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BEFORE
THE PUBLIC UTILITIES COMMISSION OF OHIO

In the Matter of the Application of Ohio Wastewater Systems, Inc. for a Certificate of Public Convenience and Necessity to Provide Sewage Disposal Service and for Approval of Its Tariff, P.U.C.O. No. 1.	))))))	**Case No. 17-616-ST-ACE**

APPLICATION OF OHIO WASTEWATER SYSTEMS, INC.

By this application filed pursuant to R.C. 4933.25 and Ohio Adm.Code 4901:1-15-05, Ohio Wastewater Systems, Inc. ("OWSI") seeks authority from this Commission to provide sanitary sewer service as a Commission-regulated R.C. 4905.03(M) sewage disposal system company to a new residential subdivision located in an unincorporated area in Union Township, Warren County, Ohio. As demonstrated in the application and attached exhibits, OWSI has the requisite management experience, financial capability, and technical expertise to provide such service at proposed rates and charges that are, in all respects, just and reasonable, and pursuant to rules and regulations that conform to the Commission's standards for sewage disposal system companies set out in Ohio Adm.Code Chapter 4905:1-15. Accordingly, OWSI requests that the Commission grant OWSI a certificate of public convenience and necessity authorizing OWSI to construct, install, and operate the sewage disposal system necessary to provide the sewer service described in the application. OWSI further requests that the Commission approve, as a first filing, the rates and charges set forth in OWSI's proposed tariff, P.U.C.O. No. 1, attached hereto as Exhibit 5, and approve the other terms and conditions of service set forth in said tariff. In support of its application, OWSI states as follows.

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1. OWSI is a newly-formed Ohio corporation and, as such, has not heretofore provided sewage disposal service in this state. However, the Smyrna, Tennessee-based parent company of OWSI, Adenus Group, LLC ("Adenus"), is the leader in decentralized wastewater systems and technology in the Southeastern United States. Adenus was founded by four brothers in the mid-1990s, and its public utility subsidiaries currently provide regulated wastewater service to over 6,000 customers in Tennessee, Alabama, and Kentucky. Tennessee Wastewater Systems, Inc. holds over 70 certificates for service territories in Middle and East Tennessee. Alabama Wastewater Systems, Inc. holds five certificates for territories in the Montgomery and Birmingham areas, and Commonwealth Wastewater Systems, Inc. holds one certificate for a system in Kentucky. More information regarding Adenus and its subsidiaries is available on the Adenus website at http://www.adenus.com.

2. In addition to the service provided by the Adenus subsidiaries identified above, Adenus has also been a leader in the wastewater technology field through the development and implementation of its HAWKMS monitoring system, which has been developed and refined over the last fifteen years specifically for use by the decentralized wastewater industry. HAWKMS gives operators the ability to remotely monitor and control their plants by means of status and override values. The technology is also able to generate performance reports that can be delivered to utility management to highlight key performance indicators. HAWKMS, which is the most advanced system of its type in the country, is able to sense and adapt certain aspects of plant operation to optimize energy consumption and plant conditions. This system, which will be utilized by OWSI, currently monitors nearly 300 sites, the most of any remote monitoring system in the industry. Adenus has invested well over a million dollars into developing this platform, and the utilities it serves have been the primary beneficiaries of the fruits of that development.

3. The proposed service area for the requested certificate encompasses a new residential subdivision known as Aberlin Springs, a development containing some 139 home sites as well as accessory structures and community buildings. Aberlin Springs is a planned agricultural community centered around the farm-to-table concept, and is the first of its kind in this region of the country. The development features an onsite farm that will provide the community with fresh produce as well as meat from pasture-raised livestock. The wastewater system designed by OWSI for the development will play an integral role in the sustainability of the farm-to-table model by providing multiple drip area disposal zones to permit the farm to irrigate the soil in those zones to grow produce for the residents of the community as well as feed for livestock. Aberlin Springs is a project of Pendragon Development Company, LLC ("Developer"), which will construct the homes and other subdivision infrastructure. More information regarding the new development is available at http://www.aberlinsprings.com.

4. The proposed sewage disposal system consists of three components, a cluster septic collection system, which will collect and transport wastewater from customer-owned tanks on the customer's property through mains and related facilities to a septic lagoon, the septic lagoon treatment system, and the multiple-zone drip distribution disposal system described above. Under its agreement with OWSI, the Developer will construct and install the collection system in accordance with OWSI's specifications, and, after the results of the required inspection are accepted by OWSI, will convey title to the collection system to OWSI. OWSI will be responsible for the construction and installation of the treatment and disposal systems, but these systems will be funded by the Developer through contributions in aid of construction in the form of per-lot capacity development fees paid by the Developer to OWSI. As evidenced by the letter from the Ohio Environmental Protection Agency ("OEPA") to the Commission attached to the application

as Exhibit 16, the OEPA has approved the plans for the system and issued the required Permit to Install.

5. The Developer's plan for Aberlin Springs project contemplates building out the subdivision in four phases, and the Developer will synchronize the construction and installation of the sewage collection system facilities with the customer requirements associated with each phase of the project. As described in Exhibit 17 to the application, OWSI will construct and install the control building and the treatment facilities required to serve the entire subdivision before service commences to the purchasers of Phase 1 homes. Although OWSI will construct the initial disposal system with more than adequate capacity to meet the requirements of Phase 1 and Phase 2 customers, OWSI will defer constructing the drip irrigation facilities for additional drip zones until subsequent phases of the project so that this equipment does not stand idle for an extended period of time. However, OWSI would emphasize that, at all times, the facilities in place will be more than sufficient to meet the needs of new Aberlin Springs customers as they come on line.

6. OWSI will contract with a local company specializing in wastewater systems to handle system inspection, maintenance, and repair tasks. The system will be monitored continuously at Adenus' headquarters through remote telemetry and the HAWKMS system. Any identified issues at the system facilities will be relayed directly to the local service company for follow-up action. Customer-initiated service calls will be handled through the OWSI office, where service tickets will be generated and forwarded to the local service company for response. Billing, collection, and other administrative functions, including responding to customer inquiries and complaints, will be performed by the customer service staff of other Adenus subsidiaries, whose time devoted to OWSI matters will be tracked to permit the associated expense to be allocated appropriately to OWSI. Although OWSI will have no actual employees, this arrangement is

similar to the manner in which OWSI's sister company, Alabama Wastewater Systems, Inc., has operated in Alabama with great success, and OWSI is confident that this arrangement will result in safe, reliable, and adequate sewage disposal service to customers within its proposed service area.

7. As suggested above, the Aberlin Springs subdivision is located in a predominantly rural area, and there are no public or private sewer systems in the vicinity of the territory OWSI proposes to serve. Thus, granting OWSI's application will both promote the public convenience and provide necessary sewage disposal service in an area where no such service currently exists.

8. The proposed boundaries of the service area are described and depicted in attached Exhibit 6. As described in detail in the engineering report attached hereto as Exhibit 7, the wastewater treatment facility has the necessary capacity to serve the potential customers in the proposed service area.

9. As discussed above, and as further explained in attached Exhibit 13, construction of the proposed sewage disposal system will be financed entirely by the Developer of the Aberlin Springs subdivision. As a startup company, OWSI has no current revenue stream. However, to the extent cash working capital is required to support its operations until a sufficient number of customers are added to make OWSI self-sustaining, OWSI will rely on its parent, Adenus, to meet any such need. Copies of Adenus' financial statements are included in Exhibit 14 to the application, which has been filed under seal pursuant to a motion for a protective order. Thus, OWSI has the financial capability to provide the proposed service.

10. As set out in the proposed tariff attached hereto as Exhibit 5, OWSI proposes to provide sewage disposal service to customers at a flat rate of $58.00 per month. Although the

projected income statement contained in Exhibits 4 and 4A to the application is necessarily based on certain assumptions, as shown therein, OWSI anticipates that this proposed rate will ultimately generate sufficient revenue for OWSI to sustain its operations. OWSI notes that, because the collection system will be constructed by the Developer, there will be no tap-in, connection, or main extension fees charged to customers within the Aberlin Springs subdivision as currently planned. Further, the tariff also provides that OWSI will maintain and repair the customer's tank and the OWSI equipment within the tank at no cost to the customer, except in instances where the maintenance service or repair is required due to the customer's violation of terms of the tariff or the guidelines contained in the user manual provided to the customer before service commences.

11. All exhibits required by Ohio Adm.Code 4901:1-15-05(D) are attached hereto and made a part of this application. OWSI recognizes that, under Ohio Adm.Code 4901:1-15-04(C)(2)(e), the Commission may conduct a hearing in this matter if a request for a public hearing is received in response to the legal notice that will be published pursuant to the Commission's directives. However, OWSI does not anticipate any public opposition to the application and, in the absence of request for a public hearing from a person or party with a legitimate interest in this proceeding, OWSI requests that the Commission decide this case based on the information presented in the verified application and exhibits under the streamlined procedure permitted by said rule. OWSI will, of course, respond promptly to any information requests received from the Commission staff ("Staff") as a part of the Staff's review of the application.

12. If the Commission deems that a hearing is required, all exhibits will be presented at hearing through an appropriate sponsoring witness and, as required by Ohio Adm.Code 4901:1-15-04(C)(4), an officer or principal of OWSI will attend the hearing.

13. As indicated by the attached certificate of service, a copy of this application has been served upon the OEPA as required by Ohio Adm.Code 4901:1-15-05(C).

WHEREFORE, OWSI respectfully requests the Commission to:

(A) Find that the application and attached exhibits comply with the requirements of Ohio Adm.Code 4905:1-15-05 and accept the application for filing;

(B) Approve the form of legal notice proposed in Exhibit 21 to the application and issue an entry directing OWSI to cause publication of the legal notice in a newspaper of general circulation in Warren County, Ohio, and specifying the date by which the proof of such publication shall be filed with the Commission;

(C) If no request for a hearing is received in response to the legal notice, find that no hearing is required and decide the case based on the information contained in the application and on the affidavit and any additional information submitted to the Commission by OWSI as permitted by Ohio Adm.Code 4905:1-15-04(C)(2)(e);

(D) Issue an order finding that the proposals contained in the application are just, reasonable, and in the public interest and granting OWSI a certificate of public convenience and necessity to provide the sewage disposal service described in the application; and

(E) Establish a TRF docket for OWSI and approve for filing therein OWSI's tariff, P.U.C.O. No. 1, in the form proposed in Exhibit 5 to the application.

WHEREFORE, OWSI respectfully requests that its application be approved.

Respectfully submitted,

Barth E. Royer (0016999)
Barth E. Royer, LLC
2740 East Main Street
Bexley, Ohio 43209
(614) 385-1937 – Phone
(614) 360-3529 – Fax
BarthRoyer@aol.com – Email
(will accept email service)

Attorney for Ohio Wastewater Systems, Inc.

EXHIBIT 1
Ohio Adm.Code 4901:1-15-05(D)(1)

Ownership and Officers

Ohio Wastewater Systems, Inc. ("OWSI"), the applicant herein, is an Ohio corporation. OWSI is wholly owned by a single shareholder, Adenus Group, LLC ("Adenus"), a Tennessee limited liability company headquartered in Smyrna, Tennessee. Adenus' address is:

Adenus Group, LLC
851 Aviation Parkway
Smyrna, TN 37167

As a single-shareholder corporation, OWSI has no board of directors. However, its sole shareholder, Adenus, which controls OWSI, has the following four members, each of whom has a 25 percent interest in OWSI's parent:

Charles Pickney, Jr. 4914 Timberdale Dr. Nashville, TN 37211	William Pickney 7640 River Road Pike Nashville, TN 37209	Thomas Pickney 7996 River Road Pike Nashville, TN 37209
Robert Pickney 307 Patton Dr. Mt. Juliet, TN 37122		

The officers of OWSI are:

President:	Charles Hyatt, 851 Aviation Parkway, Smyrna, TN 37167
Vice President:	Charles Pickney, Jr., 4914 Timberdale Dr., Nashville, TN 37211
Secretary:	Thomas Pickney, 7996 River Road Pike, Nashville, TN 37209
Treasurer:	William Pickney, 7640 River Road Pike, Nashville, TN 37209

Neither Adenus, any of its members, nor any officer of OWSI has any financial interest in any other Ohio sewage disposal system company, or in any other partnership or corporation that holds an interest in any other Ohio sewage disposal system company. However, Adenus is also the sole shareholder of Tennessee Wastewater Systems, Inc., Alabama Wastewater Systems, Inc., and Commonwealth Wastewater Systems, Inc., which operate sewage disposal systems in Tennessee, Alabama, and Kentucky, respectively.

Pendragon Development Company, LLC, the developer of Aberlin Springs subdivision that OWSI proposes to serve (hereinafter, "Developer"), has no ownership interest in OWSI, and neither Adenus, any of members, nor any officer of OWSI has any ownership interest in the Developer.

EXHIBIT 2
Ohio Adm.Code 4901:1-15-05(D)(2)

Certified Articles of Incorporation
and
Certificate of Good Standing

201631500508

DATE:	DOCUMENT ID	DESCRIPTION	FILING	EXPED	PENALTY	CERT	COPY
11/10/2016	201631500508	DOMESTIC ARTICLES/FOR PROFIT (ARF)	100.00	.00	.00	.00	.00

Receipt

This is not a bill. Please do not remit payment.

OHIO WASTEWATER SYSTEMS INC
ATTN:JEFF RISDEN
851 AVIATION PARKWAY
SMYMA, TN 37167

STATE OF OHIO
CERTIFICATE

Ohio Secretary of State, Jon Husted

3957962

It is hereby certified that the Secretary of State of Ohio has custody of the business records for

OHIO WASTEWATER SYSTEMS, INC.

and, that said business records show the filing and recording of:

Document(s)	Document No(s):
DOMESTIC ARTICLES/FOR PROFIT	**201631500508**

Effective Date: 11/07/2016

Witness my hand and the seal of the Secretary of State at Columbus, Ohio this 10th day of November, A.D. 2016.

United States of America
State of Ohio
Office of the Secretary of State

Jon Husted

Ohio Secretary of State

Form 532A Prescribed by:

JON HUSTED
OHIO SECRETARY OF STATE

Toll Free: (877) SOS-FILE (877-767-3453)
Central Ohio: (614) 466-3910

www.OhioSecretaryofState.gov
bussenv@OhioSecretaryofState.gov

File online or for more information: www.OHBusinessCentral.com

Mail this form to one of the following:

Regular Filing (non expedite)
P.O. Box 670
Columbus, OH 43216

Expedite Filing (Two business day processing time. Requires an additional $100.00)
P.O. Box 1390
Columbus, OH 43216

Initial Articles of Incorporation

(For-Profit, Domestic Corporation)

Filing Fee: $99

(113 - ARF)

Form Must Be Typed

First: Name of Corporation Ohio Wastewater Systems, Inc.

(Name must include the following word or abbreviation: company, co., corporation, corp., incorporated, or inc.)

Second: Location of Principal office in Ohio

Morrow — City

Ohio — State

Warren — County

Effective Date **(Optional)** _____ mm/dd/yyyy

(The legal existence of the corporation begins upon the filing of the articles or on a later date specified that is not more than ninety days after filing)

Third: The number of shares which the corporation is authorized to have outstanding. (Please state if shares are common or preferred and their par value, if any.)

Number of Shares	Type	Par Value
1000	Common	

Fourth: If the corporation is to have an initial stated capital, please state the amount of that stated capital

_____ Amount

****Note: ORC Chapter 1701 allows additional provisions to be included in the Articles of Incorporation that are filed with this office. If including any of these additional provisions, please do so by including them in an attachment to this form.****

ORIGINAL APPOINTMENT OF STATUTORY AGENT

The undersigned, being at least a majority of the incorporators of Ohio Wastewater Systems, Inc. hereby appoint the following to be statutory agent upon whom any process, notice or demand required or permitted by statute to be served upon the corporation may be served. The complete address of the agent is

REGISTERED AGENTS INC.
Name

6545 MARKET AVENUE N., STE 100
Mailing Address

NORTH CANTON — Ohio — 44721
City — State — Zip Code

Must be signed by the Incorporators or a majority of the incorporators

Signature

Signature

Signature

ACCEPTANCE OF APPOINTMENT

The Undersigned, REGISTERED AGENTS INC., named herein as the
Statutory Agent Name

Statutory agent for
Corporation Name

hereby acknowledges and accepts the appointment of statutory agent for said corporation.

Statutory Agent Signature Bill Havre/Secretary

Individual Agent's Signature/Signature on Behalf of Business Serving as Agent

By signing and submitting this form to the Ohio Secretary of State, the undersigned hereby certifies that he or she has the requisite authority to execute this document.

Required
Articles and original appointment of agent must be signed by the incorporator(s).

If the incorporator is an individual, then they must sign in the "signature" box and print his/her name in the "Print Name" box.

If the incorporator is a business entity, not an individual, then please print the entity name in the "signature" box, an authorized representative of the business entity must sign in the "By" box and print his/her name and title/authority in the "Print Name" box.

Adenus Group LLC
Signature

By

JEFF Rison
Print Name

Signature

By

Print Name

Signature

By

Print Name

UNITED STATES OF AMERICA
STATE OF OHIO
OFFICE OF THE SECRETARY OF STATE

I, Jon Husted, do hereby certify that I am the duly elected, qualified and present acting Secretary of State for the State of Ohio, and as such have custody of the records of Ohio and Foreign business entities; that said records show OHIO WASTEWATER SYSTEMS, INC., an Ohio corporation, Charter No. 3957962, having its principal location in Morrow, County of Warren, was incorporated on November 7, 2016 and is currently in GOOD STANDING upon the records of this office.

Witness my hand and the seal of the Secretary of State at Columbus, Ohio this 10th day of November, A.D. 2016.

Jon Husted

Ohio Secretary of State

Validation Number: 201631501522

EXHIBITS 3 AND 3A
Ohio Adm.Code 4901:1-15-05(D)(3)

Financial Statements

Ohio Adm.Code 4901:1-15-05(D)(3) requires applicants for a certificate of public convenience and necessity to submit, as Exhibit 3 to the application, a financial statement (balance sheet) showing, in detail, the applicant's assets, liabilities, and net worth as of a date no more than one month prior to the date the application was filed, and, as Exhibit 3A to the application, a balance sheet showing these items as they are projected to exist as of the date construction is completed and the system is ready for operation.

OWSI is a startup company and, as of the date this application was filed, had no physical assets, liabilities, or net worth. Thus, a current balance sheet for OWSI would contain no information.

As noted in the application, the Aberlin Springs subdivision is being constructed in phases and the construction and installation of the sewage disposal system components will be synchronized with the development of the subdivision. As of the date the construction of the facilities to serve Phase 1 of the subdivision is completed and the system is ready for operation, OWSI will own the sewage disposal system, which, as shown in Exhibit 12, will have an estimated asset value of $661,108, comprised of an estimated cost of the collection system facilities of $97,050 and an estimated cost of the treatment and disposal system facilities of $564,058.

As explained in Exhibit 13, the collection system will be constructed and installed by the Developer and will be received by OWSI as contributed property, and the treatment and disposal system will be funded entirely by the Developer through contributions in aid of construction. Thus, OWSI will have no current or long-term liabilities when service commences and, thus, will have, for financial accounting purposes, equity and a net worth equal to the $661,108 asset value of the system.

EXHIBITS 4 AND 4A
Ohio Adm.Code 4901:1-15-05(D)(4)

Pro Forma Income Statements

Ohio Adm.Code 4901:1-15-05(D)(4) requires applicants for a certificate of public convenience and necessity to submit projected pro forma income statements for the applicant's first and fifth full years of operation as Exhibit 4 and Exhibit 4A, respectively. To facilitate the Commission's review, OWSI has combined these required projected income statements into a single exhibit, which also shows the projected results of operations for years two through four.

The annual gross revenues shown on the pro forma income statements are, of course, based on an assumption as to the number of customers that will be served in the year in question. The projected number customers used in the income statements are based on discussions with the Developer regarding its expectations as to the new homes that will be added each year and an exercise of judgment based on Adenus' experience with other new subdivisions served by Adenus public utility subsidiaries.

		YR 1	YR 2	YR 3	YR 4	YR 5	Total
# of Customers		5	20	70	100	120	
Monthly Customer Rate	58	696	696	696	696	696	
Customer Revenue		3,480	13,920	48,720	69,600	83,520	219,240
		-	-	-	-	-	-
Total Revenue		3,480	13,920	48,720	69,600	83,520	219,240
Maintenance		2,250	9,000	31,500	45,000	54,000	141,750
Electricity		2,500	2,600	2,800	3,000	3,500	14,400
Materials & Supplies		2,000	5,000	7,000	10,000	12,000	36,000
Telemetry		1,320	1,320	1,320	1,320	1,320	6,600
License & Permits		400	200	200	200	200	1,200
Property Taxes							-
Billing & Collecting		150	600	2,100	3,000	3,600	9,450
Insurance		1,200	1,200	1,200	1,200	1,200	6,000
							-
Total Expenses		9,820	19,920	46,120	63,720	75,820	215,400
Income before Taxes		(6,340)	(6,000)	2,600	5,880	7,700	3,840
State Income Tax							-
Local Tax		-	-	29	66	86	181
Federal Income Tax		-	-	75	171	223	469
Net Income		(6,340)	(6,000)	2,525	5,709	7,477	3,371

EXHIBIT 5
Ohio Adm.Code 4901:1-15-05(D)(5)

Proposed Tariff

P.U.C.O. No. 1

RATES, RULES, AND REGULATIONS GOVERNING SEWAGE DISPOSAL SERVICE

OHIO WASTEWATER SYSTEMS, INC.

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SECTION 1 – GENERAL PROVISIONS

1. Definitions. Certain terms used in this tariff are defined as follows:

   A. "Capacity development fee" means the per-lot fee paid by the developer of a subdivision to fund the construction and installation of the wastewater treatment and disposal system.

   B. "Clean waters" means all waste waters other than sewage, including, but not limited to, roof and roof runoff and surface drainage.

   C. "Commission" means the Public Utilities Commission of Ohio.

   D. "Company" means Ohio Wastewater Systems, Inc.

   E. "Company service line" means that portion of the service line between the collection main, up to and including the sewer inlet connection, at or near the property line, right of way, or easement line, maintained at the cost of the Company.

   F. "Customer" means any person, firm, corporation, association, or government unit that enters into an agreement with the Company to receive sanitary sewer service.

   G. "Customer service line" means that portion of the service line from the Company service line to the structure or premises, supplied, installed, and maintained at the cost of the customer.

   H. "Collection main" means a pipe that collects or transports wastewater from customer service line to the Company's treatment facility.

   I. "Facilities" means all equipment and other property owned and operated by the Company.

   J. "In-tank equipment" means all Company-owned equipment installed within the customer's tank.

   K. "Premises" means the customer's private property.

L. "Service connection" means the connection of the Company's service line with the customer's service line at or near the property line, which connection enables the customer to receive service.

M. "Tank" means the concrete vault installed on the customer's premises and owned by the customer, which accepts waste.

N. "Tap-in" means the connecting of a Company service line to a collection main.

2. Applicability. Sewer service provided by Company is furnished subject to the terms and conditions set forth in this tariff which has been filed with and approved by the Commission. In case of any conflict between these terms and conditions of service and the Standards for Waterworks Companies and Sewage Disposal System Companies set forth in Chapter 4901:1-5 of the Ohio Administrative Code ("OAC"), as amended from time to time, the provisions of Chapter 4901:1-15, OAC, shall take precedence unless otherwise specifically ordered by the Commission. The tariff is applicable to all service furnished by the Company throughout its service area, a map of which is set forth in Section 5 of this tariff.

3. Notification of Customer Rights. Pursuant to Rule 4901:1-15-16, OAC, the Company is required to provide new customers, at the time service is initiated, and to existing customers upon request, a summary of their rights and obligations under Chapter 4901:1-15 OAC. The Notification of Customer Rights provided by the Company in accordance with this rule is set forth in Appendix A to this tariff.

SECTION 2 – RATES, CHARGES, BILLING, AND PAYMENT

1. Applicability. The rates and charges for sewer service specified in this section are applicable to all customers of the Company, except to those customers that enter into Commission-approved special arrangements with the Company pursuant to Paragraph 7 of this section.

2. Monthly Rate for Sewer Service.

   Fixed Monthly Charge: $58.00 per month

3. Billing and Payment. The Company bills its customers on a monthly basis. Bills will be sent to the premises served unless the customer has specified a different billing address on the application for service or subsequently notifies the Company in writing that a different billing address should be used. All bills are due and payable within fifteen (15) days from the billing date. All bills shall be mailed no later than the billing date set forth on the bill. Bills not paid within fifteen (15) days of the billing date shall be considered delinquent and shall be subject to a late payment charge of 1.5% based on the amount of current charges only with no compounding for future delinquencies. Delinquent bills shall also subject the customer to disconnection for nonpayment upon fourteen (14) days written notice pursuant to Paragraph 8 of Section 3 of this tariff. Failure to receive a bill does not relieve the customer from the responsibility for payment.

4. Credit Card Convenience Fee. The Company will accept payments by credit card online at http://www.ohiowastewater.com or by telephone authorization at 1-877-669-0786. A convenience fee of 3 % shall be added to the customer's bill when paying by credit card to reflect the fee charged to the Company by the credit card processing company. The actual dollar amount of such fee will be provided to the customer before the customer authorizes payment by credit card.

5. Reconnection Charge. Customers whose sewer service is disconnected pursuant to Paragraph 8 of Section 3 of this tariff shall pay a reconnection charge of $95.00 to have service restored. The reconnection charge is in addition to any other charges authorized by Paragraph 9 of Section 3 of this tariff as a condition of restoring service.

6. Dishonored Payment Charge. If a payment for any service, charge, or fee received by the Company is returned to the Company by a financial institution unpaid, a charge of $35.00

will be assessed to cover the cost of processing the transaction, provided the transaction is properly processed by the Company. At the Company's option, the charge for dishonored payment may be assessed when the Company returns the dishonored payment to the customer or may be included on the customer's next bill.

7. Billing Adjustments. If a bill is found to be inaccurate and the error is in the customer's favor, the Company, at its option, may reimburse the customer for the overpayment within thirty (30) days or issue a credit for the overpayment on the next bill. If the error resulted in the customer being undercharged, the Company will allow the customer no less than the same period for which the customer was undercharged to pay the additional amount owed, unless the error was caused by the customer.

8. Tap-In and Capacity Development Fees. Where the developer of the subdivision has installed the collection system required to serve a customer's premises and has funded the construction of treatment and disposal facilities designed to meet the capacity requirements of customers within the subdivision, no tap-in or capacity development fees will be charged to the customer as a condition of receiving sewer service. If the Company subsequently expands its service area in response to the request of a potential customer located outside the subdivision for sewer service, the Company, in addition to charging for the main extension necessary to serve customer pursuant to Section 4 of this tariff, shall be entitled to charge a tap-in fee equal to its actual out-of-pocket costs for connecting the service. In addition, if the existing capacity of the treatment and disposal facilities is not adequate to provide service to the new customer, the customer shall pay a capacity development fee of $6,500.00, which is equal to the per-lot capacity development fee paid by the developer to fund the construction and installation of the treatment and disposal facilities that were sized to serve the subdivision.

9. Special Arrangements. Nothing in this section prevents the Company from entering into a special arrangement with a customer pursuant to Section 4905.31 of the Revised Code where circumstances warrant. As required by Section 4905.31(E) of the Revised Code, no such special arrangement is lawful unless it is filed with and approved by the Commission.

SECTION 3 – SERVICE AND FACILITIES

1. Application for Service. Applications for sewer service shall be in writing on a form prescribed by the Company and approved by the Commission. The application shall be signed by the prospective customer or the prospective customer's authorized representative. A copy of the Company's application form is set for in Section 6 of this tariff. Based on the information provided in the application for service, the Company, subject to the terms and conditions set forth in Rules 4901:1-17-03 through 4901:1-17-08, OAC, may require a guarantor or deposit as a condition of initiating service. If a guarantor is required, the Company shall provide the customer with a copy of Rule 4901:1-17-03, OAC, and shall require the guarantor to execute a Guarantor Agreement as set forth in the Appendix thereto. If a deposit if required, the Company shall provide the customer with a copy of Rules 4901:1-17-04 through 4901:1-17-08, OAC, and shall administer the deposit in accordance with the provisions thereof.

2. Service Connection and Company Service Line Installation. Pursuant to its agreement with the Company, the developer of the subdivision to be served by the Company will install the Company service line and the service connection in accordance with the Company's specifications. After an inspection with results acceptable to the Company, the Company service line and service connection will be conveyed to the Company by the developer. If the property of an applicant for sewer service is so situated that the developer has not installed the Company service line and service connection, the property owner shall, upon submitting the application for service, pay a tap-in fee as provided in Paragraph 8 of Section 2 of this tariff, and, if applicable, the capacity development fee as provided in said paragraph. Upon receipt of the signed application and tap-in fee, and, if applicable, the capacity development fee, the Company shall install the Company service line to the property line and complete the service connection. The service connection and the Company service line shall be the property of the Company and shall be maintained by the Company.

3. Customer Service Line and Tank Installation. Pursuant to its agreement with the Company, the developer of the subdivision to be served by the Company will install the tank and the customer service line from the dwelling to the inlet of the tank and from the outlet of the tank to the Company service line in accordance with the Company's specifications. The customer service line and the tank will become the property of the property owner upon purchase of the premises. If the property of an applicant for sewer service is so situated that the developer has not installed the tank and the customer service line, the property owner applying for sewer service shall be responsible for the installation of the tank and

the customer service line and shall make application to the Company for approval of the plans for same through a competent plumber as his/her authorized representative. If the Company approves the location of the tank and the customer service line and is otherwise satisfied with the plans and specifications for the installation, the Company will authorize the plumber to proceed with the installation. All costs of the installation of the customer service line and tank shall be borne by the property owner. Service will not commence until the Company has inspected and approved the customer service line and tank installation, such inspection to be performed at no cost to the customer. The customer service line shall be maintained in proper condition by the property owner, which shall be responsible for the cost of any necessary repairs. Notwithstanding that the tank is the property of the property owner, the Company will perform routine maintenance and repairs on the tank at no cost to the customer; provided, however, that if maintenance service and/or repairs are required as a result of the customer's failure to comply with the Company's rules and regulations and/or failure to adhere to the guidelines set forth in the *User Manual (Do's and Don'ts for an Effluent Collection System)*, which will be provided to the customer by the Company before service commences, the Company will be entitled to charge the customer for the actual out-of-pocket cost associated with the maintenance or repair. The in-tank equipment shall be installed by the Company and shall be the property of the Company, which will be responsible for its maintenance and repair; provided, however, that if a component of the in-tank equipment is damaged due to the customer's failure to comply with the Company's rules and regulations and/or failure to adhere to the guidelines set forth in the *User Manual,* the customer shall be responsible for the cost of repairing or replacing the damaged component.

4. Relocation of Service Connection. Service connections moved for the convenience of the customer will be relocated by the Company at the customer's expense.

5. Water Valve. As a condition of receiving sewer service from the Company, a customer must have a water shut-off valve in the water line on the customer's side of the water meter and an appropriate valve box. Under its agreement with the Company, the developer will install the water valve and valve box in each residence within the subdivision. If the property of an applicant for sewer service is so situated that the developer has not installed the water valve and valve box, the property owner applying for sewer service shall permit the Company to install the water valve and valve box.

6. Access to Customer Premises. The Company shall have the right to enter a dwelling or structure only with permission granted by a person holding himself or herself out as being

responsible for the dwelling or structure. The Customer shall execute an agreement granting an easement to the Company for the maintenance of the sewer system. This paragraph shall not be construed as preventing the Company from discontinuing service to a customer pursuant to Rule 4901:1-15-27, OAC, for the unreasonable denial of access to a dwelling or structure required for the rendering of utility service in accordance with this tariff, including, but not limited to, access to investigate the possible discharge of sewage of a type not stated in the application or a connection to a premises not stated in the application. Nothing in this paragraph shall be construed as limiting or eliminating property rights granted to the Company pursuant to easements or other estates or interests in real property. Any employee or representative of the Company seeking access to the dwelling or structure of a customer shall voluntarily identify himself or herself, provide proper Company photo identification, and state the reason for the visit. The employee or representative shall, in all cases, direct himself or herself to a person holding himself or herself out as being responsible for the dwelling or structure. Entrance will not be sought or gained by subterfuge or force.

7. Interruptions of Service. The Company undertakes reasonable care and diligence to provide service on a continuous basis, but reserves the right, at any time and without notice, to discontinue service for the purpose of making emergency repairs. In the case of planned interruption of service, the Company shall notify affected customers at least three (3) days in advance of the interruption. The notice shall be by delivered written notice, by publication in a newspaper of general circulation in the Company's service area, or by an obvious sign posting in the affected portion of the Company's service area. The notice shall state the date and estimated duration of the outage and the telephone number the customers may call for further information.

8. Prohibited Connections. Customers shall not connect the customer service line or any pipe connected to it to a premises not stated in the application.

9. Disconnection of Service. The Company may refuse service to an applicant for service or disconnect a customer only for those reasons for refusal or disconnection of service set forth in this paragraph. The following procedures govern refusals or disconnections of service. In the event a customer's service could be disconnected for more than one of the following reasons, the minimum notice provision (which includes no notice) applies.

   A. No notice is required for disconnection of service for any of the following reasons:

1. For tampering with any collection main, service line, or other appliance under the control of, or belonging to the Company; or

2. For any other violation or failure to comply with the regulations of the Company, which may, in the opinion of the Company or any public authority, create an emergency situation.

B. The customer will be given not less than twenty-four (24) hours written notice before service is discontinued for any of the following reasons:

1. For the discharge of any type of sewage not stated in the application; or

2. For the use of service upon any premises not stated in the application.

For purposes of the written notices provided for in Paragraphs 8.B.1. and 8.B.2 of this section, personal delivery of the notice to the customer's premise shall first be attempted and, if personal service cannot be accomplished at that time, the notice shall be securely attached to the premises in a conspicuous manner.

C. The customer will be given not less than fourteen (14) days written notice before the service is disconnected for any of the following reasons:

1. For non-payment of any tariffed charges when due or within any additional period for payment permitted by the Company, or for not making a deposit as required. Disconnection of service for non-payment may not occur prior to fifteen (15) days after the due date;

2. For any violation of, or failure to comply with, the regulations of the Company other than those identified in Paragraph 8.A and 8.B of this section;

3. For misrepresentation in the application as to any material fact;

4. For denial to the Company of reasonable access to the premises for the purpose of inspection; or

5. For violation of federal, state, or local laws or ordinances where such violation affects the provision of utility service by the Company.

D. Service will not be refused to any applicant for service or disconnected to any customer for any of the following reasons:

1. Failure to pay for service furnished to a customer(s) formerly receiving service at the premises, unless the former customer(s) continue to reside at the premises;

2. Failure to pay for a class of service different from the service provided for the account in questions;

3. Failure to pay any amount which according to established payment and resolution procedures is in bona fide dispute; or

4. Failure to pay any charge not specified in the Company's tariff.

E. If a landlord is responsible for payment of the bill, notice of disconnection of service shall also be given to the consumer(s) at least ten (10) days before disconnection could occur. In a multi-dwelling, written notice shall be placed in a conspicuous place.

F. The Company shall provide notice of disconnection of service to one additional consenting party with the customer's written authorization for those customers desiring such additional notification.

G. The Company may disconnect service during its normal business hours; provided however that no disconnection for past due bills or for failure to make a required deposit may be performed after 12:30 p.m. on the day preceding a day that all services necessary for reconnection are not regularly performed or available.

H. Those Company employees or representative who normally perform the termination of service will be authorized to either:

1. Accept payment in lieu of termination;

2. Dispatch an employee to the premises to accept payment; or

3. Otherwise make available to the customer a means to avoid disconnection.

At the discretion of the Company, such employees or representatives may also be authorized to make extended payment arrangements.

I. The Company will not disconnect service for nonpayment if the disconnection of service would be especially dangerous to health as certified pursuant to this paragraph. Certification shall be made on a form provided by the Company, which must be signed by a licensed physician, physician assistant, clinical nurse specialist, certified nurse practitioner, certified midwife, or local board of health physician and which states that disconnection of service would pose a special danger to the health of the customer or permanent resident of the household. Certification shall prohibit disconnection for thirty (30) days from the Company's receipt of the signed certification form. In the event that service has already been disconnected for nonpayment, the Company will restore service if a signed certification form is received by the Company within twenty-one (21) days of disconnection. Certification may be renewed two additional times (thirty (30) days each) by providing a new signed certification form to the Company; provided, however, that the total certification period shall not exceed ninety (90) days in any twelve (12) month period. Certification does not relieve the customer from the responsibility for past due amounts owed the Company, charges incurred during the certification period and where disconnection has already occurred, the applicable reconnection charges set forth in Paragraph 5 of Section 2 of this tariff.

10. Reconnection of Service. The Company will reconnect previously disconnected service in accordance with the following procedures:

A. Unless prevented by circumstances beyond the Company's control, or unless a customer requests otherwise, service will be restored by the close of the following regular business day after any of the following:

1. Receipt by the Company of the full amount of arrears for which service was disconnected, including payment of the reconnection charge specified in Paragraph 5 of Section 2 of this tariff and any deposit required pursuant to Paragraph C of this section;

2. The elimination of conditions that warranted disconnection of service; or

3. Agreement by the Company and the customer on a deferred payment plan and the current payment, if any, required under the play.

B. If a customer that has been disconnected for nonpayment wishes to guarantee restoration of service the same day on which full payment is tendered, the customer must notify the Company no later than 12:30 p.m. on that day and make payment in the Company's business office or provide proof of payment after normal business hours. If service cannot be restored until after normal business hours, the customer, in addition to paying the amount specified in Paragraph 9.A.1 of this section shall also sign an agreement to pay any additional costs the Company incurs for restoring service after normal business hours. This additional fee shall be paid at the time the arrangements to restore service are made.

C. The Company subject the terms and conditions set forth in Rules 4901:1-17-03 through 4901:1-17-08, OAC, may require a guarantor or a deposit as a condition of restoring service. If a guarantor is required, the Company shall provide the customer with a copy of Rule 4901:1-07-03, OAC, and shall require the guarantor to execute a Guarantor Agreement as forth in the Appendix thereto. If a deposit is required, the Company shall provide the customer with a copy of Rules 4901:1-17-04 through 4901:1-17-08, OAC, and shall administer the deposit in accordance with the provisions thereof.

D. The current portion of the customer's bill shall not be considered in computing the full amount of arrears pursuant to Paragraph 9.A.1 of this section. The Company will not require payment of any portion of the customer's bill that is not more than fifteen (15) days past due, excluding the reconnection charge(s), as a condition of restoring service.

11. Complaints. Customer complaints, including, but not limited to, complaints regarding service or bills may be made to the Company either orally or in writing. The Company shall investigate each complaint in a fair and complete manner and report the results to the customer, either orally or in writing, within ten (10) business days after the day of the receipt of the complaint. The report shall include a description of the action taken by the Company, if any, to resolve the complaint. The Company will maintain records of complaints in accordance with Rule 4901:1-15-14(D), OAC. If the complainant is not satisfied with the Company's report, the Company shall promptly inform the customer of the availability of the Commission's complaint handling procedures, including the current

address and the toll-free telephone number for the Commission's Call Center. The Company will also investigate customer complaints referred to it by the Commission. The Company will submit a report to the Commission within ten (10) business days after the receipt of a Commission request for information concerning a complaint(s). The report shall outline the Company's investigation and any corrective measure(s) taken. The Company shall submit reports in writing upon Commission request.

12. Prohibited Discharges. No customer shall cause the discharge of clean waters into any Company service line or collection main without the written consent of the Company.

SECTION 4 – MAIN EXTENSIONS AND SUBSEQUENT CONNECTIONS

1. Main Extensions and Related Facilities. The Company shall extend its mains and related facilities to serve new customers in accordance with the provisions of this section. As used in this section, "main extension" means an extension of a collection main from the nearest existing adequate collection main along a route determined in accordance with reasonable utility engineering practices to a point perpendicular to the most remote structure to be served fronting the main extension. As used in this section, "related facilities" means all fittings, connections, and other facilities associated with the main extension and required in accordance with reasonable utility engineering practices to provide service to a point perpendicular to the most remote structure to the served fronting the main extension.

2. Main Extension Agreements. All agreements between the Company and prospective customers concerning main extensions and/or related facilities to be funded by customers' contributions in aid of construction, customer advances in aid of construction, or some combination of these methods, shall be in writing, and signed by the Company and the prospective customers involved, or their duly authorized representatives. These written agreements shall embody the terms and conditions set forth in this section.

3. Ownership. All main extensions and related facilities shall become the property of the Company.

4. Specifications and Construction. The size, type, quality of materials, and location of main extensions and related facilities shall be determined by the Company. The design and route of main extensions shall be determined by the Company in accordance with reasonable utility engineering practices. Construction shall be performed by the Company or by contractors acceptable to the Company.

