207			2022	- 009 198
AITKIN CO	UNT	Y Z0	NIN	G
PERMIT NUMBER 47179		PARCEL NUMBE	R 29-1-49	12800
Location	Gov't. Lot	5 Section	49 Twp.	23
LOT 38	tiles transition N		14	Nge.
Issued 08-03-2022 To Pa Nature of Authorization 3 bolym Ty	ul & Amy	y Gauer	253	2
Nature of Authorization 3 barm Ty	pe IV m	iound sept	tic with	h
operating permit #791.		·	2	
New Construction Alteration	-	· · · · · · · · · · · · · · · · · · ·	NOTE:	
Sewer Installation	on	is permit must be p premises on which	work is to be do	one and remain
Flood Plain and Lowest Floor Elev		til work has been co	ompleted and ins	spected.
This permit expires one year from date of issua NOT TRANSFERABLE	nce	<u>M.O.</u> ZONING	ADMINISTRATO	R

No Portion of any Sewage Disposal System shall be Covered Prior to Inspection.

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2. Zoning/Land Use Permit Applications Septic Only Permit # 47179, App. # App-2022-009198, UID # 205842

Aitkin County Planning & Zoning / Environmental Services 307 Second St. NW Room 219 Aitkin, MN 56431 Phone: 218-927-7342 Fax: 218-927-4372 Email: aitkinpz@co.aitkin.mn.us

Property Owner Contact

Landowner Phone Number:

Maintenance Contract:

Terms

Please select all that apply:

(218) 244 - 4443

File 2: 🖶 Gauer_Op_Permit_App_2022.pdf

Residential Other/Performance Sewer (Type III, IV, V) Residential Operating Permit (Type III, IV, V)

Property Owner Email Address:

paquettedandb@yahoo.com

Project Location Search

Property:	Property Location		Property Address Legal Description Pr		Property A	ttributes	Owner Information	Tax Payer Information	
	Parcel Number	Section-Township-Range	Township or City Name	Property Address	Legal Description	Lake Number	Lake Name	Owner Name(s)	Taxpayer Name(s)
	29-1-492800	S:5 T:49 R:23		51694 Long Point Pl MCGREGOR, MN 55760	LOT 38	1,006,200	BIG SANDY LAKE	GAUER, PAUL & AMY	GAUER, PAUL & AMY
Driving directions to the 1 property from Aitkin.:	69 north to 210 E	to 65 head North to Long Po	pint Place						
Designer/Installer	•								
Designer Name:	5	Septic Check							
Installer:	L	icensed Septic Professional							
Installer Name:	5	Septic Check							
Installer License Number:	2	2624							
System Informati	on								
Please attach Septic Desig Management Plan:		File 1: 🖶 GauerDesign_7.12	2.22.pdf						
Attach Operating Permit A	pplication &	File 1: 🖶 Gauer_contact_ma	aint_2022.pdf						

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General Terms Zoning Permits

Defining and staking the property lines, road right-of-ways, septic sites, and wells are the responsibility of the property owner. In some cases, a registered survey may be required to verify setbacks before granting a permit.

Land Use/Septic General Terms

Zoning permits and Subsurface Sewage Treatment System permits are valid for one (1) year (unless the sewage permit is to upgrade an Imminent Threat to Public Health or Safety system, which is then valid for ten (10) months).

All corners of the proposed structure(s) need to be staked with visible flags, ribbon, or lathes prior to onsite inspection by Aitkin County.

If property lines are not clearly marked and visible, then they need to be staked with visible flags, ribbon, or lathes prior to onsite inspection by Aitkin County.

It shall be a violation of the Aitkin County Zoning Ordinance to commence construction before the permit application is approved by Aitkin County.

The landowner or authorized agent may make application for a zoning permit agreeing to do such work in accordance with all Aitkin County Ordinances. The landowner or authorized agent agrees that the application, site plan, and all other attachments submitted herewith are true and accurate and shall become a part of the permit. The landowner or authorized agent agrees that, in making application for a zoning permit, the landowner grants permission to Aitkin County, at reasonable times, to enter the property to determine compliance of the application with applicable Local, County or State Ordinances or Statutes. It is the applicants sole responsibility to contact other Local, County or State agencies to ensure the applicant has complied with all relevant Local, County or State Ordinances or Statutes.

After a complete application is submitted and reviewed, an on-site inspection may be conducted; a permit may be issued describing the proposed construction that may take place on the property. Changes to a project may require a permit application to be resubmitted.

The septic installer shall notify Aitkin County Environmental Services a minimum of twenty-four (24) hours before the covering of any portion of the septic installation. Changes from the approved septic design will require approval by the County prior to construction.

Applicants are responsible for getting all applicable entrance permits from the appropriate road authority.

Applicants acknowledge that they are in compliance with MN Contractor Licensing laws per MN Statute 326B.85.

I acknowledge that by submitting this application, the application and its attachments are public information.

Invoice #55621 (07/14/2022)

Charge	Cost	Quantity	Total
Residential Operating Permit added 07/14/2022 11:13 AM \$150 Flat Fee	\$150.00	x 1	\$150.00
Residential Other/Performance Sewer (Type III, IV, V) added 07/14/2022 11:13 AM \$400 Flat Fee	\$400.00	x 1	\$400.00
Grand Total			
		Total	\$550.00
	P	Payment 07/14/2022	\$550.00
		Due	\$0.00

Approvals

Approval	Signature
Applicant	Melissa Besser - 07/14/2022 11:13 AM 465cd320e7add131c7e638dc79d4c72d 1bf152b042ed3ea2ea77143175ddd0ce
#1 Adminstrative Approval Group	Molly Oestreich - 07/20/2022 12:50 PM 3f50240828daea1e761b0875631f7a0b 506d2fb211be9c1e2409d88ec274edb5
#2 Inspector Group	Shannon Wiebusch - 08/03/2022 2:12 PM 0b88ca62d0e47aa9d81b696817a4355d 67aae029bd9b9b59d255f0c3be152c44
#3 Final Approval	

Public Notes

Text:	Permit # 47179 (Card in the drawer)	
	3 bdrm Type IV mound septic with operating permit #791	
File(s):	File 1: OP_791.pdf	
	File 2: 2527_001.pdf	
	₩ <u>2527_001.pdf</u>	

Admin Checklist

Date application was complete: 07/14/2022 This review has been started by: Molly Oestreich × Zoning District of project location: Shoreland × Required OHWL setback × distance: "Other" OHWL setback distance is: Pumping Agreement Attached? × Low Interest Loan or SSTS Grant × project? Is this an After-The-Fact No 🐱 application? Is the parcel a Lot of Record Yes V before 1-21-92 or have alternate sites been identified?

DESIGN REVIEW CHECKLIST

Zoning Inspector:	Kevin Turnock 🗸
SSTS Type:	Type IV 🗸
SSTS Design:	"Other"/Performance System (III, IV, V) V
New or Replacement SSTS:	Replacement SSTS V
gpd:	1-2,499 gpd 🗸
# of bedrooms:	3
Does this system require an	Yes V
Operating Permit?	
Operating Permit #:	791
Attach appropriate inspection	File 1: Gauer approval.pdf
forms.:	Gauer_approval.pdf Gauer_approva
Doos this system belong to an	
Does this system belong to an	
other establishment?	
Is this a Cluster System?	No 🗸

Numbers

Current Number

Next from Sequence

8/3/22, 2:30 PM

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UID #205	5842	not a	pplicable
App. # Ap	p-2022-009198	~~~~	App-2022-009312
Permit # 47	179	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	2022-8086

Print View



EXPERT SERVICE. LASTING VALUE. CLEAN WATER

INDIVIDUAL SEWAGE SYSTEM DESIGN SUMMARY

Property Owner: Paul & Amy Gauer	Phone: <u>Contractor – Jeremy Paquette 218-244-4443</u>
Address: 51694 Long Point Place	PID: 29-1-492800
City: McGregor Zip: 55760	County: <u>Aitkin</u>
DESIGN USAGE	SITE CHARACTERISTICS
Single Family Home X Other	Soil type Sandy Loam
Number of Potential Bedrooms <u>3</u>	Hydraulic Loading 0.78 gpd/ft2
Garbage Disposal <u>No</u>	Depth to restrictive layer7"
Sewage Lift Pump <u>No</u>	
PUMP INFORMATION	CAPACITIES
Pump GPM & TDH29 GPM & 13.4 TDH	450 Daily Water Use Est Calcgpd_
Cycles per day <u>4 Doses</u>	Septic Tank Capacity 1514 Gallons (3 compartment tank – 2250 Brown Wilbert) 757 gallons – last
Gallons per cycle78 Gallons	Pump Tank Capacity <u>compartment</u>
Perforation size & spacing <u>1/4" perfs every 3'</u>	MOUND SYSTEM
Number, spacing, & diameter of laterals $3 - 1 \frac{1}{2}$ laterals every 3'	Dimension of Rock Base10' x 38'
Forcemain Size2"	Depth of Rock Below Pipe6"
	Dimensions of Mound 32.6' x 60.6'
	% Slope of Soil Under Mound0%
	Upslope Dike Width 11.3'
	Downslope Dike Width 11.3'
	Sideslope Dike Width
	APPROVAL Date 7/12/22 n Koski License #2624 onal information sheet if checked



Property Owner: Paul & Amy Gauer – 51694 Long Point Place McGregor, MN 55760

Description of Wastewater Treatment and Dispersal System

Existing system summary:

The Gauer's built a new 3-bedroom, Class I home without a garbage disposal or sewage ejector. They want a septic system instead of using the existing 1,820 gallon holding tank. There is limited space on the property, so there is not another location for a drainfield in the future. Therefore, a Type IV system utilizing pretreatment and UV light will be used to upgrade the system.

Soil Observations:

Three soil pits were dug by shovel in the proposed rockbed area. The material from 0" to 7" is mixed fill with a Sandy Loam soil texture, concentrations and depletions appearing at 7". From 7" – 12" the texture turns to a Loam, then to Clay Loam at 12". For this design a soil loading rate of 0.78 gpd/ft2 will be used, which is that of Sandy Loam. **Installer must dig out the 15' x 43' absorption area and replace the mixed fill with washed sand.**

Pretreatment Treatment System Upgrade:

The design flow will be that of a 3-bedroom home at 450 gallons per day. The existing 1,820 gallon holding tank will need to be pumped, crushed, and removed. A Brown Wilbert 2,250-gallon triple compartment tank will be set in its place. Sewage will flow by gravity from the home into first 757-gallon compartment, then flow into the second 757-gallon compartment equipped with an EcoPod E50 pretreatment unit. The total septic capacity between the two compartments is 1,514 gallons. Effluent will then flow into a Salcor UV light installed on the inlet of the pump compartment. From there effluent will flow to the last 757-gallon compartment that will be used as the time dosed pump tank. The pump installed must deliver at least 29.0 GPM and 13.4 TDH. All manholes will need to be installed to grade for ease of servicing.

Effluent will then be time dosed to a 10' by 38' rockbed mound with a 1' clean sand lift. Installer will dig out the 15' x 43' absorption area to an elevation of 95.90 and replace the mixed fill with washed sand. From there the installer will continue adding washed sand to the elevation of the new rockbed which is 97.90. The rockbed will be built with 1 $\frac{1}{2}$ " washed rock, 1 $\frac{1}{2}$ " laterals that have cleanouts and inspection pipes to grade. There will be 18" of cover material over the rockbed, and the installer must compete final grade, rake, and seeding.

System Detail:

• Septic Tank

- 1st compartment of Brown Wilbert 2,250-gallon triple compartment tank 757 gallons serving septic capacity
- 2nd compartment of Brown Wilbert 2,250-gallon triple compartment tank 757 gallons serving septic capacity and equipped with Ecopod E50 pretreatment unit
- Salcor UV light
- Blower unit
- (4) 24" manholes to grade; lids to be insulated
- 24" ultra-rib riser, attached with ADH 100- or two-part epoxy

• Time Dose Mound Pump Tank

- 3rd compartment of Brown Wilbert 2,250-gallon triple compartment tank 757 gallons
- Goulds PE 31 pump
- Delta CP2210/MN control panel (ships with EcoPod E50)

• Drainfield

- 10' x 38' Rockbed mound with a 1' clean sand lift
- 15' x 43' absorption area digout to an elevation of 95.90
- Replace fill material with washed sand to an elevation of 97.90
- 1 ½" washed rock
- (3) 36' 1 ¹/₂" laterals using SCH 40 pipe with ¹/₄" perforations every 3'
- Lateral cleanouts, inspection pipes to grade
- 18" cover material
- Final grade, rake, and seed

Water supply / wells:

The drainfield and tank locations are over 50' from any wells on the property or neighboring properties.

Additional Notes:

Gopher locates must be completed before installation. Installer to ensure tanks are set no closer than 10 feet from the home. All tanks are to be bedded in a level base of at least 6" of pea gravel, ³/₄" minus rock or screened fill sand. Backfill material around the tanks should be granular without excessive moisture content. Existing soils may be used for backfilling if they are granular in nature and free of rocks and debris over 2" in size. Granular backfill shall be compacted in lifts to prevent pipes from settling. A tank certificate shall be provided to the inspector.

Keep all vehicles and construction equipment off septic area. Rutting and/or compacting the soil will change the percolation rates and may lead to system failure.

General Contractor to verify all property lines.

Elevations are referenced to Benchmark which is the concrete in front of the garage door.

Installer to verify all elevations, dimensions, and ensure proper fall to pipes. Pitch pump chamber outlet to ensure complete drainback to pump chamber.

Establish turf to prevent erosion and freezing.

Each tank is to be pumped through the maintenance cover when serviced. Do not pump through inspection pipes.

Homeowner is responsible for all costs involved in servicing, monitoring, and mitigating the system.

All construction to be performed in accordance with MN Rule 7080 and the Aitkin County septic ordinance.

Maintenance Requirements

See attached operating permit - Bi-annual maintenance is recommended for this system. The service visit frequency can be modified based on the system performance and recommendations by the service provider. Level A treatment was used in this design. Below is a list of maintenance requirements to be completed by the service provider, maintainer, and owner.

Owner requirements:

- Hire a licensed service provider to complete the tasks below and maintain compliance with the operating permit.
- The owner is to maintain compliance with the operating permit at all times or follow the mitigation plan to make changes to get back into compliance if operating permit limits are not being met.
- Record water meter readings weekly and provide this information to the service provider.
- Maintain vegetation around tanks and drainfields. It is suggested the sites be mowed and trimmed twice per year.
- Update the service provider, designer, and county if changes in water use are expected such as adding food service or expansion of the building.
- Maintain access points for service equipment to reach tanks and other components.

Maintainer requirements:

- Pump and clean tanks when solids levels reach 25% of tank capacity.
- Pump and clean lift tanks when sludge levels exceed 4" in depth.
- Inspect tank integrity when pumping to ensure tank compliance.
- Clean baffles and effluent screens at each tank pumping.
- Report any unsafe conditions to owner and service provider.
- Report and note any issues such as infiltration, seepage, or other non-compliance issues.
- Follow local and state regulations when disposing of septage.

Service Provider requirements:

• Use the maintenance checklist below as a reference for service to be completed on the system at which frequency.

- Adjust or recommend changes in maintenance tasks and frequency based on operational results.
- Schedule or complete tank maintenance pumping when solids reach critical levels.
- Follow the operating permit and sampling requirements. Send maintenance reports to the County.
- For detailed maintenance tasks or troubleshooting information, refer to the attached installation and operation & maintenance manual provided the manufacture.

Component Description: Septic Tank 757 Gal.				
Location	Description	Frequency		
Manholes	Inspect manholes for infiltration	Bi-annual		
Manholes	Inspect inlet and outlet for infiltration	Bi-annual		
Manholes	Inspect and clean effluent filter if needed	Bi-annual		
Inlet/outlet	Sample sludge and scum levels	Bi-annual		

Component D	Component Description: Ecopod E50 Treatment Tank 757 Gal.			
Location	Description	Frequency		
Manholes	Inspect manholes for infiltration	Bi-annual		
Manholes	Inspect inlet and outlet for infiltration	Bi-annual		
Pretreatment	Maintain per manufacturer recommendations	Bi-annual		
UV Light	Maintain per manufacturer recommendations	Bi-annual		

Component D	Component Description: Mound Dose Time Dose Tank 757 Gal.				
Location	Description	Frequency			
Manholes	Inspect manholes for infiltration	Bi-annual			
Manholes	Inspect inlet and outlet for infiltration	Bi-annual			
Inlet/outlet	Sample sludge and scum levels	Bi-annual			
Pump Tank	Pump solids level exceeds 4" in depth	As needed			
Manhole	Inspect pumps and floats for proper operation	Bi-annual			
Panel	Inspect panel and alarm system for proper operation	Bi-annual			
Panel	Record cycle counters and/or elapsed timer meters.	Bi-annual			
Panel	Adjust timer settings based on dosing results	As needed			
Manhole	Sample effluent fecal coliform	Bi-annual			

Component Description: Mound 10' by 38' rockbed			
Location	Description	Frequency	
Drainfield	Inspect for ponding or seepage	Bi-annual	
Drainfield	Mow the system	June 1 st , August 1st	
Drainfield	Clean and flush lateral lines	As Needed	

Mitigation Plan:

Problem	Action	Mitigation Steps
Rockbeds ponding	 Verify flow and effluent results are with in permit limits. Verify equal distribution in bed dosing. 	 If flow cannot be accepted by the beds, pump and haul excess effluent. Complete pump calibration to verify timer settings are correct.
Seepage below beds	 Verify dosing volumes and equal distribution Inspect all beds to determine if it's isolated to one area or in all beds. Verify pump operation Review flow data 	 Adjust timer settings to reduce flow entering the bed with seepage. Complete pump calibration to verify timer settings are correct.
Treatment levels not meeting operating permit limits	 Verify flow, influent, and effluent results are with in permit limits. Verify dosing volumes from EQ tank to treatment tank. Adjust sludge return pump settings. Verify blower and aeration network are working properly Sample influent 	 If treatment levels cannot be met, expand the treatment system or adding more tankage Adjust dosing tank match long term daily flow averages as close as possible. Sample influent from EQ tank to verify loading. Sample dissolved oxygen and pH in EQ tank and Treatment tank. Check blower air filter, amperage and pressure.
Flow limit exceeded	 Inspect for signs of infiltration in all tanks Inspect building plumbing for leak fixtures or toilets. Discuss water use patterns with the owner or mgmt. 	 Adjust timer settings within the permit limits and operating permit limits Pump and haul excess flow.



