTIFICATE	REPORTED	B	LETTER					
	PERMITTED				01	NA	01	NA
	REPORTED							
	PERMITTED							
	REPORTED							
	PERMITTED							

[illegible] THAT I AM FAMILIAR WITH THE INFORMATION IN THIS REPORT AND THAT TO THE BEST OF MY [illegible]E AND BELIEF SUCH INFORMATION IS TRUE AND [illegible]MPLE[illegible]E AND ACCURATE.

NAME	SIGNATURE	DATE (YEAR MO. DAY)
Paul Winebrenner, Jr.	Paul Winebrenner	95 09 18

TELEPHONE NUMBER		
AREA CODE	NUMBER	
13	240	1700

PLANT OPERATOR	PLANT OPERATOR	DATE (YEAR MO. DAY)

EXECUTIVE OFFICER	EXECUTIVE OFFICER	DATE (YEAR MO. DAY)
Linda DeLeon		95 09 19