



SINGULAIR® BIO-KINETIC®

WASTEWATER TREATMENT SYSTEM

TANK PUMPING INSTRUCTIONS

These instructions provide a general guideline concerning when and how to pump out the Singulair system. This literature supplements other instructional materials included in the Singulair Bio-Kinetic System Service Manual.

In order to maximize performance, protect system components and insure protection of the surrounding environment, the Singulair system should be thoroughly checked every six months by a factory-trained Norweco service technician. An initial service program that provides a minimum of four service inspections during the first two years of system operation is included in the system purchase price. Renewable service contracts to extend these routine inspections after the initial program expires are available from the local licensed Norweco distributor.

The pretreatment chamber of the Singulair system will periodically require pumping. Because the Singulair system is a biological treatment device, the time frames listed within these instructions are estimates. Actual pumping frequency will depend on the amount and strength of the wastewater being treated.

Handling and disposal of pretreatment chamber contents, referred to as septage, or the contents of the aeration and clarification chambers, referred to as biosolids, are regulated by local, state and federal authorities. Disposal options may include land application, lagoon treatment, municipal wastewater treatment or landfill disposal. Prior to arranging for tank pumping, contact the Norweco distributor to obtain complete information on access to chambers, removing equipment, coordination of services and disposal of tank contents.

During Singulair system installation and backfilling, do not allow dirt or mud to enter the system. Once in the system, dirt or mud will form a heavy sludge which will affect settling characteristics, interfere with filtration and degrade effluent quality. If dirt or mud enters the system, it must be removed to insure proper system operation. Removing the dirt or mud may require repeated flushing and tank pumping. For additional details refer to Singulair Tank Delivery and Setting instructions.

INTRODUCTION

The Singulair system is a biological treatment device and should not require pumping as frequently as a septic tank. Septic tanks are designed to store solids and perform limited biological treatment. Frequent pumping of a septic tank is mandatory to remove and dispose of these solids before they discharge from the tank. The Singulair system is designed to biologically treat all incoming wastewater and return only a high quality effluent to the environment. The multiple operating processes contained within the plant accomplish primary, secondary and tertiary treatment in each Singulair system. The pretreatment chamber of the Singulair system is designed to retain non-biodegradable solids and allow biodegradable solids to flow into the aeration chamber. The aerobic treatment process in the Singulair system utilizes these biodegradable solids to convert the wastewater into carbon dioxide and water. This natural biological process minimizes the accumulation of solids and eliminates the need to pump the system as frequently as a septic tank. Because the Singulair system utilizes the biodegradable material found in wastewater to perform biological treatment, pumping the system more often than needed will not improve operational performance. Removal of the solids in the Singulair system will be required when indicated by an inspection or evaluation as outlined herein.

WHEN TO PUMP

Norweco distributors provide maintenance and service inspections free of charge at regular six month intervals during the initial warranty period. These routine service inspections will determine if a pretreatment chamber evaluation is necessary. The pretreatment chamber should be evaluated by a factory-trained technician at least every three years to determine if pumping is required. Pumping of this chamber by a licensed tank pumping and disposal service will likely be necessary at 3 to 5 year intervals, based on variations in system occupancy, usage and loading.

ROUTINE SERVICE INSPECTIONS

Semi-annual service inspection procedures are outlined in detail in the Singulair Bio-Kinetic System Service Manual. These routine service procedures include inspection of the aeration chamber, clarification chamber and effluent line to determine if the pretreatment chamber should be evaluated. A brief outline of these routine service procedures, as well as the detailed steps required to perform a comprehensive pretreatment chamber evaluation, are listed here. The results of the routine service inspection, pretreatment chamber evaluation and tank pumping (when performed) should be noted on the Service Inspection Card.

AERATION CHAMBER INSPECTION

A summary of the aeration chamber inspection procedure is listed below. For complete details on aeration chamber service, refer to the Singulair Service Manual.

CAUTION: Any time an aerator or service pump is connected or disconnected, first shut off the selector switch in each Singulair control center. Failure to do so could result in personal injury or equipment damage.

1. Remove the vented concrete aeration chamber access cover and set aside.
2. Unplug the aerator and secure the closure cap in position to protect the electrical connector. Remove one end of the drip shield, and leave the other end attached to the aerator air intake.
3. Lift the aerator straight up out of the access opening and lay it flat on the vented cover. DO NOT bump the aspirator shaft or rest the aerator on the aspirator shaft.
4. Perform a settleable solids test using a graduated cone or other clear container. For this test, an aeration chamber sample should be collected within 2-3 minutes after turning off the aerator. See "Settleable Solids Test" section of these instructions for details.

5. Loosen the two set screws on the bottom of the intermediate shaft and remove the aspirator shaft.
6. Clean any debris from the aspirator shaft and flush the inside of the shaft with a hose.
7. Visually check the aeration chamber surface for the presence of grease or oil. An accumulation of these materials indicates the pretreatment chamber should be evaluated.
8. Check the aeration chamber for the presence of non-biodegradable materials, paper, mop fibers, hair, grease or oil. A significant accumulation of these materials in the aeration chamber indicates the pretreatment chamber should be evaluated.

Repeat steps 1-8 for Singulair systems with multiple aeration chambers and aerators.

NOTE: Do not replace the aerator(s) until the Bio-Kinetic system(s) have been removed from the clarification chamber and properly serviced.

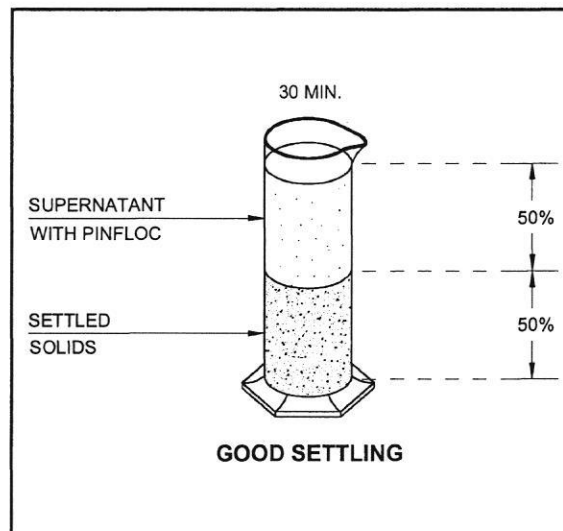
SETTLEABLE SOLIDS TEST

A settleable solids test should be conducted as part of the aeration chamber evaluation during each routine service inspection to monitor system performance.

Using a graduated cone or other clear container, dip into the aeration chamber to a depth of 2 ½ feet and collect a sample of the liquid. Collect this sample within 2-3 minutes after turning off the aerator, before the aeration chamber contents begin to settle. Set the container on a level surface and allow the solids to "settle" for 30 minutes while you complete the service inspection. The container should not be disturbed during the test.

After 30 minutes, read the level of solids and compare it with the total liquid volume in the container. Calculate the

percentage of settled solids volume (i.e. ½ full of solids equals 50%). If the settled material contains large pockets of clear liquid, estimate the volume of these pockets and reduce the settled solids reading by that amount. A settled solids reading of up to 75% indicates no adjustments are necessary. Note : The solids should settle and compact within the 30 minute test. System start-up, or periods of low organic loading will result in solids that are too light to settle, and will appear as a full container with no clear separation. This should not be interpreted as having excess solids and system operation can continue without adjustment.



A settled solids level greater than 75% indicates excessive solids in the aeration chamber and that the pretreatment chamber may need to be pumped. In this case, a pretreatment chamber evaluation must be performed. Refer to the "Pretreatment Chamber Evaluation" section of these instructions for more details. If the pretreatment chamber evaluation indicates pumping is not required, the aerator operating cycle should be increased. Consult the local regulatory agency and the Singulair Time Clock Setting Instructions before adjusting the aerator operating cycle.

In Singulair systems with more than one aerator, the settleable solids test should be conducted on a sample from each aeration chamber. The results of all tests should be averaged to determine the appropriate course of action. If test results indicate an aerator time cycle adjustment is necessary, adjust each time clock to operate on identical run cycles.

The results of the settleable solids test, and any adjustment made to the system time cycle, should be recorded on the Service Inspection Card.

CLARIFICATION CHAMBER INSPECTION

A summary of the clarification chamber inspection procedure is listed below. For complete details on clarification chamber service, refer to the Singulair Bio-Kinetic System Service Manual.

1. Remove the concrete Bio-Kinetic system access cover and set aside.
2. Remove the Bio-Sanitizer and Bio-Neutralizer feed tubes if the Bio-Kinetic system is so equipped. Do not allow the tubes to touch.
3. Lower the rigid end of the service pump suction hose into the rectangular opening in the flow deck.
4. Place the service pump flexible discharge hose into the aerator mounting casting.
5. Begin pumping the contents of the Bio-Kinetic system into the aeration chamber.
6. Place the lifting tool under the lifting handles. As the Bio-Kinetic system begins to rise, guide the unit straight up. Do not allow the Bio-Kinetic system to tilt or rub against the tank opening.
7. As the Bio-Kinetic system becomes fully buoyant and rises near the top of the mounting casting, unplug the pump and set it aside with the pump suction and discharge hoses.
8. Remove the de-watered Bio-Kinetic system from the mounting casting. Set the system on the upside down lid of the service container.

NOTE: Repeat Steps 1-8 for clarification chambers with multiple Bio-Kinetic systems.