Preliminary Evaluation Worksheet



1. Contact	Information		_		_	V	04.01.2021				
Prope	Property Owner/Client: Paul & Amy Gauer Date Completed: 7.12.22										
	Site Address: 51694 Long	Project ID:									
	Email: paquetteda	andb@yahoo.	com			Phone:	218-244-4443				
	Mailing Address: 1028 241st	-		55005		Alt Phone:					
	Legal Description:										
	Parcel ID: 29-1-492800 SEC: 5 TWP: 49 RNG: 23										
2. Flow an	2. Flow and General System Information										
	ent-Provided Information										
	roject Type: New Constr	ruction	✓ Replacem	ent	Expansion	E F	Repair				
F	Project Use: 🗌 Residential 🛛 🛛	Other Establi	shment:								
Res	idential use: # Bedrooms:	3	Dwelling S	q.ft.:	L	Infinished So	q. Ft.:				
	# Adults	:	# Chi	dren:		# Teen	agers:				
	In-home business (Y/N):		If yes, des	cribe:							
		Garbage Dis	sposal/Grinder	☑ Dishwa	sher	Hot Tub	*				
	Water-using devices:		np in basement	U Water S		Sump Pu					
	(check all that apply)	□ Large Batht	-	Iron Filt High Ef	ter* f. Furnace*	□ Self-Clea □ Other:	aning Humidifier*				
			shing machine	-			into system				
Add	litional current or future uses	:									
Ant	ticipated non-domestic waste	:									
The ab	ove is complete & accurate:	·									
	to the second flow lofe		tilk addi		gnature & da						
B. De	esigner-determined flow Info	-	7		mation as ne	-]				
	Design Flow	: 450	GPD	Anticip	ated Waste	Туре:	Residential				
	BOD	: 15	mg/L TSS	15	mg/L C)il & Grease	mg/L				
	ary Site Information										
A. Water Su	pply Wells						 				
			Well Depth	Casing	Confining	STA					
#	Description	Mn. ID#	(ft.)	Depth (ft.)	Layer	Setback	Source				
1	Deep Well	╂────	>50'	>50'			Contractor				
2											
3 4		+									
	Additional Well Information	:					<u> </u>				
1											

UNIVERSITY OF MINISORA ONSITE SEWAGE TREATMENT PROGRAM		Preliminary Evaluation Worksheet		NESOTA POLLI TROL AGENCY	UTION Y				
Si	te within 200	of noncommunity transient well (Y/N) No	Yes, source:						
Site wit	Yes, source:								
Site in Well Head Protection inner wellhead management zone (Y/N) No Yes, source:									
Buried water supply pipes within 50 ft of proposed system (Y/N) No									
B. Site loca	ited in a sho	eland district/area? Yes	Yes, name:	Big Sandy	/				
	Ele	ration of ordinary high water level: 1216.56 ft	Source:	MN DNR					
Classific	ation: Lake	General Development Tank Setback: 75 ft.	STA Setbk:	75 ft	٤.				
C. Site loca	ated in a floo	dplain? No	Yes, Type(s):	N/A					
	Floodpla	in designation/elevation (10 Year): N/A ft	Source:	N/A					
	Floodplai	designation/elevation (100 Year): N/A ft	Source:	N/A					
D. Property	y Line Id / So	urce: 🗹 Owner 🗹 Survey 🗹 County GIS 🗌 Pla	nt Map						
E. ID distan	ice of releva	nt setbacks on map: 🗹 Water 🗌 Easements 🖾 We	г						
		⊡ Building(s) ⊡ Property Lines □ OF	L						
4. Preliminary S	Г	formation From Web Soil Survey (attach map & descrip	ŕ						
Liet	Map Units:	564 Friendship Loam Sand	Slope Range:	0-3 %					
	t landforms:	Outwash Plains							
	position(s):	Back/ Side Slope							
Paren	it materials:	Outwash							
			to Watertable:	41 ir	۱ 				
Map Unit		k Absorption Field- At-grade:							
Ratings		ank Absorption Field- Mound: Not Limited							
	·	nk Absorption Field- Trench:							
5. Local Govern									
	Na	ne of LGU: Aitkin County							
	LC	U Contact: 218-927-7342							
	LGU-specifi	: setbacks:							
LGU-specif	fic design rec	uirements:			_				
LGU-specific in	stallation rec	uirements:			\Box				
Notes:									

L



Field Evaluation Worksheet



1. Project Information v 04.01.2021									
Property Owner/Client: Paul & Amy Gauer Project ID:									
Site Address: 51694 Long Point Place McGregor, MN 55760 Date Completed: 7.12.22									
2. Utility and Structure Information									
Utility Locations Identified 🗌 Gopher State One Call #									
Locate and Verify (see Site Evaluation map) 🛛 Existing Buildings 🗌 Improvements 🗌 Easements 🖓 Setbacks									
3. Site Information									
Vegetation type(s): Grass Landscape position: Back/ Side Slope									
Percent slope: 0	Percent slope: 0 % Slope shape: Slope direction:								
Describe the flooding or run-c	on potential of site:								
Describe the need for Type III	or Type IV system: Limited space for dra	linfield							
Note:									
Proposed soil treatment area	Proposed soil treatment area protected? (Y/N): Yes If yes, describe: Staked and flagged								
4. General Soils Information									
Filled, Compacted, Disturbed areas (Y/N): No									
If yes, describe:									
Soil o	bservations were conducted in the propose	ed system location (Y/N): Yes							
A soil o	observation in the most limiting area of the	e proposed system (Y/N): Yes							
Number of soil observ	vations: 3 Soil observat	tion logs attached (Y/N): Yes							
	Percolation tests perfo	ormed & attached (Y/N): No							
5. Phase I. Reporting Information									
	Pepth Elevation								
Limiting Condition*:		Restrictive Depth Identified from List Below							
Periodically saturated soil:	1 in 96.9 ft	Soil Texture: Medium Sandy Loam Percolation Rate: min/inch							
Standing water: Bedrock:	in ft in ft Soil								
Benchmark Elevation:		Hyd Loading Rate: 0.78 gpd/ft ² enchmark on map? (Y/N): Yes							
Benchmark Elevation Location:	Concrete at garage door								
Differences between soil survey ar									
Site evaluation	issues / comments:								
Anticipated construction issues		tank first.							



Design Summary Page

1. PROJECT INFORMATION						v 04.01.2021			
Property Owner/Client: Paul & Am	Project ID:								
Site Address: 51694 Lon	g Point Plac	ce McGrego	Date:	7.12.22					
Email Address: paquetted	landb@yaho	o.com			Phone:	218-244-4443			
2. DESIGN FLOW & WASTE STRENGTH	Attacl	h data / estim	ate basis fo	or Other Establishr	ments				
Design Flow:	450	GPD		Anticipated V	Waste Type:	Residential			
BOD:	15	mg/L TSS	: 15	mg/L O	il & Grease:	mg/L			
Treatment Level:	А	Select Treat	ment Level (C for residential s	eptic tank effli	uent			
3. HOLDING TANK SIZING									
Minimum Capacity: Residential =400 gal/bedroom, Other Establishment = Design Flow x 5.0, Minimum size 1000 gallons									
Code Minimum Holding Tank Capacity:		Gallons	in	Tanks	or Compart	ments			
Recommended Holding Tank Capacity:		Gallons	in	Tanks	or Compart	ments			
Type of High Level Alarm:				(Set @	75% tank c	apacity)			
Comments:									
4. SEPTIC TANK SIZING									
A. Residential dwellings:									
Number of Bedrooms (Residential):	3]							
Code Minimum Septic Tank Capacity:	1000	Gallons	in	1 Tanks	or Compart	ments			
Recommended Septic Tank Capacity:	1514	514 Gallons in 2 Tanks or Compartments				ments			
Effluent Screen & Alarm (Y/N):		Model	/Type:						
B. Other Establishments:									
Waste received by:				GPD x	Days Hyd. R	etention Time			
Code Minimum Septic Tank Capacity:		Gallons	In	Tanks	or Compart	ments			
Recommended Septic Tank Capacity:		Gallons	In	Tanks	or Compart	ments			
Effluent Screen & Alarm (Y/N):		Model	/Type:						
5. PUMP TANK SIZING									
Pump Tank 1 Capacity (Minimum):	500	Gal	Pump T	ank 2 Capacity	(Minimum):	Gal			
Pump Tank 1 Capacity (Recommended):	757	Gal Pu	np Tank 2	Capacity (Reco	ommended):	Gal			
Pump 1 29.0 GPM Total Head	13.4]ft I	ump 2	GPM	Total Head	ft			
Supply Pipe Dia. 2.00 in Dose Vol:	78.0	gal Sup	ply Pipe D	Dia.	Dose Vol:	Gal			
		-							



Design Summary Page



6. SYSTEM AND DIS	TRIBUTION TYPE	Project	ID:							
Soil Treatment Type:	Mound	Distribu	tion Type:	Pressure Distribution-L	evel					
Elevation Benchmark:	100 ft	Benchmark	Location:	Concrete at garage doc	pr					
MPCA System Type:	Type IV	Distribut	on Media:	Rock						
Type III/IV/V Details:										
7. SITE EVALUATION SUMMARY:										
-	Describe Limiting Condition: Redoximorphic Features/Saturated Soils									
-	ock Fragments? (yes/no y additional informatior	/		: % rock and layer thickn s in this design.	ess, amount of					
Note:										
Limiting Cond	Depth lition: 0 incl			f Limiting Condition						
Minimum Reg'd Separ				Critical for syster	n compliance					
			Elevation 97.90	ft	reomprance					
Code Max System I This is the maximimum dept				TL legative Depth (ft) means it mu	ist be a mound.					
Soil Texture:										
Soil Hyd. Loading	Rate: 0.78 GPE	D/ft ² Percola	tion Rate:	MPI						
Contour Loading	Rate: 12	Note:								
Measured Land	Slope: 0 %	Note:								
Comr	nents:									
8. SOIL TREATMENT	AREA DESIGN SUMMA	RY								
Trench:										
Dispersal Area	ft ² S	idewall Depth	in	Trench Width	ft					
Total Lineal Feet	ft No	o. of Trenches		Code Max. Trench Depth	in					
Contour Loading Rate	ft Mir	nimum Length	ft	Designed Trench Depth	in					
Bed:										
Dispersal Area	ft ² S	idewall Depth	in	Maximum Bed Depth	in					
Bed Width	ft	Bed Length	ft	Designed Bed Depth	in					
Mound:										
Dispersal Area	380.0 ft ²	Bed Length 38.0) ft	Bed Width	10.0 ft					
Absorption Width	15.0 ft C	lean Sand Lift 1.0	ft	Berm Width (0-1%)	11.3 ft					
Upslope Berm Width	11.3 ft Do	wnslope Berm 11.3	3 ft	Endslope Berm Width	11.3 ft					
Total System Length	60.6 ft	System Width 32.6	ó ft	Contour Loading Rate	12.0 gal/ft					
			Proje	ct ID:						

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Design Summary Page



At-Grade:									
Bed Width ft Bed Length					ft	Finished H	leight	ft	
Contour Lo	oading Rate		gal/ft L	Jpslope Berm		ft	Downslope	Berm	ft
End	lslope Berm		ft Sy	ystem Length		ft System Width ft			ft
Level & Equal Pressure Distribution									
No. of Laterals 3 Perforation Spacing 3 ft Perforation Diameter 1/4 in									1/4 in
Lateral Diameter 1.50 in Min Dose Volume 0 gal Max Dose						Max Dose Vo	olume	113 gal	
Non-Level and Unequal Pressure Distribution									
	Elevation (ft)	Pipe Size (in)	Pipe Volume (gal/ft)	Pipe Length (ft)	Perf Size (in)	Spacing (ft)	Spacing (in)	٨	۸inimum Dose
Lateral 1								١	/olume
Lateral 2								ΙΓ	gal
Lateral 3								_	
Lateral 4								Ν	Maximum Dose
Lateral 5								١	/olume
Lateral 6				1 1				Ιſ	gal
				pe IV Design					
A. Starti	ng BOD Conc	entration =	Design Flov	w X Starting B	OD (mg/L) >	(8.35÷1,	000,000		
45	50 gpd	X 17	70 mg/	L X 8.35 ÷ 1,0	00,00(=	0.64	lbs. BOD/da	ıy	
B. Target	t BOD Conce	entration = [Design Flow	v X Target BOI	D (mg/L) X 8	8.35 ÷ 1,00	00,000		
45	50 gpd	X 1	5 mg/	L X 8.35 ÷ 1,0	00,00(=	0.06	lbs. BOD/da	ıy	
			i	_bs. BOD To Be	e Removed:	0.58	Ę		
Pre	Treatment	Technology:	r				*Must	Meet o	r Exceed Target
D	visinfection ⁻	Technology:	Salcor U	V Light					r Levels A & B
C . Organ	ic Loading t	o Soil Treatr	ment Area:						
		·		0.05.4.0		280	- 2	0.000	
1	3	<u> </u>	50 gpd	x 8.35 ÷ 1,0	00,000 ÷	380	ft ² =	0.000	015 lbs./day/ft ²
10. Comm	ients/Specia	al Design Co	onsideratio	ns:					
l here	by certify th	nat I have cc	mpleted th	nis work in acc	cordance wi	th all appl	icable ordinan	ces, rul	es and laws.
	Brian Koski			Valla	/		2624	ΙΓ	7.12.22
	(Designer)		J <u>L</u>	(Signatur		(License #) (Date)			



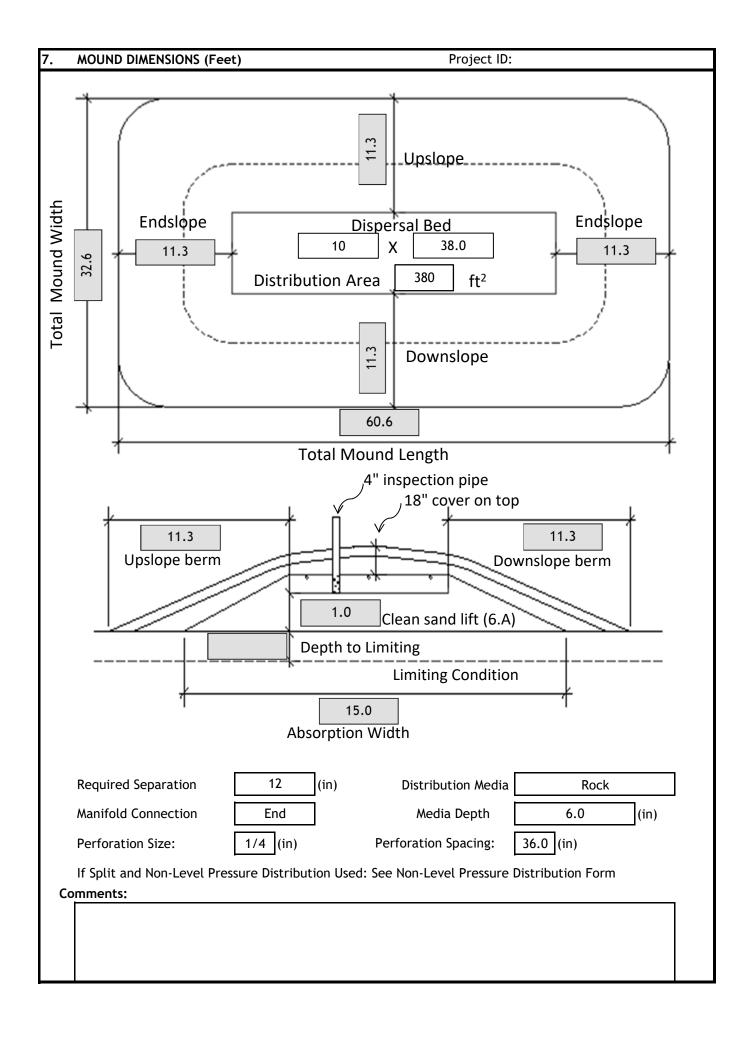
Mound Design Worksheet

<1% Slope



1.	SYSTEM SIZING:		P	rojeo	ct ID:					v 04	4.01.2021
	A. Design Flow :		450		GPD			TAB	LE IXa	L	
	B. Soil Loading Rate:		0.78	3	GPD/f	t ²		OADING RATES FOR DETERMINING BOTTOM ABSORPTION AREA AND ABSORPTION RATIOS USING PERCOLATION TESTS			
	-		0.0					Treatment Level C Treatment Level A, A-2, B,			
	C. Depth to Limiting Condition:		0.0		ft		Percolation Rate (MPI)	Absorption Area Loading	Mound	Absorption Area Loading	Mound
	D. Percent Land Slope:		0.0		%		(WPT)	Rate (gpd/ft ²)	Absorption Ratio	Rate (gpd/ft ²)	Absorption Ratio
	E. Design Media Loading Rate:		GPD/f	ť	<0.1 0.1 to 5	-	1	-	1		
	F. Mound Absorption Ratio:		1.50)			0.1 to 5 (fine sand	1.2 0.6	2	1.6 1	1
	Table I						and loamy fine sand) 6 to 15	0.78	1.5	1	1.6
	MOUND CONTOUR LOADING	S RA	TES:				16 to 30	0.6	2	0.78	2
				Con	tour		31 to 45	0.5	2.4	0.78	2
	Measured Perc Rate OR mound absorption ra		- 1		ding		46 to 60	0.45	2.6	0.6	2.6
	Perc Rate OR mound absorption ra		_ I	Ra	te:		61 to 120	-	5	0.3	5.3
	≤ 60mpi 1.0, 1.3, 2.0, 2.4, 2	4	1		12		>120	-	-	-	-
	3 60mpr 1.0, 1.3, 2.0, 2.4, 2	.0	→	2	12						
	← 61-120 mpi OR 5.0		\rightarrow	<	12	*	Systems with t	hese valu	ies are no	ot Type I s	systems.
	→			-			Contour Loading Rate (linear loading rate) is a				
	≥ 120 mpi* >5.0*		\rightarrow	≤	6*		I	recomme	nded valı	le.	
2.	DISPERSAL MEDIA SIZING										
۷.											
	A. Calculate Dispersal Bed Area: Des	ign	Flow	(1.A)) ÷ Des	ign	Media Loading	g Rate			
	450 GPD ÷		1.2		GPD/f	t ²	= 375	ft ²			
	If a larger dispersal media	area	a is d	esire	d, ente	er s	ize: 380	ft ²			
	B. Enter Dispersal Bed Width:		10		ft	Са	n not exceed	10 feet.			
	C. Calculate Contour Loading Rate: E	Rod	Widt								
	$10 \text{ft}^2 \times 1.$			PD/ft		me	12.0 gal		Cannot	exceed T	able 1
						Ļ	544		Cunnot	exceed 1	uble I
	D. Calculate Minimum Dispersal Bed		gth:	Dispe			Area ÷ Bed Wid	ith			
	$\frac{380}{\text{ft}^2 \div 1}$	0	ft	=	38	3.0	ft				
	If a larger dispersal media Le	ngtł	n is d	esire	d, ente	er s	ize:	ft			
3.	ABSORPTION AREA SIZING										
	A. Calculate Absorption Width: Bed V	Wid	th X	Mour	nd Abso	h	tion Ratio				
	10.0 ft X 1.			=		5.0	ft				
				-	1.						
	B. For slopes from 0 to 1%, the Absor	rpti	on W	idth i	is meas	sure	ed from the be	ed equally	in both	directions	
	Absorption Width Beyond the Bed	: Ah	sorpt	tion V	Nidth	- B	ed Width ÷ 2				
	(15.0 ft - 10			:) ÷	2	_	= 2.5	ft			
				·, ·	2		2.5				

4.	DISTRIBUTIO	N MEDIA					Project ID:
А.	Select Disper Rock Depth I	Below Distr	ibution Pi	Roo	ck]	Enter Either A. or B.
R	6 Registered M	jin edia			0		Charle registered product
Б.	-		a Donth				Check registered product information for specific
	Specific Medi	stered Medi a Comment	•		in		application details and design
6.	MOUND SIZIN	IG					
Α.	Clean Sand Li	ift: Require	ed Separa	tion - De	epth to Limit	ing Con	ndition = Clean Sand Lift (1 ft minimum)
	1.0 ft -		ft =	1.	0 ft	Design	n Sand Lift (optional): ft
В.	Upslope Heig	ht = Clean	Sand Lift	+ Dept	h of Media +	Depth t	to Cover Pipe + Depth of Cover (1 ft)
	1.0	ft +	0.50	ft +	0.33	ft +	1.00 ft = 2.8 ft
C.		1 · i		Г Г	•	٦	d, but could be 3-12)
	2.8	ft X	4.0	ft =	11.3	ft	
D.	Total Landsca 11.3	ape Width : ft +	= Berm W 10.0	idth + [ft +	Dispersal Bec 11.3	l Width ft =	h + Berm Width 32.6 ft
-				l L		ו נ	
Ľ.	15.0	ft -	32.6	ft =	0		on Width - Total Landscape Width if number is negative (<0), value is ZERO
F	Final Berm W				h + Berm W		
	0	ft +	11.3	ft =	11.3	ft	
G							th + Final Berm Width
0.	11.3	ft +	10.0	ft +	11.3	ft =	
Н.	Total Mound		inal Berm	L	+ Dispersal E	J 1	ngth + Final Berm Width
	11.3	ft +	38.0	ft +	11.3	ft =	
١.	Setbacks from		Absorptio		- Dispersal	J I	/idth divided by 2
(15.0	ft -	10.0) /	2 =	r	2.5 ft





