

SEPTIC CHECK

EXPERT SERVICE. LASTING VALUE. CLEAN WATER

Septic System Compliance Inspection – Existing System

DATE 3/13/2023

Property Owner: Bryon Anderson
Street Address: 32681 355th Ave
City, State, Zip: Aitkin, MN 56431

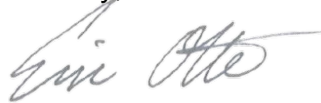
Dear Bryon Anderson and Aitkin County

A compliance inspection was performed at the above location. Soil investigations were conducted to determine the seasonal high water table, the drain field was also inspected to ensure there was no ponding or leakage, and the septic tank was inspected. The system was found to be

- **Impact on Public Health:**
Compliant; no impact on public health.
- **Tank Integrity:**
Compliant; tank(s) are functioning at operating level and are protecting the groundwater.
- **Other Compliance Conditions:**
Compliant; meets conditions of A, B, & C.
- **Soil Separation:**
Compliant, soil has 3' of vertical separation to saturated soils.
- **Operating Permit and Nitrogen BMP:**
Not applicable

I included a copy of the compliance documents and site sketch. Copies were sent to Aitkin County on your behalf. If you have any further questions, please do not hesitate to give us a call. Thank you for your business!

Sincerely,



Eric Otte, Lic. No. 8453
Compliance and Design
Office: 320-983-2447
ericotte@septiccheck.com

SEPTIC CHECK

EXPERT SERVICE. LASTING VALUE. CLEAN WATER

Disclaimer

The septic system inspection conducted for this property, meets the MN chapter 7082.0700 Subp. 4. Requirements for existing system inspections.

We recommend this system be serviced and inspected at least every 36 months by a septic professional.

Water use in excess of 50% of the design flow of the septic system may lead to premature failure.

This inspection does not guarantee future performance.

Additions to the home or use of the property may require the property owner to increase the system capacity.

Compliance inspection report form

Existing Subsurface Sewage Treatment System (SSTS)

Doc Type: Compliance and Enforcement

Instructions: Inspector must submit completed form to Local Governmental Unit (LGU) and system owner within 15 days of final determination of compliance or noncompliance. Instructions for filling out this form are located on the Minnesota Pollution Control Agency (MPCA) website at <https://www.pca.state.mn.us/sites/default/files/wq-wwists4-31a.pdf>.

Property information

Local tracking number:

Parcel ID# or Sec/Twp/Range: 24-1-086400 Reason for Inspection Building Permit
Local regulatory authority info: Aitkin
Property address: 32681 355th Ave Aitkin, MN 56431
Owner/representative: Bryon Anderson Owner's phone: 507-450-7739
Brief system description: Wieser WLP 550/450/650/ FDL Bio 500, BioMicrobics-FAST, UV, dosed to a 10'x38' mound.

System status

System status on date (mm/dd/yyyy): 3/6/2023

Compliant – Certificate of compliance*

(Valid for 3 years from report date unless evidence of an imminent threat to public health or safety requiring removal and abatement under section 145A.04, subdivision 8 is discovered or a shorter time frame exists in Local Ordinance.)

***Note: Compliance indicates conformance with Minn. R. 7080.1500 as of system status date above and does not guarantee future performance.**

Noncompliant – Notice of noncompliance

Systems failing to protect ground water must be upgraded, replaced, or use discontinued within the time required by local ordinance.

An imminent threat to public health and safety (ITPHS) must be upgraded, replaced, or its use discontinued within ten months of receipt of this notice or within a shorter period if required by local ordinance or under section 145A.04 subdivision 8.

Reason(s) for noncompliance (check all applicable)


- Impact on public health (Compliance component #1) – *Imminent threat to public health and safety*
- Tank integrity (Compliance component #2) – *Failing to protect groundwater*
- Other Compliance Conditions (Compliance component #3) – *Imminent threat to public health and safety*
- Other Compliance Conditions (Compliance component #3) – *Failing to protect groundwater*
- System not abandoned according to Minn. R. 7080.2500 (Compliance component #3) – *Failing to protect groundwater*
- Soil separation (Compliance component #5) – *Failing to protect groundwater*
- Operating permit/monitoring plan requirements (Compliance component #4) – *Noncompliant - local ordinance applies*

Comments or recommendations

Certification

I hereby certify that all the necessary information has been gathered to determine the compliance status of this system. No determination of future system performance has been nor can be made due to unknown conditions during system construction, possible abuse of the system, inadequate maintenance, or future water usage.

By typing my name below, I certify the above statements to be true and correct, to the best of my knowledge, and that this information can be used for the purpose of processing this form.

Business name: Septic Check Certification number: 8453
Inspector signature: Eric Otte  License number: 2624
(This document has been electronically signed) Phone: 320-983-2447

Necessary or locally required supporting documentation (must be attached)

- Soil observation logs
- System/As-Built
- Locally required forms
- Tank Integrity Assessment
- Operating Permit
- Other information (list):

1. Impact on public health – Compliance component #1 of 5

Compliance criteria:

System discharges sewage to the ground surface Yes* No

System discharges sewage to drain tile or surface waters. Yes* No

System causes sewage backup into dwelling or establishment. Yes* No

Any "yes" answer above indicates the system is an imminent threat to public health and safety.

Describe verification methods and results:

Visual Inspection

Attached supporting documentation:

Other: _____

Not applicable

2. Tank integrity – Compliance component #2 of 5

Compliance criteria:

System consists of a seepage pit, cesspool, drywell, leaching pit, or other pit? Yes* No

Sewage tank(s) leak below their designed operating depth? Yes* No

If yes, which sewage tank(s) leaks: _____

Any "yes" answer above indicates the system is failing to protect groundwater.