9. Reinstall the Singulair aerator(s) as outlined in the Singulair Aerator Service Instructions. The aerator(s) must be in operation while the remaining clarification chamber service is performed.
10. Check the surface of the clarification chamber for the presence of grease or biologically untreatable material. A significant accumulation of these materials would indicate that the pretreatment chamber should be evaluated.
11. With the aerator running, use the hopper scraping tool to gently scrape each wall of the hopper. Move the tool all the way down to the bottom of the clarification chamber, gently scraping the wall.
12. Complete the clarification chamber service as outlined in the "Clarification Chamber" section of the Singulair Bio-Kinetic System Service Manual.
13. Make appropriate notations on the Singulair Service Inspection Card and on the Owner's Manual.

EFFLUENT LINE INSPECTION

Check the groundwater relief point installed in the effluent line to make sure it is free of obstruction. An accumulation of paper, fibers, hair or grease indicates that the Singulair system needs to be pumped. If there is a surface discharge point, make sure that it is free of debris, foam, mud, etc. Make appropriate notations on the Service Inspection Card.

PRETREATMENT CHAMBER EVALUATION

The pretreatment chamber must be evaluated within three years of system startup or the most recent tank pumping. An evaluation must also take place any time a routine service inspection indicates the chamber may be discharging excessive solids. This evaluation includes measuring the depth of the floating scum and settled sludge layers to determine if pumping is required. If the pretreatment chamber evaluation indicates the chamber does not require pumping, these evaluations should be repeated annually until pumping is necessary.

PRETREATMENT CHAMBER INSPECTION

A complete pretreatment chamber inspection procedure is listed below. The results of the inspection should be noted on the Service Inspection Card.

1. If the pretreatment chamber access opening is not equipped with a riser and cover at grade, dig down to the access opening in the top of the tank. The opening is in line with the access opening for the aeration chamber and the system outlet. The access cover should not be more than 12" below grade.
2. Remove the cover(s) and be careful not to allow dirt or mud to enter the tank.
3. Visually check the surface of the pretreatment chamber for an accumulation of grease, oil or non-biodegradable materials.
4. Using the hopper scraping tool, gently probe the surface of the chamber to determine the thickness of the scum mat. Force the tool down through the scum mat, rotate the tool one quarter turn, then raise it until the bottom of the mat is felt. If the depth of the floating scum layer has reached the bottom of the discharge tee, the chamber should be pumped.
5. To check the depth of the settled sludge layer, secure a rough white towel to the handle of the hopper scraping tool and lower it to the bottom of the chamber.

Lower the tool behind the discharge tee (baffle) to avoid floating particles. Push the tool through the settled sludge layer to the bottom of the tank. Wait several minutes and carefully remove the tool. The depth of the settled sludge layer will be shown by a dark line on the towel. If the settled sludge layer has accumulated to the bottom of the discharge tee, the chamber should be pumped.

Review the "Operational Requirements" section of the Owner's Manual with the owner. If lint, grease, scouring pads, diapers, sanitary napkins, cotton balls, cotton swabs, cleaning rags, dental floss, strings, cigarette filters, rubber or plastic products, paints, thinning agents or other harsh chemicals are discovered in the system, the owner should be cautioned regarding proper use of the system.

WHAT TO PUMP

When pumping is required, normally it is necessary to pump only the pretreatment chamber if the Singulair system has been serviced at regular 6-month intervals. If service has been interrupted for an extended period of time, or if mud or toxic material is present, it may be necessary to pump out the entire system. When pumping, it is not necessary to wash down the compartments unless significant quantities of grease, hair, fibers, mud, toxic substances or biologically untreatable materials are present. The following chart provides volumetric capacities within each Singulair system:

SYSTEM CAPACITY		
Singulair Model	Pretreatment Chamber	Total System
500 GPD	450 Gallons	1300 Gallons
750 GPD	550 Gallons	1600 Gallons
1000 GPD	1000 Gallons	2300 Gallons
1250 GPD	1250 Gallons	2850 Gallons
1500 GPD	1500 Gallons	3400 Gallons

HOW TO PUMP THE SINGULAIR SYSTEM

A complete Singulair system pumping procedure is listed below. Prior to tank pumping, contact the Norweco distributor to obtain complete information on equipment removal and reinstallation.

1. If any portion of the Singulair system requires pumping, contact a tank pumping service licensed by the local regulatory agency. The septage or biosolids from the system must be removed and disposed of in a manner consistent with federal, state and local regulations.
 2. Refer to the "System Capacity" table and advise the pumping service what volume of liquid is to be removed from the system.
 3. For pumping the pretreatment chamber only, remove the pretreatment chamber access cover and insert a suction hose into the chamber. Lower the hose until it contacts the bottom of the tank. Withdraw the hose approximately 2" and connect the opposite end to the pump being used to evacuate the chamber.
 4. Break up the scum mat to facilitate pumping. Activate the pump and remove the pretreatment chamber contents. It is not necessary to wash down the sidewalls or tank bottom.
 5. If the solids in the chamber are so concentrated that the suction hose cannot withdraw them, tank contents may be back-flushed to break up the solid matter.
 6. If special circumstances require the total system to be pumped, contact the local Norweco Singulair distributor. Each aerator and Bio-Kinetic system must be removed for full access to all chambers and to prevent damage to components.
- Note: Access to the contents of the aeration and clarification chambers of Singulair systems should be made only through an aerator mounting casting. Never insert the hose through the Bio-Kinetic system mounting casting.
7. A Singulair system that has been inactive for an extended period of time or that has accumulated mud or dirt during installation may have to be washed down with fresh water and pumped out. This process may have to be repeated for proper system operation.
 8. After pumping, fill all chambers to capacity with water. Return all aerators, Bio-Kinetic systems and access covers to their proper locations, as outlined in the Singulair Service Manual. Be sure each control center selector switch is in the "automatic" position, and each enclosure is secured with a tamper evident seal.

Following tank pumping, no system adjustments are necessary for biological treatment to continue. Semi-annual service inspections by a factory-trained Norweco service technician should be conducted to insure long term system performance.

DISTRIBUTED LOCALLY BY:



220 REPUBLIC STREET
NORWALK, OHIO, USA 44857-1196
TELEPHONE(419)668-4471
FAX(419)663-5440

Norweco®, Singulair®, Modulair®, Travalair®, Microsonic®, Lift Rail®, Posaprime®, Bio-Kinetic®, Bio-Sanitizer®, Bio-Neutralizer®, and Bio-Static® are registered trademarks of Norwalk Wastewater Equipment Company, Inc.

©MCMXCVII NORWECO, INC.

System Component #2 – Absorption Area Dose Tank & Pump



MEMBER N. C. B. V. A.

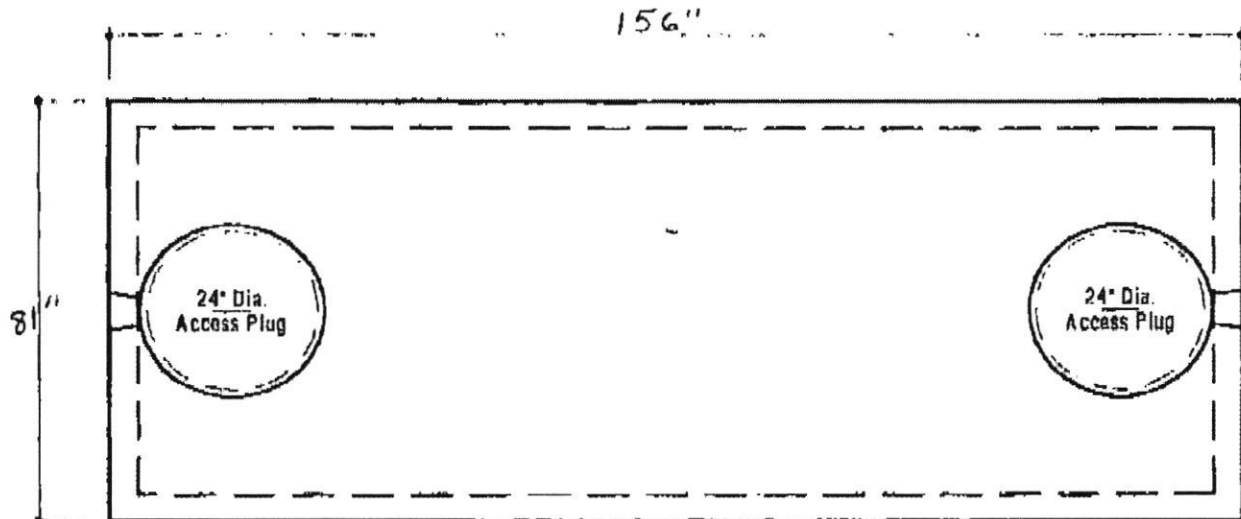
MEMBER P. C. B. V. A.