Mound Materials Worksheet

Project ID:	v 04.01.2021
A.Rock Volume: (Rock Below Pipe + Rock to cover pipe (pipe	outside dia + ~2 inch)) X Bed Length X Bed Width = Volume
(<u>6</u> in + <u>3.0</u> in) ÷ 12 X <u>38.0</u>	ft X 10.0 ft = 285.0 ft^3
Divide ft ³ by 27 ft ³ /yd ³ to calculate cubic yards:	285.0 $ft^3 \div 27 = 10.6 yd^3$
Add 30% for constructability:	10.6 $yd^3 X$ 1.3 = 13.7 yd^3
B. Calculate Clean Sand Volume:	
Volume Under Rock bed : Average Sand Depth x Media Wig 1.0 ft X 10	$\begin{array}{cccc} dth \ x \ Media \ Length \ = \ cubic \ feet \\ \hline 0.0 \ ft \ X \ \hline 38 \ ft \ = \ \hline 380 \ ft^3 \end{array}$
For a Mound on a slope from 0-1%	
Volume from Length = ((Upslope Mound Height - 1) X Absor 2.83 ft - 1)X 2.50 X	rption Width Beyond Bed X Media Bed Length) 38 ft = 173.9
Volume from Width = ((Upslope Mound Height - 1) X Absorp2.83ft - 1)X2.50X	ption Width Beyond Bed X Media Bed Width) 10 ft = 45.8
Total Clean Sand Volume : Volume from Length + Volume173.9ft3 +45.8	from Width + Volume Under Media $ft^{3} + 380.0 ft^{3} = 599.6 ft^{3}$
For a Mound on a slope greater than 1%	
Upslope Volume: ((Upslope Mound Height - 1) x 3 x Bed L ((ft - 1) X 3.0 ft	
Downslope Volume : ((Downslope Height - 1) x Downslope ((ft - 1) X	Absorption Width x Media Length) \div 2 = cubic feet ft X) \div 2 = ft ³
Endslope Volume: (Downslope Mound Height - 1) x 3 x Me (ft - 1) X 3.0 ft	
Total Clean Sand Volume : Upslope Volume + Downslope V ft ³ +	Volume + Endslope Volume + Volume Under Media ft ³ + ft ³ = ft ³
Divide ft ³ by 27 ft ³ /yd ³ to calculate cubic yards:	599.6 $ft^3 \div 27 = 22.2 yd^3$
Add 30% for constructability:	22.2 $yd^{3}X$ 1.3 = 28.9 yd^{3}
C.Calculate Sandy Berm Volume:	
Total Berm Volume (approx): ((Avg. Mound Height - 0.5 ft (2.8 - 0.5)ft X 32	topsoil) x Mound Width x Mound Length) $\div 2$ 2.6 ft X 60.6) $\div 2 = 2305.9$ ft ³
Total Mound Volume - Clean Sand volume -Rock Volume = 2305.9 ft ³ - 59	cubic feet 9.6 ft^3 - 285.0 ft^3 = 1421.3 ft^3
Divide ft ³ by 27 ft ³ /yd ³ to calculate cubic yards:	1421.3 $ft^3 \div 27 = 52.6 yd^3$
Add 30% for constructability:	52.6 $yd^3 \times 1.3 = 68.4 yd^3$
D.Calculate Topsoil Material Volume: Total Mound Width X	Total Mound Length X .5 ft
32.6 ft X 60	0.6 ft X 0.5 ft = 989.6 ft^3
Divide ft ³ by 27 ft ³ /yd ³ to calculate cubic yards:	989.6 $ft^3 \div 27 = 36.7$ yd^3
Add 30% for constructability:	36.7 $yd^3 \times 1.3 = 47.6 yd^3$





						Project	ID:				v 0-	4.01.2021
1.	Media Bed Width	n:					10 ft					
2.	Minimum Numbe	er of Late	erals in s	system/2	zone = R	ounded		Media Be	ed Width	n - 4) ÷ 3] + 1.	
		[(10	-4)	÷ 3] + 1	=	3 later	als	Does	not app	ly to at-	grades
3.	Designer Selecte	d Numb	er of La	terals :			3 later	als				
	Cannot be less t			ot in at-	grades)					Insulated acces	s box	
4.	Select Perforation Spacing :						3.00 ft	12"	Geater	>12 Soil cov tile ↑ Minimu		
5. Select Perforation Diameter Size:							1/4 in	"//" perforat	tions spaced 3' ap	art \$1"-2" (of rock	12*
6.	Length of Latera	ıls = Me	dia Bed I	Length -	2 Feet.		L	Perf	oration sizing: 1/8"	to ¼" Perfor	ation spacing: 2' 1	to 3'
	38.0	- 2f	t =	36	.0 f	t Pe	erforation can no	ot be clo	ser then	1 foot f	rom edg	ge.
7.	Determine the N round down to tl					Divide th	ne Length of Late	erals by	the Per	foration	Spacing	g and
	Number of Perfo	oration S	paces =	36	.0 f	t	÷ 3.0	ft	=	12	Spa	aces
8.	Number of Perfo											
	verify the numbe with a center ma		foration	s per la	teral gua	arantees	s less than a 10%	discharg	ge variat	10 n. Th	e value	is double
			ns Per La	teral =	12	Sp	aces + 1 =	1	3	Perfs. Pe	er Latera	al
	,	Max	imum Numi	ber of Perf	orations P		to Guarantee <10% D	ischarge Va				
			Perforation						nch Perfor	ations		
Perfe	oration Spacing (Feet)			iameter (I	,		Perforation Spacing		<u> </u>)iameter (lı	,	
	2	1	11/4	11/2	2	3	(Feet) 2	1	11/4	1½ 21	2	3 68
	21/2	10 8	13 12	18 16	30 28	60 54	21/2	10	16	21	34	64
	3	0 8	12	16	25	52	3	9	14	19	30	60
		-	Perforatio		23	52	-		nch Perfor			
. (Pipe D	iameter (l	nches)		Perforation Spacing		Pipe [)iameter (li	nches)	
Perto	oration Spacing (Feet)	1	1¼	11/2	2	3	(Feet)	1	1¼	11/2	2	3
	2	12	18	26	46	87	2	21	33	44	74	149
	21/2	12	17	24	40	80	21/2	20	30	41	69	135
	3	12	16	22	37	75	3	20	29	38	64	128
		m	anifold pipe	\			Cleanouts				`` 0	
				/			·····					P
A			X		from pump	/	'n	Aanifold pipe				ال ۹
Ľ						4			1 -			
clean o	outs					Ľ	8				Alternate I of pipe fro	
	l_				ternate locat		R				S	in pump
				TO	pipe from p					Pipe fro	om pump	
9.	Total Number of Perforated Later		itions ed	quals the	e Numbe	er of Per	forations per La	<i>teral</i> m	ultiplied	by the <i>l</i>	Number	of
	13 Per	rf. Per L	at. X	3	3	lumber	of Perf. Lat. =	3	89	Fotal Nu	mber of	Perf.
10.	Spacing of lat	terals;	Must be	greater	than 1 f	oot and	no more than 3	feet:		3.0	ft	
11.	Select Type of M	lanifold	Connect	<i>ion</i> (End	d or Cen	ter):	End		_			
12.	Select Lateral Di	iameter	(See Tal	ole):			1.50	in				



Pressure Distribution Design Worksheet

13.	Calculate the Square Feet per Perforation.		Perforation Disch	arge (GPM)	
	Recommended value is 4-11 ft2 per perforation, Does not apply to At-Grades		Perforat	on Diameter	
a.	Bed Area = Bed Width (ft) X Bed Length (ft)	Head (ft)	¹ / ₈ ³ / ₁₆	7/32	1/4
		1.0 ^a	0.18 0.41	0.56	0.74
	10 ft X 38 ft = 380 ft ²	1.5	0.22 0.51	0.69	0.9
b.	Square Foot per Perforation = Bed Area \div by the Total Number of Perfs	2.0 ^b 2.5 3.0	0.26 0.59 0.29 0.65 0.32 0.72	0.80 0.89 0.98	1.04 1.17 1.28
	380 $ft^2 \div$ 39 perf = 9.7 $ft^2/perf$	4.0	0.32 0.72	1.13	1.47
		5.0 ^c	0.41 0.93	1.26	1.65
14.	Select Minimum Average Head : 1.0 ft	1 foot	Dwellings with 3/16 i perforations		
15.	Select <i>Perforation Discharge</i> based on Table: 0.74 GPM per Perf	2 feet	Dwellings with 1/8 in Other establishments inch to 1/4 inch perfo	and MSTS with	
16.	Flow Rate = Total Number of Perfs X Perforation Discharge.		Other establishments perforations	and MSTS with	1/8 inch
	39 Perfs X 0.74 GPM per Perforation = 29	GPM			
17.	Volume of Liquid Per Foot of Distribution Piping (Table II): 0.110	iallons	/ft		
18.	Volume of Distribution Piping =				
10.				blell	
	= [Number of Perforated Laterals X Length of Laterals X (Volume of		Volume		din
	Liquid Per Foot of Distribution Piping]			^y ipe	
	3 X 36 ft X 0.110 gal/ft = 11.9 G		Pipe Diamete	Liqu r Per F	
	$\begin{array}{ c c c c c c c c c c c c c c c c c c c$	iallons	(inches)		
19.	Minimum Delivered Volume = Volume of Distribution Piping X 4		1	0.0	45
	11.9 gals X 4 = 47.5 Gallons		1.25	0.0	
			1.5	0.1	
			2	0.1	
			3	0.3	
			4	0.6	61
Comm	ents/Special Design Considerations:				



Basic Pump Selection Design Worksheet

1. PUMP CAPACITY	Pr	oject ID:					v 0-	4.01.2021
Pumping to Gravity or Pressure Distri	bution:	Pre	ssure					
					(mm)			
A. If pumping to gravity enter the gallon p		р.		GPM (10 - 45 g	spiri)			
B. If pumping to a pressurized distribution	n system:		29.0	GPM				
C. Enter pump description:			Eq	ualization/Time Do	sing			
2. HEAD REQUIREMENTS								eatment system nt of discharge
A. Elevation Difference	8 ft					ath		202 <u>0</u>
between pump and point of discharge:					supply line	lengtr		
			nlet pipe			Elevation difference		
B. Distribution nead Loss.	5 ft							
C. Additional Head Loss:	ft (due to specia	al equipment	t, etc.)				¥	
				Table I.Frictio	on Loss i	n Plastic	: Pipe pe	r 100ft
Distribution	n Head Loss			Flow Rate	I	e Diame		
Gravity Distribution = 0ft				(GPM)	1	1.25	1.5	2
Pressure Distribution based on Minimum Average Head				10	9.1	3.1	1.3	0.3
Value on Pressure Distribution	n Worksheet:			12	12.8	4.3	1.8	0.4
Minimum Average Head	Distribution		.oss	14	17.0	5.7	2.4	0.6
1ft 2ft	5ft			16	21.8	7.3	3.0	0.7
2ft 6ft 5ft 10ft			18		9.1	3.8	0.9	
Sit	101	L		20		11.1	4.6	1.1
P. 4. Sugala Dia Diamatan				25		16.8	6.9	1.7
D. 1. Supply Pipe Diameter:	2.0 in			30 35		23.5	9.7 12.9	2.4 3.2
2. Supply Pipe Length:	15 ft			40			16.5	4.1
				45			20.5	5.0
E. Friction Loss in Plastic Pipe per 100ft	trom Table I:			50				6.1
Friction Loss = 2.23	ft per 100ft of pipe			55				7.3
	1			60				8.6
F. Determine Equivalent Pipe Length from		-		65				10.0
discharge point. Estimate by adding 2! Pipe Length X 1.25 = Equivalent Pipe L		th for fitti	ng loss. Supply	10				11.4
				75 85				13.0
15 ft X 1.25	= 18.8	ft		95				16.4 20.1
G. Calculate Supply Friction Loss by mult	inlying Friction Loss P	or 100ft b	v the Equivala		divide by	100		20.1
Supply Friction Loss =			y the Equivalen		divide by	100.		
	V 10.0	6						
2.23 ft per 100ft	X 18.8	ft	÷ 100	= 0.4	ft ft			
H. Total Head requirement is the sum of	the Elevation Differen	ice + Distr	ibution Head L	oss, + Additional He	ad Loss +	Supply Fr	riction Los	s
8.0 ft + 5	5.0 ft +		ft +	0.4 f	t =	13.4	ft	
3. PUMP SELECTION								
A pump must be selected to deliver at	least 29.0	GPM w	/ith at least		13.4	feet	of total h	nead.
Comments:								

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PROGRAM	

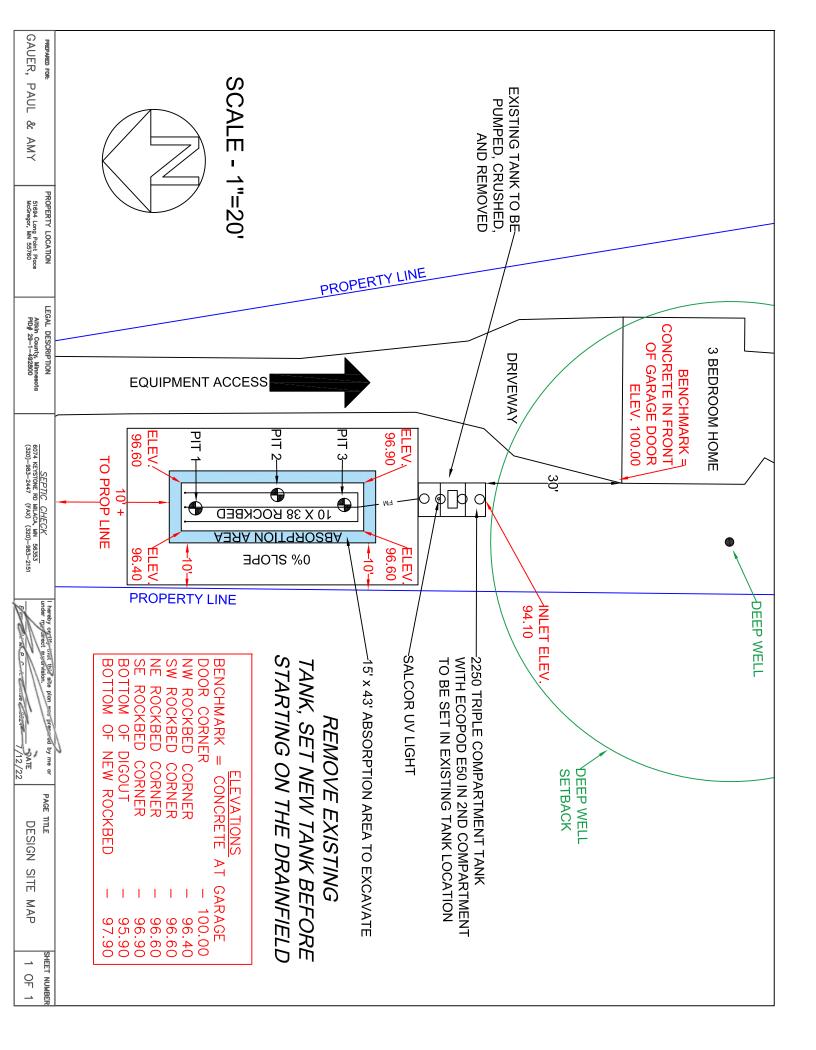
Pump Tank Design Worksheet (Time Dose)

	DETERMINE TANK CAPACITY AND DIMENSIONSProject ID:v 04.01.20							[,] 04.01.2021	
1.	Α.	Design Flow (Design Sum. 1A) :	450	GPD	В.	Tank Use:	Dos	ing	
	c.	Percentge of Design Flow 70 %	315	Gal	Up to	75% design flow	w is normal for Des	gn percentage	
	D.	Min. required pump tank capacity:	500	Gal	E.	Recommende	d capacity:	757 Gal	
2.	A.	Tank Manufacturer: Brown W	ilbert	7	В.	Tank Model:	2250 Triple C	ompartment	
	c.	Capacity from manufacturer:	757	Gallor	ns	Note: D	Design calculations ar	e based on this spec	ific tank.
			15.4				uting a different tan r timer settings. Cont	-	
	D.	Gallons per inch:			ns per i	ncn float of necessa		act designer if char	iges ure
	Ε.	Liquid depth of tank from manufacturer:	33.0	inches	5				
DET	ERMI	NE DOSING VOLUME							
3.	Volum	ne to Cover Pump (The inlet of pump shou	ld be 4 in from	the bot	ttom of	the tank & 2 in	n covering the pum	p recommended)	
		(Pump and block height + 2 inches) X Go	allons Per Inch				-		
		(12 in + 2 inches) X	15.4 Gallor	ns Per li	n =	216	Gallons		
4.	Minin	num Delivered Volume = 4 X Volume of D	istribution Pipir	ng:		_			
	-Item	18 of the Pressure Distribution or Item 1	1 of Non-level		48	Gallons (minir	mum dose)	3.1 inches	/dose
5. (Calcul	late Maximum Pumpout Volume (25% of De	esign Flow)			_			
1	Desigr	n Flow: 450 GPD X	0.25 =	1	13	Gallons (maxi	imum dose)	7.3 inches	/dose
6.	Selea	ct a pumpout volume that meets both Min	imum and Maxi	imum:		78 Gallon	s Values	م 1 ، من ما ، م	
7. (Calcul	late <i>Doses Per Day</i> = Percentage Design Flo	ow ÷ Delivered	Volume	e			of Liquid in	
		315 gpd ÷ 78	gal =	4	4.0	Doses		ripe	
8. (Calcul	late Drainback:			_	_	Pipe	Liquid	
,	۹.	Diameter of Supply Pipe =		2	inche	5	Diamete	Per Foot	i.
1	3.	Length of Supply Pipe =		15	feet		(inches)	(Gallons)	
(С.	Volume of Liquid Per Lineal Foot of Pipe	= 0.	.170	Gallor	ns/ft	1	0.045	1
1	D .	Drainback = Length of Supply Pipe X Vol					1.25	0.078	1
		15 ft X 0.170 gal/f		2.6	Gallor	าร	1.5	0.110	
9. 1	Total	Dosing Volume = Delivered Volume plus D		٦,			2	0.170	1
10 \	Norki	78gal +2.6gal = ng Storage Volume = Tank Volume -Volume		Gallor		nacity	3	0.380	-
10. Y			127 =	·	113	Gallons	4	2005 2503 0995 000 09 2105 - 02560 56 - 93	-
			, _				4	0.661	
	•	red Flow Rate :		٦					
		Pump Curve - Must verify after Install:	29	GPM*			-	lote: This value	
В. (Calcul	lated GPM = Change in Depth (in) x Gallons	-	ne Inter	val in A	Ainutes		ust be adjusted fter installation	
		in X 15.4	gal/in ÷			min =	1 (DM '	based on pump	
12. 9	Select	Flow Rate from Line 11.A or 11.B:	29.0 GPM*					calibration.	





NORMAL OPERATION TIMER SETTINGS*	
13. Calculate <u>TIMER ON</u> setting*:	
Total Dosing Volume ÷ GPM HR MIN SEC	
81 gal ÷ 29.0 gpm = 2.8 Minutes ON * 0 2.0 46]
14. Calculated <u>TIMER OFF</u> setting*:	-
Minutes Per Day (1440)/Doses Per Day - Minutes On	HR MIN SEC
1440 min ÷ 4 doses/day - 2.8 min = 353.8 Minutes OFF*	5 53.0 48
OPTIONAL PEAK ENABLE DOSING* - Desingers option for peak flow operation	
15. Peak Percentage of Design Flow %	
16. Peak Pump Volume that meets both Minimum and Maximum Volume gal + DrainBack	2.6 gal
17. Peak Dose Volume gal HR	MIN SEC
18. Peak TIMER ON gal ÷ gpm = min ON	
*Note: This value must be adjusted after installation based on pump calibration. HR	MIN SEC
19. Peak TIMER OFF:1440 min ÷ doses/day - min On min Off min Off	
FLOAT SETTINGS	
20. Pump Off Float - Measuring from bottom of tank:	
Distance to set Pump Off Float=Gallons to Cover Pump / Gallons Per Inch:	
216 gal ÷ 15.4 gal/in = 14.0 Inches Reserve Capacity	127 Gal
Alarm Depth 24.8 in	
21. Alarm Float - Measuring from bottom of tank (90% recommended): Storage Capacity	413 Gal
Distance to set Alarm Float = Tank Depth X % of Tank Depth (90% recommended) Normal Dose	81 Gal
33.0 in X 75 % = 24.75 Inches Volume	
Pump Off 14.0 in	216 Gal
22. Reserve Capacity in gallons = (Tank Depth - Alarm Depth) X GPI	
(<u>33.0</u> in + 24.8 in) X 15.4 = 127.4 gallons	





EXPERT SERVICE. LASTING VALUE. CLEAN WATER

51694 Long Point Place McGregor, MN 55760 PID 29-1-492800



Existing tank looking towards the cabin and from the cabin down driveway. This tank will be pumped, crushed, and removed. The new tank will be set in its place



Staked Rockbed

Soil Pit

Benchmark on Concrete at garage door.

