

Stantec Consulting Ltd. 10220 103 Ave NW, Edmonton, AB T5J 0K4

July 19, 2022 File: 110170012

Attention: Resident

Summer Village of Ross Haven

Dear Sir or Madam,

Reference: Ross Haven Wastewater Collection and Transmission Main – Homeowner Information Package

Council and administration are preparing for the next steps of the Summer Village of Ross Haven Municipal Wastewater System. With the construction of the Collection and Transmission main beginning in fall of 2022, we would like to present you with background information for the system, the details of your responsibilities, and a checklist of considerations so you may begin planning your connection.

There are three major components of this package for your review:

Wastewater System Connection Checklist Project Background and Specified Equipment Application for Wastewater System Connection

Please help other community members who may not be aware of the wastewater project to understand what is happening, so they are aware of the need to make timely decisions and discuss the options available. While we are trying to get the word out as best we can, we appreciate your help!

If you have any questions or are unclear on information herein, please contact the Commission at 56521 Range Road 65, Box 219, Sangudo, AB T0E 2A0, 780-785-3411, jduplessie@lsac.ca.

Best Regards,

STANTEC CONSULTING LTD.

On behalf of the North 43 Lagoon Commission

Stephan Weninger P.Eng.

Project Manager Mobile: 403.598-2200 stephan.weninger@stantec.com Sam Fritz E.I.T. Civil Engineer in Training Mobile: 587.920.4407 sam.fritz@stantec.com

Attachment: Wastewater System Connection Checklist, Project Background and Specified Equipment, Application for Wastewater System Connection

Wastewater System Connection Checklist

Checklist

With the installation of the North 43 Lagoon Commission system, there are important mandatory requirements that all homeowners must be aware of prior to having your wastewater pumping system connected. Please note, it is the responsibility of each individual homeowner to install an approved pumping system.

Steps to connect your sewage pumping system to the North 43 Municipal Wastewater System:

No.	Description	Yes	No	N/A
	Obtain Individual Inspection Report from North 43 Commission			
1.	 Email jduplessie@lsac.ca with your name, number, and address for a copy of your lot inspection report. (Please title the email "Summer Village of Ross Haven LPS Connection" including the property address. 			
2.	Confirm your Septic / Holding Tank Location			
3.	Confirm your Septic / Holding Tank Type and Depth			
	Reply to the North 43 Commission with any updates to the recorded documents, and express your interest and preferred connection timing.			
4.	 Depending on the report available for your property, the Commission may provide recommendation on next steps or schedule an initial site visit with you. 			
5.	Procure a Pump and any Required Appurtenances			
6.	Secure a Pump Installer			
	 For installation on private property, it is recommended to use a licensed installer (see www.aowma.com). The Homeowner must obtain both a plumbing and electrical permit from the local safety codes officer. 			
7.	Complete Homeowner System Installation			
	Installation may be completed before or after the Commission system is in place.			
	 If completed before the Commission's system, please install discharge pipe to property line and have a flag or 2x4 post marking the pipe stub. 			
0	Receive electrical and plumbing permits			
8.	 Superior Safety Codes Inc. 1 (866) 999-4777 			
9.	Complete your Connection (cc valve remains closed)			
10.	Submit the signed <i>Application for Municipal Wastewater System Connection</i> form complete with permitting and other supporting documentation.			
11.	Schedule a Commission operator to inspect your system			
	 Commission Contact: 1 (780) 785-3411 / jduplessie@lsac.ca Complete leakage testing against the closed Commission cc valve The Commission will open your cc valve if the system is acceptable 			

^{*}You will be charged a non-refundable \$50.00 application processing fee prior to scheduling an operator. The Commission will respond to all application requests with further details on processing and next steps.









Project Background and Specified Equipment

Background

As part of the North 43 Lagoon Commission Regional wastewater collection initiative, the Summer Village of Ross Haven plans to install a Septic Tank Effluent Pumping (STEP) low-pressure force main system. The system will convey wastewater flows from each homeowner's residence to the North 43 Lagoon facility to prevent wastewater from the community entering the groundwater and ultimately, Lac Ste. Anne.