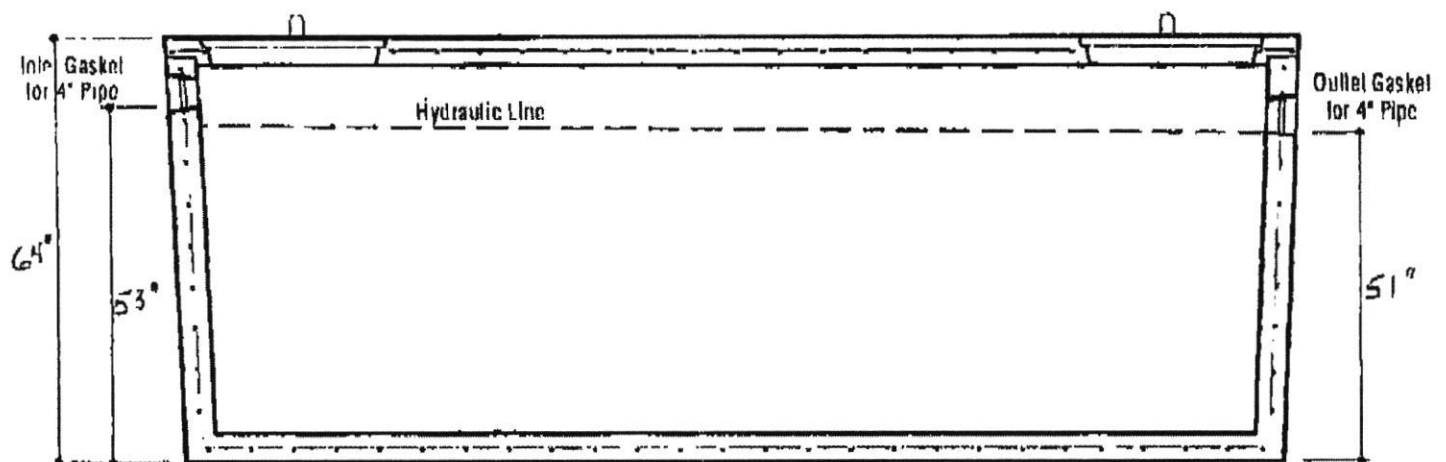
PHONE:
410-848-0393
FAX:
410-848-3551

Burial Vaults - Septic Tanks
2000 GALLON SEPTIC OR PUMP TANK

925 WAKEFIELD VALLEY ROAD
NEW WINDSOR, MD 21776



Top VIEW



side view

Design Data + General INFO.

- (1) Concrete Strengths = 6000 psi @ 28 days
- (2) Cement PORTLAND Type III per ASTM C-150-92
- (3) Admixtures - Plasticizers per ASTM C-260-86 & C-494-92
- (4) Reinforcing per ASTM A-185 min 1-1/2 inch cover
- (5) Top SLAB SEALED with Butyl Tape
- (6) 4" walls, bottom, Top



EFFLUENT DRIP PUMP Model Series: PUTURB15

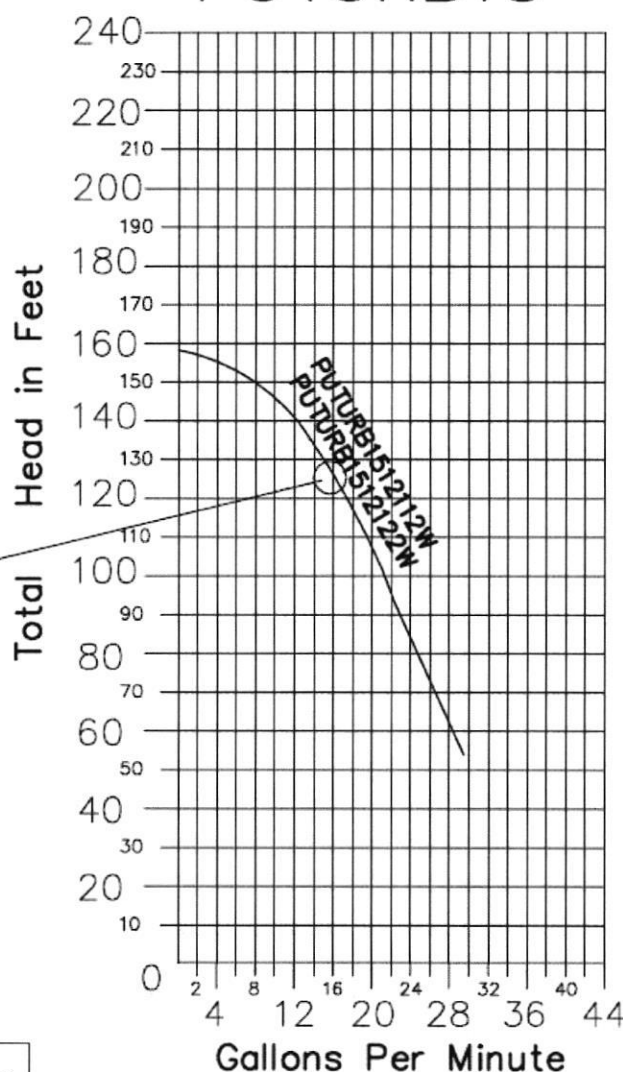
FEATURES

- ◆ **Non-Metallic Parts are Effluent Compliant:** Impellers, diffusers constructed of glass filled polycarbonate or Noryl, engineered composites. Both materials are corrosion resistant.
- ◆ **Bearing Discharge Head:** State of the art engineered composite material for superior strength and corrosion resistance. Loop for safety line molded into head.
- ◆ Warranted for one year against failure due to workmanship and materials.
- ◆ **Stainless Steel Casing:** Polished stainless steel is attractive and durable in the most corrosive effluent.
- ◆ **Hex Shaft Design:** Six sided shafts for positive impeller drive.
- ◆ **Inlet Strainer:** Molded suction strainer built into motor adapter.

TDH for Backflushing Most Limiting Condition

- ◆ **Motor:**
 - Built-in surge arrestor is provided on single-phase motors.
 - Stainless steel splined shaft.
 - Hermetically sealed windings.
 - Replaceable motor lead assembly.
 - UL 778 and CSA recognized.
 - NEMA mounting dimensions.
- ◆ Standard 100' jacketed power cord.
- ◆ **Agency Listings:** All complete pump/motor assemblies are UL778 and CSA listed. All Franklin Electric Motors are UL778 recognized.

PERC-RITE® PUMP PUTURB15



DESIGNERS GUIDE PUMP CURVE DRIP DISPERSAL SYSTEM

Model Series	Flow Range GPM	Horsepower Range	Best Eff. GPM	Discharge Connection	Maximum Solids Size	Voltage
PUTURB15112W	6 - 28	½	18	1 ¼	1/16" dia.	115
PUTURB15122W	6 - 28	½	18	1 ¼	1/16" dia.	230

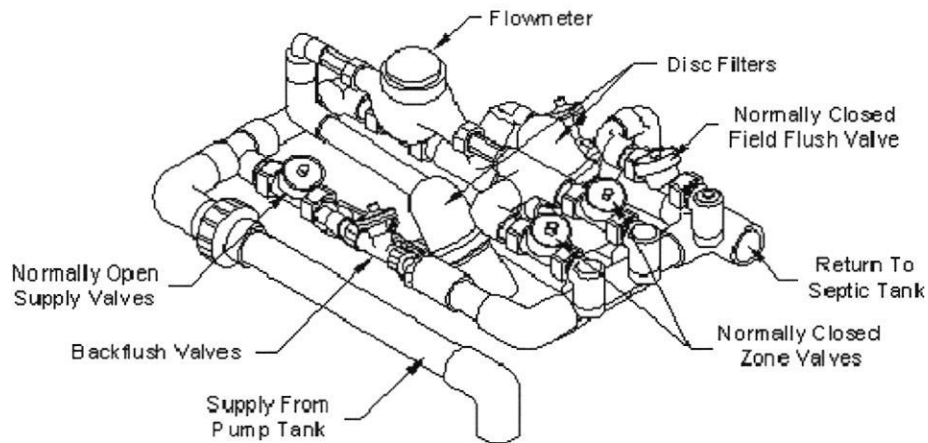
System Component #3 – Central Hydraulic Control Unit (CU)



15 Gallon per Minute Hydraulic Control Unit



**American
Manufacturing
Company, Inc.**
1-800-345-3132



HYDRAULIC CONTROL UNIT (CU) w/INSULATED ENCLOSURE

The hydraulic unit is mounted on an aluminum skid, heated, and enclosed in an "at grade" polyethylene insulated valve box with bolt down cover. The Control valves and heater are pre-wired with a 15' cord suitable for connection to the control terminal strips. Unit is as required and specified by American Manufacturing Company, Inc. Installation notes are found on the detailed design plan prepared by Penn's Trail Environmental, LLC.



Design Adequacy Review Letter





American Manufacturing Company, Inc.

Main Office: P.O. Box 549, Manassas, VA 20108 800-345-3132
Northeast Office: P.O. Box 201 Kulpville, PA 19443 215-412-5346

March 22, 2006

Adam B. Browning
4059 Skippack Pike
P.O. Box 144
Skippack, Pennsylvania 19474

Re: Authorized American "Perc-Rite®" Drip System Designer

Dear Adam,

Congratulations, this letter is to verify your individual status as an *Authorized American Manufacturing Company "Perc-Rite®" Drip Dispersal System Designer*. This letter is intended to be a general "Letter of Review" to be copied and attached to your single family home (ASD15-15 gpm) American "Perc-Rite®" Drip Dispersal system design submittals (excluding Drip Micro mounds). American Manufacturing urges you to follow the attached "General Design Guidelines" and requests to personally review any system that lies outside the recommended guidelines.

As always American Mfg. will be glad to continue to review or provide technical support and design assistance on any design per your request.

Sincerely,

Bryan J. Allen
American Manufacturing Company, Inc.

