AITKIN COUNTY ZONING

PERMIT NUMBER **44246** App# 2019-004330

PARCEL NUMBER 11-0-067003 11-1-115700

Location LOT 8 & PT VACATED HOLIDAY TRAIL DOC 451636 HOLIDAY BEACH SECTION 29 & 45 27
Lot Block Gov't. Lot Section Twp. Rge.
.37 AC IN SE SE IN DOC 451636 SECTION 30

Issued May 13, 2019 To LOWELL & SHARON REEDSTROM TRUSTEES

Nature of Authorization 300 GPD Type V Residential Other/Performance Pressure Bed with Operating Permit # 614

New Construction _____ Alteration _____

Sewer Installation ✓

Flood Plain and Lowest Floor Elev. _____

This permit expires one year from date of issuance
NOT TRANSFERABLE

NOTE:
This permit must be posted in a conspicuous place on premises on which work is to be done and remain until work has been completed and inspected.

S. Westerlund
ZONING ADMINISTRATOR

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

AITKIN COUNTY ZONING

PERMIT NUMBER **44246** App# 2019-004330

PARCEL NUMBER 11-0-067703 / 11-1-115700

Location E 163.5 FT OF W 346.5 FT OF LOT 1 IN 31 45 27
Lot Block Gov't. Lot Section Twp. Rge.

DOC 228074 + W 193 FT OF N 330 FT OF LOT 1 IN 248750

Issued May 13, 2019 To Daniel + Kathleen Brown Trust

Nature of Authorization 300 GPD Type V Residential Other/Performance Pressure Bed with Operating Permit # 614

New Construction _____ Alteration _____

Sewer Installation ✓

Flood Plain and Lowest Floor Elev. _____

This permit expires one year from date of issuance
NOT TRANSFERABLE

NOTE:
This permit must be posted in a conspicuous place on premises on which work is to be done and remain until work has been completed and inspected.

S. Westerlund
ZONING ADMINISTRATOR

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

2. Zoning/Land Use Permit Applications Septic Only Permit # 2019-3979, App. # App-2019-004330, UID # 197512

Aitkin County Planning & Zoning / Environmental Services
209 2nd Street NW, Room 100
Aitkin, MN 56431
Phone: 218-927-7342
Fax: 218-927-4372
Email: aitkinpz@co.aitkin.mn.us

Property Owner Contact

Landowner Phone Number:	(612) 384 - 4811
Property Owner Email Address:	tire63@msn.com

Project Location Search

Property:

Property Location			Property Address	Legal Description	Property Attributes		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)
11-0-067703	S:31 T:45 R:27	HAZELTON TWP	45828 228th St AITKIN, MN 56431	E 163.5 FT OF W 346.5 FT OF LOT 1 IN DOC	1,020,400	ROUND LAKE (HAZELTON TWP)	BROWN, DANIEL & KATHLEEN TRUST	BROWN, DANIEL & KATHLEEN TRUST
11-1-115700	S:29 T:45 R:27	HAZELTON TWP	23058 450th Ave AITKIN, MN 56431	LOT 8	1,015,700	BIG PINE LAKE (Hazelton)	REEDSTROM, LOWELL & SHARON TRUSTEES	REEDSTROM, LOWELL & SHARON TRUSTEES

Driving Directions to the project location.: Hwy 169 to 450th Ave follow up to Big Pine Lake

Designer/Installer

Designer Name:	Septic Check
Installer:	Licensed Septic Professional
Installer Name:	Septic Check
Installer License Number:	2624

System Information

Please attach a septic system design.:	File 1: Design_-_PID_11-1-115700.pdf
Please select all that apply:	Residential Other/Performance Sewer

Other Information

Other:	Lowell Reedstrom hired us for the design and installation of this project. He has sold this home to Ron Brown. Two parcel ID's are attached to this property and it appears one is still in Lowells name and the other in Ron's name. Ron can be reached at 612-384-4811. Lowell can be reached at 507-380-4321. Please let me know if you have further questions on this. Thanks! Melissa 320-983-2447

Invoice #47475 (04/24/2019)

Charge	Cost	Quantity	Total
Residential Other/Performance Sewer added 04/24/2019 2:39 PM $350 Flat Fee	$350.00	x 1	$350.00
Grand Total			
		Total	**$350.00**
		Payment 04/24/2019	**$350.00**
		Due	**$0.00**

Invoice #47492 (04/25/2019)

Charge	Cost	Quantity	Total
Residential Operating Permit added 04/25/2019 11:10 AM $100 Flat Fee	$100.00	x 1	$100.00
Grand Total			
		Total	**$100.00**
		Payment 04/26/2019	**$100.00**
		Due	**$0.00**

Results (Go to top)

Signature accepted

Status Changed

Change logged

Sent Your Septic Application has been Approved. notification to: melissab@septiccheck.com; tire63@msn.com

Approvals

Approval	Signature
Applicant	Melissa Besser - 04/24/2019 2:40 PM 681cf0bc99d34dc615ade806b7f57a93 2847f07501b687c7167d1fde73d0136e
#1 Adminstrative Approval Group	Shannon Westerlund - 04/29/2019 9:45 AM 50d69d49e8dd3ef12bfb5eae91ae12c5 95b60d898085a2d0950d9d2a2e79e984
#2 Inspector Group	Shannon Westerlund - 05/13/2019 3:22 PM f81693877b55be9c184506d885e67e3e b7bd33227bd0246140f177907b17c4a7
#3 Final Approval	Shannon Westerlund - 05/13/2019 4:28 PM 16c7114580db2463b7d3142afcc5acb3

865b0091d5c6acea33d94592e6fffc7e

Public Notes

Text: P# 44246 Approved for Type V 300 GPD Residential Other/Performance Pressure Bed w/ Operating Permit# 614

File(s):

File 1: 44246.pdf
44246.pdf

File 2: Brown_Maint.Contract.pdf
Brown_Maint.Contract.pdf

File 3: Brown_Operating_Permit.p
Brown_Operating_Permit.pdf

File 4: OP614.pdf
OP614.pdf

Admin Checklist

Date application was complete: 04/26/2019

This application has been started by: Shannon Westerlund

Zoning District of project location: Shoreland

Required OHWL setback distance: 75 ft.

"Other" OHWL setback distance is:

Pumping Agreement Attached?

Low Interest Loan or SSTS Grant project?	
Is this an After-The-Fact application?	No

DESIGN REVIEW CHECKLIST

Zoning Inspector:	Pete Gansen
SSTS Type:	Type V
SSTS Design:	Pressure Bed/Seepage
New or Replacement SSTS:	Replacement SSTS
gpd:	1-2,499 gpd
# of bedrooms:	2
Does this system require an Operating Permit?	Yes
Operating Permit #:	614
Attach appropriate inspection forms.:	
Does this system belong to an other establishment?	No
Is this a Cluster System?	No

Numbers

	Current Number		Next from Sequence
UID #	197512		*not applicable*
App. #	App-2019-004330	««	App-2019-004447
Permit #	2019-3979	««	2019-3980

Print View

Halling Engineering, Inc.

3727 E 255th Street • Webster, MN 55088 • Phone: 952-440-1680

April 18, 2019

Terry Neff, Director
Aitkin County
Environmental Services
209 2nd Street
Aitkin, MN 56431

Re: Design review for Wexco for mini MBBR treatment process Type V pretreatment used for Lowell Reedstrom, 23058 450th Avenue, Aitkin, MN 56431

Dear Mr. Neff,

I have reviewed the proposed Type V ISTS design at the above location, which includes using the mini MBBR drop in process. The MPCA has registered the Smart Treat MBBR product for treating high strength waste down to residential strength waste but not the mini MBBR drop in units. This design is based on a peak flow of 300 gpd with typical average flows of less than 300 gpd with residential strength wastewater. The system is designed to extend the life of the seepage bed that is being constructed and to enhance the movement of the effluent into the soils below the bed. It is my professional opinion that the mini MBBR as designed with UV disinfection will treat this high strength wastewater down to the targeted waste strength. This system meets Minnesota Rules Chapter 7080.2400 Type V Systems requirements. This letter in no way guarantees the actual performance of the system. Please contact me if you have any questions.

Sincerely,

Gregory R. Halling

Gregory, R. Halling, P.E. Mn Reg. No. 12783
MPCA Advanced Designer C914
Cc: Brian Koski

SEPTIC CHECK

EXPERT SERVICE. LASTING VALUE. CLEAN WATER

INDIVIDUAL SEWAGE SYSTEM DESIGN SUMMARY

Property Owner: Lowell Reedstrom
Phone: 507-380-4321
Address: 23058 450th Ave
PID: 11-1-115700 & 11-0-067703
City: Aitkin Zip: 56431
County: Aitkin County

DESIGN USAGE

Single Family Home X Other
Number of Potential Bedrooms 2
Garbage Disposal No
Sewage Lift Pump No

SITE CHARACTERISTICS

Soil type Sandy Loam
Hydraulic Loading 1.00 gpd/ft2
Depth to restrictive layer 30"

PUMP INFORMATION

Pump GPM & TDH 26.0 GPM & 17.5 TDH
Cycles per day 5 Cycles
Gallons per cycle 55 gallons
Perforation size & spacing ¼ perfs every 36"
Number, spacing, & diameter of laterals 5 – 1 ½" laterals every 3'
Forcemain Size 2"

CAPACITIES

Daily Water Use Est Calc 300
Septic Tank Capacity 1250 Gal - Existing
Pump Tank Capacity 1500 Gal 2 Compartment-New

BELOW GRADE SYSTEM

Type of Drainfield 15' x 20' Pressure Bed
Maximum Depth of Bed 18"
Square Feet of bed Required 300 sqft
Square Feet of bed Proposed 300 sqft
Lineal Feet of bed Proposed 20'

MOUND SYSTEM

Dimension of Rock Base
Depth of Rock Below Pipe
Dimensions of Mound
% Slope of Soil Under Mound
Upslope Dike Width
Downslope Dike Width
Sideslope Dike Width

APPROVAL

By Brian Koski License #2624
Date 4/18/19

See additional information sheet if checked ☒

Septic System Design
Additional Information

SEPTIC CHECK

Property Owner: Lowell Reedstrom – 23058 450th Ave Aitkin, MN 56431

Description of Wastewater Treatment and Dispersal System

This design is for a 2 bedroom, class I home. The existing system was reported non-compliant on 9/17/18 for soil separation. The existing 1,250 gallon septic tank was found to be in compliance so it will be reused in this design. Due to the limited space and the direction of the contours, a Wexco MBBR pretreatment unit will be used to treat the effluent before entering the drainfield making this system a Type V.

The soil investigation for the proposed drainfield was conducted in the center and south edge of the pressure bed by digging a soil pit. Sandy Loam was the predominate soil discovered in the investigation. The soil loading rate for Treatment Level A of Sandy Loam is 1.0 gpd/ft2.

Sewage flows by gravity from the home, underneath the garage into the existing 1,250 gallon septic tank; from there effluent will flow by gravity to a new 1,500 gallon reverse two compartment tank. ***The new 4" SCH 40 collection line from the existing 1,250 gallon septic tank to the new 1,500 gallon tank will need to be insulated as it will run under a driveway turn around.*** The 1,000 gallon compartment of the 1,500 gallon tank will require a 30" riser and will be equipped with the MBBR pretreatment unit. An effluent filter will need to be installed on the outlet of this compartment. The inlet of the 500 gallon compartment will be equipped with a Salcor UV disinfection lamp. The UV lamp should be installed inside a 24" ultra-rib enclosure for easy maintenance access. This compartment will also serve as the time dose pump tank. The pump selected must deliver at least 26.0 GMP and 17.5 TDH. Effluent will be time dosed to a 15' by 20' pressurized rockbed which will have lateral cleanouts and inspection pipes to grade.

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.

Homeowner to verify all property lines.

Elevations are referenced to Bench Mark on concrete garage slab.

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 or management plan for details

Aitkin County, Minnesota

685—Oesterle fine sandy loam

Map Unit Setting

National map unit symbol: gjjd
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: Prime farmland if drained

Map Unit Composition

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

Description of Oesterle

Setting

Landform: Outwash plains
Landform position (two-dimensional): Toeslope, footslope
Down-slope shape: Linear
Across-slope shape: Concave
Parent material: Sandy and gravelly outwash

Typical profile

A - 0 to 2 inches: fine sandy loam
E,E/B,B/E,Bt - 2 to 21 inches: sandy loam
Bt2 - 21 to 34 inches: stratified loamy coarse sand to gravelly sand
2C - 34 to 60 inches: gravelly sand

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Somewhat poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 6.00 in/hr)
Depth to water table: About 12 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 5.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: A/D
Forage suitability group: Level Swale, Low AWC, Acid (G090AN007MN)
Hydric soil rating: No

Minor Components

Loamy till substratum
Percent of map unit: 4 percent
Hydric soil rating: No

Meehan and similar soils
Percent of map unit: 4 percent
Hydric soil rating: No

Nemadji and similar soils
Percent of map unit: 4 percent
Hydric soil rating: No

Leafriver and similar soils
Percent of map unit: 3 percent
Landform: Depressions
Hydric soil rating: Yes

Data Source Information

Soil Survey Area: Aitkin County, Minnesota
Survey Area Data: Version 19, Sep 12, 2018

Soil Profile Description

Date Completed :	1/15/2019	**Observation # :**	Soil Pit
Completed By :	Brian Koski	**Equipment :**	Shovel
Client / Project :	Lowell Reedstrom	**Limiting Layer :**	40"
Landscape position :	Side Slope	**Vegitation :**	Grass
Mapped soil type :	685	**Weather :**	Cloudy

Observation # : 1	*Pit 1*					
Horizon Depth	**Soil Texture**	**Matrix Color**	**Redox features**	**Shape**	**Grade**	**Consistence**
0" - 8"	Mixed Fill	10YR 3/2		Granular	Strong	Friable
8" - 24"	Sandy Loam	10YR 4/4		Granular	Strong	Friable
24" - 34"	Sandy Loam	7.5YR 4/4		Blocky	Strong	Friable
34" - 40"	Clay Loam	7.5YR 4/4	No mottling to 40"	Blocky	Strong	Friable

Observation # : 2	*Pit 2*					
Horizon Depth	**Soil Texture**	**Matrix Color**	**Redox features**	**Shape**	**Grade**	**Consistence**
0" - 8"	Mixed Fill	10YR 3/2		Granular	Strong	Friable
8" - 12"	Sandy Loam	10YR 4/4		Granular	Strong	Friable
12" - 36"	Sandy Loam	7.5YR 4/4		Granular	Strong	Friable

SEPTIC CHECK
6074 Keystone Rd Milaca, MN 56353
Phone: (320)-983-2447 Fax: (320)-983-2151 info@septiccheck.com www.SepticCheck.com

Minnesota Pollution Control Agency

OSTP Design Summary Worksheet

University of Minnesota

Property Owner/Client: Lowell Reedstrom | Project ID: | v 07.14.15

Site Address: 23058 450th Ave Aitkin, MN 56431 | Date: 4/18/19

1. DESIGN FLOW AND TANKS

A. *Design Flow:* 300 Gallons Per Day (GPD)

Note: The estimated design flow is considered a peak flow rate including a safety factor. For long term performance, the average daily flow is recommended to be < 60% of this value.