The Commission formally closed the project re-tender period on March 22, 2022, having received proponent bids from four prequalified contractors. Acceptable pricing was received to advance the project and the system is anticipated to begin construction activities on approximately September 14, 2022. The awarded contractor will be contractually obligated to complete construction by March 31, 2023, and restore all affected areas by June 26, 2023.

North 43 Lagoon Commission System

The Collections and Transmission main, owned and operated by the North 43 Lagoon Commission, will utilize road rights-of-way along the main streets within the Summer Village. Each street will be connected to the transmission main by a collection line with individual 38 mm service stubs extending approximately 5 m into the property line of each lot. A curb stop (cc) valve will be installed on each service stub, directly adjacent to the main line, and will form the custody transfer point between Commission and Homeowner. The objective of these documents is to inform you on how to complete your connection so the Commission can open this valve and incorporate your lot into the system.

The ultimate goal of the system is to service all homeowners in the Summer Village but the timing of individual lot connections is the homeowner's responsibility. The Commission will disclose the contact information of the awarded contractor so that interested parties may phone or email to request a consultation. The Prime Contractor's site superintendent will be available to meet with the homeowner at the time of installing their service stub so that site specific requirements may be identified. The Prime Contractor may also be available to complete installation of the pipe to the homeowner's system. Note that service pipe length beyond 5m into the lot will be the responsibility of the homeowner to pay for.

Should the homeowner not wish to connect immediately, it is still advised that they contact the Prime Contractor to identify site specific requirements. The service stub location, 5m into the lot, may then be coordinated with the homeowner for future connection to their system.

In the instance where a lot is vacant or the homeowner does not contact the Prime Contractor or cannot be contacted by their staff, the final location of the service stub, 5m into the lot, will be placed at the Prime Contractor's discretion. Fair judgement will be used to avoid driveways, trees, or above ground features as best as possible. Long term connection stubs will be GPS located, cut, and capped at or near ground surface to improve aesthetics.

Commission operations staff will be responsible to confirm all connections are adequately constructed and permitted before allowing flows from individual lots. This will help prevent complications in overall system operation and help protect your lot. Should issues arise, the Commission will maintain available staff and a 24-hour emergency number to correct problems.









Project Background and Specified Equipment

Homeowner System

Each homeowner will be responsible for their own private system which will convey wastewater to the custody transfer point and into the Commission line. For your property in the Summer Village, this will include procurement of equipment to establish the connection as well as taking on responsibility for any future maintenance.

The Homeowner system may be broken down into three mandatory components for connection:

1. Septic / Holding Tank

Only screened effluent from individual septic tank(s) will be allowed to be pumped into the sanitary collection system. Septic / holding tank(s) must have solid-liquid separation mechanism to ensure only clarified effluent will be pumped. It will be your responsibility to confirm the state of your tank and determine the solution based on the three observed scenarios below:

If the Homeowner has an existing Dual Chamber Septic / Holding Tank they will be responsible to procure an approved pump package. This will either be installed into the clarified tank chamber (second stage chamber) or make a separate connection to an external pump chamber. Either configuration is feasible so the homeowner may proceed with whichever is deemed easier due to accessibility, above ground features, or other restraints. The recommended pump unit remains the same in either case. Details on the dual chamber tank configuration are included for reference.

If the Homeowner has a Single Chamber Septic / Holding Tank, they will be responsible to procure an approved pump package. This is recommended to be installed in an external pump chamber but may in some cases be installed in the septic tank. However, for the Homeowner to install the pump package directly into a single chamber tank, they will need to confirm the applicability with the supplier which involves confirming tank type, depth, and right in manway access configuration. The Homeowner would connect a pipe to their storage tank above the level of grit settlement and connect to the separate prepackaged pumping chamber. The separate pump chamber facilitates grit and solids settlement and can significantly reduce future maintenance. Details on the single chamber tank and separate pump chamber are included for reference.