Describe verification methods and results:

Pumped, cleaned and visually inspected.

Attached supporting documentation:

Empty tank(s) viewed by inspector

Name of maintenance business: Timberlakes

License number of maintenance business: L455

Date of maintenance: 3/3/23

Existing tank integrity assessment (Attach)

Date of maintenance 3/3/2023
(mm/dd/yyyy): (must be within three years)

(See form instructions to ensure assessment complies with Minn. R. 7082.0700 subp. 4 B (1))

Tank is Noncompliant (pumping not necessary – explain below)

Other: _____

3. Other compliance conditions – Compliance component #3 of 5

3a. Maintenance hole covers appear to be structurally unsound (damaged, cracked, etc.), or unsecured?

Yes* No Unknown

3b. Other issues (*electrical hazards, etc.*) to immediately and adversely impact public health or safety? Yes* No Unknown

***Yes to 3a or 3b - System is an imminent threat to public health and safety.**

3c. System is non-protective of ground water for other conditions as determined by inspector?

Yes* No

3d. System not abandoned in accordance with Minn. R. 7080.2500?

Yes* No

***Yes to 3c or 3d - System is failing to protect groundwater.**

Describe verification methods and results:

Attached supporting documentation: Not applicable

4. Operating permit and nitrogen BMP* – Compliance component #4 of 5 Not applicable

Is the system operated under an Operating Permit?

Yes No **If “yes”, A below is required**

Is the system required to employ a Nitrogen BMP specified in the system design? Yes No

If “yes”, B below is required

BMP = Best Management Practice(s) specified in the system design

If the answer to both questions is “no”, this section does not need to be completed.

Compliance criteria:

a. Have the operating permit requirements been met?

Yes No

b. Is the required nitrogen BMP in place and properly functioning?

Yes No

Any “no” answer indicates noncompliance.

Describe verification methods and results:

Attached supporting documentation: Operating permit (Attach)

5. Soil separation – Compliance component #5 of 5

Date of installation 4/17/2017 Unknown
(mm/dd/yyyy)

Shoreland/Wellhead protection/Food beverage lodging? Yes No

Compliance criteria (select one):

5a. For systems built prior to April 1, 1996, and not located in Shoreland or Wellhead Protection Area or not serving a food, beverage or lodging establishment: Yes No*

Drainfield has at least a two-foot vertical separation distance from periodically saturated soil or bedrock.

5b. Non-performance systems built April 1, 1996, or later or for non-performance systems located in Shoreland or Wellhead Protection Areas or serving a food, beverage, or lodging establishment: Yes No*

Drainfield has a three-foot vertical separation distance from periodically saturated soil or bedrock.*

5c. "Experimental", "Other", or "Performance" systems built under pre-2008 Rules; Type IV or V systems built under 2008 Rules 7080.2350 or 7080.2400 (Intermediate Inspector License required ≤ 2,500 gallons per day; Advanced Inspector License required > 2,500 gallons per day) Yes No*

Drainfield meets the designed vertical separation distance from periodically saturated soil or bedrock.

Attached supporting documentation:

- Soil observation logs completed for the report
- Two previous verifications of required vertical separation
- Not applicable (No soil treatment area)
- _____

Indicate depths or elevations

A. Bottom of distribution media	
B. Periodically saturated soil/bedrock	
C. System separation	
D. Required compliance separation*	

*May be reduced up to 15 percent if allowed by Local Ordinance.

***Any "no" answer above indicates the system is failing to protect groundwater.**

Describe verification methods and results:

Upgrade requirements: (Minn. Stat. § 115.55) An imminent threat to public health and safety (ITPHS) must be upgraded, replaced, or its use discontinued within ten months of receipt of this notice or within a shorter period if required by local ordinance. If the system is failing to protect ground water, the system must be upgraded, replaced, or its use discontinued within the time required by local ordinance. If an existing system is not failing as defined in law, and has at least two feet of design soil separation, then the system need not be upgraded, repaired, replaced, or its use discontinued, notwithstanding any local ordinance that is more strict. This provision does not apply to systems in shoreland areas, Wellhead Protection Areas, or those used in connection with food, beverage, and lodging establishments as defined in law.

Purpose: This form *may* be used to certify the compliance status of the sewage tank components of the SSTS. **This form is not a complete SSTS inspection report, only a tank integrity assessment, and may only certify sewage tank compliance status when entirely completed and signed by a qualified professional.** SSTS compliance inspection report forms can be found at: <https://www.pca.state.mn.us/water/inspections>.

Instructions: This form may be completed, and signed, by a Designated Certified Individual (DCI) of a licensed SSTS inspection, maintenance, installation, or service provider business who personally conducts the necessary procedures to assess the compliance status of each sewage tank in the system. Only a licensed maintenance business is authorized to pump the tank for assessment. A copy of this information should be submitted to the system owner and be maintained by the licensed SSTS business for a period of five (5) years from the assessment date.

When this form is signed by a qualified certified professional, it becomes *necessary supporting documentation* to an Existing System Compliance Inspection Report: [Compliance inspection form - Existing system \(wg-wwists4-31b\)](#). This form can be found on the MPCA website at <https://www.pca.state.mn.us/water/inspections>.

The information and certified statement on this form is **required** when existing septic tank compliance status is determined by an individual other than the SSTS Inspector that submits an inspection report. This form represents a third party assessment of SSTS component compliance and is allowable under Minn. R. 7082.0700, subp. 4(B)(1). This form is valid for a period of three years beyond the signature date on this form unless a new evaluation is requested by the owner or owner's agent or is required according to local regulations. Additional Administrative Rule references for this activity can be found at Minn. R. 7082.0700, subp. 4(B),(C), and (D) and; Minn. R. 7083.0730(C).