B. *Septic Tanks:*

Minimum Code Required Septic Tank Capacity: 1000 Gallons, in 1 Tanks or Compartments

Recommended Septic Tank Capacity: 1250 Gallons, in 1 Tanks or Compartments

Effluent Screen: yes Alarm: no

C. *Holding Tanks Only:*

Minimum Code Required Capacity: Gallons, in Tanks

Designer Recommended Capacity: Gallons, in Tanks

Type of High Level Alarm:

D. *Pump Tank 1* Capacity (Code Minimum): 500 Gallons *Pump Tank 2* Capacity (Code Minimum): Gallons

Pump Tank 1 Capacity (Designer Rec): 500 Gallons *Pump Tank 2* Capacity (Designer Rec): Gallons

Pump 1 26.0 GPM Total Head 17.5 ft Pump 2 GPM Total Head ft

Supply Pipe Dia. 2.00 in Dose Volume: 55.0 gal Supply Pipe Dia. in Dose Volume: gal

2. SYSTEM TYPE

○ Trench ◉ Bed ○ Mound ○ At-Grade ◉ Gravity Distribution ○ Pressure Distribution-Level ○ Pressure Distribution-Unlevel

○ Drip ○ Holding Tank ○ Other * Selection Required

Benchmark Elevation: 100.00 ft

Benchmark Location: Garage Slab

System Type

☐ Type I ☐ Type II ☐ Type III ☐ Type IV ☑ Type V

Type of Distribution Media:

☑ Drainfield Rock ☐ Registered Treatment Media:

3. SITE EVALUATION:

A. Depth to Limiting Layer: 30 in 2.5 ft

B. Measured Land Slope %: 3.0 %

C. Elevation of Limiting Layer: 95.3

D. Soil Texture: Sandy Loam

E. Loc. of Restricive Elevation: Soil Pit

F. Soil Hyd. Loading Rate: 1.00 GPD/ft²

G. Minimum Required Separation: 12 in 1.0 ft

H. Perc Rate: MPI

I. Code Maximum Depth of System: 18 in

Comments:

4. DESIGN SUMMARY

Trench Design Summary

Dispersal Area ft² Sidewall Depth in Trench Width ft

Total Lineal Feet ft Number of Trenches Code Maximum Trench Depth in

Contour Loading Rate ft Designer's Max Trench Depth in

Bed Design Summary

Absorption Area 300 ft² Depth of sidewall 6.0 in Code Maximum Bed Depth 18.0 in

Bed Width 15 ft Bed Length 20.0 ft Designer's Max Bed Depth 18.0 in

Minnesota Pollution Control Agency

OSTP Design Summary Worksheet

University of Minnesota

Mound Design Summary

Absorption Bed Area	ft²	Bed Length	ft	Bed Width	ft
Absorption Width	ft	Clean Sand Lift	ft	Berm Width (0-1%)	ft
Upslope Berm Width	ft	Downslope Berm Width	ft	Endslope Berm Width	ft
Total System Length	ft	Total System Width	ft	Contour Loading Rate	gal/ft

At-Grade Design Summary

Absorption Bed Width	ft	Absorption Bed Length	ft	System Height	ft
Contour Loading Rate	gal/ft	Upslope Berm Width	ft	Downslope Berm Width	ft
Endslope Berm Width	ft	System Length	ft	System Width	ft

Level & Equal Pressure Distribution Summary

No. of Perforated Laterals		Perforation Spacing	ft	Perforation Diameter	in
Lateral Diameter	in	Min. Delivered Volume	gal	Maximum Delivered Volume	gal

Non-Level and Unequal Pressure Distribution Summary

	Elevation (ft)	Pipe Size (in)	Pipe Volume (gal/ft)	Pipe Length (ft)	Perforation Size (in)	Spacing (ft)	Spacing (in)
Lateral 1							
Lateral 2							
Lateral 3							
Lateral 4							
Lateral 5							
Lateral 6							

Minimum Delivered Volume: gal

Maximum Delivered Volume: gal

5. Additional Info for Type IV/Pretreatment Design

A. *Calculate the organic loading*

1. *Organic Loading to Pretreatment Unit = Design Flow X Estimated BOD* in mg/L in the effluent X 8.35 ÷ 1,000,000

300 gpd X 225 mg/L X 8.35 ÷ 1,000,000 = 0.56 lbs BOD/day

2. Type of Pretreatment Unit Being Installed: Wexco MBBR

3. Calculate *Soil Treatment System Organic Loading: BOD concentration after pretreatment ÷ Bottom Area* = lbs/day/ft²

10 mg/L X 8.35 ÷ 1,000,000 ÷ 300 ft² = 0.000 lbs/day/ft²

Comments/Special Design Considerations:

I hereby certify that I have completed this work in accordance with all applicable ordinances, rules and laws.

Brian Koski		2624	03/06/19
(Designer)	(Signature)	(License #)	(Date)

Minnesota Pollution Control Agency

OSTP Bed Design Worksheet

University of Minnesota

1. SYSTEM SIZING:

Project ID:

v 07.14.15

A. Design Flow (Design Sum.1A): 300 GPD

B. Code Maximum Depth*: 18 inches Designers Maximum Depth: 18 inches

C. Soil Loading Rate: 1.00 GPD/ft^2

D. Required Bottom Area: Design Flow (1.A) ÷ Loading Rate (1.C) = Initial Required Bottom Area

300 GPD ÷ 1.00 GPD/ft^2 = 300 ft^2

E. Select Distribution Method: ☑ Pressure ☐ Gravity

F. Select Dispersal Type: ☑ Rock ☐ Registered

G. If distribution media is installed in contact with sandy or loamy sand or with a percolation rate of 0.1 to 5 mpi indicate distribution or treatment method:

2. BED CONFIGURATION: (for sites with less than 6% slope)

A. Select size Multiplier: 1.0 1.0 = pressurized or 1.5 = gravity

B. Req'd Bottom Area = Bottom Area (1.D) X Size Multiplier =

300.0 ft^2 X 1.0 ft = 300 ft^2

C. Designed Bottom Area: 300 ft *Optional upsizing of bed area*

D. Select Bed Width: 15 ft

E. Calculate Bed Length: Designed Bottom Area ÷ Bed Width = Bed Length

300 ft^2 ÷ 15.0 ft = 20.0 ft

3. MATERIAL CALCULATION: ROCK

A. If drainfield rock is being used, select sidewall absorption

6.0 inches = 0.50 ft

B. Media Volume: (Media Depth + depth to cover pipe) X Designed Bottom Area = ft^3

(0.5 ft + 0.33 ft) X 300.0 ft^2 = 249 ft^3

C. Calculate Volume in cubic yards: Media volume in cubic feet ÷ 27 = cubic yards

249 ft^3 ÷ 27 = 9 yd^3

4. MATERIAL CALCULATION: REGISTERED PRODUCTS - CHAMBERS AND EZFLOW

A. Registered Product:

B. Component Length: ft

C. Component Width: ft

D. Component depth (louver or depth of sidewall loading) in

D. Number of Components per Row = Bed Length divided by Component Length (Round up)

ft ÷ ft = components

E. Actual Bed Length = Number of Components X Component Length:

components X ft = ft

F. Number of Rows = Bed Width divided by Component Width

ft ÷ ft = rows *Adjust width so this is an whole number.*

G. Total Number of Components = Number of Components per Row X Number of Rows

X = components

Minnesota Pollution Control Agency

OSTP Pressure Distribution Design Worksheet

University of Minnesota

Project ID: v 07.14.15

1. Media Bed Width: 15 ft

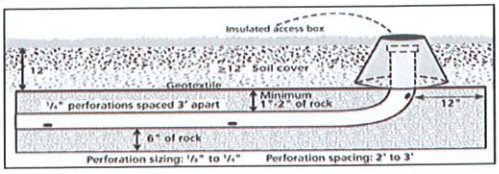
2. Minimum Number of Laterals in system/zone = Rounded up number of [(Media Bed Width - 4) ÷ 3] + 1.

(15 - 4) + 1 = 5 laterals *Does not apply to at-grades*

3. Designer Selected *Number of Laterals*: 5 laterals
Cannot be less than line 2 (accept in at-grades)

4. Select *Perforation Spacing*: 3.0 ft

5. Select *Perforation Diameter Size:* 1/4 in



6. *Length of Laterals* = Media Bed Length - 2 Feet.

20 - 2ft = 18 ft *Perforation can not be closer then 1 foot from edge.*

7. Determine the *Number of Perforation Spaces*. Divide the *Length of Laterals* by the *Perforation Spacing* and round down to the nearest whole number.

Number of Perforation Spaces = 18 ft ÷ 3 ft = 6 Spaces

8. *Number of Perforations per Lateral* is equal to 1.0 plus the *Number of Perforation Spaces*. Check table below to verify the number of perforations per lateral guarantees less than a 10% discharge variation. The value is double with a center manifold.

Perforations Per Lateral = 6 Spaces + 1 = 7 Perfs. Per Lateral

Maximum Number of Perforations Per Lateral to Guarantee <10% Discharge Variation

¼ Inch Perforations						7/32 Inch Perforations					
Perforation Spacing (Feet)	Pipe Diameter (Inches)					Perforation Spacing (Feet)	Pipe Diameter (Inches)				
	1	1¼	1½	2	3		1	1¼	1½	2	3
2	10	13	18	30	60	2	11	16	21	34	68
2½	8	12	16	28	54	2½	10	14	20	32	64
3	8	12	16	25	52	3	9	14	19	30	60
3/16 Inch Perforations						1/8 Inch Perforations					
Perforation Spacing (Feet)	Pipe Diameter (Inches)					Perforation Spacing (Feet)	Pipe Diameter (Inches)				
	1	1¼	1½	2	3		1	1¼	1½	2	3
2	12	18	26	46	87	2	21	33	44	74	149
2½	12	17	24	40	80	2½	20	30	41	69	135
3	12	16	22	37	75	3	20	29	38	64	128

9. *Total Number of Perforations* equals the *Number of Perforations per Lateral* multiplied by the *Number of Perforated Laterals.*

7 Perf. Per Lat. X 5 Number of Perf. Lat. = 35 Total Number of Perf.

10. Select *Type of Manifold Connection* (End or Center): ☑ End ☐ Center

11. *Select Lateral Diameter (See Table)*: 1.50 in

Minnesota Pollution Control Agency

OSTP Pressure Distribution Design Worksheet

University of Minnesota

12. Calculate the *Square Feet per Perforation. Recommended value is 4-11 ft² per perforation.*
Does not apply to At-Grades

a. *Bed Area* = Bed Width (ft) X Bed Length (ft)

15	ft	X	20	ft	=	300	ft^2

b. *Square Foot per Perforation* = *Bed Area* divided by the *Total Number of Perforations*.

300	ft^2	÷	35	perforations	=	8.6	ft^2/perforations

13. Select *Minimum Average Head*: 1.0 ft

14. Select *Perforation Discharge* (GPM) based on Table: 0.74 GPM per Perforation

15. Determine required *Flow Rate* by multiplying the *Total Number of Perfs.* by the *Perforation Discharge.*

35	Perfs	X	0.74	GPM per Perforation =	26	GPM

16. *Volume of Liquid Per Foot of Distribution Piping (Table II)*: 0.110 Gallons/ft

17. *Volume of Distribution Piping* =
= [*Number of Perforated Laterals* X *Length of Laterals* X (Volume of Liquid Per Foot of Distribution Piping]

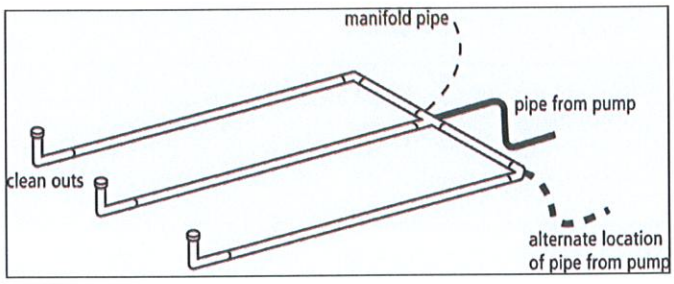
5	X	18	ft	X	0.110	gal/ft	=	9.9	Gallons

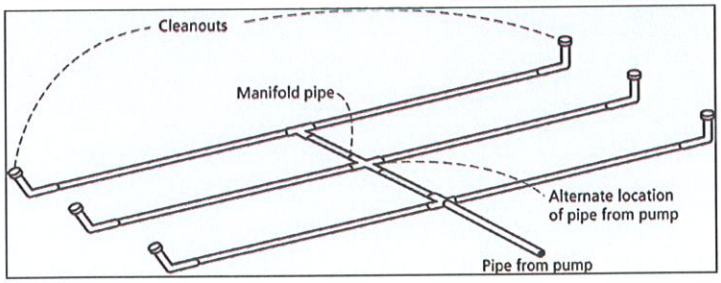
18. Minimum Delivered Volume = Volume of Distribution Piping X 4

9.9	gals	X	4	=	39.6	Gallons

Table II
Volume of Liquid in Pipe

Pipe Diameter (inches)	Liquid Per Foot (Gallons)
1	0.045
1.25	0.078
1.5	0.110
2	0.170
3	0.380
4	0.661





Comments/Special Design Considerations:

Minnesota Pollution Control Agency

OSTP Basic Pump Selection Design Worksheet

University of Minnesota

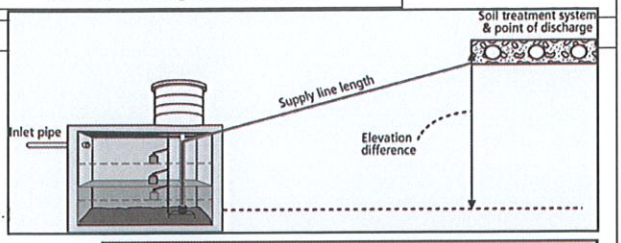
1. PUMP CAPACITY

Project ID:

Pumping to Gravity or Pressure Distribution: ○ Gravity ◉ Pressure — Selection required

1. If pumping to gravity enter the gallon per minute of the pump: _____ GPM *(10 - 45 gpm)*
2. If pumping to a pressurized distribution system: 26.0 GPM
3. Enter pump description: Demand Dosing Soil Treatment

2. HEAD REQUIREMENTS



A. Elevation Difference between pump and point of discharge: 12 ft

B. Distribution Head Loss: 5 ft

C. Additional Head Loss: _____ ft (due to special equipment, etc.

Distribution Head Loss	
Gravity Distribution = 0ft	
Pressure Distribution based on Minimum Average Head Value on Pressure Distribution Worksheet:	
Minimum Average Head	**Distribution Head Loss**
1ft	5ft
2ft	6ft
5ft	10ft

Table I. Friction Loss in Plastic Pipe per 100ft

Flow Rate (GPM)	Pipe Diameter (inches)			
	1	1.25	1.5	2
10	9.1	3.1	1.3	0.3
12	12.8	4.3	1.8	0.4
14	17.0	5.7	2.4	0.6
16	21.8	7.3	3.0	0.7
18		9.1	3.8	0.9
20		11.1	4.6	1.1
25		16.8	6.9	1.7
30		23.5	9.7	2.4
35			12.9	3.2
40			16.5	4.1
45			20.5	5.0
50				6.1
55				7.3
60				8.6
65				10.0
70				11.4
75				13.0
85				16.4
95				20.1

D. 1. Supply Pipe Diameter: 2.0 in

2. Supply Pipe Length: 20 ft

E. **Friction Loss in Plastic Pipe per 100ft** from Table I:

Friction Loss = 1.82 ft per 100ft of pipe

F. Determine *Equivalent Pipe Length* from pump discharge to soil dispersal area discharge point. Estimate by adding 25% to supply pipe length for fitting loss. *Supply Pipe Length (D.2)* X 1.25 = *Equivalent Pipe Length*

20 ft X 1.25 = 25.1 ft

G. Calculate *Supply Friction Loss* by multiplying *Friction Loss Per 100ft* (Line E) by the *Equivalent Pipe Length* (Line F) and divide by 100.