5. Cost Estimate. Prior to the entering into of an agreement concerning the extension of mains and/or related facilities funded by customer contributions in aid of construction, customer advances in aid of construction, or a combination of these methods, the Company shall estimate the total of the costs of the main extension, related facilities, and tax or tax impact in accordance with Rule 4901:01-15-30, OAC. Such estimate shall be included in the terms and conditions of the agreement. The Company shall include in the estimate only that portion of the main extension and related facilities necessary, in accordance with reasonable utility engineering practices, to provide adequate service to the prospective customer(s). The length of the main extension shall be determined by measuring from the

nearest existing adequate main along a route determined in accordance with generally accepted utility engineering practices to a point perpendicular to the most remote structure to be served fronting the main extension. If the Company installs mains or related facilities with a capacity in excess of that required to provide adequate service to the prospective customer, the Company shall bear the cost of such oversizing.

6. Method of Payment. The main extension agreement shall embody one of the following methods of payment. The selection of the method will be at the discretion of the Company.

A. The prospective customer requesting the main extension shall be required to advance to the Company, before construction is commenced, the estimated total cost of the main extension, related facilities and tax impact, if applicable. The tax impact shall be calculated by the following method:

$$\text{Tax impact} = \frac{C}{(1-R)} - C$$

C = Dollar value of taxable contribution or advance in aid of construction
R = Decimal equivalent of applicable marginal rate of federal income tax on value of taxable contributions and advances.

The entire advance including the tax impact shall be subject to refund as provided in Paragraph 9 of this section.

B. The prospective customer requesting a main extension shall be required to advance to the Company, before construction is commenced, the estimated total cost of the main extension and related facilities. The cost of the main extension and related facilities minus any tax shall be subject to refund as provided in Paragraph 9 of this section. The tax shall be calculated by the following method:

$$\text{Tax} = C \times R$$

C = Definition in Paragraph 6.A. of this section.
R = Definition of Paragraph 6.A. of this section.

7. True Up Adjustments. Any amount by which the estimated cost of the main extension and/or related facilities determined pursuant to Paragraph 5 of this section exceeds the actual cost shall be refunded to the customer by the Company within sixty (60) days after the completion of the extension. Any amount by which the actual cost of the main extension and/or related facilities exceeds the estimated cost paid by the customer to the Company determined pursuant to Paragraph 5 of this section shall be billed to the customer upon completion of the extension and shall be paid by the customer with sixty (60) days after completion of construction.

8. Multiple Applicants. When more than one prospective customer is involved in the request for a main extension and/or related facilities, the amount of the advance in aid of construction shall be divided equally amount the applicants unless otherwise agreed by the applicants.

9. Customer Guarantee of Acceptance of Service. The Company will not extend mains unless the prospective customer guarantees to the Company in the main extension agreement that service will be accepted within thirty (30) days following completion of the main extension, or such longer period as the Company and the prospective new customer agree.

10. Temporary Service. The Company will provide temporary service, provided that the applicant for such service agrees in writing to pay in advance to the Company the Company's estimate of the cost of labor and materials, less salvage value on removal, for installing and removing such service. The charges set forth in Section 2 of this tariff also apply to temporary service.

11. Subsequent Connections, Service Connections, and Tap-Ins. If, at any time during the term of a main extension agreement involving refundable customer advances in aid of construction pursuant to Rule 4901:1-15-30 OAC, the owner of any lot abutting the main extension who was not a party to the main extension agreement requests service (hereinafter the "subsequent applicant"), the Company shall enter into a written agreement with the subsequent applicant governing the requested connection and payment of a tap-in fee as provided in Paragraph 8 of Section 2 of this tariff and, if applicable, the capacity development fee as provided in said paragraph.

SECTION 5 – SERVICE AREA MAP

Issued: Effective:

Filed pursuant to PUCO Finding and Order dated _____, 2017 in Case No. 17-616-ST-ACE

Issued by Charles Hyatt, President

SECTION 6 – SEWER SERVICE APPLICATION

SEWER SUBSCRIPTION CONTRACT

DATE: _____

_____
PRINTED NAME

_____ _____
ADDRESS OF PROPERTY **LOT #**

_____
MAILING ADDRESS (If different from above)

_____ _____ _____
TELEPHONE NUMBER **EMAIL ADDRESS** ☐

I hereby make application to Ohio Wastewater Systems, Inc. ("OWSI") for sewer service at the address of property stated above. In consideration of the undertaking on the part of OWSI to furnish sewer service, I understand, covenant, and agree as follows:

1. I understand that components of a sewer system have been installed on the property identified above, which is owned or occupied by me, and which is to be connected with a wastewater treatment and disposal system owned and/or maintained by OWSI. I warrant that any connection to and/or subsequent use to this system by the components on my property shall be in accordance with the Rules, Regulations, and Plans of OWSI. Regarding my usage of the system components on my property, which are owned by me, I covenant to follow the guidelines set forth in the USER MANUAL (Do's and Don'ts for an Effluent Collection System). Should I violate these guidelines or any provisions of OWSI's Rules, Regulations, and Plans of OWSI and/or abuse or damage my components or components owned by OWSI, I understand that I must bear the expense to repair or replace the same in accordance with the Plans of OWSI.

2. I acknowledge OWSI and its successors and assigns have a perpetual easement in, over, under and upon the above specified land as shown on the property plat, with the right to operate and repair all components of the sewer system on my property, including but not

3. limited to the interceptor tank and the interceptor pump or interceptor gravity tank systems. I further grant OWSI permission to enter upon my property for any reason connected with the provision or removal of sewer service, subject to the notice provisions contained in OWSI's Rules and Regulations.

4. For all other plumbing and structures on the property, including the outfall line to the interceptor tank, I agree that I am responsible for all operation and repair thereof.

5. If not already installed, I hereby authorize OWSI to purchase and install a water cutoff valve on my side of my water meter and grant OWSI exclusive right to use such valve in accordance with its Rules and Regulations. However, the use of this valve does not in any way relieve me of my obligation to pay for water service to the service provider.

5. I hereby acknowledge receipt of the USER MANUAL.

6. I understand and agree to promptly pay for service at the then current schedule of rates and fees authorized by the Public Utilities Commission or Ohio ("PUCO") and agree to abide by and be subject to OWSI's PUCO-approved billing, disconnection, and reconnection procedures. Should I not pay in accordance with OWSI's Rules and Regulations, I agree to pay all costs of collection, including attorney fees.

7. I agree that this agreement shall remain in effect for as long as I own, reside upon, or rent the above-described property. When such circumstances no longer exist, I agree to provide notice to OWSI at least thirty (30) days in advance of my vacating the property.

_____
SUBSCRIBER'S SIGNATURE

NOTIFICATION OF CUSTOMER RIGHTS

As a customer of Ohio Wastewater Systems, Inc. (the "Company"), you have certain rights and obligations. These rights and obligations are spelled out in detail in the standards for water and sewer utilities established by the Public Utilities Commission of Ohio ("Commission") and in the Company's rules and regulations, which have also been approved by the Commission. This Notification of Customer Rights is intended to provide you with a summary of some of the more significant rules and regulations. Copies of the Commission's comprehensive standards and the Company's rules and regulations are available from the Company upon request. You may contact the Company to obtain copies of these documents, or for any other purpose, including inquiries, complaints, and to report emergencies, at:

Ohio Wastewater Systems, Inc.
851 Aviation Parkway
Smyrna, TN 37167
1-877-669-0786 (24-hour number)

Copies of the Commission's standards can also be obtained by contacting the Commission at:

Public Utilities Commission of Ohio
180 East Broad Street
Columbus, Ohio 43266-0573
1-800-686-7826
7-1-1 (Ohio Relay Service)
http://www.puco.ohio.gov

Complaints:

Complaints as to service or bills should first be directed to the Company by writing or calling the Company at the address or phone number listed above. The Company will investigate your complaint and will report the results of its investigation to you, either orally or in writing, within ten business days of receiving the complaint. If your complaint is not resolved after you have contacted the Company, or for general utility information, residential and commercial customers may contact the Commission for assistance at 1-800-686-7826 (toll free) 8:00 a.m. to 5:00 p.m. weekdays or at http://www.puco.ohio.gov. Hearing or speech impaired customers may contact the Commission via 7-1-1 (Ohio Relay Service). The Ohio Consumers' Counsel ("OCC") represents residential utility customers in matters before the Commission. The OCC can be contacted at 1-877-742-5622 (toll free) from 8:00 a.m. to 5:00 p.m. weekdays, or at http://www.occ.ohio.

Customer Rights:

As a customer, you have the right, among others, to:

A. Notice that the Company intends to discontinue service and the reason therefore, which includes non-payment of bills, failure to abide by the terms of the Company's tariff, tampering with Company facilities, discharging any type of sewage not stated in the application for service, or the use of service upon any premises not stated in the application for service.

B. Notice that sewer service will be interrupted;

C. To see a proper Company photo identification when a Company employee or authorized representative seeks access to your premises; and

D. To review the Company's rates, rules, and regulations upon request.

Customer Obligations:

As a customer, you are obligated, among other things, to:

A. Abide by the terms and conditions in the Company's tariff;

B. Pay your bills when due;

C. Allow the Company reasonable access to your premises to inspect connections to the Company's system, inspect, maintain, and repair your tank and Company-owned equipment located within your tank, and to investigate complaints; and

D. Follow the guidelines set forth in the *User Manual (Do's and Don'ts for an Effluent Collection System)* furnished to you by the Company prior to the commencement of service.

Service Installation:

The Company will supply sewer service to any customer within its service area who makes an application in writing on the application form provided by the Company, subject to the terms and conditions set forth in the Company's tariff.

No connection or tap-in fee will be charged to implement service where the required collection facilities, including necessary mains and laterals, have been constructed and installed by the developer of the Aberlin Springs subdivision or its successors and assigns ("Developer") and where the Developer has funded the construction and installation of treatment and disposal facilities designed to provide sewage disposal service to the premises specified in the application for service. Upon acceptance of the application, the Company will, if necessary, complete the service connection, and initiate service.

The property owner is responsible for the service line from the connection to the Company service line to the outlet of customer-owned tank and from the inlet of the customer-owned tank to the dwelling to be served. The Company will maintain and repair the tank, tank components, control panels, and Company service lines at no cost to the customer, except where maintenance service or repairs are required as a result of the customer's failure to comply with the Company's rules and regulations and/or failure to adhere to the guidelines set forth in the *User Manual (Do's and Don'ts for an Effluent Collection System)*. In such instances, the Company will be entitled to charge the customer for the actual out-of-pocket cost associated with the maintenance service or repair.

Billing:

The Company bills its customers on a monthly basis. Bills will be sent to the address of the premises served unless the customer has specified a different billing address on the application for service or subsequently notifies the Company, in writing, that a different billing address should be used. All bills are due and payable within fifteen days from the billing date. All bills will be mailed no later than the billing date. The Company will accept payments online via credit card at http://www.ohiowastewater.com or by telephone authorization at 1-877-669-0786. A 3% convenience fee will be charged for payments by credit card, and the amount of such fee will be provided to the customer before the customer authorizes payment. Bills not paid within fifteen days of the billing date will be considered delinquent and will be subject to a late payment charge of 1.5% based on the amount of current charges only, with no compounding for future delinquencies. Delinquent bills will also subject the customer to disconnection for nonpayment upon fourteen days' written notice pursuant to the Company's tariff. Failure to receive a bill does not relieve the customer from responsibility for payment.

Disconnection of Service:

The Company may disconnect service to any customer only for the reasons for disconnection set forth below. The following procedures govern refusals or disconnections of service:

A. No notice is required for disconnection of service for any of the following reasons:

1. For tampering with any collection main, service line, or other appliance or facility under the control of, or belonging to, the Company;

2. For any other violation or failure to comply with the regulations of the Company, which may, in the opinion of the Company or any public authority, create an emergency situation.

B. The customer will be given not less than twenty-four hours written notice before service is disconnected for any of the following reasons:

1. For the discharge of any type of sewage not stated in the application; or

2. For the use of service upon any premises not stated in the application. Personal delivery of the notice to the customer's premise shall first be attempted. If personal service cannot be accomplished at that time, then the notice will be securely attached to the premises in a conspicuous manner.

C. The customer will be given not less than fourteen days written notice before service is disconnected for any of the following reasons:

1. For non-payment of any tariffed charges when due or within any additional period for payment permitted by the Company, or for not making a deposit as required. Disconnection of service for non-payment may not occur prior to fifteen days after the due date;

2. For any violation of, or failure to comply with, the regulations of the Company other than those stated in Paragraphs A and B above;

3. For misrepresentation in the application as to any material fact;

4. For denial to the Company of reasonable access to the premises for the purpose of inspection; or

5. For violation of federal, state, or local laws or ordinances where such violation affects the provision of utility service by the Company.

D. Service will not be refused or disconnected to any customer or refused to any applicant for service for any of the following reasons:

1. Failure to pay for service furnished to a customer(s) formerly receiving service at the premises, unless the former customer(s) continues to reside at the premises;

2. Failure to pay for a class of service different from the service provided for the account in question;

3. Failure to pay any amount which, according to established payment dispute and resolution procedures, is in *bona fide* dispute; or

4. Failure to pay any charge not specified in the Company's tariff.

E. If a landlord is responsible for payment of the bill, notice of disconnection of service will be given to the tenant(s) at least ten days before disconnection could occur. In a multi-unit dwelling, written notice shall be placed in a conspicuous place.

F. The Company will provide notice of disconnection of service to one additional consenting party, with the customer's written authorization, for those customers desiring such additional notification.

G. The Company may disconnect service during normal business hours of 9:00 a.m. to 5:00 p.m., Monday through Friday; provided, however, that no disconnection for past due bills or for failure to make a required deposit will be performed after 12:30 p.m. on the day preceding a day that all services necessary for reconnection are not regularly performed or available.

H. Those Company employees or authorized representatives who normally perform the termination of service are authorized to either:

1. Accept payment in lieu of termination;

2. Dispatch an employee or authorized representative to the premises to accept payment; or

3. Otherwise make available to the customer a means to avoid disconnection. At the discretion of the Company, such employees or authorized representatives may also be authorized to make extended payment arrangements.

I. The Company will not disconnect service for nonpayment if the disconnection of service would be especially dangerous to health as certified pursuant to this paragraph. Certification shall be made on a form provided by the Company, which must be signed by a licensed physician, physician assistant, clinical nurse specialist, certified nurse practitioner, certified midwife, or local board of health physician, and which states that disconnection of service would pose a special danger to the health of the customer or permanent resident of the household. Certification shall prohibit disconnection for thirty days from the Company's receipt of the signed certification form. In the event that service has already been disconnected for nonpayment, the Company will restore service if a signed certification form is received by the Company within twenty-one days of disconnection. Certification may be renewed two additional times (for thirty days each) by providing a new signed certification form to the Company; provided, however, that the total certification period shall not exceed ninety days in any twelve-month period. Certification does not relieve the customer from responsibility for past due amounts owed the Company, charges incurred during the certification period, and, where, disconnection has already occurred, the applicable reconnection charge.

Reconnection of Service:

The Company will reconnect previously disconnected service in accordance with the following procedures.

A. Unless prevented by circumstances beyond the Company's control, or unless a customer requests otherwise, service will be restored by the close of the following regular business day after any of the following:

1. Receipt by the Company of the full amount of arrears for which service was disconnected, including payment of the reconnection charge and any required deposit;

2. The elimination of conditions that warranted disconnection of service; or

3. Agreement by the Company and the customer on a deferred payment plan and the current payment, if any, required under the plan.

B. If a customer that has been disconnected for nonpayment wishes to guarantee restoration of service the same day on which full payment is tendered, the customer must notify the Company no later than 12:30 p.m. on that day and make payment in the Company's business office or provide proof of payment. If service cannot be

restored until after normal business hours, the customer, in addition to paying the normal reconnection charge, shall also pay any additional costs the Company incurs for restoring service after normal business hours. This additional fee shall be paid at the time the arrangements to restore service are made.

C. The Company may require a guarantor or deposit as a condition of restoring service, subject to the Commission's rules governing guarantors or deposits. If a guarantor or deposit is required, the Company will provide the customer with a copy of the applicable rules and will administer any deposit in accordance with those rules.

D. The Company will not require payment of any portion of the customer's bill that is not more than fifteen days past due, excluding the reconnection charge(s), as a condition of restoring service.

BILL FORMAT

OHIO Wastewater

Ohio
Wastewater Systems, Inc.
851 Aviation Parkway
Smyrna, TN 37167
888-3-ADENUS
Maintenance Hotline: 877-669-0786

Account No.	Location No.

Due Date	After Due Date	Net Amount

Account No.	Location No.	Service Address:

From Date	Through Date	

Service	Usage	Amount

For unresolved billing issues, contact PUCO at 1-800-686-7826. Applicable rate schedule provided upon request.

RETURN STUB WITH PAYMENT TO:
Ohio Wastewater Systems, Inc
851 Aviation Parkway
Smyrna, TN 37167

Past Due Amount	Current Charges	Net Amount

Due Date	After Due Date	

EXHIBIT 6
Ohio Adm.Code 4901:1-15-05(D)(6)

Description and Map of Area to be Served

Ohio Adm.Code 4901:1-15-05(D)(6) requires that an application for a certificate of public convenience and necessity include a metes and bounds description of the area in which service is to be rendered and a map based upon the metes and bounds description. The boundaries of OWSI's proposed service area are coterminous with the boundaries of the Developer's Aberlin Springs property so as to permit OWSI to serve the entire subdivision as presently planned and as may be expanded in the future. Thus, the metes and bounds description and map contained in this exhibit is that prepared by Bayer Becker, the surveying firm retained by the Developer in connection with its acquisition of the Aberlin Springs property.

The rule also requires that the exhibit include the contact information for the individual that prepared the description and map. The Bayer Becker letterhead displays the contact information for each of its various offices, but does not indicate the specific contact information for Brian R. Johnson, the professional surveyor responsible for the accuracy and completeness of the documents. Please be advised that Mr. Johnson works out of Bayer Becker's Mason, Ohio office at 6900 Tylersville Road, Suite A, Mason, OH, 45040 and can be reached at (513) 336-6600.

Date: January 3, 2017

Description: Pendragon Development Company, LLC
141.1132 Acres

Location: Union Township
Warren County, Ohio

Situated in the State of Ohio, Section 32, Town 5, Range 3, Between the Miamis, Union Township, Warren County, and being all of the lands of Pendragon Development Company, LLC, as recorded in Document Number 2016-033939 and Instrument 2016-028205 of the Warren County, Ohio, Recorder's Office and being further described as follows:

Commencing at a found 5/8" iron pin (capped "MLM 6315") at the northeast corner of said Section 32 and being the northeast corner of the lands of Levonna Bonnie & Jackie Lee Sayre as recorded in Official Record 5294, Page 93 of the Warren County, Ohio, Recorder's Office and being the northwest corner of the lands of Oedner & Sons Garage, Inc., as recorded in Official Record 4445, Page 838 of the Warren County, Ohio, Recorder's Office; thence, with the easterly line of said Section 32, South 05° 53' 40" West, 969.22 feet, to the southeast corner of said lands of Levonna Bonnie & Jackie Lee Sayre and being to the **True Point of Beginning**;

thence, from the **True Point of Beginning**, leaving said lands of Levonna Bonnie & Jackie Lee Sayre, continuing with said easterly line of Section 32 and with the westerly boundary of said lands of Oedner & Sons Garage, Inc, South 06° 03' 06" West, 825.05 feet to the southwest corner of said lands of Oedner & Sons Garage, Inc, and being the northwest corner of the lands of Larry Dale & Shirley Joyce Brandenburg, as recorded in Deed Book 542, Page 391 of the Warren County, Ohio, Recorder's Office;

thence, leaving said lands of Oedner & Sons Garage, Inc. and continuing with said easterly line of said Section 32 and with the westerly boundary of said lands of Larry Dale & Shirley Joyce Brandenburg, South 05° 35' 09" West, 876.32 feet to the southwest corner of said lands of Larry Dale & Shirley Joyce Brandenburg and being the northwest corner of Shawhan Acres, Plat No. 1, as recorded in Plat Book 4, Pg. 147 of the Warren County, Ohio, Recorder's Office;

thence, leaving said lands of Larry Dale & Shirley Joyce Brandenburg, with the westerly line of said Shawhan Acres, Plat No. 1, South 06° 08' 11" West, 263.48 feet to the northeast corner of the lands of Bobby G. & J.J. Sizemore, as recorded in Deed Book 440, Page 365 of the Warren County, Ohio, Recorder's Office;

thence, leaving said westerly line of Shawhan Acres Plat No. 1 and said section line and with the northerly boundary of said lands of Bobby G. & J.J. Sizemore, North 82° 53' 33" West, 607.50 feet to the northwest corner of said lands of Bobby G. & J.J. Sizemore and being the northeast corner of the lands of Bobby Sizemore et al (11.87 Acres), as recorded in Official Record 5001, Page 746 of the Warren County, Ohio, Recorder's Office;

thence, leaving said lands of Bobby G. & J.J. Sizemore and with the northerly boundary of said Bobby Sizemore et al (11.87 Acres), the following three courses:

1) North 83° 11' 11" West, 122.61 feet;
2) South 05° 04' 46" West, 89.68 feet;

6900 Tylersville Road, Suite A
Mason, Ohio 45040
513-336-6600

209 Grandview Drive
Fort Mitchell, Kentucky 41017
859-261-1113

110 South College Ave, Suite 101
Oxford, OH 45056
513-523-4270

1404 Race Street, Suite 204
Cincinnati, OH 45202
513-834-6151

Engineering – Surveying – Landscape Architecture – Planning ~ www.bayerbecker.com

3) South 85° 52' 56" West, 684.24 feet to the northwest corner of said lands of Bobby Sizemore et al (11.87 Acres) and being the northeast corner of the lands of Bobby Sizemore et al (11.499 Acres) as recorded in Official Record 5001, Page 746 of the Warren County, Ohio, Recorder's Office;

thence, leaving said lands of Bobby Sizemore et al (11.87 Acres) and with the northerly boundary of said lands of Bobby Sizemore et al (11.499 Acres) and continuing with the northerly boundary of the lands of Bobby Sizemore et al (10 Acres) as recorded in Official Record 5001, Page 746 of the Warren County, Ohio, Recorder's Office, South 85° 52' 18" West, 439.40 feet;

thence, with the northerly boundary of said Bobby Sizemore et al (10 Acres) and with the northerly boundary of Donald S. & Helen Bowman, as recorded in Deed Book 479, Page 845 of the Warren County, Ohio, Recorder's Office, North 81° 05' 45" West, 696.06 feet to the southeast corner of the lands of Dilbert Bishop as recorded in Deed Book 480, Page 558 of the Warren County, Ohio, Recorder's Office;

thence, leaving said lands of Donald S. & Helen Bowman and with the easterly boundary of said lands of Dilbert Bishop, the following six courses:

1) North 03° 34' 53" East, 98.34 feet;
2) North 15° 55' 07" West, 33.00 feet;
3) North 27° 55' 07" West, 66.00 feet;
4) North 51° 25' 07" West, 47.52 feet;
5) North 89° 22' 27" West, 40.26 feet;
6) South 33° 34' 03" West, 34.74 feet to the northwest corner of said lands of Dilbert Bishop, being on the easterly boundary of the lands of Mark W. & Wanda Solsman as recorded in Deed Book 567, Page 62 of the Warren County, Ohio, Recorder's Office;

thence, leaving said lands of Dilbert Bishop, with the easterly boundary extended of said lands of Mark W. & Wanda Solsman and with the easterly boundary extended of the lands of Donald L. and Darlen Allen, as recorded in Deed Book 1943, Page 723 of the Warren County, Ohio, Recorder's Office, and with the easterly boundary extended of the lands of Ryan & Jennifer Gross, as recorded in Official Record 4504, Page 59 of the Warren County, Ohio, Recorder's Office, North 05° 10' 58" East, 644.30 feet to the northeast corner of said lands of Ryan & Jennifer Gross;

thence, with the northerly boundary extended of said lands of Ryan & Jennifer Gross and with the northerly boundary extended of the lands of Brad J. & Tara L. Bolsinger, as recorded in Instrument 2016-004447 of the Warren County, Ohio, Recorder's Office, with the northerly boundary extended of said lands of Mark W. & Wanda Solsman and with the northerly boundary of the lands of Jason M. & Brooke A. Flinders, as recorded in Official Record 4929, Page 963 of the Warren County, Ohio, Recorder's Office, North 84° 04' 08" West, 660.66 feet to the southeast corner of the lands of Joan A. Archer Tr.(57.345 Acres), as recorded in Instrument #2014-008624 of the Warren County, Ohio, Recorder's Office;

thence, leaving the said lands of Jason M. & Brooke A. Flinders and with the easterly boundary of said lands of Joan A. Archer Tr. (57.345 Acres), North 07° 26' 56" East, 260.65 feet to the southwest corner of the lands of Joan A. Archer Tr. (5.42 Acres) as recorded in Instrument #2014-008624 of the Warren County, Ohio, Recorder's Office;

thence, leaving the said lands of Joan A. Archer Tr. (57.345 Acres), and with the easterly boundary of said lands of Joan A. Archer Tr. (5.42 Acres), the following three courses:

1) North 37° 45' 30" East, 198.00 feet;
2) North 39° 30' 30" East, 181.50 feet;

3) North 48° 45' 30" East, 161.04 feet to the southeast corner of said lands of Joan A. Archer Tr. (5.42 Acres) and being on the easterly line of said lands of Joan A. Archer Tr. (57.345 Acres);

thence, leaving said lands of Joan A. Archer Tr. (5.42 Acres) and with the easterly boundary of said lands of Joan A. Archer Tr. (57.345 Acres) the following four courses:

1) South 77° 14' 30" East, 82.50 feet;

2) North 53° 30' 30" East, 99.00 feet;

3) North 18° 30' 30" East, 534.78 feet;

4) North 49° 50' 30" East, 111.54 feet to the southerly line of the lands of Joseph H. & Diane R. Wesseler, Trs., as recorded in Official Record 5157, Page 353 of the Warren County, Ohio, Recorder's Office;

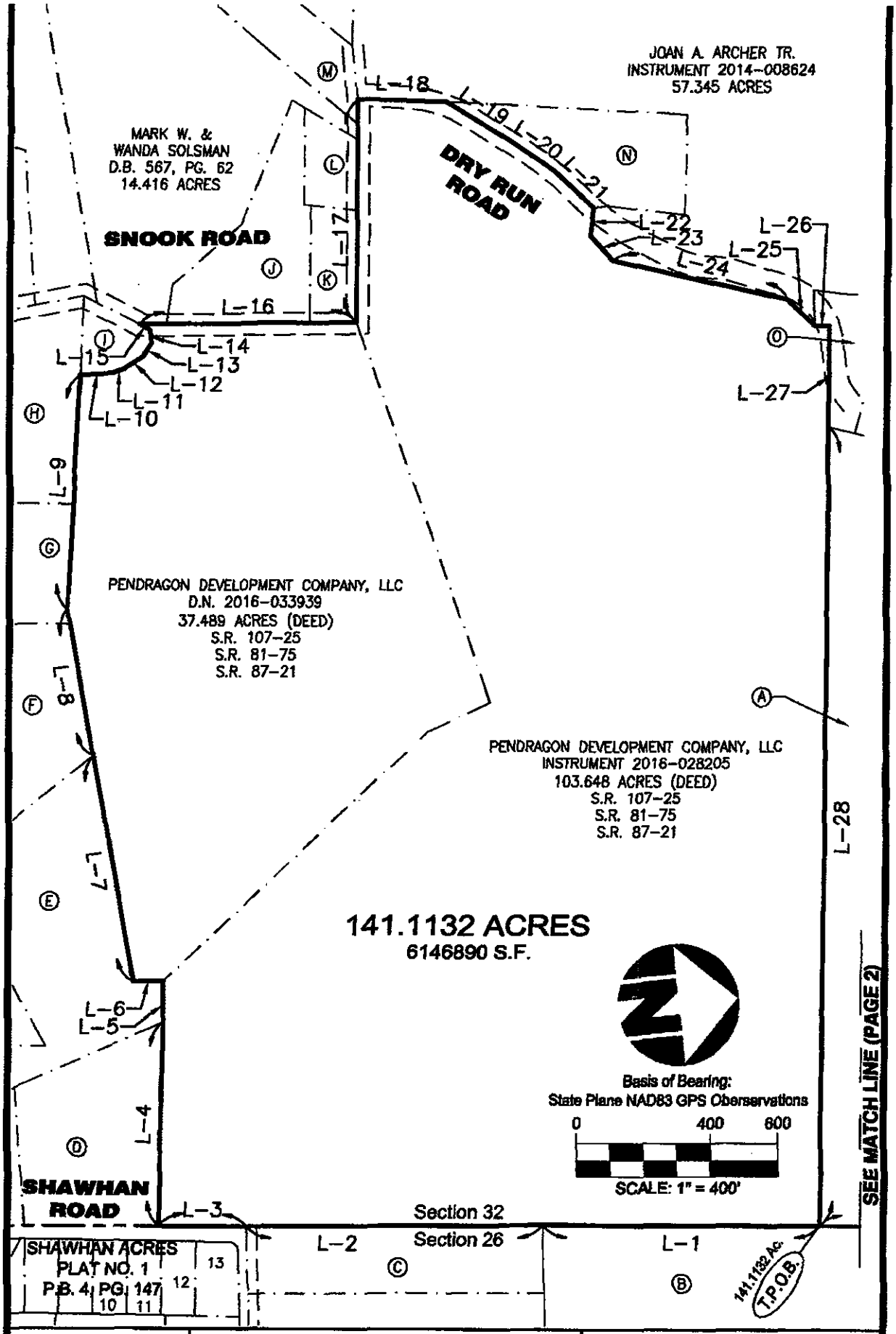
thence, leaving said lands of Joan A. Archer Tr. (57.345 Acres) and with the southerly boundary of said lands of Joseph H. & Diane R. Wesseler, Trs., the following two courses:

1) North 05° 28' 28" East, 43.44 feet;

2) South 83° 41' 57" East, 301.11 feet to the southeast corner of said lands of Joseph H. & Diane R. Wesseler, Trs. and being the southwest corner of said lands of Levonna Bonnie & Jackie Lee Sayre;

thence, leaving said lands of Joseph H. & Diane R. Wessler, Trs. and with the southerly boundary of said lands of Levonna Bonnie & Jackie Lee Sayre, South 83° 38' 22" East, 2375.24 feet to the **True Point of Beginning** containing 6,146,890 square feet or 141.1132 acres, more or less, and being subject to all legal highway, easements, restrictions and agreements of record.

The above description was prepared from an exhibit prepared by Bayer Becker, Brian R. Johnson, Professional Surveyor #8484 in the State of Ohio, January 3, 2017.



Drawing: 14R017.000 EX1	**PENDRAGON DEVELOPMENT COMPANY, LLC**	bayer becker
Scale 1"=400'	**SECTION 32, TOWN 5, RANGE 3**	
Drawn by: RJR	**BETWEEN THE MIAMIS**	

LINE TABLE

Line	Direction	Distance
L-1	S06°03'06"W	825.05'
L-2	S05°35'09"W	876.32'
L-3	S06°08'11"W	263.48'
L-4	N82°53'33"W	607.50'
L-5	N83°11'11"W	122.61'
L-6	S05°04'46"W	89.68'
L-7	S85°52'56"W	684.24'
L-8	S85°52'18"W	439.40'
L-9	N81°05'45"W	696.06'
L-10	N03°34'53"E	98.34'
L-11	N15°55'07"W	33.00'
L-12	N27°55'07"W	66.00'
L-13	N51°25'07"W	47.52'
L-14	N89°22'27"W	40.26'

LINE TABLE

Line	Direction	Distance
L-15	S33°34'03"W	34.74'
L-16	N05°10'58"E	644.30'
L-17	N84°04'08"W	660.66'
L-18	N07°26'56"E	260.65'
L-19	N37°45'30"E	198.00'
L-20	N39°30'30"E	181.50'
L-21	N48°45'30"E	161.04'
L-22	S77°14'30"E	82.50'
L-23	N53°30'30"E	99.00'
L-24	N18°30'30"E	534.78'
L-25	N49°50'30"E	111.54'
L-26	N05°28'28"E	43.44'
L-27	S83°41'57"E	301.11'
L-28	S83°38'22"E	2375.24'

(A) LEVONNA BONNIE & JACKIE LEE SAYRE
O.R. 5294, PG. 93
37.9875 ACRES

(B) OEDNER & SONS GARAGE, INC.
O.R. 4445, PG. 838
90.558 ACRES

(C) LARRY DALE & SHIRLEY JOYCE BRANDENBURG
D.B. 542, PG. 391
4.024 ACRES

(D) BOBBY G. & J.J. SIZEMORE
D.B. 440, PG. 365
4.90 ACRES

(E) BOBBY SIZEMORE ET AL
O.R. 5001, PG. 746
11.87 ACRES

(F) BOBBY SIZEMORE ET AL
O.R. 5001, PG. 746
11.499 ACRES

(G) BOBBY SIZEMORE ET AL
O.R. 5001, PG. 746
10 ACRES

(H) DONALD S. & HELEN BOWMAN
D.B. 479, PG. 845
6.435 ACRES

(I) DILBERT BISHOP
D.B. 480, PG. 558
0.761 ACRES

(J) DONALD L. AND DARLEN ALLEN
D.B. 1943, PG. 723
3.314 ACRES

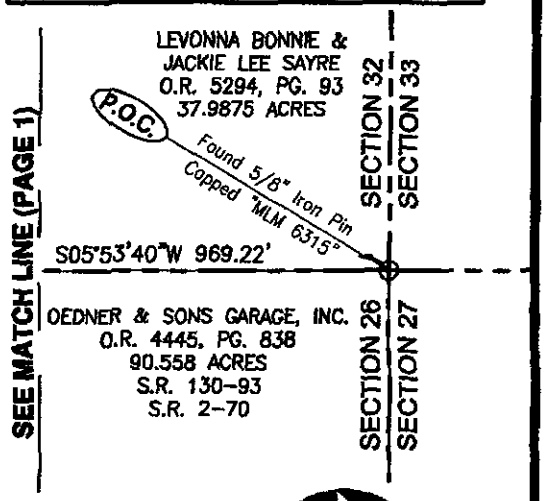
(K) RYAN & JENNIFER GROSS
O.R. 4504, PG. 59
1.074 ACRES

(L) BRAD J. & TARA L. BOLSINGER
INSTRUMENT #2016-004447
0.902 ACRES

(M) JASON M & BROOKE A. FLINDERS
O.R. 4929, PG. 963
5.001 ACRES

(N) JOAN A. ARCHER TR.
INSTRUMENT #2014-008624
5.42 ACRES

(O) JOSEPH H & DIANE R. WESSELER, TRS.
O.R. 5157, PG. 353
1.324 ACRES



Basis of Bearing:
State Plane NAD83 GPS Oberservations

0 400 600

SCALE: 1" = 400'

Drawing: 14R017.000 EX1
Scale 1"=400'
Drawn by: BJR

PENDRAGON DEVELOPMENT COMPANY, LLC
SECTION 32, TOWN 5, RANGE 3
BETWEEN THE MIAMIS

bayer becker

EXHIBIT 7
Ohio Adm.Code 4901:1-15-05(D)(7)

Engineer's Report

WYCO Consulting, Inc.
Civil Engineering
Surveying
Land Development

ABERLIN SPRINGS

ENGINEERING REPORT
CLUSTER SEPTIC SYSTEM
December 27, 2016
By: Ruth Campbell, PE, PS

1) PROJECT SUMMARY
   a) Project Description
   b) Location

2) DESIGN COMPONENTS
   a) System Summary
   b) Septic Tank & Pumps
   c) Small Diameter Pressure Sewer and Small Diameter Gravity Sewer
   d) Pump Tank, Hydraulic Controls, & Filter
   e) Septic Lagoon
   f) Drip Distribution

3) DRIP FIELD OPERATION PLAN
   a) Farm Operation
   b) Field Operation

APPENDICES
Appendix A – *Soils Reports*
Appendix B –*Sewer Sizing*
Appendix C – *Drip Field Design*
Appendix D – *Component Specifications*
Appendix E – *Design Flow Basis*

Ruth H. Campbell
Ruth H. Campbell, Ohio PE 53249

WYCO Consulting Inc. • 10 Stadia Drive • Franklin, Ohio 45005 • (937)743-9926 • Email:ruth@wycoconsulting.com

ENGINEERING REPORT

1) PROJECT SUMMARY

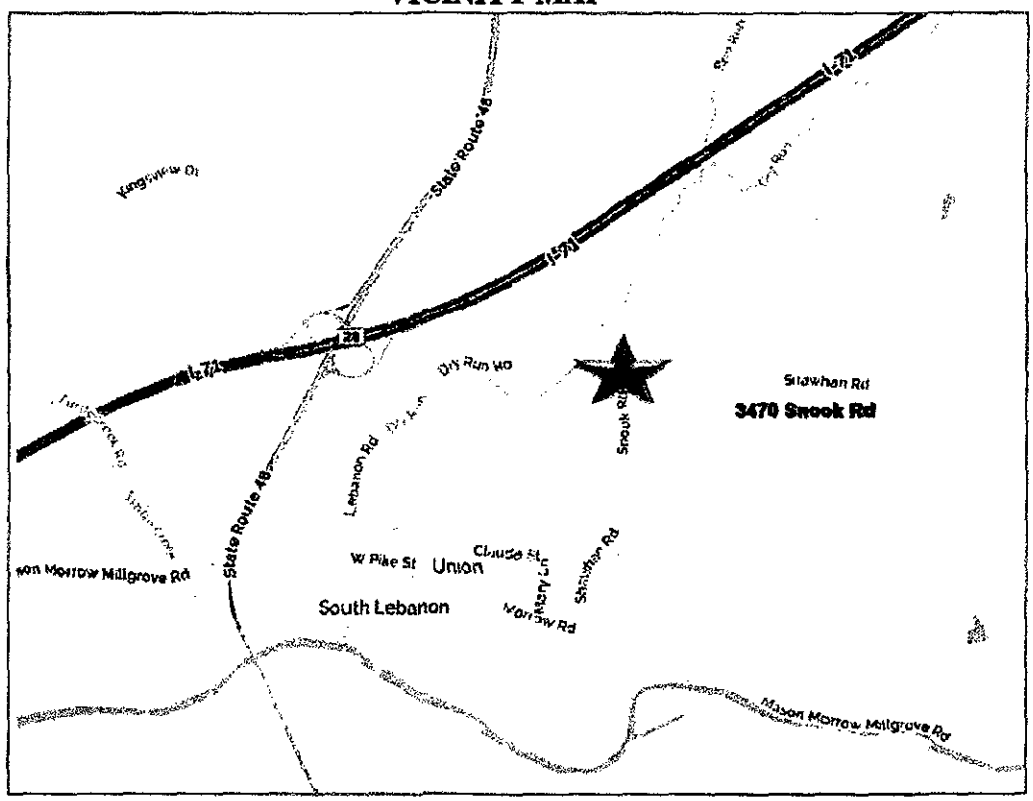
a) **Project Description.** Aberlin Springs is a proposed Planned Unit Development consisting of 142 single-family homes, 41 accessory structures, agricultural uses, community buildings, and open space. Water will be provided by Western Water. Ohio Waste Water Systems, Inc., a new PUCO regulated utility is to be created to own, operate and manage the waste water disposal system.

Aberlin Springs is set among 141 acres of preserved forests and meadows in the heart of Warren County, Ohio. This one-of-a-kind community's homes are connected by looping country roads and a network of footpaths. Aberlin Springs offers cabin, manor and estate home styles ranging in size from 3,500 to 550 square feet.

As the region's first agri-community, the new development offers Farm-to-Table living with an onsite farm and Community-supported Agriculture (CSA) program. The CSA provides Aberlin Springs residents with fresh in-season food and pasture-raised meat.

b) **Location.** Aberlin Springs is to be located at 3470 Snook Road, Union Township, Warren County, Ohio.