If the Homeowner does not have an existing Septic / Holding Tank, the homeowner will be responsible to procure a tank and pumping system. A minimum 1500 gallon dual chamber tank is required for new installations to allow solid-liquid separation. This will also provide some storage capacity in the event of pump failure (i.e. power failure). Details on the septic / holding tank compatible with the specified pump are included for reference.

2. Effluent Pump

The North 43 Lagoon Commission recommends that an Orenco ProPak pump package unit with PF 10051 60 Hz Series ½ HP submersible effluent pump is used. However, an alternative preapproved pump package may be used if requested. Pump specifications have been provided for reference.

Only a CSA certified effluent pump meeting the following criteria will be approved as an alternative for connecting to the sanitary system:

 Type of Pump: Submersible Effluent Pump (Biotube ProPak pump package comes with control panel, level floats, and filter)









Project Background and Specified Equipment

- Design Flow Rate: 0.6 liters per second (10 gallons per minute)
- Total Dynamic Head: 54 m (175ft) at 0.6 l/s design flow rate.
- Power and Voltage: 0.5 HP, 120v/240 v, Single Phase
- Pump package height dependent on tank depth
- External Splice box
- Cold Weather Discharge Assembly
- Drainback Discharge Assembly
- Demand Dosing Control Panel
- Pipe Pressure (38 mm) to the service stub must be rated for a working pressure of 100 psi
- Water depth monitoring mechanism is required for automatic pump operation or warning.

3. Service Connection

The service connection itself will be defined as the piping connection between the Homeowner Tank / Effluent Pump/ Backflow configuration and the Commission service stub and cc valve. The Commission will require the depth of bury of the pump outlet to be 2.7 m unless it is insulated or heat traced. It is recommended to bury piping below the frost line whenever possible but is ultimately the homeowners responsibility to mitigate frost concerns at their pump.

Other Recommendations

The following are additional items to consider for convenient operation of your system.

- The tank and pump can clog just like a municipal sewer system. Only water-based liquids, human waste, and toilet paper should be sent down the drain. Do not cloth, paint, chemicals, flushable wipes, sanitary napkins, diapers or any other solids down the drain.
- Add coverage for the tank and pump to your home insurance policy
- Maintain an accurate record of equipment and installations
- Inquire on the warranty of your new equipment
- Install the pump control panel in an easily accessible location
- Identify the location of your tank and potential pump system in advance of the Collections and Transmission main installation. Efficiencies may be achieved through proactive coordination with the awarded contractor
- Read the Owner's Manual and ask questions of the vendor to fully understand your equipment
- Complete the maintenance and service checks recommended in the Owner's Manual.









Application for Municipal Wastewater System Connection

To be completed	by th	e Homeowner							
Date of Application:	:		Tax R	oll#					
Landowner(s): (Print Clearly)	First	Last	M.I.		First		Last	Λ	И.І.
Mailing Address:	Street	Address			Postal Cod	de			
Contact Info:									
Cornact mile.	Phone	(Home)	Phone (Cell)		Email				
To be completed	by th	e Installer							
Municipal Service A	Area:	Summer Vi Lac Ste An	llage of Ross Hav	ven:		Oth	er:		
Service Location:									
	Legal				Lot		Block	Plan	
	Street	Address (if Availab	le)						
Company Name:					Telepho	ne Nu	mber:		
Address:									
		Existing Tank		Single C	hamber		Dual Chan	nber	
1. Holding Tank:		Existing Tank Cor	ndition Assessment	Adequat	te		Potential fo	or Leakage	
		New Tank		Single C	hamber		Dual Chan	nber	
Effluent Pump):	Model				Serial I	Number		
3. Pipe Connecti	ion:	Pump Outlet Dept	h	(m	<u>)</u> Fr	rost Cor	ntrols		
It is imperative that the Lagoon Commission re									
Approval received f			sion for an altern	ative pur	mp: □				
I certify that my ans	swers a	are true and con	nplete to the best	of my kı	nowledge.				
Applicant Signatu	re:						_		
Office Use Only									
Connection is Acce	ptable	: 🗆	P	ermits R	eceived:				
Old System disconi	nected	: □	Le	eakage 1	Test Pass	ed:			
Date Wastewater Connection Opened: (Plumbing and Electrical)									
Additional Notes:									
The Personal information is personal information is prothe collection, please continuous process.	otected b	y the privacy provision	ns of the Freedom of In	formation a	nd Protection	of Priva	cy Act. If you l	have any ques	
North 43 Signature	North 43 Signature: Date:								