Owner information

 Owner/Representative Bryon and Marcia Anderson / Heather Johnson - Septic Check

 Property address: 32681 355th Ave., Aitkin, MN 56431

 Local Regulatory Authority: Aitkin County

 Parcel ID: 24-1-086400

System status

 System status on date (mm/dd/yyyy): 3/3/2023
 Certificate of sewage tank compliance
 Notice of sewage tank non-compliance

Compliance criteria:

 The SSTS has a seepage pit, cesspool, drywell, leaching pit, or other pit - "**Failure to Protect Groundwater.**"

 Yes* No

 The SSTS has a sewage tank that leaks below the designed operating depth - "**Failure to Protect Groundwater.**"

 Yes* No

 The SSTS presents a threat to public safety by reason of structurally unsound (damaged, cracked, or weak) maintenance hole cover(s) or lids or any other unsafe condition - "**Imminent Threat to Public Health or Safety.**"

 Yes* No

Any "yes" answer above indicates sewage tank non-compliance.

Company information

 Company name: Timber Lakes Septic Service Inc

 Business license number: L455

Designated Certified Individual (DCI) information

 Print name: Dan Swanson

 Certification number: C6023

I personally conducted the work described above as a Designated Certified Individual of a Minnesota-licensed SSTS inspection, maintenance, installation, or service provider Business. I personally conducted the necessary procedures to assess the compliance status of each sewage tank in this SSTS.

By typing/signing my name below, I certify the above statements to be true and correct, to the best of my knowledge, and that this information can be used for the purpose of processing this form.

 Designated Certified Individual's signature: Dan Swanson
(This document has been electronically signed.)

 Date (mm/dd/yyyy): 3/3/2023

Septic Check

6074 Keystone Rd
Milaca, MN 56353

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

Mail To: Bryon Anderson
1903 West Mark Street
Winona, MN
55987

PROPERTY INFORMATION

Location: 32681 - 355th Ave.
Aitkin
Tax ID: 24-1-086400

Use: Residential, Single Family (3 bdrm)
System Design Flow: 450
GENERAL SYSTEM TYPE: FAST Res 2x Yr w/Test

Fold
Here

ON-SITE WASTEWATER TREATMENT SYSTEM INSPECTION REPORT

Inspected: 11/02/2022 - Inspection Type: ROUTINE - Correction Status: No corrections needed

Company:
Septic Check

Work Performed By:
Michael Pederson

Submitted 11/04/2022 by:
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 - 1,650 Gal Tank w/ MicroFAST unit

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):	1
Pumping recommended:	NO

Aerobic Treatment Unit: ATU - BioMicrobics - FAST, Manufacturer= Bio-Microbics, Inc. - MicroFAST 0.5

Manufacturer: Bio-Microbics, Inc. Model: MicroFAST 0.5

This component was:	Fully Inspected
Aerobic Mechanism appears to be functioning per manufacturers specifications:	YES
Cleaned filter element:	NO
Unit audio/visual alarms functioning:	YES
Vent(s) and observation ports clear from obstructions:	YES
Vigorous boiling is occurring:	YES
Effluent is visually clear:	YES
The effluent smell is a damp, earthy odor (N/A = not observed):	YES
pH level within normal operating range (6-9): (Enter N/A if not performed):	N/A
Field sample performance results within operational limits (Enter N/A if not performed):	N/A
The first compartment settling zone sludge accumulation is greater than 18 inches or is within 6 inches of the connection point between the settling zone and treatment zone. (If Yes, pumping needed):	NO
The second compartment treatment zone sludge accumulation is less than 3 inches from the FAST unit. (If Yes, pumping needed):	NO
Pumping needed:	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 - Drainfield Dose Panel

This component was:	Fully Inspected	
Panel functioning (including alarm):	YES	
Pump 1: on minutes (override in parentheses - if present):	1.6	
Pump 1: off hours (override in parentheses - if present):	3.9	
Pump 1: gallons per dose (override in parentheses - if present):	-	
Pump 1: ETM hours (override in parentheses - if present):	34.46	
Pump 1: Cycle Count (override in parentheses - if present):	1371	

Pump: Effluent Pump, Manufacturer= Champion - CPE - Champion CPE4A

Manufacturer: Champion Model: CPE

This component was:	Fully Inspected	
Controls functioning:	YES	
Tested gallons per minute flow:	-	

Media Filter: Mound 10' x 37.5'

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

TANK: Pump Tank - 650 Gal Pump Tank

This component was:	Fully Inspected	
Compartment 1 Scum accumulation (Inches, if other specify):	0	
Compartment 1 Sludge accumulation (Inches, if other specify):	0	
Pumping recommended:	NO	

SAMPLING REPORT

Location: 32681 - 355th Ave.

Aitkin

24-1-086400

Owner: Bryon Anderson

Use: Single Family

Service Company:

Septic Check

6074 Keystone Rd

Milaca, MN 56353

320-983-2447

Laboratory: A W Labs

Sample Date: 11/02/2022 Sample entered by: Heather Johnson Report submitted: 11/08/2022

Notes:

ONSITE SEWAGE SYSTEM SAMPLING DETAIL

COMPONENT	TYPE	SAMPLE	LIMIT	RESULT
Control - 1 Pump - Drainfield Dose Panel	Effluent	Flow	450 GPD	99.6
Pump Tank - 650 Gal Pump Tank	Effluent	Fecal	000 cfu/100r	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.