VICINITY MAP



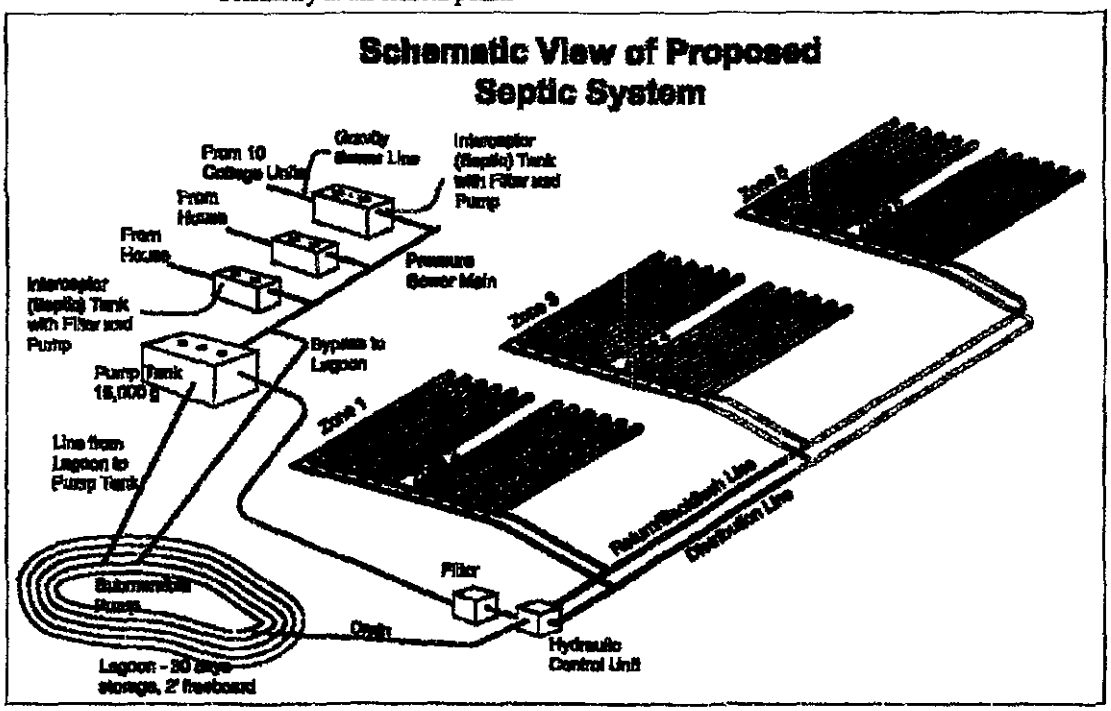
2) DESIGN COMPONENTS

a) **System Summary.** The development of the first agri-community in southwestern Ohio requires a re-examination of typical development practices. Some of the goals of the community are to use, conserve, reuse, and protect local natural resources. With those goals in mind the owner/developer established several requirement:

- The waste water disposal system should return waste water effluent to the local environment, not to a central system discharging to a stream
- There should be a beneficial reuse of the waste water effluent and the nutrients within the effluent
- Overly large lots should not be created just to allow individual on-site septic systems
- Natural resources should be used intelligently to design a system that is economical and provides a low carbon footprint for installation and operation

Given the nature of the soils and the topography of the land, the developers opted to install a clustered septic system with the following components:

- Gravity sewer line to an interceptor (septic) tank
- Discharge from the tank via a Septic Tank Effluent Pumping (STEP) system to a Small Diameter Pressure Sewer or a Septic Tank Effluent Gravity (STEG) system to a Small Diameter Gravity Sewer
- Pumping Tank for distribution of effluent
- Lagoon for emergency overflow storage and pre-treatment if and when required
- Effluent Filter
- Hydraulic Control Unit
- Drip Distribution
- Telemetry at all critical points



b) **Interceptor Tank.** Watertight tanks shall be installed to serve each home or each group of ten cottage homes as appropriate. The tank shall provide:

- o Sufficient hydraulic retention time for capturing grease, grit and other substances that settle or float. Minimum size to 2.5 times design flow.
- o Sufficient storage capacity for sludge and scum to keep septage pumping intervals to a minimum of three years.
- o Sufficient reserve space for 24 hours of normal operation before a system malfunction must be corrected. High water alarms to alert the homeowner and system operator of any malfunction.
- o Sufficient operation zone to modulate peak inflows without causing nuisance alarms
- o An effluent filter device that retains solids greater than one sixteenth inch in size or a filtered step system or screened vault in lieu of, or in addition to, the effluent filter device required.
- o STEP systems shall also require a STEP pump and vault, controls and monitors.

- Each group of 10 Cottage Homes will share a 10,000 gallon tank (6 total)
- Each individual home will have its own 1,500 gallon tank (79 total)
- STEP systems will use the Adenus Technologies STEP Package AT-STEP-1000- RO
- STEG systems will use the Adenus Technologies STEG Package AT-STEG 4

See Appendix D for Component Specifications.

c) **Small Diameter Pressure Sewer and Small Diameter Gravity Sewer** shall be designed per the Alternative Wastewater Collections Systems Manual published by the United States Environmental Protection Agency, October 1991, publication number EPA/625/1-91/024. Small Diameter Sewers sizes and gradients are designed based on hydraulic considerations. Since settleable solids are removed in the septic tanks it is not necessary to provide self-cleaning velocities, thus allowing for reduced gradients and the replacement of manholes with cleanouts at appropriate locations. Pipes will be small diameter PVC, SDR 21 laid with the contour of the terrain. Where practical pipes will be installed at depths to permit collection and transportation by gravity. Minimum depths will be 30 inches. Typical minimum diameters are two to four inches. Cleanouts will be installed as needed to provide access for inspection and for maintenance. Air release valves will be installed at all high points of the main. See Appendix B --Sewer Sizing for sewer layout and sizing.

d) **Pump Tank & Hydraulic Controls.**

- A water tight pump tank designed in accordance with Ohio Revised Code Section 3701-29-12 shall be provided.
- Dosing controls shall prevent flow to the drip distribution component in excess of the daily design flow. Controls shall provide a means to record alarm events, troubleshoot system malfunctions, and monitor flow over time and flow rates during both dosing and flushing events including the use of a flow meter to monitor system operation. Controls shall provide a means of alternating flows to each zone.
- Effluent that is sent to the drip tubing zones shall first be filtered due to the potential of clogging the emitters. A disk filter capable of removal down to 140 microns will be used.
- Provision for automatic hydraulic flushing of filter. Solenoid flush valves shall be used in the design of the drip distribution system to allow the flushing operation to be automated. These flush valves shall be installed near the flush return to provide for easy maintenance.

e) **Septic Lagoon.** A sewage lagoon designed to store thirty days of effluent and provide two feet of freeboard shall be provided. The lagoon shall have a clay or geomembrane liner, a minimum depth of five feet, and a length to width ration at or exceeding 2 to 1. The sewer line will be designed to permit bypassing of the pump tank with direct discharge to the lagoon. Submersible pumps will be used to return pre-treated effluent to the pump tank for dispersal to the drip distribution fields as necessary.

f) **Drip Distribution.** A drip distribution system shall be designed and installed to provide treatment and distribution of the combined average daily design flow in five fields, with three fields active at any point in time. Rotation among the fields will be managed to provide resting time for each field. Reserve area for two additional fields will be provided. Each field is comprised of three subfields with each subfield having two zones. A total of 30 zones will be constructed with 18 zones active at a time.

- Number of homes = 142, Average Daily Design Flow = 300 gpd/lot
- Number of accessory structures = 41, Average Daily Design Flow = 100 gpd/structure
- Average Daily Flow = 46,700 gpd
- A hydraulic loading rate of 0.3 gpd will be used

See Appendix C – *Drip Field Design* for design calculations.
See Appendix E – *Design Flow Basis* for design basis.

3) Drip Field Operation Plan

a) **Farm Operation.** Living out a Farm-to-Table philosophy, Aberlin Springs is home to a sustainable farm with organic practices and an annual Community Supported Agriculture (CSA) program. The experienced farming team of Marc and Claire Luff of Finn Meadows Farm run the CSA, which provides Aberlin Springs residents with fresh in-season food and pasture-raised meat.
The Luff's existing business, Finn Meadows Farm, has been in operation since 2011. Their experience has helped them to adopt an evolving approach to farming that yields ecologically sound methods of food production. *"We do most of our planting, cultivating, and harvesting by hand (but some tasks require the use of a small tractor). We never use chemical fertilizer; we believe in feeding the soil with compost as a way to begin healing the land from overuse. Chemical fertilizer not only pollutes waterways, it is also responsible for mass microbe genocide which would otherwise aid plant growth. We practice the ideas of cover-cropping, crop rotation, and animal fertilization of our soils. We think the most sustainable farm means keeping all our inputs on the farm rather than buying from outside sources (but we're still getting there)."*

"Rather *than applying herbicides, you'll constantly see us with a swan-neck hoe working the soil, or on our hands and knees hand-weeding the beds. We believe the best way to control pests and disease is to create optimal conditions for our plants. Instead of using pesticides to control pests, we practice companion planting, use of beneficial insects, and crop rotation. We would like to move away from city water in the future, and hopefully will be fortunate enough to add several ponds, so we can use rainwater to water our crops instead of treated city water."*

"We believe that animal collagerotationally-grazed cows not only improve our soil, they could actually solve the problem of global warming by sequestering carbon in pastures. We move our cows daily and avoid antibiotics. Our poultry range on pasture. They have the choice of shelter in a mobile house that follows them around the pasture in rotational gazing (poultry follow the cows, thereby controlling the fly populations). Chickens and turkeys feast on bugs and greens, creating a superior flavor in the meat as well as a golden color in the yolk of our eggs (high in beta-carotene!)."

b) **Field Operation.** The challenges of operating a working farm in the midst of a residential community have been carefully considered. The biggest challenge is to develop a plan to allow animal grazing within the areas used for drip distribution. Some of the practices that will be in place include:

- The PUCO run utility has final authority on grazing schedules and will closely monitor the impact of grazing. They also have the authority to halt the practice if necessary.
- The sewage lagoon will be fenced to prevent farm animals from entering the site.
- Field rotation between the five fields will provide a resting time prior to animals being placed on the field. Three fields will be in operation for drip distribution. One field will be resting and one field will permit grazing.
- Additional areas are available for grazing that is outside of any drip distribution area.
- Animals are grazed on a very small area of the field at a time, approximately an eighth of an acre to a quarter of an acre. The animals are moved every day or every other day to a new area.
- Fencing is provided by movable electric fencing. Fields will be well marked to prevent conflicts between drip line and fencing.
- Spacing of the fields allows for alleys between fields for transport of equipment and siting of portable water tanks and the chicken house.

APPENDIX A

Soils Reports

Large Scale Percolation Tests at Aberlin Springs Development

A large scale percolation was conducted at the Aberlin Springs Development on the Bottom Land Area. This is a severe testing of the soil's water conducting capabilities. In the past, there have been numerous percolation tests run in Ohio using a small 6 inch diameter hole and then presoaking for a day. The amount of water drop in the hole was then observed and recorded the next day.

That procedure is not adequate for the Aberlin Springs soil percolation determination. That procedure simply lacks sampling size. In addition, there has never been a real field study which connected the results of the test to the actual amount of water the land could handle.

PROCEDURE

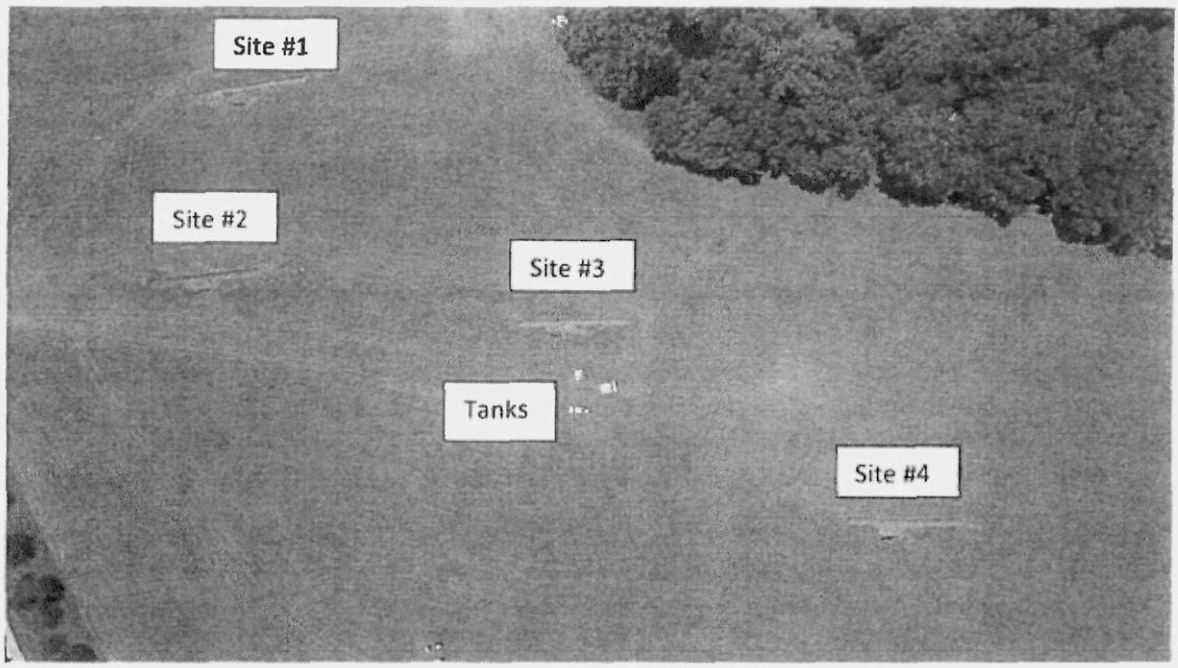
This test involved installing four 100 foot trenches at one foot depth and one foot wide. So, there were actually 4 large scale tests run. In addition, observation pits were dug nearby for soil description properties.

Two large water tanks were set in the field and allowed to drain into each trench. A water meter was also placed so that daily dose amounts could be determined.

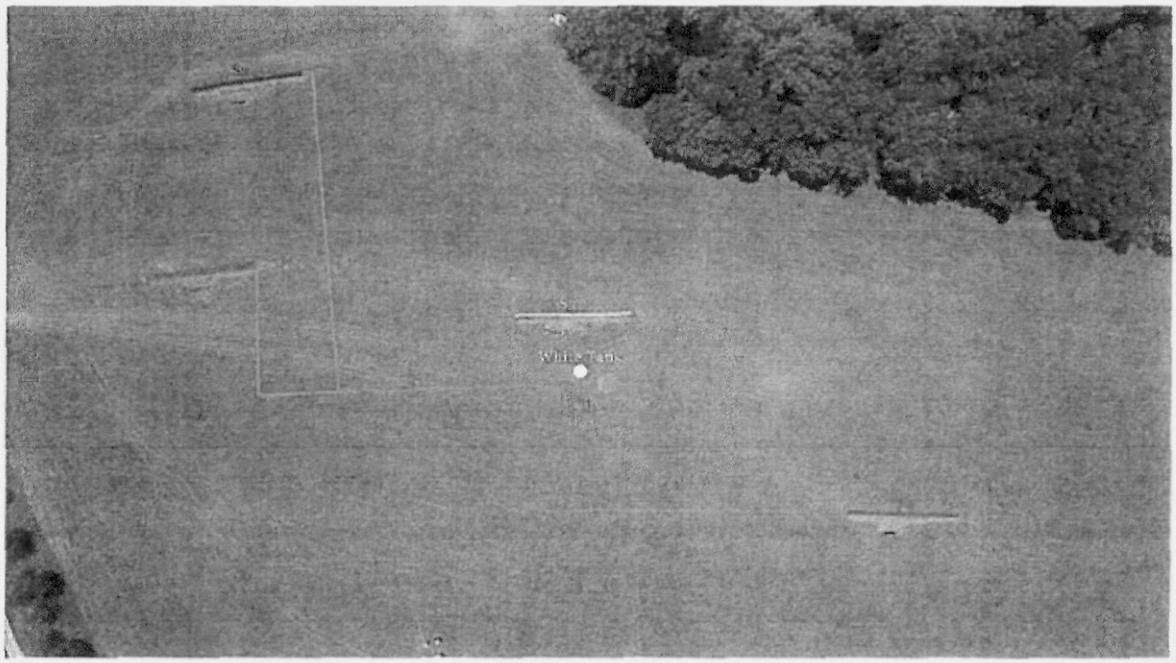
The water entered into the trench via a drip tube with orifices every two feet. This method allowed for even distribution across the length of the trench.

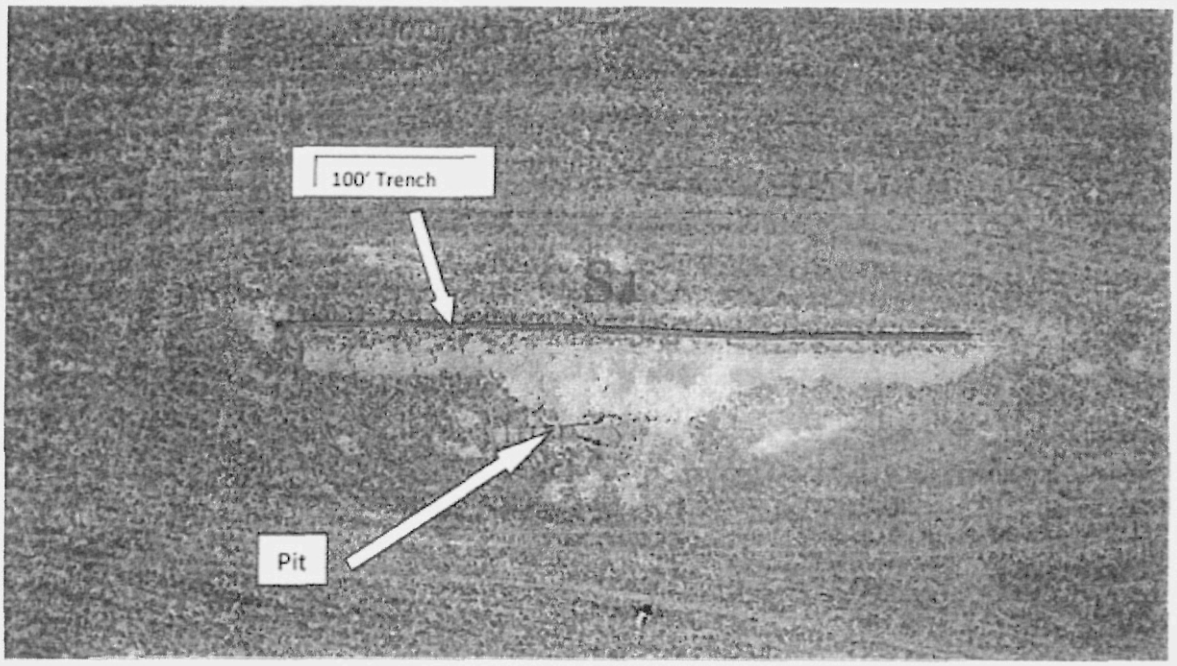
Large volumes were added daily (vaguely 300 gallons/day for each trench). During this procedure, it was noted that the soil was easily handling the load. So, midterm, a very large dose test was attempted on Trench #2. This test was performed to help determine the soil's maximum capability.

The following photos show an aerial view for perspective.



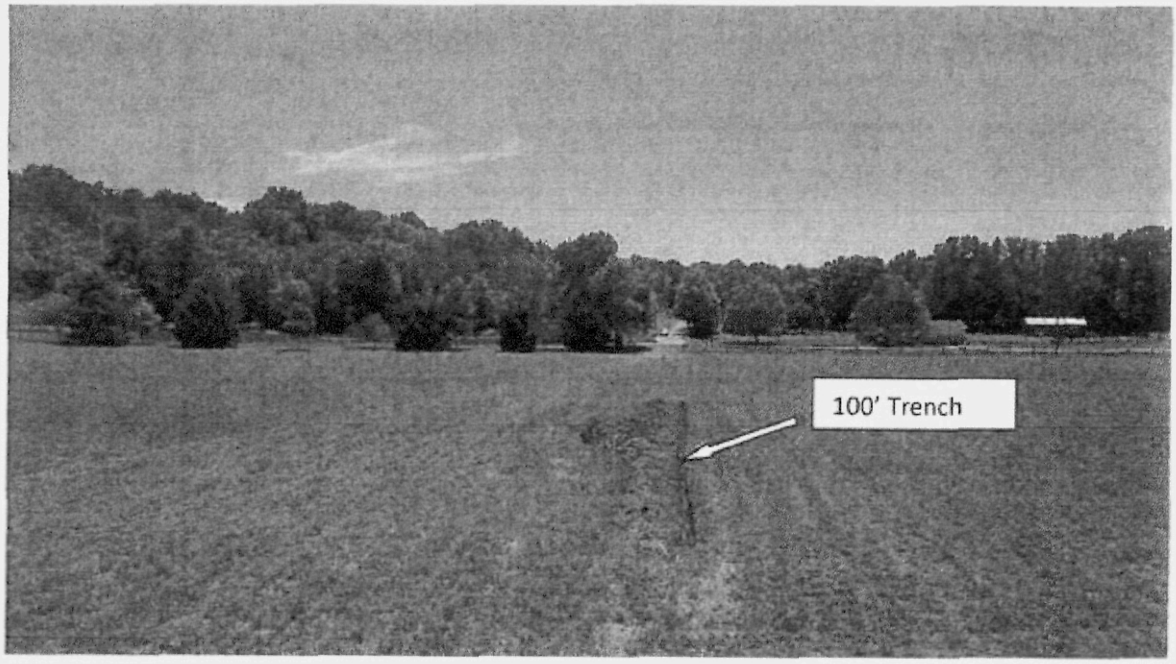
This is an aerial shot showing 4 trench locations. Below shows an overlay description. The CAD drawing also shows these locations and is to scale.





This photo shows a closer up photo of S1. Note the soil description pit just below the trench. North is to the right

The photo below is the same trench at a different view angle. (looking South)



The above photo shows one of the two tanks which drains through a water meter then splits into the trenches. The tanks are filled from a nearby hose outlet once or twice a day.

RESULTS:

Daily field notes are recorded on an attached spreadsheet.

The soils throughout the field are very similar.

In all four trenches a water dose of exceeding 310 gallons per day was easily handled without ponding of water at the bottom of the trench. Even during mild rain events, the trenches remained unponded. Keep in mind that the trenches were dosed over a fairly long period of time. A total of about 5,176 gallons of water were added to each trench. There was even more water added to trench #3 during the heavy flooding test.

This means that about 6.9 feet of water was vertically fed into each square foot of trench bottom.

Basal Rate Calculation during normal testing :

Over 312 gallons per day per trench which has 100 sq.ft. of area on the trench bottom were dosed.

So, the basal rate exceeds 312/100 = 3.12 gallons per square ft. / day (greatly exceeds Tyler rates)

Linear Loading Rate Calculation during normal testing :

Over 312 gallons per day per trench which has 100 feet in length.

So, the linear rate exceeds 312/100 = 3.12 gallons per foot / day (greatly exceeds Tyler rates)

However, during normal testing, the trenches may have been under dosed.

So, consideration must be given to the higher doses on trench #3:

Basal Rate Calculation during heavy flow testing :

3,141 gallons in 23 hours was applied to trench #3 which has 100 sq.ft. of area on the trench bottom. This test did not even pond the entire trench bottom.

So, the basal rate exceeds 3,141/23 hours >= 32.8 gallons per square ft. / day (greatly exceeds Tyler rates)

Linear Loading Rate Calculation during heavy flow testing :

3,141 gallons per day per trench which has 100 feet in length.

So, the linear rate exceeds 3141/100 >= 31.4 gallons per foot / day (greatly exceeds Tyler rates)

SUMMARY and COMMENTS

The large scale perc test shows that the soil has very high percolation rates that greatly exceeds the Tyler rates. Keep in mind that clear water is used in this test. Lowly treated septic tank effluent would not be expected to perform similarly. The high percolation rates offer hope that this bottom land could absorb a large volume of extra water.

Consideration should be given to dosing rates in order to slow the path of water through the soil.

The soil is deep, so consideration can be given to deeper burial of drip tubing to avoid upward capillary action to the surface to help avoid a wet surface.

This project involves applying tens of thousands of gallons to the field every day. The designer should consider the effect on the entire water table on the bottom. In other words, the addition of gradient drains will likely be required.

Soil and Site Evaluation for Sewage Treatment and Dispersal

County: Warren
Township/Sec.: Turtle Creek
Property Address/Location: Snook Road
Morrow, OH 45152
Parcel # / Subdiv. Lot #:
Applicant Name: Aberlin Springs
Address:

Phone #:
Lot #:
Test Hole #: Pit#1,Pit#3,Pit#4
Latitude/Longitude:
Method: ____Pit ____Auger __X__ Probe

Land Use/Vegetation: Alfalfa/Orchardgrass
Landform: stream terrace
Position on Landform: side slope
Percent Slope: 2%
Shape of Slope: linear
Coord. Method/Accuracy: GPS - 5 ft.

Date: 6/24/2016
Evaluator: Dan Michael
620 North Broadway
Lebanon, OH 45036

Certification Stamp or Certification# #30586
Signature: Dan Michael CPSS
Phone # : 1-800-299-4257

Soil Profile		Estimating Soil Saturation: Munsell Color (hue, value, chroma)			Estimating Soil Permeability							
			Redoximorphic Features		Texture			Structure				
Horizon	Depth (inches)	Matrix color	Concentrations	Depletions	Class	Approx. % clay	Approx. % Fragments	Grade	Size	Type (shape)	Consistence	Other Soil Features
Ap	0 - 10	10YR 3/3 dark brown			silt loam	15%	0%	2- moderate	co	gr	friable	high organic matter
AB1	10 - 16	10YR 3/2 very dark grayish brown			loam	15%	0%	3 - strong	m	gr	friable	high organic matter
AB2	16 - 36	10YR 3/2 very dark grayish brown			loam	20%	0%	3 - strong	f	SBK	friable	high organic matter
Bt	36 - 42	10YR 4/4 dark yellowish brown			silty clay loam	27%	1%	2- moderate	co	SBK	friable to firm	
2Bt	42 - 64	10YR 4/4 dark yellowish brown	10YR 3/1 1%	10YR 5/2 15%	clay loam	32%	2%	2- moderate	co	SBK	firm	
2BC	64 - 72+	10YR 5/4 yellowish brown	10YR 3/1 1%	10YR 5/2 20%	clay loam	32%	10%	1- weak	co	SBK	firm	

Limiting Conditions	Depth to (in.)	Descriptive notes	Remarks/Risk Factors:
Perched Seasonal Water Table	42 in.		Very good structure in the subsoil.
Ground Water/Aquifer	> 72 in.		Actual large scale percoltion tests have been performed and show basal and linear loading rates
Highly Permeable Material (range)	> 72 in.		at drastically higher rates than the Tyler Table shows.
Bedrock	> 72 in.	Fractured - Karst (circle one)	
Flow Restrictive Layer	> 72 in.	Dense glacial till	SEE ATTACHED LARGE SCALE PERC TEST.
Highly Weathered Soil	> 72 in.		
Fractured Glacial Till	> 72 in.		
Other High Risk Limiting Conditions	> 72 in.		

Table 3. Soil Infiltration Loading Rates.

Soil Characteristics			Soil Infiltration Loading RRate (gpd/ft2)		
Texture	Structure		CBOD5		
	Shape	Grade	>25mg/L (septic tank effluent)	<=25mg/L (treated effluent)	Row
COS, S, LCOS,LS	--	0SG	0.8	1.6	1
FS, VFS, LFS, LVFS	--	0SG	0.4	1	2
CSL, SL	--	0M	0.2	0.6	3
	PL	1	0.2	0.5	4
		2, 3	0	0	5
	PR/BK/GR	1	0.4	0.7	6
		2, 3	0.6	1	7
FSL, VFSL	--	0M	0.2	0.5	8
	PL	1,2,3	0	0	9
	PR/BK/GR	1	0.2	0.6	10
		2,3	0.4	0.8	11
L	--	0M	0.2	0.5	12
	PL	1,2,3	0	0	13
	PR/BK/GR	1	0.4	0.6	14
		2,3	0.6	0.8	15
SIL	--	0M	0	0	16
	PL	1,2,3	0	0	17
	PR/BK/GR	1	0.4	0.6	18
		2,3	0.6	0.8	19
SCL, CL, SICL	--	0M	0	0	20
	PL	1,2,3	0	0	21
	PR/BK/GR	1	0.2	0.3	22
		2,3	0.4	0.6	23
SC, C, SIC	--	0M	0	0	24
	PL	1,2,3	0	0	25
	PR/BK/G	1	0	0	26
		2,3	0.2	0.3	27

Soil Characteristics			Hydraulic Linear Loading Rate (gpd/ft)									
			Slope 0-4%			Slope 5-9%			Slope >10%			
Texture	Structure		Infiltrative Distance, (Inches)			Infiltrative Distance, (Inches)			Infiltrative Distance, (Inches)			
	Shape	Grade	8 - 12	12-24	24-48	8 - 12	12-24	24-48	8 - 12	12-24	24-48	Row
COS, S, LCOS,LS	--	0SG	4.0	5.0	6.0	5.0	6.0	7.0	6.0	7.0	8.0	1
FS, VFS, LFS, LVFS	--	0SG	3.5	4.5	5.5	4.0	5.0	6.0	5.0	6.0	7.0	2
CSL, SL	--	0M	3.0	3.5	4.0	3.6	4.1	4.6	5.0	6.0	7.0	3
	PL	1	3.0	3.5	4.0	3.6	4.1	4.6	4.0	5.0	6.0	4
		2, 3										5
	PR/BK/	1	3.5	4.5	5.5	4.0	5.0	6.0	5.0	6.0	7.0	6
	GR	2, 3	3.5	4.5	5.5	4.0	5.0	6.0	5.0	6.0	7.0	7
FSL, VFSL	--	0M	2.0	2.3	2.6	2.4	2.7	3.0	2.7	3.2	3.7	8
	PL	1,2,3										9
	PR/BK	1	3.0	3.5	4.0	3.3	3.8	4.3	3.6	4.1	4.6	10
	GR	2,3	3.3	3.8	4.3	3.6	4.1	4.6	3.9	4.4	4.9	11
L	--	0M	2.0	2.3	2.6	2.4	2.7	3.0	3.2	3.2	3.7	12
	PL	1,2,3	-	-	-	-	-	-	-	-	-	13
	PR/BK	1	3.0	3.5	4.0	3.3	3.8	4.3	3.6	4.1	4.6	14
	GR	2,3	3.3	3.8	4.3	3.6	4.1	4.6	3.9	4.4	4.9	15
SIL	--	0M	2.0	2.5	3.0	2.2	2.7	3.2	2.4	2.9	3.4	16
	PL	1,2,3										17
	PR/BK	1	2.4	2.7	3.0	2.7	3.0	3.3	3.0	3.5	4.0	18
	GR	2,3	2.7	3.0	3.3	3.0	3.5	4.0	3.3	3.8	4.3	19
SCL, CL, SICL	--	0M										20
	PL	1,2,3										21
	PR/BK	1	2.0	2.5	3.0	2.2	2.7	3.2	2.4	2.9	3.4	22
	GR	2,3	2.4	2.9	3.4	2.7	3.0	3.3	3.0	3.5	4.0	23
SC, C, SIC	--	0M										24
	PL	1,2,3										25
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Morrow, OH 45152
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Phone #:
Lot #:
Test Hole #: Pit #2
Latitude/Longitude:
Method: ____Pit ____Auger __X__ Probe

Land Use/Vegetation: Alfalfa/Orchardgrass
Landform: stream terrace
Position on Landform: side slope
Percent Slope: 2%
Shape of Slope: linear
Coord. Method/Accuracy: GPS - 5 ft.

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Evaluator: Dan Michael
620 North Broadway
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Certification Stamp or Certification# #30586
Signature: Dan Michael, CPSS
Phone # : 1-800-299-4257

Soil Profile		Estimating Soil Saturation: Munsell Color (hue, value, chroma)			Estimating Soil Permeability							
			Redoximorphic Features		Texture			Structure				
Horizon	Depth (inches)	Matrix color	Concentrations	Depletions	Class	Approx. % clay	Approx. % Fragments	Grade	Size	Type (shape)	Consistence	Other Soil Features
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	PL	1	0.2	0.5	4
		2, 3	0	0	5
	PR/BK/GR	1	0.4	0.7	6
		2, 3	0.6	1	7
FSL, VFSL	--	0M	0.2	0.5	8
	PL	1,2,3	0	0	9
	PR/BK/GR	1	0.2	0.6	10
		2,3	0.4	0.8	11
L	--	0M	0.2	0.5	12
	PL	1,2,3	0	0	13
	PR/BK/GR	1	0.4	0.6	14
		2,3	0.6	0.8	15
SIL	--	0M	0	0	16
	PL	1,2,3	0	0	17
	PR/BK/GR	1	0.4	0.6	18
		2,3	0.6	0.8	19
SCL, CL, SICL	--	0M	0	0	20
	PL	1,2,3	0	0	21
	PR/BK/GR	1	0.2	0.3	22
		2,3	0.4	0.6	23
SC, C, SIC	--	0M	0	0	24
	PL	1,2,3	0	0	25
	PR/BK/G	1	0	0	26
		2,3	0.2	0.3	27

Soil Characteristics			Hydraulic Linear Loading Rate (gpd/ft)									
			Slope 0-4%			Slope 5-9%			Slope >10%			
Texture	Structure		Infiltrative Distance, (Inches)			Infiltrative Distance, (Inches)			Infiltrative Distance, (Inches)			
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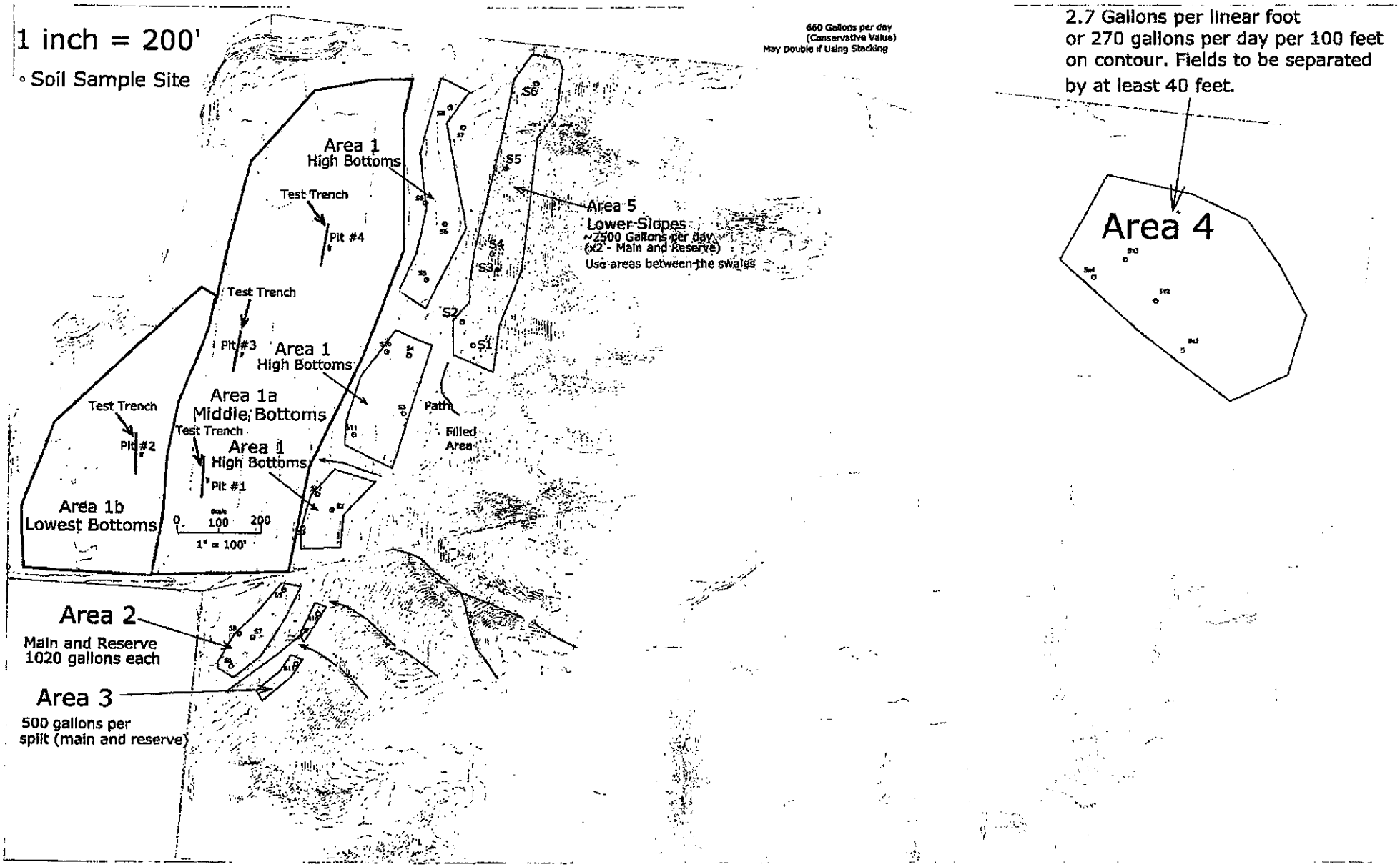
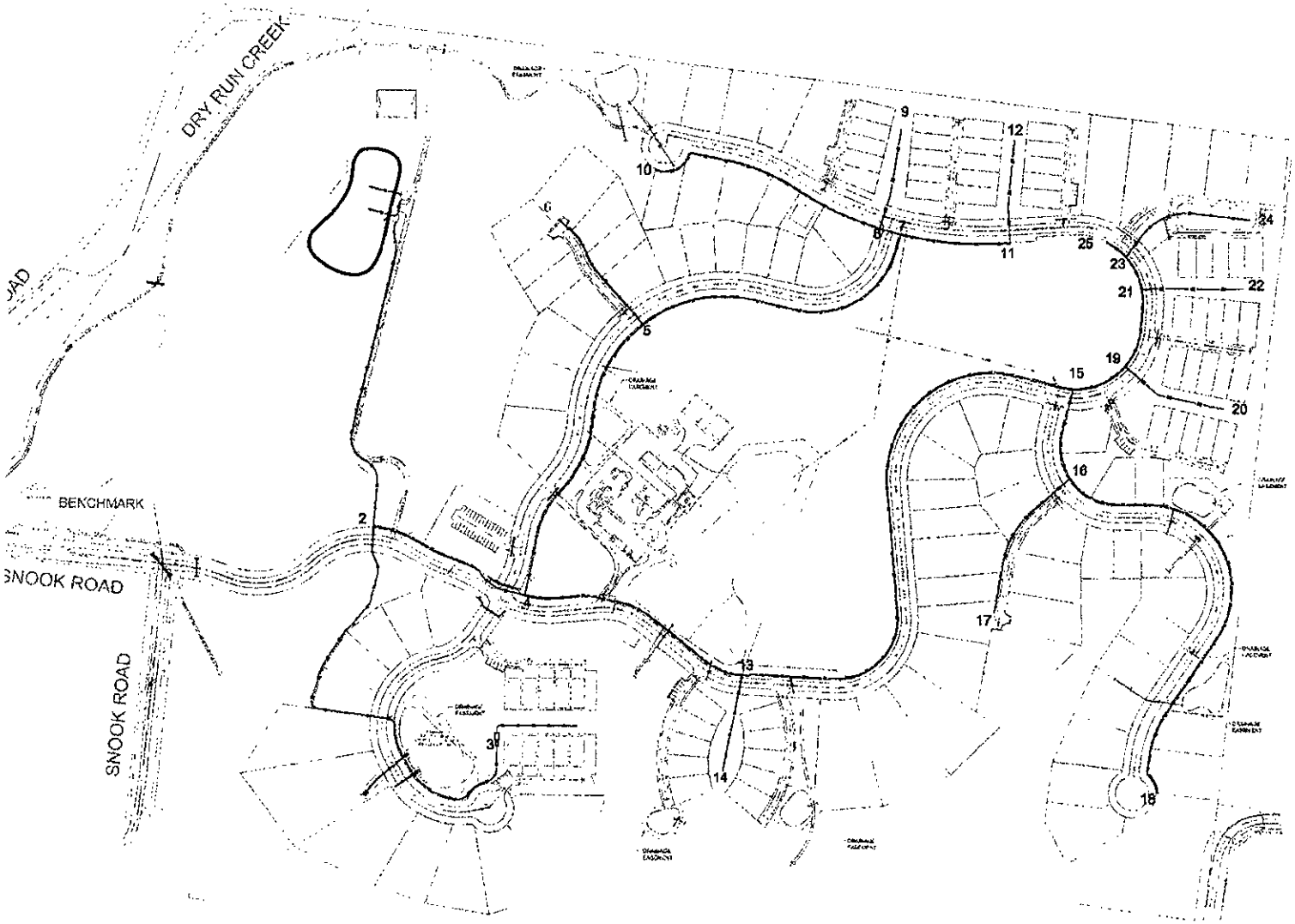
FS, VFS, LFS, LVFS	--	0SG	3.5	4.5	5.5	4.0	5.0	6.0	5.0	6.0	7.0	2
CSL, SL	--	0M	3.0	3.5	4.0	3.6	4.1	4.6	5.0	6.0	7.0	3
	PL	1	3.0	3.5	4.0	3.6	4.1	4.6	4.0	5.0	6.0	4
		2, 3										5
	PR/BK/	1	3.5	4.5	5.5	4.0	5.0	6.0	5.0	6.0	7.0	6
	GR	2, 3	3.5	4.5	5.5	4.0	5.0	6.0	5.0	6.0	7.0	7
FSL, VFSL	--	0M	2.0	2.3	2.6	2.4	2.7	3.0	2.7	3.2	3.7	8
	PL	1,2,3										9
	PR/BK	1	3.0	3.5	4.0	3.3	3.8	4.3	3.6	4.1	4.6	10
	GR	2,3	3.3	3.8	4.3	3.6	4.1	4.6	3.9	4.4	4.9	11
L	--	0M	2.0	2.3	2.6	2.4	2.7	3.0	3.2	3.2	3.7	12
	PL	1,2,3	-	-	-	-	-	-	-	-	-	13
	PR/BK	1	3.0	3.5	4.0	3.3	3.8	4.3	3.6	4.1	4.6	14
	GR	2,3	3.3	3.8	4.3	3.6	4.1	4.6	3.9	4.4	4.9	15
SIL	--	0M	2.0	2.5	3.0	2.2	2.7	3.2	2.4	2.9	3.4	16
	PL	1,2,3										17
	PR/BK	1	2.4	2.7	3.0	2.7	3.0	3.3	3.0	3.5	4.0	18
	GR	2,3	2.7	3.0	3.3	3.0	3.5	4.0	3.3	3.8	4.3	19
SCL, CL, SICL	--	0M										20
	PL	1,2,3										21
	PR/BK	1	2.0	2.5	3.0	2.2	2.7	3.2	2.4	2.9	3.4	22
	GR	2,3	2.4	2.9	3.4	2.7	3.0	3.3	3.0	3.5	4.0	23
SC, C, SIC	--	0M										24
	PL	1,2,3										25
	PR/BK	1										26
	GR	2,3	2.0	2.5	3.0	2.2	2.7	3.2	2.4	2.9	3.4	27