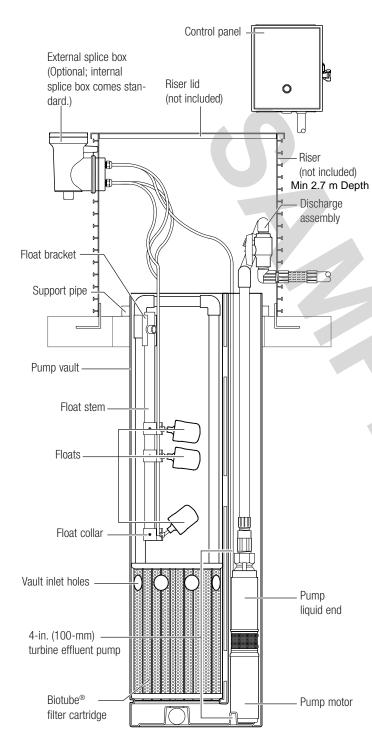


APPENDIX A Orenco ProPak Pump Package – PF 10051 60 Hz ½ HP Effluent Pump



Biotube[®] ProPak[™] Pump Package

60-Hz Series Pump Packages



Biotube® ProPak™ pump package components.

Applications

The Biotube ProPak is designed to filter and pump effluent to either gravity or pressurized discharge points. It is intended for use in a septic tank (one- or two-compartment) and can also be used in a pump tank.

The Biotube ProPak is designed to allow the effluent filter to be removed for cleaning without the need to remove the pump vault or pump, simplifying servicing.

Complete packages are available for on-demand or timed dosing systems with flow rates of 10, 20, 30, and 50-gpm* (0.6, 1.3, 1.9, and 3.2 L/sec), as well as with 50 Hz and 60 Hz power supplies.

General

Orenco's Biotube® ProPak™ is a complete, integrated pump package for filtering and pumping effluent from septic tanks. And its patented pump vault technology eliminates the need for separate dosing tanks.

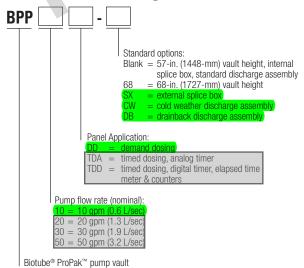
This document provides detailed information on the ProPak pump vault and filter, 4-in. (100-mm) 60-Hz turbine effluent pump, and control panel. For more information on other ProPak components, see the following Orenco technical documents:

- Float Switch Assemblies (NTD-MF-MF-1)
- Discharge Assemblies (NTD-HV-HV-1)
- Splice Boxes (NTD-SB-SB-1)
- External Splice Box (NTD-SB-SB-1)

Standard Models

BPP10DD, BPP20DD, BPP20DD-SX, BPP30TDA, BPP30TDD-SX, BBPP50TDA, BPP50TDD-SX

Product Code Diagram





Technical Data Sheet

ProPak[™] Pump Vault

Polyethylene
PVC
57 (1448) or 68 (1727)
17.3 (439)
19 (475)
2 (50)
3 (76)
4 (102)

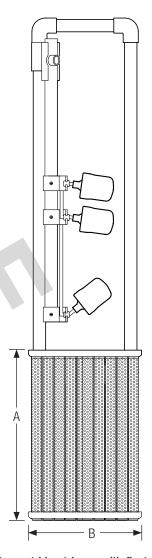
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ProPak™ pump vault (shown with Biotube filter and effluent pump)