Septic Check

6074 Keystone Rd
Milaca, MN 56353

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

Mail To: Bryon Anderson
1903 West Mark Street
Winona, MN
55987

PROPERTY INFORMATION

Location: 32681 - 355th Ave.
Aitkin
Tax ID: 24-1-086400

Use: Residential, Single Family (3 bdrm)
System Design Flow: 450
GENERAL SYSTEM TYPE: FAST Res 2x Yr w/Test

Fold
Here

ON-SITE WASTEWATER TREATMENT SYSTEM INSPECTION REPORT

Inspected: 04/25/2022 - Inspection Type: ROUTINE - Correction Status: No corrections needed

Company:
Septic Check

Work Performed By:
Michael Pederson

Submitted 04/26/2022 by:
Heather Johnson

Fold
Here

COMMENTS & GENERAL INSPECTION NOTES

No Deficiencies Noted

The bulb wasn't all the way down in the glass sheath, so the UV was not treating properly like it should be. I placed the bulb down where it should be so next time we sample we can get better results. If the fecal sample does not meet limits this time, this could be the reason.

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 - 1,650 Gal Tank w/ MicroFAST unit

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):	1	
Pumping recommended:	NO	

Aerobic Treatment Unit: ATU - BioMicrobics - FAST, Manufacturer= Bio-Microbics, Inc. - MicroFAST 0.5

Manufacturer: Bio-Microbics, Inc. Model: MicroFAST 0.5

This component was:	Fully Inspected	
Aerobic Mechanism appears to be functioning per manufacturers specifications:	YES	
Cleaned filter element:	NO	
Unit audio/visual alarms functioning:	YES	
Vent(s) and observation ports clear from obstructions:	YES	
Vigorous boiling is occurring:	YES	
Effluent is visually clear:	YES	
The effluent smell is a damp, earthy odor (N/A = not observed):	YES	
pH level within normal operating range (6-9): (Enter N/A if not performed):	N/A	
Field sample performance results within operational limits (Enter N/A if not performed):	N/A	
The first compartment settling zone sludge accumulation is greater than 18 inches or is within 6 inches of the connection point between the settling zone and treatment zone. (If Yes, pumping needed):	NO	
The second compartment treatment zone sludge accumulation is less than 3 inches from the FAST unit. (If Yes, pumping needed):	NO	
Pumping needed:	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 - Drainfield Dose Panel

This component was:	Fully Inspected	
Panel functioning (including alarm):	YES	
Pump 1: on minutes (override in parentheses - if present):	1.9	
Pump 1: off hours (override in parentheses - if present):	4	
Pump 1: gallons per dose (override in parentheses - if present):	NA	
Pump 1: ETM hours (override in parentheses - if present):	27.64	
Pump 1: Cycle Count (override in parentheses - if present):	1118	

Pump: Effluent Pump, Manufacturer= Champion - CPE - Champion CPE4A

Manufacturer: Champion Model: CPE

This component was:	Fully Inspected	
Controls functioning:	YES	
Tested gallons per minute flow:	NA	

Media Filter: Mound 10' x 37.5'

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

TANK: Pump Tank - 650 Gal Pump Tank

This component was:	Fully Inspected	
Compartment 1 Scum accumulation (Inches, if other specify):	0	
Compartment 1 Sludge accumulation (Inches, if other specify):	0	
Pumping recommended:	NO	

SAMPLING REPORT

Location: 32681 - 355th Ave.

Aitkin

24-1-086400

Owner: Bryon Anderson

Use: Single Family

Service Company:

Septic Check

6074 Keystone Rd

Milaca, MN 56353

320-983-2447

Laboratory: AW Labs

Sample Date: 04/25/2022 Sample entered by: Heather Johnson Report submitted: 05/02/2022

Notes: Will sample at next visit as the UV light was not adjusted properly. Ended up sampling it was 1640. With the UV light being adjusted, next sample at fall visit should passing.

ONSITE SEWAGE SYSTEM SAMPLING DETAIL

COMPONENT	TYPE	SAMPLE	LIMIT	RESULT
Control - 1 Pump - Drainfield Dose Panel	Effluent	Flow	450 GPD	34.7

Septic Permit # 2017-1478

APP-2017-001633
P#42731
OP#529

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

Contact Information

Are you the Property Owner? No

If we have questions on the application who should we contact?

Name: Travis Johnson
 Phone: (320) 983 - 2447
 Email Address: travis@septiccheck.com
 Mailing Address: 6074 Milaca MN 56353
 errinkrats@msn.com

Property Owner Contact

Property Owner Email Address: errinkrats@msn.com

Project Location Search

Property: Selected:

Property Location		Property Address			Legal Description	Property Attributes		Owner Information	Tax Payer Information
Parcel Number	Township or City Name	TWP	SEC	RGE	Property Zip 5	Lake Number	Lake Name	Owner Name(s)	Taxpayer Name(s)
24-1-086400	NORDLAND TWP	46	11	26	32681 355th Ave AITKIN	56431	LOT 9 BLK 2	OLSON, ROSE TRUSTEE	OLSON, ROSE TRUSTEE

Driving take 355th ave south off of CR 17. It is on the land bridge between section 10 lake and section 12 lake.

Directions to the project location: Does your property have an E911 address assigned? Yes

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: ✓ Schrackenhaust_Design.pdf
 File 2: ✓ Schrackenhaust_Design_w_OP_ppw.pdf
 Please select all that apply: Residential Other/Performance Sewer

Invoice 04/24/2017

Residential Other/Performance Sewer added 04/24/2017 5:02 PM	Charge	Cost	Quantity	Total
\$350 Flat Fee		\$350.00	x 1	\$350.00
Grand Total			Total (Paid)	\$350.00

Invoice 04/27/2017

Residential Operating Permit added 04/27/2017 8:18 AM	Charge	Cost	Quantity	Total
\$100 Flat Fee		\$100.00	x 1	\$100.00
Grand Total			Total (Paid)	\$100.00