Date	Water Meter Reading	Gallons Dispersed	Gallons to Date	General Observations	Pit #1 Observations	Pit #2 Observations	Pit #3 Observations	Pit #4 Observations
6/4/2016	21,549	--						
6/5/2016	22,766	1,217	1,217		4.0' to W.T.; Ditch: water not standing	3.3' to W.T.; Ditch: water not standing	4.8' to W.T., Ditch: water not standing	5.2' to W.T.; Ditch: water not standing
6/6/2016	24,057	1,291	2,508		4.8' to W.T.; Ditch: water not standing	4.2' to W.T.; Ditch: water not standing	4.9' to W.T.; Ditch: water not standing	5.8' to W.T.; Ditch: water not standing
6/6/2016	26,190	2,133	4,641		> 5' to W.T.; Ditch: water not standing	4.3' to W.T.; Ditch: water not standing	5.0' to W.T.; Ditch: water not standing	5.9' to W.T.; Ditch: water not standing
6/8/2016	27,483	1,293	5,934	Moist capillary action 6 inches above bottom	> 5' to W.T.; Ditch: water not standing	4.3' to W.T.; Ditch: water not standing	5.1' to W.T.; Ditch: water not standing	5.9' to W.T.; Ditch: water not standing
6/10/2016	28,759	1,276	7,210	1.5 inches of rain today	> 5' to W.T.; Ditch: water not standing	4.4' to W.T.; Ditch: water not standing	5.2' to W.T.; Ditch: water not standing	6.0' to W.T.; Ditch: water not standing
6/12/2016	31,370	2,611	9,821		> 5' to W.T.; Ditch: water not standing	4.6' to W.T.; Ditch: water not standing	5.6' to W.T.; Ditch: water not standing	6.0' to W.T.; Ditch: water not standing
6/13/2016	32,381	1,011	10,832		> 5' to W.T.; Ditch: water not standing	4.6' to W.T.; Ditch: water not standing	5.6' to W.T.; Ditch: water not standing	6.0' to W.T.; Ditch: water not standing
				Flooding test starts on Trench #3				
6/13/2016	32,384	0	0	1:21 p.m.				
6/13/2016	32,540	156	156	2:52 p.m.				
6/13/2016	32,674	134	290	4:10 p.m				
6/13/2016	32,755	81	371	5:00 p.m. 25' of standing water about 1 inch in depth				
6/13/2016	32,800	45	416	5:30 p.m. 25' of standing water about 1 inch in depth				
				Note that the perc rate is too high to allow the				
				complete trench to fill				
				416 gallons/(4 hrs + 9 minutes) = 2406 gallons/day				
				without using the entire trench				
				Test Returned to normal				
6/16/2016	37,236	4,436	15,268	This represents 3 days of normal running	> 5' to W.T.; Ditch water not standing	> 4.6' to W.T ; Ditch: water not standing	5.4" to W.T.; Ditch: water not standing	6.0' to W.T.; Ditch: water not standing
				New Flooding test starts on Trench #3				
6/17/2016	37,252	0	0	Test starts 2:52 pm				
	37,391	139	139	3:52:00 pm				
	37,527	136	275	4:52 pm - 68' of visible water				
	37,698	171	446	5:52 pm 70 ft. of visible water 1 to 2 inches deep				
	37,863	165	611	6:52 pm 74ft. of visible water made				
	38,062	199	810	7:52 pm 81 ft. of visible water (water turned down - flowing overnight)				
6/18/2016	40,393	2,331	3,141	1:52 pm - 64' of ponding -Over 23 hours 3,141 gallons absorbed by Trench #3 without saturation of the entire trench			5.4" to W.T.; Ditch: water not standing	
				LLR > 32.8 gallons per foot/ day using only 2/3 of the trench				
				Basal Rate > 32.8 gallons per square foot/day				
				Lines returned to normal - feed all trenches				
6/21/2016	45,830	5,437	20,705	End of test	> 5' to W.T.; Ditch: water not standing	> 4.8' to W.T.; Ditch: water not standing	5.6" to W.T., Ditch: water not standing	6.2' to W.T.; Ditch: water not standing


1 inch = 200'
Soil Sample Site
660 Gallons per day
(Conservative Value)
May Double if Using Stacking
2.7 Gallons per linear foot
or 270 gallons per day per 100 feet
on contour. Fields to be separated
by at least 40 feet.
Area 1
High Bottoms
Test Trench
Pit #4
Test Trench
Pit #3
Area 1
High Bottoms
Area 1a
Middle Bottoms
Test Trench
Pit #2
Test Trench
Area 1
High Bottoms
Pit #1
Area 1b
Lowest Bottoms
Scale
0 100 200
1" = 100'
Area 2
Main and Reserve
1020 gallons each
Area 3
500 gallons per
split (main and reserve)
S6
S5
S4
S3
S2
S1
Area 5
Lower Slopes
~2500 Gallons per day
(x2 - Main and Reserve)
Use areas between the swales
Path
Filled
Area
Area 4

APPENDIX B

Sewer Sizing


DRY RUN CREEK
BENCHMARK
SNOOK ROAD
SNOOK ROAD
2
3
5
6
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25

	End	Cottages	Houses	# EDU	Cumulative EDU	Peak Flow	L	Top	Top	Average S	Size
						gpm	feet	at Start	at End	%	Inches
1								673.2			
2	1	0	0	0.0	165.0	97.5	794	707.4	673.2	-4.31%	4
3	2	10	12	26.0	165.0	97.5	1,170	748.4	707.4	-3.50%	4
4	2	0		0.0	139.0	84.5	421	751.3	707.4	-10.43%	4
5	4	0	3	4.0	55.9	43.0	754	761	748.4	-1.67%	4
6	5	0	8	10.6	10.6	20.3	341	755	761	1.76%	2
7	5	0	6	8.0	41.3	35.7	768	762	761	-0.13%	4
8	7	0	0	0.0	23.3	26.7	55	765	762	-5.45%	2
9	8	10		10.0	10.0	20.0	257	761	765	1.56%	2
10	8	0	10	13.3	13.3	21.7	623	753	765	1.93%	2
11	7	0	0	0.0	10.0	20.0	275	765	762	-1.09%	2
12	11	10	0	10.0	10.0	20.0	261	761	765	1.53%	2
13	4	0	0	0.0	83.1	56.6	592	755	751.3	-0.63%	4
14	13	10	0	10.0	10.0	20.0	245	750	755	2.04%	2
15	13	0	12	16.0	73.1	51.6	1,450	764	755	-0.62%	4
16	15	0	4	5.3	30.5	30.3	230	763	751.3	-5.09%	2
17	16	0	5	6.6	6.6	18.3	402	755	763	1.99%	2
18	16	0	14	18.6	18.6	24.3	1,124	759	750	-0.80%	4
19	15	0	0	0.0	26.6	28.3	148	767	764	-2.03%	4
20	19	10	0	10.0	10.0	20.0	275	768	767	-0.36%	2
21	19	0	0	0.0	16.6	23.3	204	767	767	0.00%	2
22	21	10	0	10.0	10.0	20.0	253	771	767	-1.58%	2
23	21	0	0	0.0	6.6	18.3	89	767	767	0.00%	2
24	23	0	4	5.3	5.3	17.7	357	772	767	-1.40%	2
25	24	0	1	1.3	1.3	15.7	63	767	767	0.00%	2
Total		60	79	165			11,151				

60 Cottages with ADF = 300 GPD

79 Houses with ADF = 300 GPD + 100 GPD from an accessory structure = 400 GPD

Therefore # of Houses x 1.33 = # of Equivalent Dwelling Unit (EDU)

APPENDIX C

Drip Field Design

Drip Irrigation Disposal soils

Hydraulic Loading: The soils report and field testing from Dan Michael indicates that the soils in the proposed drip fields will support loading far in excess of the Tyler Tables of 0.6. In addition, the Netafim design manual recommends a loading rate of 0.2 – 0.5 gpd/sf/day for silt loams with weak to strong structures. However, the maximum rate used by Ohio Wastewater Systems, Inc. is 0.3 gpd/sf/day. Therefore, the design loading rate will be 0.3 gpd/sf/day.

Design daily flow for disposal	= 46,700 GPD
Design loading rate	= 0.30 gal/sf/day (gpd/sf)
46,700 GPD ÷ 0.30 gpd/sf	= 155,667 SF basal soil area

This site has ~556,000 SF+/- suitable primary soils available, with approximately 92,400 SF+/- additional soils - OK

Drip emitter piping will be used for drip disposal. Netafim Bioline 0.61 (1/2") pipe, with 2 foot orifice spacing of emitters, will be plowed-in-place on approximately 2 foot pipe centers. Actual installation will be dictated by existing grade, and at the direction of the design engineer. Actual installed LF of piping should be expected to range from a minimum of 78,334 LF of pipe, to a maximum of 79,200 LF of pipe. (An additional 52,800 L.F. of pipe will be installed for field resting.

Bioline Drip Emitter Piping Calculations

General Design

Drip system will be constructed using Netafim Bioline .570 I.D tubing, with 0.61GPH emitters. All design calculations are based on the Netafim design literature. Normal dosing pressure will be minimum of 25 PSI (58 ft of head) and a maximum of 60 PSI (138 ft of head). If possible, design will stay in this range without pressure reducers and multiple pumps. The proposed pumps are **four STEP50-15221 (1.5 HP, single phase pump, 220V).**

Bioline piping requires 1.6 GPM per distal end to properly flush the emitters.

This system will be built in cells of 4400 LF of dripper line (maximum), per cell. The installed number of total cells will be eighteen (18) active and twelve (12) for resting. The maximum number of distal ends in any cell shall be 10 lines.

Therefore: 10 distal ends x 1.6 GPM/distal end = 16 GPM minimum to achieve flushing.

Use: 16 GPM

Using a 24" spacing with the Bioline 0.61, the head loss in laterals up to 440 LF in length is approximately 8 ft. This number is to be called Δ P. (From manufacturer's info.)

Therefore: Δ P = 8 (From Netafim)

Using ΔP = 8, the minimum inlet pressure required for proper flushing is 38 PSI (30 PSI for drip flush, 8 PSI for flush solenoid).

The return lines are generally a downhill hydraulic grade. The flush solenoid valve will be in the control building below the system.

38 PSI * 2.3 = 87.4 feet of head (approx.) at lateral entrance (top of drip field)

Size pumps for normal operation:

Regular Min dosing flow: (per cell) 4400 LF / 2' centers = 2200 emitters
2200 emitters * 0.61 gph = 1342 gph
1342 gph / 60 min / hour = 22.36 gpm Use: 23 gpm
Head Losses:
Flow – 23 GPM
Transport Pipe: 1470 lf @ 0.152 ft/100 = 2.23 ft (3" Pipe)

H_L for Disc. Filter @ 23 gpm = 2 ft
Misc. for Bends, etc.: 5 ft
Minimum Pump Requirements:
23 GPM @ 69 ft. min. normal operating pressure + friction losses in transport pipe (2.2 ft.) + elevation head (8 ft.) + Arkal filter (2 ft.) + misc. (5 ft.) = 86.2 - TDH (Top Lateral)
AT 23 GPM pump STEP50-15221 generates- 135 ft of head. **OK**

Size Pumps for Flushing-Dosing Requirements:

Normal Dosing + Flushing Flow: 23 GPM + 16 GPM (Flushing) = 39 GPM
Head Losses:
Transport Pipe: 1470 lf @ 0.320 ft/100 = 4.7 ft (3")
H_L for Disc. Filter @ 39 GPM = 3 ft
Misc. for Bends, etc.: 5 ft
Flushing Solenoid: 16 ft
TDH = 69 ft (static) + 8 (elev.) + 3 (Arkal) + 4.7 (friction) + 16 (fl solenoid) + 5 misc. = 105.7 ft.

Total head required for flushing: 69 ft. (static at inlet manifold) + 36.7 = 105.7 ft
Size pumps for min: 39 GPM (combined flow) **@ 105.7 ft. head**

Use both pumps for Dosing-Flushing cycle:
Therefore, in order to adequately dose and flush the Bioline tubing, each pump must produce:
23 GPM @ 105.7 TDH (use two pumps at the same time to get 39 GPM)

STEP50-15221 will produce 135 ft of head under these conditions

Check Pressure at Header Pipe (top of Drip Field):
Actual head = 135 – 10.5 (elev.) – 2 (Arkal) – 2.2 (friction) - 5 misc. 115.3 ft = 50.1 PSI - **OK**

Check Pressure at Header Pipe (bottom Drip Field):
Actual head = 135 ft + 9.5 (elev.) – 2 (Arkal) – 2.2 (friction) - 5 misc. 135.3 ft = 58.8 PSI – **OK.**

Check for pressure overload if flush valve is inoperable:
Flow for two pumps will be 23 GPM normal dose + 16 GPM flushing = 39 GPM

Each pump will deliver 19.5 GPM @ 138.5 TDH

Pressure at bottom of Drip field:
138.5 + 9.5 (elev.) – 3 Arkal - 5 (misc.) – 4.7 (friction) = 135.3 TDH = 58.8 PSI - **OK.**

Final Discharge Pumps:

Four (4) STEP50-15221, 1.5 HP, single phase pumps, 220V.

APPENDIX D

Component Specifications

Component Specifications

Pipe Specifications
Adenus Technologies SF1-ETM Control Panel (each individual residence)
Adenus Technologies DAC2 Control Panels (each 10 cottage pocket community)
Arkal Filters - Spin Klin Fully Automatic Disc Filters (drip distribution system)
Stepros maximum filter (each individual residence and each 10 cottage pocket community)
Stepros Self Cleaning Tall Vault (each 10 cottage pocket community)
Stepros Self Cleaning Vault (each individual residence)
Control/Pump Duty Float Switches (each individual residence and each 10 cottage pocket community)
Stepros Hose and Valve Assemblies (each individual residence and each 10 cottage pocket community)
STA-RITE® JP Series Pump (each individual residence – 10 gpm and each 10 cottage pocket community- 20 gpm)
STA-RITE® ST.E.P Plus Series (pump tank – 50 gpm)

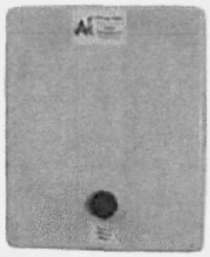
Pipe Specifications

Type	Pressure-STEP	Gravity
Size	2", 3", 4"	6"
Pipe Material	HDPE SDR-21	PVC SDR-26
Material Specification	AWWA C906	ASTM D3034
Joint Specification	ASTM 2620	ASTM D3212
Bedding Classification	ASTM D2321	ASTM D2321

SF1-ETM Control Panels

Submittal Data Sheet

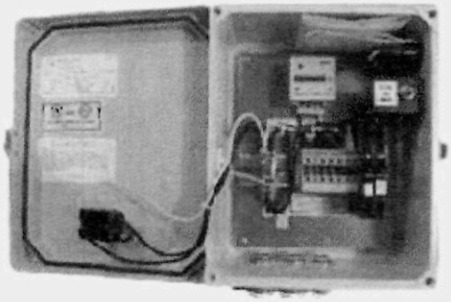
Applications:



Adenus Technologies SF1-ETM Control Panels are used to control effluent pumps and alarms as specified in onsite STEP (pump) systems. The SF1-ETM Control Panel is used in STEP applications where a Redundant Off or Low-Level Alarm is not needed.

General Information:

Adenus Technologies SF1-ETM Control Panels are specifically engineered for the pump and floats in STEP systems. Standard features include three ½" conduit adapters, pump circuit breaker (20 amps), controls circuit breaker (10 amps), an AUTO/OFF/MANUAL toggle switch, and an audio/visual high water alarm. All control panels are manufactured by Adenus Technologies and are designed for use with float switches.



The SF1-ETM panel from Adenus Technologies, LLC offers high level alarm, pump on/off control, and an elapsed time meter for overall pump run time. With its sound construction and simple installation, the SF1-ETM Control Panel from Adenus Technologies is the perfect controller for your two-float STEP systems.

Standard Features:

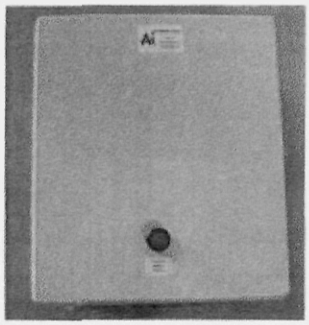
Feature:	Specification(s):
Pump Circuit Breaker	20 amps, OFF/ON switch. Single pole 120 VAC, DIN rail mounting with thermal magnetic tripping characteristics.
Controls Circuit Breaker	10 amps, OFF/ON switch. Single pole VAC. DIN rail mounting with thermal magnetic tripping characteristics.
Toggle Switch	Single pole, double-throw HOA switch, 20 amps, 1 hp.
Audio Alarm	95 dB at 24", warble-tone sound
Audio Alarm Silence Relay	120 VAC, automatic reset.
Visual Alarm	7/8" diameter red lens, "Push to Silence." NEMA 4X, 1 watt bulb, 120 VAC
Padlock Latch	Constructed of non-corrosive stainless steel
Elapsed Time Meter	120 VAC, 6-digit, non-resettable.

All Adenus Technologies Control Panels are quality tested, certified, and UL certified.

DAC2 Control Panels

Submittal Data Sheet

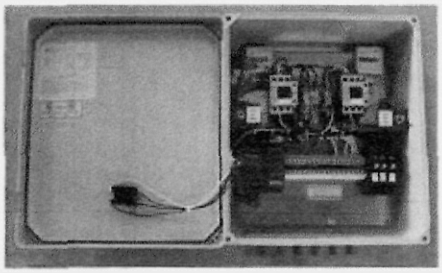
Applications:



Adenus Technologies DAC2 Control Panels are used to control duplex pump systems and alarms as specified in onsite duplex pump systems and commercial STEP systems.

General Information:

Adenus Technologies DAC2 Control Panels are specifically engineered for duplex pump systems or commercial systems. Standard features include seven ½" conduit adapters, pump circuit breakers (20 amps), controls circuit breaker (10 amps), an AUTO/OFF/MANUAL toggle switch for each pump, and an audio/visual alarm for high- and low-level water conditions. All Adenus Technologies Control Panels are manufactured by Adenus Technologies and are designed for use with float switches.



The DAC2 panel from Adenus Technologies offers high- and low-level alarms, pump on/off, and redundant off indicators. With its sound construction and simple installation, the DAC2 Control Panel from Adenus Technologies is the perfect controller for your duplex pump or commercial STEP systems.

Standard Features:

Feature:	Specification(s):
Pump Circuit Breaker	20 amps, OFF/ON switch. Single pole 120 VAC, DIN rail mounting with thermal magnetic tripping characteristics.
Controls Circuit Breaker	10 amps, OFF/ON switch. Single pole VAC. DIN rail mounting with thermal magnetic tripping characteristics.
Toggle Switch	Single pole, double-throw HOA switch, 20 amps, 1 hp.
Audio Alarm	95 dB at 24", warble-tone sound
Audio Alarm Silence Relay	120 VAC, automatic reset. DIN rail mount
Visual Alarm	7/8" diameter red lens, "Push to Silence." NEMA 4X, 1 watt bulb, 120 VAC
Padlock Latch	Constructed of non-corrosive stainless steel (2)
Elapsed Time Meter	220 VAC, 6-digit, non-resettable.
Enclosure Rating	NEMA 4x

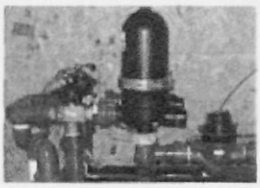
All Adenus Technologies Control Panels are quality tested, certified, and UL certified.

Arkal Filters

Spin Klin Fully Automatic Disc Filters

- **2" Spin Klin® Compact (stand alone)**
- **2" Spin Klin® Automatic (Self-cleaning) Disc Filter Batteries**

2" Spin Klin® Automatic (Self-cleaning) Disc Filter Batteries



Size: 3" - 6" inlet/outlet manifold diameter

Capacity: low flow (10-120 m^3/hr)

Operation: Modular, Fully Automatic Disc Filtration

Standard Features:

- Uniquely efficient. Precise particle separation.
- Innovative filter design captures and stores large amounts of solids
- Low energy and water consumption.
- Long-term operation with barely any maintenance.
- Operation is easy and requires no filter media replacement
- Continuous flow during backwash

Special Features:

- **Automatic backwashing for self-cleaning.**
- The flushing cycle has a regulated volume, is short and environmentally friendly as it minimizes the use of flush water and automatically cleans the filter element. This saves labor and costs - minimum maintenance, and eliminates forever the need to replace filter media.
- Compact design

2" Automatic Disc Filter Batteries - Technical Data

data	2 units		3 units		4 units	
Maximum pressure:	10 bar	145 psi	10 bar	145 psi	10 bar	145 psi
Minimum pressure:	2.8 bar	38 psi	2.8 bar	38 psi	2.8 bar	38 psi
Flow rate (40-140 mesh, 100-400μ):	40 m^3/h	176 gpm	60 m^3/h	264 gpm	80 m^3/h	352 gpm
Flow rate(55μ):	26 m^3/h	114 gpm	40 m^3/h	176 gpm	53 m^3/h	233 gpm
Flow rate(20μ):	15 m^3/h	66 gpm	23 m^3/h	101 gpm	32 m^3/h	141 gpm
Filtration surface area:	1760 cm^2	272 in^2	2640 cm^2	410 in^2	3520 cm^2	544 in^2
Filtration volume:	2640 cm^3	160 in^3	3960 cm^3	240 in^3	5290 cm^3	323 in^3
Filter length:	545 mm	2115/32"	845 mm	339/32"	1145 mm	453/32"
Filter height:	815 mm	323/32"	815 mm	323/32"	815 mm	323/32"
Filter width:	720 mm	2811/32"	720 mm	2811/32"	720 mm	2811/32"
Weight(Polyester coated):	79 kg	174 lbs	100 kg	220 lbs	121 kg	266 lbs
Weight(Stainless steel):	70 kg	154 lbs	90 kg	198 lbs	110 kg	242 lbs

Aug. 17

Stepros Maximum Filter

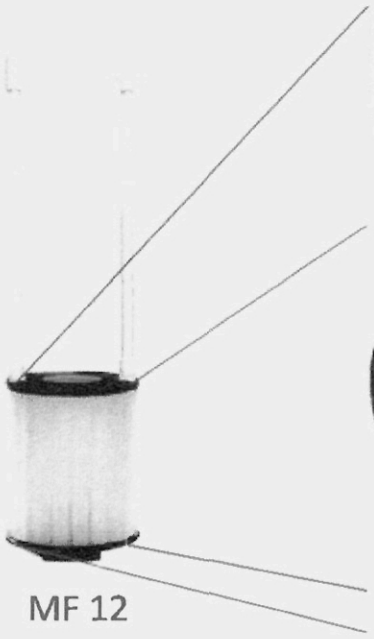
STEPROS'S maximum filter series is designed to meet your filtration requirements. Our filter is unique in design to benefit your preventative maintenance program Our maximum filter used in conjunction with our Self Cleaning Vault repels solids back into the tank instead of collecting them thus providing longer periods of time between cleaning and increase in pump life.

Technical Specifications

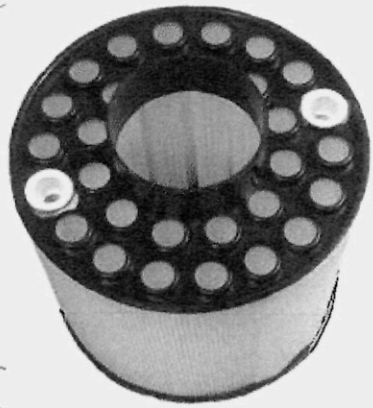
- Polypropylene
- Schedule 40 PVC
- 1/8" solids or smaller
- 15.3 ft^2 effective screen area

Features

- Unique inside to compliment surface area with ease of cleaning and removal of buildup.
- Superior pump protection
- Maximum surface area to ensure delivery of water to the pump



MF 12



Underside/Inside View

849 Aviation Parkway Smyrna, TN 37167

615-427-1824

STEPROS

Dec. 1

Stepros Self Cleaning Tall Vault

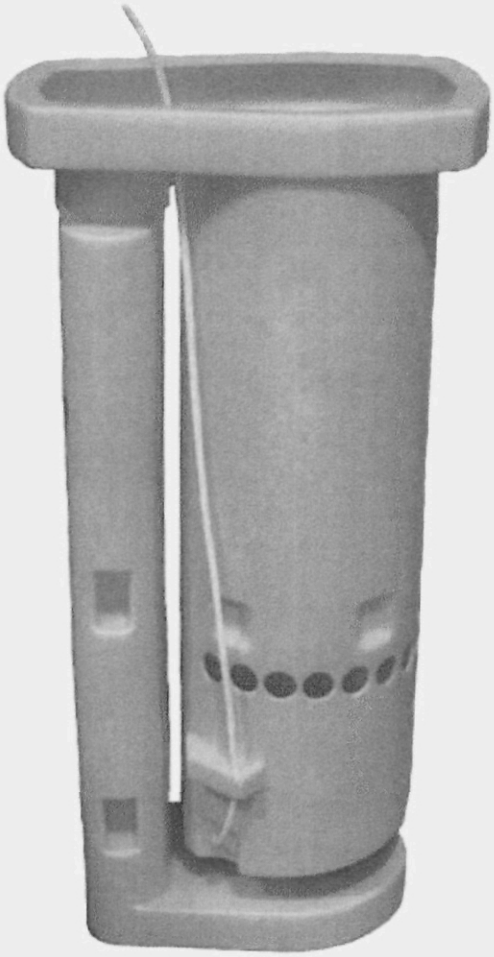
STEPROS'S maximum filter series designed to meet your filtration requirements. Our filter is unique in design to benefit your preventative maintenance program. Our maximum filter used in conjunction with our Self Cleaning Flush Vault repels solids back into the tank instead of collecting them thus providing longer periods of time between cleaning Our 72" tall vault is ideal for larger tanks and commercial applications.

Technical Specifications

- Polypropylene
- Schedule 40 PVC
- 1/8" solids or smaller
- 15 3 ft^2 effective screen area

Features

- Unique inside to compliment surface area with ease of cleaning and removal of buildup.
- Superior pump protection
- Maximum surface area to ensure delivery of water to the pump



HFSCV72MF12

849 Aviation Parkway Smyrna, TN 37167

615-427-1824

Aug. 12

Stepros Self Cleaning Vault

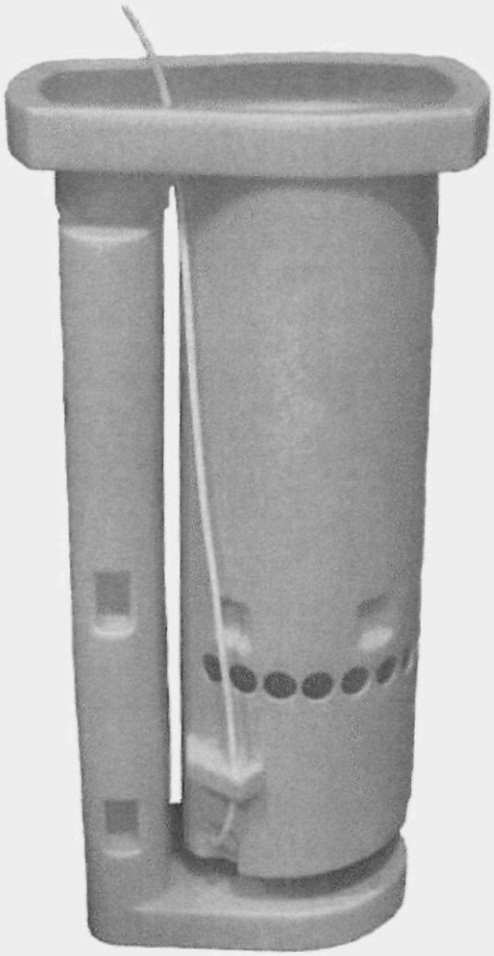
STEPROS'S maximum filter series designed to meet your filtration requirements. Our filter is unique in design to benefit your preventative maintenance program Our maximum filter used in conjunction with our Self Cleaning Flush Vault repels solids back into the tank instead of collecting them thus providing longer periods of time between cleaning

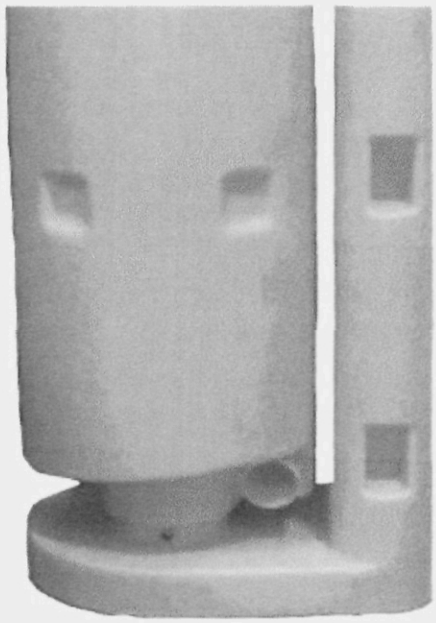
Technical Specifications

- Polypropylene
- Schedule 40 PVC
- 1/8" solids or smaller
- 15 3 ft^2 effective screen area

Features

- Unique inside to compliment surface area with ease of cleaning and removal of buildup.
- Superior pump protection
- Maximum surface area to ensure delivery of water to the pump





849 Aviation Parkway Smyrna, TN 37167

615-427-1824

Control/Pump Duty Float Switches

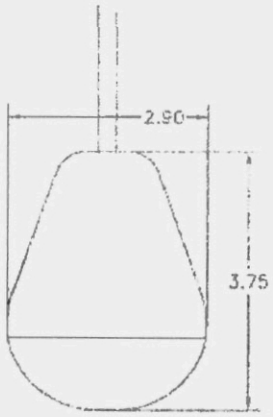
SPECIFICATIONS

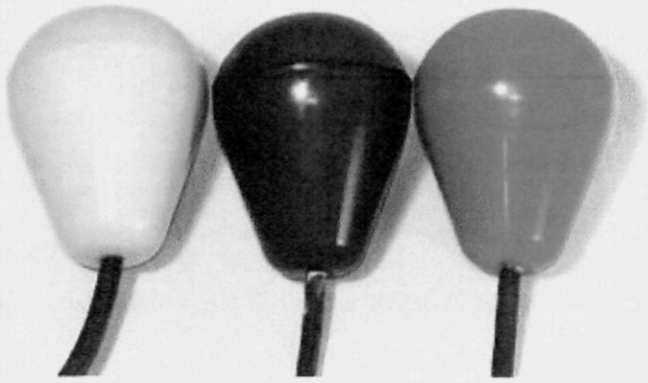
- 2.90 x 3.75"
- Min/max temperatures 32-170ºF
- power cord is chlorinated polyethylene type SJOOW- 300v
- 16/2 for N/O or
- 18/2 for N/C and wide angle switches.
- 16/2 N/O 13amps @120-240 VAC ½ H.P
- 18/2 N/C and Narrow angle N/O 10 AMPS @ 120 VAC, 3 AMPS @ 240 VAC.

FEATURES

- Leak proof, shock proof, and impact resistant
- Durable polypropylene outer shell and a solid polyurethane foam interior

849 Aviation Parkway
Smyrna, TN 37167
615-604-4007
ezonsite@gmail.com





Normally Open (N/O): ***Pump duty. As the float raises 1" (5º) above horizontal, the contact becomes closed and completes the circuit. This float is generally used to turn on pumps.***

Normally Closed (N/C): ***Control duty. As the float falls 1" (5º) below horizontal, the contact becomes closed and completes the circuit. This float is generally used to turn off pumps as a fail-safe method (redundant off).***

Narrow Angle Floats (N/0): ***Control duty. As the float raises 1" (10º) above horizontal, the contact becomes closed and completes the circuit. This float is generally used to turn on pumps. With a narrow-angle activated actuation, these are often used in pump stations and recirculating sand filters (RSFs) where water levels require more precision.***

These floats are constructed of a durable polypropylene outer shell and a solid polyurethane foam interior. They are designed for accurate liquid level control in many applications including sewage and wastewater environments. Float switches can be utilized to signify specific water levels for direct alarm actuation, and can be used as a "pump-on" or "pump off" switch.

Applications

- ***For use with EZ-Onsite control Panels***
- ***Pump Stations***
- ***Recirculation Sand Filter Beds.***
- ***STEP and STEG tanks***

www.ezonsite.com

EZ Onsite

Aug. 12

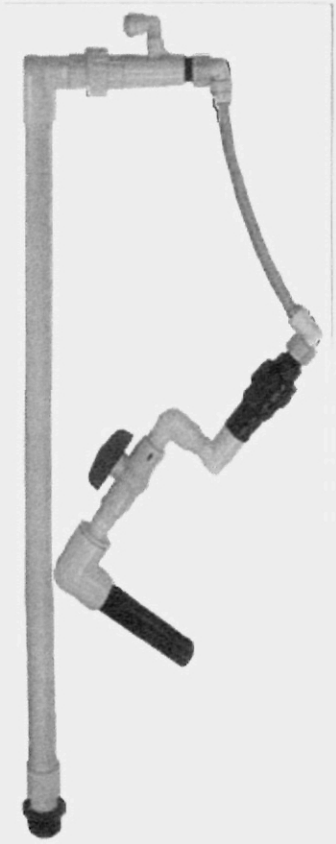
Stepros Hose and Valve Assemblies

STEPROS'S discharge assemblies include all the necessary plumbing components (as specified by the system owner or utility) to convey effluent from a pump to the collection system

General Specifications

- *Pipe and PVC fittings:* Sch 40 pvc pressure; solvent welded / threaded and sealed with PTFE pipe thread sealant
- 1/2" models made with pex quick disconnect working pressure = 250 psi @ 73◦ F and flexible pex pipe working pressure = 160 psi@ 73◦ F
- Assembled to ensure discharge assembly does not prohibit routine maintenance
- Union attached for easy pump removal
- Ball Valve included for manual cut off
- Ball Check valve provided for auto flushing the vault

849 Aviation Parkway
Smyrna, TN
37167
615-427-1824



DASCV-05-10GPM

DASCV-_ _ _- _ _GPM

Indicates pump size:
10
15
20
30
50

Indicates discharge assembly size
05 - 1/2"
100- 1"
125 -1-1/4"
200 - 2"

DASCV = Discharge Assembly Self Cleaning Vault

STA-RITE® JP Series

Signature 2000® composite 4" submersible pumps

POWERED BY PENTEK®

Precision-engineered, corrosion-*resistant Signature 2000® Composite* Pumps in 10, 15, 20 and 30 GPM deliver efficient, dependable performance even in rough, aggressive water. Heads to over 650 feet and capacities to 45 GPM. Built to deliver long-term, trouble-free service.

These pumps feature the proven SignaSeal™ staging system. Floating impeller design resists sand and reduces sand locking.

APPLICATIONS

Water systems...for residential, industrial, commercial, multiple housing and farm use.

SPECIFICATIONS

Shell: Stainless steel

Diameter: 3-7/8"

Discharge: Fiberglass-reinforced thermoplastic

Discharge Bearing: Nylatron®

Intermediate Bearing: (On larger units) polycarbonate, nitrile rubber and stainless steel

Impellers: Acetal

Diffusers: Polycarbonate

Suction Caps: Polycarbonate with stainless steel insert

Thrust Pads: Proprietary spec.

Shaft and Coupling: Stainless steel

Intake: Fiberglass-reinforced thermoplastic

Intake Screen: Polypropylene

Cable Guard: Stainless steel

Check Valve: Acetal

Agency Listings: CSA

FEATURES

Proven Staging System: Our proven SignaSeal staging system incorporates a harder-than-sand ceramic wear surface that when incorporated with our floating impeller design, greatly reduces problems with abrasives, sand lock-up and running dry.

Discharge: Corrosion-resistant fiberglass-reinforced thermoplastic for durability in aggressive water. Large octagon wrench area for ease of installation.

Discharge Bearing: Exclusive self-lubricating Nylatron bearing resists wear from sand.

Intake: Corrosion-resistant fiberglass-reinforced thermoplastic for durability in aggressive water.

Shaft: Positive drive from 7/16" hexagonal heavy-duty 300 grade stainless steel.

Coupling: Stainless steel press fit to pump shaft. Couples to all standard NEMA motors.

Shell: Heavy-walled corrosion-resistant stainless steel. Threaded for easy servicing.

Hardware: All screws, washers and nuts are corrosion-resistant 300 grade stainless steel.

Check Valve: Durable internal poppet-type check valve.

Cable Guard: Corrosion-resistant stainless steel guard protects motor leads. Tapered ends prevent pump from catching on well.

Intake Screen: Corrosion-proof polypropylene.

Pentek® XE Series™ Motor:
2 and 3 wire NEMA standard all stainless construction water-filled motors.

Nylatron® is a registered trademark of Polymer Corp.
All other brand or product names are trademarks or registered trademarks of Pentair Ltd.