Biotube® Filter Cartridge

Materials of Construction			
Filter tubes	Polyethylene		
Cartridge end plates	Polyurethane		
Handle assembly	PVC		
Dimensions, in. (mm)			
A - Cartridge height	18 (457)		
B - Cartridge width	12 (305)		
Performance			
Biotube® mesh opening	0.125 in. (3 mm)*		
Total filter flow area	4.4 ft² (0.4 m²)		
Total filter surface area	14.5 ft² (1.35 m²)		
Maximum flow rate	140 gpm (8.8 L/sec)		

^{*0.062-}in. (1.6-mm) filter mesh available



Biotube® filter cartridge (shown with float switch assembly)



4-in. (100-mm) Turbine Effluent Pumps*

Orenco's 4-in. (100 mm) Turbine Effluent Pumps are constructed of lightweight, corrosion-resistant stainless steel and engineered plastics; all are field-serviceable and repairable with common tools. All 60-Hz PF Series models are CSA certified to the U.S. and Canadian safety standards for effluent pumps, and meet UL requirements.

Power cords for Orenco's 4-in. (100-mm) turbine effluent pumps are Type SOOW 600-V motor cable (suitable for Class 1, Division 1 and 2 applications).

Materials of Construction

Discharge:	Stainless steel or glass-filled polypropylene			
Discharge bearing:	Engineered thermoplastic (PEEK)			
Diffusers:	Glass-filled PPO			
Impellers:	Acetal (20-, 30-gmp), Noryl (50-gpm)			
Intake screens:	Polypropylene			
Suction connection:	Stainless steel			
Drive shaft:	300 series stainless steel			
Coupling:	Sintered 300 series stainless steel			
Shell:	300 series stainless steel			
Lubricant:	Deionized water and propylene glycol			

Specifications

Nom. flow, gpm (L/sec)	Length in. (mm)	Weight Ib (kg)	Discharge in., nominal ¹	Impellers
10 (0.6)	23.0 (660)	26 (11)	1.25	6
20 (1.3)	22.5 (572)	26 (11)	1.25	4
30 (1.9)	21.3 (541)	25 (11)	1.25	3
50 (3.2)	20.3 (516)	27 (12)	2.00	2

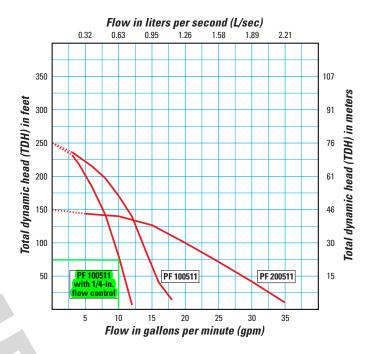
Performance

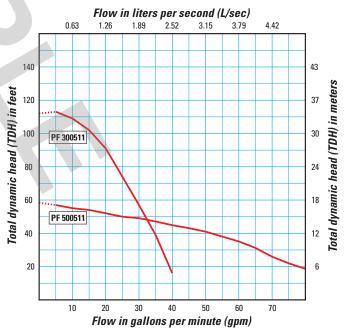
Nom. flow, gpm (L/sec)	hp (kW)	Design flow amps	Rated cycles/day	Min liquid level, in. (mm) ²
10 (0.6)	0.5 (0.37)	12.7	300	16 (406)
20 (1.3)	0.5 (0.37)	12.3	300	18 (457)
30 (1.9)	0.5 (0.37)	11.8	300	20 (508)
50 (3.2)	0.5 (0.37)	12.1	300	24 (610)

¹ Discharge is female NPT threaded, U.S. nominal size, to accommodate Orenco® discharge hose and valve assemblies. Consult your Orenco Distributor about fittings to connect discharge assemblies to metric-sized piping.