Approvals

Approval	Signature
Applicant	Travis M. Johnson - 04/24/2017 5:02 PM d1fa5bce979a09d9826550864417d260 1fb60129b5ada7acbb507dc1372cdc9b
#1 Administrative Approval Group	Kalea Suihkonen - 05/04/2017 4:17 PM 052e56d735642ff52504c4058ab4a1ca 105e0b9679021d87fbb6d0cc3a6192a
#2 Inspector Group	Kalea Suihkonen - 05/05/2017 12:10 PM 4896ab0562c8edf6cf10b1f641dab5e ea442d69e08b9456a6c422b7eb7b41e
#3 Final Approval	Kalea Suihkonen - 05/05/2017 12:11 PM 1809293eb25f536881e0f64ff2bccdf 5bb59436cb1de7e1f9f4ac979f6ea03b

Admin Checklist

This application has been started by: Kalea Suihkonen
 Zoning District of project location: Shoreland
 Required OWHL setback distance: 75 ft.
 "Other" OWHL setback distance is:
 Pumping Agreement Attached? No
 Low Interest Loan or SSTS Grant project? No
 Is this an After-The-Fact application? No

DESIGN REVIEW CHECKLIST

Zoning Inspector: Terry Neff
 SSTS Type: Type IV
 SSTS Design: "Other"/Performance System
 New or Replacement SSTS: Replacement SSTS
 gpd: 1-2,499 gpd
 # of bedrooms: 3
 Operating Permit #: 527

Does this system require an Operating Permit? Yes

Attach appropriate inspection forms:

Does this system belong to an other No
 establishment?

Is this a Cluster System? No

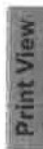
Public Notes

Text: PERMIT 42731 ISSUED FOR AN "OTHER" SEPTIC SYSTEM WITH OPERATING PERMIT #527
 5-4-17 Terry Neff reviewed and approved design. KS

- File(s):
- File 1: Operating_permit.pdf
 - Operating_permit.pdf
 - File 2: P_42731_OP_529.pdf
 - P_42731_OP_529.pdf

Numbers

Current Number	Next from Sequence
UID # 193330	not applicable
App. # App-2017-001633	App-2017-001692
Permit # 2017-1478	2017-1479





INDIVIDUAL SEWAGE SYSTEM DESIGN SUMMARY

Property Owner: Ron Schreckenhaust Phone: 612-363-3404
 Address: 32681 - 355th Ave Township: _____
 City: Aitkin Zip: 56431 County: Aitkin

DESIGN USAGE

Single Family Home X Other _____
 Number of Potential Bedrooms 3
 Garbage Disposal no
 Sewage Lift Pump no

SITE CHARACTERISTICS

Soil type Clay Loam
 Hydraulic Loading existing
 Depth to restrictive layer 8"

PUMP INFORMATION

Pump GPM & TDH Est. 29 GPM 16.1 TDH
 Cycles per day 6
 Gallons per cycle 75 gallons
 Perforation size & spacing unknown
 Number, spacing, & diameter of laterals 3 laterals size unknown
 Forcemain Size 2"

CAPACITIES

Daily Water Use 450 Est _____ Calc X
 Septic Tank Capacity 550 gallons
 Pump Tank Capacity 650 gallons

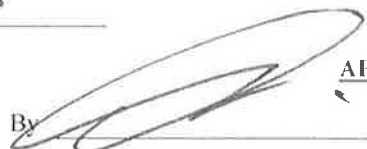
MOUND SYSTEM

Dimension of Rock Base 10' by 37.5'
 Depth of Rock Below Pipe Existing
 Dimensions of Mound Existing
 % Slope of Soil Under Mound Existing
 Upslope Dike Width Existing
 Downslope Dike Width Existing
 Sideslope Dike Width Existing

TRENCH SYSTEM

Type of trench _____
 Maximum Depth of trench _____
 Square Feet of bed Required _____
 Square Feet of bed Proposed _____
 Lineal Feet of bed Proposed _____

APPROVAL

By  Date 4/24/2017
 Brian Koski License #2624

See additional information sheet if checked

Protecting Your Investment and Everyone's Environment

Septic System Design Additional Information

Property Owner: Ron Schreckenhaust

Description of Wastewater Treatment and Dispersal System

This design is for an existing septic system on a lake home in Aitkin County. A compliance inspection was done and found the mound system only had 1.5' of separation and was considered non-compliant. The proposed design would utilize a pretreatment system that would treat to level A to bring the system into compliance.

The existing tanks will need to be pumped and properly abandon prior to the installation of the Wieser three compartment treatment tank. There is a large maple tree that will need to be removed for the installation of the new tank. The existing mound system will need to have cleanouts installed and it is recommended that the lines be jetted prior to being connected to the new system.

The original design for the existing mound system does not provide orifice sizing or spacing. Assumptions have been made to get a general idea on dosing volumes and pump sizing. Once the system is receiving water, drawdowns should be performed on the pumps to assure proper dosing.

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 the top of the lid on the existing tank.

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.