Enclosure:

CC: AMC-VA Office

Manufacturer Owner's Manual





EFFLUENT DRIP PUMP Model Series: PUTURB15

FEATURES

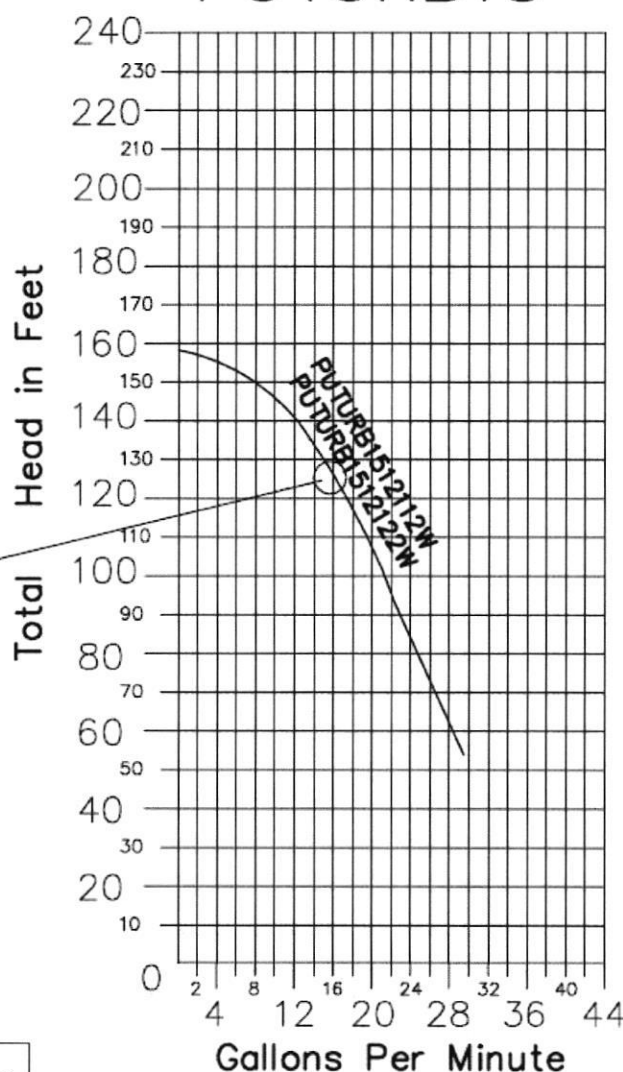
- ◆ **Non-Metallic Parts are Effluent Compliant:** Impellers, diffusers constructed of glass filled polycarbonate or Noryl, engineered composites. Both materials are corrosion resistant.
- ◆ **Bearing Discharge Head:** State of the art engineered composite material for superior strength and corrosion resistance. Loop for safety line molded into head.
- ◆ Warranted for one year against failure due to workmanship and materials.
- ◆ **Stainless Steel Casing:** Polished stainless steel is attractive and durable in the most corrosive effluent.
- ◆ **Hex Shaft Design:** Six sided shafts for positive impeller drive.
- ◆ **Inlet Strainer:** Molded suction strainer built into motor adapter.

TDH for Backflushing Most Limiting Condition

- ◆ **Motor:**
 - Built-in surge arrestor is provided on single-phase motors.
 - Stainless steel splined shaft.
 - Hermetically sealed windings.
 - Replaceable motor lead assembly.
 - UL 778 and CSA recognized.
 - NEMA mounting dimensions.
- ◆ Standard 100' jacketed power cord.
- ◆ **Agency Listings:** All complete pump/motor assemblies are UL778 and CSA listed. All Franklin Electric Motors are UL778 recognized.

Model Series	Flow Range GPM	Horsepower Range	Best Eff. GPM	Discharge Connection	Maximum Solids Size	Voltage
PUTURB15112W	6 - 28	½	18	1 ¼	1/16" dia.	115
PUTURB15122W	6 - 28	½	18	1 ¼	1/16" dia.	230

PERC-RITE® PUMP PUTURB15



DESIGNERS GUIDE PUMP CURVE DRIP DISPERSAL SYSTEM

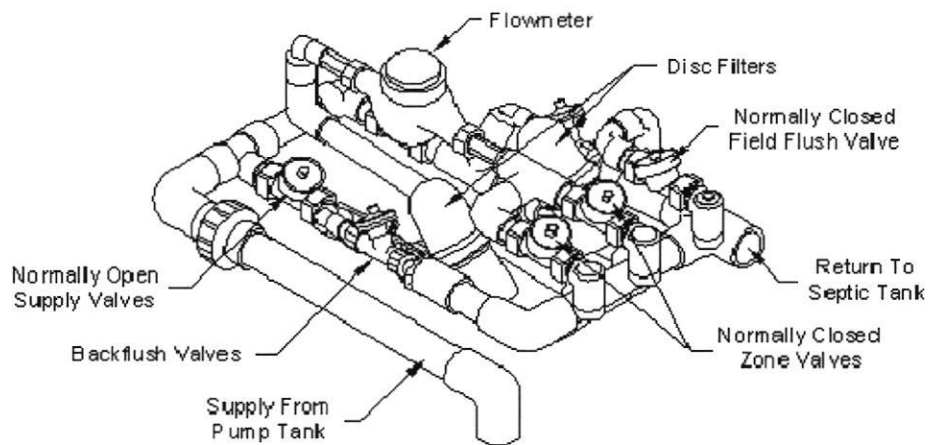
System Component #3 – Central Hydraulic Control Unit (CU)



15 Gallon per Minute Hydraulic Control Unit



**American
Manufacturing
Company, Inc.**
1-800-345-3132



HYDRAULIC CONTROL UNIT (CU) w/INSULATED ENCLOSURE

The hydraulic unit is mounted on an aluminum skid, heated, and enclosed in an "at grade" polyethylene insulated valve box with bolt down cover. The Control valves and heater are pre-wired with a 15' cord suitable for connection to the control terminal strips. Unit is as required and specified by American Manufacturing Company, Inc. Installation notes are found on the detailed design plan prepared by Penn's Trail Environmental, LLC.



Design Adequacy Review Letter





American Manufacturing Company, Inc.

Main Office: P.O. Box 549, Manassas, VA 20108 800-345-3132

Northeast Office: P.O. Box 201 Kulpville, PA 19443 215-412-5346

March 22, 2006

Adam B. Browning
4059 Skippack Pike
P.O. Box 144
Skippack, Pennsylvania 19474

Re: Authorized American "Perc-Rite®" Drip System Designer

Dear Adam,

Congratulations, this letter is to verify your individual status as an *Authorized American Manufacturing Company "Perc-Rite®" Drip Dispersal System Designer*. This letter is intended to be a general "Letter of Review" to be copied and attached to your single family home (ASD15-15 gpm) American "Perc-Rite®" Drip Dispersal system design submittals (excluding Drip Micro mounds). American Manufacturing urges you to follow the attached "General Design Guidelines" and requests to personally review any system that lies outside the recommended guidelines.

As always American Mfg. will be glad to continue to review or provide technical support and design assistance on any design per your request.

Sincerely,

Bryan J. Allen
American Manufacturing Company, Inc.

Enclosure:

CC: AMC-VA Office

Manufacturer Owner's Manual



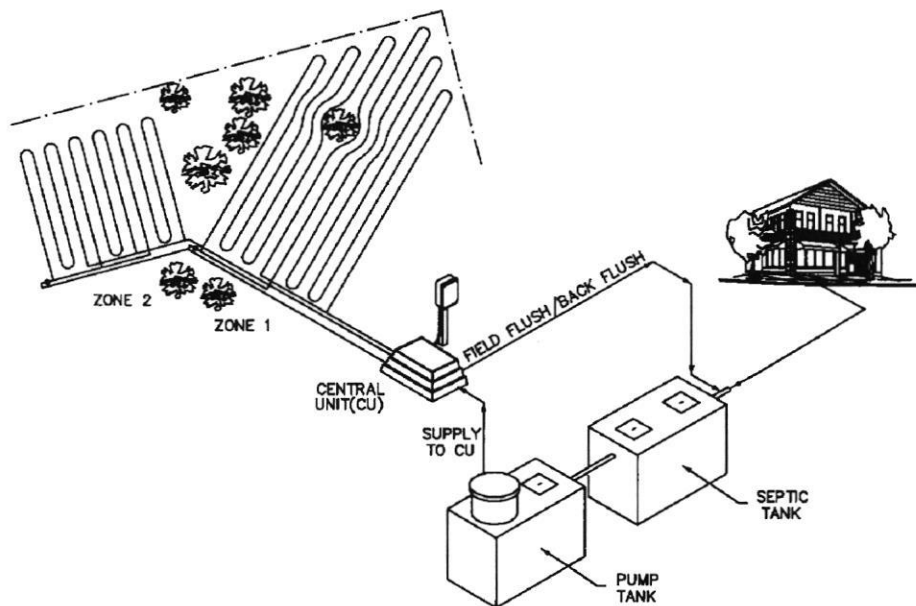
Owner's Manual

AMERICAN "PERC-RITE®"

WASTEWATER DRIP SYSTEMS

2 ZONE or 4 ZONE
SIMPLEX or DUPLEX

PATENT #'s: 5,200,065 ; 5,984,574B ; 6,261,452B1



OWNER'S NAME _____

HEALTH DEPT. ID NO. _____

LOCATION _____

NAME
STREET NAME
CITY, STATE ZIP

Table of Contents

American Manufacturing Limited Warranty	2
Introduction	2
Safety Precautions and Warnings	2
Owner's Responsibility	3
Overview of American Perc-Rite® Drip	3
System Parameters of American Septic Drip	5
Data Registers & Component Specifications & Details	6
Startup Log	8

MANUFACTURED BY:
AMERICAN MANUFACTURING COMPANY INC.
5517 WELLINGTON ROAD, GAINESVILLE, VA. 20155
1-800-345-3132

AMERICAN MANUFACTURING LIMITED WARRANTY

For TWO year (24 months) after the date of purchase, American Manufacturing Company, Inc. will repair or replace any product or portion thereof which proves to be defective due to materials or workmanship of American Manufacturing. We reserve the right to repair or replace defective materials at our discretion. This warranty does not cover the following conditions:

1. Defects or problems caused by improper installation or maintenance of materials.
2. Abuse, neglect or accidental damage of products.
3. Normal maintenance or upkeep of products.
4. Lighting, war, floods, or other acts beyond our control.
5. Misapplication of our products for their designed purpose, or misapplication according to local, state or national codes when in effect.
6. American Manufacturing Company or its representatives are not responsible for the labor for the replacement of defective parts.