Pump Curves

Pump curves, such as those shown here, can help you determine the best pump for your system. Pump curves show the relationship between flow (gpm or L/sec) and pressure (TDH), providing a graphical representation of a pump's performance range. Pumps perform best at their nominal flow rate, measured in gpm or L/sec.



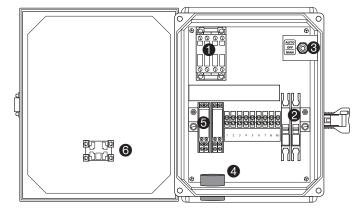


Control Panel (Demand Dose)

Orenco's ProPak™ demand dose control panels are specifically engineered for the ProPak pump package and are ideal for applications such as demand dosing from a septic tank into a conventional gravity drainfield.

Materials of Construction

materiale of com	bu douon
Enclosure	UV-resistant fiberglass, UL Type 4X
Hinges	Stainless steel
Dimensions, in. (mm)
A - Height	11.5 (290)
B - Width	9.5 (240)
C - Depth	5.4 (135)
Specifications	
Panel ratings	120 V, 3/4 hp (0.56 kW), 14 A, single phase, 60 Hz
Motor-start contactor	16 FLA, 1 hp (0.75 kW), 60 Hz; 2.5 million cycles at FLA (10 million at 50% of FLA)
2. Circuit breakers	120 V, 10 A, OFF/ON switch, Single pole
3. Toggle switch	Single-pole, double-throw HOA switch, 20 A
4. Audio alarm	95 dB at 24 in. (600 mm), warble-tone sound, UL Type 4X
5. Audio alarm silence relay	120 V, automatic reset, DIN rail mount
6. Visual alarm	7/8-in. (22-mm) diameter red lens, "Push-to-silence," 120 V LED, UL Type 4X