							Soil Observation Log	bc			
Soil Verification for:	ttion for:	Paul & Amy Gauer	my Gauer				Property Address	S	51694 Long P	51694 Long Point Place McGregor, MN 55760	egor, MN 55760
Soil parent i	Soil parent material(s): (Check all that apply)	heck all t	that apply		J Outwash	Lacustrine	🗌 Loess 🔲 Till	Alluvium	m 🗌 Bedrock	k 🛛 🗌 Organic Matter	Matter
Landscape	Landscape Position: (check one)	ck one)	J Summit	□ Shoulder		Back/Side Slope	e 🛛 Foot Slope Toe Slope	Foe Slope			
Vegetation	-	Weeds		Soil	survey n	Soil survey map units		56	564 Friendship Loamy Sand	amy Sand	
Weather Co	Weather Conditions/Time of Day:	of Day:				Sunny 10am	lam		Date	0	07/12/22
Observatio	Observation #/Location:				4			Observation Type:	Гуре:		Soil Pit
	T	Rock	A a tuint			10/2010		(0)20400 iber		Structure	(
ueptn (In)	I eXIUre	Frag. %	Matrix Color(s)	olor(s)	Nome	Mottle Color(s)	Redox NING(S)	indicator(s)	Shape	Grade	Consistence
0" - 2"	Fill Soil	%9>	10YR 3/2	3/2					Granular	Moderate	Friable
2" - 7"	Fill Soil	<5%	10YR 5/2	5/2	10YR	5/8	Concentrations, depletions	S1	Granular	Moderate	Friable
7" - 12"	Loam	%9>	10YR 3/2	3/2					Blocky	Strong	Friable
12" - 15"	Clay Loam	<5%	10YR 5/2	5/2					Blocky	Strong	Friable
Observatio	Observation #/Location:				2			Observation Type:	Lype:		Soil Pit
Conth /in/	Tottino	Rock					Dodow Kind(c)	Indiantaria		Structure	jé
uepui (iii)	Iexiure	Frag. %		(3)1010	MOULE	MULLIE COLOL (S)		Indicator(s)	Shape	Grade	Consistence
0" - 4"	Fill Soil	<5%	10YR 3/2	3/2					Granular	Moderate	Friable
4" - 7"	Fill Soil	%9>	10YR 5/2	5/2	10YR	5/8	Concentrations, depletions	S1	Granular	Moderate	Friable
7" - 12"	Loam	<5%	10YR 3/2	3/2					Blocky	Strong	Friable
Observati	Observation #/Location:				3			Observation Type:	Type:		Soil Pit
Danth (in)	Tavhira	Rock	Matrix Color(s)) olor(e)	Mottle (Mottle Color(s)	Redox Kind(s)	Indicator/s)		I Structure	6
		Frag. %							Shape	Grade	Consistence
0" - 4"	Fill Soil	<5%	10YR 3/2	3/2					Granular	Moderate	Friable
4" - 7"	Fill Soil	<5%	10YR 5/2	5/2	10YR	5/8	Concentrations, depletions	S1	Granular	Moderate	Friable
7" - 12"	Loam	<5%	10YR 3/2	3/2					Blocky	Strong	Friable
12" - 15"	Clay Loam	<5%	10YR	5/2					Blocky	Strong	Friable
I hereby cert	ify that I have c	sompleted	I this work	in accord:	ance with	all applic	hereby certify that I have completed this work in accordance with all applicable ordinances, rules and laws.	ules and laws.			
	Brian Koski				M				2624		7/12/2022
(Des	(Designer/Inspector)	r)				(Signature)			(License #)		(Date)

Soil Observation Log

Aitkin County, Minnesota

564—Friendship loamy sand

Map Unit Setting

National map unit symbol: gjhw Elevation: 980 to 1,640 feet Mean annual precipitation: 25 to 30 inches Mean annual air temperature: 39 to 45 degrees F Frost-free period: 120 to 140 days Farmland classification: Not prime farmland

Map Unit Composition

Friendship and similar soils: 85 percent *Minor components:* 15 percent *Estimates are based on observations, descriptions, and transects of the mapunit.*

Description of Friendship

Setting

Landform: Outwash plains Landform position (two-dimensional): Summit, backslope Down-slope shape: Linear Across-slope shape: Concave Parent material: Sandy outwash

Typical profile

E - 0 to 3 inches: loamy sand Bw1 - 3 to 6 inches: loamy sand Bw2,Bw3,BC - 6 to 39 inches: sand C1,C2 - 39 to 60 inches: sand

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): High to very high (6.00 to 20.00 in/hr)
Depth to water table: About 41 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 4.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4s
Hydrologic Soil Group: A
Forage suitability group: Sloping Upland, Low AWC, Acid (G090AN008MN)
Other vegetative classification: Sloping Upland, Low AWC, Acid (G090AN008MN)

USDA

Hydric soil rating: No

Minor Components

Leafriver and similar soils Percent of map unit: 5 percent Landform: Depressions Hydric soil rating: Yes

Meehan and similar soils Percent of map unit: 5 percent Hydric soil rating: No

Menahga and similar soils

Percent of map unit: 5 percent Hydric soil rating: No

Data Source Information

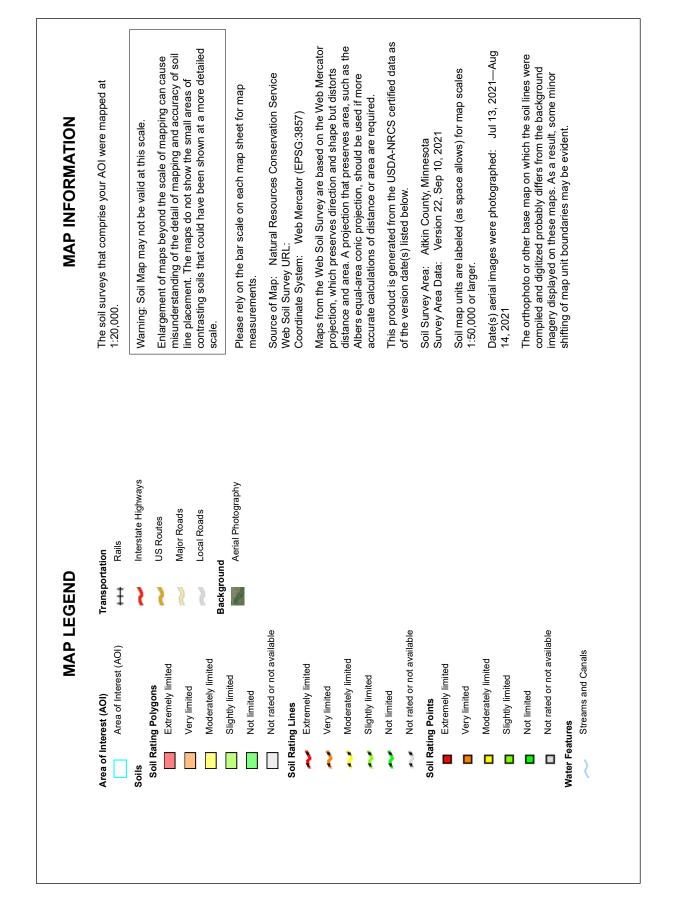
Soil Survey Area: Aitkin County, Minnesota Survey Area Data: Version 22, Sep 10, 2021





Natural Resources Conservation Service

Web Soil Survey National Cooperative Soil Survey Septic Tank Absorption Fields -- Mound (MN)—Aitkin County, Minnesota





Septic Tank Absorption Fields — Mound (MN)

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
564	Friendship loamy sand	Not limited	Friendship (85%)		2.5	87.8%
W	Water	Not rated	Water (100%)		0.3	12.2%
Totals for Area o	f Interest				2.9	100.0%

Rating	Acres in AOI	Percent of AOI
Not limited	2.5	87.8%
Null or Not Rated	0.3	12.2%
Totals for Area of Interest	2.9	100.0%



Description

"Mound septic tank absorption fields" are areas in which effluent from a septic tank is distributed into the soil surface through perforated pipe. In this system the drain field is placed above the soil surface in a mound. The ratings are based on the soil properties that affect absorption of the effluent, construction and maintenance of the system, and public health. Saturated hydraulic conductivity (Ksat) is evaluated from the surface to a depth of 30 centimeters. Depth to saturation and depth to bedrock are evaluated from the surface to a depth of 203 centimeters. The frequency of ponding and flooding also is evaluated. Excessive slope may cause lateral seepage and surfacing of the effluent in downslope areas.

The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect the specified use. "Not limited" indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. "Slightly limited" indicates that the soil has features that are favorable for the specified use. "Moderately limited" indicates that the soil has features that are favorable for the specified use. "Moderately limited" indicates that the soil has features that are favorable for the specified use. The specified use. The limitations can be overcome or minimized by special planning, design, or installation. Good performance and moderate maintenance can be expected. "Very limited" indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without special design or expensive installation procedures. "Extremely limited" indicates that the soil has one or more features that are very unfavorable for the specified use. The limitations generally cannot be overcome without special design or expensive installation procedures.

Numerical ratings indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

The components listed for each map unit in the accompanying Summary by Map Unit table in Web Soil Survey or the Aggregation Report in Soil Data Viewer are determined by the aggregation method chosen. An aggregated rating class is shown for each map unit. The components listed for each map unit are only those that have the same rating class as the one shown for the map unit. The percent composition of each component in a particular map unit is given to help the user better understand the extent to which the rating applies to the map unit.

Other components with different ratings may occur in each map unit. The ratings for all components, regardless the aggregated rating of the map unit, can be viewed by generating the equivalent report from the Soil Reports tab in Web Soil Survey or from the Soil Data Mart site. Onsite investigation may be needed to validate these interpretations and to confirm the identity of the soil on a given site.

Rating Options

Aggregation Method: Dominant Condition

USDA

Component Percent Cutoff: None Specified Tie-break Rule: Higher



Conservation Service

Soil Map—Aitkin County, Minnesota

Γ

Area of Interest (ADI) Soli Map Unit Polygons Story Spot Soli Soli Map Unit Polygons Very Story Spot Soli Map Unit Ines Soli Map Unit Polygons Very Story Spot Soli Map Unit Ines Soli Map Unit Polints Very Story Spot Soli Map Unit Points Soli Map Unit Points Very Story Spot Soli Map Unit Points Soli Map Unit Points Very Story Spot Soli Map Unit Points Soli Map Unit Points Very Story Spot Soli Map Unit Points Soli Map Unit Points Very Story Spot Soli Map Unit Points Soli Map Unit Points Very Story Spot Soli Map Unit Points Soli Map Unit Points Very Story Spot Soli Map Unit Points Soli Map Unit Points Very Story Spot Soli Map Unit Points Mater Faatures Mater Faatures Story Spot Clay Spot Ures Interstate Highways Gravel Pit Marshor Swath Mater Faatures Mater Faatures Marshor Swath Lavel Flow Local Roads Local Roads Marshor Swath Marshor Swath Local Roads Local Roads Marshor Swath Marshor Swath <t< th=""><th>The soil surveys that comprise your AOI were mapped at 1:20,000.</th><th>Warning: Soil Map may not be valid at this scale.</th><th>Enlargement of maps beyond the scale of mapping can cause</th><th>line placement. The maps do not show the small areas of</th><th>contrasting soils that could have been shown at a more detailed</th><th>scale.</th><th>Please rely on the bar scale on each map sheet for map measurements.</th><th>Source of Map: Natural Resources Conservation Service</th><th>Web Soil Survey URL: Conrdinate System · Web Mercator (EDSG:3857)</th><th>Maps from the Web Soil Survey are based on the Web Mercator</th><th>projection, which preserves direction and shape but distorts</th><th>distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more</th><th>accurate calculations of distance or area are required.</th><th>This product is generated from the USDA-NRCS certified data as of the version date(s) listed helow</th><th>Soil Survey Area. Attin County Minnesota</th><th></th><th>Soil map units are labeled (as space allows) for map scales</th><th>1:50,000 or larger.</th><th>Date(s) aerial images were photographed: Jul 13, 2021—Aug 14. 2021</th><th>The orthophoto or other base map on which the soil lines were</th><th>compiled and digitized probably differs from the background</th><th>imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.</th><th></th><th></th></t<>	The soil surveys that comprise your AOI were mapped at 1:20,000.	Warning: Soil Map may not be valid at this scale.	Enlargement of maps beyond the scale of mapping can cause	line placement. The maps do not show the small areas of	contrasting soils that could have been shown at a more detailed	scale.	Please rely on the bar scale on each map sheet for map measurements.	Source of Map: Natural Resources Conservation Service	Web Soil Survey URL: Conrdinate System · Web Mercator (EDSG:3857)	Maps from the Web Soil Survey are based on the Web Mercator	projection, which preserves direction and shape but distorts	distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more	accurate calculations of distance or area are required.	This product is generated from the USDA-NRCS certified data as of the version date(s) listed helow	Soil Survey Area. Attin County Minnesota		Soil map units are labeled (as space allows) for map scales	1:50,000 or larger.	Date(s) aerial images were photographed: Jul 13, 2021—Aug 14. 2021	The orthophoto or other base map on which the soil lines were	compiled and digitized probably differs from the background	imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.		
terest (AOI) Unit Polygons Unit Lines Unit Lines res res pot t t t t t t t	Spoil Area				Special Line Features	ater Features	Streams and Canals	ansportation Rails		US Routes	Major Roads	Local Roads	ackground	Aerial Photography										
	rest (AOI) Area of Interest (AOI)		Soil Map Unit Polygons Soil Map Unit Lines	Soil Map Unit Drints		-	Dit		Closed Depression	Gravel Pit	Gravelly Spot	Landfill		Marsh or swamp	Mine or Quarry	Miscellaneous Water	Perennial Water	Rock Outcrop	Saline Spot	Sandy Spot	Severely Eroded Spot	Sinkhole	Slide or Slip	Sodic Spot

USDA Natural Resources Conservation Service

Web Soil Survey National Cooperative Soil Survey

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
564	Friendship loamy sand	2.5	87.8%
W	Water	0.3	12.2%
Totals for Area of Interest		2.9	100.0%





MAINTENANCE SERVICE, MONITORING, AND INSPECTION CONTRACT FOR ONSITE WASTEWATER TREATMENT SYSTEM

It is hereby agreed this 23rd day of June 2022 by and between Septic Check (Service Provider) and Client:

Client Name and Site Address					
Name:	Paul & Amy Gauer				
Street Address:	51694 Long Point Place				
City, State, Zip:	McGregor, MN 55760				
Parcel ID:	29-1-492800				
LGU:	Aitkin County				
Contract Type:	ATU 2x/yr TESTING				
Treatment System:	ECOPOD				

That in consideration of the payments provided herein, the Service Provider shall provide services to perform preventative maintenance, monitoring, and inspection of the Onsite Wastewater Treatment System (OWTS) located at the property described in this Contract.

Each inspection visit includes an examination of the OWTS per this Contract and a follow-up report. The report shall contain status of conditions and recommended corrective measures or replacement parts if deemed appropriate. The Service Provider is authorized to submit a copy of the report to the Local Governmental Unit (LGU) listed above.

This Contract does not assume any responsibilities or obligations which are normally the responsibilities of the Client as related to parts or labor, and does not extend to cover any costs that may be associated with any recommendations made under this Contract.

The Service Provider will only contract or subcontract for parts or labor after Client authorization. Billings for service calls outside of this Contract shall be made on a case-by-case basis. This Contract covers listed services and does not cover alarm calls of any kind.

The Service Provider shall be provided access to the site and the system in order to perform the following services as indicated:

SEPTIC TANK AND LIFT STATION(S) INSPECTION

- Check septic tank and compartments for solids build-up and general appearance. If necessary, $\sqrt{}$ recommend pumping when 25 to 33% of the operating levels contain solids.
- $\sqrt{}$ Inspect the septic tank baffles, inspection pipes, risers, and lids for structural integrity.
- $\sqrt{1}$ Check pumping system, including control panel and floats (if applicable).
- $\sqrt{}$ Record and date the readings of flow measurement devices (if applicable).
- $\sqrt{}$ Check dosing settings in the control panel (if applicable).
- $\sqrt{}$ Check and clean effluent screen(s) (if applicable).
 - Other:

**The cost of tank or lift station pumping is the responsibility of the Client and is not included in this Contract.

TREATMENT DEVICE – Aerobic Treatment Unit (ATU)

- $\sqrt{}$ Inspect ATU per manufacturer's recommendations (if applicable).
- $\sqrt{1}$ Inspect and clean any parts per manufacturer's recommendations.
- $\sqrt{}$ Inspect the appearance of the wastewater inside the unit for color and turbidity, and check odors.
- $\sqrt{}$ Sample effluent per operating permit.
- $\sqrt{}$ Inspect UV disinfection unit (if applicable); clean tube and replace bulb when needed.

__Other:

**The cost of the replacement bulb is the responsibility of the Client and is not included in this Contract.

DISPERSAL FIELD

**Mowing is not included in this Contract.

- $\sqrt{}$ Inspect for visible signs of failure (surface discharge, wet spots, settling, etc.).
- $\sqrt{}$

_ Check inspection pipes for evidence of ponding.

Inspect and clean lateral lines when necessary.

**The cost of cleaning lateral lines is the responsibility of the Client and is not included in this Contract.

OPERATING PERMIT COMPLIANCE

**Operating permit fees are not included in this Contract.

Complete onsite inspection reports and enter in database.

 $\sqrt{}$ Collect and compile sample results and flow data.

- $\sqrt{}$ Submit service and sample reports to the LGU prior to deadline.
- $\sqrt{}$ Act as liaison between client and LGU as needed.

In no event shall the Service Provider be responsible for special or consequential damages including but not limited to loss of time, injury to personal property or any other consequential damages or incidental or economic loss due to equipment failure or for any other reason. This Contract does not assume any responsibilities or obligations which are normally the responsibility of the Client related to parts or labor, and does not extend to cover any costs that may be associated with any recommendations made under this Contract.

	Contract Terms
Contract Effective Date:	Upon acceptance of this Contract, automatic annual renewal
Frequency of Regular Service Visits:	SEMI-ANNUAL – 2x/yr
Sample Parameters:	Fecal Coliform, Flow
Cost for Maintenance Contract:	\$430/year to include regular service visits, testing (if applicable), and reporting with annual price increases equivalent to the Regional Consumer Price Index (CPI) to cover variable costs such as fuel, materials, and laboratory fees (average 3% per year approximately).
Billing Dates:	\$215 after each regular service visit is complete
Alarm/Emergency Call Charge:	Invoiced using current service visit and labor fees.
Expected Repair Budget:	\$300/year* (See below)
Repeat Sampling Cost:	\$100/Repeat sample retrieval and processing due to initial sample not meeting permit limits.

*The expected repair budget above is a recommended planning amount to cover expected repair/replacement costs associated with your treatment device. Other costs for items such as tank pumping and cleaning, pump or other component replacements are not expected to be covered by the amount.

OUTSIDE SCOPE OF WORK:

 Alarm Response: Service Provider will be available to respond to alarm conditions as notified by the owner or automatic dialer (if installed). A typical response time is three to six hours and within 24 hours. Some alarms may need to be responded to immediately.

- **Repairs:** Parts/material costs will be as needed for each repair. Estimates for repairs can be provided before work starts if you prefer, although some potential alarm conditions may not permit delay.
- Tank pumping and other services: Services not covered in this Contract will be billed by outside vendors directly to the Client. In the event Service Provider pays vendor for said services, the Client will be billed for the service cost plus 10%.
 Repeat sampling: Any additional required sampling shall be billed separately.
 Operating Permit Fees: Ongoing permit fees from the LGU are to be paid and submitted by the client.

SLUG LOADS AND ACCIDENTAL SPILLS

Service Provider is not responsible for any illicit discharges into the wastewater system that may harm the treatment efficiency such as: accidental release of cleansers/oils, pharmaceuticals, feminine products, rags/paper towels, condoms, grease or food products, volume of water or high strength waste beyond system design, or other chemical discharges. Trucking or hauling the waste may be required in those circumstances at the cost of the Client.

The Service Provider agrees to provide inspection, monitoring, and routine maintenance service only under this Contract. The Client remedies for breach of this Contract shall be limited to refund of any amounts paid in advance for service. The Client or operator may terminate this agreement, without cause, upon 30 days written notice.



Aitkin County Environmental Services

Wastewater Treatment and Dispersal Permit

Permit Numbe	r:	Date:		
Facility Infor	mation			
	Paul & Amy Gauer 1028 241 st Ave NE	P	hone number:	
City: <u>East Bet</u>		State: MN	Zip code: _55005	
Property ID num	ber (GPS location): 29-1-4928	00 51694 Long Point Place McGre	gor, MN 55760	
		he requirements of this operating p	a wastewater treatment and dispersal syste ermit. The attached Management Plan is	∍m
Issuance date:		Expiration date:		
System type:	Type IV		Α	
System design flow:	450 GPD	Residential/Commercial:	Residential	
	System Components:			
	(2250 Triple compartment	t topk) 757 CAL contin comporting	nt to 757 CAL contin comportment equippe	ad

(2250 Triple compartment tank) 757 GAL septic compartment to 757 GAL septic compartment equipped with an Ecopod E50 pretreatment unit, Salcor UV light to the last 757 GAL compartment serving as the time dose pump tank dosing a 10' x 38' rockbed mound with a 1' lift.

Monitoring Requirements

Parameter	Effluent limits	Frequency	Location
Peak flow (gpd)	450 GPD	Semi-Annual (2 x yr)	Control Panel
Average flow (gpd)			
CBOD₅ (mg/L)	15 mg/l	As Needed	Bed dose tank
TSS (mg/L)	15 mg/l	As Needed	Bed dose tank
Fecal (cfu/ml)	1000 cfu/100ml	Annual (1 x yr)	Bed dose tank
Ponding/Surfacing in soil treatment	none	Annual (1 x yr)	Drainfield

Maintenance Requirements

Maintenance requirements shall be performed as specified in the Management Plan as prepared by the system's Advanced Designer.