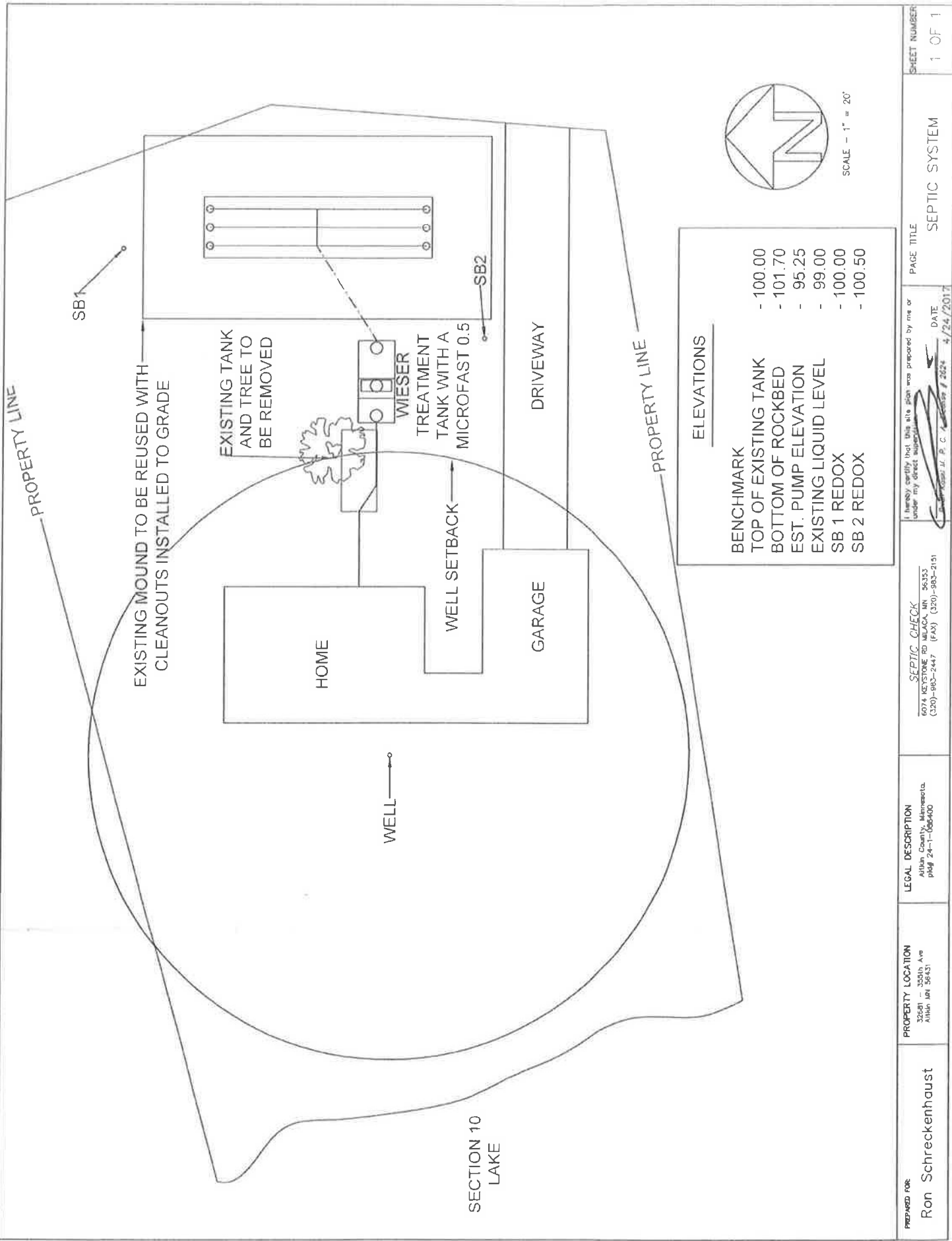
Each tank is to be pumped through the maintenance cover when serviced. Do not pump through inspection pipes.

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.

Maintenance Requirements

See attached operating permit or management plan for details



ELEVATIONS	
BENCHMARK	- 100.00
TOP OF EXISTING TANK	- 101.70
BOTTOM OF ROCKBED	- 95.25
EST. PUMP ELEVATION	- 99.00
EXISTING LIQUID LEVEL	- 100.00
SB 1 REDOX	- 100.50
SB 2 REDOX	- 100.50

SCALE - 1" = 20'



Soil Profile Description

Last updated: 1/8/10

Date Completed :	4/24/2017	Observation # :	SB 1 & 2
Completed By :	Travis Johnson	Equipment :	Bucket Auger
Client / Project :	Ron Schreckenhaust	Limiting Layer :	8" & 10"
Landscape position :		Vegetation :	Grass
Mapped soil type :	Cushing Mahtomedi	Weather :	Sunny

<i>Observation # : 1</i>		<i>Primary or Alternate Site</i>	<i>Elevation:</i>
Horizon Depth	Soil Texture	Matrix Color	Redox features
0"-10"	Loam	10 YR 2/2	
10"-14"	Clay Loam	7.5 YR 5/5	Concentrations

<i>Observation # : 2</i>		<i>Primary or Alternate Site</i>	<i>Elevation:</i>
Horizon Depth	Soil Texture	Matrix Color	Redox features
0"-8"	Loam	10 YR 2/2	Concentrations
8"-18"	Clay Loam	7.5 YR 5/5	Concentrations & Depletions

OSTP Design Summary Worksheet



Property Owner/Client: Project ID: v 07.14.15
 Site Address: Date:

1. DESIGN FLOW AND TANKS

A. Design Flow: 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: Gallons, in Tanks or Compartments
 Recommended Septic Tank Capacity: Gallons, in Tanks or Compartments
 Effluent Screen: Alarm:

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): Gallons Pump Tank 2 Capacity (Code Minimum): Gallons
 Pump Tank 1 Capacity (Designer Rec): Gallons Pump Tank 2 Capacity (Designer Rec): Gallons
 Pump 1 GPM Total Head ft Pump 2 GPM Total Head ft
 Supply Pipe Dia. in Dose Volume: 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: ft
 Benchmark Location:

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: in ft B. Measured Land Slope %: %
 C. Elevation of Limiting Layer: D. Soil Texture:
 E. Loc. of Restrictive Elevation: F. Soil Hyd. Loading Rate: GPD/ft²
 G. Minimum Required Separation: in ft H. Perc Rate: MPI
 I. Code Maximum Depth of System: 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 ft² Depth of sidewall in Code Maximum Bed Depth in
 Bed Width ft Bed Length ft Designer's Max Bed Depth in