Defective or warranted materials must be returned to us or a place designated by American Manufacturing. All returns must be accompanied by a return authorization number supplied by American Manufacturing.

American Manufacturing will in no way be responsible for any losses or damages incurred by failure of equipment, parts or service. NOTE: Some states do not allow exclusion of damages so this may not apply to you. There are no other warranties written or implied.

INTRODUCTION

Congratulations! You are now the owner of a state of the art wastewater treatment and recycling system by American Manufacturing Company, Inc. We have been in business for over 20 years and are considered one of the leaders in the On-Site Wastewater industry. With a staff having over 100 years collective experience in providing solutions to new sites and sites in need of repair, we are able to deliver an ecological, economical, easy to install and off-the-shelf **Perc-Rite® Drip** to owners like yourself.

When and How to use manual

This owner's manual should be read cover to cover initially, and then as needed to answer any questions or assist the owner in fulfilling their maintenance and inspection responsibilities.

When and Where to call for assistance or get additional information

If at any time you have a question about the **Perc-Rite® Drip** or observe any alarm or unusual condition, you should call your qualified service representative or installing contractor as soon as possible. The owner should record in the back of this manual, the contact name and telephone number of the qualified service representative and installing contractor. If further assistance is needed, call American Manufacturing Company, Inc. at 800-345-3132, or visit us at www.americanonsite.com.

Overview of Manual

The manual is organized to cover safety precautions and warnings, an overview of the **Perc-Rite® Drip** components, and the owner's responsibility. A startup log and limited warranty are in the back of this manual.

SAFETY PRECAUTIONS AND WARNINGS

The owner or operator of the **Perc-Rite® Drip** should take precautions consistent with operators working with sewage and/or electricity while working with, or around any of the system components.

Electrical Hazards

The **Perc-Rite® Drip** incorporates pump(s), float switches, relays and many electrical components that use 230 volts, 120 volts or 24 volts AC. Improper use of equipment can cause an electrical shock and may lead to serious injury or death.

Sewage Hazards

Proper attention should be given to cleanup when working in and around the septic and pump tanks and wastewater handling equipment to insure that disease causing bacteria are not transmitted to persons or contact surfaces. The septic and pump tanks can allow for a toxic buildup of poisonous gasses that can lead to serious injury or death if inhaled.

Heavy Lifting Hazards

The owner and/or operator should exercise proper caution when lifting heavy system components, such as pump tank lids. Improper lifting of heavy components can lead to loss of limb and/or mobility.

OWNER'S RESPONSIBILITY

Preventative Maintenance

The drip field area should receive only the most passive type yard uses. No use is recommended when conditions are wet. Under no conditions are any autos or heavy machinery to be allowed on the site.

In order to prevent erosion, the site should be established and maintained as a healthy lawn, or if wooded, mulched and stabilized. Erosion of the site and the adjacent areas should be controlled and eliminated. Surface waters should be diverted away from all components.

Scheduled Inspections

Within a month of operation the owner should contact the installer to have the system inspected for proper startup. After three months of operation the drip field should be walked and the system inspected. Symptoms to look for on the field walk inspection are patches of wetness. If symptoms are identified, notify your service provider immediately. The drip field should be walked & inspected at least annually.

A trained professional service provider, your American Dealer, should inspect the septic tank and pump chambers at least once a year. The septic tank should be pumped when the sludge level reaches 25% or approximately 12 inches, or when the scum layer on top is excessive. The flow meter reading in the hydraulic unit should be recorded with the date on a quarterly basis.

Alarms - Notifying Service Provider of alarm events

The system controller is equipped with an audiovisual alarm-to-alarm high water level condition. The high level alarm may be silenced by pressing the "silence" button on the side of the control. Since a high water level condition can be caused by pump failure, excessive infiltration, or an unusually large peak water use, the owner should call the service provider to determine the cause of the alarm prior to requesting service.

If at any time there are any indications of failure, such as the flow meter not moving during a dose or wetness in the area of the drip field, notify your service provider immediately.

Monitor & Regulate waste input to septic tanks

Since all processes in this sewage disposal system use biological activity to treat the wastewater, only typical biodegradable household wastes are to be disposed of in drains leading to the septic tank. Never dispose of pesticides, oil or grease based products, or non-fecal solids (especially feminine hygiene products) into the system. Minimize disposal of high strength over-the-counter type products such as bleach, and do not use colored toilet tissue.

OVERVIEW OF PERC-RITE® DRIP SYSTEM

The **Perc-Rite® Drip System** is a unique fluid handling system for dispersal of effluent wastewater in soil systems. The system incorporates filtration, time and level controlled application and ultra low rate drip distribution. In conditions where aerobic dispersal, such as "Low Pressure Distribution", of septic effluent is required or where land application with the use of conventional soil absorption fields are not acceptable, this system offers a unique method for subsurface distribution of the waste water effluent.

The **Perc-Rite® Drip System** will accommodate virtually any type of pretreatment process, whether septic tank (anaerobic), aerobic, lagoon, or any type of treatment facility. Only primary treatment (the removal of large settleable solids) of sewage is necessary for the operation of the system. Local soil and site conditions may require additional treatment for excessive organics, oil and grease or other contaminants.

Since the installation of the field distribution lines causes very little soil disturbance and effluent discharge volume from each emitter hole is insignificant, the installation of the system has very little site impact even in established lawns or park areas. After installation there are virtually no visible indications that the installation site is being used for disposal purposes. This system is especially suited for landscaped or wooded areas near buildings, trailer parks, apartment complexes or residential subdivisions.

The **Perc-Rite® Drip System** is operated via a "state of the art" controller, which is activated by level sensing devices (standard mechanical differential float switches) located in a dosing tank downstream from the pretreatment process or processes (typically a septic tank). When activated by the rising level of effluent in the dosing tank, the controller will enable the disposal cycle, and as dictated by the time clock, pump the effluent through a 115-micron disc filter and then to final drip dispersal.

Drip Tubing

The drip field supply line conveys the effluent to the drip absorption zone that is being dosed where it is discharged below the soil surface through a patented chemical-resisting pressure compensating self cleaning "drip" poly-tubing emitter. The emitters or "drippers" are located every two feet in the tubing and emit 0.65 gallons per hour per emitter. The dripper lines are automatically scoured (forward flushed) every 25 dosing cycles. This function is activated by the controller, which opens the field flush valve, thus allowing the flushed effluent to be returned to the pretreatment tank. The duration of this cycle is approximately three minutes. The flushing cycle produces a high

velocity cleansing/scouring action by the effluent along the inside walls of the dripper tubing and P.V.C. Manifolds. The tubing emitters are self-cleaning and require no maintenance.

The construction of the drip tubing is unique in that the internal diaphragm and labyrinth provide for an exact amount of effluent to be discharged from each of its emitters, which are spaced at two-foot intervals along the entire length of the drip tubing. Each emitter maintains a constant flow over pressure ranges of 7 to 70 psi. Because the effluent is distributed at an ultra low rate, large quantities of effluent may be economically distributed over large areas during controlled periods of time without saturating the surrounding soil.

Air Release Valves

The drip field return line conveys the effluent from the drip absorption zone (used to "flush" or clean the tubing) back to the pretreatment device. Each zone will have an air release valve housed in a small valve box at the highest point of the return manifold pipe. This valve will close when the water pressure arrives at the valve during each dose. The air release valve allows air to reenter the tubing after each dose to allow the tubing to drain. This also prevents the uphill tubing from draining water into the downhill tubing and overloading downhill tubing.

In the event of damage to the air release valve, effluent may leak from the system. This condition should be fixed immediately by replacing damaged parts. Air release valves should not be covered with soil or other material and should always be accessible to the service personnel.

Sequence of Operation: PERC-RITE® DRIP SYSTEM

The pump control panel is equipped with four float switches to control the timed doses to be discharged. The four float switches, "Redundant Off", "Standard Dose Enable", "Peak Dose Enable" (optional), and "High Level" function as follows:

Redundant Off - The water level must be high enough to overcome the "Redundant Off" (first & bottom) float in order for the pump to be permitted to run.

Standard Dose Enable - When the water level rises high enough to overcome the "Standard Dose Enable" (second) float and the time clock has timed out the preset time delay of 180 minutes (rest between dosing cycles for two zone designs) the pump will activate and the lead zone is dosed. The pump will continue to run for the length of time as adjusted on the pump run timer and then shut off. The pump will remain off until the internal time clock again times out the preset time delay (180 minutes) after which the pump will activate (as long as the "Standard Dose Enable" float is still up) and will run until the pump run timer finishes timing out. This process will repeat until the water level drops below the "Standard Dose Enable" float and the pump run timer has timed out. The rest time automatically varies with the number of Zones.

Peak Dose Enable - The control system will be equipped with a "Peak Dose Enable" circuit to manage peak flows and excess water use. If the rising water level activates the "Peak Dose Enable" (third) float, the "Pump - Off - Pump & Alarm" switch is set to "Pump", and the preset time delay has exceeded 108 minutes ("Peak Dose Enable" rest between cycles for two zone designs), the lead zone will be dosed. When the peak circuit has been deactivated the normal pumping cycle will resume. If the rising water level activates the "Peak Dose Enable" (third) float, the "Pump - Off - Pump & Alarm" switch is set to "Pump & Alarm", and the preset time delay has exceeded 108 minutes ("Peak Dose Enable" rest between cycles for two zone designs), the lead zone will be dosed and the "Peak Dose Enable" alarm will be activated. The audio portion of the alarm may be silenced by pressing the Test-Normal-Silence switch to the silence position. When the "Peak Dose Enable" float has returned to the down position the alarm will be deactivated and the normal pumping cycle will resume. The rest time automatically varies with the number of Zones.