Supply Friction Loss =

1.82 ft per 100ft X 25.1 ft ÷ 100 = 0.5 ft

H. *Total Head* requirement is the sum of the *Elevation Difference* (Line A), the Distribution Head Loss (Line B), Additional Head Loss (Line C), and the Supply Friction Loss (Line G)

12.0 ft + 5.0 ft + _____ ft + 0.5 ft = 17.5 ft

3. PUMP SELECTION

A pump must be selected to deliver at least **26.0** GPM (Line 1 or Line 2) with at least **17.5** feet of total head.

Comments:

Minnesota Pollution Control Agency

OSTP Pump Tank Design Worksheet

University of Minnesota

DETERMINE TANK CAPACITY AND DIMENSIONS

Project ID:

v 07.14.15

1. A. *Design Flow (Design Sum.1A)*: 300 GPD

   B. Min. required pump tank capacity: 500 Gal C.Recommended pump tank capacity: 500 Gal

   D. Pump tank description: Time to Pressure

MEASURED TANK CAPACITY (existing tanks):

2. A. Rectangle area = Length (L) X Width (W)

   ____ ft X ____ ft = ____ ft^2

   B. Circle area = $3.14r^2$ (3.14 X radius X radius)

   3.14 X ____ ^{2} ft = ____ ft^2

   C. Calculate Gallons Per Inch. Multiply the area from 1.A or 1.B, by 7.5 to determine the gallons per foot the tank holds and divide by 12 to calculate the gallons per inch.

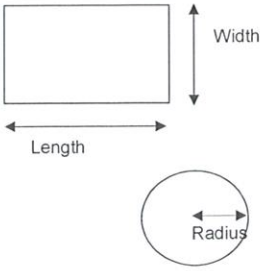
   ____ ft^2 X 7.5 gal/ft^3 ÷ 12 in/ft = ____ Gallons per inch

   D. Calculate *Total Tank Volume*

   Depth from bottom of inlet pipe to tank bottom: ____ in

   Total Tank Volume = Depth from bottom of inlet pipe (Line 4.A) X *Gallons/Inch* (Line 2)

   ____ in X 11.7 Gallons Per Inch = ____ Gallons



MANUFACTURER'S SPECIFIED TANK CAPACITY (when available):

3. A. Tank Manufacturer: Brown Wilbert

   B. Tank Model: 1500 Gallon 2 Comp. Tank

   C. Capacity from manufacturer: 501 Gallons

   D. Gallons per inch from manufacturer: 11.7 Gallons per inch

   E. Liquid depth of tank from manufacturer: 43.0 inches

Note: Design calculations are based on this specific tank. Substituting a different tank model will change the pump float or timer settings. Contact designer if changes are necessary.

DETERMINE DOSING VOLUME

4. Calculate *Volume to Cover Pump* (The inlet of the pump must be at least 4-inches from the bottom of the pump tank & 2 inches of water covering the pump is recommended)

   (Pump and block height + 2 inches) X *Gallons Per Inch* (2C or 3E)

   (12 in + 2 inches) X 11.7 Gallons Per Inch = 164 Gallons

5. *Minimum Delivered Volume* = 4 X Volume of Distribution Piping:

   - Line 17 of the Pressure Distribution or Line 11 of Non-level 40 Gallons (minimum dose)

6. Calculate *Maximum Pumpout Volume* (25% of Design Flow)

   Design Flow: 300 GPD X 0.25 = 75 Gallons (maximum dose)

7. *Select a pumpout volume that meets both Minimum and Maximum:* 55 Gallons

8. Calculate *Doses Per Day* = Design Flow ÷ *Delivered Volume*

   300 gpd ÷ 55 gal = 5 *Doses*

9. Calculate Drainback:

   A. *Diameter of Supply Pipe* = 2 inches

   B. Length of Supply Pipe = 20 feet

   C. *Volume of Liquid Per Lineal Foot of Pipe* = 0.170 Gallons/ft

   D. *Drainback = Length of Supply Pipe X Volume of Liquid Per Lineal Foot of Pipe*

   20.1 ft X 0.170 gal/ft = 3.4 Gallons

10. *Total Dosing Volume = Delivered Volume* plus *Drainback*

    55 gal + 3.4 gal = 58 Gallons

11. Minimum Alarm Volume = Depth of alarm (2 or 3 inches) X gallons per inch of tank

    3 in X 11.7 gal/in = 35.2 Gallons

Volume of Liquid in Pipe	
Pipe Diameter (inches)	Liquid Per Foot (Gallons)
1	0.045
1.25	0.078
1.5	0.110
2	0.170
3	0.380
4	0.661

Minnesota Pollution Control Agency

OSTP Pump Tank Design Worksheet

University of Minnesota

TIMER or DEMAND FLOAT SETTINGS

Select Timer or Demand Dosing: ◉ Timer ○ Demand Dose

A. Timer Settings

12. Required *Flow Rate* :

A. From Design (Line 12 of Pressure, Line 10 of Non-Level or Line 6 of Pump*): 26 GPM

B. Or calculated: GPM = Change in Depth (in) x Gallons Per Inch / Time Interval in Minutes

[ ] in X [11.7] gal/in ÷ [ ] min = [ ] GPM

Note: This value must be adjusted after installation based on pump calibration.

13. Flow Rate from Line 12.A or 12.B above. 26 GPM

14. Calculate **TIMER ON** setting:

Total Dosing Volume/GPM

[58] gal ÷ [26.0] gpm = 2.2 Minutes ON

15. Calculate **TIMER OFF** setting:

Minutes Per Day (1440)/*Doses Per Day* - Minutes On

1440 min ÷ [5] doses/day - [2.2] min = 285.8 Minutes OFF

16. Pump Off Float - Measuring from bottom of tank:

Distance to set Pump Off Float=Gallons to Cover Pump / Gallons Per Inch:

[164.08] gal ÷ [11.7] gal/in = 14.0 Inches

17. Alarm Float - Measuring from bottom of tank:

Distance to set Alarm Float = Tank Depth(4A) X 90% of Tank Depth

[43] in X 0.90 = 38.7 in

B. DEMAND DOSE FLOAT SETTINGS

18. Calculate *Float Separation Distance* using *Dosing Volume* .

Total Dosing Volume /Gallons Per Inch

[ ] gal ÷ [ ] gal/in = [ ] Inches

19. Measuring from bottom of tank:

A. *Distance to set Pump Off Float* = Pump + block height + 2 inches

[ ] in + [ ] in = [ ] Inches

B. *Distance to set Pump On Float=Distance to Set Pump-Off Float + Float Separation Distance*

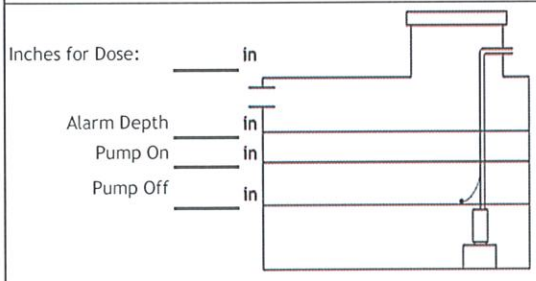
[ ] in + [ ] in = [ ] Inches

C. *Distance to set Alarm Float = Distance to set Pump-On Float + Alarm Depth* (2-3 inches)

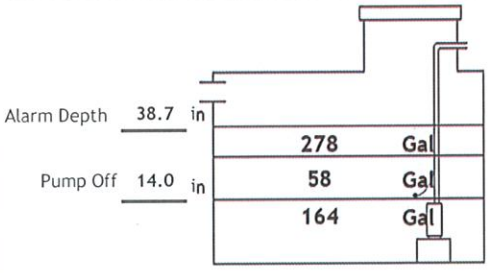
[ ] in + [ ] in = [ ] Inches

FLOAT SETTINGS

DEMAND DOSING



TIMED DOSING



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Septic System Management Plan for Below 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 long-term 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	Lowell Reedstrom	Email	
Property Address	23058 450th Ave Aitkin	Property ID	11-1-115700
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 www.bookstores.umn.edu and search for the word "septic" or call 800-322-8642.

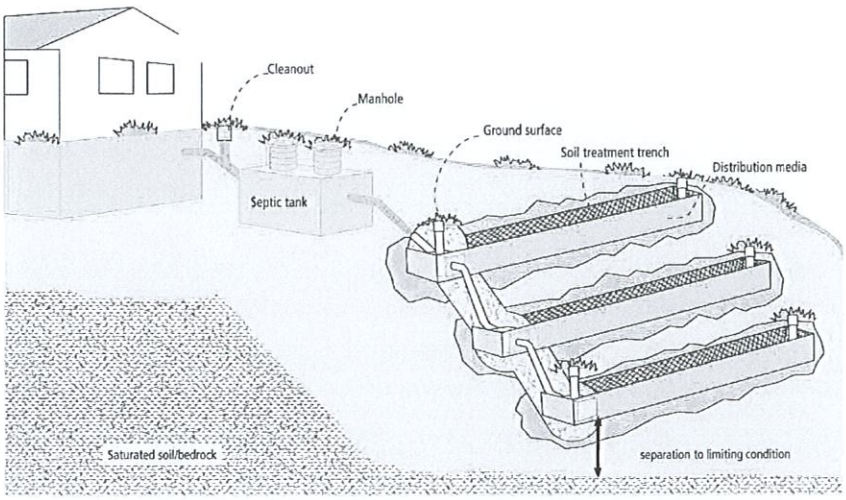
For more information see http://septic.umn.edu

Version: August 2015

UNIVERSITY OF MINNESOTA

Septic System Management Plan for Below Grade Systems

Your Septic System



Septic System Specifics

System Type: ○ I ○ II ○ III ○ IV* ◉ V*
(Based on MN Rules Chapter 7080.2200 – 2400)
**Additional Management Plan required*

☑ System is subject to operating permit*
☑ System uses UV disinfection unit*
Type of advanced treatment unit _____

Dwelling Type

Number of bedrooms: 2
System capacity/ design flow (gpd): 300
Average daily flow (gpd): >300
Comments _____
Business? ○ Y ◉ N What type? _____

Well Construction

Well depth (ft): shallow
- ☐ Cased well Casing depth: _____
- ☐ Other (specify): _____

Distance from septic (ft): 100'
Is the well on the design drawing? ◉ Y ○ N

Septic Tank

- ☐ First tank *Tank volume:* 1250 *gallons*
  Does tank have two compartments? ○ Y ◉ N
- ☐ Second tank *Tank volume:* 1514 *gallons*
- ☐ Tank is constructed of concrete
- ☐ Effluent screen: ○ Y ◉ N Alarm ○ Y ◉ N

- ☐ Pump tank *(if one)* 500 *gallons*
- ☐ Effluent pump *make/model:* Goulds PE 51
  Pump capacity 26.0 GPM
  TDH 17.8 Feet of head
- ☐ Alarm ◉ Y ○ N Location Outdoor Powerpost

Soil Treatment Area (STA)

Trenches: 26 total lineal feet
Number of trenches: 1 at 20 feet each
STA size (width x length): 15 ft x 20 ft
Location of additional STA: _____
Type of distribution media: 1.5" Washed Rock

☐ Gravity distribution ☑ Pressure distribution
☑ Inspection ports ☑ Cleanouts
☐ Additional STA not available
☐ Surface water diversions

Homeowner Management Tasks

These op*eration and maintenance ac*tivities 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 12 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.

Professional Management Tasks

These are the operation and maintenance activities that a pumper/maintainer performs to help ensure long-term 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.
- *Gravity trenches and beds.* Check the number of gravity trenches with effluent ponded in distribution media. Identify the percentage of the system in use. Determine if action is needed.
- *Pressure trenches and beds - 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:

_____

_____

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 recharge 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. • 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
Surface drainage Footing drains	• Water from these sources will overload the system and is prohibited from entering septic system.	

UNIVERSITY OF MINNESOTA

Septic System Management Plan for Below Grade Systems

Homeowner Maintenance Log

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

Activity	Date accomplished									
Check frequently:										
Leaks: check for plumbing leaks *										
Soil treatment area check for surfacing **										
Lint filter: check, clean if needed *										
Alarms **										
Check annually:										
Water usage rate (max gpd: 300)										
Caps: inspect, replace if needed										
Water use appliances – review use										
Other:										

*Monthly

** Quarterly

*** Bi-Annually

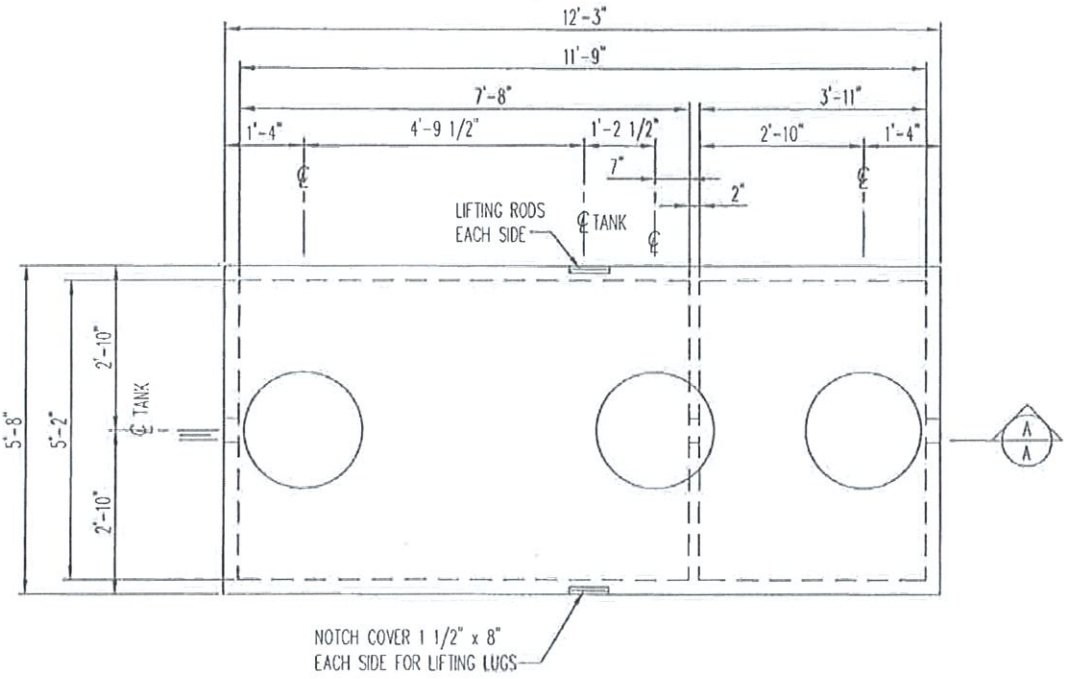
Notes: If flow exceeds system capacity, check for and repair any leaks into the system, including household plumbing fixtures. If system ponds or otherwise cannot handle flow, repair options include; add time dosing, adding pre-treatment, or expanding the system.