STA-RITE® JP Series

Signature 2000® composite 4" submersible pumps

ORDERING INFORMATION

GPM	MOTOR TYPE	HP	STGS.	PH	VOLT	ASSEMBLED PUMP CATALOG NUMBER	ASSEMBLED PUMP LENGTH INCHES*	ASSEMBLED PUMP WEIGHT POUNDS*	PUMP END CATALOG NUMBER	PUMP END LENGTH INCHES*	PUMP END WEIGHT POUNDS*	MOTOR CATALOG NUMBER	MOTOR WEIGHT POUNDS*	CONTROL BOX CATALOG NUMBER	CONTROL BOX WEIGHT POUNDS*
10**	2 WIRE	1/2	7	1	115	S10P4JP05121	22-3/4	27-1/2	L10P4CJ	12-3/4	9	P42B0005A1	19		
		1/2	7	1	230	S10P4JP05221	22-3/4	27-1/2	L10P4CJ	12-3/4	9	P42B0005A2	19		
		3/4	10	1	230	S10P4JP07221	25-3/4	30-1/2	L10P4DJ	14-1/2	10	P42B0007A2	23		
		1	13	1	230	S10P4JP10221	28-3/4	34-1/2	L10P4EJ	16	10-3/4	P42B0010A2	25		
		1-1/2	17	1	230	S10P4JP15221	34-3/4	41-1/2	L10P4FJ	19-3/4	12-1/2	P42B0015A2	29		
	3 WIRE	1/2	7	1	115	S10P4JP05131	22-3/4	27-1/2	L10P4CJ	12-3/4	9	P43B0005A1	19	SMC-IR0511	4
		1/2	7	1	230	S10P4JP05231	22-3/4	27-1/2	L10P4CJ	12-3/4	9	P43B0005A2	18	SMC-CR0521	4
		3/4	10	1	230	S10P4JP07231	25-3/4	30-1/2	L10P4DJ	14-1/2	10	P43B0007A2	21	SMC-CR0721	4
		1	13	1	230	S10P4JP10231	28-3/4	34-1/2	L10P4EJ	16-1/4	10-3/4	P43B0010A2	23	SMC-CR1021	4
		1	13	3	230				L10P4EJ	15-1/2	10-1/4	P43B0010A3	23		
		1	13	3	460				L10P4EJ	15-1/2	10-1/4	P43B0010A4	23		
		1-1/2	17	1	230	S10P4JP15231	33-1/2	41-1/2	L10P4FJ	19-3/4	12-1/2	P43B0015A2	27	SMC-CR1521	7
		1-1/2	17	3	230				L10P4FJ	19-3/4	12-1/2	P43B0015A3	23		
		1-1/2	17	3	460				L10P4FJ	19-3/4	12-1/2	P43B0015A4	23		
15**	2 WIRE	1/2	5	1	115	S15P4JP05121	22-1/4	27	L15P4CJ	12-1/4	9	P42B0005A1	19		
		1/2	5	1	230	S15P4JP05221	22-1/4	27	L15P4CJ	12-1/4	9	P42B0005A2	19		
		3/4	7	1	230	S15P4JP07221	25-3/4	31	L15P4DJ	14-1/2	10	P42B0007A2	23		
		1	9	1	230	S15P4JP10221	29-1/4	35	L15P4EJ	16-3/4	11	P42B0010A2	25		
		1-1/2	12	1	230	S15P4JP15221	35-1/4	43	L15P4FJ	20-1/4	13	P42B0015A2	29		
	3 WIRE	1/2	5	1	115	S15P4JP05131	22-1/4	27	L15P4CJ	12-1/4	9	P43B0005A1	19	SMC-IR0511	4
		1/2	5	1	230	S15P4JP05231	22-1/4	27	L15P4CJ	12-1/4	9	P43B0005A2	18	SMC-CR0521	4
		3/4	7	1	230	S15P4JP07231	25-3/4	31	L15P4DJ	14-1/2	10	P43B0007A2	21	SMC-CR0721	4
		1	9	1	230	S15P4JP10231	29-1/4	35	L15P4EJ	16-3/4	11	P43B0010A2	23	SMC-CR1021	4
		1	9	3	230				L15P4EJ	15-1/2	10-1/4	P43B0010A3	23		
		1	9	3	460				L15P4EJ	15-1/2	10-1/4	P43B0010A4	23		
		1-1/2	12	1	230	S15P4JP15231	33-3/4	41	L15P4FJ	20-1/4	13	P43B0015A2	27	SMC-CR1521	7
		1-1/2	12	3	230				L15P4FJ	20-1/4	13	P43B0015A3	23		
		1-1/2	12	3	460				L15P4FJ	20-1/4	13	P43B0015A4	23		
20**	2 WIRE	3/4	5	1	230	S20P4JP07221	23-3/4	30	L20P4DJ	12-1/2	8-1/2	P42B0007A2	23		
		1	7	1	230	S20P4JP10221	27-1/4	34	L20P4EJ	14-3/4	9-3/4	P42B0010A2	25		
		1-1/2	9	1	230	S20P4JP15221	32	39	L20P4FJ	16-3/4	10-3/4	P42B0015A2	29		
	3 WIRE	3/4	5	1	230	S20P4JP07231	23-3/4	30	L20P4DJ	12-1/2	8-1/2	P43B0007A2	21	SMC-CR0721	4
		1	7	1	230	S20P4JP10231	27-1/4	34	L20P4EJ	14-3/4	9-3/4	P43B0010A2	23	SMC-CR1021	4
		1	7	3	230				L20P4EJ	15-1/2	10-1/4	P43B0010A3	23		
		1	7	3	460				L20P4EJ	15-1/2	10-1/4	P43B0010A4	23		
		1-1/2	9	1	230	S20P4JP15231	30-1/2	39	L20P4FJ	16-3/4	10-3/4	P43B0015A2	27	SMC-CR1521	7
		1-1/2	9	3	230				L20P4FJ	16-3/4	10-3/4	P43B0015A3	23		
		1-1/2	9	3	460				L20P4FJ	16-3/4	10-3/4	P43B0015A4	23		
		2	12	1	230				L20P4GJ	20-1/4	12-1/2	P43B0020A2	31	SMC-CR2021	7
		2	12	3	230				L20P4GJ	20-1/4	12-1/2	P43B0020A3	23		
		2	12	3	460				L20P4GJ	20-1/4	12-1/2	P43B0020A4	23		
30**	2 WIRE	1	5	1	230	S30P4JP10221	26-1/2	35	L30P4EJ	14	10	P42B0010A2	25		
		1-1/2	6	1	230	S30P4JP15221	30-1/2	39	L30P4FJ	15-1/4	11	P42B0015A2	29		
	3 WIRE	1	5	1	230	S30P4JP10231	26-1/2	35	L30P4EJ	14	10	P43B0010A2	23	SMC-CR1021	4
		1	5	3	230				L30P4EJ	15-1/2	10-1/4	P43B0010A3	23		
		1	5	3	460				L30P4EJ	15-1/2	10-1/4	P43B0010A4	23		
		1-1/2	6	1	230	S30P4JP15231	29	39	L30P4FJ	15-1/4	11	P43B0015A2	27	SMC-CR1521	7
		1-1/2	6	3	230				L30P4FJ	15-1/4	11	P43B0015A3	23		
		1-1/2	6	3	460				L30P4FJ	15-1/4	11	P43B0015A4	23		
		2	8	1	230				L30P4GJ	18-1/4	12	P43B0020A2	31	SMC-CR2021	7
		2	8	3	230				L30P4GJ	18-1/4	12	P43B0020A3	23		
		2	8	3	460				L30P4GJ	18-1/4	12	P43B0020A4	23		

*Length and Weight are approximate.

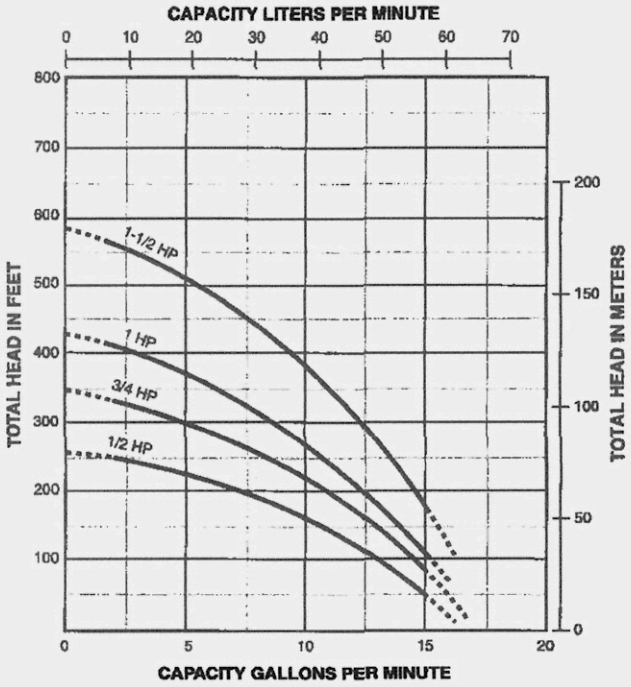
**For 10 GPM, 15 GPM, 20 GPM and 30 GPM discharge is 1-1/4" NPT.

NOTE: On 2 HP and larger pumps – Motor, Control Box or Magnetic Starter must be ordered separately.

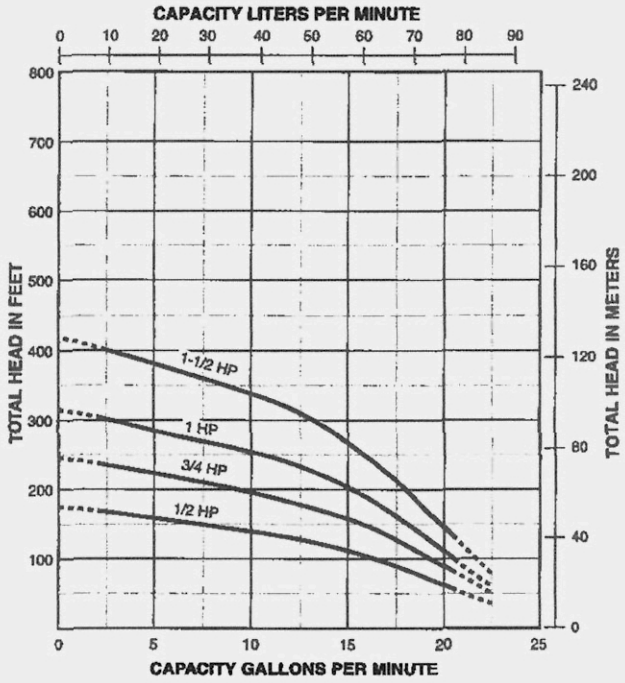
STA-RITE® JP Series

Signature 2000® composite 4" submersible pumps

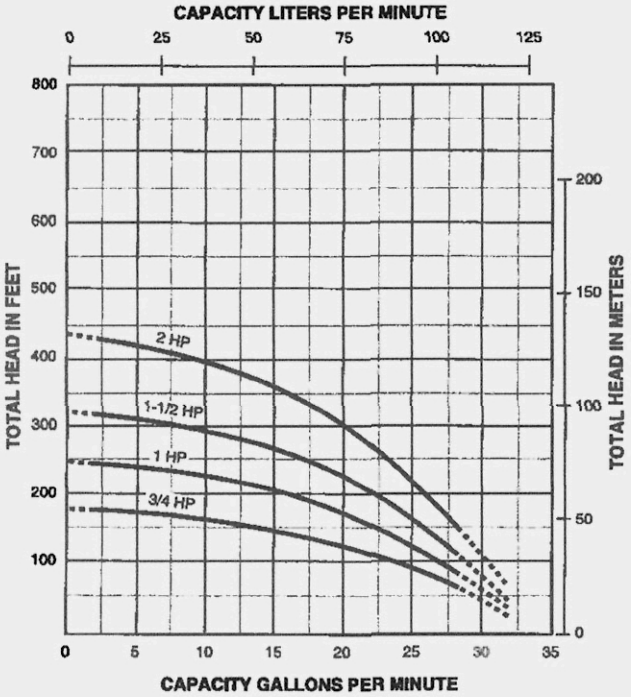
PUMP PERFORMANCE: 10 GPM



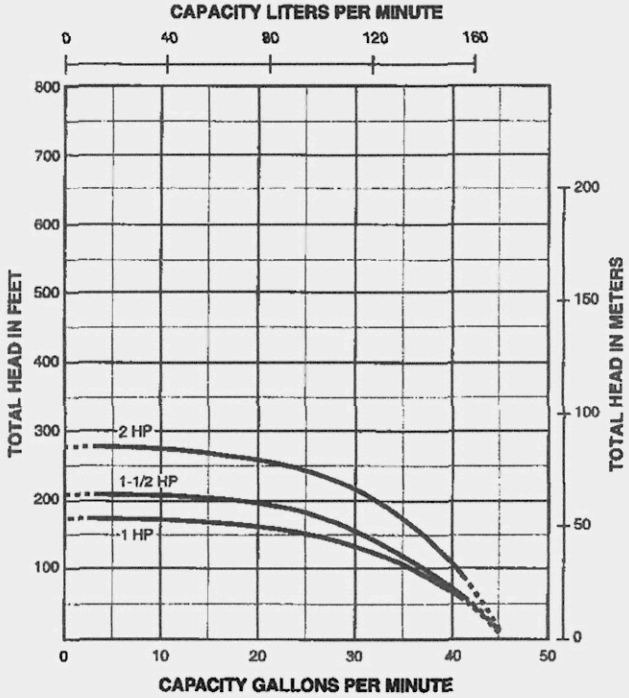
PUMP PERFORMANCE: 15 GPM



PUMP PERFORMANCE: 20 GPM



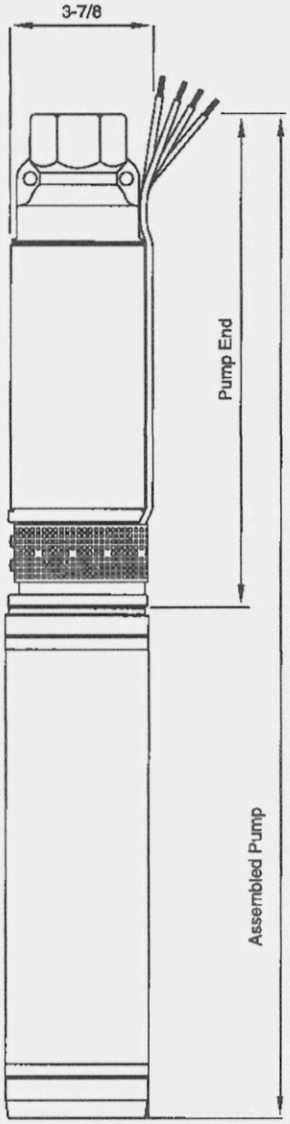
PUMP PERFORMANCE: 30 GPM



STA-RITE® JP Series

Signature 2000® composite 4" submersible pumps

OUTLINE DIMENSIONS



DISCHARGE	
10 GPM	1-1/4" NPT
15 GPM	1-1/4" NPT
20 GPM	1-1/4" NPT
30 GPM	1-1/4" NPT

For lengths, refer to Ordering Information tables.
Dimensions (in inches) are for estimating purposes only.

STA-RITE® JP Series

Signature 2000® composite 4" submersible pumps

10 GALLONS PER MINUTE | PUMP PERFORMANCE (CAPACITY IN GALLONS PER MINUTE)

HP	PSI	PUMPING DEPTH IN FEET																	SHUT-OFF HEAD	
		20	40	60	80	100	125	150	175	200	250	300	350	400	450	500	550	600	FEET	PSI
1/2	0	—	—	14.1	13.5	12.8	12.0	10.8	9.5	7.4	4.7								255	110
	20	14.0	13.3	12.7	12.0	11.0	9.6	7.8	5.2	1.4										
	30	13.2	12.6	11.8	10.9	9.8	8.0	5.5	1.7											
	40	12.4	11.7	10.8	9.7	8.2	8.8	2.0												
	50	11.5	10.5	9.4	7.8	5.8	2.2													
	60	10.4	9.2	7.5	5.4	2.8														
3/4	0	—	—	—	14.8	14.4	13.8	13.0	12.0	11.0	8.4	4.7							340	147
	20	—	14.7	14.3	13.7	13.0	12.2	11.2	9.9	8.6	5.0									
	30	14.4	14.2	13.7	13.0	12.3	11.2	10.0	8.8	7.2	3.0									
	40	14.2	13.5	12.9	12.1	11.3	10.2	8.9	7.4	5.3										
	50	13.4	12.7	12.0	11.0	10.2	8.9	7.4	5.5	3.2										
	60	12.6	11.9	11.0	10.0	9.1	7.5	5.7	4.4	1.4										
1	0	—	—	—	—	14.9	14.4	13.8	13.3	12.8	11.5	10.1	8.2	5.8	2.1				467	202
	20	—	—	14.7	14.4	14.0	13.4	12.9	12.3	11.7	10.2	8.3	6.0	2.6						
	30	—	14.7	14.4	13.8	13.4	12.9	12.3	11.7	11.0	9.4	7.4	4.6							
	40	14.6	14.2	13.8	13.3	13.0	12.5	11.8	11.1	10.3	8.5	6.2	3.0							
	50	14.1	13.7	13.3	12.9	12.4	11.8	11.1	10.2	9.5	7.4	4.8								
	60	13.7	13.2	12.8	12.4	11.9	11.2	10.3	9.5	8.7	6.3	3.2								
1-1/2	0	—	—	—	—	—	—	14.7	14.4	14.0	13.2	12.2	11.2	10.1	8.6	7.1	5.2	2.5	636	275
	20	—	—	—	—	14.8	14.4	14.0	13.6	13.2	12.4	11.3	10.2	8.7	7.3	5.3	2.8			
	30	—	—	—	14.7	14.4	14.0	13.6	13.2	12.8	11.9	10.7	9.6	8.1	6.4	4.4				
	40	—	15.0	14.7	14.4	14.1	13.7	13.3	12.8	12.4	11.4	10.2	8.9	7.3	5.5	3.0				
	50	14.9	14.6	14.3	14.0	13.6	13.2	12.8	12.4	12.0	10.8	9.7	8.2	6.5	4.5					
	60	14.5	14.3	14.0	13.6	13.3	12.8	12.4	12.0	11.5	10.2	9.0	7.5	5.6	3.3					

CAUTION: DO NOT use pump at flow rates indicated by the symbol '—'. To do so can cause premature failure of unit. Pump warranty void when failure occurs under these conditions. Tested and rated in accordance with Water Systems Council Standards.

NOTE: Pumps installed with a Pro-Source® tank require a 100 PSI relief valve. Pumps installed with a conventional tank require a 75 PSI relief valve. Relief valve must be capable of relieving entire flow of pump at relief pressure.

STA-RITE® JP Series

Signature 2000® composite 4" submersible pumps

15 GALLONS PER MINUTE | PUMP PERFORMANCE (CAPACITY IN GALLONS PER MINUTE)

HP	PSI	PUMPING DEPTH IN FEET															SHUT-OFF HEAD	
		20	40	60	80	100	125	150	175	200	250	300	350	400	450	500	FEET	PSI
1/2	0	—	21.5	20.0	18.7	16.9	13.1	7.4									175	76
	20	19.7	18.3	16.3	13.0	8.8												
	30	18.0	15.6	12.4	7.9	2.0												
	40	15.2	11.9	7.0														
	50	11.2	5.8															
	60	4.8																
3/4	0	—	—	21.2	20.2	19.3	17.8	16.0	13.2	9.6							245	106
	20	20.9	19.9	19.0	17.7	16.4	13.7	10.0	4.9									
	30	19.8	18.8	17.6	16.1	14.0	10.7	5.5										
	40	18.6	17.5	15.9	13.5	10.9	6.0											
	50	17.2	15.4	13.1	10.0	6.4												
	60	15.0	12.7	9.7	5.5	1.8												
1	0	—	—	—	—	20.4	19.4	18.4	17.2	15.5	10.3	2.7					318	138
	20	—	20.9	20.2	19.3	18.7	17.5	15.8	13.4	10.9	3.2							
	30	20.8	20.0	19.1	18.5	17.6	16.0	13.7	11.1	7.5								
	40	19.8	19.0	18.3	17.4	16.2	13.9	11.3	8.1	3.7								
	50	18.9	18.2	17.1	15.8	14.0	11.4	8.2	4.0									
	60	18.0	17.0	15.6	13.7	11.7	8.4	4.4										
1-1/2	0	—	—	—	—	—	20.5	19.9	19.3	18.4	16.4	13.1	8.3	2.8			420	182
	20	—	—	21.2	20.5	20.0	19.3	18.6	17.6	16.5	13.5	9.1	3.2					
	30	—	21.1	20.3	19.9	19.3	18.7	17.7	16.6	15.4	11.7	6.3						
	40	21.0	20.2	19.8	19.2	18.7	17.9	16.7	15.5	13.7	9.4	3.6						
	50	20.2	19.7	19.2	18.6	18.0	16.8	15.6	13.8	11.9	6.7							
	60	19.6	19.0	18.5	17.7	16.9	15.7	13.9	12.0	9.7	3.8							

CAUTION: DO NOT use pump at flow rates indicated by the symbol '—'. To do so can cause premature failure of unit. Pump warranty void when failure occurs under these conditions.

Tested and rated in accordance with Water Systems Council Standards.

NOTE: Pumps installed with a Pro-Source® tank require a 100 PSI relief valve. Pumps installed with a conventional tank require a 75 PSI relief valve. Relief valve must be capable of relieving entire flow of pump at relief pressure.

STA-RITE® JP Series

Signature 2000® composite 4" submersible pumps

20 GALLONS PER MINUTE		PUMP PERFORMANCE (CAPACITY IN GALLONS PER MINUTE)															
		PUMPING DEPTH IN FEET														SHUT-OFF HEAD	
HP	PSI	20	40	60	80	100	125	150	175	200	250	300	350	400	450	FEET	PSI
3/4	0	—	—	—	26.9	23.5	19.0	13.7								180	78
	20	—	25.8	22.5	18.5	14.5	3.4										
	30	25.2	22.0	18.3	13.9	4.5											
	40	21.3	17.6	13.0	3.0												
	50	17.2	11.4														
	60	10.2															
1	0	—	—	—	—	—	25.3	22.4	18.8	15.5						251	109
	20	—	—	—	25.1	22.8	19.5	16.1	10.1								
	30	—	—	24.9	22.5	19.8	16.5	10.6									
	40	27.0	24.5	22.0	19.4	16.8	11.6	2.6									
	50	24.2	21.5	19.0	16.3	12.5	3.3										
	60	21.3	18.6	16.0	11.1	3.7											
1-1/2	0	—	—	—	—	—	—	26.4	24.0	21.6	16.4	5.4				323	140
	20	—	—	—	—	26.8	24.4	22.0	19.5	16.8	6.8						
	30	—	—	—	26.5	24.7	22.2	19.6	17.1	13.9							
	40	—	—	26.2	24.3	22.3	19.8	17.3	14.2	8.0							
	50	—	26.0	24.1	22.1	20.0	17.5	14.5	8.3								
	60	25.6	23.9	21.9	19.8	17.5	14.8	9.1									
2	0	—	—	—	—	—	—	—	27.3	26.0	23.2	20.2	16.2	8.5		435	188
	20	—	—	—	—	—	—	26.1	24.9	23.4	20.6	16.7	9.5				
	30	—	—	—	—	—	26.2	25.0	23.5	22.1	19.1	13.8	4.8				
	40	—	—	—	—	26.4	25.1	23.7	22.2	20.8	17.2	10.1					
	50	—	—	27.2	26.1	25.1	23.8	22.3	20.9	19.3	14.0	5.7					
	60	—	27.1	26.0	25.0	23.9	22.4	21.0	19.4	17.3	10.8						

CAUTION: DO NOT use pump at flow rates indicated by the symbol '—'. To do so can cause premature failure of unit. Pump warranty void when failure occurs under these conditions. Tested and rated in accordance with Water Systems Council Standards.

NOTE: Pumps installed with a Pro-Source® tank require a 100 PSI relief valve. Pumps installed with a conventional tank require a 75 PSI relief valve. Relief valve must be capable of relieving entire flow of pump at relief pressure.

STA-RITE® JP Series

Signature 2000® composite 4" submersible pumps

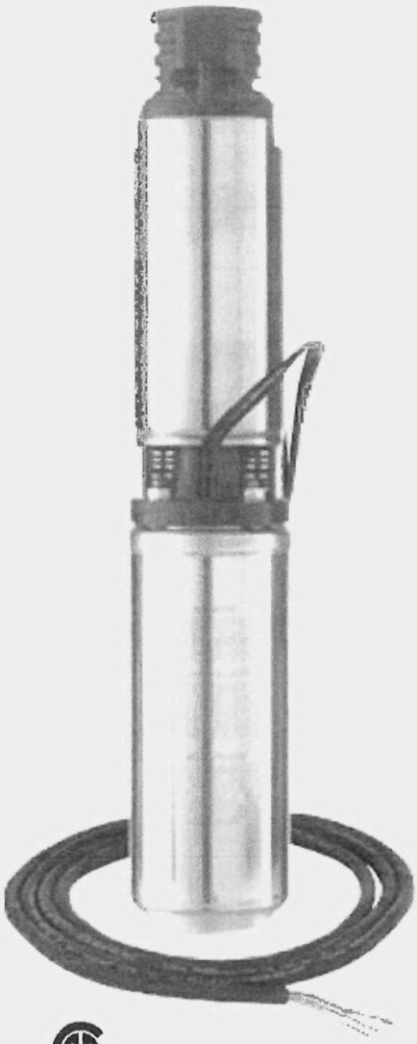
30 GALLONS PER MINUTE		PUMP PERFORMANCE (CAPACITY IN GALLONS PER MINUTE)															
		PUMPING DEPTH IN FEET														SHUT-OFF HEAD	
HP	PSI	20	40	60	80	100	125	150	175	200	250	300	350	400	450	FEET	PSI
1	0	—	—	40.9	39.1	36.8	32.5	26.0	8.0							175	76
	20	40.4	38.8	36.0	32.4	27.7	13.3										
	30	38.0	35.3	31.7	26.3	14.3											
	40	35.0	31.4	25.9	12.1												
	50	30.2	24.0	3.0													
	60	21.9															
1-1/2	0	—	—	41.9	39.9	37.5	34.1	30.9	26.9	17.0						210	91
	20	41.2	39.1	36.5	34.0	31.5	27.8	21.5									
	30	38.9	36.1	33.8	31.0	27.9	21.8										
	40	36.0	33.5	30.8	27.7	20.2											
	50	32.9	30.1	26.8	21.5												
	60	29.5	25.9	18.1													
2	0	—	—	—	41.8	40.5	38.8	36.8	34.7	31.6	23.7					280	121
	20	—	41.3	40.1	38.7	37.1	34.9	32.1	29.0	24.8							
	30	41.2	40.0	38.5	37.0	35.0	32.2	29.1	24.9	15.2							
	40	39.9	38.3	36.6	34.8	32.7	29.8	25.1	16.1								
	50	38.0	36.3	34.5	32.1	30.0	25.3	17.5									
	60	36.0	34.0	31.9	29.1	26.0	18.0										

CAUTION: DO NOT use pump at flow rates indicated by the symbol '—'. To do so can cause premature failure of unit. Pump warranty void when failure occurs under these conditions. Tested and rated in accordance with Water Systems Council Standards.

NOTE: Pumps installed with a Pro-Source® tank require a 100 PSI relief valve. Pumps installed with a conventional tank require a 75 PSI relief valve. Relief valve must be capable of relieving entire flow of pump at relief pressure.

STA-RITE® ST.E.P Plus Series

4" high-head multi-stage submersible effluent pumps



The STEP Plus 4" submersible filtered effluent pumps in 10, 20, 30 and 50 GPM models offer dependable performance and value for high pressure filtered effluent applications.

These STEP Plus pumps will handle "dry run" conditions.

The 10, 20, 30 and 50 GPM are industry standard 3-3/4" in diameter.

APPLICATIONS

Filtered Effluent... for residential, commercial, and agricultural use.

SPECIFICATIONS

Shell – Stainless steel

Discharge –
10, 20 and 30 GPM models: fiberglass-reinforced thermoplastic; 50 GPM models: stainless steel

Discharge Bearing – Nylatron®

Impellers – Engineered composite

Diffusers – Engineered composite

Suction Caps – Engineered composite with stainless steel wear ring

Thrust Pads – Proprietary spec.

Shaft and coupling – Stainless steel 300 grade

Intake – Engineered composite

Intake Screen – Polypropylene

Jacketed Cord – 600 Volt "SOOW" or 300 Volt "SJOW" jacketed 10' leads (2-wire with ground); optional 20', 30', 50' and 100' lengths available

FEATURES

Proven "Floating Impeller" Staging System – Incorporates 1st-in-class performance, sand handling and thrust management staging system with the industry exclusive "dry-run" design element. Reinforced engineered composites and stainless steel, offering high resistance to corrosion and abrasion.

Discharge – Tested-tough, fiberglass-reinforced thermoplastic, with proven internal check valve. Large wrench flats and rope hole.

Shell – Stainless steel pump shell offers high corrosion resistance.

Shaft – Hexagonal 3/8", 300-grade stainless steel pump shaft; offers generous impeller drive surfaces.

Shaft Bearing – Exclusive self-lubricating Nylatron bearing resists wear surface from sand.

Motor Bracket – Tested-tough, fiberglass-reinforced thermoplastic; incorporates an integral suction screen.

In order to provide the best products possible, specifications are subject to change.

STA-RITE® ST.E.P Plus Series

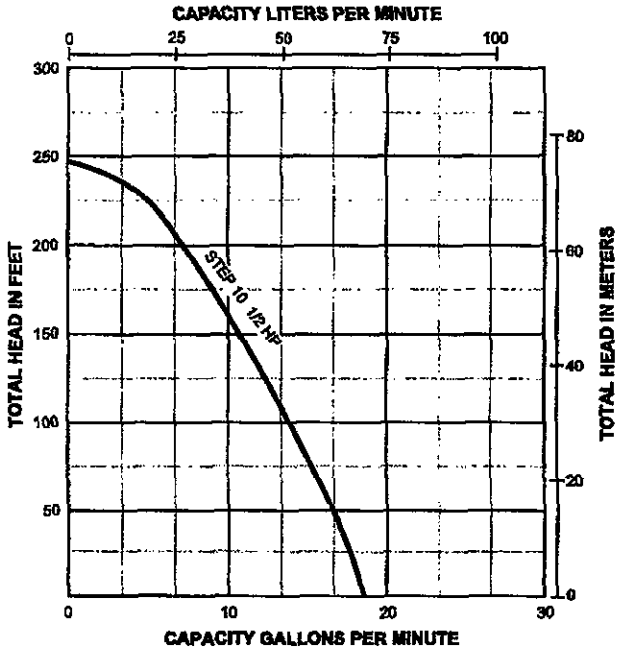
4" high-head multi-stage submersible effluent pumps

ORDERING INFORMATION						
CATALOG NUMBER	HP	STAGES	MAX. LOAD AMPS	VOLTS	PHASE/ CYCLES	CORD LENGTH
STEP10	1/2	7	12.0	115	1/60	10'
STEP10X100FT-05121	1/2	7	12.0	115	1/60	100'
STEP10X30FT	1/2	7	12.0	115	1/60	30'
STEP10X50FT	1/2	7	12.0	115	1/60	50'
STEP20	1/2	5	12.0	115	1/60	10'
STEP20X100FT-05121	1/2	5	12.0	115	1/60	100'
STEP20X30FT	1/2	5	12.0	115	1/60	30'
STEP20X50FT	1/2	5	12.0	115	1/60	50'
STEP30-05121	1/2	3	9.5	115	1/60	10'
STEP30X100FT-05121	1/2	3	12.0	115	1/60	100'
STEP30X30FT-05121	1/2	3	12.0	115	1/60	30'
STEP30X50FT-05121	1/2	3	12.0	115	1/60	50'
STEP30-05221	1/2	3	4.7	230	1/60	10'
STEP30X100FT-05221	1/2	3	4.7	230	1/60	100'
STEP30X30FT-05221	1/2	3	4.7	230	1/60	30'
STEP30X50FT-05221	1/2	3	4.7	230	1/60	50'
STEP30-10221	1	5	9.1	230	1/60	10'
STEP30X100FT-10221	1	5	9.1	230	1/60	100'
STEP30X30FT-10221	1	5	9.1	230	1/60	30'
STEP30X50FT-10221	1	5	9.1	230	1/60	50'
STEP30-15221	1-1/2	6	11.0	230	1/60	10'
STEP30X100FT-15221	1-1/2	6	11.0	230	1/60	100'
STEP30X30FT-15221	1-1/2	6	11.0	230	1/60	30'
STEP30X50FT-15221	1-1/2	6	11.0	230	1/60	50'
STEP50-10221	1	3	9.1	230	1/60	10'
STEP50X100FT-10221	1	3	9.1	230	1/60	100'
STEP50X30FT-10221	1	3	9.1	230	1/60	30'
STEP50X50FT-10221	1	3	9.1	230	1/60	50'
STEP50-15221	1-1/2	4	11.0	230	1/60	10'
STEP50X100FT-15221	1-1/2	4	11.0	230	1/60	100'
STEP50X30FT-15221	1-1/2	4	11.0	230	1/60	30'
STEP50X50FT-15221	1-1/2	4	11.0	230	1/60	50'

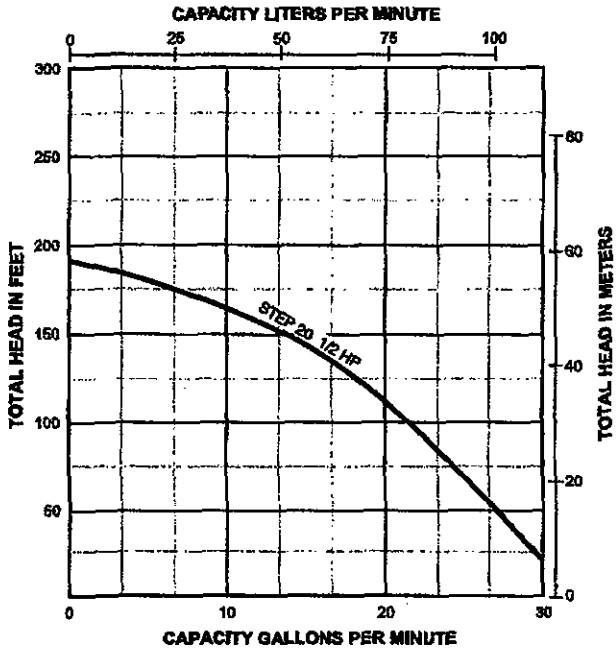
STA-RITE® ST.E.P Plus Series

4" high-head multi-stage submersible effluent pumps

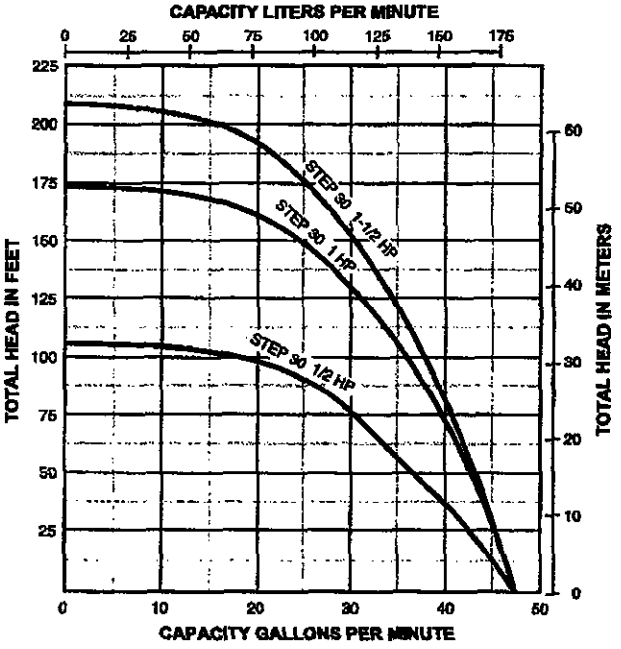
PUMP PERFORMANCE - 10 GPM



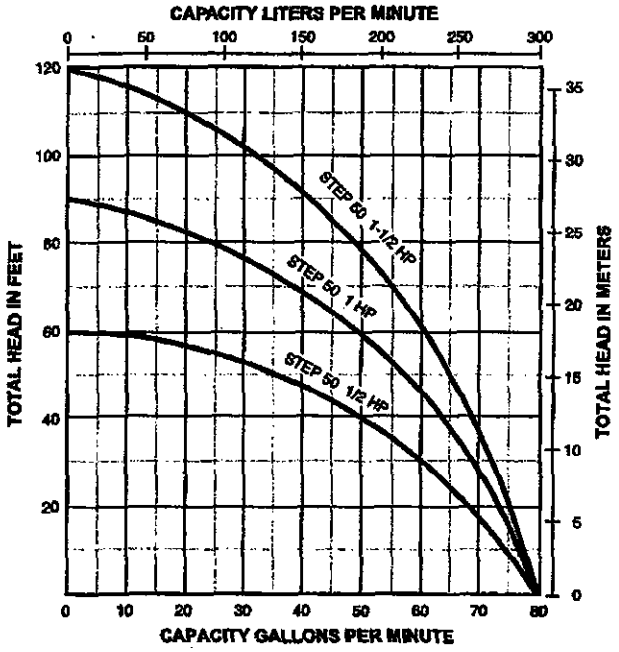
PUMP PERFORMANCE - 20 GPM



PUMP PERFORMANCE - 30 GPM



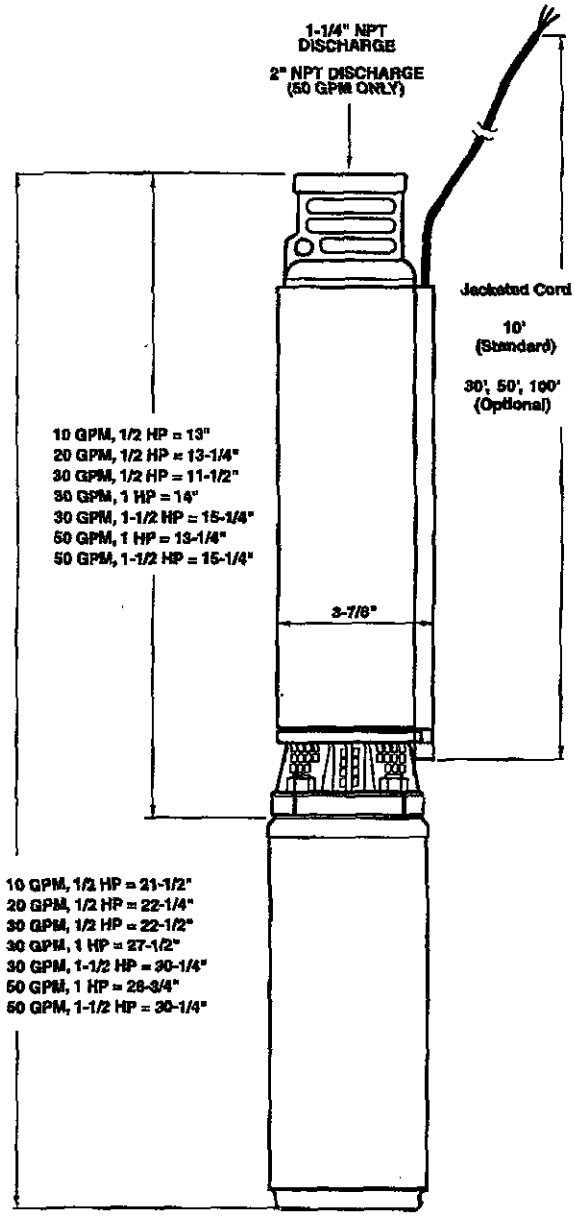
PUMP PERFORMANCE - 50 GPM



STA-RITE® ST.E.P Plus Series

4" high-head multi-stage submersible effluent pumps

OUTLINE DIMENSIONS



Dimensions (in inches) are for estimating purposes only.

PENTAIR

293 WRIGHT STREET, DELAVAN, WI 53115 WWW.STA-RITE.COM PH: 888-782-7483 ORDERS FAX: 800-426-9446

Because we are continuously improving our products and services, Pentair reserves the right to change specifications without prior notice.

APPENDIX E

Design Flow Basis

TENNESSEE
Wastewater

851 Aviation Parkway
Smyrna, TN 37167

August 19, 2016

Ruth Campbell
WYCO Consulting, Inc.
10 Stadia Drive
Franklin, Ohio

Dear Mrs. Campbell:

Please find an attached spreadsheet for Watkins Creek Subdivision (sited in Williamson County Tennessee) documenting the average daily flow for the past several years. The wastewater collection for all TWSI systems are small diameter, watertight septic tank effluent collection systems. This site is typical of well over a hundred residential systems. This system was built in approximately 2000. The site was designed for 174 homes. The subdivision is now at full buildout and is a mature subdivision. Homes range in size from 3500 to 5000 sf of living space.

The data block in yellow indicates an issue with the flow meter during that period of time. That data is not used in calculating the GPD for monthly averages.

All of TWSI's drip systems automatically flush the drip tubing on regular intervals, so we have to record flow to the drip system and the flush flow returning from the drip system. The net discharge is simply the total flow to the drip field minus the return from the drip during flushing events.

The other important component for this system is rainfall. The treatment system at this site is a recirculating gravel filter – which is open to the atmosphere. A one-inch rainfall event contributes 6430 gallons to be discharged. This would equal about 37 gpd per home for a 1" rain event. We do not track actual rainfall at this site but at other sites we have spot checked the impact of rainfall on the sand filter. If rainfall is accounted for the average daily flow per home become remarkably consistent (usually between 140 and 180 gallons per day).

TWSI has been designing all residential subdivisions at 300 gallons per home per day since we stated the program in 1993. This has proven to be a very conservative design value. We have identified our safety factor in our design as being the 300 gpd. Since our actual flows are consistently less than 175 gpd, this has proven to be a conservative, sustainable design standard.

We have designed many systems in Tennessee, Georgia, Alabama, and Mississippi and Kentucky. WE have always used the 300 GPD as our design flow. All these state have accepted this design flow as our design standard.

615.220.7202 www.tennesseewastewater.com Fax: 615.220.7209

TENNESSEE Wastewater

851 Aviation Parkway
Smyrna, TN 37167

We are confident that the success of our program is directly related to the "watertight" collection system. We have many treatment systems – from activated sludge to trickling filters, and the treatment technology has had little impact on the actual performance of the system. Our systems have had no significant inflow and infiltration problems. In instances where we have broken pipe or "unknown damage" to our collection system causing excess flow, we can easily pressure test the system to find the broken/damages piping and repair.

I look forward to working with you on this and many more projects -

Sincerely,
Robert J. Pickney
Robert J. Pickney, P.E.
Tennessee Wastewater Systems, Inc.