System component	Maintenance	Frequency
Septic tank/Trash tank	Check annually, pump as needed	Annual (1 x yr)
Pump tank and controls	Check annually, pump/replace as needed	Annual (1 x yr)
Soil treatment and dispersal	Clean/jet laterals	As needed – 1 st cleaning not expected for 3- 5 years, maybe longer
Ponding/Surfacing in soil treatment	Check yearly, repair as needed.	Annual (1 x yr)
Pretreatment	Check Semi-Annual	Semi-Annual (2 x yr)

Monitoring Protocol

Any sampling and laboratory testing procedures shall be performed in accordance with the proprietary treatment product's protocol, Standard Methods, and at a Minnesota Department of Health approved laboratory. Results shall be submitted to the permitting

Parameter	Effluent limits	High risk / Resample	
Peak flow (gpd)	450		Bad Sample
		>315	>450
Average flow (gpd)	<315	>315	>150
Fecal			

Contingency Plan

In the event the wastewater treatment system does not meet required performance requirements as contained in this operating permit, the owner shall notify the local unit of government within 30 days of non-compliance. The owner is responsible to obtain the services of a Minnesota Pollution Control Agency (MPCA)-licensed Service Provider or other qualified practitioner to complete the required corrective measures. If a sample value is exceeded but the sample value is less than the resample column above, a new sample should be collected within 30 days.

After three resamples in the high-risk category, monitoring will be increased too monthly. After 3 bad samples or a combination of 6 total samples over the permit limits, a corrective action plan following the mitigation plan in the design will be enforced.

Authorization

This permit is effective on the issuance date identified above. This permit and the authorization to treat and disperse wastewater shall expire one year from date of issue.

This system will be Compliant as long as the conditions of the Operating Permit are met. This permit will need to be renewed 30

Any additional tanks or equipment that need to be added to meet standards required by this permit due to expansion, failure of equipment, or increased flow shall not require additional permits provided that this system is current with the standards outlined in

The Permittee is not authorized to discharge after the above date of expiration.

The Permittee shall submit monitoring information and forms as required by Aitkin County Environmental Services yearly no later than sixty (60) days after service date. This permit is not transferable.

The owner is required to obtain the services of a Minnesota Pollution Control Agency (MPCA) licensed 1) Service Provider to provide ongoing system operation, maintenance, and monitoring and 2) Maintainer to pump the system's sewage tanks and components. The owner is responsible to provide the name of the Service Provider business prior to the issuance of this operating permit. The owner has secured the services of Septic Check as the Service Provider for this system (signed Service Provider contract attached).

I hereby certify with my signature as the Permittee that I understand the provisions of the wastewater treatment and dispersal system operating permit including maintenance and monitoring requirements. I agree to indemnify and hold either Aitkin County Environmental Services harmless from all loss, damages, costs and charges that may be incurred by the use of this system. If I fail to comply with the provisions of this operation permit, I understand that penalties may be issued. If I sell this property during the life of the permit, I will inform the new owner(s) of the permit requirements and the need to renew the operating permit.

The Operating Permit is hereby granted Paul & Amy Gauer to:

Permittee (please print):	- MAUL	ANDAMY	GAUE2	
	NEDS		Date: 7/	7/22

.

Permitting Authority (please print):

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Septic System Management Plan for Above Grade Systems

The goal of a septic system is to protect human health and the environment by properly treating wastewater before returning it to the environment. Your septic system is designed to kill harmful organisms and remove pollutants before the water is recycled back into our lakes, streams and groundwater.

This **management plan** will identify the operation and maintenance activities necessary to ensure longterm performance of your septic system. Some of these activities must be performed by you, the homeowner. Other tasks must be performed by a licensed septic maintainer or service provider. However, it is **YOUR** responsibility to make sure all tasks get accomplished in a timely manner.

The University of Minnesota's *Septic System Owner's Guide* contains additional tips and recommendations designed to extend the effective life of your system and save you money over time.

Proper septic system design, installation, operation and maintenance means safe and clean water!

Property Owner Paul & Amy Gauer	Email
Property Address 51694 Long Point Place McGregor	Property ID 29-1-492800
System Designer Septic Check	Contact Info 320-983-2447
System Installer Septic Check	Contact Info 320-983-2447
Service Provider/Maintainer Septic Check	Contact Info 320-983-2447
Permitting Authority Aitkin County	Contact Info 218-927-7342
Permit #	Date Inspected

Keep this Management Plan with your Septic System Owner's Guide. The Septic System Owner's Guide includes a folder to hold maintenance records including pumping, inspection and evaluation reports. Ask your septic professional to also:

- Attach permit information, designer drawings and as-built of your system, if they are available.
- Keep copies of all pumping records and other maintenance and repair invoices with this document.
- Review this document with your maintenance professional at each visit; discuss any changes in product use, activities, or water-use appliances.

For a copy of the *Septic System Owner's Guide*, visit <u>www.bookstores.umn.edu</u> and search for the word "septic" or call 800-322-8642.

For more information see http://septic.umn.edu

Version: August 2015

UNIVERSITY OF MINNESOTA

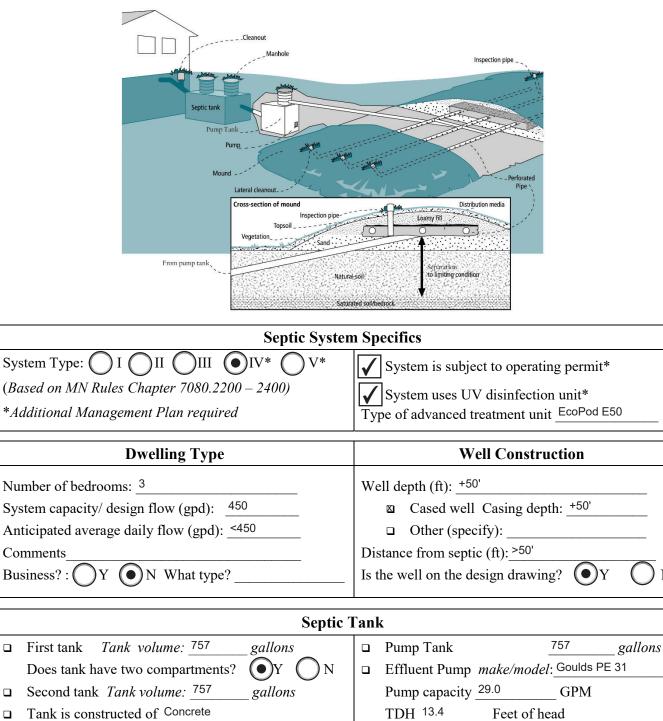
Effluent screen:

) Y (\bullet) N Alarm (\bullet) Y

Septic System Management Plan for Above Grade Systems







Soil Treatment Area (STA)						
Mound/At-Grade area (width x length): $\frac{32.6}{10}$ ft x $\frac{60.6}{10}$ ft Rock bed size (width x length): $\frac{10}{10}$ ft x $\frac{38}{10}$ ft Location of additional STA: Type of distribution media: $\frac{11/2"}{Washed Rock}$	 Inspection ports Surface water diversions Additional STA not available 					

Ν Feet of head

Alarm location Outdoor Powerpost

) N

Septic System Management Plan for Above Grade Systems



Homeowner Management Tasks

These operation and maintenance activities are your responsibility. Chart on page 6 can help track your activities.

Your toilet is not a garbage can. Do not flush anything besides human waste and toilet paper. No wet wipes, cigarette butts, disposal diapers, used medicine, feminine products or other trash!

The system and septic tanks needs to be checked every <u>6</u> months

Your service provider or pumper/maintainer should evaluate if your tank needs to be pumped more or less often.

Seasonally or several times per year

- Leaks. Check (listen, look) for leaks in toilets and dripping faucets. Repair leaks promptly.
- *Soil treatment area.* Regularly check for wet or spongy soil around your soil treatment area. If surfaced sewage or strong odors are not corrected by pumping the tank or fixing broken caps and leaks, call your service professional. *Untreated sewage may make humans and animals sick.* Keep bikes, snowmobiles and other traffic off and control borrowing animals.
- *Alarms*. Alarms signal when there is a problem; contact your service professional any time the alarm signals.
- *Lint filter*. If you have a lint filter, check for lint buildup and clean when necessary. If you do not have one, consider adding one after washing machine.
- *Effluent screen.* If you do not have one, consider having one installed the next time the tank is cleaned along with an alarm.

Annually

- *Water usage rate.* A water meter or another device can be used to monitor your average daily water use. Compare your water usage rate to the design flow of your system (listed on the next page). Contact your septic professional if your average daily flow over the course of a month exceeds 70% of the design flow for your system.
- *Caps.* Make sure that all caps and lids are intact and in place. Inspect for damaged caps at least every fall. Fix or replace damaged caps before winter to help prevent freezing issues.
- *Water conditioning devices.* See Page 5 for a list of devices. When possible, program the recharge frequency based on *water demand (gallons)* rather than *time (days)*. Recharging too frequently may negatively impact your septic system. Consider updating to demand operation if your system currently uses time,
- *Review your water usage rate.* Review the Water Use Appliance chart on Page 5. Discuss any major changes with your service provider or pumper/maintainer.

During each visit by a service provider or pumper/maintainer

- Make sure that your service professional services the tank through the manhole. (NOT though a 4" or 6" diameter inspection port.)
- Ask how full your tank was with sludge and scum to determine if your service interval is appropriate.
- Ask your pumper/maintainer to accomplish the tasks listed on the Professional Tasks on Page 4.

Septic System Management Plan for Above Grade Systems



Professional Management Tasks

These are the operation and maintenance activities that a pumper/maintainer performs to help ensure longterm performance of your system. At each visit a written report/record must be provided to homeowner.

Plumbing/Source of Wastewater

- Review the Water Use Appliance Chart on Page 5 with homeowner. Discuss any changes in water use and the impact those changes may have on the septic system.
- Review water usage rates (if available) with homeowner.

Septic Tank/Pump Tanks

- *Manhole lid.* A riser is recommended if the lid is not accessible from the ground surface. Insulate the riser cover for frost protection.
- *Liquid level*. Check to make sure the tank is not leaking. The liquid level should be level with the bottom of the outlet pipe. (If the water level is below the bottom of the outlet pipe, the tank may not be watertight. If the water level is higher than the bottom of the outlet pipe of the tank, the effluent screen may need cleaning, or there may be ponding in the soil treatment area.)
- Inspection pipes. Replace damaged or missing pipes and caps.
- *Baffles*. Check to make sure they are in place and attached, and that inlet/outlet baffles are clear of buildup or obstructions.
- *Effluent screen.* Check to make sure it is in place; clean per manufacturer recommendation. Recommend retrofitted installation if one is not present.
- *Alarm*. Verify that the alarm works.
- *Scum and sludge*. Measure scum and sludge in each compartment of each septic and pump tank, pump if needed.

Pump

- *Pump and controls.* Check to make sure the pump and controls are operating correctly.
- *Pump vault*. Check to make sure it is in place; clean per manufacturer recommendations.
- *Alarm*. Verify that the alarm works.
- Drainback. Check to make sure it is draining properly.
- Event counter or elapsed time meter. Check to see if there is an event counter or elapsed time meter for the pump. If there is one or both, calculate the water usage rate and compare to the anticipated use listed on Design and Page 2. Dose Volume: _____ gallons: Pump run time: _____ Minutes

Soil Treatment Area

- *Inspection pipes*. Check to make sure they are properly capped. Replace caps and pipes that are damaged.
- Surfacing of effluent. Check for surfacing effluent or other signs of problems.
- *Lateral flushing*. Check lateral distribution; if cleanouts exist, flush and clean at recommended frequency.
- *Vegetation* Check to see that a good growth of vegetation is covering the system.

All other components – evaluate as listed here: _____

Septic System Management Plan for Above Grade Systems



Water-Use Appliances and Equipment in the Home

Appliance	Impacts on System	Management Tips
Garbage disposal	 Uses additional water. Adds solids to the tank. Finely-ground solids may not settle. Unsettled solids can exit the tank and enter the soil treatment area. 	 Use of a garbage disposal is not recommended. Minimize garbage disposal use. Compost instead. To prevent solids from exiting the tank, have your tank pumped more frequently. Add an effluent screen to your tank.
Washing machine	 Washing several loads on one day uses a lot of water and may overload your system. Overloading your system may prevent solids from settling out in the tank. Unsettled solids can exit the tank and enter the soil treatment area. 	 Choose a front-loader or water-saving top-loader, these units use less water than older models. Limit the addition of extra solids to your tank by using liquid or easily biodegradable detergents. Limit use of bleach-based detergents and fabric softeners. Install a lint filter after the washer and an effluent screen to your tank Wash only full loads and think even – spread your laundry loads throughout the week.
Dishwasher	 Powdered and/or high-phosphorus detergents can negatively impact the performance of your tank and soil treatment area. New models promote "no scraping". They have a garbage disposal inside. 	 Use gel detergents. Powdered detergents may add solids to the tank. Use detergents that are low or no-phosphorus. Wash only full loads. Scrape your dishes anyways to keep undigested solids out of your septic system.
Grinder pump (in home)	• Finely-ground solids may not settle. Unsettled solids can exit the tank and enter the soil treatment area.	 Expand septic tank capacity by a factor of 1.5. Include pump monitoring in your maintenance schedule to ensure that it is working properly. Add an effluent screen.
Large bathtub (whirlpool)	 Large volume of water may overload your system. Heavy use of bath oils and soaps can impact biological activity in your tank and soil treatment area. 	 Avoid using other water-use appliances at the same time. For example, don't wash clothes and take a bath at the same time. Use oils, soaps, and cleaners in the bath or shower sparingly.
Clean Water Uses	Impacts on System	Management Tips
High-efficiency furnace	• Drip may result in frozen pipes during cold weather.	• Re-route water directly out of the house. Do not route furnace discharge to your septic system.
Water softener Iron filter Reverse osmosis	 Salt in recharge water may affect system performance. Recharge water may hydraulically overload the system. 	 These sources produce water that is not sewage and should not go into your septic system. Reroute water from these sources to another outlet, such as a dry well, draintile or old drainfield.
Surface drainage Footing drains	• Water from these sources will overload the system and is prohibited from entering septic system.	 When replacing, consider using a demand-based recharge vs. a time-based recharge. Check valves to ensure proper operation; have unit serviced per manufacturer directions

Septic System Management Plan for Above Grade Systems



Homeowner Maintenance Log

Track maintenance activities here for easy reference. See list of management tasks on pages 3 and 4.

Activity		Dat	e acco	mplis	hed		
Check frequently:							
Leaks: check for plumbing leaks*							
Soil treatment area check for surfacing**							
Lint filter: check, clean if needed*							
Effluent screen (if owner-maintained)***							
Alarm**							
Check annually:							
Water usage rate (maximum gpd)							
Caps: inspect, replace if needed							
Water use appliances – review use							
Other:							

*Monthly

**Quarterly

***Bi-Annually

Notes: If flow exceeds system capacity, check for and repair any leaks into the system, including household plumbing fixtures. If system ponds or otherwise cannot handle flow, repair options include; add time dosing, adding pre-treatment, or expanding the system.

"As the owner of this SSTS, I understand it is my responsibility to properly operate and maintain the sewage treatment system on this property, utilizing the Management Plan. If requirements in this Management Plan are not met, I will promptly notify the permitting authority and take necessary corrective actions. If I have a new system, I agree to adequately protect the reserve area for future use as a soil treatment system."

Property Owner Signature:	Date
Management Plan Prepared By: Brian Koski	Certification # 7989
Permitting Authority: Aitkin County	

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Onsite Sewage Treatment Program Septic System Management Plan Delta Environmental Products Ecopod Fixed Film Aerobic Treatment Unit



This Management Plan identifies some basic requirements for proper operation and maintenance of the ECOPOD wastewater treatment device for residential use. Refer to the manufacturer's Operation and Maintenance Manual for ECOPOD wastewater treatment products for detailed instructions on proper system operation and maintenance. Refer to your soil treatment system management plan (below or above-grade) for additional management requirements.

The ECOPOD Manual, submitted by the manufacturer (Delta Environmental Products) as part of the registration of this product in Minnesota, can be found at the Minnesota Pollution Control Agency's website http://www.pca.state.mn.us/programs/ists/productregistration.html.

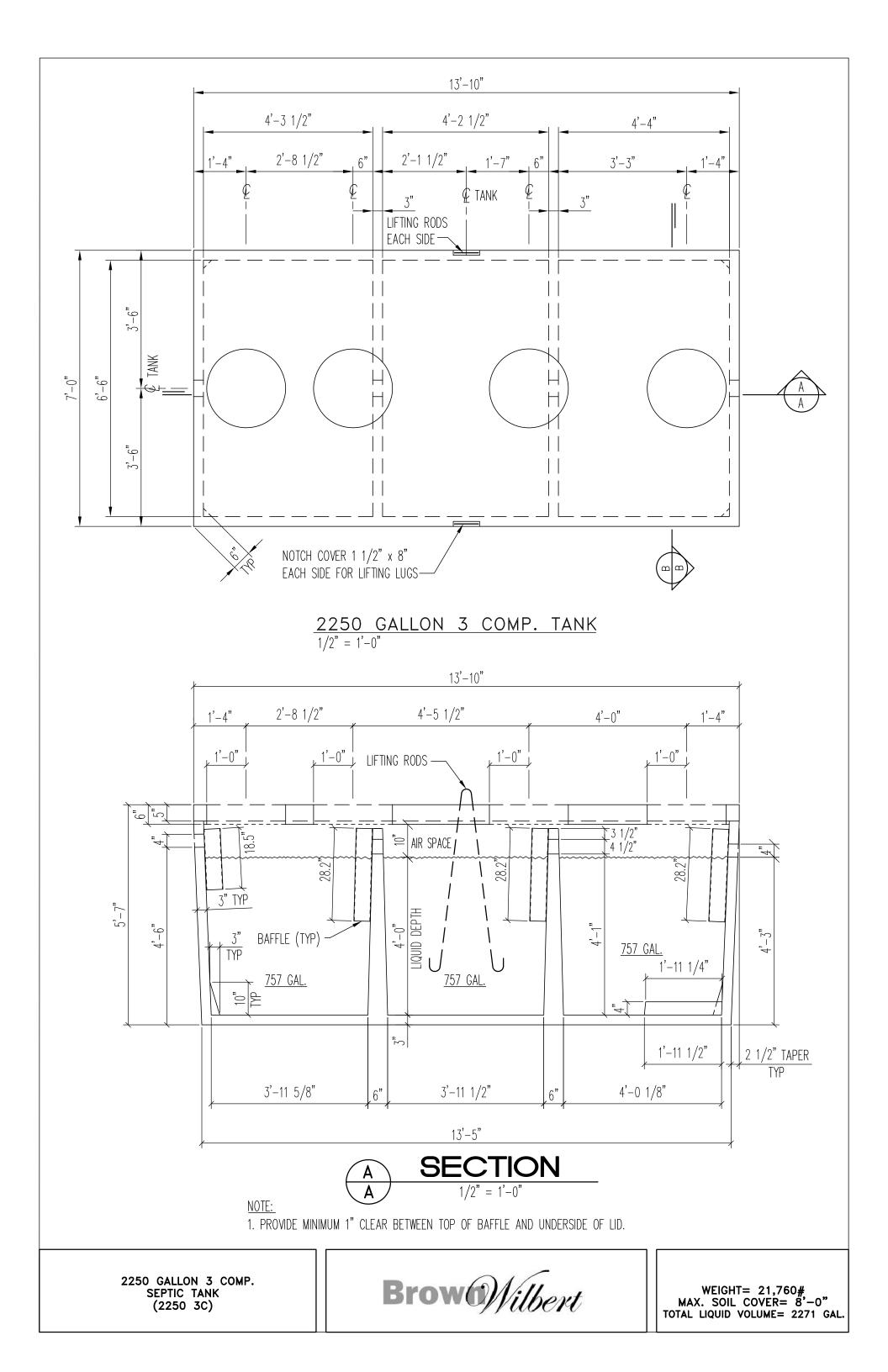
SYSTEM COMPONENT	TASK	FREQUENCY	RESPONSIBLE PARTY
ECOPOD Wastewater	Monitor alarm	On-going	Homeowner
Treatment Device	Keep vents on blower housing clear of obstruction	On-going	Homeowner
	Check and clean air filter on the air pump	Every three months	Homeowner or Service Provider
	Monitor flow	Every six months	Service Provider
	Check mechanical and electrical components	Every six months	Service Provider
	Perform operational field tests on influent/effluent quality including odor, color, turbidity, temperature, dissolved oxygen and pH as appropriate	Every six months	Service Provider
	Sample effluent as required in the local Operating Permit	See Operating Permit*	Service Provider
	Check sludge level in all sewage tanks; follow manufacturers recommendations for solids removal	Every six months	Service Provider & Maintainer
	For seasonal use, follow manufacturers guidelines	As required based on seasonal usage	Service Provider

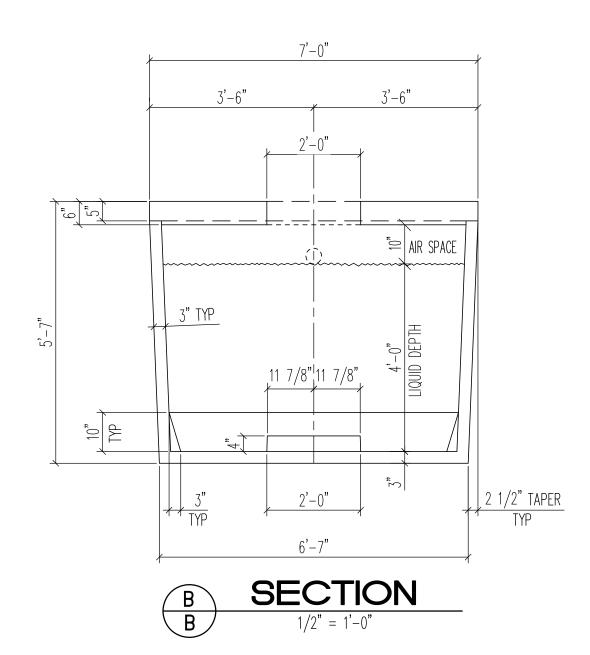
* Systems designed to meet treatment level A or B with UV disinfection must collect effluent sample for fecal coliform annually at a minimum.