"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 4/24/19

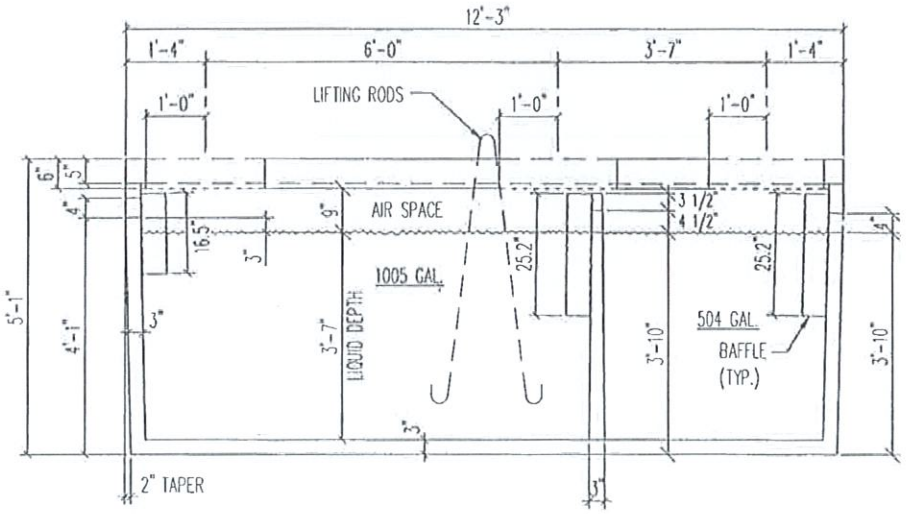
Management Plan Prepared By: Brian Koski Certification # 7989

Permitting Authority: Aitkin County



1500 GALLON 2 COMP. TANK

1/2" = 1'-0"



A/A SECTION

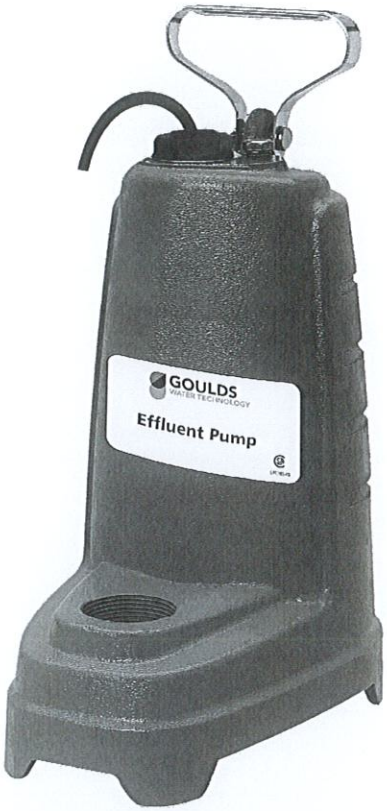
1/2" = 1'-0"

NOTE:

1. PROVIDE MINIMUM 1" CLEAR BETWEEN TOP OF BAFFLE AND UNDERSIDE OF LID.

1500 GALLON 2 COMP. SEPTIC TANK (1500-2C)	Brown Wilbert	WEIGHT=13,600# MAX. SOIL COVER= 7'-0" TOTAL LIQUID VOLUME= 1509 GAL.

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

PE

SUBMERSIBLE EFFLUENT PUMP

BUILT IN THE USA
ENGINEERED, ASSEMBLED & TESTED

GOULDS WATER TECHNOLOGY
a xylem brand

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

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:

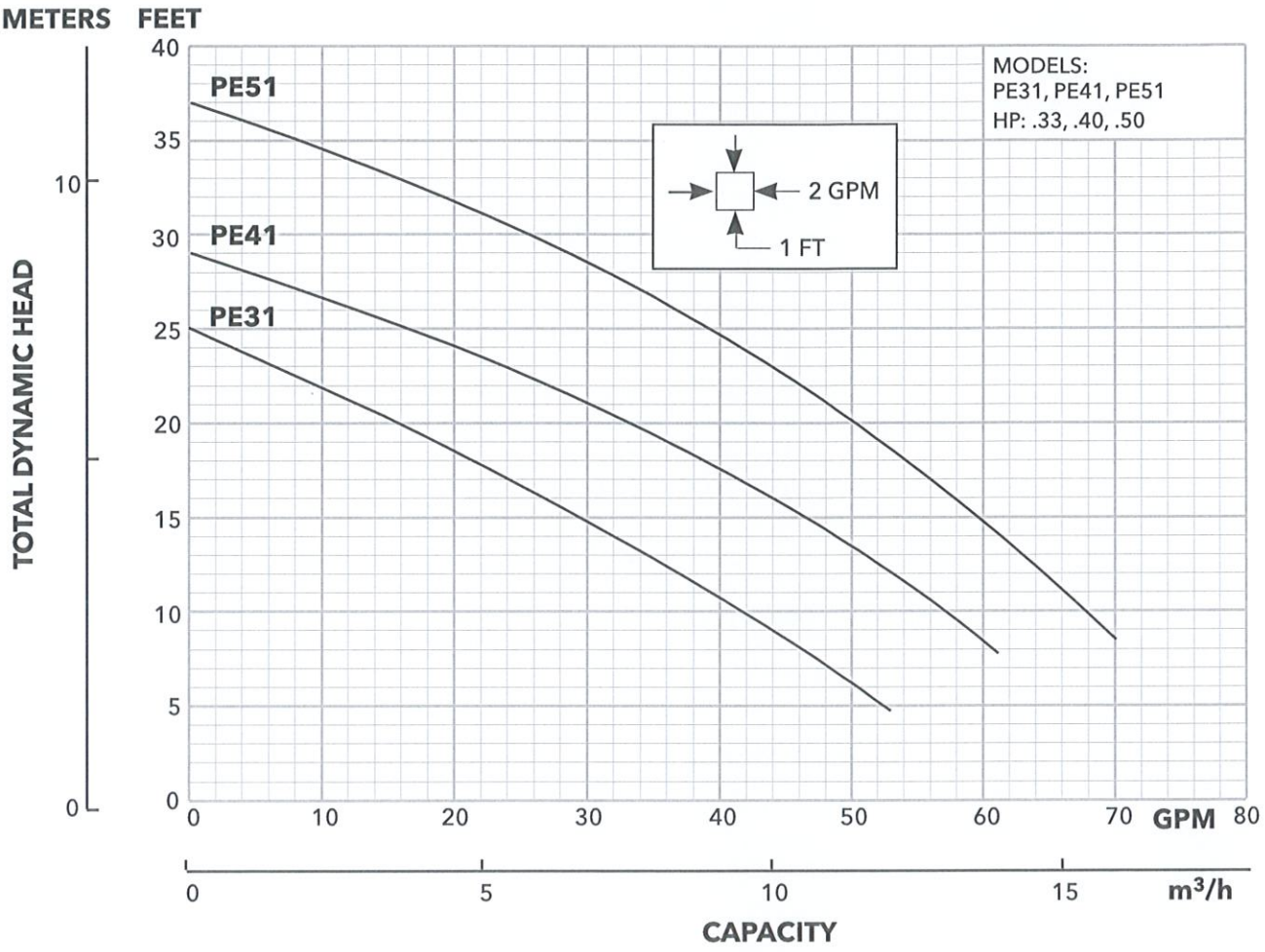
- .50 HP, 3400 RPM
- 115 and 230 volts
- PSC design

AGENCY LISTINGS

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

PUMP INFORMATION

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



PERFORMANCE RATINGS

PE31

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

PE41

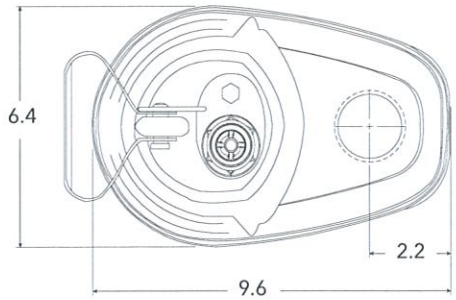
Total Head (feet of water)	GPM
8	61
10	57
15	46
20	33
25	16

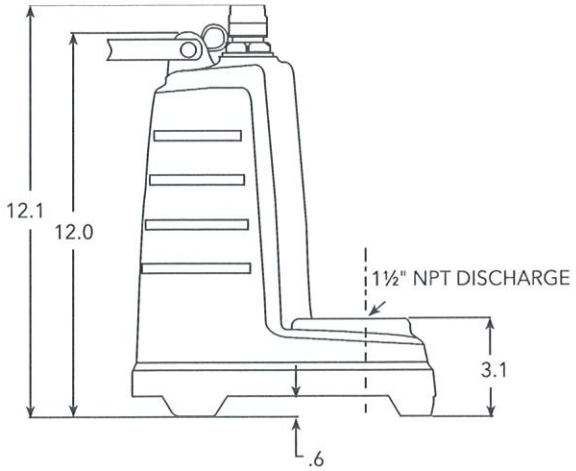
PE51

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.)



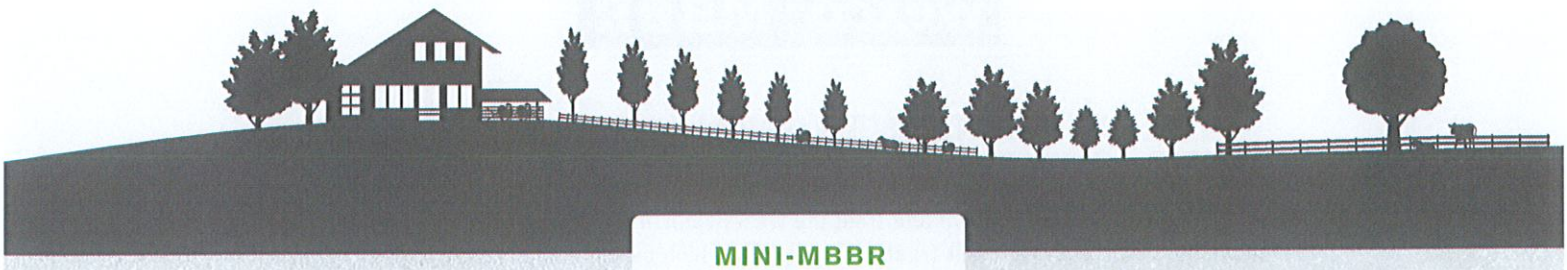


xylem
Let's Solve Water

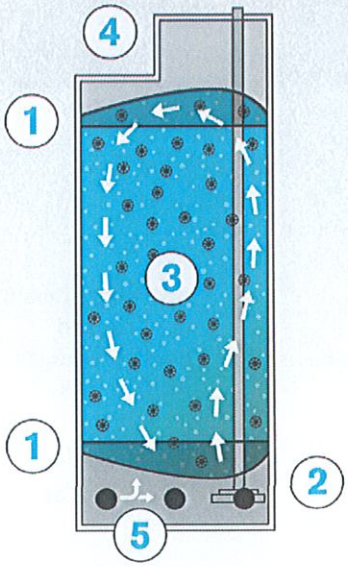
Xylem Inc.
2881 East Bayard Street Ext., Suite A
Seneca Falls, NY 13148
Phone: (866) 325-4210
Fax: (888) 322-5877
www.goulds watertechnology.com

wexco ENVIRONMENTAL

WEXCO MBBR
MINI-MBBR



MINI-MBBR



DETAILS

- Custom designed and built to match your existing or new tank.
- With a 16" diameter, this unit can fit down standard manholes.
- Directional flow provides gentle mixing of the tank, which increases settling of solids.
- Remove up to 1.5 lbs BOD/day/unit.
- Economical for systems up to 6 lbs BOD with up to 4 units in one tank.
- Can be used as pre-aeration to struggling treatment systems.
- High efficiency aeration provides low operating cost.

1. ROUNDED SIEVE CAP INSERT **2.** AIR DIFFUSER **3.** BIOCARRIERS **4.** DIRECTIONAL FLOW OPENING
5. INFLUENT ENTERS IN THROUGH BOTTOM

The flexible configuration of the mini-MBBR can be custom designed to retrofit almost any existing or new installation. It is specifically designed to remove BOD for low flow systems such as small restaurants or taverns. This new innovative design has the lowest installation and operating cost on the market.

THE **BENEFITS** OF MINI-MBBR

Retrofit capabilities (in existing tanks).

Large surface area of biofilm carriers compared to other treatment technologies.

Means you can do more in a smaller space.

Self-regulating biofilm ensures stability under shock loading conditions.

Biofilm growth on media surface

Energy efficient linear compressors keep operating expense low.

Quick and economical installation, operator friendly, virtually maintenance free.

Can pretreat ahead of existing treatment if loading is too high.

Passive denite in some configurations.

Retrofit or drop into existing tanks.

Units are custom sized to fit loading and tank configuration.

Directional flow reduces stirring of tank & facilitates better settling than similar units on the market.

wexco MBBR

THE **SMARTER** TREATMENT SOLUTION

Wexco MBBR (moving bed bioreactor) utilizes small biofilm carriers which provide a stable home for large populations of bacteria to grown and treat the wastewater. That, coupled with time tested aeration equipment, creates an **efficient treatment process** which can be used in most applications.

WHY USE MBBR?

Can work for small flows (hundreds of gallons per day) and **easily scales** to large flows (million gallons per day).

Flexible install, below ground fiberglass or concrete tanks, above ground steel, concrete, or fiberglass tanks.

High density of bacterial growth due to large surface area of media.

Expandable if flows or loading increases.

Add pretreatment to or expand existing systems without tank installation.

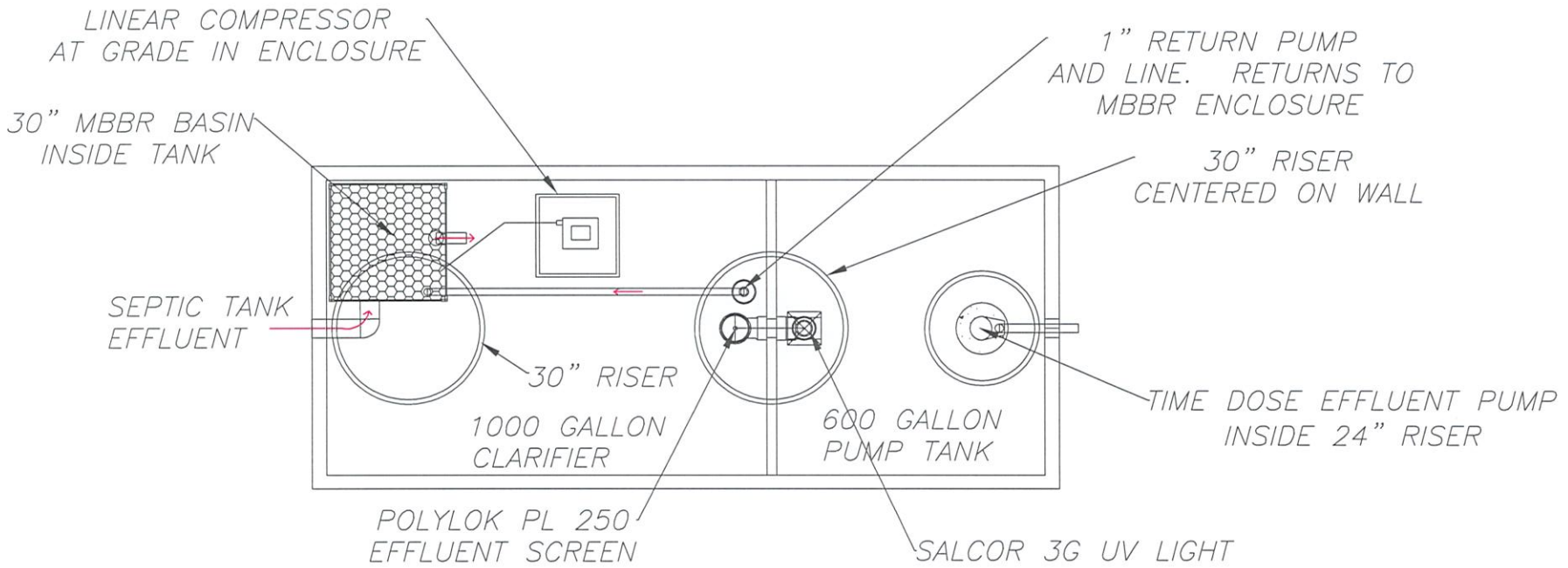
Works well in **cold climates**.

SIMPLE. EFFICIENT. CLEAN WATER.