615.220.7202 www.tennesseewastewater.com Fax: 615.220.7209

DATE	Discharge Flow	Drip Flush Return	Net Discharge to Drip	# Customers	Expected Flow @ 175 GPD	Actual GPD per Home	AVG GPD/Month
1/1/2013	21290	2553	18737	96	16800	195	
1/2/2013	23340	2817	20523	96	16800	214	
1/3/2013	22720	986	21734	96	16800	226	
1/4/2013	23010	5845	17165	96	16800	179	
1/5/2013	23330	1149	22181	96	16800	231	
1/6/2013	20340	965	19375	96	16800	202	
1/7/2013	22090	4346	17744	96	16800	185	
1/8/2013	22830	6580	16250	96	16800	169	
1/9/2013	20410	831	19579	96	16800		
1/10/2013	30590	12101	18489	96	16800		
1/11/2013	42970	19405	23565	96	16800		
1/12/2013	42180	8996	33184	96	16800		
1/13/2013	42560	2279	40281	96	16800		
1/14/2013	41660	2131	39529	96	16800		
1/15/2013	39110	1255	37855	96	16800		
1/16/2013	26960	648	26312	96	16800		
1/17/2013	35020	1302	33718	96	16800		
1/18/2013	30290	569	29721	96	16800		
1/19/2013	18810	264	18546	96	16800	193	
1/20/2013	17230	254	16976	96	16800	177	
1/21/2013	16930	285	16645	96	16800	173	
1/22/2013	18440	244	18196	96	16800	190	
1/23/2013	18127	220	17907	96	16800	187	
1/24/2013	14806	191	14615	96	16800	152	
1/25/2013	14295	199	14096	96	16800	147	
1/26/2013	18506	248	18258	96	16800	190	
1/27/2013	15854	214	15640	96	16800	163	
1/28/2013	15311	196	15115	96	16800	157	
1/29/2013	15741	308	15433	96	16800	161	
1/30/2013	13915	193	13722	96	16800	143	
1/31/2013	22450	451	21999	96	16800	229	184
2/1/2013	18545	196	18349	96	16800	191	
2/2/2013	17073	203	16870	96	16800	176	
2/3/2013	17372	164	17208	96	16800	179	
2/4/2013	19098	249	18849	96	16800	196	
2/5/2013	15245	163	15082	96	16800	157	
2/6/2013	16436	172	16264	96	16800	169	
2/7/2013	16928	201	16727	96	16800	174	
2/8/2013	14180	154	14026	96	16800	146	
2/9/2013	18250	620	17630	96	16800	184	
2/10/2013	15576	125	15451	96	16800	161	
2/11/2013	24621	241	24380	96	16800	254	
2/12/2013	22776	650	22126	96	16800	230	
2/13/2013	17267	153	17114	96	16800	178	

DATE	Discharge Flow	Drip Flush Return	Net Discharge to Drip	# Customers	Expected Flow @ 175 GPD	Actual GPD per Home	AVG GPD/Month
2/14/2013	18625	189	18436	96	16800	192	
2/15/2013	18795	765	18030	96	16800	188	
2/16/2013	15328	154	15174	96	16800	158	
2/17/2013	15126	135	14991	96	16800	156	
2/18/2013	18602	564	18038	96	16800	188	
2/19/2013	16002	143	15859	96	16800	165	
2/20/2013	22298	185	22113	96	16800	230	
2/21/2013	18823	303	18520	96	16800	193	
2/22/2013	16414	116	16298	96	16800	170	
2/23/2013	21780	155	21625	96	16800	225	
2/24/2013	19630	410	19220	96	16800	200	
2/25/2013	17489	154	17335	96	16800	181	
2/26/2013	16078	122	15956	96	16800	166	
2/27/2013	18716	307	18409	96	16800	192	
2/28/2013	17012	92	16920	96	16800	176	176
3/1/2013	16474	82	16392	96	16800	171	
3/2/2013	17258	136	17122	96	16800	178	
3/3/2013	17571	121	17450	96	16800	182	
3/4/2013	19474	132	19342	96	16800	201	
3/5/2013	18379	95	18284	96	16800	190	
3/6/2013	22647	159	22488	96	16800	234	
3/7/2013	20169	81	20088	96	16800	209	
3/8/2013	17367	104	17263	96	16800	180	
3/9/2013	16954	96	16858	96	16800	176	
3/10/2013	16742	88	16654	96	16800	173	
3/11/2013	17450	114	17336	96	16800	181	
3/12/2013	27198	145	27053	96	16800	282	
3/13/2013	19771	123	19648	96	16800	205	
3/14/2013	17972	103	17869	96	16800	186	
3/15/2013	16476	103	16373	96	16800	171	
3/16/2013	16342	131	16211	96	16800	169	
3/17/2013	16636	98	16538	96	16800	172	
3/18/2013	19729	131	19598	96	16800	204	
3/19/2013	20031	126	19905	96	16800	207	
3/20/2013	17026	85	16941	96	16800	176	
3/21/2013	17081	78	17003	96	16800	177	
3/22/2013	16294	62	16232	96	16800	169	
3/23/2013	16286	79	16207	96	16800	169	
3/24/2013	15954	107	15847	96	16800	165	
3/25/2013	19826	89	19737	96	16800	206	
3/26/2013	19913	0	19913	96	16800	207	
3/27/2013	14708	0	14708	96	16800	153	
3/28/2013	14751	0	14751	96	16800	154	
3/29/2013	14071	0	14071	96	16800	147	

DATE	Discharge Flow	Drip Flush Return	Net Discharge to Drip	# Customers	Expected Flow @ 175 GPD	Actual GPD per Home	AVG GPD/Month
3/30/2013	16279	0	16279	96	16800	170	
3/30/2013	16279	0	16279	96	16800	170	
3/31/2013	16398	0	16398	96	16800	171	185
4/1/2013	20305	0	20305	98	17150	207	
4/2/2013	21120	0	21120	98	17150	216	
4/3/2013	15118	0	15118	98	17150	154	
4/4/2013	15840	0	15840	98	17150	162	
4/5/2013	20319	0	20319	98	17150	207	
4/6/2013	18445	0	18445	98	17150	188	
4/7/2013	14182	0	14182	98	17150	145	
4/8/2013	17365	0	17365	98	17150	177	
4/9/2013	17563	0	17563	98	17150	179	
4/10/2013	18613	0	18613	98	17150	190	
4/11/2013	16042	0	16042	98	17150	164	
4/12/2013	21509	0	21509	98	17150	219	
4/13/2013	30426	302	30124	98	17150	307	
4/14/2013	20496	97	20399	98	17150	208	
4/15/2013	20865	52	20813	98	17150	212	
4/16/2013	22699	18	22681	98	17150	231	
4/17/2013	17388	0	17388	98	17150	177	
4/18/2013	16305	0	16305	98	17150	166	
4/19/2013	17024	1	17023	98	17150	174	
4/20/2013	24765	69	24696	98	17150	252	
4/21/2013	22144	26	22118	98	17150	226	
4/22/2013	20691	43	20648	98	17150	211	
4/23/2013	20240	31	20209	98	17150	206	
4/24/2013	17595	40	17555	98	17150	179	
4/25/2013	18430	38	18392	98	17150	188	
4/26/2013	20792	26	20766	98	17150	212	
4/27/2013	18341	28	18313	98	17150	187	
4/28/2013	25427	15	25412	98	17150	259	
4/30/2013	16578	118	16460	98	17150	168	199
5/1/2013	8552	82	8470	99	17325		
5/1/2013	8552	82	8470	99	17325		
5/2/2013	4885	41	4844	99	17325		
5/2/2013	4885	41	4844	99	17325		
5/3/2013	9761	508	9253	99	17325		
5/4/2013	7801	120	7681	99	17325		
5/5/2013	14148	143	14005	99	17325	141	
5/6/2013	15826	165	15661	99	17325	158	
5/7/2013	13766	302	13464	99	17325	136	
5/8/2013	8101	80	8021	99	17325		
5/9/2013	4811	86	4725	99	17325		
5/10/2013	750	27	723	99	17325		

DATE	Discharge Flow	Drip Flush Return	Net Discharge to Drip	# Customers	Expected Flow @ 175 GPD	Actual GPD per Home	AVG GPD/Month
5/12/2013	3659	118	3541	99	17325		
5/13/2013	0	0	0	99	17325		
5/14/2013	17331	20	17311	99	17325	175	
5/15/2013	15377	27	15350	99	17325	155	
5/16/2013	14731	620	14111	99	17325	143	
5/17/2013	15881	2291	13590	99	17325	137	
5/18/2013	16507	892	15615	99	17325	158	
5/19/2013	17257	1901	15356	99	17325	155	
5/20/2013	17453	865	16588	99	17325	168	
5/21/2013	18516	1945	16571	99	17325	167	
5/22/2013	17352	1085	16267	99	17325	164	
5/23/2013	19104	1222	17882	99	17325	181	
5/24/2013	17632	3042	14590	99	17325	147	
5/25/2013	20582	672	19910	99	17325		
5/26/2013	9964	0	9964	99	17325		
5/27/2013	0	0	0	99	17325		
5/28/2013	0	0	0	99	17325		
5/29/2013	13364	460	12904	99	17325	130	
5/30/2013	17002	2356	14646	99	17325	148	
5/31/2013	14656	607	14049	99	17325	142	153
6/1/2013	15846	716	15130	104	18200	145	
6/2/2013	15080	2401	12679	104	18200	122	
6/3/2013	18166	816	17350	104	18200	167	
6/4/2013	17998	819	17179	104	18200	165	
6/5/2013	16772	2432	14340	104	18200	138	
6/6/2013	18139	850	17289	104	18200	166	
6/7/2013	16191	640	15551	104	18200	150	
6/8/2013	15937	1989	13948	104	18200	134	
6/9/2013	16097	953	15144	104	18200	146	
6/10/2013	18270	799	17471	104	18200	168	
6/11/2013	26905	2704	24201	104	18200	233	
6/12/2013	15994	1672	14322	104	18200	138	
6/13/2013	14954	1949	13005	104	18200	125	
6/14/2013	16405	2727	13678	104	18200	132	
6/15/2013	17149	3325	13824	104	18200	133	
6/16/2013	18895	3491	15404	104	18200	148	
6/17/2013	16963	3547	13416	104	18200	129	
6/18/2013	19897	4040	15857	104	18200	152	
6/19/2013	20573	4700	15873	104	18200	153	
6/20/2013	21782	4622	17160	104	18200	165	
6/21/2013	21718	4998	16720	104	18200	161	
6/22/2013	20229	4412	15817	104	18200	152	
6/23/2013	20131	4443	15688	104	18200	151	
6/24/2013	21066	4628	16438	104	18200	158	

DATE	Discharge Flow	Drip Flush Return	Net Discharge to Drip	# Customers	Expected Flow @ 175 GPD	Actual GPD per Home	AVG GPD/Month
6/25/2013	27225	5917	21308	104	18200	205	
6/26/2013	27068	6050	21018	104	18200	202	
6/27/2013	22060	4812	17248	104	18200	166	
6/28/2013	21819	4794	17025	104	18200	164	
6/29/2013	21998	4610	17388	104	18200	167	
6/30/2013	27007	5794	21213	104	18200	204	158
7/1/2013	18198	3865	14333	107	18725	134	
7/2/2013	18208	3744	14464	107	18725	135	
7/3/2013	18017	3568	14449	107	18725	135	
7/4/2013	17947	3863	14084	107	18725	132	
7/5/2013	28309	6098	22211	107	18725	208	
7/6/2013	38355	7567	30788	107	18725	288	
7/7/2013	42122	9756	32366	107	18725	302	
7/8/2013	38839	8717	30122	107	18725	282	
7/9/2013	26039	5832	20207	107	18725	189	
7/11/2013	21563	4543	17020	107	18725	159	
7/12/2013	31085	6570	24515	107	18725	229	
7/13/2013	31489	6396	25093	107	18725	235	
7/14/2013	23144	4611	18533	107	18725	173	
7/15/2013	20369	4210	16159	107	18725	151	
7/16/2013	21528	4908	16620	107	18725	155	
7/17/2013	20074	4309	15765	107	18725	147	
7/18/2013	18807	3965	14842	107	18725	139	
7/19/2013	19572	4221	15351	107	18725	143	
7/20/2013	19767	4405	15362	107	18725	144	
7/21/2013	18677	4168	14509	107	18725	136	
7/22/2013	19976	4376	15600	107	18725	146	
7/23/2013	21854	4634	17220	107	18725	161	
7/24/2013	22876	5144	17732	107	18725	166	
7/25/2013	21456	4520	16936	107	18725	158	
7/26/2013	20572	4431	16141	107	18725	151	
7/27/2013	21206	4648	16558	107	18725	155	
7/28/2013	19736	4166	15570	107	18725	146	
7/29/2013	21496	4298	17198	107	18725	161	
7/30/2013	20597	4102	16495	107	18725	154	
7/31/2013	20316	3971	16345	107	18725	153	172
8/1/2013	23444	4675	18769	108	18900	174	
8/2/2013	22154	4448	17706	108	18900	164	
8/3/2013	22821	4647	18174	108	18900	168	
8/4/2013	22454	4579	17875	108	18900	166	
8/5/2013	21664	4165	17499	108	18900	162	
8/6/2013	22056	3964	18092	108	18900	168	
8/7/2013	23048	4163	18885	108	18900	175	
8/8/2013	23864	4362	19502	108	18900	181	

DATE	Discharge Flow	Drip Flush Return	Net Discharge to Drip	# Customers	Expected Flow @ 175 GPD	Actual GPD per Home	AVG GPD/Month
8/9/2013	41150	6177	34973	108	18900	324	
8/10/2013	34969	6114	28855	108	18900	267	
8/11/2013	24031	4494	19537	108	18900	181	
8/12/2013	36485	5190	31295	108	18900	290	
8/13/2013	40391	7056	33335	108	18900	309	
8/14/2013	33561	6195	27366	108	18900	253	
8/15/2013	25635	4640	20995	108	18900	194	
8/16/2013	23066	4214	18852	108	18900	175	
8/17/2013	20603	3758	16845	108	18900	156	
8/18/2013	21559	3840	17719	108	18900	164	
8/19/2013	21181	3591	17590	108	18900	163	
8/20/2013	22932	3798	19134	108	18900	177	
8/21/2013	22914	3823	19091	108	18900	177	
8/22/2013	24836	4397	20439	108	18900	189	
8/23/2013	23897	4270	19627	108	18900	182	
8/24/2013	21915	3728	18187	108	18900	168	
8/25/2013	22007	3785	18222	108	18900	169	
8/26/2013	22726	3640	19086	108	18900	177	
8/27/2013	22477	3619	18858	108	18900	175	
8/28/2013	21833	3402	18431	108	18900	171	
8/29/2013	20629	3339	17290	108	18900	160	
8/30/2013	21715	4033	17682	108	18900	164	
8/31/2013	20800	3836	16964	108	18900	157	190
9/1/2013	20768	3660	17108	115	20125	149	
9/2/2013	21737	3918	17819	115	20125	155	
9/3/2013	22770	3871	18899	115	20125	164	
9/4/2013	21405	3770	17635	115	20125	153	
9/5/2013	22464	3664	18800	115	20125	163	
9/6/2013	22110	3432	18678	115	20125	162	
9/7/2013	20865	3467	17398	115	20125	151	
9/8/2013	20723	3282	17441	115	20125	152	
9/9/2013	21314	3333	17981	115	20125	156	
9/10/2013	21851	3541	18310	115	20125	159	
9/11/2013	23125	3676	19449	115	20125	169	
9/12/2013	22779	3679	19100	115	20125	166	
9/13/2013	25747	4064	21683	115	20125	189	
9/14/2013	28465	4426	24039	115	20125	209	
9/15/2013	24205	3807	20398	115	20125	177	
9/16/2013	25191	3849	21342	115	20125	186	
9/17/2013	26952	3993	22959	115	20125	200	
9/18/2013	24735	3702	21033	115	20125	183	
9/19/2013	25230	3922	21308	115	20125	185	
9/20/2013	21922	3358	18564	115	20125	161	
9/21/2013	23150	3672	19478	115	20125	169	

DATE	Discharge Flow	Drip Flush Return	Net Discharge to Drip	# Customers	Expected Flow @ 175 GPD	Actual GPD per Home	AVG GPD/Month
9/22/2013	35765	6123	29642	115	20125	258	
9/23/2013	27824	4576	23248	115	20125	202	
9/24/2013	26702	4329	22373	115	20125	195	
9/25/2013	26293	4376	21917	115	20125	191	
9/26/2013	24993	4046	20947	115	20125	182	
9/27/2013	23502	3888	19614	115	20125	171	
9/28/2013	24094	3902	20192	115	20125	176	
9/29/2013	23801	3706	20095	115	20125	175	
9/30/2013	23576	3802	19774	115	20125	172	176
10/1/2013	23513	3443	20070	121	21175	166	
10/2/2013	20636	3077	17559	121	21175	145	
10/3/2013	20928	3146	17782	121	21175	147	
10/4/2013	19233	2904	16329	121	21175	135	
10/5/2013	23019	3564	19455	121	21175	161	
10/6/2013	21144	3169	17975	121	21175	149	
10/7/2013	24461	3598	20863	121	21175	172	
10/8/2013	23820	3248	20572	121	21175	170	
10/9/2013	24221	3394	20827	121	21175	172	
10/10/2013	22283	3249	19034	121	21175	157	
10/11/2013	23071	3790	19281	121	21175	159	
10/12/2013	20736	3275	17461	121	21175	144	
10/13/2013	20711	3485	17226	121	21175	142	
10/14/2013	19920	3162	16758	121	21175	138	
10/15/2013	22645	3479	19166	121	21175	158	
10/16/2013	23342	3361	19981	121	21175	165	
10/17/2013	23024	3424	19600	121	21175	162	
10/18/2013	21626	3214	18412	121	21175	152	
10/18/2013	21626	3214	18412	121	21175	152	
10/19/2013	23178	3192	19986	121	21175	165	
10/19/2013	23178	3192	19986	121	21175	165	
10/20/2013	20800	2955	17845	121	21175	147	
10/21/2013	22723	2853	19870	121	21175	164	
10/22/2013	26526	3523	23003	121	21175	190	
10/23/2013	29024	4150	24874	121	21175	206	
10/24/2013	23496	3346	20150	121	21175	167	
10/25/2013	23379	3176	20203	121	21175	167	
10/26/2013	22112	2914	19198	121	21175	159	
10/27/2013	19252	2572	16680	121	21175	138	
10/28/2013	22922	2881	20041	121	21175	166	
10/29/2013	23266	3048	20218	121	21175	167	
10/30/2013	21921	2784	19137	121	21175	158	
10/31/2013	22094	2738	19356	121	21175	160	160
11/1/2013	24619	3098	21521	130	22750	166	
11/2/2013	25262	3018	22244	130	22750	171	

DATE	Discharge Flow	Drip Flush Return	Net Discharge to Drip	# Customers	Expected Flow @ 175 GPD	Actual GPD per Home	AVG GPD/Month
11/3/2013	23532	2853	20679	130	22750	159	
11/4/2013	23578	2705	20873	130	22750	161	
11/5/2013	24353	2905	21448	130	22750	165	
11/6/2013	23447	2651	20796	130	22750	160	
11/7/2013	23559	2764	20795	130	22750	160	
11/8/2013	25481	2854	22627	130	22750	174	
11/9/2013	23884	2612	21272	130	22750	164	
11/10/2013	23921	2696	21225	130	22750	163	
11/11/2013	24070	2566	21504	130	22750	165	
11/12/2013	24598	2756	21842	130	22750	168	
11/13/2013	25964	2827	23137	130	22750	178	
11/14/2013	22964	2406	20558	130	22750	158	
11/15/2013	22403	2165	20238	130	22750	156	
11/16/2013	21481	2208	19273	130	22750	148	
11/17/2013	23147	2346	20801	130	22750	160	
11/18/2013	25667	2448	23219	130	22750	179	
11/19/2013	27248	2724	24524	130	22750	189	
11/20/2013	23361	3148	20213	130	22750	155	
11/21/2013	26054	3367	22687	130	22750	175	
11/22/2013	23029	2889	20140	130	22750	155	
11/23/2013	23964	3063	20901	130	22750	161	
11/24/2013	22425	3101	19324	130	22750	149	
11/25/2013	23479	2996	20483	130	22750	158	
11/26/2013	23545	3046	20499	130	22750	158	
11/27/2013	32132	4307	27825	130	22750	214	
11/28/2013	26449	4019	22430	130	22750	173	
11/29/2013	16076	4213	11863	130	22750		
11/30/2013	7077	3890	3187	130	22750		166
12/1/2013	6770	3512	3258	142	24850		
12/2/2013	8532	3590	4942	142	24850		
12/3/2013	2645	3579	-934	142	24850		
12/4/2013	2851	3422	-571	142	24850		
12/5/2013	12866	1621	11245	142	24850		
12/6/2013	29271	3466	25805	142	24850	182	
12/7/2013	60498	6589	53909	142	24850	380	
12/8/2013	38358	5832	32526	142	24850	229	
12/9/2013	31319	4571	26748	142	24850	188	
12/10/2013	31306	4991	26315	142	24850	185	
12/11/2013	27407	4138	23269	142	24850	164	
12/12/2013	25641	3676	21965	142	24850	155	
12/13/2013	25668	3673	21995	142	24850	155	
12/14/2013	25277	3655	21622	142	24850	152	
12/15/2013	26882	3999	22883	142	24850	161	
12/16/2013	27342	4163	23179	142	24850	163	

DATE	Discharge Flow	Drip Flush Return	Net Discharge to Drip	# Customers	Expected Flow @ 175 GPD	Actual GPD per Home	AVG GPD/Month
12/17/2013	27598	4306	23292	142	24850	164	
12/18/2013	25750	3243	22507	142	24850	159	
12/19/2013	25380	2769	22611	142	24850	159	
12/20/2013	26413	3082	23331	142	24850	164	
12/21/2013	27597	3428	24169	142	24850	170	
12/23/2013	40173	3503	36670	142	24850	258	
12/24/2013	32742	4575	28167	142	24850	198	
12/25/2013	26322	3833	22489	142	24850	158	
12/26/2013	28026	3942	24084	142	24850	170	
12/27/2013	27810	3837	23973	142	24850	169	
12/28/2013	28408	4044	24364	142	24850	172	
12/29/2013	25972	3826	22146	142	24850	156	
12/30/2013	38522	5668	32854	142	24850	231	
12/31/2013	30449	4564	25885	142	24850	182	185
1/1/2014	32138	4828	27310	148	25900	185	
1/2/2014	29159	4512	24647	148	25900	167	
1/3/2014	31594	4889	26705	148	25900	180	
1/4/2014	30362	4662	25700	148	25900	174	
1/5/2014	28184	4238	23946	148	25900	162	
1/6/2014	29814	4484	25330	148	25900	171	
1/7/2014	31699	5015	26684	148	25900	180	
1/8/2014	32097	5171	26926	148	25900	182	
1/9/2014	29895	5015	24880	148	25900	168	
1/10/2014	28086	4525	23561	148	25900	159	
1/11/2014	25587	4146	21441	148	25900	145	
1/12/2014	36695	6002	30693	148	25900	207	
1/13/2014	31396	5137	26259	148	25900	177	
1/14/2014	33149	5420	27729	148	25900	187	
1/15/2014	33854	5672	28182	148	25900	190	
1/16/2014	29199	4672	24527	148	25900	166	
1/17/2014	25425	3859	21566	148	25900	146	
1/18/2014	28734	4530	24204	148	25900	164	
1/19/2014	26302	4020	22282	148	25900	151	
1/20/2014	24839	3957	20882	148	25900	141	
1/21/2014	28310	4483	23827	148	25900	161	
1/22/2014	26820	4303	22517	148	25900	152	
1/23/2014	25478	4058	21420	148	25900	145	
1/24/2014	26611	4293	22318	148	25900	151	
1/25/2014	28008	4554	23454	148	25900	158	
1/26/2014	26397	4258	22139	148	25900	150	
1/27/2014	25821	4178	21643	148	25900	146	
1/28/2014	28604	4606	23998	148	25900	162	
1/29/2014	27064	4439	22625	148	25900	153	
1/30/2014	27322	4743	22579	148	25900	153	

DATE	Discharge Flow	Drip Flush Return	Net Discharge to Drip	# Customers	Expected Flow @ 175 GPD	Actual GPD per Home	AVG GPD/Month
1/31/2014	27228	4532	22696	148	25900	153	164
2/1/2014	26010	4106	21904	152	26600	144	
2/2/2014	24933	3935	20998	152	26600	138	
2/3/2014	33021	5058	27963	152	26600	184	
2/4/2014	48971	7226	41745	152	26600	275	
2/5/2014	33040	5274	27766	152	26600	183	
2/6/2014	50404	7209	43195	152	26600	284	
2/7/2014	28316	4701	23615	152	26600	155	
2/8/2014	28039	4518	23521	152	26600	155	
2/9/2014	24504	3950	20554	152	26600	135	
2/10/2014	27134	4361	22773	152	26600	150	
2/11/2014	27297	4462	22835	152	26600	150	
2/12/2014	25383	4136	21247	152	26600	140	
2/13/2014	23703	3784	19919	152	26600	131	
2/14/2014	25173	4070	21103	152	26600	139	
2/15/2014	27803	4565	23238	152	26600	153	
2/16/2014	29097	4723	24374	152	26600	160	
2/17/2014	27753	4493	23260	152	26600	153	
2/18/2014	30699	5083	25616	152	26600	169	
2/19/2014	25824	4191	21633	152	26600	142	
2/20/2014	25357	4115	21242	152	26600	140	
2/21/2014	28616	4839	23777	152	26600	156	
2/22/2014	39253	6574	32679	152	26600	215	
2/23/2014	28743	4762	23981	152	26600	158	
2/24/2014	26736	4332	22404	152	26600	147	
2/25/2014	28608	4611	23997	152	26600	158	
2/26/2014	25420	4080	21340	152	26600	140	
2/27/2014	25199	4270	20929	152	26600	138	
2/28/2014	25073	4115	20958	152	26600	138	162
3/1/2014	25279	4034	21245	154	26950	138	
3/2/2014	25127	4160	20967	154	26950	136	
3/3/2014	31364	4726	26638	154	26950	173	
3/4/2014	58296	8272	50024	154	26950	325	
3/5/2014	34982	5640	29342	154	26950	191	
3/6/2014	25724	3986	21738	154	26950	141	
3/7/2014	26855	4294	22561	154	26950	147	
3/8/2014	26715	4270	22445	154	26950	146	
3/9/2014	27466	4434	23032	154	26950	150	
3/10/2014	25801	4152	21649	154	26950	141	
3/11/2014	29428	4718	24710	154	26950	160	
3/12/2014	25607	4154	21453	154	26950	139	
3/13/2014	25950	4340	21610	154	26950	140	
3/14/2014	25599	4227	21372	154	26950	139	
3/15/2014	30050	5010	25040	154	26950	163	

DATE	Discharge Flow	Drip Flush Return	Net Discharge to Drip	# Customers	Expected Flow @ 175 GPD	Actual GPD per Home	AVG GPD/Month
3/16/2014	27372	4583	22789	154	26950	148	
3/17/2014	30965	5182	25783	154	26950	167	
3/18/2014	27632	4625	23007	154	26950	149	
3/19/2014	25831	4296	21535	154	26950	140	
3/20/2014	25459	4293	21166	154	26950	137	
3/21/2014	23575	3920	19655	154	26950	128	
3/22/2014	23918	4058	19860	154	26950	129	
3/23/2014	27559	4608	22951	154	26950	149	
3/24/2014	30875	5028	25847	154	26950	168	
3/25/2014	30501	5203	25298	154	26950	164	
3/26/2014	28691	4775	23916	154	26950	155	
3/27/2014	29528	4823	24705	154	26950	160	
3/28/2014	28341	4732	23609	154	26950	153	
3/29/2014	30989	5178	25811	154	26950	168	
3/30/2014	36547	6248	30299	154	26950	197	
3/31/2014	35723	6225	29498	154	26950	192	160
4/1/2014	31634	5378	26256	154	26950	170	
4/2/2014	29110	4990	24120	154	26950	157	
4/3/2014	28570	4933	23637	154	26950	153	
4/4/2014	30291	5199	25092	154	26950	163	
4/5/2014	39876	6956	32920	154	26950	214	
4/6/2014	30283	5370	24913	154	26950	162	
4/7/2014	30003	5104	24899	154	26950	162	
4/8/2014	40650	7079	33571	154	26950	218	
4/9/2014	29957	5171	24786	154	26950	161	
4/10/2014	25287	4210	21077	154	26950	137	
4/11/2014	25814	4460	21354	154	26950	139	
4/12/2014	27833	4773	23060	154	26950	150	
4/13/2014	28028	4770	23258	154	26950	151	
4/14/2014	30614	5358	25256	154	26950	164	
4/15/2014	29770	5090	24680	154	26950	160	
4/16/2014	33535	5679	27856	154	26950	181	
4/17/2014	26683	4570	22113	154	26950	144	
4/18/2014	27303	4589	22714	154	26950	147	
4/19/2014	27995	4648	23347	154	26950	152	
4/20/2014	27502	4449	23053	154	26950	150	
4/21/2014	30033	5107	24926	154	26950	162	
4/22/2014	29790	4998	24792	154	26950	161	
4/23/2014	26814	4514	22300	154	26950	145	
4/24/2014	26612	4372	22240	154	26950	144	
4/25/2014	27647	4456	23191	154	26950	151	
4/26/2014	29809	4680	25129	154	26950	163	
4/27/2014	27707	4510	23197	154	26950	151	
4/28/2014	28866	4725	24141	154	26950	157	

DATE	Discharge Flow	Drip Flush Return	Net Discharge to Drip	# Customers	Expected Flow @ 175 GPD	Actual GPD per Home	AVG GPD/Month
4/29/2014	55733	6323	49410	154	26950	321	
4/30/2014	46838	6195	40643	154	26950	264	168
5/1/2014	33468	4641	28827	154	26950	187	
5/2/2014	29267	4290	24977	154	26950	162	
5/3/2014	26445	3927	22518	154	26950	146	
5/4/2014	27162	4001	23161	154	26950	150	
5/5/2014	29025	4384	24641	154	26950	160	
5/6/2014	28259	4283	23976	154	26950	156	
5/7/2014	28835	4323	24512	154	26950	159	
5/8/2014	24900	3741	21159	154	26950	137	
5/9/2014	26683	4030	22653	154	26950	147	
5/10/2014	31039	4638	26401	154	26950	171	
5/11/2014	29341	4322	25019	154	26950	162	
5/12/2014	31293	4520	26773	154	26950	174	
5/13/2014	30026	4375	25651	154	26950	167	
5/14/2014	26389	3845	22544	154	26950	146	
5/15/2014	45222	6277	38945	154	26950	253	
5/16/2014	42144	5749	36395	154	26950	236	
5/17/2014	29401	4317	25084	154	26950	163	
5/18/2014	28913	4046	24867	154	26950	161	
5/19/2014	31790	4552	27238	154	26950	177	
5/20/2014	28657	4012	24645	154	26950	160	
5/21/2014	29947	4136	25811	154	26950	168	
5/22/2014	27031	3736	23295	154	26950	151	
5/23/2014	25667	3682	21985	154	26950	143	
5/24/2014	28343	4055	24288	154	26950	158	
5/25/2014	22725	3281	19444	154	26950	126	
5/26/2014	23547	3405	20142	154	26950	131	
5/27/2014	25550	3577	21973	154	26950	143	
5/28/2014	28049	4108	23941	154	26950	155	
5/29/2014	29425	4214	25211	154	26950	164	
5/30/2014	27249	3895	23354	154	26950	152	
5/31/2014	26599	3834	22765	154	26950	148	162
6/1/2014	27755	3884	23871	155	27125	154	
6/2/2014	30152	4300	25852	155	27125	167	
6/3/2014	30217	4105	26112	155	27125	168	
6/4/2014	26182	3612	22570	155	27125	146	
6/5/2014	25752	3494	22258	155	27125	144	
6/6/2014	40864	5726	35138	155	27125	227	
6/7/2014	32531	4433	28098	155	27125	181	
6/8/2014	30700	4012	26688	155	27125	172	
6/9/2014	36909	5056	31853	155	27125	206	
6/10/2014	33446	4508	28938	155	27125	187	
6/11/2014	39820	4934	34886	155	27125	225	

DATE	Discharge Flow	Drip Flush Return	Net Discharge to Drip	# Customers	Expected Flow @ 175 GPD	Actual GPD per Home	AVG GPD/Month
6/12/2014	30943	3999	26944	155	27125	174	
6/13/2014	28575	3638	24937	155	27125	161	
6/14/2014	34352	4465	29887	155	27125	193	
6/15/2014	29124	3742	25382	155	27125	164	
6/16/2014	28508	3774	24734	155	27125	160	
6/17/2014	28006	3715	24291	155	27125	157	
6/18/2014	27495	3465	24030	155	27125	155	
6/19/2014	25284	3140	22144	155	27125	143	
6/20/2014	26171	3540	22631	155	27125	146	
6/21/2014	26797	3671	23126	155	27125	149	
6/22/2014	27101	3637	23464	155	27125	151	
6/23/2014	27604	3703	23901	155	27125	154	
6/24/2014	29575	4003	25572	155	27125	165	
6/25/2014	26950	3607	23343	155	27125	151	
6/26/2014	26114	3488	22626	155	27125	146	
6/27/2014	26125	3420	22705	155	27125	146	
6/28/2014	27230	3566	23664	155	27125	153	
6/29/2014	27046	3817	23229	155	27125	150	
6/30/2014	28554	4065	24489	155	27125	158	165
7/1/2014	30079	4230	25849	156	27300	166	
7/2/2014	25508	3577	21931	156	27300	141	
7/3/2014	25191	3594	21597	156	27300	138	
7/4/2014	26081	3592	22489	156	27300	144	
7/5/2014	27103	3696	23407	156	27300	150	
7/6/2014	25848	3638	22210	156	27300	142	
7/7/2014	26739	3658	23081	156	27300	148	
7/8/2014	27417	3786	23631	156	27300	151	
7/9/2014	27084	3696	23388	156	27300	150	
7/10/2014	26055	3583	22472	156	27300	144	
7/11/2014	25429	3364	22065	156	27300	141	
7/12/2014	27371	3674	23697	156	27300	152	
7/13/2014	29278	3914	25364	156	27300	163	
7/14/2014	30902	4090	26812	156	27300	172	
7/15/2014	30620	4156	26464	156	27300	170	
7/16/2014	33317	4549	28768	156	27300	184	
7/17/2014	27336	3623	23713	156	27300	152	
7/18/2014	26262	3611	22651	156	27300	145	
7/19/2014	24079	3270	20809	156	27300	133	
7/20/2014	56004	6218	49786	156	27300	319	
7/21/2014	32044	4325	27719	156	27300	178	
7/22/2014	29207	3822	25385	156	27300	163	
7/23/2014	26221	3341	22880	156	27300	147	
7/24/2014	27358	3650	23708	156	27300	152	
7/25/2014	27541	3544	23997	156	27300	154	

DATE	Discharge Flow	Drip Flush Return	Net Discharge to Drip	# Customers	Expected Flow @ 175 GPD	Actual GPD per Home	AVG GPD/Month
7/26/2014	26119	3271	22848	156	27300	146	
7/27/2014	24578	2894	21684	156	27300	139	
7/28/2014	24370	3001	21369	156	27300	137	
7/29/2014	27890	3254	24636	156	27300	158	
7/30/2014	23031	2694	20337	156	27300	130	
7/31/2014	24800	2776	22024	156	27300	141	156
8/1/2014	24127	2851	21276	157	27475	136	
8/2/2014	23221	2679	20542	157	27475	131	
8/3/2014	26063	2945	23118	157	27475	147	
8/4/2014	26794	3130	23664	157	27475	151	
8/5/2014	26928	3084	23844	157	27475	152	
8/6/2014	25467	2822	22645	157	27475	144	
8/7/2014	26484	2965	23519	157	27475	150	
8/8/2014	27175	3058	24117	157	27475	154	
8/9/2014	26695	3000	23695	157	27475	151	
8/10/2014	29706	3324	26382	157	27475	168	
8/11/2014	27599	3092	24507	157	27475	156	
8/12/2014	26113	2885	23228	157	27475	148	
8/13/2014	26688	2850	23838	157	27475	152	
8/14/2014	26582	2823	23759	157	27475	151	
8/15/2014	24948	2763	22185	157	27475	141	
8/16/2014	25694	3045	22649	157	27475	144	
8/17/2014	26744	3727	23017	157	27475	147	
8/18/2014	27285	3853	23432	157	27475	149	
8/19/2014	30251	4277	25974	157	27475	165	
8/20/2014	30271	4371	25900	157	27475	165	
8/21/2014	30329	4270	26059	157	27475	166	
8/22/2014	28762	4034	24728	157	27475	158	
8/23/2014	29101	4043	25058	157	27475	160	
8/24/2014	30962	4217	26745	157	27475	170	
8/25/2014	37762	5227	32535	157	27475	207	
8/26/2014	32042	4349	27693	157	27475	176	
8/27/2014	25798	3705	22093	157	27475	141	
8/28/2014	25165	3470	21695	157	27475	138	
8/29/2014	27041	3644	23397	157	27475	149	
8/30/2014	25227	3549	21678	157	27475	138	
8/31/2014	30156	3444	26712	157	27475	170	154
9/1/2014	42160	5043	37117	158	27650	235	
9/2/2014	28176	3788	24388	158	27650	154	
9/3/2014	28229	3697	24532	158	27650	155	
9/4/2014	26837	3605	23232	158	27650	147	
9/5/2014	25632	3165	22467	158	27650	142	
9/6/2014	27252	3562	23690	158	27650	150	
9/7/2014	27124	3448	23676	158	27650	150	

DATE	Discharge Flow	Drip Flush Return	Net Discharge to Drip	# Customers	Expected Flow @ 175 GPD	Actual GPD per Home	AVG GPD/Month
9/8/2014	28796	3610	25186	158	27650	159	
9/9/2014	28144	3570	24574	158	27650	156	
9/10/2014	23868	2855	21013	158	27650	133	
9/11/2014	25431	3060	22371	158	27650	142	
9/12/2014	25469	2897	22572	158	27650	143	
9/13/2014	24346	3000	21346	158	27650	135	
9/14/2014	23608	2706	20902	158	27650	132	
9/15/2014	26887	3127	23760	158	27650	150	
9/16/2014	28226	3184	25042	158	27650	158	
9/17/2014	24464	2840	21624	158	27650	137	
9/18/2014	25765	2796	22969	158	27650	145	
9/19/2014	25379	2673	22706	158	27650	144	
9/20/2014	24497	2583	21914	158	27650	139	
9/21/2014	24145	2374	21771	158	27650	138	
9/22/2014	26209	2712	23497	158	27650	149	
9/23/2014	27470	2909	24561	158	27650	155	
9/24/2014	25303	2571	22732	158	27650	144	
9/25/2014	24711	2326	22385	158	27650	142	
9/26/2014	25851	2620	23231	158	27650	147	
9/27/2014	24773	2597	22176	158	27650	140	
9/28/2014	25403	2746	22657	158	27650	143	
9/29/2014	26256	2830	23426	158	27650	148	
9/30/2014	26092	2758	23334	158	27650	148	149
10/1/2014	25254	2649	22605	159	27825	142	
10/2/2014	26047	2762	23285	159	27825	146	
10/3/2014	24964	2600	22364	159	27825	141	
10/4/2014	28155	2886	25269	159	27825	159	
10/5/2014	25840	2473	23367	159	27825	147	
10/6/2014	26931	2559	24372	159	27825	153	
10/7/2014	28208	2754	25454	159	27825	160	
10/8/2014	26925	2495	24430	159	27825	154	
10/9/2014	43445	3292	40153	159	27825	253	
10/10/2014	27704	2583	25121	159	27825	158	
10/11/2014	43947	3421	40526	159	27825	255	
10/12/2014	45007	3725	41282	159	27825	260	
10/13/2014	27997	2637	25360	159	27825	159	
10/14/2014	37612	3217	34395	159	27825	216	
10/15/2014	56788	3877	52911	159	27825		
10/16/2014	19854	1593	18261	159	27825		
10/17/2014	0	0	0	159	27825		
10/18/2014	0	0	0	159	27825		
10/19/2014	0	0	0	159	27825		
10/20/2014	0	0	0	159	27825		
10/21/2014	0	0	0	159	27825		

DATE	Discharge Flow	Drip Flush Return	Net Discharge to Drip	# Customers	Expected Flow @ 175 GPD	Actual GPD per Home	AVG GPD/Month
10/22/2014	20	0	20	159	27825		
10/23/2014	3093	201	2892	159	27825		
10/24/2014	10984	1106	9878	159	27825		
10/25/2014	24061	2208	21853	159	27825	137	
10/26/2014	23084	2236	20848	159	27825	131	
10/27/2014	23599	2174	21425	159	27825	135	
10/28/2014	35615	3267	32348	159	27825	203	
10/29/2014	38171	3378	34793	159	27825	219	
10/30/2014	31773	2877	28896	159	27825	182	
10/31/2014	26891	2445	24446	159	27825	154	174
11/1/2014	29435	2634	26801	162	28350	165	
11/2/2014	28741	2619	26122	162	28350	161	
11/3/2014	26750	2504	24246	162	28350	150	
11/4/2014	29603	3049	26554	162	28350	164	
11/5/2014	26668	2683	23985	162	28350	148	
11/6/2014	32396	3015	29381	162	28350	181	
11/7/2014	40347	3853	36494	162	28350	225	
11/8/2014	28324	2814	25510	162	28350	157	
11/9/2014	26600	2686	23914	162	28350	148	
11/10/2014	29623	2975	26648	162	28350	164	
11/11/2014	30938	2975	27963	162	28350	173	
11/12/2014	27080	3024	24056	162	28350	148	
11/13/2014	25531	3224	22307	162	28350	138	
11/14/2014	24945	3019	21926	162	28350	135	
11/15/2014	25798	3118	22680	162	28350	140	
11/16/2014	27999	3392	24607	162	28350	152	
11/17/2014	30475	3676	26799	162	28350	165	
11/18/2014	42627	4827	37800	162	28350	233	
11/19/2014	32277	3783	28494	162	28350	176	
11/20/2014	27097	3203	23894	162	28350	147	
11/21/2014	26378	3194	23184	162	28350	143	
11/22/2014	26617	3203	23414	162	28350	145	
11/23/2014	24837	3007	21830	162	28350	135	
11/24/2014	30281	3608	26673	162	28350	165	
11/25/2014	32146	3888	28258	162	28350	174	
11/26/2014	26928	3208	23720	162	28350	146	
11/27/2014	31535	3736	27799	162	28350	172	
11/28/2014	32558	3823	28735	162	28350	177	
11/29/2014	32249	3832	28417	162	28350	175	
11/30/2014	30713	3570	27143	162	28350	168	162
12/1/2014	27667	3248	24419	165	28875	148	
12/2/2014	30691	3571	27120	165	28875	164	
12/3/2014	29659	3429	26230	165	28875	159	
12/4/2014	31577	3770	27807	165	28875	169	