Control panel, demand-dose

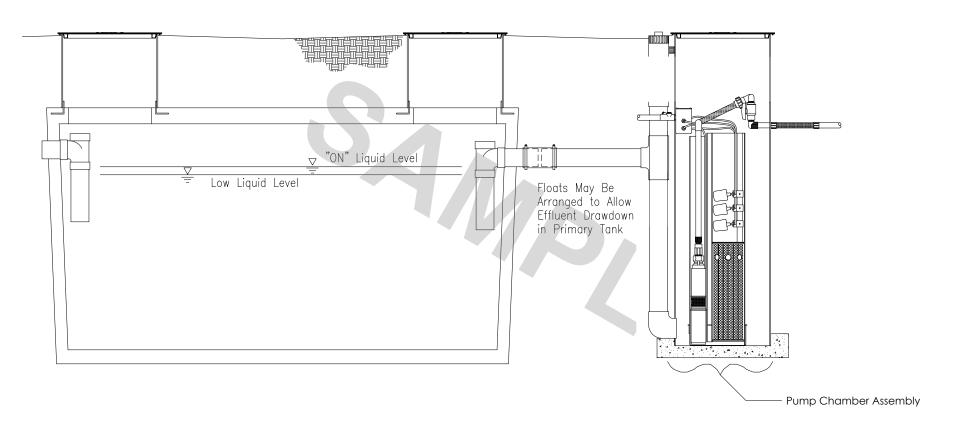
APPENDIX B

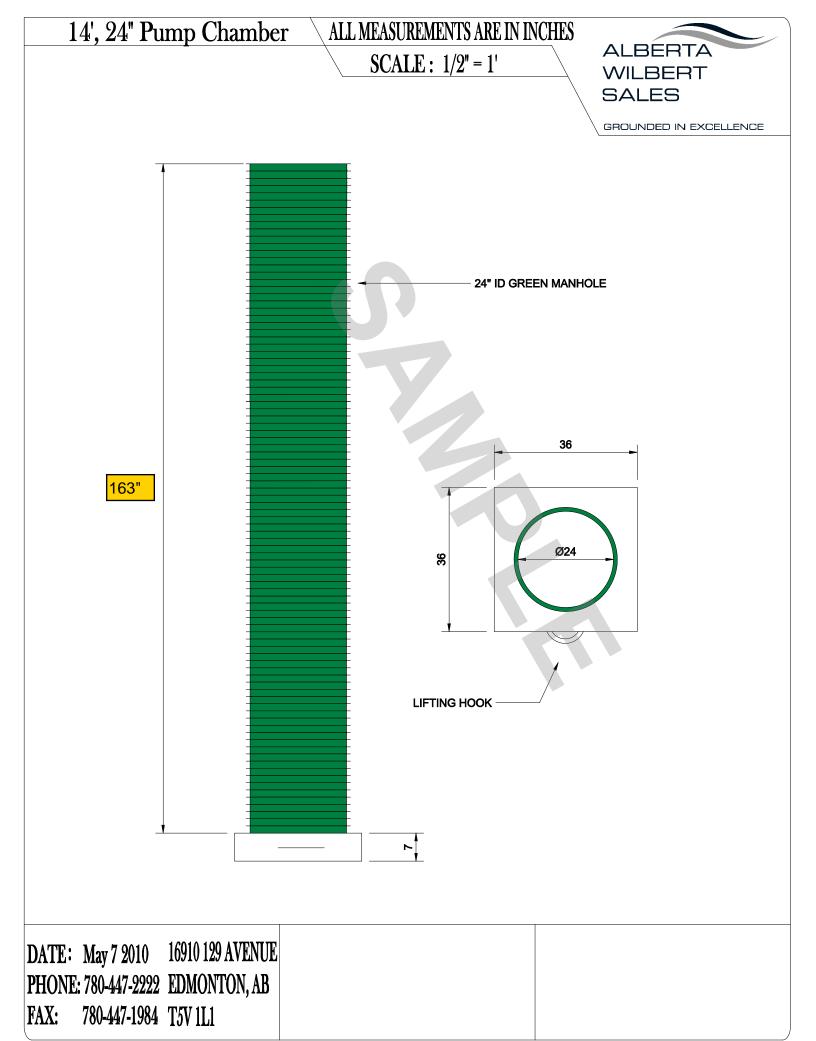
Single Chamber Tank Configurations

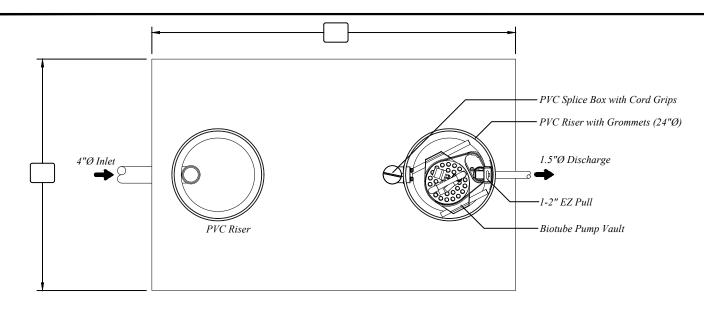
Basin with Effluent Pumping System



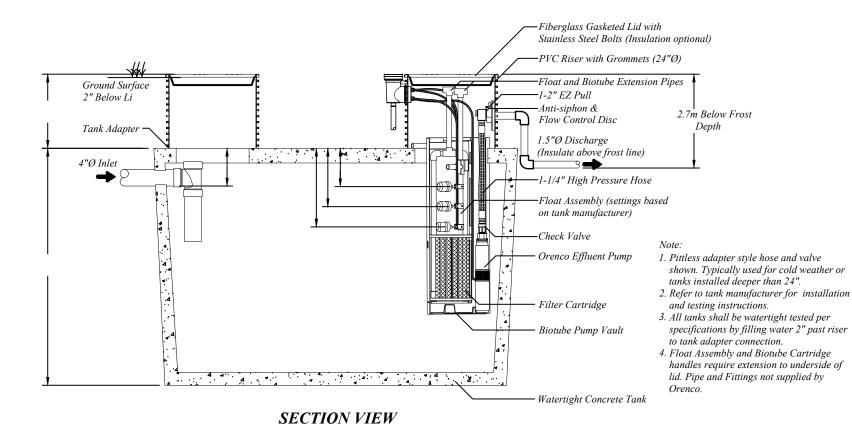
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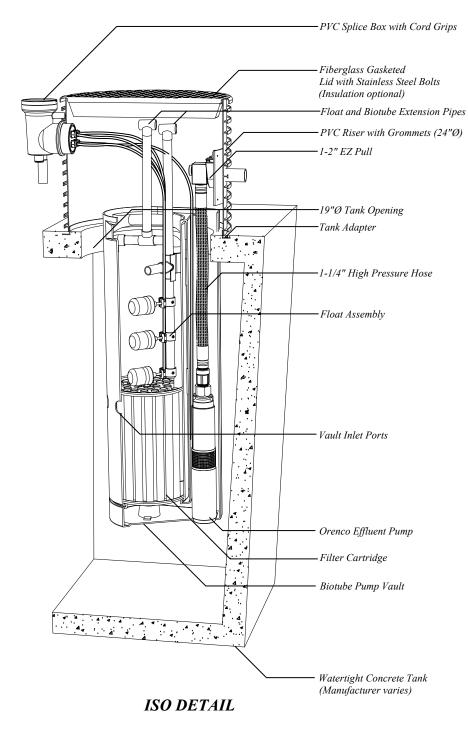






TOP VIEW





*Homeowner responsible to confirm applicability direct pump insert into single chamber tank with pump supplier



Orenco Systems, Inc. Portions or all of this Standard System Configuration Drawing, as appropriate, may be reproduced and integrated into the site-specific layout and configuration of a system by its designer. Disclaimer: This Standard