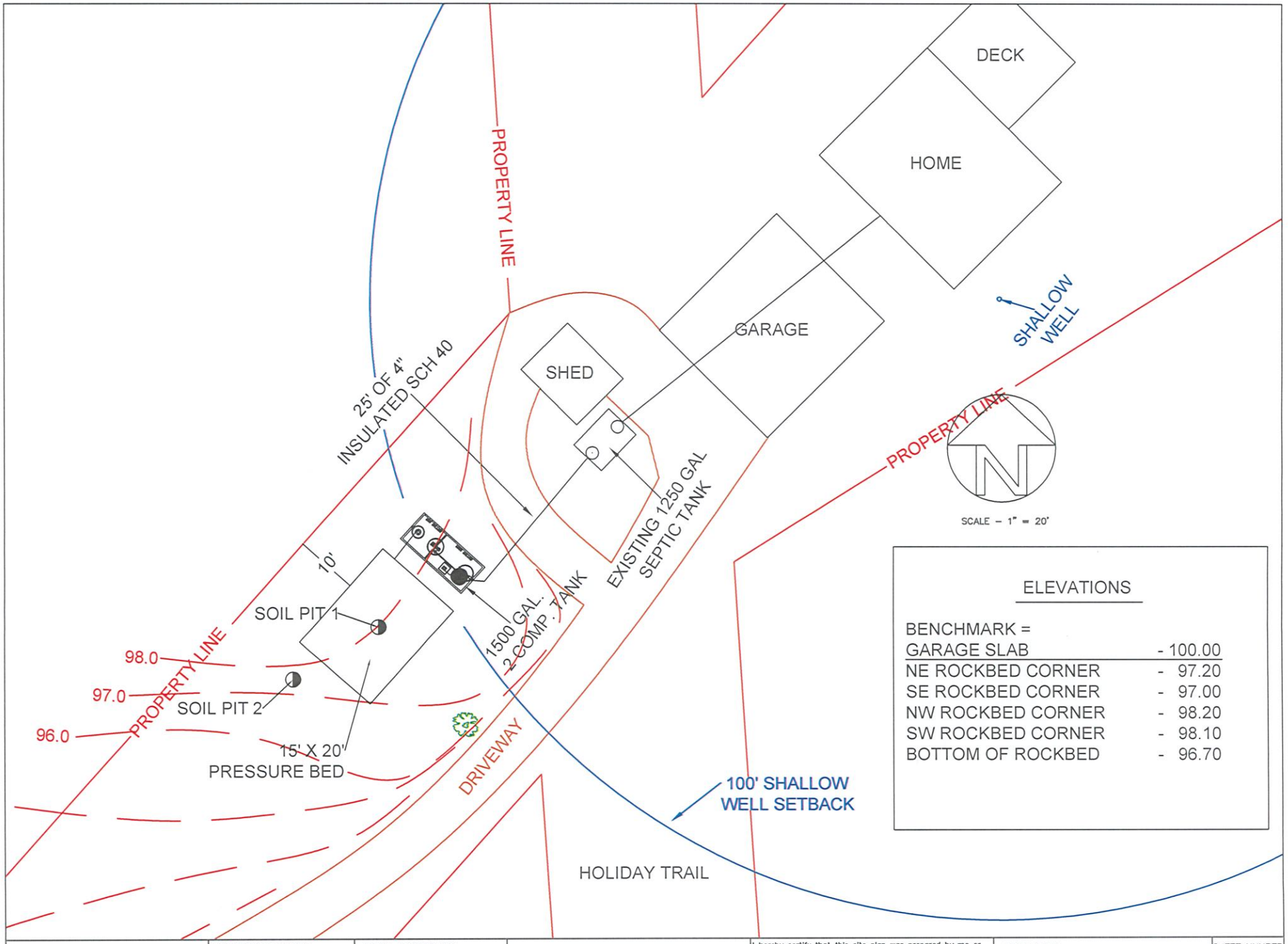
wexco ENVIRONMENTAL

320.983.2447
WEXCOENVIRO.COM

WEXCO MBBR DETAIL



PREPARED FOR:	PROPERTY LOCATION	LEGAL DESCRIPTION			PAGE TITLE	SHEET NUMBER
Lowell Reedstrom	Address & P.I.D		SEPTIC CHECK 6074 KEYSTONE RD MILACA, MN 56353 (320)-983-2447 (FAX) (320)-983-2151	I hereby certify that this site plan was prepared by me or under my direct supervision. Brian Koski M. P. C. A. License # 2624 DATE 1/3/2019	MBBR OVERVIEW	1 OF 1



ELEVATIONS

BENCHMARK = GARAGE SLAB	- 100.00
NE ROCKBED CORNER	- 97.20
SE ROCKBED CORNER	- 97.00
NW ROCKBED CORNER	- 98.20
SW ROCKBED CORNER	- 98.10
BOTTOM OF ROCKBED	- 96.70

PREPARED FOR:	PROPERTY LOCATION	LEGAL DESCRIPTION	SEPTIC CHECK		PAGE TITLE	SHEET NUMBER
Lowell Reedstrom	23058 450th Ave Aitkin, MN 56431	Aitkin County, Minnesota. pid# 11-1-115700 pid# 11-0-167703	6074 KEYSTONE RD MILACA, MN 56353 (320)-983-2447 (FAX) (320)-983-2151	I hereby certify that this site plan was prepared by me or under my direct supervision. Brian Koski M. P. C. A. License # 2624 DATE 4/18/2019	Septic Design	1 OF 1

Aitkin County Environmental Services
Wastewater Treatment and Dispersal Permit

Permit Number: _____ Date: _____

Facility Information

Permittee name: Ron Brown Phone number: 507-380-4321

Mailing address: 9650 Flintlock Trail

City: Chanhassen State: MN Zip code: 55317

Property ID number (GPS location): 11-1-115700 & 11-0-067703

Aikin County authorizes the Permittee to operate a wastewater treatment and dispersal system at the address named above in accordance with the requirements of this operating permit. The attached Management Plan is hereby incorporated as part of the requirements of this operating permit.

Issuance date: _____ Expiration date: _____

System type: Type V Treatment level: A

System design flow: 300 GPD Residential/Commercial: Residential

System Components:

1250 gallon septic tank, 1500 gallon reverse two compartment septic tank equipped with a MBBR drop in unit in the 1000 gallon compartment with an effluent filter on the outlet, UV light on the inlet of the 500 gallon compartment which also serves as a time dose pump tank to a 15'x20' pressure rockbed.

Monitoring Requirements

Parameter	Effluent limits	Frequency	Location
Peak flow (gpd)	300 GPD	Weekly	Control Panel
Average flow (gpd)			
$CBOD_5$ (mg/L)	15 mg/l	Annual	Bed dose tank
TSS (mg/L)	15 mg/l	Annual	Bed dose tank
Fecal (mg/l)	1000 cfu/100ml	Annual	Bed dose tank
Ponding/Surfacing in soil treatment	none	Annual (2 x yr)	Bed 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 (2 x yr)
Pump tank and controls	Check annually, pump/replace as needed	Annual (2 x yr)
Soil treatment and dispersal	Clean/jet laterals	As needed – 1st cleaning not expected for 3-5 years, maybe longer
Ponding/Surfacing in soil treatment	Check yearly, repair as needed.	Annual (2 x yr)
Pretreatment	Check annually	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 authorities at: Aitkin County Environmental Services.

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.

Authorization

This permit is effective on the issuance date identified above. This permit and the authorization to treat and disperse waste water 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 days before expiration date.
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 this operating permit.
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 to: Ron Brown

Permittee (please print): RB Ron Brown

Title: _____ Date: 4/26/16

Signature: RB

Permitting Authority (please print): _____

Title _____ Date: _____

Signature: _____

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 ($CBOD_5$) 15 milligrams per liter (mg/L), Total Suspended Solids (TSS) 15 mg/L, Fecal Coliform Bacteria 1000 per 100 milliliter (mL); Treatment Level B = $CBOD_5$ 25 mg/L, TSS 30 mg/L, Fecal Coliform Bacteria 10,000 per 100 mL; Treatment Level C = $CBOD_5$ 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 $CBOD_5$, 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. **$CBOD_5$** – monitoring for $CBOD_5$ is not typically required for the majority of wastewater systems used for single-family homes generating typical domestic strength effluent. However, monitoring for $CBOD_5$ 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 $CBOD_5$ is generally necessary to determine $CBOD_5$ removal efficiencies of proprietary treatment devices and/or organic loading rates to the soil's infiltrative surface.

3. **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.

SEPTIC CHECK

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

It is hereby agreed this 26th day of April, 2019 by and between Septic Check (Service Provider) and Client:

Client Name and Site Address	
Name:	Ron Brown
Street Address:	23058 450th Ave
City, State, Zip:	Aitkin, MN 56431
Parcel ID:	11-1-115700 & 11-0-067703
LGU:	Aitkin County
Treatment System:	MBBR

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, recommend pumping when 25 to 33% of the operating levels contain solids.

√ Inspect the septic tank baffles, inspection pipes, risers, and lids for structural integrity.

√ Check pumping system, including control panel and floats (if applicable).

√ Record and date the readings of flow measurement devices (if applicable).

√ Check dosing settings in the control panel (if applicable).

√ 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)

√ Inspect ATU per manufacturer's recommendations (if applicable).

√ Inspect and clean any parts per manufacturer's recommendations.

√ Inspect the appearance of the wastewater inside the unit for color and turbidity, and check odors.

√ Sample effluent per this Contract.

√ 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, soggy ground, wet spots, settling, etc.).

√ 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.**

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:	2x per year
Cost for Maintenance Contract:	$370/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:	$185 after each regular service visit is complete
Alarm/Emergency Call Charge:	$85/hour business hours, $115/hour non-business hours
Expected Repair Budget:	$300/year
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 CONTRACT

- **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%.
- **Additional sampling:** Any additional required sampling shall be billed separately.

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.

Client:		**Service Provider:**	
Sign:		Sign:	
Signed by:	Ron Brown	Signed by:	Brian Koski, Owner, Septic Check
Date:	4/26/19	Date:	4/26/19

AITKIN COUNTY ENVIRONMENTAL SERVICES-PLANNING & ZONING
209 Second Street, NW Room# 100
Aitkin, Minnesota 56431
PH: (218) 927-7342
FX: (218) 927-4372

4/29/2019

Ron Brown
9650 Flintlock Trail
Chanhassen, MN 55317

Re: Operating Permit #614
Zoning Permit # 2019-00433
Parcel # 11-1-115700

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.

<u>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.</u>

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 reading
2) Annual Compliance Inspection report
3) Renewal application and fee

The Compliance Inspector is privately hired by you, the landowner. The Compliance Inspector 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 #: 614
ZONING PERMIT #: 2019-004330
PARCEL #: 11-1-115700
PERMITTEE: Ron Brown
MAILING ADDRESS: 9650 Flintlock Trail
Chanhassen, MN 55317

ORGINAL DATE ISSUED: 4 /29/2019
RENEWAL PERIOD:
RENEWAL EXPIRATION: 5 /31/2022

PROPERTY ADDRESS:
23058 450th Ave
Aitkin, MN 56431

TELEPHONE: (507) 380-4321
LEGAL: LOT 8 HOLIDAY BEACH
FEE PAID: 100 **DATE PAID:** 4 /25/2019 **RECEIPT:** online **CK #:** n/a

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 date of expiration. The Permittee shall submit such information and forms 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 permit including the 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 permit.

Signature of Permittee — **Date** 5/17/19

Signature of Permitting Authority Shannon Westerlund — **Date** 5-17-2019

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

Residential Type V 300 GPD 1250 gallon septic tank, 1500 gallon reverse two compartment septic tank equipped with a MBBR drop in unit in the 1000 gallon compartment with an effluent filter on the outlet, UV light on the inlet of the 500 gallon compartment which also serve as a time dose pump tank to a 15'x20' pressure rockbed.

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 FREQUENC
Ponding/surfacing in soil treatment		Bed drainfield	2 times a year		ANNUALLY
Fecal Coliform	1000 cfu/100ml	Bed dose tank	Annually		ANNUALLY
TSS	15 mg/L	Bed dose tank	Annually		ANNUALLY
CBOD	15 mg/L	Bed dose tank	Annually		ANNUALLY
Flow	300 GPD	Control Panel	Weekly	Record on a Log Sheet	ANNUALLY

C. MAINTENANCE REQUIREMENTS:

PARAMETER	LOCATION	FREQUENCY
check annually	Pre-treatment	Two times a year
check yearly, repair as needed	Ponding/surfacing in soil treatment	Two times a year
Clean/jet laterals	Soil treatment and dispersal	As needed- 1st cleaning not expected for 3-5 years
Pump as needed	Septic tank/Trash tank	Two times a year
pump/replace as needed	Pump tank and controls	Two times a year

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
209 2nd Street NW, Room 100
Aitkin, MN 56431

The monitoring reports shall be signed by the Permittee. Copies are to be retained by the Permittee.

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

Monitoring plans may be modified as necessary and reapproved by Aitkin County Environmental Services.

Sampling and laboratory testing procedures shall be performed in accordance with Standard Methods and shall be performed by a Minnesota Department of Health approved laboratory. All sampling and testing costs shall be the responsibility of the Permittee.

Monitoring will be performed by: Brian Koski

E. MITIGATION PLAN:

If system fails, the landowner is responsible to obtain the services of a MPCA licensed Service Provider or other qualified practitioner to complete the required corrective measures.

AITKIN COUNTY

CERTIFICATE OF INSTALLATION/~~NOTICE OF NONCOMPLIANCE~~

This certificate of installation/~~notice of noncompliance~~ has been issued this 30th day of May, 20 19 to certify compliance\~~noncompliance~~ with Aitkin County's Subsurface Sewage Treatment System Ordinance.
The premises covered by this certificate are legally described as:
Lot 8 Holiday Beach & .37 ac in SE SE & vacated portion of Holiday Trail

Section 29 Township 45 Range 27 Lake Big Pine Lake
PERMIT NO. 44246 Owner Name Lowell & Sharon Reedstrom Tr.
Address 23058 450th Ave, Aitkin, MN 56431
Installer Name Septic Check
Type of System Inspected Type 5 2 Bedroom Pressure Bed
Parcel Number 11-1-115700 & 11-0-067003

The certificate of installation/~~notice of noncompliance~~ was based on No 1 of the following:

1) Inspection of the installation or construction as in accordance with the above referenced permit and application design.

2) Review of as-built plans submitted in accordance with Subdivision 9.2 D of Aitkin County's Subsurface Sewage Treatment System Ordinance.

If the above permitted subsurface sewage treatment system is in noncompliance with Aitkin County's Subsurface Sewage Treatment System Ordinance, then the following shall serve as a Notice of Violation:

1) Statement of the findings of fact through inspections or investigations:

2) List of specific violations of Ordinance:

3) Requirements for correction or removal of violations:

4) Time schedule for compliance:

Failure to correct or remove the above violation(s) will result in this matter being turned over to the Aitkin County Attorney's Office for further legal action, which may result in revocation of licenses or registrations, fines and/or imprisonment.