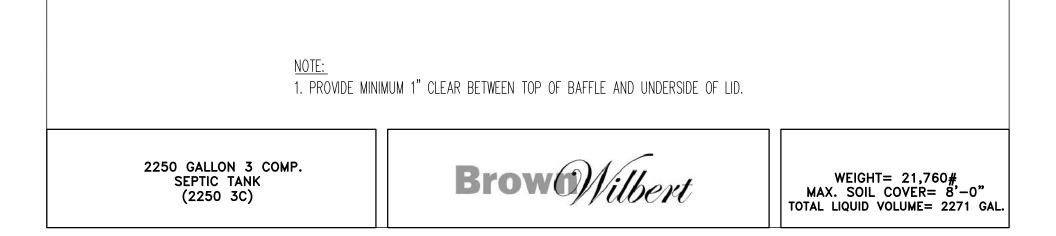
At the time of each service visit, Form 7-2: Aerobic Treatment Unit should be completed. See http://www.onsiteconsortium.org/omspchecklists.html

Items not permitted in the ECOPOD wastewater systems are specified in the ECOPOD Manual for Minnesota.

Sampling requirements may be specified in local operating permits. The protocol for collection of wastewater samples is specified in the ECOPOD Manual for Minnesota.





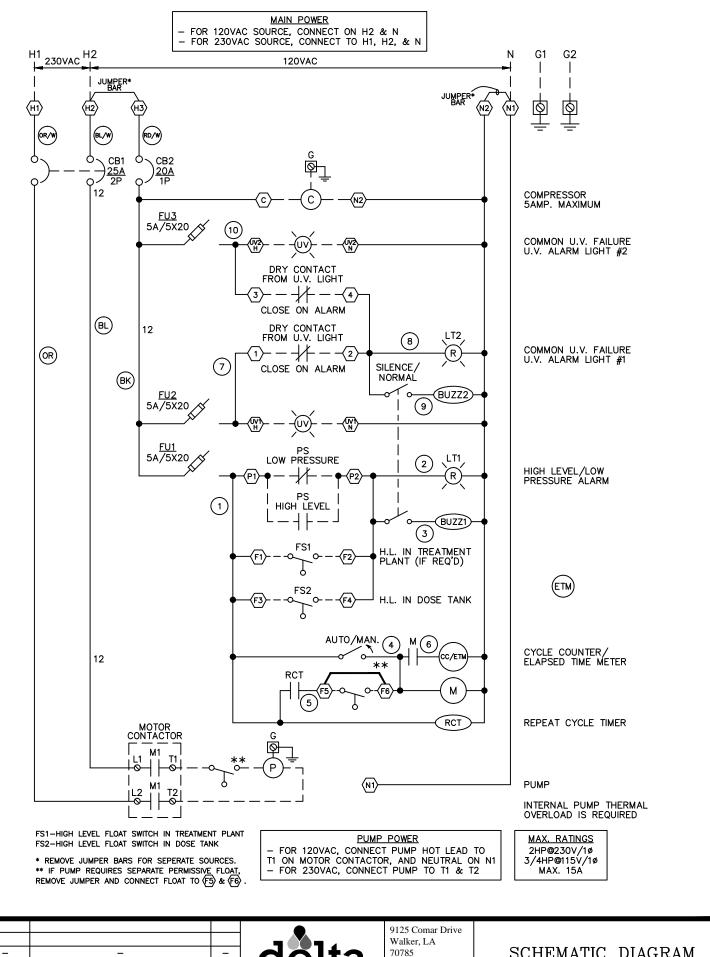




CP2210/MN CONTROL PANEL

Delta Treatment Systems 9125 Comar Drive Walker, LA 70785 (225) 665-6162 Fax (800) 219-9183

CP2210/MN



COMPANY CONFIDENTIAL: INFORMATION CONTAINED HEREIN IS CONFIDENTIAL,	PLOT SCALE	DF
IT IS THE PROPERTY OF PENTAIR PUMP GROUP, IT IS TO BE USED		
SOLELY FOR THE PURPOSE PROVIDED, AND IT IS NOT TO BE DISCLOSED TO	NTS	
OTHERS WITHOUT THE PRIOR WRITTEN CONSENT OF PENTAIR PUMP GROUP.	NIS	ı C

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REVISION DESCRIPTION

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REV.

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DATE

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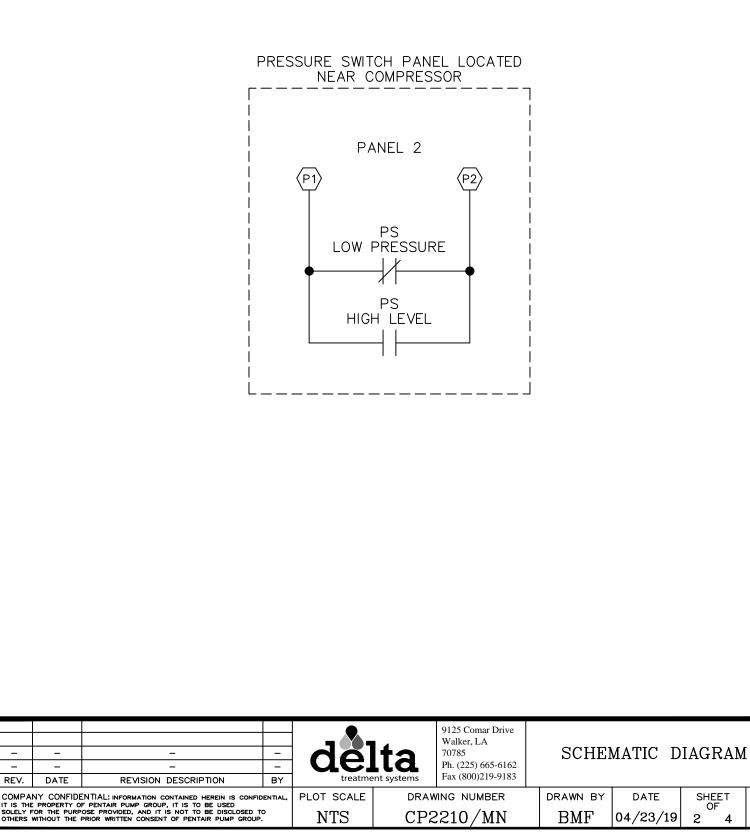
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Ph. (225) 665-6162

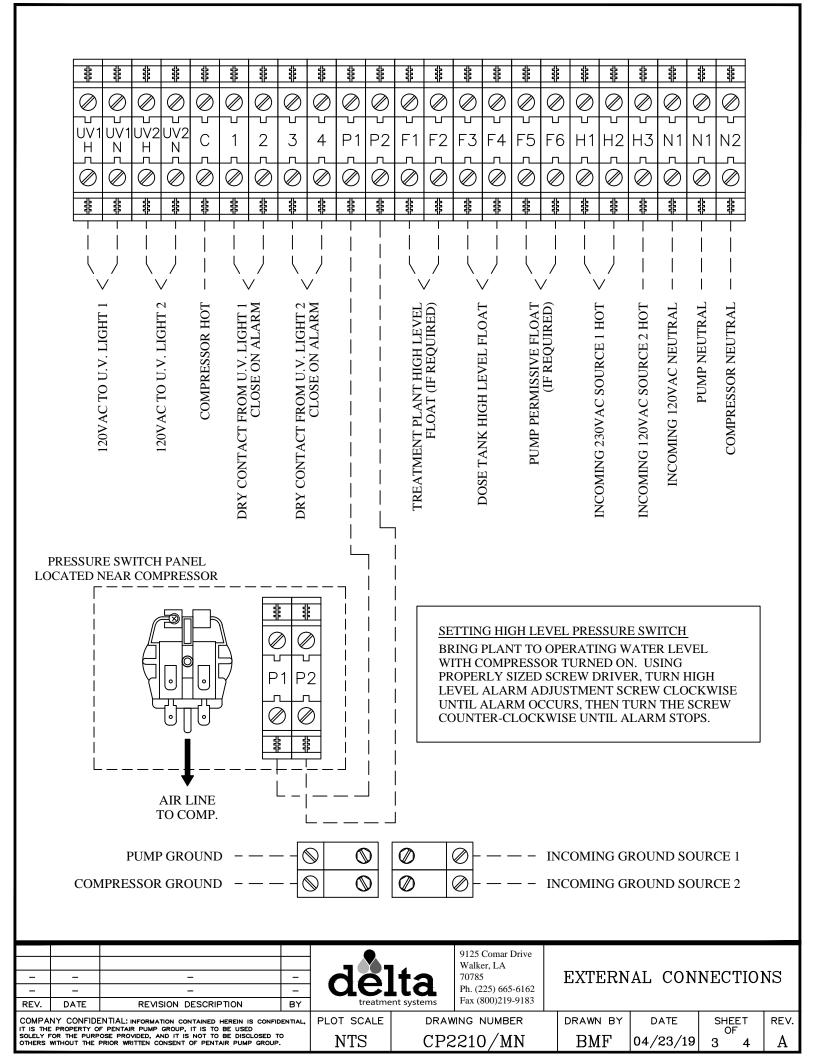
SCHEMATIC DIAGRAM

DRAWN BY	DATE	SHEET	REV.	ĺ
BMF	04/23/19	1 4	А	



REV.

А



HOW TO SET THE REPEAT CYCLE TIMER

	Selector			Di	ial	Time On	Time Off
	3	4 (On)	7 (Off)	Orange (On)	Green (Off)	Time On	Time Off
*	1.2	10m	10h	.7	.2	7min	2hours
	1.2	10m	10h	1.2	1.2	12min	12hours
	3.0	10m	hrs	2.0	2.0	20min	2hours
	3.0	10m	hrs	3.0	3.0	30min	3hours

EXAMPLES OF SETTINGS

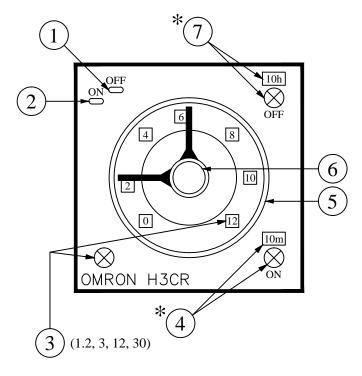
***** = Factory Settings

Time On = 4(On) Setting x Orange Setting Time Off = 7(Off) Setting x Green Setting

Factory Setting:

Time $On = 10m \ge 0.7 = 7$ Minutes

Time Off = $10h \ge 0.2 = 2$ Hours



 OFF Indicator (Green)
 ON Indicator (Orange)
 Range Time Selector
 ON Time Unit Selector
 ON Time Unit Selector
 Setting dial for OFF (Green pointer)
 Setting dial for ON (Orange pointer)
 OFF Time Unit Selector
 Note: If pointer is turned counterclockwise until overranged, instantaneous output will be

set.

* H3CR-F8N (10s, 10m, hrs, 10h)

			-	de	9125 Comar Driv Walker, LA 70785Ph. (225) 665-61 Fax (800)219-91		REPEAT CYCLE TIMER INSTRUCTIONS							
REV.	DATE	REVISION DESCRIPTION	BY	treatme	ent systems	Fax (800)219-9183								
		ENTIAL: INFORMATION CONTAINED HEREIN IS CONFI	DENTIAL,	PLOT SCALE	PLOT SCALE DRAWING NUMBER			DATE	SHEET	REV.				
SOLELY F	OR THE PURP	PRIOR WRITTEN CONSENT OF PENTAIR PUMP GROUI		NTS	NTS CP2210/MN		BMF	04/23/19	4 4	Α				

BILL OF MATERIALS

ITEM	QTY.	MANUFACTURER	PART NUMBER	DESCRIPTION
1	1	STAHLIN	RJ1412HPL	ENCLOSURE 1
2	1	STAHLIN	BP1412AL	BACKPLATE
3	1	SQUARE D	QOU225	CB1
4	1	SQUARE D	QOU120	CB2
5	3	PHOENIX CONTACT	UT4-HESI	FUSE HOLDER
6	3	BUSSMANN	BK/GMA-SA	FU1,2
7	2	ARK-LES	_	BUZZER1,2
8	2	ABB	CL100R W/BULBS	RED PILOT LIGHT
9	1	EZ SWITCH	18159-5	SILENCE SWITCH
10	1	OMRON	H3CR-F8N-100-240AC	REPEAT CYCLE TIMER
11	1	EZ SWITCH	01-796520-5D	AUTO-MANUAL SWITCH
12	1	ABB	AF16-30-10-13	CONTACTOR
13	1	CANTEX	5133705	ENCLOSURE 2
14	1	HERGA	_	DUAL PRESSURE SWITCH
15	17	PHOENIX	UT4	TERMINALS
16	6	PHOENIX	UT6	TERMINALS
17	1	EATON	CEC-48DR-406	COMBO COUNTER/ETM
18				
19				
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27				
28				
29				
30				

 	 DATE	– – – REVISION DESCRIPTION	– – –	del	delta treatment systems 9125 0 Walke 70785 Ph. (2 Fax (8		BILL	OF MAT	ERIALS	
COMPA	NY CONFIDE PROPERTY OF FOR THE PURP	INTIAL: INFORMATION CONTAINED HEREIN IS CONFIL PENTAIR PUMP GROUP, IT IS TO BE USED OSE PROVIDED, AND IT IS NOT TO BE DISCLOSED T PRIOR WRITTEN CONSENT OF PENTAIR PUMP GROUP	DENTIAL,	plot scale NTS	PLOT SCALE DRAWING NUMBER		drawn by BMF	DATE 04/23/19	SHEET OF	rev. A



A wholly owned subsidiary of Infiltrator Water Technologies, LLC

DELTA TREATMENT SYSTEMS ECOPOD-N® NSF/ANSI 40 AND 245 RESIDENTIAL WASTEWATER TREATMENT SYSTEM



DELTA TREATMENT SYSTEMS NSF/ANSI 40 AND 245 Residential Wastewater Treatment System

ECOPOD-N[®] Advanced Wastewater Treatment

ECOPOD-N is the clear choice for an on-site wastewater disposal system where nitrogen reduction is required. It was tested under Standard 40 and 245 of NSF/ANSI with an average nitrogen reduction of greater than 50% and met and exceeded Class 1 requirements with an average effluent quality of 9 mg/L BOD5 and 8 mg/L TSS.

ECOPOD-N directly contributes to a cleaner, safer environment using the bacteria nature provides. As a result of air being pumped into the system, the bacteria thrive and grow in much greater numbers than would occur naturally. This "overpopulation" of bacteria speeds the process of breaking down the sewage, making it safe for release into the environment.

ECOPOD-N significantly reduces BOD, TSS, fecal coliforms, and nutrients in the wastewater. Nitrification and denitrification occur in a single tank.

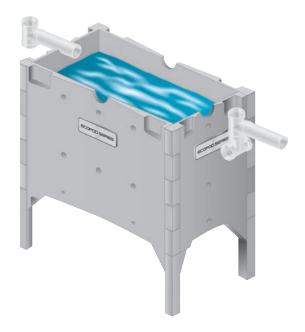
ECOPOD-N series uses a fixed film process which is characteristically stable, reliable and sturdy. Fixed film is a preferred treatment process for on-site wastewater treatment systems.

ECOPOD-N Available Offering

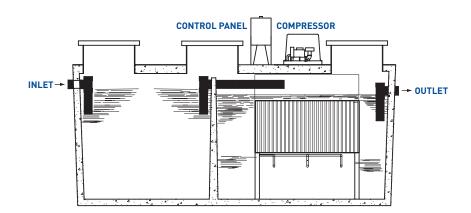
ECOPOD-N Units are manufactured to specifications according to wastewater flow requirements. Units are available in the following sizes:

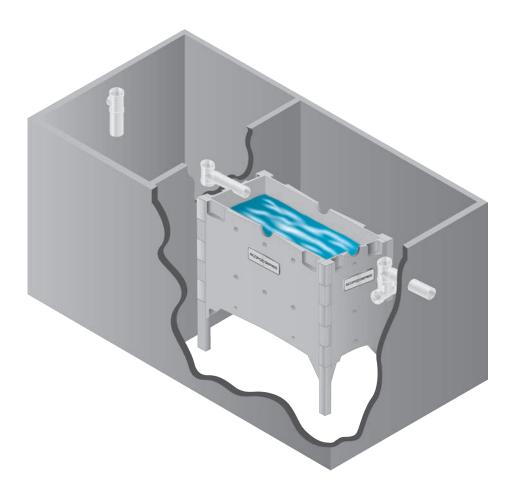
- Model E50-N treating 500 gallons per day
- Model E60-N treating 600 gallons per day
- Model E75-N treating 750 gallons per day
- Model E100-N treating 1,000 gallons per day
- Model E150-N treating 1,500 gallons per day





Certified to NSF/ANSI 245 for Nitrogen Reduction





Why Use ECOPOD-N[®] Advanced Wastewater Treatment?

- Built with technology which meets NSF/ANSI 40 and 245 Class 1
- Completely submerged reactor disposes of wastewater quietly, efficiently, and with no odor
- Typical effluent quality of 9 mg/L BOD5 and 8 mg/L TSS
- No inner tank filters, screens or diffusers to service
- Patented non-clogging air delivery system
- Remote mount air compressor
- Low initial capital cost and operation
- Complete on-site system designs
- ECOPOD-N treatment systems are preengineered, requiring no special expertise to design, specify, or install
- True attached growth system no mixed liquor
- Integral clarifier no external clarifier required

Manufactured According to Need

Choices of fabrication are offered, consistent with your preference or regulatory requirements:

- Fiberglass Construction
- Concrete Construction*
- Polypropylene Construction

• Round or Rectangular *Based on regional availability

Design Components Material Specifications									
Shown is the ECOPOD-N MODEL E50-N									
Treatment Capacity	500 GPD								
Electrical Requirement	115/1/60								
Aerator Compressor	EN50								

Other Delta Treatment Systems Products

A respected leader in wastewater treatment with decades of technical design and manufacturing experience, Delta Treatment Systems is committed to the continuing development of new products in the 21st century.



Distributor Network

ECOPOD[®] Series Advanced Wastewater Treatment Systems and accessories are sold, installed and serviced by certified distributors who are fully trained to provide all necessary components and to ensure professional installation.





9125 Comar Drive, Walker, LA 70785, 1 (800) 219-9183 | WWW.DELTATREATMENT.COM

TECHNICAL BROCHURE

BPE R1



FEATURES

Corrosion resistant construction

Cast iron body

Thermoplastic impeller and cover.

Upper sleeve and lower heavy duty ball bearing construction.

Motor is permanently lubricated for extended service life.

Powered for continuous operation.

All ratings are within the working limits of the motor.

Quick disconnect power cord, 20' standard length, heavy duty 16/3 SJTW with 115 or 230 volt grounding plug.

Complete unit is heavy duty, portable and compact.

Mechanical seal is carbon, ceramic, BUNA and stainless steel.

Stainless steel fasteners







Wastewater

Goulds Water Technology

APPLICATIONS

Specially designed for the following uses:

- Mound Systems
- Effluent/Dosing Systems
- Low Pressure Pipe Systems
- Basement Draining
- Heavy Duty Sump/Dewatering

SPECIFICATIONS

Pump - General:

- Discharge: 1½" NPT
- Temperature: 104°F (40°C) maximum, continuous when fully submerged.
- Solids handling: ½" maximum sphere.
- Automatic models include a float switch.
- Manual models available.
- Pumping range: see performance chart or curve.