DATE	Discharge Flow	Drip Flush Return	Net Discharge to Drip	# Customers	Expected Flow @ 175 GPD	Actual GPD per Home	AVG GPD/Month
12/5/2014	28484	3359	25125	165	28875	152	
12/6/2014	30152	3568	26584	165	28875	161	
12/7/2014	54353	4668	49685	165	28875	301	
12/8/2014	38048	4570	33478	165	28875	203	
12/9/2014	30851	3604	27247	165	28875	165	
12/10/2014	28209	3385	24824	165	28875	150	
12/11/2014	25692	2862	22830	165	28875	138	
12/12/2014	25766	2979	22787	165	28875	138	
12/13/2014	23585	2705	20880	165	28875	127	
12/14/2014	27417	3184	24233	165	28875	147	
12/15/2014	27754	3238	24516	165	28875	149	
12/16/2014	30462	3460	27002	165	28875	164	
12/17/2014	27183	3146	24037	165	28875	146	
12/18/2014	27186	3053	24133	165	28875	146	
12/19/2014	28664	3274	25390	165	28875	154	
12/20/2014	29432	3409	26023	165	28875	158	
12/21/2014	29712	3316	26396	165	28875	160	
12/22/2014	30390	3364	27026	165	28875	164	
12/23/2014	32137	3582	28555	165	28875	173	
12/24/2014	33586	3715	29871	165	28875	181	
12/25/2014	41963	4324	37639	165	28875	228	
12/26/2014	39067	4077	34990	165	28875	212	
12/27/2014	37989	3952	34037	165	28875	206	
12/28/2014	33002	3436	29566	165	28875	179	
12/29/2014	39231	3881	35350	165	28875	214	
12/30/2014	38585	3966	34619	165	28875	210	
12/31/2014	32722	3435	29287	165	28875	177	172
1/1/2015	30645	3209	27436	166	29050	165	
1/2/2015	30570	3202	27368	166	29050	165	
1/3/2015	30548	3201	27347	166	29050	165	
1/4/2015	30646	3063	27583	166	29050	166	
1/5/2015	39410	3883	35527	166	29050	214	
1/6/2015	35782	3728	32054	166	29050	193	
1/7/2015	29280	3036	26244	166	29050	158	
1/8/2015	28762	2808	25954	166	29050	156	
1/9/2015	28278	2969	25309	166	29050	152	
1/10/2015	31678	3199	28479	166	29050	172	
1/11/2015	29728	3181	26547	166	29050	160	
1/12/2015	31399	3008	28391	166	29050	171	
1/13/2015	35907	3431	32476	166	29050	196	
1/14/2015	30318	3014	27304	166	29050	164	
1/15/2015	26987	2570	24417	166	29050	147	
1/16/2015	26822	2571	24251	166	29050	146	
1/17/2015	27816	2697	25119	166	29050	151	

DATE	Discharge Flow	Drip Flush Return	Net Discharge to Drip	# Customers	Expected Flow @ 175 GPD	Actual GPD per Home	AVG GPD/Month
1/18/2015	24508	2339	22169	166	29050	134	
1/19/2015	28858	2794	26064	166	29050	157	
1/20/2015	29107	2757	26350	166	29050	159	
1/21/2015	28920	2778	26142	166	29050	157	
1/22/2015	26259	2352	23907	166	29050	144	
1/23/2015	28546	2704	25842	166	29050	156	
1/24/2015	28947	2672	26275	166	29050	158	
1/25/2015	31701	2881	28820	166	29050	174	
1/26/2015	31326	2704	28622	166	29050	172	
1/27/2015	33707	2888	30819	166	29050	186	
1/28/2015	27630	2386	25244	166	29050	152	
1/29/2015	26540	2283	24257	166	29050	146	
1/30/2015	29253	2443	26810	166	29050	162	
1/31/2015	28150	2303	25847	166	29050	156	163
2/1/2015	29573	2255	27318	168	29400	163	
2/2/2015	33030	2276	30754	168	29400	183	
2/3/2015	38277	2972	35305	168	29400	210	
2/4/2015	29500	2423	27077	168	29400	161	
2/5/2015	27778	2278	25500	168	29400	152	
2/6/2015	27407	2322	25085	168	29400	149	
2/7/2015	24619	1857	22762	168	29400	135	
2/8/2015	27387	2105	25282	168	29400	150	
2/9/2015	28908	2078	26830	168	29400	160	
2/10/2015	30176	2189	27987	168	29400	167	
2/11/2015	27601	2544	25057	168	29400	149	
2/12/2015	24712	2801	21911	168	29400	130	
2/13/2015	31314	3726	27588	168	29400	164	
2/14/2015	28628	3254	25374	168	29400	151	
2/15/2015	29754	3368	26386	168	29400	157	
2/16/2015	30701	3451	27250	168	29400	162	
2/17/2015	29401	3343	26058	168	29400	155	
2/18/2015	35024	3970	31054	168	29400	185	
2/19/2015	32068	3647	28421	168	29400	169	
2/20/2015	34019	4041	29978	168	29400	178	
2/21/2015	31229	3882	27347	168	29400	163	
2/22/2015	46446	4722	41724	168	29400	248	
2/23/2015	59683	4968	54715	168	29400	326	
2/24/2015	43041	4215	38826	168	29400	231	
2/25/2015	29375	3146	26229	168	29400	156	
2/26/2015	30231	3338	26893	168	29400	160	
2/27/2015	30685	3201	27484	168	29400	164	
2/28/2015	31034	3327	27707	168	29400	165	173
3/1/2015	29168	3118	26050	168	29400	155	
3/2/2015	31625	3141	28484	168	29400	170	

DATE	Discharge Flow	Drip Flush Return	Net Discharge to Drip	# Customers	Expected Flow @ 175 GPD	Actual GPD per Home	AVG GPD/Month
3/3/2015	36063	3512	32551	168	29400	194	
3/4/2015	30440	3017	27423	168	29400	163	
3/5/2015	44905	3763	41142	168	29400	245	
3/6/2015	53049	4007	49042	168	29400	292	
3/7/2015	38841	3842	34999	168	29400	208	
3/8/2015	34356	3407	30949	168	29400	184	
3/9/2015	34356	3407	30949	168	29400	184	
3/10/2015	33013	2818	30195	168	29400	180	
3/11/2015	35473	3242	32231	168	29400	192	
3/12/2015	41203	4273	36930	168	29400	220	
3/13/2015	31769	3287	28482	168	29400	170	
3/14/2015	31845	3252	28593	168	29400	170	
3/15/2015	35005	3645	31360	168	29400	187	
3/16/2015	32548	3227	29321	168	29400	175	
3/17/2015	27292	2844	24448	168	29400	146	
3/18/2015	26590	2576	24014	168	29400	143	
3/19/2015	26848	2525	24323	168	29400	145	
3/20/2015	24299	2329	21970	168	29400	131	
3/21/2015	26102	2599	23503	168	29400	140	
3/22/2015	27434	2642	24792	168	29400	148	
3/23/2015	32152	3163	28989	168	29400	173	
3/24/2015	34798	3375	31423	168	29400	187	
3/25/2015	31038	2990	28048	168	29400	167	
3/26/2015	27862	2586	25276	168	29400	150	
3/27/2015	29787	2786	27001	168	29400	161	
3/28/2015	30718	2965	27753	168	29400	165	
3/29/2015	30651	2911	27740	168	29400	165	
3/30/2015	34822	2987	31835	168	29400	189	
3/31/2015	32770	2834	29936	168	29400	178	177
4/1/2015	27560	2583	24977	168	29400	149	
4/2/2015	28252	2580	25672	168	29400	153	
4/3/2015	32827	2991	29836	168	29400	178	
4/4/2015	34474	2878	31596	168	29400	188	
4/5/2015	42230	3286	38944	168	29400	232	
4/6/2015	32577	2772	29805	168	29400	177	
4/7/2015	34338	2725	31613	168	29400	188	
4/8/2015	33512	2671	30841	168	29400	184	
4/9/2015	28646	2266	26380	168	29400	157	
4/10/2015	30838	2752	28086	168	29400	167	
4/11/2015	27738	2276	25462	168	29400	152	
4/12/2015	28951	2285	26666	168	29400	159	
4/13/2015	31379	2783	28596	168	29400	170	
4/14/2015	34760	2657	32103	168	29400	191	
4/15/2015	34972	2454	32518	168	29400	194	

DATE	Discharge Flow	Drip Flush Return	Net Discharge to Drip	# Customers	Expected Flow @ 175 GPD	Actual GPD per Home	AVG GPD/Month
4/16/2015	35642	2852	32790	168	29400	195	
4/17/2015	31012	2682	28330	168	29400	169	
4/18/2015	33305	2373	30932	168	29400	184	
4/19/2015	27850	2155	25695	168	29400	153	
4/20/2015	45895	3220	42675	168	29400	254	
4/21/2015	38041	3139	34902	168	29400	208	
4/22/2015	28600	3272	25328	168	29400	151	
4/23/2015	28962	3385	25577	168	29400	152	
4/24/2015	24951	2923	22028	168	29400	131	
4/25/2015	29729	3443	26286	168	29400	156	
4/26/2015	32636	3853	28783	168	29400	171	
4/27/2015	31434	3602	27832	168	29400	166	
4/28/2015	33216	3766	29450	168	29400	175	
4/29/2015	32692	3670	29022	168	29400	173	
4/30/2015	29784	3340	26444	168	29400	157	174
5/1/2015	27403	3072	24331	168	29400	145	
5/2/2015	30300	3380	26920	168	29400	160	
5/3/2015	28499	3154	25345	168	29400	151	
5/4/2015	30955	3486	27469	168	29400	164	
5/5/2015	30062	3325	26737	168	29400	159	
5/6/2015	29891	3255	26636	168	29400	159	
5/7/2015	29147	3236	25911	168	29400	154	
5/8/2015	28145	3153	24992	168	29400	149	
5/9/2015	32083	3500	28583	168	29400	170	
5/10/2015	29294	3264	26030	168	29400	155	
5/11/2015	32506	3557	28949	168	29400	172	
5/12/2015	32464	3652	28812	168	29400	172	
5/13/2015	32792	3609	29183	168	29400	174	
5/14/2015	26772	2862	23910	168	29400	142	
5/15/2015	29774	3224	26550	168	29400	158	
5/16/2015	30233	3285	26948	168	29400	160	
5/17/2015	31563	3716	27847	168	29400	166	
5/18/2015	31548	3595	27953	168	29400	166	
5/19/2015	31660	3735	27925	168	29400	166	
5/20/2015	28812	3297	25515	168	29400	152	
5/21/2015	31533	3681	27852	168	29400	166	
5/22/2015	33921	4053	29868	168	29400	178	
5/23/2015	29537	3454	26083	168	29400	155	
5/24/2015	27723	3273	24450	168	29400	146	
5/25/2015	28364	3350	25014	168	29400	149	
5/26/2015	31975	3677	28298	168	29400	168	
5/27/2015	37686	4513	33173	168	29400	197	
5/28/2015	41592	4170	37422	168	29400	223	
5/29/2015	37609	4456	33153	168	29400	197	

DATE	Discharge Flow	Drip Flush Return	Net Discharge to Drip	# Customers	Expected Flow @ 175 GPD	Actual GPD per Home	AVG GPD/Month
5/30/2015	32558	3869	28689	168	29400	171	
5/31/2015	31649	3714	27935	168	29400	166	165
6/1/2015	37861	4010	33851	170	29750	199	
6/2/2015	54462	4114	50348	170	29750	296	
6/3/2015	39867	4581	35286	170	29750	208	
6/4/2015	29291	3531	25760	170	29750	152	
6/5/2015	27157	3624	23533	170	29750	138	
6/6/2015	25828	3524	22304	170	29750	131	
6/7/2015	25123	3471	21652	170	29750	127	
6/8/2015	25419	3529	21890	170	29750	129	
6/9/2015	30925	3451	27474	170	29750	162	
6/10/2015	32675	4262	28413	170	29750	167	
6/11/2015	22039	3570	18469	170	29750	109	
6/12/2015	22359	3198	19161	170	29750	113	
6/13/2015	27619	3819	23800	170	29750	140	
6/14/2015	25803	3723	22080	170	29750	130	
6/15/2015	26112	3484	22628	170	29750	133	
6/16/2015	28366	3993	24373	170	29750	143	
6/17/2015	26819	3913	22906	170	29750	135	
6/18/2015	25477	4124	21353	170	29750	126	
6/19/2015	29145	3971	25174	170	29750	148	
6/20/2015	26257	3596	22661	170	29750		
6/21/2015	25299	3633	21666	170	29750		
6/22/2015	26731	3624	23107	170	29750		
6/23/2015	29149	3979	25170	170	29750		
6/24/2015	20746	3248	17498	170	29750		
6/25/2015	30843	4714	26129	170	29750		
6/26/2015	17219	3537	13682	170	29750		
6/27/2015	5072	980	4092	170	29750		
6/28/2015	0	0	0	170	29750		
6/29/2015	2039	302	1737	170	29750		
6/30/2015	147	4	143	170	29750		152
7/1/2015	9341	1101	8240	171	29925		
7/2/2015	22185	2609	19576	171	29925		
7/3/2015	28574	3255	25319	171	29925	148	
7/4/2015	28781	3239	25542	171	29925	149	
7/5/2015	36462	4111	32351	171	29925	189	
7/6/2015	57521	3689	53832	171	29925	315	
7/7/2015	37603	4078	33525	171	29925	196	
7/8/2015	14987	1711	13276	171	29925	78	
7/9/2015	21242	1950	19292	171	29925	113	
7/10/2015	30907	3467	27440	171	29925	160	
7/11/2015	28176	3246	24930	171	29925	146	
7/12/2015	27875	3164	24711	171	29925	145	

DATE	Discharge Flow	Drip Flush Return	Net Discharge to Drip	# Customers	Expected Flow @ 175 GPD	Actual GPD per Home	AVG GPD/Month
7/13/2015	28464	3257	25207	171	29925	147	
7/14/2015	27263	3240	24023	171	29925	140	
7/15/2015	24584	2982	21602	171	29925		
7/16/2015	22543	3040	19503	171	29925		
7/17/2015	4103	97	4006	171	29925		
7/18/2015	16336	59	16277	171	29925		
7/19/2015	25296	71	25225	171	29925		
7/20/2015	15148	15	15133	171	29925		
7/21/2015	18879	18	18861	171	29925		
7/22/2015	14920	28	14892	171	29925		
7/23/2015	15275	125	15150	171	29925		
7/24/2015	20240	232	20008	171	29925		
7/25/2015	13929	1684	12245	171	29925		
7/26/2015	9620	2929	6691	171	29925		
7/27/2015	10163	2946	7217	171	29925		
7/28/2015	9216	2881	6335	171	29925		
7/29/2015	5733	2629	3104	171	29925		
7/30/2015	7997	2559	5438	171	29925		
7/31/2015	6984	2539	4445	171	29925		161
8/1/2015	6492	2504	3988	171	29925		
8/2/2015	6488	2622	3866	171	29925		
8/3/2015	8957	2883	6074	171	29925		
8/4/2015	15144	2938	12206	171	29925		
8/5/2015	15681	2634	13047	171	29925		
8/6/2015	6530	1947	4583	171	29925		
8/7/2015	12153	3498	8655	171	29925		
8/8/2015	7322	3632	3690	171	29925		
8/9/2015	7443	3169	4274	171	29925		
8/10/2015	7088	3236	3852	171	29925		
8/11/2015	3112	3702	-590	171	29925		
8/12/2015	1588	2899	-1311	171	29925		
8/13/2015	2283	2986	-703	171	29925		
8/14/2015	4756	2913	1843	171	29925		
8/15/2015	4160	3226	934	171	29925		
8/16/2015	3798	3076	722	171	29925		
8/17/2015	11528	3410	8118	171	29925		
8/18/2015	20338	3581	16757	171	29925		
8/19/2015	16232	2831	13401	171	29925		
8/20/2015	8892	3361	5531	171	29925		
8/21/2015	13169	3823	9346	171	29925		
8/22/2015	5994	3123	2871	171	29925		
8/23/2015	3197	3104	93	171	29925		
8/24/2015	2628	3283	-655	171	29925		
8/25/2015	871	3492	-2621	171	29925		

DATE	Discharge Flow	Drip Flush Return	Net Discharge to Drip	# Customers	Expected Flow @ 175 GPD	Actual GPD per Home	AVG GPD/Month
8/26/2015	796	2890	-2094	171	29925		
8/27/2015	2991	3234	-243	171	29925		
8/28/2015	799	2690	-1891	171	29925		
8/29/2015	884	2263	-1379	171	29925		
8/30/2015	2422	2518	-96	171	29925		
8/31/2015	653	3207	-2554	171	29925		
9/1/2015	402	3146	-2744	172	30100		
9/2/2015	370	2859	-2489	172	30100		
9/3/2015	325	2733	-2408	172	30100		
9/4/2015	350	2562	-2212	172	30100		
9/5/2015	1974	2947	-973	172	30100		
9/6/2015	575	2921	-2346	172	30100		
9/7/2015	1043	2656	-1613	172	30100		
9/8/2015	452	3134	-2682	172	30100		
9/9/2015	273	3506	-3233	172	30100		
9/10/2015	201	3316	-3115	172	30100		
9/11/2015	14659	1563	13096	172	30100		
9/12/2015	28440	417	28023	172	30100	163	
9/13/2015	30555	411	30144	172	30100	175	
9/14/2015	30231	459	29772	172	30100	173	
9/15/2015	27875	434	27441	172	30100	160	
9/16/2015	24530	204	24326	172	30100	141	
9/17/2015	26206	306	25900	172	30100	151	
9/18/2015	22993	159	22834	172	30100	133	
9/19/2015	26360	143	26217	172	30100	152	
9/20/2015	26233	187	26046	172	30100	151	
9/21/2015	27113	207	26906	172	30100	156	
9/22/2015	30989	112	30877	172	30100	180	
9/23/2015	27645	235	27410	172	30100	159	
9/24/2015	27964	247	27717	172	30100	161	
9/25/2015	27334	74	27260	172	30100	158	
9/26/2015	27275	33	27242	172	30100	158	
9/27/2015	27149	51	27098	172	30100	158	
9/28/2015	33399	51	33348	172	30100	194	
9/29/2015	28269	33	28236	172	30100	164	
9/30/2015	27953	11	27942	172	30100	162	161
10/1/2015	27048	2	27046	173	30275	156	
10/2/2015	25447	176	25271	173	30275	146	
10/3/2015	29664	141	29523	173	30275	171	
10/4/2015	29368	228	29140	173	30275	168	
10/5/2015	29819	255	29564	173	30275	171	
10/6/2015	28454	209	28245	173	30275	163	
10/7/2015	25325	22	25303	173	30275	146	
10/8/2015	26329	46	26283	173	30275	152	

DATE	Discharge Flow	Drip Flush Return	Net Discharge to Drip	# Customers	Expected Flow @ 175 GPD	Actual GPD per Home	AVG GPD/Month
10/9/2015	25826	35	25791	173	30275	149	
10/10/2015	26310	54	26256	173	30275	152	
10/11/2015	27889	66	27823	173	30275	161	
10/12/2015	30683	72	30611	173	30275	177	
10/13/2015	29536	50	29486	173	30275	170	
10/14/2015	30035	159	29876	173	30275	173	
10/15/2015	27045	91	26954	173	30275	156	
10/16/2015	22662	210	22452	173	30275	130	
10/17/2015	25704	149	25555	173	30275	148	
10/18/2015	23082	281	22801	173	30275	132	
10/19/2015	24992	307	24685	173	30275	143	
10/20/2015	24348	793	23555	173	30275	136	
10/21/2015	25539	2012	23527	173	30275	136	
10/22/2015	25652	2183	23469	173	30275	136	
10/23/2015	25888	2017	23871	173	30275	138	
10/24/2015	24763	1958	22805	173	30275	132	
10/25/2015	24512	2059	22453	173	30275	130	
10/26/2015	28603	2551	26052	173	30275	151	
10/27/2015	33889	3029	30860	173	30275	178	
10/28/2015	42965	3188	39777	173	30275	230	
10/29/2015	45675	2958	42717	173	30275	247	
10/30/2015	36011	1698	34313	173	30275	198	
10/31/2015	26557	1426	25131	173	30275	145	159
11/1/2015	27282	1028	26254	173	30275	152	
11/2/2015	32049	1000	31049	173	30275	179	
11/3/2015	31076	1150	29926	173	30275	173	
11/4/2015	28134	1288	26846	173	30275	155	
11/5/2015	28551	972	27579	173	30275	159	
11/6/2015	22913	996	21917	173	30275	127	
11/7/2015	35488	653	34835	173	30275	201	
11/8/2015	31671	452	31219	173	30275	180	
11/9/2015	31747	337	31410	173	30275	182	
11/10/2015	32632	562	32070	173	30275	185	
11/11/2015	24523	533	23990	173	30275	139	
11/12/2015	28230	438	27792	173	30275	161	
11/13/2015	25013	419	24594	173	30275	142	
11/14/2015	27519	318	27201	173	30275	157	
11/15/2015	25737	467	25270	173	30275	146	
11/16/2015	29936	834	29102	173	30275	168	
11/17/2015	29984	450	29534	173	30275	171	
11/18/2015	27608	137	27471	173	30275	159	
11/19/2015	40582	840	39742	173	30275	230	
11/20/2015	37064	1022	36042	173	30275	208	
11/21/2015	28069	274	27795	173	30275	161	

DATE	Discharge Flow	Drip Flush Return	Net Discharge to Drip	# Customers	Expected Flow @ 175 GPD	Actual GPD per Home	AVG GPD/Month
11/22/2015	27096	700	26396	173	30275	153	
11/23/2015	29650	769	28881	173	30275	167	
11/24/2015	29200	1136	28064	173	30275	162	
11/25/2015	31544	1321	30223	173	30275	175	
11/26/2015	27882	1933	25949	173	30275	150	
11/27/2015	33705	1993	31712	173	30275	183	
11/28/2015	32708	1912	30796	173	30275	178	
11/29/2015	29332	781	28551	173	30275	165	
11/30/2015	40497	1312	39185	173	30275	227	170
12/1/2015	52685	1239	51446	173	30275	297	
12/2/2015	48314	346	47968	173	30275	277	
12/3/2015	33063	500	32563	173	30275	188	
12/4/2015	26758	307	26451	173	30275	153	
12/5/2015	24634	121	24513	173	30275	142	
12/6/2015	32505	806	31699	173	30275	183	
12/7/2015	10387	184	10203	173	30275	59	
12/8/2015	29829	933	28896	173	30275	167	
12/9/2015	37543	898	36645	173	30275	212	
12/10/2015	36675	395	36280	173	30275	210	
12/11/2015	31158	357	30801	173	30275	178	
12/12/2015	30844	279	30565	173	30275	177	
12/13/2015	30902	446	30456	173	30275	176	
12/14/2015	32322	98	32224	173	30275	186	
12/15/2015	36827	83	36744	173	30275	212	
12/16/2015	32395	95	32300	173	30275	187	
12/17/2015	29462	75	29387	173	30275	170	
12/18/2015	33683	46	33637	173	30275	194	
12/19/2015	33211	105	33106	173	30275	191	
12/20/2015	31125	168	30957	173	30275	179	
12/21/2015	33066	191	32875	173	30275	190	
12/22/2015	33849	241	33608	173	30275	194	
12/23/2015	42377	174	42203	173	30275	244	
12/24/2015	37609	70	37539	173	30275	217	
12/25/2015	46136	51	46085	173	30275	266	
12/26/2015	54522	155	54367	173	30275	314	
12/27/2015	52780	86	52694	173	30275	305	
12/28/2015	38126	38	38088	173	30275	220	
12/29/2015	39709	31	39678	173	30275	229	
12/30/2015	38783	53	38730	173	30275	224	
12/31/2015	33410	34	33376	173	30275	193	204
1/1/2016	33418	55	33363	173	30275	193	
1/2/2016	36037	126	35911	173	30275	208	
1/3/2016	34364	186	34178	173	30275	198	
1/4/2016	33758	196	33562	173	30275	194	

DATE	Discharge Flow	Drip Flush Return	Net Discharge to Drip	# Customers	Expected Flow @ 175 GPD	Actual GPD per Home	AVG GPD/Month
1/5/2016	34581	252	34329	173	30275	198	
1/6/2016	30081	453	29628	173	30275	171	
1/7/2016	29825	629	29196	173	30275	169	
1/8/2016	28687	883	27804	173	30275	161	
1/9/2016	31340	1868	29472	173	30275	170	
1/10/2016	30652	2203	28449	173	30275	164	
1/11/2016	32830	1120	31710	173	30275	183	
1/12/2016	32429	474	31955	173	30275	185	
1/13/2016	28229	756	27473	173	30275	159	
1/14/2016	28336	463	27873	173	30275	161	
1/15/2016	30599	1125	29474	173	30275	170	
1/16/2016	30889	803	30086	173	30275	174	
1/17/2016	29725	434	29291	173	30275	169	
1/18/2016	34477	701	33776	173	30275	195	
1/19/2016	35526	670	34856	173	30275	201	180
2/6/2016	31107	347	30760	173	30275	178	
2/7/2016	30293	750	29543	173	30275	171	
2/8/2016	33584	975	32609	173	30275	188	
2/9/2016	34510	343	34167	173	30275	197	
2/10/2016	30527	254	30273	173	30275	175	
2/11/2016	30540	403	30137	173	30275	174	
2/12/2016	30542	114	30428	173	30275	176	
2/13/2016	29657	18	29639	173	30275	171	
2/14/2016	31013	18	30995	173	30275	179	
2/15/2016	33524	62	33462	173	30275	193	
2/16/2016	42002	56	41946	173	30275	242	
2/17/2016	48639	22	48617	173	30275	281	
2/18/2016	38201	85	38116	173	30275	220	
2/19/2016	30901	53	30848	173	30275	178	
2/20/2016	29600	6	29594	173	30275	171	
2/21/2016	31047	29	31018	173	30275	179	
2/22/2016	34065	28	34037	173	30275	197	
2/23/2016	33361	4	33357	173	30275	193	
2/24/2016	31241	4	31237	173	30275	181	
2/25/2016	42727	5	42722	173	30275	247	
2/26/2016	33462	4	33458	173	30275	193	
2/27/2016	30336	0	30336	173	30275	175	
2/28/2016	28872	0	28872	173	30275	167	
2/29/2016	35891	7	35884	173	30275	207	193
3/1/2016	33488	1	33487	173	30275	194	
3/2/2016	33249	7	33242	173	30275	192	
3/3/2016	34909	2	34907	173	30275	202	
3/4/2016	33130	11	33119	173	30275	191	
3/5/2016	34506	1	34505	173	30275	199	

DATE	Discharge Flow	Drip Flush Return	Net Discharge to Drip	# Customers	Expected Flow @ 175 GPD	Actual GPD per Home	AVG GPD/Month
3/6/2016	29917	206	29711	173	30275	172	
3/7/2016	34216	501	33715	173	30275	195	
3/8/2016	34633	1059	33574	173	30275	194	
3/9/2016	30777	722	30055	173	30275	174	
3/10/2016	29697	640	29057	173	30275	168	
3/11/2016	31610	759	30851	173	30275	178	
3/12/2016	33631	323	33308	173	30275	193	
3/13/2016	31074	263	30811	173	30275	178	
3/14/2016	31074	263	30811	173	30275	178	
3/15/2016	41341	197	41144	173	30275	238	
3/16/2016	35877	145	35732	173	30275	207	
3/17/2016	31373	15	31358	173	30275	181	
3/18/2016	29279	13	29266	173	30275	169	
3/19/2016	29382	35	29347	173	30275	170	
3/20/2016	30276	4	30272	173	30275	175	
3/21/2016	28506	14	28492	173	30275	165	
3/22/2016	27342	47	27295	173	30275	158	
3/23/2016	25668	121	25547	173	30275	148	
3/24/2016	25428	448	24980	173	30275	144	
3/25/2016	30603	511	30092	173	30275	174	
3/26/2016	28888	320	28568	173	30275	165	
3/27/2016	28984	199	28785	173	30275	166	
3/28/2016	31238	202	31036	173	30275	179	
3/29/2016	33835	74	33761	173	30275	195	
3/30/2016	28724	84	28640	173	30275	166	
3/31/2016	26788	29	26759	173	30275	155	179
4/1/2016	31806	26	31780	173	30275	184	
4/3/2016	29640	5	29635	173	30275	171	
4/4/2016	30896	10	30886	173	30275	179	
4/5/2016	36436	18	36418	173	30275	211	
4/6/2016	27164	15	27149	173	30275	157	
4/7/2016	31530	18	31512	173	30275	182	
4/8/2016	28861	20	28841	173	30275	167	
4/9/2016	31277	40	31237	173	30275	181	
4/10/2016	28441	74	28367	173	30275	164	
4/11/2016	33031	47	32984	173	30275	191	
4/12/2016	35336	91	35245	173	30275	204	
4/13/2016	28062	46	28016	173	30275	162	
4/14/2016	29202	40	29162	173	30275	169	
4/15/2016	29726	222	29504	173	30275	171	
4/16/2016	29120	350	28770	173	30275	166	
4/17/2016	31613	115	31498	173	30275	182	
4/18/2016	30840	15	30825	173	30275	178	
4/19/2016	33127	13	33114	173	30275	191	

DATE	Discharge Flow	Drip Flush Return	Net Discharge to Drip	# Customers	Expected Flow @ 175 GPD	Actual GPD per Home	AVG GPD/Month
4/20/2016	32220	15	32205	173	30275	186	
4/21/2016	26804	5	26799	173	30275	155	
4/22/2016	32498	9	32489	173	30275	188	
4/23/2016	28950	3	28947	173	30275	167	
4/24/2016	28690	6	28684	173	30275	166	
4/25/2016	29150	0	29150	173	30275	168	
4/26/2016	36335	0	36335	173	30275	210	
4/27/2016	29069	2	29067	173	30275	168	
4/28/2016	28531	1	28530	173	30275	165	
4/29/2016	26649	9	26640	173	30275	154	176
4/30/2016	28632	3	28629	173	30275	165	
5/1/2016	29621	1	29620	173	30275	171	
5/2/2016	31091	4	31087	173	30275	180	
5/3/2016	33735	4	33731	173	30275	195	
5/4/2016	30305	6	30299	173	30275	175	
5/5/2016	30985	3	30982	173	30275	179	
5/6/2016	29484	0	29484	173	30275	170	
5/7/2016	33488	3	33485	173	30275	194	
5/8/2016	31800	7	31793	173	30275	184	
5/9/2016	35532	2	35530	173	30275	205	
5/10/2016	34945	1	34944	173	30275	202	
5/11/2016	32289	2	32287	173	30275	187	
5/12/2016	31391	4	31387	173	30275	181	
5/13/2016	32749	4	32745	173	30275	189	
5/14/2016	36766	5	36761	173	30275	212	
5/15/2016	31632	7	31625	173	30275	183	
5/16/2016	34722	16	34706	173	30275	201	
5/17/2016	36969	33	36936	173	30275	214	
5/18/2016	33117	45	33072	173	30275	191	
5/19/2016	30339	36	30303	173	30275	175	
5/20/2016	30616	8	30608	173	30275	177	
5/21/2016	40890	4	40886	173	30275	236	
5/22/2016	33968	6	33962	173	30275	196	
5/23/2016	30257	3	30254	173	30275	175	
5/24/2016	33836	2	33834	173	30275	196	
5/25/2016	32376	1	32375	173	30275	187	
5/26/2016	30426	1	30425	173	30275	176	
5/27/2016	26763	3	26760	173	30275	155	
5/28/2016	31461	5	31456	173	30275	182	
5/29/2016	32546	3	32543	173	30275	188	
5/30/2016	28387	0	28387	173	30275	164	
5/31/2016	30940	0	30940	173	30275	179	186
6/1/2016	33043	0	33043	173	30275	191	
6/2/2016	27852	2	27850	173	30275	161	

DATE	Discharge Flow	Drip Flush Return	Net Discharge to Drip	# Customers	Expected Flow @ 175 GPD	Actual GPD per Home	AVG GPD/Month
6/3/2016	30928	1	30927	173	30275	179	
6/4/2016	32314	0	32314	173	30275	187	
6/5/2016	54570	0	54570	173	30275	315	
6/6/2016	47258	1	47257	173	30275	273	
6/7/2016	32845	0	32845	173	30275	190	
6/8/2016	28554	0	28554	173	30275	165	
6/9/2016	26630	0	26630	173	30275	154	
6/10/2016	28858	0	28858	173	30275	167	
6/11/2016	28965	0	28965	173	30275	167	
6/12/2016	28949	0	28949	173	30275	167	
6/13/2016	32272	0	32272	173	30275	187	
6/14/2016	30608	1	30607	173	30275	177	
6/15/2016	28482	1	28481	173	30275	165	
6/16/2016	32534	0	32534	173	30275	188	
6/17/2016	33003	3	33000	173	30275	191	
6/18/2016	33689	0	33689	173	30275	195	
6/19/2016	32857	2	32855	173	30275	190	
6/20/2016	34107	0	34107	173	30275	197	
6/21/2016	34073	0	34073	173	30275	197	
6/22/2016	26612	0	26612	173	30275	154	
6/23/2016	27869	0	27869	173	30275	161	
6/24/2016	28785	0	28785	173	30275	166	
6/25/2016	43933	1	43932	173	30275	254	
6/26/2016	33467	0	33467	173	30275	193	
6/27/2016	37351	2	37349	173	30275	216	
6/28/2016	35317	1	35316	173	30275	204	
6/29/2016	32216	0	32216	173	30275	186	
6/30/2016	28997	1	28996	173	30275	168	190
7/1/2016	30969	0	30969	173	30275	179	
7/2/2016	28731	0	28731	173	30275	166	
7/3/2016	27081	0	27081	173	30275	157	
7/4/2016	27163	0	27163	173	30275	157	
7/5/2016	28879	0	28879	173	30275	167	
7/6/2016	33243	0	33243	173	30275	192	
7/7/2016	32036	0	32036	173	30275	185	
7/8/2016	49957	2	49955	173	30275	289	
7/9/2016	31177	0	31177	173	30275	180	
7/10/2016	30829	0	30829	173	30275	178	
7/11/2016	31716	0	31716	173	30275	183	
7/12/2016	30573	1	30572	173	30275	177	
7/13/2016	30586	0	30586	173	30275	177	
7/14/2016	27533	0	27533	173	30275	159	
7/15/2016	28233	0	28233	173	30275	163	
7/16/2016	26782	0	26782	173	30275	155	

DATE	Discharge Flow	Drip Flush Return	Net Discharge to Drip	# Customers	Expected Flow @ 175 GPD	Actual GPD per Home	AVG GPD/Month
7/17/2016	27551	0	27551	173	30275	159	
7/18/2016	32486	1	32485	173	30275	188	
7/19/2016	29919	0	29919	173	30275	173	
7/20/2016	28971	0	28971	173	30275	167	
7/21/2016	26899	0	26899	173	30275	155	
7/22/2016	29331	0	29331	173	30275	170	
7/23/2016	32617	0	32617	173	30275	189	
7/24/2016	30415	0	30415	173	30275	176	
7/25/2016	30477	0	30477	173	30275	176	
7/26/2016	32060	0	32060	173	30275	185	
7/27/2016	32816	0	32816	173	30275	190	
7/28/2016	39299	0	39299	173	30275	227	
7/29/2016	32626	0	32626	173	30275	189	
7/30/2016	34050	0	34050	173	30275	197	
7/31/2016	38428	1	38427	173	30275	222	182
8/1/2016	29896	0	29896	173	30275	173	
8/2/2016	32675	0	32675	173	30275	189	
8/3/2016	30991	0	30991	173	30275	179	
8/4/2016	37633	0	37633	173	30275	218	
8/5/2016	39089	0	39089	173	30275	226	
8/6/2016	38310	0	38310	173	30275	221	
8/7/2016	29238	0	29238	173	30275	169	
8/8/2016	32722	0	32722	173	30275	189	
8/9/2016	29561	0	29561	173	30275	171	
8/10/2016	25599	0	25599	173	30275	148	
8/11/2016	28382	0	28382	173	30275	164	
8/12/2016	28077	0	28077	173	30275	162	
8/13/2016	26515	0	26515	173	30275	153	
8/14/2016	20948	0	20948	173	30275	121	
8/15/2016	25193	0	25193	173	30275	146	
8/16/2016	26326	0	26326	173	30275	152	
8/17/2016	23382	0	23382	173	30275	135	
8/18/2016	22127	0	22127	173	30275	128	169
				Overall Average			171

Rain falling in Sand Filter

Surface Area of Sand Filter		SF	10,320	
Rainfall	1	Inch	6433	Gallons
At full Build-out	37	Gallons Per	Home	

EXHIBITS 8, 9, AND 10
Ohio Adm.Code 4901:1-15-05(D)(8)
Ohio Adm.Code 4901:1-15-05(D)(9)
Ohio Adm.Code 4901:1-15-05(D)(10)

Not Applicable

The above-referenced rules apply to applications by waterworks companies and are not applicable to sewage disposal system companies.

EXHIBIT 11
Ohio Adm.Code 4901:1-15-05(D)(11)

Statement re: Size of Sewage Mains and Laterals

Ohio Adm.Code 4901:1-15-05(D)(11) requires applicants for certificates of public convenience and necessity to submit a statement evidencing that "the mains and laterals proposed are of adequate size and are to be laid with such flow lines as to permit an expeditious flow from the point of the origin at the customer's premises to the point of treatment or disposal."

As discussed in detail in the engineer's report contained in this exhibit, the proposed mains and laterals are of adequate size and will be laid in a manner that will permit an expeditious flow from the customer's premises to the point of disposal. Because settleable solids will be removed in septic tanks on the customer's property, the required velocity is less than the velocity that would be required for transporting effluent that includes solid wastes, which reduces the gradients that would otherwise be necessary for expeditious flows and also minimizes the need for lift stations. Pipes will be installed at depths that maximize gravity collection and transportation. Air release valves will be installed at all high points on the main. Please refer to Exhibit 7 for an additional description of the collection system.

ABERLIN SPRINGS

Sewer Mains and Distribution Design
December 27, 2016
By: Ruth Campbell, PE, PS

Small Diameter Pressure Sewer and Small Diameter Gravity Sewer shall be designed per the Alternative Wastewater Collections Systems Manual published by the United States Environmental Protection Agency, October 1991, publication number EPA/625/1-91/024. Small Diameter Sewers sizes and gradients are designed based on hydraulic considerations. Pipes will be small diameter PVC, SDR 21 laid with the contour of the terrain. Where practical, pipes will be installed at depths to permit collection and transportation by gravity. Minimum depths will be 30 inches. Typical minimum diameters are two to four inches. Cleanouts will be installed as needed to provide access for inspection and for maintenance. Air release valves will be installed at all high points of the main. See Exhibit 7- Engineering Report, Appendix B –Sewer Sizing for sewer layout and sizing.

Interceptor Tank. Watertight tanks shall be installed to serve each home or each group of ten cottage homes as appropriate. The tank shall provide:

- Sufficient hydraulic retention time for capturing grease, grit and other substances that settle or float. Minimum size to 2.5 times design flow.
- Sufficient storage capacity for sludge and scum to keep septage pumping intervals to a minimum of three years.
- Sufficient reserve space for 24 hours of normal operation before a system malfunction must be corrected. High water alarms to alert the homeowner and system operator of any malfunction.
- Sufficient operation zone to modulate peak inflows without causing nuisance alarms
- An effluent filter device that retains solids greater than one sixteenth inch in size or a filtered step system or screened vault in lieu of, or in addition to, the effluent filter device required.
- STEP systems shall also require a STEP pump and vault, controls and monitors. See Exhibit 7- Engineering Report, Appendix D for Component Specifications.

Drip Distribution. A drip distribution system shall be designed and installed to provide treatment and distribution of the combined average daily design flow. A total of 30 zones will be constructed with 18 zones active at a time.