INSPECTOR SIGNATURE Bryan Hargrave

SUBSURFACE SEWAGE TREATMENT SYSTEM INSPECTION FORM
AITKIN COUNTY, MINNESOTA

2019-4330

Township Hazelton Date of Inspection 5/21/2019 App. Number 44246

Owner Lowell & Sharon Reedstrom Parcel Number 11-1-115700

Project Address 23058 450th Ave. Installer Septic Check

City Aitkin Zip Code 56431 T5 ZBR Pr. Bed

New ☐ Repair ☑ DIST. or DROP BOX & TYPE Pressure Bed

SETBACKS:

Buildings to tank(s) 16'

Buildings to drainfield 67'

Well(s) 50' or 100' DW: 100'+

Lake/Creek/Wetland Big Pine Lake: 100'+

SEPTIC TANKS: New ☐ Existing ☑

Number of tanks installed 1

Liquid capacity and type 1250 Ex. Tank

Type of baffle —

Inspection pipes 6"

Manholes size 24"

Manhole to grade Yes ☑ No ☐

PUMPS: New ☑ Existing ☐

Tank capacity and type 1500 Brown & Wilbert combo

Pump manufacturer & model # Gould PE4I

Horsepower & GPM 0.4 HP 26 GPM

Feet of head 17.5'

Gallons per cycle 55 gpc

Size of discharge line 1.5"

Type & location of alarm Electric on tank

Water meter Simplex Time Dose panel

TRENCHES, BEDS, OR GRAVELLESS LEACHFIELD:

Trench/Bed depth 18"

Trench/Bed length 20'

Trench/Bed bottom width 15'

~~Trench~~ Lateral spacing (5) laterals 1.5"/0.25" holes/36" sp

Drainfield rock below pipe 9"

Size of gravelless pipe —

Depth of backfill 12"

Absorption area: square feet 300 ft²

lineal feet —

MOUNDS:

Percent slope

Upslope sand width

Downslope sand width

Sideslope sand width

Drainfield rock below pipe

Depth of sand below rock

Perforation size & spacing

Pipe size & spacing

Dimensions of rock bed

Dimensions of sand base

Final cover

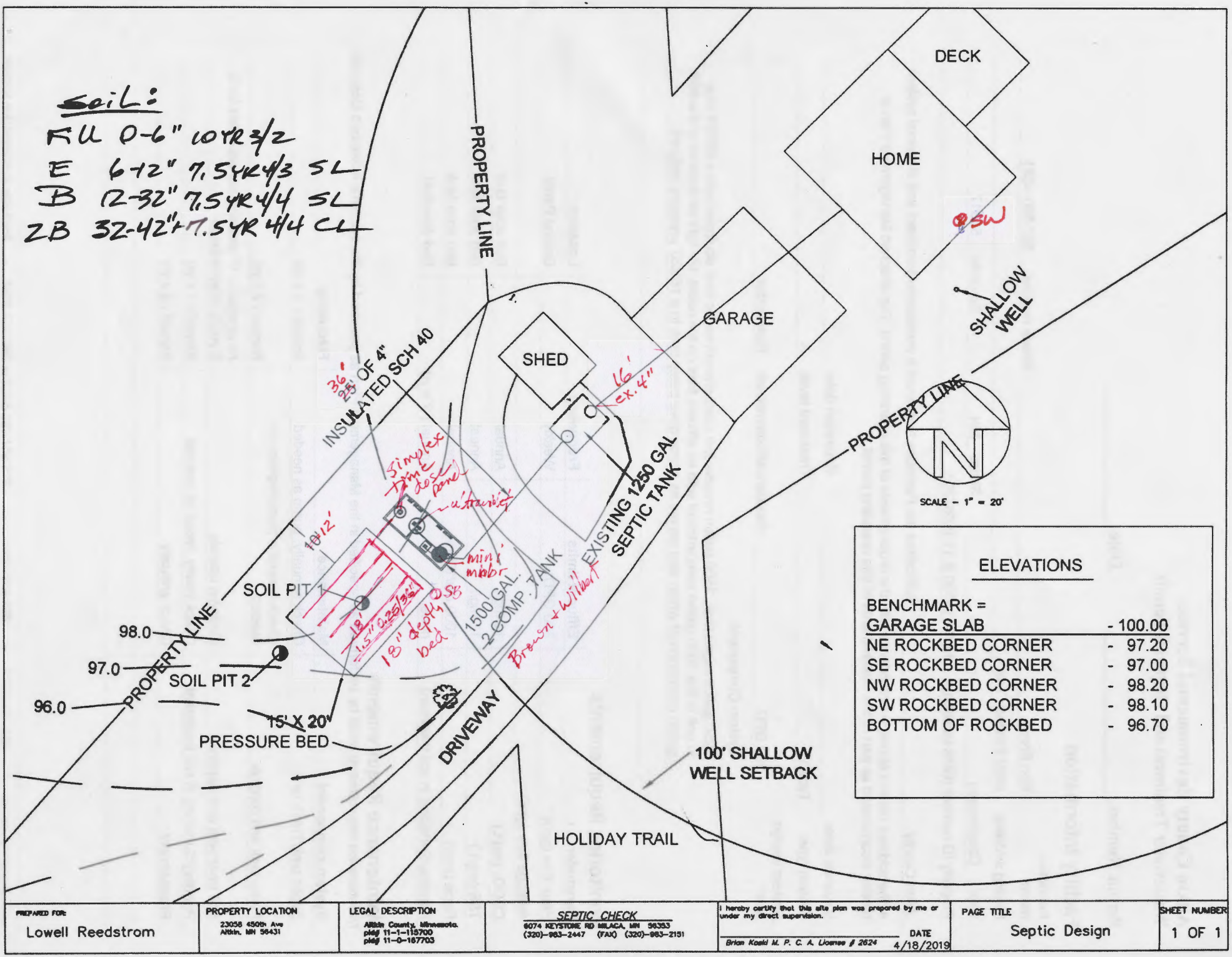
DRAWING OF SYSTEM: (include soils)

see attached site plan

Inspector's Comments: This is a TS system w/ a mini mbpr unit in first manhole of 1500 combo tank & a UV light w/ filter in second comp Lots too small for T1 Mound system

Inspector's Signature Bryan Hargrave **Installer's Signature**

Rev:1/13 White – County Yellow – Applicant Pink - Installer


Soil:
FU 0-6" 10YR3/2
E 6-12" 7.5YR4/3 SL
B 12-32" 7.5YR4/4 SL
2B 32-42"+ 7.5YR 4/4 CL
DECK
HOME
SW
SHALLOW WELL
GARAGE
SHED
PROPERTY LINE
36' 25' OF 4" INSULATED SCH 40
16'
ex. 4"
EXISTING 1250 GAL SEPTIC TANK
simplex time dose panel
ultrarid
mini mobr
10-12'
SOIL PIT 1
SOIL PIT 2
18'
1.5' 0.25/36"
18" depth bed
1500 GAL. 2 COMP. TANK
Brown + Wilbert
98.0
97.0
96.0
PROPERTY LINE
15' X 20' PRESSURE BED
DRIVEWAY
100' SHALLOW WELL SETBACK
HOLIDAY TRAIL
SCALE - 1" = 20'
ELEVATIONS
BENCHMARK = GARAGE SLAB - 100.00
NE ROCKBED CORNER - 97.20
SE ROCKBED CORNER - 97.00
NW ROCKBED CORNER - 98.20
SW ROCKBED CORNER - 98.10
BOTTOM OF ROCKBED - 96.70
PREPARED FOR: Lowell Reedstrom
PROPERTY LOCATION 23056 450th Ave Aitkin, MN 56431
LEGAL DESCRIPTION Aitkin County, Minnesota. pid# 11-1-119700 pid# 11-0-167703
SEPTIC CHECK 6074 KEYSTONE RD MILACA, MN 56353 (320)-983-2447 (FAX) (320)-983-2151
I hereby certify that this site plan was prepared by me or under my direct supervision.
Brian Koski M. P. C. A. License # 2624
DATE 4/18/2019
PAGE TITLE Septic Design
SHEET NUMBER 1 OF 1


2019/05/21


2019/05/21


2019/05/21


2019/05/21


320-983-2447
SEPTICCHECK.COM
2019/05/21


POLARIS
2019/05/21


2019/05/21


2019/05/21


ROCKBED CORNER
2019/05/21


2019/05/21


2019/05/21


2019/05/21


MN 7529 HH
21
2019/05/21


2019/05/21


2019/05/21


2019/05/21


2019/05/21


BLOCKED CORNER
2019/05/21


2019/05/21


CAT
2019/05/21

Septic Check

6074 Keystone Rd
Milaca, MN 56353

320-983-2447
Fax: 320-983-2151

Mail To: Ron Brown
9650 Flintlock Trail
Chanhassen, MN
55317

PROPERTY INFORMATION
Ron Brown
Location: 23058 450th Ave
Aitkin
Tax ID: 11-1-115700 &

Use: Residential, Single Family (2 bdrm)
System Design Flow: 300
GENERAL SYSTEM TYPE: Mini MBBR Res 2x per year with

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ON-SITE WASTEWATER TREATMENT SYSTEM INSPECTION REPORT

Fold Here

Inspected: 10/01/2019 - Inspection Type: ROUTINE - Correction Status: No corrections needed

Company:	Work Performed By:	Submitted 10/23/2019 by:
Septic Check	Chris King	Abbie Gobel

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

TANK: Septic Tank - 1 Compartment, Manufacturer= Unknown - Concrete 1250 Gallon Septic tank #1

Manufacturer: Unknown Model: Concrete

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):	6	
Pumping recommended:	NO	

TANK: Septic Tank - 2 Compartment, Manufacturer= Unknown - Concrete Mini Mbbr treatment tank

Manufacturer: Unknown Model: Concrete

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):	0	
Compartment 2 Scum accumulation (Inches, if other specify):	0	
Compartment 2 Sludge accumulation (Inches, if other specify):	0	
Pumping recommended:	NO	

Aerobic Treatment Unit: ATU, Manufacturer= SMART Treat MBBR - SMART Treat MBBR Mini Mbbr treatment tank

Manufacturer: SMART Treat MBBR Model: SMART Treat MBBR

This component was:	Fully Inspected	
Effluent level within operational limits (if NO explain in comments):	YES	
Aerobic Mechanism appears to be functioning per manufacturers specifications:	YES	
ATU serviced per manufacturers requirements including cleaning of applicable filter(s):	YES	
Trash Compartment solids accumulation within operational limits per manufacturer (n/a = no trash compartment):	YES	
Aerobic Chamber solids accumulation within manufacturer operational limits (n/a = no aerobic chamber):	YES	
Clarifying Chamber solids accumulation within manufacturer operational limits (n/a = no clarifying chamber):	YES	
Pumping recommended:	NO	

Panel: Control - 1 Pump, Manufacturer= SJE Rhombus - EZ Series Simplex Drainfield control panel

Manufacturer: SJE Rhombus Model: EZ Series Simplex

This component was:	Fully Inspected	
Panel functioning (including alarm):	YES	
Pump 1: on minutes (override in parentheses - if present):	3 Minutes	
Pump 1: off hours (override in parentheses - if present):	6 Hours	
Pump 1: gallons per dose (override in parentheses - if present):	N/A	
Pump 1: ETM hours (override in parentheses - if present):	1.46	
Pump 1: Cycle Count (override in parentheses - if present):	43	

Drainfield (disposal): Pressure Bed, Manufacturer= Site Constructed - Gravel 15x20 pressure bed

Manufacturer: Site Constructed Model: Gravel

This component was:	Fully Inspected	
Lateral lines flushed:	YES	
Average squirt height (if performed) (feet, if other specify):	N/A	
Ponding present? If YES explain in comments:	NO	

append to 44246 5/22/2020

Septic Check

6074 Keystone Rd
Milaca, MN 56353

320-983-2447
Fax: 320-983-2151

PROPERTY INFORMATION

Ron Brown
Location: 23058 450th Ave
Aitkin
Tax ID: 11-1-115700 &

Use: Residential, Single Family (2 bdrm)
System Design Flow: 300
GENERAL SYSTEM TYPE: Mini MBBR Res 2x per year with

Mail To: Ron Brown
9650 Flintlock Trail
Chanhassen, MN
55317

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ON-SITE WASTEWATER TREATMENT SYSTEM INSPECTION REPORT

Inspected: 05/19/2020 - Inspection Type: ROUTINE - Correction Status: No corrections needed

Company:	Work Performed By:	Submitted 05/22/2020 by:
Septic Check	Blesener Dave	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

TANK: Septic Tank - 1 Compartment, Manufacturer= Unknown - Concrete 1250 Gallon Septic tank #1

Manufacturer: Unknown Model: Concrete

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):	0	
Pumping recommended:	NO	

TANK: Septic Tank - 2 Compartment, Manufacturer= Unknown - Concrete Mini Mbbr treatment tank

Manufacturer: Unknown Model: Concrete

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):	0	
Compartment 2 Scum accumulation (Inches, if other specify):	0	
Compartment 2 Sludge accumulation (Inches, if other specify):	0	
Pumping recommended:	NO	

Aerobic Treatment Unit: ATU, Manufacturer= SMART Treat MBBR - SMART Treat MDBR Mini Mbbr treatment tank

Manufacturer: SMART Treat MBBR Model: SMART Treat MBBR

This component was:	Fully Inspected	
Effluent level within operational limits (if NO explain in comments):	YES	
Aerobic Mechanism appears to be functioning per manufacturers specifications:	YES	
ATU serviced per manufacturers requirements including cleaning of applicable filter(s):	YES	
Trash Compartment solids accumulation within operational limits per manufacturer (n/a = no trash compartment):	YES	
Aerobic Chamber solids accumulation within manufacturer operational limits (n/a = no aerobic chamber):	YES	
Clarifying Chamber solids accumulation within manufacturer operational limits (n/a = no clarifying chamber):	YES	
Pumping recommended:	NO	

Panel: Control - 1 Pump, Manufacturer= SJE Rhombus - EZ Series Simplex Drainfield control panel

Manufacturer: SJE Rhombus Model: EZ Series Simplex

This component was:	Fully Inspected	
Panol functioning (including alarm):	YES	
Pump 1: on minutes (override in parentheses - if present):	2.45	
Pump 1: off hours (override in parentheses - if present):	6	
Pump 1: gallons per dose (override in parentheses - if present):	NA	
Pump 1: ETM hours (override in parentheses - if present):	4.55	
Pump 1: Cycle Count (override in parentheses - if present):	112	

Drainfield (disposal): Pressure Bed, Manufacturer= Site Constructed - Gravel 15x20 pressure bed

Manufacturer: Site Constructed Model: Gravel

This component was:	Fully Inspected	
Lateral lines flushed:	NO	
Average squirt height (if performed) (feet, if other specify):	NA	
Ponding present? If YES explain in comments:	NO	

Septic Check

6074 Keystone Rd
Milaca, MN 56353

320-983-2447
Fax: 320-983-2151

PROPERTY INFORMATION

Ron Brown
Location: 23058 450th Ave
Aitkin
Tax ID: 11-1-115700 &

Use: Residential, Single Family (2 bdrm)
System Design Flow: 300
GENERAL SYSTEM TYPE: Mini MBBR Res 2x per year with

Mail To: Ron Brown
9650 Flintlock Trail
Chanhassen, MN
55317

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ON-SITE WASTEWATER TREATMENT SYSTEM INSPECTION REPORT

Inspected: 10/27/2020 - Inspection Type: ROUTINE - Correction Status: No corrections needed

Company:	*Work Performed By:*	*Submitted 11/09/2020 by:*
Septic Check	Michael Pederson	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

TANK: Septic Tank - 1 Compartment, Manufacturer= Unknown - Concrete 1250 Gallon Septic tank #1

Manufacturer: Unknown Model: Concrete

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):	6	
Pumping recommended:	NO	

TANK: Septic Tank - 2 Compartment, Manufacturer= Unknown - Concrete Mini Mbbr treatment tank

Manufacturer: Unknown Model: Concrete

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):	2	
Compartment 2 Scum accumulation (Inches, if other specify):	0	
Compartment 2 Sludge accumulation (Inches, if other specify):	0	
Pumping recommended:	NO	

Aerobic Treatment Unit: ATU, Manufacturer= SMART Treat MBBR - SMART Treat MBBR Mini Mbbr treatment tank