PE31 Pump:

- Maximum capacity: 53 GPM
- Maximum head: 25' TDH

PE41 Pump:

- Maximum capacity: 61 GPM
- Maximum head: 29' TDH

PE51 Pump:

- Maximum capacity: 70 GPM
- Maximum head: 37' TDH

PUMP INFORMATION

MOTOR

General:

- Single phase
- 60 Hertz
- 115 and 230 volts
- Built-in thermal overload protection with automatic reset.
- Class B insulation
- Oil-filled design
- High strength carbon steel shaft

PE31 Motor:

- .33 HP, 3000 RPM
- 115 volts
- Shaded pole design

PE41 Motor:

- .40 HP, 3400 RPM
- 115 and 230 volts
- PSC design

PE51 Motor:

- .50 HP, 3400 RPM
- 115 and 230 volts
- PSC design

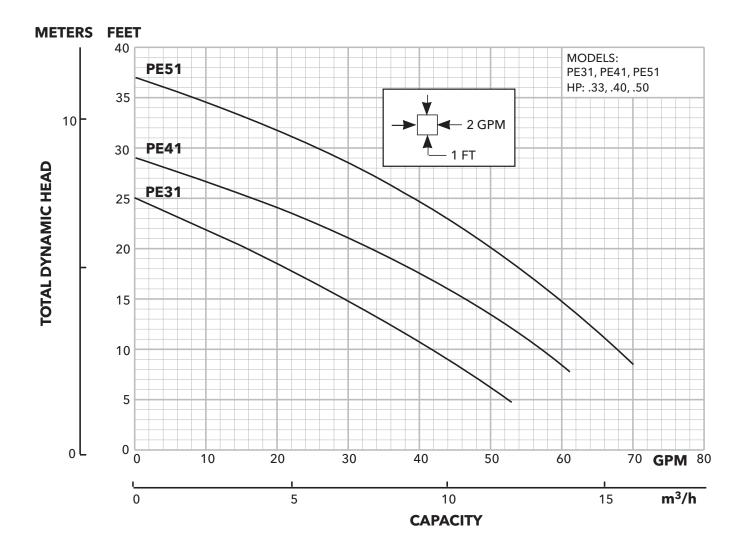
AGENCY LISTINGS



Tested to UL 778 and CSA 22.2 108 Standards By Canadian Standards Association File #LR38549

Order No.	НР	Volts	Amps	Minimum Circuit Breaker	Phase	Float Switch Style	Cord Length	Discharge Connection	Minimum Basin Diameter	Maximum Solids Size	Shipping Weight Ibs/kg
PE31M	0.33		12	20		Manual / No Switch					
PE31P1	0.33	115	IZ	20		Piggyback Float Switch					
PE41M		115	7.5	15		Manual / No Switch					
PE41P1			7.5	15		Piggyback Float Switch					
PE42M	0.4	230	3.7	10	1	Manual / No Switch	20'	1.5"	18"	.5"	31/14.1
PE42P1]	230	3.7	10	I	Piggyback Float Switch	20	1.5	10	.5	31/14.1
PE51M		115	9.5	20		Manual / No Switch					
PE51P1		115	9.5	20		Piggyback Float Switch					
PE52M	0.5	230	4.7	10		Manual / No Switch]				
PE52P1]	230	4./	10		Piggyback Float Switch					

Goulds Water Technology



PERFORMANCE RATINGS

PE31

Total Head (feet of water)	GPM
5	52
10	42
15	29
20	16
25	0

PE41

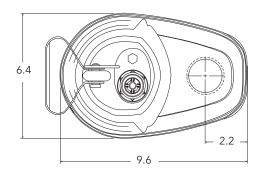
Total Head (feet of water)	GPM
8	61
10	57
15	46
20	33
25	16

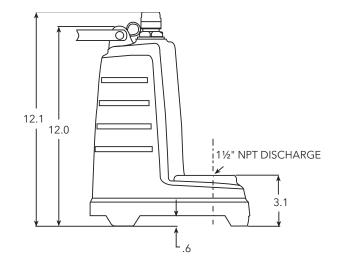
PE51

Total Head (feet of water)	GPM
10	67
15	59
20	50
25	39
30	26
35	8

DIMENSIONS

(All dimensions are in inches. Do not use for construction purposes.)







Xylem Inc. 2881 East Bayard Street Ext., Suite A Seneca Falls, NY 13148 Phone: (866) 325-4210 Fax: (888) 322-5877 www.gouldswatertechnology.com

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MAINTENANCE SERVICE, MONITORING, AND INSPECTION CONTRACT FOR ONSITE WASTEWATER TREATMENT SYSTEM

It is hereby agreed this 23rd day of June 2022 by and between Septic Check (Service Provider) and Client:

Client Name and Site Address		
Name:	Paul & Amy Gauer	
Street Address:	51694 Long Point Place	
City, State, Zip:	McGregor, MN 55760	
Parcel ID:	29-1-492800	
LGU:	Aitkin County	
Contract Type:	ATU 2x/yr TESTING	
Treatment System:	ECOPOD	

That in consideration of the payments provided herein, the Service Provider shall provide services to perform preventative maintenance, monitoring, and inspection of the Onsite Wastewater Treatment System (OWTS) located at the property described in this Contract.

Each inspection visit includes an examination of the OWTS per this Contract and a follow-up report. The report shall contain status of conditions and recommended corrective measures or replacement parts if deemed appropriate. The Service Provider is authorized to submit a copy of the report to the Local Governmental Unit (LGU) listed above.

This Contract does not assume any responsibilities or obligations which are normally the responsibilities of the Client as related to parts or labor, and does not extend to cover any costs that may be associated with any recommendations made under this Contract.

The Service Provider will only contract or subcontract for parts or labor after Client authorization. Billings for service calls outside of this Contract shall be made on a case-by-case basis. This Contract covers listed services and does not cover alarm calls of any kind.

The Service Provider shall be provided access to the site and the system in order to perform the following services as indicated:

SEPTIC TANK AND LIFT STATION(S) INSPECTION

- Check septic tank and compartments for solids build-up and general appearance. If necessary, $\sqrt{}$ recommend pumping when 25 to 33% of the operating levels contain solids.
- $\sqrt{}$ Inspect the septic tank baffles, inspection pipes, risers, and lids for structural integrity.
- $\sqrt{1}$ Check pumping system, including control panel and floats (if applicable).
- $\sqrt{}$ Record and date the readings of flow measurement devices (if applicable).
- $\sqrt{}$ Check dosing settings in the control panel (if applicable).
- $\sqrt{}$ Check and clean effluent screen(s) (if applicable).
 - Other:

**The cost of tank or lift station pumping is the responsibility of the Client and is not included in this Contract.

TREATMENT DEVICE – Aerobic Treatment Unit (ATU)

- $\sqrt{}$ Inspect ATU per manufacturer's recommendations (if applicable).
- $\sqrt{1}$ Inspect and clean any parts per manufacturer's recommendations.
- $\sqrt{}$ Inspect the appearance of the wastewater inside the unit for color and turbidity, and check odors.
- $\sqrt{}$ Sample effluent per operating permit.
- $\sqrt{}$ Inspect UV disinfection unit (if applicable); clean tube and replace bulb when needed.

__Other:

**The cost of the replacement bulb is the responsibility of the Client and is not included in this Contract.

DISPERSAL FIELD

**Mowing is not included in this Contract.

- _____ Inspect for visible signs of failure (surface discharge, wet spots, settling, etc.).
- $\sqrt{}$

_ Check inspection pipes for evidence of ponding.

Inspect and clean lateral lines when necessary.

**The cost of cleaning lateral lines is the responsibility of the Client and is not included in this Contract.

OPERATING PERMIT COMPLIANCE

**Operating permit fees are not included in this Contract.

Complete onsite inspection reports and enter in database.

 $\sqrt{}$ Collect and compile sample results and flow data.

- $\sqrt{}$ Submit service and sample reports to the LGU prior to deadline.
- $\sqrt{}$ Act as liaison between client and LGU as needed.

In no event shall the Service Provider be responsible for special or consequential damages including but not limited to loss of time, injury to personal property or any other consequential damages or incidental or economic loss due to equipment failure or for any other reason. This Contract does not assume any responsibilities or obligations which are normally the responsibility of the Client related to parts or labor, and does not extend to cover any costs that may be associated with any recommendations made under this Contract.

	Contract Terms			
Contract Effective Date:	Upon acceptance of this Contract, automatic annual renewal			
Frequency of Regular Service Visits:	SEMI-ANNUAL – 2x/yr			
Sample Parameters:	Fecal Coliform, Flow			
Cost for Maintenance Contract:\$430/year to include regular service visits, testing (if applicable), and reporting with annual price increases equivalent to the Regional Consumer Price Index (CPI) to cover variable costs such as fuel, 				
Billing Dates: \$215 after each regular service visit is complete				
Alarm/Emergency Call Charge:	Invoiced using current service visit and labor fees.			
Expected Repair Budget:	\$300/year* (See below)			
Repeat Sampling Cost:	\$100/Repeat sample retrieval and processing due to initial sample not meeting permit limits.			

*The expected repair budget above is a recommended planning amount to cover expected repair/replacement costs associated with your treatment device. Other costs for items such as tank pumping and cleaning, pump or other component replacements are not expected to be covered by the amount.

OUTSIDE SCOPE OF WORK:

 Alarm Response: Service Provider will be available to respond to alarm conditions as notified by the owner or automatic dialer (if installed). A typical response time is three to six hours and within 24 hours. Some alarms may need to be responded to immediately.

- **Repairs:** Parts/material costs will be as needed for each repair. Estimates for repairs can be provided before work starts if you prefer, although some potential alarm conditions may not permit delay.
- Tank pumping and other services: Services not covered in this Contract will be billed by outside vendors directly to the Client. In the event Service Provider pays vendor for said services, the Client will be billed for the service cost plus 10%.
 Repeat sampling: Any additional required sampling shall be billed separately.
 Operating Permit Fees: Ongoing permit fees from the LGU are to be paid and submitted by the client.

SLUG LOADS AND ACCIDENTAL SPILLS

Service Provider is not responsible for any illicit discharges into the wastewater system that may harm the treatment efficiency such as: accidental release of cleansers/oils, pharmaceuticals, feminine products, rags/paper towels, condoms, grease or food products, volume of water or high strength waste beyond system design, or other chemical discharges. Trucking or hauling the waste may be required in those circumstances at the cost of the Client.

The Service Provider agrees to provide inspection, monitoring, and routine maintenance service only under this Contract. The Client remedies for breach of this Contract shall be limited to refund of any amounts paid in advance for service. The Client or operator may terminate this agreement, without cause, upon 30 days written notice.



Aitkin County Environmental Services

Wastewater Treatment and Dispersal Permit

Permit Numbe	r:	Date:		
Facility Infor	mation			
	Paul & Amy Gauer 1028 241 st Ave NE	P	hone number:	
City: East Bet		State: MN	Zip code: _55005	
Property ID num	ber (GPS location): 29-1-4928	00 51694 Long Point Place McGre	gor, MN 55760	
		he requirements of this operating p	a wastewater treatment and dispersal syste ermit. The attached Management Plan is	∍m
Issuance date:		Expiration date:		
System type:	Type IV		Α	
System design flow:	450 GPD	Residential/Commercial:	Residential	
	System Components:			
	(2250 Triple compartment	t topk) 757 CAL contin comporting	nt to 757 CAL contin comportment equippe	ad

(2250 Triple compartment tank) 757 GAL septic compartment to 757 GAL septic compartment equipped with an Ecopod E50 pretreatment unit, Salcor UV light to the last 757 GAL compartment serving as the time dose pump tank dosing a 10' x 38' rockbed mound with a 1' lift.

Monitoring Requirements

Parameter	Effluent limits	Frequency	Location
Peak flow (gpd)	450 GPD	Semi-Annual (2 x yr)	Control Panel
Average flow (gpd)			
CBOD₅ (mg/L)	15 mg/l	As Needed	Bed dose tank
TSS (mg/L)	15 mg/l	As Needed	Bed dose tank
Fecal (cfu/ml)	1000 cfu/100ml	Annual (1 x yr)	Bed dose tank
Ponding/Surfacing in soil treatment	none	Annual (1 x yr)	Drainfield

Maintenance Requirements

Maintenance requirements shall be performed as specified in the Management Plan as prepared by the system's Advanced Designer.

System component	Maintenance	Frequency
Septic tank/Trash tank	Check annually, pump as needed	Annual (1 x yr)
Pump tank and controls	Check annually, pump/replace as needed	Annual (1 x yr)
Soil treatment and dispersal	Clean/jet laterals	As needed – 1 st cleaning not expected for 3- 5 years, maybe longer
Ponding/Surfacing in soil treatment	Check yearly, repair as needed.	Annual (1 x yr)
Pretreatment	Check Semi-Annual	Semi-Annual (2 x yr)

Monitoring Protocol

Any sampling and laboratory testing procedures shall be performed in accordance with the proprietary treatment product's protocol, Standard Methods, and at a Minnesota Department of Health approved laboratory. Results shall be submitted to the permitting

Parameter	Effluent limits	High risk / Resample	
Peak flow (gpd)	450		Bad Sample
		>315	>450
Average flow (gpd)	<315	>315	>150
Fecal			

Contingency Plan

In the event the wastewater treatment system does not meet required performance requirements as contained in this operating permit, the owner shall notify the local unit of government within 30 days of non-compliance. The owner is responsible to obtain the services of a Minnesota Pollution Control Agency (MPCA)-licensed Service Provider or other qualified practitioner to complete the required corrective measures. If a sample value is exceeded but the sample value is less than the resample column above, a new sample should be collected within 30 days.

After three resamples in the high-risk category, monitoring will be increased too monthly. After 3 bad samples or a combination of 6 total samples over the permit limits, a corrective action plan following the mitigation plan in the design will be enforced.

Authorization

This permit is effective on the issuance date identified above. This permit and the authorization to treat and disperse wastewater shall expire one year from date of issue.

This system will be Compliant as long as the conditions of the Operating Permit are met. This permit will need to be renewed 30

Any additional tanks or equipment that need to be added to meet standards required by this permit due to expansion, failure of equipment, or increased flow shall not require additional permits provided that this system is current with the standards outlined in

The Permittee is not authorized to discharge after the above date of expiration.

The Permittee shall submit monitoring information and forms as required by Aitkin County Environmental Services yearly no later than sixty (60) days after service date. This permit is not transferable.

The owner is required to obtain the services of a Minnesota Pollution Control Agency (MPCA) licensed 1) Service Provider to provide ongoing system operation, maintenance, and monitoring and 2) Maintainer to pump the system's sewage tanks and components. The owner is responsible to provide the name of the Service Provider business prior to the issuance of this operating permit. The owner has secured the services of Septic Check as the Service Provider for this system (signed Service Provider contract attached).

I hereby certify with my signature as the Permittee that I understand the provisions of the wastewater treatment and dispersal system operating permit including maintenance and monitoring requirements. I agree to indemnify and hold either Aitkin County Environmental Services harmless from all loss, damages, costs and charges that may be incurred by the use of this system. If I fail to comply with the provisions of this operation permit, I understand that penalties may be issued. If I sell this property during the life of the permit, I will inform the new owner(s) of the permit requirements and the need to renew the operating permit.

The Operating Permit is hereby granted Paul & Amy Gauer to:

Permittee (please print):	- MAUL	ANDAMY	GAUE2	
	NEDS		Date: 7/	7/22

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Permitting Authority (please print):

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Instructions for Completing an Operating Permit

The following instructions provide an explanation for local units of government to complete the operating permit template. This is intended to provide guidance to local units of governments (LGU) in developing operating permits for Type IV and Type V systems, including both residential and commercial systems. The template could be modified for holding tanks. Since the Management Plan is considered part of the operating permit, it needs to be attached to the operating permit. A signed contract, between the owner and Service Provider, should be attached to the operating permit to help ensure the owner has made the necessary arrangements to have the system maintained and monitored.

LGU Name, Department and Address – fill in the name, department and address of local unit of government at the top of the operating permit.

Wastewater Treatment and Dispersal Operating Permit No. – assign an operating permit number to be able to track the system over the years.

Permittee Name, Telephone Number, and Address – fill in the name, address and phone number of the owner.

Property Id. Number (GPS Location) – these are simply identifiers used by local units of government in the event the property address changes over time.

Name of Local Unit of Government – fill in the name of the local unit of government. This authorizes the Permittee to operate the wastewater treatment system at the address named above, according to the operating permit, attached Management Plan and contract with the Service Provider.

Issuance Date – fill in the date the operating permit is issued. The operating permit should not be issued until all required information is submitted.

Expiration Date – fill in the date when this operating permit expires. The first time an operating permit is issued to an owner, it should be issued for one (1) year. This helps ensure the owner actually does the required maintenance and monitoring during the first year. If the owner complies, the operating permit can then be issued for a longer period of time as determined by the local unit of government (typically 3 to 5 years). However, if the owner does not comply the first year, the second operating permit could, again, be issued for a period of one (1) year.

System Type - fill in as Type IV or Type V system. Holding tanks also require operating permits (Type II system).

Treatment Level – specify Treatment Level A, B, C, TN or TP. Treatment Level A = Carbonaceous Biochemical Oxygen Demand, five day (CBOD₅) 15 milligrams per liter (mg/L), Total Suspended Solids (TSS) 15 mg/L, Fecal Coliform Bacteria 1000 per 100 milliliter (mL); Treatment Level B = CBOD₅ 25 mg/L, TSS 30 mg/L, Fecal Coliform Bacteria 10,000 per 100 mL; Treatment Level C = CBOD₅ 125 mg/L, TSS 80 mg/L, Oil and Grease 20 mg/L; TN = 20 mg/L, or TP = 2 mg/L.

System Design Flow – fill in the design flow specified on the construction permit for the system, along with the projected average daily flow for the system. Average daily flow is generally 60 to 70 percent of design flow.

Residential/Commercial – specify if the system is residential or commercial. You may specify additional information, such as classification of dwelling, number of bedrooms; or type of commercial establishment.

System Components – provide a brief description of the system components. An example would be the following: 600 gallon trash tank, 600 gallon ECOPOD treatment device, 1 Salcor Ultra Violet (UV) light disinfection unit, 500-gallon pump tank, pump, floats and controls, and 250-foot shallow trenches using pressure distribution.

Monitoring Requirements (Table)

The monitoring requirements specified in an operating permit are unique to the site and soil conditions of the property (its environmental sensitivity) and system complexity. The monitoring requirements include specific parameters to be monitored, target limits and the frequency and location of monitoring. The monitored parameters, at a minimum, would include: 1) wastewater flow - the most basic parameter to know in understanding system performance, 2) ponding in the soil treatment system and 3) surfacing of the soil treatment system. Monitoring for CBOD₅, TSS, fecal coliform bacteria and nitrogen are unique to the site, its receiving environment and complexity of the wastewater system. Field tests for temperature, pH and dissolved oxygen can be performed by the Service Provider to serve as general indicators of system performance.

1. **Flow** – flow to each system needs to be determined as specified in the Management Plan or as determined by the local unit of government. Flow can be determined several ways, using water meters, event counters, and running time clocks. Telemetry can also be used and has the advantage that flow can be determined continually.

The determination for the frequency of flow measurement is done on a case-by-case basis. At first, daily flow monitoring may be needed to determine average flow and peak flows to a system. After a period of time, weekly or monthly flow determination may be acceptable. Flow determinations once a year generally provide limited information.

- 2. CBOD₅ monitoring for CBOD₅ is not typically required for the majority of wastewater systems used for single-family homes generating typical domestic strength effluent. However, monitoring for CBOD₅ may be needed periodically. For example, there may be a need to audit systems as part of the product registration process in Minnesota or if the Service Provider is trying to troubleshoot a system. For commercial systems, monitoring for CBOD₅ is generally necessary to determine CBOD₅ removal efficiencies of proprietary treatment devices and/or organic loading rates to the soil's infiltrative surface.
- TSS monitoring for TSS is not typically required for most residential wastewater systems that generate typical domestic strength effluent. However, turbidity measurements may be taken in the field by Service Providers. Monitoring for TSS may be needed periodically as part of an audit process for the registration of proprietary treatment products in Minnesota. For commercial systems, monitoring for TSS may be necessary.
- 4. **Fecal Coliform Bacteria** monitoring for fecal coliform bacteria should generally be required for systems listed as Treatment Level A and Treatment Level B systems where reduced vertical soil separation is used.
- 5. **Total Nitrogen and Total Phosphorus** monitoring for Total Nitrogen (TN) may be needed in areas identified as nitrogen sensitive environments. Monitoring for Total Phosphorus (TP) may be required in phosphorus sensitive lake environments.
- 6. **Field Tests** these are tests performed by the Service Provider to help 'monitor' system performance and identify problems (troubleshooting a system). Although field tests are not a strict monitoring requirement, they are appropriate to list in the operating permit if specified in the Management Plan or in the product's Operation and Maintenance Manual. The local unit of government will determine if the permittee is required to report field test results as part of the operating permit.
- 7. **Ponding/Surfacing in Soil Treatment** all systems should be monitored periodically as specified in the Management Plan to determine extent and frequency of ponding in soil treatment systems. A check for surfacing is needed.