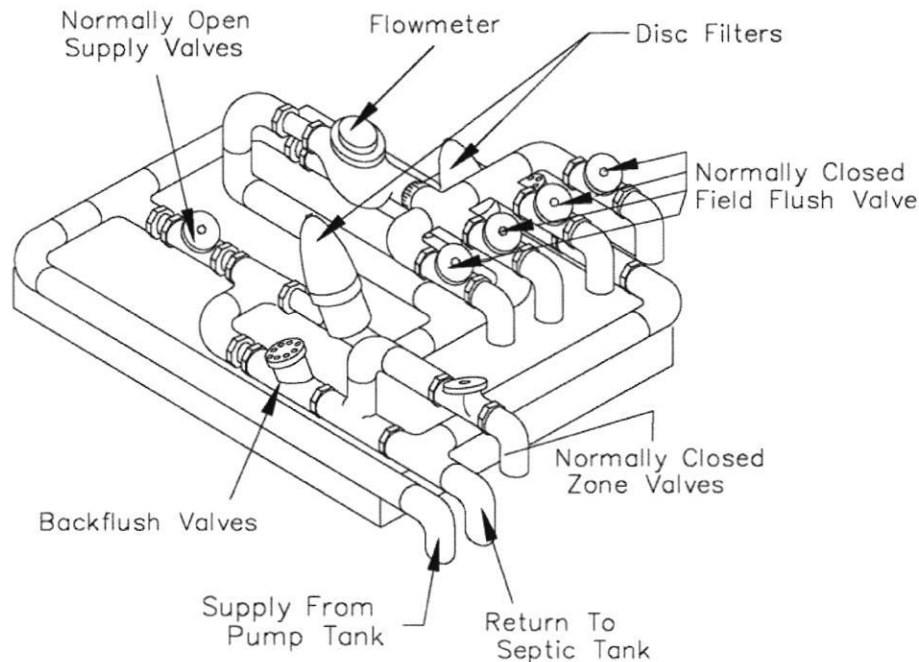
High Level - If the water level rises enough to overcome the "High Level" (fourth) float, the audiovisual alarm will activate. The audio portion of the alarm may be silenced by pressing the Test-Normal-Silence switch (located on the outside of the control panel) to the silence position. The alarm circuit will auto reset when the "High Level" float returns to its normal (down) position. The high-level alarm float is a wide-angle float in order to latch the alarm signal.

CONTROLLER

The "state of the art" controller is enclosed in an outdoor electrical control box located near and connected to the hydraulic unit. The control panel uses 115 or 230 volt power and the microprocessor has 120V and 24V AC inputs and relay outputs for automatic operation of the **Perc-Rite® Drip System**. When in the "Hand" or "Off" position, the manual switches (Hand-Off-Auto) on the door of the control panel completely bypass the microprocessor. The "Hand" position will allow manual operation of the component in the event of a microprocessor failure.

NOTE:

THE HOMEOWNER ASSUMES FULL RESPONSIBILITY FOR CONDITIONS OR MALFUNCTIONS DUE TO CHANGES IN PUMP RUN TIME BY ANYONE OTHER THAN A QUALIFIED SERVICE REPRESENTATIVE. LEAVING THE PUMP CONTROL IN THE "HAND" POSITION WILL FORCE THE PUMP TO RUN CONTINUOUSLY AND MAY RESULT IN PUMP FAILURE.



Hydraulic Unit

The submersible pump delivers unfiltered effluent through each filter. The filter backflushing schedule is triggered at the beginning of each dose cycle. The backflushing sequence is as follows. One filter valve closes, thus blocking the flow of unfiltered effluent to that filter. After a short delay, the other flushing valve opens, thereby backflushing the unused filter. The accumulated impurities discharge back into the pretreatment unit. The closing and opening procedure of the filter and back flush valves causes a change of flow within the unit to provide effluent from one filter to backflush the other filter. The backflush procedure lasts approximately fifteen seconds then the back flushing valve closes. Only after the first filter has completed its backflushing cycle, will the second filter begin its cycle of backflushing in the same manner as the first. Effluent will then be pumped through clean disc filters, then through the **flow meter** and finally through the zone valves to the drip field supply line. During extended dose times the disc filters are re-backwashed to assure optimum operation.

System Parameters Simplex System w/ 1 or 2 Zones & 2 Disc Filters

- a. System Fail indicated by high level alarm or unusual wetness in the field.
- b. Standard Rest time between doses = 180 minutes, 4 doses per day per zone.
- c. Peak Rest time between doses = 108 minutes, 6.6 doses per day per zone.
- d. Flow meter on hydraulic unit (record periodically to monitor activity).
- e. To remove pump or zone from service place its' control switch to "off".

System Parameters Simplex & Duplex System w/ 4 Zones & 2 Disc Filters

- a. System Fail indicated by high level alarm or unusual wetness in the field.
- b. Standard Rest time, 4 doses per day per zone;
 - 4 zones in use doses = 90 minutes,
 - 3 zones in use doses = 120 minutes,
 - 2 zones in use doses = 180 minutes,
- c. Peak Rest time between doses
 - 4 zones in use doses = 54 minutes,
 - 3 zones in use doses = 72 minutes,
 - 2 zones in use doses = 108 minutes,
- d. Flow meter on hydraulic unit (record periodically to monitor activity).
- e. To remove pump or zone from service place its' control switch to "off".

AMERICAN "PERC-RITE®"

WASTEWATER DRIP SYSTEMS

2 ZONE or 4 ZONE
SIMPLEX or DUPLEX
CONTROLLER

SIEMENS MICROPROCESSOR - INPUTS AND OUTPUTS

The Siemens microprocessor has inputs on the bottom and outputs on top. The two zone units have 8 inputs (0-7) and 6 outputs (0-5). The three and four zone has the following;

Output	Q0	.0	.1	.2	.3	.4	.5	.6	.7	Q1	.0	.1				
Input	I0	.0	.1	.2	.3	.4	.5	.6	.7	I1	.0	.1	.2	.3	.4	.5

MICROPROCESSOR - INPUTS AND OUTPUTS

R E F A	R E F B	R E F C		R E F A	R E F B	R E F C	
Input I0	Input I0	Input I0	Description	Output Q0	Output Q0	Output Q0	Description
.0	.0	.0	DOSE CUTOUT	.0	.0	.0	PUMP 1
.1	.1	.1	OFF LEVEL FLOAT	.1	.1	.1	ZONE RETURN
.2	.2	.2	DOSE ENABLE FLOAT	.2	.2	.2	FILTER 1
.3	.3	.3	PEAK ENABLE FLOAT	.3	.3	.3	FILTER 2
.4	.4	.4	RESET/CYCLE START	.4	.4	.4	FIELD 1
.5	.5	.5	PUMP 1	.5	.5	.5	FIELD 2
.6	.6	.6	ZONE 1 VALVE		.6	.6	FIELD 3
.7	.7	.7	ZONE 2 VALVE		.7	.7	FIELD 4
	.0	.0	ZONE 3 VALVE		.0	.0	PUMP 2
Input I1	Input I1	Input I1		Output Q1	Output Q1	Output Q1	
	.1	.1	ZONE 4 VALVE		.1	.1	ZONE MASTER
	.2	.2	PUMP 2				
	.3	.3	CURRENT SENSOR				
	.4	.4	HIGH LEVEL (OPTION)				
	.5	.5	AUX. INPUT 1				