Manufacturer: SMART Treat MBBR Model: SMART Treat MBBR

This component was:	Fully Inspected	
Effluent level within operational limits (if NO explain in comments):	YES	
Aerobic Mechanism appears to be functioning per manufacturers specifications:	YES	
ATU serviced per manufacturers requirements including cleaning of applicable filter(s):	YES	
Trash Compartment solids accumulation within operational limits per manufacturer (n/a = no trash compartment):	N/A	
Aerobic Chamber solids accumulation within manufacturer operational limits (n/a = no aerobic chamber):	YES	
Clarifying Chamber solids accumulation within manufacturer operational limits (n/a = no clarifying chamber):	N/A	
Pumping recommended:	NO	

Disinfection: Ultra Violet, Manufacturer= Salcor Engineering - 3G

Manufacturer: Salcor Engineering Model: 3G

This component was:	Fully Inspected	
Alarm mechanism functioning as intended:	YES	
Disinfection unit light on:	YES	

Panel: Control - 1 Pump, Manufacturer= SJE Rhombus - EZ Series Simplex Drainfield control panel

Manufacturer: SJE Rhombus Model: EZ Series Simplex

This component was:	Fully Inspected	
Panel functioning (including alarm):	YES	
Pump 1: on minutes (override in parentheses - if present):	2.45	
Pump 1: off hours (override in parentheses - if present):	6	
Pump 1: gallons per dose (override in parentheses - if present):	NA	
Pump 1: ETM hours (override in parentheses - if present):	7.14	
Pump 1: Cycle Count (override in parentheses - if present):	164	

Drainfield (disposal): Pressure Bed, Manufacturer= Site Constructed - Gravel 15x20 pressure bed

Manufacturer: Site Constructed Model: Gravel

This component was:	Fully Inspected	
Lateral lines flushed:	NO	
Average squirt height (if performed) (feet, if other specify):	NA	
Ponding present? If YES explain in comments:	NO	

SAMPLING REPORT

Location: 23058 450th Ave
Aitkin
11-1-115700 & 11-0-067703

Owner: Ron Brown
Use: Single Family

Service Company:
Septic Check
6074 Keystone Rd
Milaca, MN 56353
320-983-2447

Laboratory:A W Labs

Sample Date: 10/27/2020 **Sample entered by: Heather Johnson** **Report submitted: 11/09/2020**

Notes:

ONSITE SEWAGE SYSTEM SAMPLING DETAIL

COMPONENT	TYPE	SAMPLE	LIMIT	RESULT
Control - 1 Pump Drainfield control panel	Effluent	Flow	300 GPD	41.5
Septic Tank - 2 Compartment Mini Mbbr treatment	Effluent	Fecal	1000	100

44246

Septic Check

6074 Keystone Rd
Milaca, MN 56353

320-983-2447
Fax: 320-983-2151

Mail To: Ron Brown
9650 Flintlock Trail
Chanhassen, MN
55317

PROPERTY INFORMATION
Ron Brown
Location: 23058 450th Ave
Aitkin
Tax ID: 11-1-115700 &

Use: Residential, Single Family (2 bdrm)
System Design Flow: 300
GENERAL SYSTEM TYPE: Mini MBBR Res 2x per year with

Fold Here

ON-SITE WASTEWATER TREATMENT SYSTEM INSPECTION REPORT

Inspected: 04/20/2021 - Inspection Type: ROUTINE - Correction Status: No corrections needed

Company:	Work Performed By:	Submitted 04/27/2021 by:
Septic Check	Matt Maleski	Heather Johnson

Fold Here

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

TANK: Septic Tank - 1 Compartment, Manufacturer= Unknown - Concrete 1250 Gallon Septic tank #1

Manufacturer: Unknown Model: Concrete

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):	6	
Pumping recommended:	NO	

TANK: Septic Tank - 2 Compartment, Manufacturer= Unknown - Concrete Mini Mbbr treatment tank

Manufacturer: Unknown Model: Concrete

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):	2	
Compartment 2 Scum accumulation (Inches, if other specify):	0	
Compartment 2 Sludge accumulation (Inches, if other specify):	4	
Pumping recommended:	NO	

Aerobic Treatment Unit: ATU, Manufacturer= SMART Treat MBBR - SMART Treat MBBR Mini Mbbr treatment tank

Manufacturer: SMART Treat MBBR Model: SMART Treat MBBR

This component was:	Fully Inspected	
Effluent level within operational limits (if NO explain in comments):	YES	
Aerobic Mechanism appears to be functioning per manufacturers specifications:	YES	
ATU serviced per manufacturers requirements including cleaning of applicable filter(s):	YES	
Trash Compartment solids accumulation within operational limits per manufacturer (n/a = no trash compartment):	YES	
Aerobic Chamber solids accumulation within manufacturer operational limits (n/a = no aerobic chamber):	YES	
Clarifying Chamber solids accumulation within manufacturer operational limits (n/a = no clarifying chamber):	YES	
Pumping recommended:	NO	

Disinfection: Ultra Violet, Manufacturer= Salcor Engineering - 3G

Manufacturer: Salcor Engineering Model: 3G

This component was:	Fully Inspected	
Alarm mechanism functioning as intended:	YES	
Disinfection unit light on:	YES	

Panel, Control - 1 Pump, Manufacturer= SJE Rhombus - EZ Series Simplex Drainfield control panel

Manufacturer: SJE Rhombus Model: EZ Series Simplex

This component was:	Fully Inspected	
Panel functioning (including alarm):	YES	
Pump 1: on minutes (override in parentheses - if present):	2.45	
Pump 1: off hours (override in parentheses - if present):	6	
Pump 1: gallons per dose (override in parentheses - if present):	NA	
Pump 1: ETM hours (override in parentheses - if present):	8.03	
Pump 1: Cycle Count (override in parentheses - if present):	184	

Drainfield (disposal): Pressure Bed, Manufacturer= Site Constructed - Gravel 15x20 pressure bed

Manufacturer: Site Constructed Model: Gravel

This component was:	Fully Inspected	
Lateral lines flushed:	NO	
Average squirt height (if performed) (feet, if other specify):	NA	
Ponding present? If YES explain in comments:	NO	

SAMPLING REPORT

Location: 23058 450th Ave
Aitkin
11-1-115700 & 11-0-067703

Owner: Ron Brown
Use: Single Family

Service Company:
Septic Check
6074 Keystone Rd
Milaca, MN 56353
320-983-2447
Laboratory:A W Labs

Sample Date: 04/20/2021 **Sample entered by: Heather Johnson** **Report submitted: 04/27/2021**

Notes:

ONSITE SEWAGE SYSTEM SAMPLING DETAIL

COMPONENT	TYPE	SAMPLE	LIMIT	RESULT
Control - 1 Pump Drainfield control panel	Effluent	Flow	300 GPD	13.1
Septic Tank - 2 Compartment Mini Mbbr treatment	Effluent	Fecal	1000	<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.

AITKIN COUNTY ENVIRONMENTAL SERVICES-PLANNING & ZONING
307 Second St NW, Room 219
Aitkin, Minnesota 56431
(P): (218) 927-7342
(F): (218) 927-4372
(E): aitkinpz@co.aitkin.mn.us

8/2/2022

Ron & Kolleen Brown
9650 Flintlock Trail
Chanhassen, MN 55317

Re: Operating Permit # 614
Zoning Permit # 44246
Parcel ID# 11-1-115700

Dear Permittee:

This letter is to remind you that the Operating Permit for the septic system at the above mentioned parcel is due for renewal this year by September 30th. The enclosed Operating Permit was issued as part of the permit for your septic system and must be renewed.

The Operating Permit for the current renewal period is enclosed. If there are no changes to the current Operating Permit, please submit all of the following to the County Office to renew the Operating Permit: (If any boxes below are checked, then we have received that item.)

- ☐ Signed Operating Permit (enclosed)
- ☐ $150 permit renewal fee (a $50 late fee will apply if not paid by 9/30/22)
- ☑ Monitoring and maintenance activities report by Service Provider
- ☐ A table of your water usage

If your designer finds the system is operating in conformance with the Operating Permit, please have him/her submit a letter requesting to have the Operating Permit renewed for a longer period or to request terminating the Operating Permit. Our Office will determine if this is possible.

The performance and life expectancy of this septic system is dependent on regular monitoring and maintenance of all parts of the system. Your compliance with the Operating Permit will ensure continued performance of the system. Failure to perform the monitoring and maintenance of this system could cause costly repairs and/or replacement of this system. In addition, failure to comply with the monitoring, maintenance and reporting of the septic system is a violation of the Aitkin County's Subsurface Sewage Treatment System Ordinance and could be prosecuted by the County Attorney's Office.

All information required must be submitted to this Office by the expiration date referenced on your Operating Permit. We are notifying you to give you sufficient time to contact your Service Provider and make any necessary changes, have samples taken and tested, tanks pumped, and any other activities that were required to meet the requirements of your permit.

Please contact our office with any questions regarding the renewal of this permit.

Sincerely,

Aitkin County Planning & Zoning

AITKIN COUNTY ENVIRONMENTAL SERVICES
OPERATING PERMIT FOR WASTEWATER TREATMENT AND DISPERSAL RENEWAL

ISSUANCE DATE:
9/30/2022
RENEWAL PERIOD:
ANNUALLY

OPERATING PERMIT #: 614
ZONING PERMIT #: 44246
PARCEL #: 11-1-115700

PERMITEE:

Ron & Kolleen Brown

MAILING ADDRESS:

9650 Flintlock Trail
Chanhassen, MN 55317

PD
CK # 2126

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 is valid through the renewal period identified above. The Permittee is not authorized to discharge after the renewal period. The Permittee shall submit such information and forms 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.

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

I hereby certify with my signature as the permittee that I understand the provisions of this permit including the 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 permit.

Signature of Permittee _____ **Date** 8/18/22

Signature of Permitting Authority Shannon W. **Date** 8/24/22

Invoice #55989 (08/25/2022)

2. Zoning/Land Use Permit Applications Misc. (OFFICE USE ONLY) App. # App-2022-009425, UID # 206227

Ronald Brown
(612) 384-4811
9650 Flintlock Trl, Chanhassen, MN 55317

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

Charge	Cost	Quantity	Total	Note
Operating Permit Renewal added 08/25/2022 10:52 AM $150	$150.00	x 1	$150.00	
Grand Total				
			Total	**$150.00**

Payment #50055

Method:	Check		2126
Date:	08/25/2022	**Note:**	OP# 614 2022 renewal
Made By:	Ronald L Brown		
Confirmed By:	Shannon Wiebusch		

AITKIN COUNTY ENVIRONMENTAL SERVICES-PLANNING & ZONING
307 Second Street NW Room# 219
Aitkin, Minnesota 56431
PH: (218) 927-7342
FX: (218) 927-4372

8/25/2022

Ron & Kolleen Brown
9650 Flintlock Trail
Chanhassen, MN 55317

Re: Operating Permit # 614
Zoning Permit # 44246
Parcel # 11-1-115700

Dear Permittee:

This letter is to inform you that your Operating Permit has been renewed until 9/30/2023 .

Please adhere to your monitoring and maintenance contract including monitoring your water use. Failure to do so would violate the agreement to operate your system and could void the operating permit. You should contact your Operation and Maintenance provider directly with questions that you may have during the year.

Thank you for your good stewardship and we hope that your system continues to operate well, protecting groundwater for you and the environment.

Sincerely,

Shannon W.

Aitkin County Planning & Zoning

Septic Check

6074 Keystone Rd
Milaca, MN 56353

320-983-2447
Fax: 320-983-2151

PROPERTY INFORMATION

Ron Brown
Location: 23058 450th Ave
Aitkin
Tax ID: 11-1-115700 &

Use: Residential, Single Family (2 bdrm)
System Design Flow: 300
GENERAL SYSTEM TYPE: Mini MBBR Res 2x W/ TEST

Mail To: Ron Brown
9650 Flintlock Trail
Chanhassen, MN
55317

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ON-SITE WASTEWATER TREATMENT SYSTEM INSPECTION REPORT

Inspected: 10/10/2022 - Inspection Type: ROUTINE - Correction Status: No corrections needed

Company:	*Work Performed By:*	*Submitted 10/11/2022 by:*
Septic Check	Lucas Caldwell	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

TANK: Septic Tank - 1 Compartment, Manufacturer= Unknown - Concrete 1250 Gallon Septic tank 1

Manufacturer: Unknown Model: Concrete

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):	4	
Pumping recommended:	NO	

TANK: Septic Tank - 2 Compartment, Manufacturer= Unknown - Concrete Mini Mbbr treatment tank

Manufacturer: Unknown Model: Concrete

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):	0	
Compartment 2 Scum accumulation (Inches, if other specify):	0	
Compartment 2 Sludge accumulation (Inches, if other specify):	0	
Pumping recommended:	NO	

Aerobic Treatment Unit: ATU, Manufacturer= SMART Treat MBBR - SMART Treat MBBR Mini Mbbr treatment tank

Manufacturer: SMART Treat MBBR Model: SMART Treat MBBR

This component was:	Fully Inspected	
Effluent level within operational limits (if NO explain in comments):	YES	
Aerobic Mechanism appears to be functioning per manufacturers specifications:	YES	
ATU serviced per manufacturers requirements including cleaning of applicable filter(s):	YES	
Trash Compartment solids accumulation within operational limits per manufacturer (n/a = no trash compartment):	N/A	
Aerobic Chamber solids accumulation within manufacturer operational limits (n/a = no aerobic chamber):	N/A	
Clarifying Chamber solids accumulation within manufacturer operational limits (n/a = no clarifying chamber):	N/A	
Pumping recommended:	NO	

Disinfection: Ultra Violet, Manufacturer= Salcor Engineering - 3G

Manufacturer: Salcor Engineering Model: 3G

This component was:	Fully Inspected	
Alarm mechanism functioning as intended:	YES	
Disinfection unit light on:	YES	

Panel: Control - 1 Pump, Manufacturer= SJE Rhombus - EZ Series Simplex Drainfield control panel

Manufacturer: SJE Rhombus Model: EZ Series Simplex

This component was:	Fully Inspected	
Panel functioning (including alarm):	YES	
Pump 1: on minutes (override in parentheses - if present):	2.45	
Pump 1: off hours (override in parentheses - if present):	6.00.00	
Pump 1: gallons per dose (override in parentheses - if present):	-	
Pump 1: ETM hours (override in parentheses - if present):	11.25	
Pump 1: Cycle Count (override in parentheses - if present):	262	

Drainfield (disposal): Pressure Bed, Manufacturer= Site Constructed - Gravel 15x20 pressure bed

Manufacturer: Site Constructed Model: Gravel

This component was:	Fully Inspected	
Lateral lines flushed:	NO	
Average squirt height (if performed) (feet, if other specify):	-	
Ponding present? If YES explain in comments:	NO	

SAMPLING REPORT

Location: 23058 450th Ave
Aitkin
11-1-115700 & 11-0-067703

Owner: Ron Brown
Use: Single Family

Service Company:

Septic Check
6074 Keystone Rd
Milaca, MN 56353
320-983-2447

Sample Date: 10/10/2022 **Sample entered by: Heather Johnson** **Report submitted: 10/11/2022**

Notes:

ONSITE SEWAGE SYSTEM SAMPLING DETAIL

COMPONENT	TYPE	SAMPLE	LIMIT	RESULT
Control - 1 Pump Drainfield control panel	Effluent	Flow	300 GPD	21

Septic Check

6074 Keystone Rd
Milaca, MN 56353

320-983-2447
Fax: 320-983-2151

PROPERTY INFORMATION

Location: 23058 450th Ave
Aitkin
Tax ID: 11-1-115700 &

Use: Residential, Single Family (2 bdrm)
System Design Flow: 300
GENERAL SYSTEM TYPE: Mini MBBR Res 2x W/ TEST

Mail To: Ron Brown
9650 Flintlock Trail
Chanhassen, MN
55317

Fold Here

Fold Here

ON-SITE WASTEWATER TREATMENT SYSTEM INSPECTION REPORT

Inspected: 05/25/2023 - Inspection Type: ROUTINE - Correction Status: No corrections needed

Company:	*Work Performed By:*	*Submitted 05/26/2023 by:*
Septic Check	Kyle Wade	Heather Johnson

COMMENTS & GENERAL INSPECTION NOTES

No Deficiencies Noted

Regular service performed today.
I noticed that the UV light wasn't working, contacted owner and replaced the bulb.
We will have to come out again to collect the fecal sample.
Scum and sludge levels looked good, no pumping required.
Everything else was working as it should.