System Configuration Drawing is provided solely as a design aid, and in no event should it be used as a replacement for site—specific engineering and design of the layout and configuration of an actual system. Orenco neither represents nor warrants that the configuration illustrated herein will perform in compliance with the requirements for any particular site.

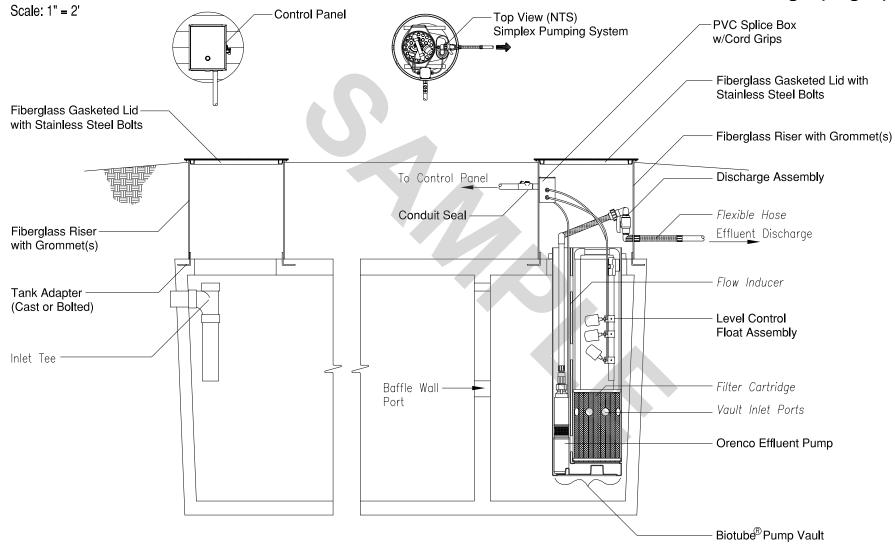
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(Concrete Tank)		Reviewed By:	GL	Sheet:	I OF I
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APPENDIX C

Dual Chamber Tank Configuration (Pump Insert)

Effluent Pumping System - Dual Compartment Drawdown





APPENDIX D

Dual Chamber Septic Tank Reference (for Pump Insert)