Maintenance Requirements (Table)

This table lists some of the basic maintenance requirements for each major component of the wastewater system. Since you can't possibly list all the maintenance requirements in this table, it is best to reference the Management Plan. You could reference the proprietary product's Operation and Maintenance Manual.

- 1. **System Component** list each system component, including the septic tank, trash tank, effluent screen, pump tank and controls, proprietary treatment product, disinfection device, and soil treatment and dispersal system.
- 2. **Maintenance** briefly identify the maintenance requirements of each major system component. For additional information, you could also reference the proprietary product documents listed on the MPCA Web site at http://www.pca.state.mn.us/programs/ists/productregistration.html.
- 3. **Frequency** briefly identify the frequency of maintenance as per the systems Management Plan and Operation and Maintenance Manual.

Monitoring Protocol – this section of the operating permit states that testing needs to be performed in accordance with approved methods and the results submitted to the local unit of government.

Contingency Plan – briefly describes requirements if the system does not function as intended. The owner must notify the local unit of government when non-compliance occurs. The Management Plan may identify some of the corrective actions required or you will need to consult your Service Provider. The owner is responsible to obtain the services of a MPCA-licensed Service Provider or other qualified practitioner to complete the required corrective measures. More detail could be added here by the local unit of government.

Authorization – fill in the length of time of the operating permit; this is typically one to five years. Fill in the name of the local unit of government in the second blank space. Next, fill in the name of the MPCA licensed Service Provider identified by the owner in contract; this is needed to help ensure the owner has made the necessary arrangements to have the system maintained and monitored.

The Operating Permits Hereby Granted to - print the name of the owner who signed the operating permit.

Signature of Permittee (and date of signature) - the owner signs and dates the operating permit.

By Order of – signature of the permitting authority, title, and date.

AITKIN COUNTY ENVIRONMENTAL SERVICES-PLANNING & ZONING 307 Second Street NW, Room 219 Aitkin, Minnesota 56431

PH: (218) 927-7342 FX: (218) 927-4372 aitkinpz@co.aitkin.mn.us



8/3/2022

Paul & Amy Gauer 1028 241st Ave NE East Bethel, MN 55005 Re: Operating Permit #791 Zoning Permit #2022-9198 Parcel # 29-1-492800

Dear Permittee:

Enclosed is the Operating Permit for an "Other" Septic System (formerly Experimental, Performance, Etc.) that you are petitioning Aitkin County to allow to be installed on your property instead of a standard system. Please review this permit thoroughly and become acquainted with all of the conditions, then sign the operating permit and return it to the address above.

One provision that is often overlooked by homeowners is the State of Minnesota requirement that a water meter or other flow measuring device be installed and the results recorded by the homeowner on a REGULAR basis.

You will receive an annual reminder notice on how to renew your operating permit before the renewal expiration deadline. This reminder notice will ask that you provide:

1) Recorded water meter readings

2) Annual Compliance Inspection report

3) Renewal application and fee

The Service Provider/Qualified Individual is privately hired by you, the landowner. The Service Provider/Qualified Individual must review the septic system on an annual basis. This annual review would be a great opportunity to review the conditions of the Operating Permit.

Should you have any questions, please contact our office.

Thank you, Aitkin County Planning & Zoning

Enclosure: Operating Permit App

AITKIN COUNTY ENVIRONMENTAL SERVICES

OPERATING PERMIT FOR WASTEWATER TREATMENT AND DISPERSAL

OPERATING PERMIT #: 791 ZONING PERMIT #: 2022-9198 PARCEL #: 29-1-492800 PERMITTEE: Paul & Amy Gauer

MAILING ADDRESS: 1028 241st Ave NE East Bethel. MN 55005 ORIGINAL DATE ISSUED:8 /1 /2022 RENEWAL PERIOD: ANNUAL EXPIRATION: 9 /30/2024

PROPERTY ADDRESS: 51694 Long Point Pl

McGregor, MN 55760

TELEPHONE: 🗙

 LEGAL: LOT 38 DOUBLE S ACRES SECOND ADDITION

 FEE PAID: 150
 DATE PAID: 7 /14/2022
 INVOICE #: 55621
 CK #: card

Aitkin County Environmental Services authorizes the Permittee to operate a wastewater treatment and dispersal system located on the above described property in accordance with the requirements of this permit.

This permit is effective on the issuance date identified above. This permit and the authorization to treat and disperse from the above system shall expire on the above expiration date. The Permittee is not authorized to discharge after the above date of expiration. The Permittee shall submit such monitoring information as required by Aitkin County Environmental Services no later than thirty (30) days prior to the expiration date. When the required information is submitted and approved by Aitkin County Environmental Services, the permit may be renewed. This permit is not transferable from owner to owner.

I hereby certify with my signature as the Permittee that I understand the provisions of this operating permit including maintenance and monitoring requirements. I agree to indemnify and hold Aitkin County harmless from all loss, damages, costs and charges that may be incurred by use of this system and if I fail to comply with the provisions of this Operating Permit. If I sell this property during the life of the permit, I will inform the new owner(s) of the permit requirements and the need to renew the operating permit.

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Signature of Permittee

Date

Date

Signature of Permitting Authority

If you have any questions regarding this permit, including the specific permit requirements, permit reporting or permit compliance status, please contact Aitkin County Environmental Services at 218-927-7342.

A. DESCRIPTION OF WASTEWATER TREATMENT AND DISPERSAL SYSTEM

3 Bedroom Type IV Advanced Residential System with 2250 triple compartment tank. 757 gal septic compartment to 757 gal septic compartment equipped with an Ecopod E50 pretreatment unit, Salcor UV light to the last 757 gal compartment serving as the time dose pump tank dosing to a 10'x38' rockbed mound with a 1' lift.

B. PERFORMANCE STANDARD REQUIREMENTS:

During the period beginning on the effective date (issuance date) of this permit and lasting until this permit's expiration date, the Permittee is authorized to discharge from the wastewater treatment unit to subsurface dispersal. No surface discharge is permitted. The following parameters must be monitored and the results must be found within the compliance limits.

PARAMETER	COMPLIANCE LIMIT	SAMPLE LOCATION	SAMPLE FREQUENCY	SAMPLE TYPE	REPORTING FREQUENCY
ponding/surfacing	none	Drainfield	Annually	Visual	Annually
Fecal Coliform	1000 cfu/100ml	Bed dose tank	Annually	Lab	ANNUALLY
TSS	15 mg/l	Bed dose tank	As needed	Lab	As needed
5-Day BOD	15 mg/l	Bed dose tank	As needed	Lab	As needed
Peak flow (gpd)	450 gpd	Control Panel	Monthly by owner	Record on a Log Sheet	Semi-Annual (2x yr)

C. MAINTENANCE REQUIREMENTS:

PARAMETER	LOCATION	FREQUENCY
Check annually, pump as needed	Septic tank(s)	ANNUALLY
Check pretreament units	Ecopod & UV light	Semi-Annual (2x yr)
Clean/jet laterals	Soil treament and dispersal	As needed- 1st cleaning in 3-5 yrs
Ponding/Surfacing	Soil Treatment	ANNUALLY
Pumps, Floats & Alarms	Pump Chamber	ANNUALLY

D. MONITORING AND REPORTING REQUIREMENTS:

Monitoring results obtained during each calendar year shall be submitted no later than May 31st of that year to:

Aitkin County Environmental Services 307 2nd Street NW, Room 219 Aitkin, MN 56431

The monitoring reports shall be signed by the Permittee. Copies are to be retained by the Permittee. Any sampling and laboratory testing procedures shall be performed in accordance with Standard Methods at a Minnesota Department of Health approved laboratory. All sampling and testing costs shall be the responsibility of the Permitte. Monitoring plans may be modified as necessary and reapproved by Aitkin County Environmental Services.

The Permittee shall ntoify Aitkin County Environmental Services within thirty (30) days when monitoring results do not meet the monitoring plan requirements of this permit.

The owner has secured the services of **Septic Check** as the Service Provider or qualified individual for this system. The Service Provider or qualified individual is hereby authorized to report the required monitoring data and routine maintenance service records to Aitkin County Environmental Services.

AITKIN COUNTY AS-BUILT FORM FOR AN ISTS

OWNER Paul & Amy Gauer	PERMIT NUMBER 47179
INSTALLER Septic Check	DATE OF INSTALLATION
SETBACKS: 30' Buildings to tank(s) 50' Building to drainfield 50' Well(s) 50' or 100' >50' Lake/Creek/Wetland Big Sandy Lake Property lines (drainfield/tanks) 10' to DF, 15' to tank SEPTIC TANKS: Liquid Capacity Liquid Capacity 1514 gal- used first 2 compartments Manufacturer & Type Brown Wilbert 2250 - 3 compartment Type of baffle(s) Plastic Inspection pipes (#, size & height) Manhole access (size) # and height of risers on manhole 4 risers, 2-3'	TRENCHES, BEDS OR AT-GRADE SYSTEMS: Drop box or Dist. Box and Type Trench depth(s) Trench length(s) Trench bottom width trench spacing Drainfield rock below pipe Size of graveless pipe Depth of backfill Absorption area: square feet lineal feet
MOUNDS: Percent slope0% Upslope dike width11.3' Downslope dike width11.3' Discrete dike width11.3' Drainfield rock below pipe6" Depth of sand below rock12" Perforation size & spacing1/4" perfs every 3' Pipe size & spacing1.5" lats with 3' Dimensions of rockbed10' x 38' Dimensions of sandbase Depth of final cover18"	Tank capacity 757 gal Tank capacity 757 gal Tank manufacturer & type Brown Wilbert 2250 - 3 compart. # and height of risers

DRAWING OF SYSTEM – use back of this sheet if more room is needed.

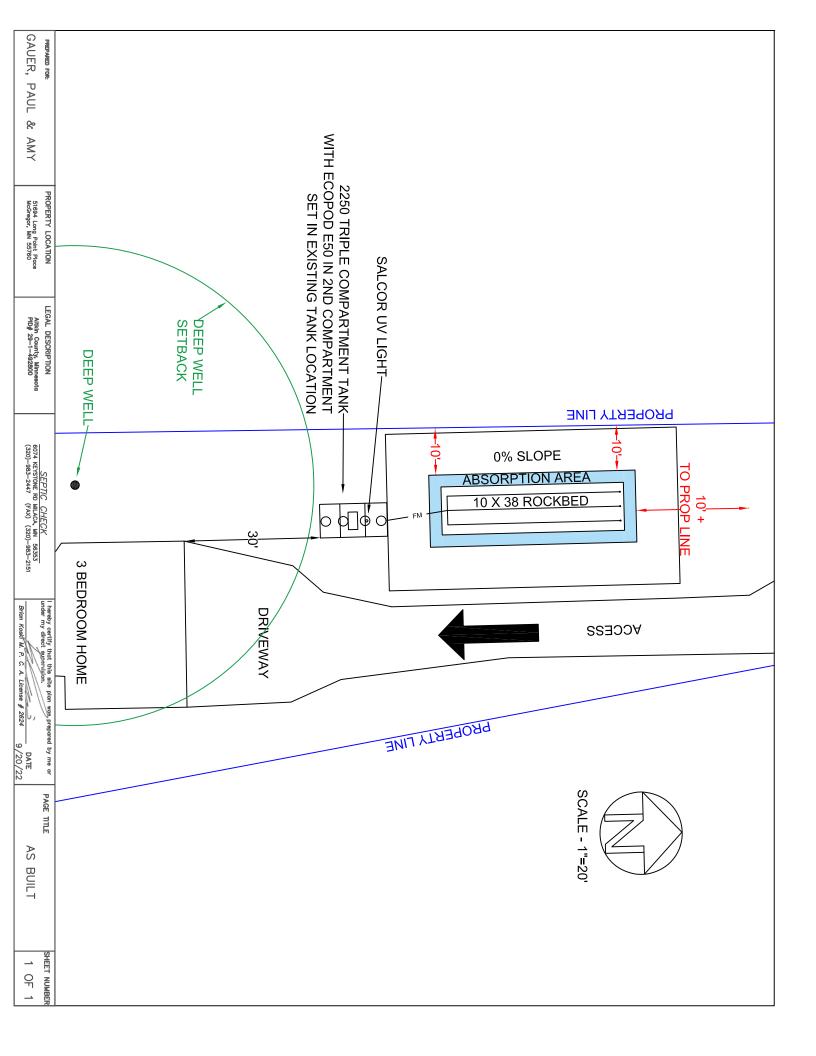
SEE ATTACHED SITE MAP

Valai

_(installer signature) certify that the above work was installed in accordance

witht he submitted designa and permit conditions and the system is free from defects.***

***|



Septic Check

6074 Keystone Rd Milaca, MN 56353

Mail To: Amy Gauer

55005

Bethel, MN

1028 241st Ave NE

C PROPERTY INFORMATION

Location: 51694 Long Point Place McGregor Tax ID: 29-1-492800

> Use: Residential, Cabin System Design Flow: 450 GENERAL SYSTEM TYPE: ECOPOD 2x yr W/ TEST

Fold Here

○ ON-SITE WASTEWATER TREATMENT SYSTEM INSPECTION REPORT
Inspected: 05/26/2023 - Inspection Type: ROUTINE - Correction Status: Corrections in progress

Company:	Work Performed By:	Submitted 05/31/2023 by:
Septic Check	Kyle Wade	Heather Johnson

COMMENTS & GENERAL INSPECTION NOTES

Deficiencies Were Noted: Corrections are in progress.

I noticed some minor cosmetic settling around the inlet and outlet of the tank. I figure 5 wheel barrels of topsoil will take care of it. (most likely warranty work) The UV light is missing the 1" female threaded adapter on the top.

Everything else looked good. Sample results to follow later in the year.

GENERAL SITE & SYSTEM CONDITIONS

The General Site and System Conditions were:	Fully Inspected
Components accessible for service:	YES
All required service performed (if no - specify omitted inspection items in notes):	YES
Surfacing effluent from any component (including mound seepage):	NO
Components appear to be watertight - no visual leaks:	YES
Improper encroachment (structures/impervious surfaces); cover; or settling problems observed:	YES - In Progress

ONSITE SEWAGE SYSTEM INSPECTION DETAIL

TANK: Septic Tank - 3 Compartment W/ ECOPOD		
This component was:	Fully Inspected	
Effluent level within operational limits (if NO explain in comments):	YES	
All required baffles in place (N/A = No baffles required):	YES	
Compartment 1 Scum accumulation (Inches, if other specify):	0	
Compartment 1 Sludge accumulation (Inches, if other specify):	10	
Compartment 2 Scum accumulation (Inches, if other specify):	0	
Compartment 2 Sludge accumulation (Inches, if other specify):	0	
Compartment 3 Scum accumulation (Inches, if other specify):	0	
Compartment 3 Sludge accumulation (Inches, if other specify):	0	
Pumping recommended:	NO	
Aerobic Treatment Unit: ATU - Delta Ecopod, Manufacturer= Delta Environmental Products, Inc ECOPOD-E50		
Manufacturer: Delta Environmental Products, Inc. Model: ECOPOD-E50		
This component was:	Fully Inspected	
Effluent level within operational limits (if NO explain in comments):	YES	
Dissolved Oxygen within normal operating range (1.5 to 3.0 mg/L) (if less than 1.5 check blower and	N/A	
re-check):		
Field sample performance results within operational limits (Enter N/A if not performed):	N/A	
Trash Compartment solids accumulation within operational limits per manufacturer:	YES	
Clarifying Chamber solids accumulation within manufacturer operational limits:	YES	
Digester settleable solids test resulted in greater than 25% settleable solids: (If Yes, pumping needed):	NO	
Intake vent at blower housing and exhaust vent at digester clear of obstructions and operating	YES	
Applicable filters cleaned	YES	
Pumping needed:	NO	
Disinfection: Ultra Violet, Manufacturer= Salcor Engineering - 3G V2		
Manufacturer: Salcor Engineering Model: 3G V2		
This component was:	Fully Inspected	
Alarm mechanism functioning as intended:	N/A	
Disinfection unit light on:	YES	

Panel: Control - 1 Pump, Manufacturer= SJE Rhombus - IFS Single Phase Simplex	
Manufacturer: SJE Rhombus Model: IFS Single Phase Simplex	
This component was:	Fully Inspected
Panel functioning (including alarm):	YES
Pump 1: on minutes (override in parentheses - if present):	3.5
Pump 1: off hours (override in parentheses - if present):	5
Pump 1: gallons per dose (override in parentheses - if present):	-
Pump 1: ETM hours (override in parentheses - if present):	.75
Pump 1: Cycle Count (override in parentheses - if present):	52
Pump: Effluent Pump, Manufacturer= Goulds Pumps - PE Series	
Manufacturer: Goulds Pumps Model: PE Series	
This component was:	Fully Inspected
Controls functioning:	YES
Tested gallons per minute flow:	-
Media Filter: Mound, Manufacturer= Site Constructed - Gravel Bed Rockbed mound	
Manufacturer: Site Constructed Model: Gravel Bed	
This component was:	Fully Inspected
Slope integrity maintained:	YES
Lateral lines flushed:	NO
Ponding present? If YES explain in comments:	NO
Average squirt height (if performed) (feet, if other specify):	-

This report indicates certain characteristics of the onsite sewage system at the time of visit. In no way is this report a guarantee of operation or future performance.

Septic Check

6074 Keystone Rd Milaca, MN 56353

Mail To: Amy Gauer

55005

Bethel, MN

1028 241st Ave NE

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~ PROPERTY INFORMATION

Location: 51694 Long Point Place McGregor Tax ID: 29-1-492800

> Use: Residential, Cabin System Design Flow: 450 GENERAL SYSTEM TYPE: ECOPOD 2x yr W/ TEST

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ON-SITE WASTEWATER TREATMENT SYSTEM INSPECTION REPORT				
Inspected: 10/12/2023 - Inspection Type: ROUTINE - Correction Status: No corrections needed				
Company:	Work Performed By:	Submitted 10/16/2023 by	<i>y</i> :	
Septic Check	Matt Maleski	Heather Johnson		

COMMENTS & GENERAL INSPECTION NOTES

No Deficiencies Noted

GENERAL SITE & SYSTEM CONDITIONS

The General Site and System Conditions were:	Fully Inspected	
Components accessible for service:	YES	
All required service performed (if no - specify omitted inspection items in notes):	YES	
Surfacing effluent from any component (including mound seepage):	NO	
Components appear to be watertight - no visual leaks:	YES	
Improper encroachment (structures/impervious surfaces); cover; or settling problems observed:	NO	

ONSITE SEWAGE SYSTEM INSPECTION DETAIL

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larm mechanism functioning as intended: YES	Manufacturer: Salcor Engineering Model: 3G V2	
	This component was:	
visinfection unit light on: YES	Alarm mechanism functioning as intended:	
	Disinfection unit light on:	YES

Panel: Control - 1 Pump, Manufacturer= SJE Rhombus - IFS Single Phase Simplex	
Manufacturer: SJE Rhombus Model: IFS Single Phase Simplex	
This component was:	Fully Inspected
Panel functioning (including alarm):	YES
Pump 1: on minutes (override in parentheses - if present):	3.5 min
Pump 1: off hours (override in parentheses - if present):	5
Pump 1: gallons per dose (override in parentheses - if present):	-
Pump 1: ETM hours (override in parentheses - if present):	2.48
Pump 1: Cycle Count (override in parentheses - if present):	139
Pump: Effluent Pump, Manufacturer= Goulds Pumps - PE Series	
Manufacturer: Goulds Pumps Model: PE Series	
This component was:	Fully Inspected
Controls functioning:	YES
Tested gallons per minute flow:	-
Media Filter: Mound, Manufacturer= Site Constructed - Gravel Bed Rockbed mound	
Manufacturer: Site Constructed Model: Gravel Bed	
This component was:	Fully Inspected
Slope integrity maintained:	YES
Lateral lines flushed:	NO
Ponding present? If YES explain in comments:	NO
Average squirt height (if performed) (feet, if other specify):	-

This report indicates certain characteristics of the onsite sewage system at the time of visit. In no way is this report a guarantee of operation or future performance.

SAMPLING REPORT		
Location: 51694 Long Point Place	Service Company:	
McGregor	Septic Check	
29-1-492800	6074 Keystone Rd	
owner: Paul Gauer	Milaca, MN 56353	
Use: Cabin	320-983-2447	
	Laboratory:AW Labs	

Sample Date: 09/05/2023 Sample entered by: Heather Johnson Report submitted: 10/16/2023

Notes: flow from 10/12/23 site visit

ONSITE SEWAGE SYSTEM SAMPLING DETAIL				
COMPONENT	TYPE	SAMPLE	LIMIT	RESULT
Effluent Pump PE Series	Effluent	Flow	450 gmd	21.7
Effluent Pump PE Series	Effluent	Fecal	1000 mg/l	<100

This report indicates certain characteristics of the sample taken at the time of visit. In no way is this report a guarantee of operation or future performance.