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

TANK: Septic Tank - 1 Compartment, Manufacturer= Unknown - Concrete 1250 Gallon Septic tank 1

Manufacturer: Unknown Model: Concrete

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):	1	
Compartment 1 Sludge accumulation (Inches, if other specify):	6	
Pumping recommended:	NO	

TANK: Septic Tank - 2 Compartment, Manufacturer= Unknown - Concrete Mini Mbbr treatment tank

Manufacturer: Unknown Model: Concrete

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):	0	
Compartment 2 Scum accumulation (Inches, if other specify):	0	
Compartment 2 Sludge accumulation (Inches, if other specify):	0	
Pumping recommended:	NO	

Aerobic Treatment Unit: ATU, Manufacturer= SMART Treat MBBR - SMART Treat MBBR Mini Mbbr treatment tank

Manufacturer: SMART Treat MBBR Model: SMART Treat MBBR

This component was:	Fully Inspected	
Effluent level within operational limits (if NO explain in comments):	YES	
Aerobic Mechanism appears to be functioning per manufacturers specifications:	YES	
ATU serviced per manufacturers requirements including cleaning of applicable filter(s):	YES	
Trash Compartment solids accumulation within operational limits per manufacturer (n/a = no trash compartment):	N/A	
Aerobic Chamber solids accumulation within manufacturer operational limits (n/a = no aerobic chamber):	YES	
Clarifying Chamber solids accumulation within manufacturer operational limits (n/a = no clarifying chamber):	N/A	
Pumping recommended:	NO	

Disinfection: Ultra Violet, Manufacturer= Salcor Engineering - 3G

Manufacturer: Salcor Engineering Model: 3G

This component was:	Fully Inspected	
Alarm mechanism functioning as intended:	N/A	
Disinfection unit light on:	YES	

Panel: Control - 1 Pump, Manufacturer= SJE Rhombus - EZ Series Simplex Drainfield control panel

Manufacturer: SJE Rhombus Model: EZ Series Simplex

This component was:	Fully Inspected	
Panel functioning (including alarm):	YES	
Pump 1: on minutes (override in parentheses - if present):	2 min 45 sec	
Pump 1: off hours (override in parentheses - if present):	6	
Pump 1: gallons per dose (override in parentheses - if present):	-	
Pump 1: ETM hours (override in parentheses - if present):	12.17	
Pump 1: Cycle Count (override in parentheses - if present):	281	

Drainfield (disposal): Pressure Bed, Manufacturer= Site Constructed - Gravel 15x20 pressure bed

Manufacturer: Site Constructed Model: Gravel

This component was:	Fully Inspected	
Lateral lines flushed:	NO	
Average squirt height (if performed) (feet, if other specify):	-	
Ponding present? If YES explain in comments:	NO	

SAMPLING REPORT

Location: 23058 450th Ave
Aitkin
11-1-115700 & 11-0-067703

Owner: Ron Brown
Use: Single Family

Service Company:

Septic Check
6074 Keystone Rd
Milaca, MN 56353
320-983-2447

Sample Date: 05/25/2023 **Sample entered by: Heather Johnson** **Report submitted: 05/26/2023**

Notes: Changed out UV bulb, sample at a later date

ONSITE SEWAGE SYSTEM SAMPLING DETAIL

COMPONENT	TYPE	SAMPLE	LIMIT	RESULT
Control - 1 Pump Drainfield control panel	Effluent	Flow	300 GPD	10.5

SAMPLING REPORT

Location: 23058 450th Ave
Aitkin
11-1-115700 & 11-0-067703

Owner: Ron Brown
Use: Single Family

Service Company:

Septic Check
6074 Keystone Rd
Milaca, MN 56353
320-983-2447

Laboratory:AW Labs

Sample Date: 08/02/2023 **Sample entered by: Heather Johnson** **Report submitted: 08/14/2023**

Notes:

ONSITE SEWAGE SYSTEM SAMPLING DETAIL

COMPONENT	TYPE	SAMPLE	LIMIT	RESULT
Septic Tank - 2 Compartment Mini Mbbr treatment	Effluent	Fecal	1000	<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.

Aitkin County Environmental Services – Planning & Zoning
307 2nd Street NW, Room 219
Aitkin, MN 56431
(P) (218) 927-7342
(F) (218) 927-4375
(E) aitkinpz@co.aitkin.mn.us

July 31, 2023

Re: Operating Permit # 614
Zoning Permit # 44246
Parcel # 11-1-115700

Ron & Kolleen Brown
9650 Flintlock Trail
Chanhassen, MN 55317

Dear Permittee:

This letter is to remind you that the Operating Permit for the septic system at the above-mentioned parcel is due for renewal by September 30, 2023. The enclosed Operating Permit was issued as part of the permit for your non-standard septic system and it must be renewed.

All information listed in the application enclosed must be submitted to our office by the expiration date. Incomplete applications will be returned. We are notifying you to give you sufficient time to contact your service provider/inspector for the monitoring/maintenance activities that are required under this operating permit.

If your service provider/inspector finds the system is operating in conformance with the Operating Permit, please have them submit a letter requesting to have term of the operating permit extended for a longer period or to request terminating the operating permit. Our office will determine if this is possible.

The performance and life expectancy of this septic system is dependent on regular monitoring and maintenance of all parts of the system. Your compliance with the operating permit will ensure continued performance of the system. Failure to perform the monitoring and maintenance of this system could cause costly repairs and/or replacement of this system. Failure to comply with the monitoring, maintenance and reporting of the septic system is a violation of the Aitkin County Subsurface Sewage Treatment System Ordinance and could result in prosecution by the County Attorney's office.

Please contact our office with any questions regarding the renewal of this operating permit and your septic system.

Sincerely,

Shannon Wiebusch
Office Assistant
Aitkin County Planning & Zoning
shannon.wiebusch@co.aitkin.mn.us
218-927-7342

Enclosure: Operating Permit Renewal Application

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

Subsurface Sewage Treatment System
Operating Permit Renewal Application

Use this application to renew an operating permit.

Operating Permit #	614	**Zoning Permit #**	44246		
Issuance Date:	9/30/2023	**Expiration Date:**	9/30/2024	**Renewal Term:**	ANNUALLY

Site Information

Property ID:	11-1-115700				
Property Address:	23058 450th Ave	City:	Aitkin	Zip:	56431
Service Provider or Inspector Name:	Septic Check	License #:			

Contact Information

Permittee Name:	Ron & Kolleen Brown						
Mailing Address:	9650 Flintlock Trail	City:	Chanhassen	State:	MN	Zip:	55317
Email:				Phone:			

Include with this completed renewal application the following items:

- ☑ Table of Water Usage (Flow Monitoring Report)
- ☑ Maintenance & Monitoring Report by your Service Provider/Inspector
- ☑ Renewal Fee: **$150** Due Date: **9/30/2023** Please make check payable to: Aitkin County

Notice of Late Fee: If your completed application and renewal fee are not received or postmarked by the due date, add a $50.00 late fee.

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 authority at: Aitkin County Environmental Services, 307 2nd St NW, Room 219, Aitkin, MN 56431 no later than the expiration date listed.

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 Aitkin County Environmental Services within thirty (30) days of receiving non-compliant information. The owner is responsible to obtain the services of a Minnesota Pollution Control Agency (MPCA) licensed Service Provider or other qualified inspector to complete the required corrective measures.

Authorization

Aitkin County Environmental Services authorizes the Permittee to operate a wastewater treatment and dispersal system at the address named above in accordance with the requirements of this operating permit, attached Management Plan and contract with the Service Provider/Inspector.

This permit is effective on the issuance date and term identified above. This permit and the authorization to treat and disperse wastewater shall expire on the expiration date identified above. The Permittee is not authorized to discharge after the above date of expiration. The Permittee shall submit monitoring and maintenance information on forms as required by Aitkin County Environmental Services prior to the above date of expiration for operating permit renewal. If not renewed within ninety (90) calendar days of the expiration date, it may be required that the system be abandoned in accordance with MN Rule 7080.2500. This permit is not transferable as to person or place.

The owner is required to obtain the services of a Minnesota Pollution Control Agency (MPCA) licensed and trained: 1) Service Provider or Inspector 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 or Inspector business prior to the issuance of this operating permit. The owner has secured the services of **Septic Check** as the Service Provider or Inspector for this system. The Service Provider or Inspector is hereby authorized to provide the required monitoring data and routine maintenance service records to both Aitkin County Environmental Services.

[For systems that generate high strength wastewater, the following items should be added to the operating permit: "If there is a change of use within the facility (i.e., change in menu, increase in food capacity, change in water use fixtures, etc.), the permittee is required to notify Aitkin County Environmental Services and the Service Provider before any changes occurs. Changes to the facility that could potentially impact performance of the wastewater treatment and dispersal system shall not take place until appropriate evaluation has been completed."]

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 Aitkin County 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.

Permittee (please print):	Ron Brown	Permitting Authority (please print):	P+Z / Shannon Wiebusch
Title:	owner Date: 8/9/23	Title:	Office Assistant Date: 8-23-23
Permittee Signature:	X _____ Permitee Signature	Permitting Authority Signature:	X Shannon Wiebusch Aitkin County Representative Signature

Invoice #58488 (08/23/2023)
Misc. (OFFICE USE ONLY) Permit # 2023-0807, App. # App-2023-000945, UID # 208787
RONALD L BROWN
(000) 000-0000
9650 FLINTLOCK TRAIL, CHANHASSEN, MN 55317

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

Charge	Cost	Quantity	Total	Note
Operating Permit Renewal added 08/23/2023 1:28 PM	$150.00	x 1	$150.00	
Grand Total				
		Total	**$150.00**	

Payment #51484

Method: Check 2154
Date: 08/23/2023 **Note:** OP 614 2023 RENEWAL

Made By: RONALD L BROWN

Confirmed By: Shannon Wiebusch

AITKIN COUNTY ENVIRONMENTAL SERVICES-PLANNING & ZONING
307 Second Street NW Room 219
Aitkin, Minnesota 56431
Phone: (218) 927-734
Email: aitkinpz@co.aitkin.mn.us

8/23/2023

Ron & Kolleen Brown
9650 Flintlock Trail
Chanhassen, MN 55317

Re: Operating Permit # 614
Zoning Permit # 44246
Parcel # 11-1-115700

Dear Permittee:

This letter is to inform you that your Operating Permit has been renewed until 9/30/2024 .

Please adhere to your monitoring and maintenance contract including monitoring your water use. Failure to do so would violate the agreement to operate your system and could void the operating permit. You should contact your Service Provider/Inspector directly with questions that you may have during the year.

Thank you for your good stewardship and we hope that your system continues to operate well, protecting groundwater for you and the environment.

Sincerely,

Shannon W.

Aitkin County Planning & Zoning

Septic Check

6074 Keystone Rd
Milaca, MN 56353

320-983-2447
Fax: 320-983-2151

PROPERTY INFORMATION

Location: 23058 450th Ave
Aitkin
Tax ID: 11-1-115700 &

Use: Residential, Single Family (2 bdrm)
System Design Flow: 300
GENERAL SYSTEM TYPE: Mini MBBR Res 2x W/ TEST

Mail To: Ron Brown
9650 Flintlock Trail
Chanhassen, MN
55317

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Fold Here

ON-SITE WASTEWATER TREATMENT SYSTEM INSPECTION REPORT

Inspected: 11/10/2023 - Inspection Type: ROUTINE - Correction Status: No corrections needed

Company:	*Work Performed By:*	*Submitted 11/13/2023 by:*
Septic Check	Kyle Wade	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

TANK: Septic Tank - 1 Compartment, Manufacturer= Unknown - Concrete 1250 Gallon Septic tank 1

Manufacturer: Unknown Model: Concrete

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):	1	
Compartment 1 Sludge accumulation (Inches, if other specify):	5	
Pumping recommended:	NO	

TANK: Septic Tank - 2 Compartment, Manufacturer= Unknown - Concrete Mini Mbbr treatment tank

Manufacturer: Unknown Model: Concrete

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):	2	
Compartment 2 Scum accumulation (Inches, if other specify):	0	
Compartment 2 Sludge accumulation (Inches, if other specify):	0	
Pumping recommended:	NO	

Aerobic Treatment Unit: ATU, Manufacturer= SMART Treat MBBR - SMART Treat MBBR Mini Mbbr treatment tank

Manufacturer: SMART Treat MBBR Model: SMART Treat MBBR

This component was:	Fully Inspected	
Effluent level within operational limits (if NO explain in comments):	YES	
Aerobic Mechanism appears to be functioning per manufacturers specifications:	YES	
ATU serviced per manufacturers requirements including cleaning of applicable filter(s):	YES	
Trash Compartment solids accumulation within operational limits per manufacturer (n/a = no trash compartment):	N/A	
Aerobic Chamber solids accumulation within manufacturer operational limits (n/a = no aerobic chamber):	YES	
Clarifying Chamber solids accumulation within manufacturer operational limits (n/a = no clarifying chamber):	N/A	
Pumping recommended:	NO	

Disinfection: Ultra Violet, Manufacturer= Salcor Engineering - 3G		
Manufacturer: Salcor Engineering Model: 3G		
This component was:	Fully Inspected	
Alarm mechanism functioning as intended:	YES	
Disinfection unit light on:	YES	
Panel: Control - 1 Pump, Manufacturer= SJE Rhombus - EZ Series Simplex Drainfield control panel		
Manufacturer: SJE Rhombus Model: EZ Series Simplex		
This component was:	Fully Inspected	
Panel functioning (including alarm):	YES	
Pump 1: on minutes (override in parentheses - if present):	2 min 45 sec	
Pump 1: off hours (override in parentheses - if present):	6	
Pump 1: gallons per dose (override in parentheses - if present):	-	
Pump 1: ETM hours (override in parentheses - if present):	14.07	
Pump 1: Cycle Count (override in parentheses - if present):	322	
Drainfield (disposal): Pressure Bed, Manufacturer= Site Constructed - Gravel 15x20 pressure bed		
Manufacturer: Site Constructed Model: Gravel		
This component was:	Fully Inspected	
Lateral lines flushed:	NO	
Average squirt height (if performed) (feet, if other specify):	-	
Ponding present? If YES explain in comments:	NO	

SAMPLING REPORT

Location: 23058 450th Ave
Aitkin
11-1-115700 & 11-0-067703

Owner: Ron Brown
Use: Single Family

Service Company:

Septic Check
6074 Keystone Rd
Milaca, MN 56353
320-983-2447

Sample Date: 11/10/2023 **Sample entered by: Heather Johnson** **Report submitted: 11/13/2023**

Notes:

ONSITE SEWAGE SYSTEM SAMPLING DETAIL

COMPONENT	TYPE	SAMPLE	LIMIT	RESULT
Control - 1 Pump Drainfield control panel	Effluent	Flow	300 GPD	29