References: "REF A " is Two Zone Simplex System

"REF B " is Four Zone Simplex System

"REF C " is Four Zone Duplex System

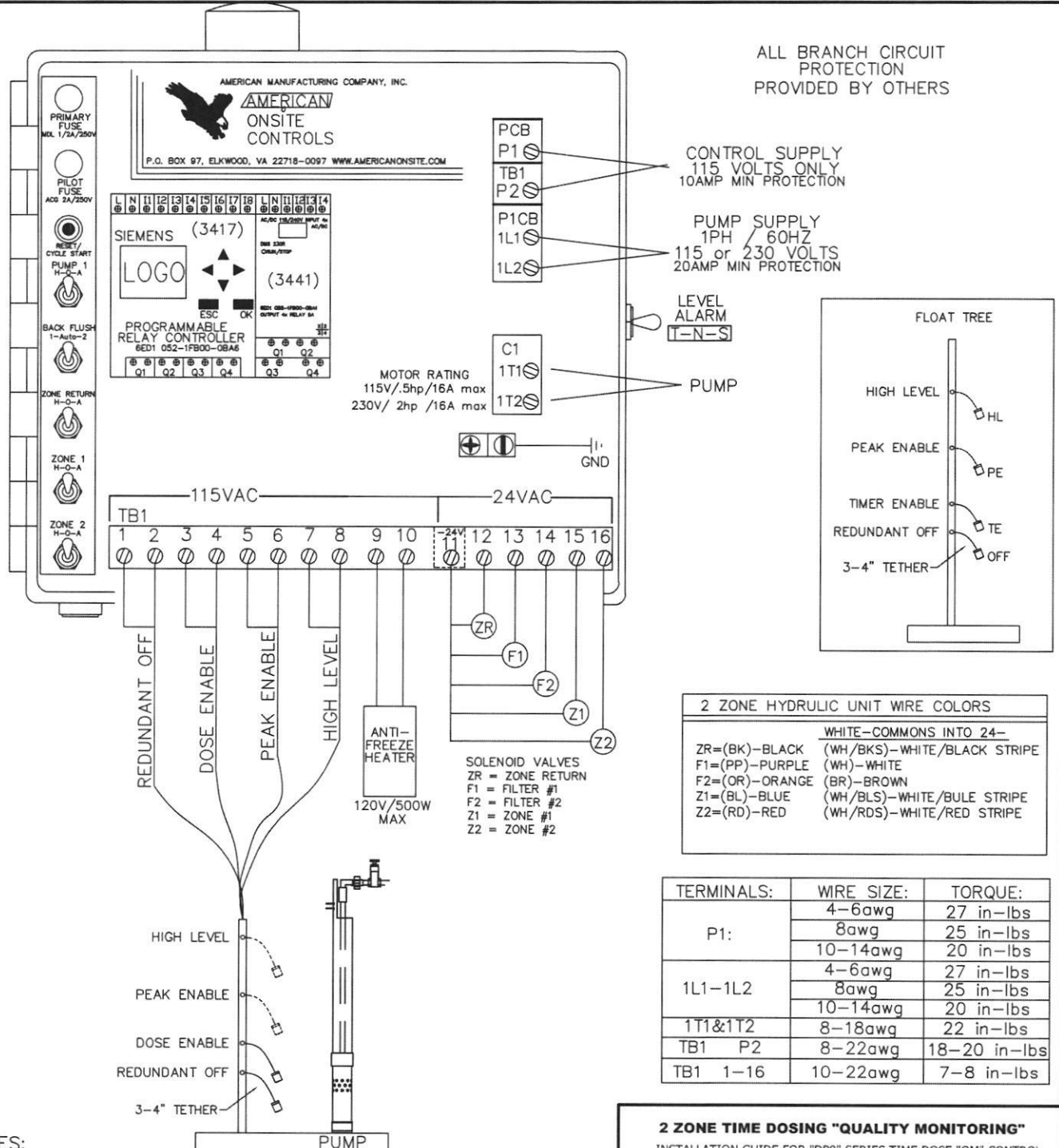


AMERICAN ONSITE CONTROLS

AMERICAN MANUFACTURING COMPANY INC.

P.O. BOX 97 ELKWOOD, VA 22718

(800) 345-3132 www.americanonsite.com



NOTES:

1. PLEASE REVIEW ALL PAGES AND INSERTS IN THIS MANUAL BEFORE ATTEMPTING TO INSTALL ANY CONTROL EQUIPMENT.
2. DASHED LINES REPRESENT OPTIONAL EQUIPMENT
3. TIME DOSING IS CONTROLLED BY A SIEMENS LOGO! SEE ADDITIONAL MANUAL FOR PROGRAMMING INSTRUCTIONS.
4. BF=BACKFLUSH, AND ZR=ZONE RETURN



COPYRIGHT © 2007 AMERICAN MANUFACTURING COMPANY, INC.

ALL BRANCH CIRCUIT
PROTECTION
PROVIDED BY OTHERS

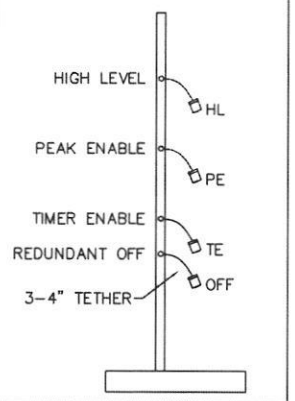
CONTROL SUPPLY
115 VOLTS ONLY
10AMP MIN PROTECTION

PUMP SUPPLY
1PH / 60HZ
115 or 230 VOLTS
20AMP MIN PROTECTION

LEVEL
ALARM
T-N-S

PUMP

FLOAT TREE



2 ZONE HYDRULIC UNIT WIRE COLORS

	WHITE-COMMONS INTO 24-
ZR=(BK)-BLACK	(WH/BKS)-WHITE/BLACK STRIPE
F1=(PP)-PURPLE	(WH)-WHITE
F2=(OR)-ORANGE	(BR)-BROWN
Z1=(BL)-BLUE	(WH/BLS)-WHITE/BULE STRIPE
Z2=(RD)-RED	(WH/RDS)-WHITE/RED STRIPE

TERMINALS:	WIRE SIZE:	TORQUE:
P1:	4-6awg	27 in-lbs
	8awg	25 in-lbs
	10-14awg	20 in-lbs
1L1-1L2	4-6awg	27 in-lbs
	8awg	25 in-lbs
	10-14awg	20 in-lbs
1T1&1T2	8-18awg	22 in-lbs
TB1 P2	8-22awg	18-20 in-lbs
TB1 1-16	10-22awg	7-8 in-lbs

2 ZONE TIME DOSING "QUALITY MONITORING"

INSTALLATION GUIDE FOR "DPO" SERIES TIME DOSE "QM" CONTROL
NEMA 4X, 1 PHASE, OPTIONS: A,J,L

MODEL#:	DPO22-SAB124-AJL		
DWG#:	X9114-2Z		REVISION A
DATE:	04/05/12	DRAWN BY: SPC	APPROVED
FILE PATH:	S:/DATA/CONTROLS/AUTOCAD2000LT/X&LIGHTNING/X9114-2ZN.dwg		PAGE 1

STARTUP LOG

LINE NO.	DESIGN VALUE	AS-BUILT VALUE	DESCRIPTION	NUMBER OF ZONES	2	USER LOG	
						DATE	FLOW METER
1	4		BEDROOMS				
2	600		GALLONS PER DAY				
3	SCL		TEXTURE GROUP				
4	0.34		GPD/FT2 DESIGN SOIL LOADING RATE				
5	1000		TOTAL LINEAR FEET TUBING				
6	4.60		GPD/LF FT DESIGN TUBING LOADING RATE				
7			METER READING				
8	400.00		ZONE 1 LINEAR FEET OF TUBING				
9	2		ZONE 1 NUMBER OF FIELD FLUSH CONNECTIONS				
10	2.03		ZONE 1 GPM DOSING FLOW RATE				
11	3.2		ZONE 1 GPM TOTAL FLUSHING FLOW RATE				
12	8.85		ZONE 1 RUN TIME				
13	600.00		ZONE 2 LINEAR FEET OF TUBING				
14	3		ZONE 2 NUMBER OF FIELD FLUSH CONNECTIONS				
15	3.05		ZONE 2 GPM DOSING FLOW RATE				
16	4.8		ZONE 2 GPM TOTAL FLUSHING FLOW RATE				
17	8.85		ZONE 2 RUN TIME				
18			ZONE 3 LINEAR FEET OF TUBING				
19			ZONE 3 NUMBER OF FIELD FLUSH CONNECTIONS				
20			ZONE 3 GPM DOSING FLOW RATE				
21			ZONE 3 GPM TOTAL FLUSHING FLOW				
22			ZONE 3 RUN TIME				
23			ZONE 4 LINEAR FEET OF TUBING				
24			ZONE 4 NUMBER OF FIELD FLUSH CONNECTIONS				
25			ZONE 4 GPM DOSING FLOW RATE				
26			ZONE 4 GPM TOTAL FLUSHING FLOW				
27			ZONE 4 RUN TIME				
28			PEAK ENABLE CYCLE COUNTER				
29			HIGH LEVEL CYCLE COUNTER				
30	CONTRACTOR STARTUP REPRESENTATIVE:						
31	STARTUP DATE:						

DESIGNER: PENNS TRAIL ENVIRONMENTAL, LLC
 PH. 215-362-4610 FAX 215-362-4620 EMAIL STAFF@PENNSTRAIL.COM
 FAX ONE COPY OF THIS REPORT FOLLOWING STARTUP TO THE NUMBER ABOVE.

AMERICAN MANUFACTURING COMPANY, INC.

P.O. BOX 549, MANASSAS, VA 20108-0549 1-800-345-3132

LETTER OF AGREEMENT FOR MONITORING - RETAIN FOR RECORDS

The System controller monitors the liquid level in the pump tank. In the event of a high level alarm or peak dose enable condition, an alarm will sound.

The owner understands that as a condition of the warranty, the Manufacturer will monitor the system during the warranty period (standard TWO year) for flow, peak dose enable conditions, high level alarm conditions, and other mechanical functions which result in a high level alarm.

The Owner shall provide American or its dealer/representative with such access to the property and system as is reasonably necessary for American to comply with the terms of this Agreement. As soon as an alarm condition occurs, the owner shall notify the installer which condition occurred, the nature of the condition, and where the system is located. The owner understands and will hold the installer and manufacturer harmless for alarm conditions and other events beyond their control. Please reference the American Manufacturing Company, Inc. warranty policy. American Manufacturing Company, Inc. shall not be responsible for damages caused by any type of system failure or for soil suitability, damage due to construction, use, acts of God, or other events.

Note: In the event of a power, pump, or other mechanical failure, the system should be designed to provide at least an additional 1/4 day of storage capacity.

DEALER _____

OWNER: _____

ADDRESS _____

ADDRESS: _____

Representative By: _____

Date: _____

Date: _____

Serial No: _____

LETTER OF AGREEMENT FOR MONITORING - RETURN FOR WARRANTY

The System controller monitors the liquid level in the pump tank. In the event of a high level alarm or peak dose enable condition, an alarm will Sound.

The owner understands that as a condition of the warranty, the Manufacturer will monitor the system during the warranty period (standard TWO year) for flow, peak dose enable conditions, high level alarm conditions, and other mechanical functions which result in a high level alarm.

The Owner shall provide American or its representative with such access to the property and system as is reasonably necessary for American to comply with the terms of this Agreement. As soon as an alarm condition occurs, the owner shall notify the installer which condition occurred, the nature of the condition, and where the system is located. The owner understands and will hold the installer and manufacturer harmless for alarm conditions and other events beyond their control. Please reference the American Manufacturing Company, Inc. warranty policy. American Manufacturing Company, Inc. shall not be responsible for damages caused by any type of system failure or for soil suitability, damage due to construction, use, acts of God, or other events.