OSTP Design Summary Worksheet



Mound Design Summary

Absorption Bed Area	<input type="text" value="0.0"/> ft ²	Bed Length	<input type="text" value="0.0"/> ft	Bed Width	<input type="text" value="0.0"/> ft
Absorption Width	<input type="text" value="0.0"/> ft	Clean Sand Lift	<input type="text" value="0.0"/> ft	Berm Width (0-1%)	<input type="text"/> ft
Upslope Berm Width	<input type="text"/> ft	Downslope Berm Width	<input type="text"/> ft	Endslope Berm Width	<input type="text" value="0.0"/> ft
Total System Length	<input type="text" value="0.0"/> ft	Total System Width	<input type="text" value="0.0"/> ft	Contour Loading Rate	<input type="text" value="0.0"/> gal/ft

At-Grade Design Summary

Absorption Bed Width	<input type="text"/> ft	Absorption Bed Length	<input type="text"/> ft	System Height	<input type="text"/> ft
Contour Loading Rate	<input type="text"/> gal/ft	Upslope Berm Width	<input type="text"/> ft	Downslope Berm Width	<input type="text"/> ft
Endslope Berm Width	<input type="text"/> ft	System Length	<input type="text"/> ft	System Width	<input type="text"/> ft

Level & Equal Pressure Distribution Summary

No. of Perforated Laterals	<input type="text" value="3"/>	Perforation Spacing	<input type="text" value="3"/> ft	Perforation Diameter	<input type="text" value="1/4"/> in
Lateral Diameter	<input type="text" value="2.00"/> in	Min. Delivered Volume	<input type="text" value="73"/> gal	Maximum Delivered Volume	<input type="text" value="113"/> 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								Minimum Delivered Volume <input type="text"/> gal Maximum Delivered Volume <input type="text"/> gal
Lateral 2								
Lateral 3								
Lateral 4								
Lateral 5								
Lateral 6								

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

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

2. Type of Pretreatment Unit Being Installed:

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

mg/L X 8.35 ÷ 1,000,000 ÷ ft² = 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
(Designer)

(Signature)

2624
(License #)

04/24/17
(Date)



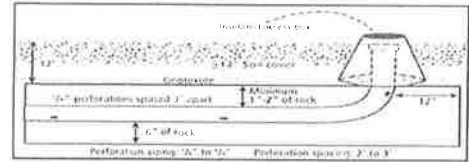
OSTP Pressure Distribution Design Worksheet



Project ID: _____

v 07.14.15

- Media Bed Width: ft
- Minimum Number of Laterals in system/zone = Rounded up number of $[(\text{Media Bed Width} - 4) \div 3] + 1$.
 $(\text{ } \boxed{10} \text{ } - 4) + 1 = \text{ } \boxed{3} \text{ } \text{ laterals}$ *Does not apply to at-grades*
- Designer Selected Number of Laterals: laterals
Cannot be less than line 2 (accept in at-grades)
- Select Perforation Spacing: ft
- Select Perforation Diameter Size: in



- Length of Laterals = Media Bed Length - 2 Feet.
 - 2ft = ft *Perforation can not be closer than 1 foot from edge.*

- 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 = ft \div ft = Spaces

- 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 = Spaces + 1 = Perfs. Per Lateral

Maximum Number of Perforations Per Lateral to Guarantee <10% Discharge Variation											
1/4 Inch Perforations						7/32 Inch Perforations					
Perforation Spacing (Feet)	Pipe Diameter (Inches)					Perforation Spacing (Feet)	Pipe Diameter (Inches)				
	1	1 1/4	1 1/2	2	3		1	1 1/4	1 1/2	2	3
2	10	13	18	30	60	2	11	16	21	34	68
2 1/2	8	12	16	28	54	2 1/2	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	1 1/4	1 1/2	2	3		1	1 1/4	1 1/2	2	3
2	12	18	26	46	87	2	21	33	44	74	149
2 1/2	12	17	24	40	80	2 1/2	20	30	41	69	135
3	12	16	22	37	75	3	20	29	38	64	128

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

Perf. Per Lat. X Number of Perf. Lat. = Total Number of Perf.

- Select Type of Manifold Connection (End or Center): End Center

- Select Lateral Diameter (See Table): in



OSTP Pressure Distribution Design Worksheet



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)

10 ft X 38 ft = 380 ft²

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

380 ft² ÷ 39 perforations = 9.7 ft²/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*.

39 Perfs X 0.74 GPM per Perforation = 29 GPM

16. *Volume of Liquid Per Foot of Distribution Piping* (Table II): 0.170 Gallons/ft

17. *Volume of Distribution Piping* =

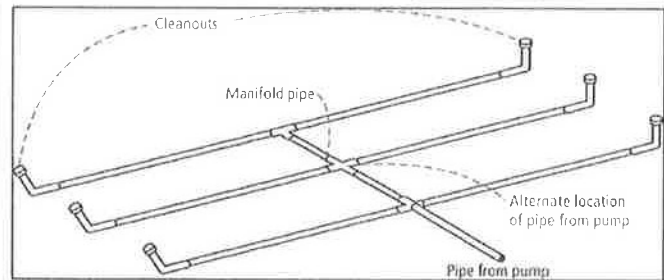
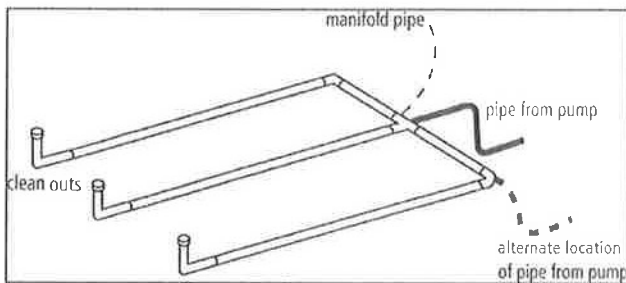
= [Number of Perforated Laterals X Length of Laterals X (Volume of Liquid Per Foot of Distribution Piping)]

3 X 36 ft X 0.170 gal/ft = 18.4 Gallons

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

18.4 gals X 4 = 73.4 Gallons

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:

Blank area for providing comments or special design considerations.