- Number of homes = 142, Average Daily Design Flow = 300 gpd/lot
- Number of accessory structures = 41, Average Daily Design Flow = 100 gpd/structure
- Average Daily Flow = 46,700 gpd
- A hydraulic loading rate of 0.3 gpd will be used

See Exhibit 7- Engineering Report, Appendix C – *Drip Field Design* for design calculations.
See Exhibit 7- Engineering Report, Appendix E – *Design Flow Basis* for design basis.

Pump Tank & Hydraulic Controls.

- A water tight pump tank designed in accordance with Ohio Revised Code Section 3701-29-12 shall be provided.
- Dosing controls shall prevent flow to the drip distribution component in excess of the daily design flow. Controls shall provide a means to record alarm events, troubleshoot system malfunctions, and monitor flow over time and flow rates during both dosing and flushing events including the use of a flow meter to monitor system operation. Controls shall provide a means of alternating flows to each zone.
- Effluent that is sent to the drip tubing zones shall first be filtered due to the potential of clogging the emitters. A disk filter capable of removal down to 140 microns will be used.
- Provision for automatic hydraulic flushing of filter. Solenoid flush valves shall be used in the design of the drip distribution system to allow the flushing operation to be automated. These flush valves shall be installed near the flush return to provide for easy maintenance.

Septic Lagoon. A sewage lagoon designed to store thirty days of effluent and provide two feet of freeboard shall be provided. The lagoon shall have a clay or geomembrane liner, a minimum depth of five feet, and a length to width ration at or exceeding 2 to 1. The sewer line will be designed to permit bypassing of the pump tank with direct discharge to the lagoon. Submersible pumps will be used to return pre-treated effluent to the pump tank for dispersal to the drip distribution fields as necessary.

Ruth H Campbell

Ruth H. campbell, Ohio PE 53249

EXHIBIT 12
Ohio Adm.Code 4901:1-15-05(D)(12)

Estimated Cost of Construction

Ohio Adm.Code 4901:1-15-05(D)(12)(a) requires applicants for a certificate of public convenience and necessity to submit a detailed estimate of the cost of construction of the sewage disposal system prepared and signed by the person who prepared Exhibits 6 and 7.

As shown in the verified construction estimate contained in this exhibit, WYCO Consulting, Inc. ("WYCO"), the engineering firm retained by OWSI, estimates the total cost of construction of the system to serve the Aberlin Springs subdivision to be $1,281,148, which is comprised of an estimated cost of the collection system of $345,090 and an estimated cost of the treatment and disposal system of $936,0588. As noted in Exhibits 3 and 3A, the estimated cost of construction of the system that will be in place when service commences to Phase 1 of the Aberlin Springs project is $661,108, which is comprised of an estimated cost of the collection system of $97,050, and an estimated cost of the treatment and disposal system of $598,558.

Although the rule appears to assume that the description and map of the service area presented in Exhibit 6 would be prepared by the same person that prepares the engineering report presented in Exhibit 7, there is nothing in the rules that requires that the same person prepare both exhibits. In this instance, the WYCO engineer that prepared and signed the estimate of the construction costs contained in this exhibit is the same person that prepared and signed the engineering report contained in Exhibit 7. However, the description and map of the proposed service area contained in Exhibit 6 was prepared by a surveying firm retained by the Developer and contains no information that bears on the estimated cost of construction. Under these circumstances, there would be no basis for requiring the signature of the person that prepared Exhibit 6 on the construction cost estimate contained in this exhibit. Thus, OWSI respectfully submits that the information contained in this exhibit substantially complies with the requirements of Ohio Adm.Code 4901:1-15-05(D)(12)(a). However, if the Commission deems that a formal waiver is required, please consider this to be a request for waiver of the requirement that the person that prepared Exhibit 6 must also prepare and sign the construction cost estimate presented in this exhibit.

VERIFICATION

State of Ohio)
County of Warren)

Ruth Campbell, first being duly sworn, says that the attached construction estimate for the wastewater system at Aberlin Springs is accurate to the best of my information and belief, and is based on general construction knowledge and experience in estimating such budgets, as well as upon my personal knowledge.

Ruth Campbell
Affiant

Personally appeared before me, Kaitlyn Estes, notary public of this county, Ruth Campbell, the within named witness, with whom I am personally acquainted, and who acknowledged that such person executed the within instrument for the purposes therein contained.

Witness my hand, at office, this 28 day of February, 2017.

Kaitlyn Estes
Notary

My commission expires: Nov. 23, 2019

NOTARY PUBLIC STATE OF OHIO
KAITLYN D. ESTES
Notary Public, State of Ohio
My Commission Expires
November 23, 2019

Aberlin Springs Subdivison Sewage Disporal System Construction Cost Estimate

	Phase 1	Phase 2	Phase 3	Phase 4	Total
Number of Homes	22	31	39	50	142
Storage Basin	$ 132,000				$ 132,000
Filtration System	$ 268,000				$ 268,000
Control Building	$ 25,000				$ 25,000
Control System	$ 25,058	$ 10,000	$ 10,000	$ 10,000	$ 55,058
Pumps / External Wiring	$ 48,000	$ 4,000	$ 4,000	$ 4,000	$ 60,000
Drip Irrigation System	$ 66,000	$ 92,400	$ 118,800	$ 118,800	$ 396,000
Collection System	$ 97,050	$ 84,210	$ 72,420	$ 91,410	$ 345,090
Phase Total	$ 661,108	$ 190,610	$ 205,220	$ 224,210	$ 1,281,148

Notes:

1. The phases refer to the Developer's construction shedule. Phase 4 includes 47 new homes and 3 existing homes.
2. OWSI will construct and install the Storage Basin, Filtration System, and Control Building that will serve the entire Aberlin Springs Subdivision before service commences to any customers.
3. There will be incremental additions to the Control System and Pumps / External Wiring as customers are added in subsequent phases.
4. The Collection System will be constructed and installed by the Developer and includes the in-tank equipment, service connection, mains, and stations necessary to transport wastewater from the customers premises to the treatment facility.

STATE OF OHIO
RUTH H. CAMPBELL
53249
REGISTERED
PROFESSIONAL ENGINEER

2-28-2017

EXHIBIT 13
Ohio Adm.Code 4901:1-15-05(D)(13)

Statement of Financing Plan

Pursuant to the agreement between OWSI and the Developer of the Aberlin Springs subdivision, the $936,058 cost of the sewage treatment and disposal system will be funded entirely by the Developer through contributions in aid of construction in the form of a per-lot capacity reservation fee. The Developer will also be responsible for the construction and installation of the collection system per OWSI's specifications, with title of the system to be conveyed to OWSI once OWSI has approved and accepted the results of the required inspection. Thus, the collection system, which is estimated to cost $345,090, will be received by OWSI as contributed property. As a result of these arrangements, OWSI will not be required to secure external capital to fund the construction of the system through the issuance of either debt or equity, and, thus, will commence operations with no outstanding debt obligations.

To the extent OWSI requires cash working capital to meet operating expenses prior to the time the customer base reaches the size necessary to permit OWSI to sustain operations using internally-generated funds, such cash will be advanced by OWSI's parent and sole shareholder, Adenus, on an as-needed basis as an interest-free non-recourse loan.

EXHIBIT 14
Ohio Adm.Code 4901:1-15-05(D)(14)

Statement of Financial Capability

Ohio Adm.Code 4901:1-15-05(D)(14) requires applicants for a certificate of public convenience and necessity to submit a statement evidencing that:

> (A)pplicant has its treasury sufficient unobligated paid-in capital or internally generated funds and/or has commitments from a responsible financial organization, satisfactory to the commission, which will enable it to secure through the issuance of securities, approved by the commission, all additional financing necessary to complete construction of and place into operation its proposed utility system.

As explained in Exhibit 13, it will not be necessary for OWSI to issue securities to complete the construction of its system because the treatment and disposal components of the system will be funded by the Developer through contributions in aid of construction and because, upon completion, the collection components of the system will be received by OWSI from the Developer as contributed property.

As further noted in Exhibit 13, to the extent that OWSI requires cash working capital to meet operating expenses until such time that the customer base reaches the size necessary to permit OWSI to sustain operations using internally-generated funds, such cash will be advanced by OWSI's parent and sole shareholder, Adenus, on an as-needed basis as an interest free non-recourse loan. To demonstrate that Adenus has the financial capability to make any such necessary cash infusions, OWSI is submitting, as a part of this exhibit, the financial statements of Adenus for last two years. These financial statements are being filed under seal pursuant to a motion for a protective order.

ADENUS GROUP, LLC AND SUBSIDIARIES

CONSOLIDATED FINANCIAL STATEMENTS
AND SUPPLEMENTAL INFORMATION

YEARS ENDED DECEMBER 31, 2015 AND 2014

[REDACTED – FILED UNDER SEAL]

EXHIBIT 15
Ohio Adm.Code 4901:1-15-05(D)(15)

Statement of Adequacy of Proposed Rates

Ohio Adm.Code 4901:1-15-05(D)(15) requires applicants for a certificate of public convenience and necessity to submit a statement evidencing that:

> (A)t the rates proposed in applicant's tariff as filed with the application and based upon a pro forma income statement also filed with the application, applicant will have sufficient revenues to enable it to meet its operating and maintenance expenses, to begin establishing a depreciation reserve, to pay all taxes, to establish an adequate reserve for contingencies, and to pay interest on any outstanding debt.

As shown on the pro forma income statements contained in Exhibits 4 and 4A, OWSI currently projects that the proposed $58.00 per month flat rate for sewage disposal service set forth in the proposed tariff contained in Exhibit 5 will be adequate to generate the revenues required for the purposes identified in the above rule within the Year 3 of OWSI's operations.

EXHIBIT 16
Ohio Adm.Code 4901:1-15-05(D)(16)

Ohio Environmental Protection Agency Approval

Ohio Adm.Code 4901:1-15-05(D)(16) provides that, if approval of the Ohio Environmental Protection Agency ("OEPA") is required for the construction of the facilities described in the application for a certificate of public convenience and necessity, the application must include a written statement to the Commission from an OEPA official indicating that the OEPA has approved general plans for the proposed sewage disposal system and that it would approve final plans upon notification that the Commission has granted applicant a certificate of public convenience and necessity for the construction and operation of the system.

On June 9, 2016, WYCO submitted an engineering report to the OEPA on behalf of OWSI describing the proposed system to provide sewage disposal service to the Aberlin Springs development. By letter dated July 1, 2016, the OEPA staff found the preliminary plans acceptable, subject to two minor modifications. On September 12, OWSI submitted its actual plans to the OEPA, which were supplemented by additional information submitted by OWSI on October 24, 2016, December 7, 2016, and January 20, 2017. By letter dated February 7, 2017, the OEPA issued a Permit to Install the proposed facilities. A letter to the Commission from the OEPA confirming the issuance of the Permit to Install as well as copy of the Permit to Install are contained in this exhibit.

Although the OEPA's final approval of OWSI's plans predates the Commission's grant of a certificate of public convenience and necessity, a general condition of the Permit to Install is that the issuance of the permit does not relieve the permit holder from the duty of complying with all applicable federal, state, and local laws, ordinances, and regulations. OWSI understands that this condition includes the Commission's grant of a certificate of public convenience and necessity and respectfully submits that the issuance of the actual Permit to Install prior to the Commission's decision in this case does no violence to the intent of the rule. However, if the Commission deems that a formal waiver is required to allow the application to proceed, OWSI respectfully requests a waiver of the requirement that final OEPA approval of the facilities described in the application be obtained after the certificate of public convenience and necessity has been granted.

Ohio Environmental Protection Agency

John R. Kasich, Governor
Mary Taylor, Lt. Governor
Craig W. Butler, Director

February 16, 2017

Chairman Asim Z. Haque
Public Utilities Commission of Ohio
Continental Plaza
180 East Broad Street
Columbus, Ohio 43215

RE: Aberlin Springs Development
General Correspondence
Surface Water Permit to Install
Warren County
8BU00127

Subject: Aberlin Spring Development, Permit to Install Approval

Dear Chairman Haque:

On September 12, 2016, Ohio Wastewater Systems Inc. submitted a permit to install application to the Ohio EPA, Southwest District Office. The permit to install application addressed a sewage collection and treatment system that will be owned and operated by a private utility company that will need to be permitted by the Public Utilities Commission of Ohio. Additional information on this application was provided by this proposed utility company on October 24, 2016, December 7, 2016, and January 20, 2017.

On February 7, 2017, the Ohio EPA approved the sewage collection and treatment system for Phase I of this proposed development. A copy of the permit to install and an engineering report addressing this sewage system is enclosed for your information. At this time, Ohio Wastewater Systems Inc. has the necessary Ohio EPA approvals to construct this private development.

If you have any questions or comments, please call me at (937) 285-6096.

Sincerely,

Ned Sarle
Environmental Specialist II
Division of Surface Water
Permits Section

Enclosure

ec: Ruth Campbell, WYCO
Bob Pickney, Adenus

NS/bp

Ohio Environmental Protection Agency

John R. Kasich, Governor
Mary Taylor, Lt. Governor
Craig W. Butler, Director

RECEIVED
OHIO EPA
FEB 09 2017
Southwest District

February 07, 2017

Ohio Wastewater Systems Inc
Attn: Bob Pickney
849 Aviation Parkway
Smyma, TN 37167

RE: Ohio Wastewater Systems Inc
Permit-Long Term
Surface Water Permit to Install
Warren County
DSWPTI1108487

Subject: Aberlin Springs On site cluster system - A new PUCO regulated utility, is to be created to own, operate and manage the waste water disposal system , Union Twp
Plans Received on September 12, 2016
Plans Revised on January 20, 2017
From: WYCO Consulting, Inc.

Ladies and Gentlemen:

Enclosed is an approved Ohio EPA Permit to Install. This permit contains several conditions and restrictions; I urge you to read it carefully. A general condition of your permit states that issuance of the permit does not relieve you of the duty of complying with all applicable federal, state, and local laws, ordinances, and regulations. You are hereby notified that this action of the Director is final and may be appealed to the Environmental Review Appeals Commission pursuant to Section 3745.04 of the Ohio Revised Code. The appeal must be in writing and set forth the action complained of and the grounds upon which the appeal is based. The appeal must be filed with the Commission within thirty (30) days after notice of the Director's action. The appeal must be accompanied by a filing fee of $70.00, made payable to "Ohio Treasurer Josh Mandel", which the Commission, in its discretion, may reduce if by affidavit you demonstrate that payment of the full amount of the fee would cause extreme hardship. Notice of the filing of the appeal shall be filed with the Director within three (3) days of filing with the Commission. Ohio EPA requests that a copy of the appeal be served upon the Ohio Attorney General's Office, Environmental Enforcement Section. An appeal may be filed with the Environmental Review Appeals Commission at the following address: Environmental Review Appeals Commission, 77 South High Street, 17th Floor, Columbus, OH 43215. If you have any questions, please contact the Ohio EPA District Office.

Ohio EPA has developed a customer service survey to get feedback from regulated entities that have contacted Ohio EPA for regulatory assistance, or worked with the Agency to obtain a permit, license or other authorization. Ohio EPA's goal is to provide our customers with the best possible customer service, and your feedback is important to us in meeting this goal. Please take a few minutes to complete this survey and share your experience with us at http://www.surveymonkey.com/s/ohioepacustomersurvey. If you have any questions, please contact the Ohio EPA district office to which you submitted your application.

Sincerely,

Kevin J. Fowler, Supervisor
Permit Processing Unit, Division of Surface Water

KJF/cm
Enclosure
CERTIFIED MAIL
cc: Southwest District Office
Warren County Combined Health District
WYCO Consulting, Inc.

RECEIVED
FEB 09 2017
Southwest District

Ohio Environmental Protection Agency

Permit to Install

Application No: 1108487

Applicant Name:	Ohio Wastewater Systems Inc
Address:	849 Aviation Parkway
City:	Smyma
State Zip:	TN 37167

Person to Contact:	Bob Pickney
Telephone:	615-220-7160

Description of Proposed Source: Aberlin Springs On site cluster system - A new PUCO regulated utility, is to be created to own, operate and manage the waste water disposal system, Union Twp, Warren County

Issuance Date: February 07, 2017
Effective Date: February 07, 2017

The above named entity is hereby granted a permit to install for the above described source pursuant to Chapter 3745-42 of the Ohio Administrative Code. Issuance of this permit does not constitute expressed or implied approval or agreement that, if constructed or modified in accordance with the plans included in the application, the above described source of environmental pollutants will operate in compliance with applicable state and federal laws and regulations. Issuance of this permit does not constitute expressed or implied assurance that, if constructed or modified in accordance with those plans and specifications, the above described source of pollutants will be granted the necessary operating permits. This permit is granted subject to the following conditions attached hereto.

Ohio Environmental Protection Agency

Craig W. Butler

Craig W. Butler
Director
P.O. Box 1049
50 West Town Street, Suite 700
Columbus, OH 43216-1049

This permit shall expire if construction has not been initiated by the applicant within eighteen months of the effective date of this permit. By accepting this permit, the applicant acknowledges that this eighteen month period shall not be considered or construed as extending or having any effect whatsoever on any compliance schedule or deadline set forth in any administrative or court order issued to or binding upon the permit applicant, and the applicant shall abide by such compliance schedules or deadlines to avoid the initiation of additional legal action by the Ohio EPA.

The director of the Ohio Environmental Protection Agency, or his authorized representatives, may enter upon the premises of the above named applicant during construction and operation at any reasonable time for the purpose of making inspections, conducting tests, examining records, or reports pertaining to the construction, modification, or installation of the above described source of environmental pollutants.

Issuance of this permit does not relieve you of the duty of complying with all applicable federal, state, and local laws, ordinances, and regulations.

Any well, well point, pit or other device installed for the purpose of lowering the ground water level to facilitate construction of this project shall be properly abandoned in accordance with the provisions of Section 3745-9-10 of the Ohio Administrative Code or in accordance with the provisions of this plan or as directed by the Director or his representative. For more information please contact: Division of Drinking and Ground Water - Lazarus Government Center, 50 West Town Street, Suite 700, Columbus, Ohio 43215 (614) 644-2752.

Any person installing any well, well point, pit or other device used for the purpose of removing ground water from an aquifer shall complete and file a Well Log and Drilling Report form with the Ohio Department of Natural Resources, Division of Water, within 30 days of the well completion in accordance with the Ohio Revised code Section 1521.01 and 1521.05. In addition, any such facility that has a capacity to withdraw waters of the state in an amount greater than 100,000 gallons per day from all sources shall be registered by the owner with the chief of the Division of Water, Ohio Department of Natural Resources, within three months after the facility is completed in accordance with Section 1521.16 of the Ohio Revised Code. For copies of the necessary well log, drilling report, or registration forms, please contact:

Ohio Department of Natural Resources
2045 Morse Road Bldg. E
Columbus, OH 43229-6693
(614) 265-6717

1. The proposed wastewater disposal system shall be constructed in strict accordance with the plans and application approved by the director of the Ohio Environmental Protection Agency. There shall be no deviation from these plans without the prior express, written approval of the agency. Any deviations from these plans or the above conditions may lead to such sanctions and penalties as provided for under Ohio law. Approval of these plans and issuance of this permit does not constitute an assurance by the Ohio Environmental Protection Agency that the proposed facilities will operate in compliance with all Ohio laws and regulations. Additional facilities shall be installed upon orders of the Ohio Environmental Protection Agency if the proposed sources are inadequate or cannot meet applicable standards.

Project Description: The project consists of constructing a septic tank effluent pump small diameter collection system for 22 individual homes and 6 accessory units. The ultimate development is for 142 individual homes and 41 accessory units. The treatment system will consist of a drip irrigation dosing tank with four dosing pumps, a wastewater storage lagoon and a multiple zoned drip irrigation system.

This permit to install applies only to the wastewater disposal system described above. The installation of drinking water supplies, air contaminant sources, or solid waste disposal facilities will require the submittal of a separate application to the director.

2. If the construction area for this project is one acre or more, or is part of a larger development that is one acre or more, the applicant must submit a Notice of Intent (NOI) for coverage under the general construction stormwater permit to Ohio EPA at least 21 days prior to the start of construction of this project.

3. For projects involving construction or placement of fill in a stream or wetland, the applicant shall contact the appropriate district of the U.S. Army Corps of Engineers for a determination regarding potential impacts to water of the state as well as the requirements for obtaining, if necessary, certification. The applicant shall acquire a Section 404 permit and 401 water quality certification, if needed, before impacting any waters of the state as part of this project.

4. This facility meets the definition of a class V injection well contained within paragraph (E) of rule 3745-34-04 of the Ohio Administrative Code. As required in the code, the permittee shall notify the director of Ohio EPA of the existence of any class V injection well within thirty days of installing the well. A UIC Inventory Form shall be completed and submitted to the Ohio EPA Division of Drinking and Ground Water. Forms can be obtained by visiting the Ohio EPA web site at http://www.epa.state.oh.us/ddagw/Documents/autoinvenform.PDF or contacting the Division of Drinking and Ground Water in the district offices.

5. The owner shall be responsible for proper operation and maintenance of the sewerage system.

6. For parallel installation, a minimum horizontal separation of 10 feet between pressure sewers and any existing or proposed potable water mains shall be maintained. The distance shall be measured edge to edge. Where pressure sewer lines cross existing or proposed water mains, the pressure sewer lines shall be laid below the water mains to provide a separation of at least 18 inches between the invert of the water main and the crown of the pressure sewer.

7. a. Consistent with the provisions in OAC 3745-42-13(F)(1)(b), a detailed description of the existing and proposed surface and subsurface drainage ways within twenty feet of the lagoon (i.e., surface drainage ways and subsurface tiles/drains) should be provided. This will help assess whether any preferential pathways may exist from the lagoon to surface or ground water.

8. b. The site geology and hydrogeology should be sufficiently characterized to identify the first significant zone of saturation that exists under the lagoon and drip irrigation fields. This characterization should be developed from data collected using subsurface investigatory methods such as borings and monitoring wells. This would also provide information to assist in the location and installation of permanent ground water monitoring wells as a part of the ground water monitoring plan.

9. c. A ground water monitoring plan should be submitted for review and approval no later than 60 days after the hydrogeologic investigation. The ground water monitoring plan should include a sampling and analysis plan and a statistical analysis plan. The PTI approval is contingent on approval of the ground water monitoring plan.

10. d. The ground water monitoring plan should be consistent with the provisions in OAC 3745-42-13(L)(4), including:

i. The monitoring well network should include one well upgradient from the lagoon and fields, and at least two wells downgradient of the lagoon and fields. More wells may be needed, depending on the area to be monitored and ground water flow direction.

ii. The wells should be installed and developed in accordance with Ohio EPA's Technical Guidance Manual for Hydrogeologic Investigations and Ground Water Monitoring (Ohio EPA's TGM).
iii. The wells shall be sampled in accordance with Ohio EPA's TGM. They should be sampled semi-annually for parameters collected in the field (pH, specific conductance, temperature, turbidity, ORP) and sent to a laboratory for analysis (ammonia, E. coli or total coliform, nitrate-nitrogen plus nitrite-nitrogen, chloride.
iv. An annual report should be submitted to Ohio EPA that contains a potentiometric map and the sampling results for all required wells and constituents. Statistical analysis of the ground water monitoring data should be conducted.

11. Provisions shall be made for proper operation of the wastewater pumping facilities.

12. This permit applies only to the proposed wastewater disposal system. All other aspects of the proposed projects must be approved by the Ohio Department of Health , the local health department, and/or other state and local agencies.

13. This permit applies to a wastewater disposal system designed to serve an average daily hydraulic flow of no more than 7200 gallons.

14. Roof drains, foundation drains, and other clean water connections to the disposal system are prohibited.

15. No liquids, sludges, or toxic or hazardous substances other than those set forth in the approved permit shall be accepted for disposal without the prior written approval of the Ohio Environmental Protection Agency.

16. Sewer and manhole construction joints shall conform to standards of the Ohio Environmental Protection Agency.

17. When flexible pipe (PVC, ABS, HDPE, etc.) is used it must be tested for maximum deflection of 5 percent after the final backfill has been in place no less than 30 days to permit stabilization of the soil-pipe system. Pipe with a stiffness of 200 p.s.i. or greater need not be tested for deflection if all pipe between manholes is less than 12 feet below final grade.

The rigid ball or mandrel used for the deflection test shall have a diameter not less than 95 percent of the base inside diameter or average inside diameter of the pipe depending on which is specified in the ASTM specification, including the appendix, to which the pipe is manufactured. The test shall be performed without mechanical pulling devices.

All pipe, flexible and rigid, shall be subject to a leakage test. The leakage exfiltration/infiltration test shall be a hydrostatic or air test. The hydrostatic leakage test shall not exceed 100 gallons per inch of pipe diameter per mile per day for any section of the system. If an air test is used, the test shall conform to the test procedure outlined in the ASTM standards for the material of pipe used.

The leakage and deflection test shall be conducted under the supervision of a professional engineer. A representative of the professional engineer may supervise the deflection and leakage tests, but the professional engineer must sign off on the results of the deflection and leakage tests. Results of the deflection and leakage tests shall be kept on file at least 180 days by the entity responsible for the sewerage system, and shall be available upon request by the Ohio Environmental Protection Agency. Any lines which fail the deflection or leakage test must be repaired and retested until they meet the requirements which have been set forth within this condition.

18. The applicant shall notify the Ohio Environmental Protection Agency if the applicant does not continue as the sole user of the sewage disposal system.

19. The Southwest District office of the Ohio Environmental Protection Agency shall be notified in writing as to (a) the construction starting date; (b) the construction completion date; and (c) the date the wastewater disposal system was placed into operation.

20. The permit to install is not an authorization to discharge pollutants to waters of the state. Pursuant to Chapter 6111 of the Ohio Revised Code, the applicant shall apply for a permit to discharge (NPDES) 180 days prior to any discharge of pollutants to waters of the state.

21. Fugitive dust generated by this sewer construction project shall be controlled as specified in OAC 3745-17-08 (B).

Report on Detail Plans
Sewage Collection and Treatment System
Aberlin Springs On-Site Cluster System
Union Township, Warren County

Detail plans for the proposed sewage collection and treatment system for the Aberlin Springs development (Aberlin Springs) were received on September 12, 2016 from Ohio Wastewater Systems Inc. Revisions were received on October 24, 2016; December 7, 2016; and January 20, 2017.

The site is located at 3470 Snook Road, Union Township, Warren County. The site consists of 141 acres and is served by central water. The proposed sewage collection and treatment system will provide sewage treatment for Aberlin Springs. Ohio Wastewater Systems Inc. will be a PUCO permitted entity. Ohio Wastewater Systems Inc. will operate and maintain the sewage collection and treatment system.

The detail plans are satisfactory and it is recommended that they be approved.

Ned Sarle
Permits Group
Division of Surface Water

Joseph Miller
Permits Supervisor
Division of Surface Water

Project Sewage Collection System

Aberlin Springs will be developed in four phases. This approval is for phase 1. The sewage collection and treatment system for phase 1 is being designed to treat 7200 gpd average daily design flow. Sewage will be generated from 22 individual homes (300 gpd/home) and 6 accessory units (100 gpd/accessory). The total development will consist of 142 homes and 41 accessory units and will generate 46,700 gpd of sewage. For phase I, a total of 2923 feet of 4 inch PVC pipe will be used for the septic tank effluent pumping collection system. A 10,000 gallon septic tank is proposed as part of this sewage collection system and will serve 10 individual homes. Warren County will be the permitting authority for the individual home laterals including the 1500 gallon septic tanks used for each individual home. The collected sewage will be directed to the on-site cluster septic system.

Proposed On-site Cluster Septic System

The on-site cluster septic system will consist of a 15,000 gallon dosing tank and a control building containing the four drip irrigation pumps. Excess flow will be directed to a wastewater storage lagoon. The wastewater will be ultimately treated using a drip irrigation system.

Drip Irrigation Dosing Tank and Control Building

The drip irrigation dosing tank will provide 15,000 gallons of wastewater storage. The tank will measure 20 feet x 10 feet x 10 feet. The wastewater will be pumped via four 50 gpm pumps at 86.2 TDH. These pumps will be located in a control building. Excess wastewater will be directed by a gravity sewer to a wastewater storage lagoon.

Wastewater Storage Lagoon

The wastewater storage lagoon will be lined with two feet of clay. The constructed liner will have a hydraulic conductivity of 4.0 E^{-6} cm/sec and will be compacted to 98% Proctor Standard and a moisture content between 15.7% to 19.7%. The storage lagoon will provide 226,198 cubic feet of storage capacity based on the maximum storage elevation. This will provide 37 days of storage based on the total average daily design flow for this development. Wastewater will be pumped back to the drip irrigation dosing tank.

Drip Irrigation System

The drip irrigation system will be constructed in four phases. A total of 30 drip irrigation zones will be constructed for the development. The drip irrigation will use 18 zones while the 12 remaining zones are resting. The basal loading is based on 0.3 gpd/ft^2, and a linear loading rate of 6.0 gpd/ft. Each zone will consist of 4400 feet of drip irrigation. The drip irrigation will be constructed in the following manner:

Phase	Design Flow	Length of Drip Irrigation Added	Number of Zones Added
I	7200 gpd	13,200 feet	5
II	10,400 gpd	17,600 feet	7
III	12,700 gpd	22,000 feet	9
IV	16,400 gpd	26,400 feet	9
Total	46,700 gpd	132,000 feet	30

Ground Water

The wastewater storage lagoon and drip irrigation site will be required to be monitored using a minimum of three ground water monitoring wells. This requirement is detailed in the Permit to Install conditions. The ground water monitoring system must be implemented prior to any sewage being generated at the site.

Estimated Cost

Wastewater Collection and Treatment System = $ 300,000

Construction Schedule

Begin Construction	January 18, 2017
Complete Construction	June 30, 2017
Final Compliance	June 30, 2017

EXHIBIT 17
Ohio Adm.Code 4901:1-15-05(D)(17)

Construction and Installation Schedule

Ohio Adm.Code 4901:1-15-05(D)(17) and its subparagraphs require applicants for a certificate of public convenience and necessity to submit a proposed construction and installation schedule indicating, in days, the expected elapsed time between the issuance of the certificate and the start of active and continued construction of the facilities described in the application, the time between the commencement of such construction and the in-service date of the facilities, and a statement that the sewage disposal system facilities necessary to provide adequate serve to the entire area for which the certificate is sought will be completed by the scheduled in-service date, unless work is interrupted by weather or by other conditions beyond applicant's control.

As previously explained, under its agreement with OWSI, the Developer is responsible for the construction and installation of the collection system, including the in-tank equipment, service connections, mains, and lift stations, and will subsequently convey these facilities to OWSI once the required inspection has been completed and the results accepted by OWSI. The Developer is not a public utility and is constructing the collection system on its own property. Under these circumstances, the construction of the collection system is not jurisdictional, and, accordingly, the Developer commenced construction of the collection system necessary to serve Phase 1 of the Aberlin Springs project shortly after the OEPA approved the plans and issued the Permit to Install. The Developer is performing this work in conjunction with its construction of other elements of infrastructure required for Phase 1 of the project, including the tanks and water valves that will ultimately become the property of the purchasers of the home sites, and will continue to install additional collection facilities as subsequent phases of the Aberlin Springs subdivision are developed.

OWSI, which is responsible for the construction of the treatment and disposal facilities, will commence active and continued construction of these components of the system necessary to provide sewage disposal service to the Aberlin Springs subdivision immediately upon issuance of the certificate of public convenience and necessity. OWSI anticipates that the facilities required to provide service to Phase 1 of the Aberlin Springs subdivision will be completed no more the 60 days from the date construction commences and, potentially, sooner than 60 days from that date, and states that, unless work is interrupted by weather of other conditions beyond OWSI's control, the work will be completed not later than 60 days from the date construction commences.

OWSI notes that the rule appears to suggest that the facilities necessary to provide adequate service to the entire service area for which the certificate is sought must be in place before service can commence. The septic lagoon storage basin, the filtration system, and the control building will be completed in their entirety before service commences, but the drip irrigation system that will be constructed and installed by the time service commences will have the capacity to provide disposal service for 70 lots, which will be more than adequate to serve Phase 1 and Phase 2 of the Aberlin Springs project. The construction and installation of the additional drip distribution

disposal facilities required to serve the subsequent phases of the development will be synchronized with the customer requirements of each subsequent phase to avoid having facilities that are underutilized or would stand idle for an extended period of time. There will also be relatively minor incremental additions to the control system, pumps, and external wiring initially installed in each subsequent phase of the project. Thus, although, consistent with its agreement with the Developer, OWSI seeks authority to serve the entire Aberlin Springs subdivision through its application in this case, OWSI respectfully submits that it would be unreasonable to expect OWSI to construct and install all the facilities necessary to serve the entire Aberlin Springs subdivision as currently planned (or as may be subsequently expanded) as a condition of commencing service to Phase 1 customers. OWSI warrants that, as shown on the letter from the engineer contained in this exhibit, all the drip distribution disposal facilities necessary to serve customers in subsequent phases of the development will be in place when required to meet the needs of such customers, and is more than willing to provide reports to the Commission staff when additional construction is undertaken for this purpose. Thus, OWSI submits that its planned construction schedule is in substantial compliance with the rule. However, if the Commission deems that a formal waiver is required, please consider this to be a request for waiver of the requirement that all facilities necessary to serve the entire service area must be in place before service can commence.

WYCO Consulting, Inc.
Civil Engineering
Surveying
Land Development

Aberlin Springs Drip Distribution
Union Township, Warren County, Ohio
January 31, 2017

Drip Distribution Phasing

Phase	1	2	3	4
Required GPD/Phase	7,200	10,400	12,700	16,400
Fields Per Phase Provided	5	7	9	9
Number of Field Active	3	4	5	6
L.F. of Drip Line Active	13,200	17,600	22,000	26,400
Capacity Provided per Phase	7,920	10,560	13,200	15,840
Number of Fields for Resting	2	3	4	3
L.F. Drip Line Resting	8,800	13,200	17,600	13,200
Capacity at Rest	5,280	7,920	10,560	7,920
Phase	1	2	3	4
Cumulative Required Capacity	7,200	17,600	30,300	46,700
Total Fields	5	12	21	30
Total Active Fields	3	7	12	18
Total L.F. Active	13,200	30,800	52,800	79,200
Capacity of Active Fields	7,920	18,480	31,680	47,520
Total Resting Fields	2	5	9	12
Total L.F. Resting	8,800	22,000	39,600	52,800
Total Capacity at Rest	5,280	13,200	23,760	31,680
Percent Resting	40.00%	41.67%	42.86%	40.00%

Note that Capacity of Active Fields always exceeds the Cumulative Required Capacity.
Note that Percent Resting always exceeds 40%.

Ruth H. Campbell

Ruth H. Campbell, PS, PS

WYCO Consulting Inc. • 10 Stadia Drive • Franklin, Ohio 45005 • (937)743-9926 • Email:ruth@wycoconsulting.com

EXHIBIT 18
Ohio Adm.Code 4901:1-15-05(D)(18)

Statement of Public Need

Ohio Adm.Code 4901:1-15-05(D)(18) requires that applicants for a certificate of public convenience and necessity provide a statement averring that there is "a present and continuing need by the public in the area encompassed by the application for facilities and services of the type which applicant proposes to provide." OWSI states that the area it proposes to serve is rural in character and that sewer service is not presently available in this areas. As homes are constructed in the Aberlin Springs development, there will be an existing and continuous public need for the sewage disposal service OWSI proposes to provide.

EXHIBIT 19
Ohio Adm.Code 4901:1-15-05(D)(19)

Statement of Lack of Alternative Providers

Ohio Adm.Code 4901:1-15-05(D)(19) requires applicants for a certificate of public convenience and necessity to submit a statement evidencing that "no existing agency, publicly or privately owned or operated, would or could economically and efficiently provide the facilities and services needed by the public in the area which is the subject of the application." As noted in Exhibit 18, no public or private entity currently provides sewage disposal service in the proposed service area, and OWSI would suggest that the fact that the Developer of the Aberlin Springs subdivision has contracted with OWSI to establish sewage disposal service for its residents is clear evidence that no existing public or private entry could economically and efficiently provide sewer service to the area in question.

In this connection, OWSI would further note that the Developer could have selected another private company to design, install, and operate the sewage disposal system required to serve the Aberlin Springs subdivision. Thus, the fact that the developer selected OWSI reflects the developer's judgment that OWSI can economically and efficiently meet the sewage disposal needs of the Aberlin Springs' residents as well as enhancing the agricultural enterprise that is central to the farm-to-table concept.

EXHIBIT 20
Ohio Adm.Code 4901:1-15-05(D)(20)

Statement of Public Convenience

Ohio Adm.Code 4901:1-15-05(D)(19) requires applicants for a certificate of public convenience and necessity to submit a statement "describing the public convenience to be served by means of granting a certificate of public convenience and necessity to applicant, and a list of the counties and any municipal corporations proposed to be served in whole or in part."

Granting the certificate of public convenience and necessity requested by OWSI will promote the orderly development of the Aberlin Springs subdivision encompassed by OWSI's proposed service area. Because the collection system necessary to provide safe and reliable service to the home sites within each phase of the Aberlin Springs project will be installed before the first customer in each phase is served, the increasing requirements for sewage disposal service as homes are added will be met without disrupting the environment or creating aesthetic concerns. Further, as described in the application, the public convenience also will be served because the capability to dispose of wastewater through multiple drip irrigation zones will permit the farm to utilize the potential of the soils in those zones to the best advantage in growing produce and feed for livestock for the farm-to-table community.

The Aberlin Springs subdivision to be served by OWSI is located in an unincorporated area in Union Township, Warren County, Ohio.

EXHIBIT 21
Ohio Adm.Code 4901:1-15-05(D)(21)

Proposed Legal Notice

Ohio Adm.Code 4901:1-15-05(D)(21) requires applicants for a certificate of public convenience and necessity to submit a proposed legal notice of the filing of the application that complies with the requirements of Ohio Adm.Code 4901:1-15-04(2)(d)(i)-(v). OWSI submits the following proposed legal notice for approval by the Commission. OWSI requests that it be authorized to accomplish notice by newspaper publication as provided in Ohio Adm.Code 4901:1-15-04(C)(2)(a).

Legal Notice

Notice is hereby given that Ohio Wastewater Systems, Inc. (OWSI), 851 Aviation Parkway, Smyrna, TN 37167 has filed an application with the Public Utilities Commission of Ohio (Commission) in Case No. 17-616-ST-ACE requesting that it be granted a certificate of public convenience and necessity to provide sewage disposal service to residents of the new Aberlin Springs subdivision located on Snook Road in Union Township, Warren County, Ohio. As set forth in the proposed tariff submitted with the application, OWSI proposes to charge a flat monthly rate of $58.00 for sewage disposal service, a late payment fee of 1.5 percent of the current bill for bills that are not paid within 15 days, a credit card convenience fee of 3 percent of the bill for accepting payment by credit card, a reconnection fee of $95.00 to restore service that has been disconnected for cause, and a dishonored check charge of $35.00 for checks returned unpaid.

Any person or entity affected by the application may file comments with the Commission setting forth the nature of their interest in the application and requesting that a hearing be held in this matter. Comments must be filed with the Commission on or before the fourteenth day from the date of publication of this notice. If the Commission deems that a hearing is required, the Commission will set the time and place for such hearing. If the Commission determines that a hearing is unnecessary, the Commission will decide the case on the basis of the information contained in the application and the affidavits and information submitted by OWSI.

For additional information regarding this matter, contact the Commission at 180 East Broad Street, Columbus, OH 43266-0573, view the Commission's website at http://www.puco.state.oh.us, or call the Commission at 1-800-686-7826 or 7-1-1 (Ohio Relay Service) for the hearing or speech impaired.

EXHIBIT 22
Ohio Adm.Code 4901:1-15-05(D)(22)

Affidavit

STATE OF TENNESSEE)
) ss:
COUNTY OF RUTHERFORD)

The undersigned, Charles Hyatt, being first duly cautioned and sworn, states that he is the President of Ohio Wastewater Systems, Inc., the applicant in this proceeding.

Affiant further states that he has examined the foregoing application for a certificate of public convenience and necessity and the exhibits thereto and that the information presented therein is true and accurate to the best of his knowledge and belief.

Affiant further states that he is duly authorized to represent that said application and exhibits are adopted by Ohio Wastewater Systems, Inc. in furtherance of its request for authority to provide the service described in the application.

FURTHER, AFFIANT SAYETH NOT.

Charles Hyatt
President, Ohio Wastewater Systems, Inc.

Sworn to before me and subscribed in my presence this 27th day of February, 2017.

Notary Public

My Commission Expires: 02/20/2018

SUSAN R. CHA
STATE OF TENNESSEE NOTARY PUBLIC
RUTHERFORD COUNTY

CERTIFICATE OF SERVICE

I hereby certified that a copy of the foregoing application has been served upon the following by U.S. Priority Mail, postage prepaid, this 1st day of March 2017.

Barth E. Royer

Craig W. Baker
Director
Ohio Environmental Protection Agency
P.O. Box 1049
50 West Town Street
Suite 700
Columbus, OH 43216-1049