Note: In the event of a power, pump, or other mechanical failure, the system should be designed to provide at least an additional 1/4 day of storage capacity.

DEALER _____

OWNER: _____

ADDRESS _____

ADDRESS: _____

Representative By: _____

Date: _____

Date: _____

Serial No: _____

This agreement accompanies a system professionally designed by:
Penn's Trail Environmental, LLC 21 E. Lincoln Ave.-Ste. 160, Hatfield, PA 19440
Ph. 215-362-4610 Fax 215-362-4620 Email:staff@pennstrail.com Web: www.pennstrail.com

Penn's Trail Environmental, LLC

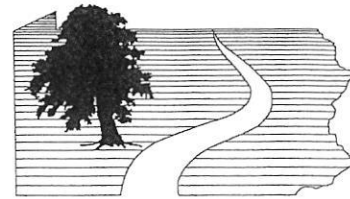
327 E. Ridgeville Blvd. - # 141

Mount Airy, MD 21771

Phone : (301) 829-5022

Fax: (215) 362-4620

e-mail: staff@pennstrail.com



LETTER of TRANSMITTAL

Date: 12/21/21 PTE Job # 5290

Attention:

Re:

11703 Wayneridge Ct

To: Kevin Wolf
Howard Co

We are sending you ☐ attached ☐ under separate cover the following:

☐ cover letter ☐ plans ☐ change order ☐ samples

Copies	Date	Number	Description
<u>3</u>			<u>Final Report & Design</u>

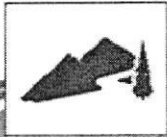
- ☐ For approval ☐ Approved as submitted ☐ Resubmit ☐ copies for approval
☐ For your use ☐ Approved as noted ☐ Submit ☐ copies for distribution
☐ As requested ☐ Returned for corrections ☐ Return ☐ corrected prints
☐ For review and comment: _____
☐ For bids due: _____ ☐ Prints returned after loan to us

Remarks: _____

Copy: _____

SIGNED: Penn's Trail Environmental, LLC

Adam B. Browning
Division Manager



CANAAN VALLEY INSTITUTE

February 7, 2022

Rieko & Futoshi Yumoto
11703 Wayneridge Court
Fulton, MD 20759

RE: FY 2022 Howard County Bay Restoration Fund OSDS Upgrade Program

Dear Mr. and Mrs. Yumoto:

Thank you for your application to participate in the Howard County Bay Restoration Fund OSDS Upgrade Program. The Howard County Health Department has verified that your existing septic system is failing and in need of repair. Based on your 2020 tax information status as a certified small business, you are eligible to receive funding to cover **100%** of the cost to upgrade your system to one of the MDE approved best available technology units listed below. The approved grant award includes the cost of the unit, installation of the unit, and 2 years of operation and maintenance. The price does not include the cost of permits or soil absorption.

<u>System</u>	<u>Vendor</u>	<u>Contact</u>	<u>Phone</u>
Norweco Singulair TNT	Back River Precast	Matt Geckle	410-833-3394
Biomicrobics	Dwayne C. Jones	Dwayne C. Jones	410-692-6900
HOOT	Mayer Bros, Inc.	Nancy Mayer	410-796-1434
Hydroaction	Sample Excavating	Mike Sample	443-807-8639
Orenco	Atlantic Solutions	Bob Johnson	877-814-8426
Septitech	Dwayne C. Jones	Dwayne C. Jones	410-692-6900
Aquaklear	BayStar Precast	Dave Care	410-977-3453

In order to receive your OSDS upgrade, **you MUST follow these steps:**

1. **Sign this letter** on the bottom of page 2 **and return it** via email or USPS to Canaan Valley Institute 10624 Appalachian Hwy, Davis, WV 26260 within **2 weeks of the date of this letter.**
2. File a septic repair permit application with the Howard County Health Department **within 2 weeks of the date of this letter.** The permit application fee is \$396.00 (\$165 for tank approval only).
3. Obtain the Agreement and Easement for Installation of Best Available Technology Systems with Bay Restoration Funds from the Howard County Health Department, have it signed by a Howard County Health Department Bureau Director or Designee. Then take it to the Circuit Court and have it recorded in Land Records **within 2 weeks of the date of this letter.**
4. Prepare your property and schedule installation of the system. The system must be installed **within 6 weeks of the date the Agreement and Easement is recorded.**

If assistance is needed in completing any of the steps listed above, you may contact me at 304-940-3443 or kristin.mielcarek@canaanvi.org.

10624 Appalachian Highway | Davis, WV 26260
www.canaanvi.org

The system vendor may provide a contractor to install your BAT unit. CVI will provide payment directly to the vendor. The vendor may also require proof of insurance from your contractor.

If your system is not installed within the 8 week timeframe listed in the steps on page 1, the funds may be released and used elsewhere. If you cannot complete installation in within this timeframe, please contact me to request an extension. Please note that failure to request an extension may result in termination of your grant and your system must be installed no later than June 27, 2022 in order to retain your funding.

For more information on septic repair permitting, contact:

Jeff Williams
Program Supervisor, Well and Septic
410-313-1771

Please sign and return this original letter and keep a copy for your records. If you have any questions, please contact me at 304-940-3443 or by email at kristin.mielcarek@canaanvi.org.

Sincerely,



Kristin Mielcarek, Executive Director

I have read and agree to the conditions of this Agreement Letter.

Accepted by: Rieko Yumoto, Property Owner

Signature

Date

Accepted by: Futoshi Yumoto, Property Owner

Signature

Date

Copy

**AGREEMENT FOR THE
INSTALLATION OF AN INNOVATIVE
ON-SITE SEWAGE DISPOSAL SYSTEM**

THIS AGREEMENT is made this 12 day of January 2022, among

_____, hereinafter referred to as "Owner", the
Howard County Health Department hereinafter collectively referred to as the "County", and the
Department of the Environment, hereinafter referred to as the "Department".

WHEREAS, Owner owns a tract of land located on 11703 Wayneridge Court in the 5th Election
District of Howard County, Maryland, and the deed to same is recorded among the Land Records of
Howard County, Maryland, in Liber 11555 and Folio 00209.

WHEREAS, Owner's land is unsuitable for the installation of a conventional on-site sewage disposal
system and owner has requested the Department's approval to install an innovative system of sewage
disposal.

NOW, THEREFORE, the parties hereto agree as follows:

- A. The property is currently improved with a 4 bedroom single family residence served by a
private well and an on-site sewage disposal system.
- B. The Owners agree that the County will approve no future additions, expansions of use for, or
changes of use for any building on the property that may involve increased flow to the on-site sewage
disposal system.
- C. Owner must install and maintain a water meter on the incoming side of the water system or an
event counter and an elapsed time meter on the sewage pumping system.
- D. Owner hereby grants to the Department and the County the right to enter upon the property at
any reasonable time for access to the system to make periodic inspections and the Owner agrees to provide
any information and data requested and needed by the Department to develop accurate and thorough test
results.

E. Owner acknowledges and agrees that the proposed innovative system is non conventional and that his or her participation is voluntary. Owner agrees that there shall be no liability on the part of the County or Department to Owner if this innovative system fails, and that the County and the Department do not warrant or guarantee that the system will adequately or properly function.

F. Owner acknowledges and agrees that neither the County nor the Department nor any of its agents or employees, either officially or individually, underwrites the operation of any system approved by them.

G. The Owner will devote such care and effort to the maintenance of the system so that a system malfunction is not the result of poor maintenance, faulty operation, or neglect.

H. The Owner agrees, that, should the system be determined by the County or the Department to pose a threat to the public health, safety or comfort, the County or the Department may order any necessary changes or corrections and the Owner agrees to pay for all such changes or corrections. System modifications may include requirements for holding of sewage waste in tanks and regular pumping from the holding tanks. Upon the County or Department's request, the Owner agrees to enter into a contract acceptable to the County or Department to allow a private entity to pump on a regularly scheduled basis an approved holding tank system.

I. The Owner agrees to contact both the Water and Science Administration, On-site systems division of the Wastewater Permits Program and the County at least forty-eight (48) hours prior to system installation, so that the Department may lay out the system in the field with the contractor. The Owner must install this system according to the plans and specifications approved by the County and Department and any changes required by the County and Department as a result of the field layout. If installation deviates substantially from the approved plans or changes such that experimental data will be compromised or reduced, the Owner agrees to pay for all necessary corrections.

J. This agreement shall run with the land and binds the Owner, his heirs, successors, and assigns. Owner further agrees that he shall inform in writing any purchaser or lessee of the property that the

system requires maintenance and other attention. The Owner agrees to record this agreement in the land records of Howard County.

K. This agreement shall not be construed to limit any authority of the County or the Department to protect the public health, safety or comfort or to issue any other orders to take any other action which is now or may hereafter be within its authority.

L. This agreement may be voided at the discretion of the Department if the system construction is not completed within twenty four (24) months of the effective date of this agreement.

M. This agreement contains the entire agreement and understanding between the County and the Owner and the Department. There are no additional terms other than as contained in this agreement. This agreement may not be modified except in writing signed by each of the parties or by their authorized representatives.

N. The laws of the State of Maryland govern the provisions of all transactions pursuant to this agreement.

IN WITNESS WHEREOF, the parties have signed and sealed this agreement on the date indicated above.

DATE: _____

Owner

DATE: _____

Owner

DATE: 1/12/22

Naomi Howell, Chief
Naomi Howell, Division Chief
On-Site Systems Division
Wastewater Permits Program
Water and Science Administration
Department of the Environment

DATE: _____

Mike Davis, Director
Environmental Health
Howard County Health Department