OSTP Basic Pump Selection Design Worksheet



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: GPM

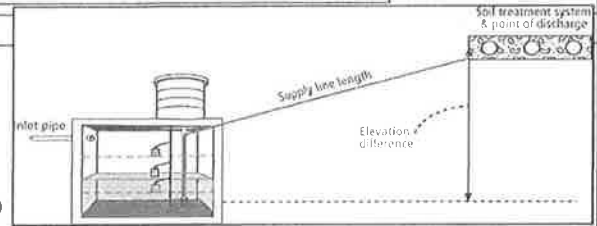
3. Enter pump description:

2. HEAD REQUIREMENTS

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

B. Distribution Head Loss: 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: in

2. Supply Pipe Length: ft

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

Friction Loss = 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*

ft X 1.25 = 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 = ft per 100ft X ft ÷ 100 = 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)

ft + ft + ft + ft = ft

3. PUMP SELECTION

A pump must be selected to deliver at least **29.0** GPM (Line 1 or Line 2) with at least **16.1** feet of total head.

Comments:

DETERMINE TANK CAPACITY AND DIMENSIONS Project ID: v 07.14.15

1. A. Design Flow (Design Sum 1A): 450 GPD

B. Min. required pump tank capacity: 450 Gal C. Recommended pump tank capacity: 650 Gal

D. Pump tank description: Time to Pressure

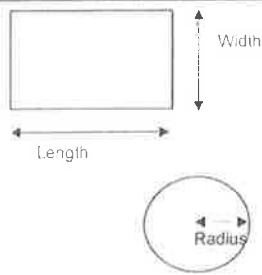
MEASURED TANK CAPACITY (existing tanks):

2. A. Rectangle area = Length (L) X Width (W)
 ft X ft = ft²

B. Circle area = 3.14r² (3.14 X radius X radius)
 3.14 X ² ft = ft²

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.
 ft² X 7.5 gal/ft³ ÷ 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 15.9 Gallons Per Inch = Gallons



MANUFACTURER'S SPECIFIED TANK CAPACITY (when available):

3. A. Tank Manufacturer: Wieser

B. Tank Model: WLP 550/450/650/-FDL Bio 500

C. Capacity from manufacturer: 650 Gallons

D. Gallons per inch from manufacturer: 15.9 Gallons per inch

E. Liquid depth of tank from manufacturer: 41.0 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)
10 in + 2 inches) X 15.9 Gallons Per Inch = 191 Gallons

5. Minimum Delivered Volume = 4 X Volume of Distribution Piping:
 · Line 17 of the Pressure Distribution or Line 11 of Non-level 73 Gallons (minimum dose)

6. Calculate Maximum Pumpout Volume (25% of Design Flow)
 Design Flow: 450 GPD X 0.25 = 113 Gallons (maximum dose)

7. Select a pumpout volume that meets both Minimum and Maximum: 75 Gallons

8. Calculate Doses Per Day = Design Flow ÷ Delivered Volume
450 gpd ÷ 75 gal = 6 Doses

9. Calculate Drainback:
 A. Diameter of Supply Pipe = 2 inches
 B. Length of Supply Pipe = 40 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
40 ft X 0.170 gal/ft = 6.8 Gallons

10. Total Dosing Volume = Delivered Volume plus Drainback
75 gal + 6.8 gal = 82 Gallons

11. Minimum Alarm Volume = Depth of alarm (2 or 3 inches) X gallons per inch of tank
3 in X 15.9 gal/in = 47.8 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

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*):

GPM

B. Or calculated: $GPM = \text{Change in Depth (in)} \times \text{Gallons Per Inch} / \text{Time Interval in Minutes}$

in X 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:

GPM

14. Calculate TIMER ON setting:

Total Dosing Volume/GPM

gal ÷ gpm = Minutes ON

15. Calculate TIMER OFF setting:

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

1440 min ÷ doses/day - min = Minutes OFF

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

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

gal ÷ gal/in = Inches

17. Alarm Float - Measuring from bottom of tank:

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

in X 0.90 = 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

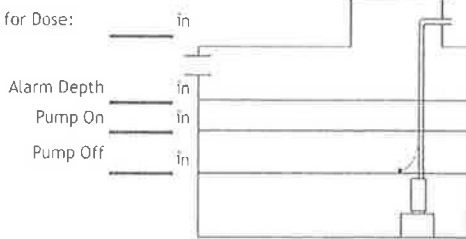
C. Distance to set Alarm Float = Distance to set Pump-On Float + Alarm Depth (2-3 inches)

in + in = Inches

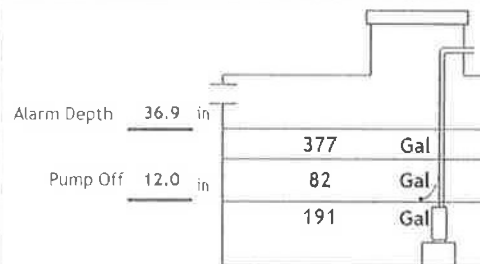
FLOAT SETTINGS

DEMAND DOSING

Inches for Dose:



TIMED DOSING





Bio-Microbics
Fixed Film Aerobic Treatment Unit
Flows 1500 gpd or less & Domestic Strength Waste

This Management Plan identifies some basic requirements for proper operation and maintenance of the Bio-Microbics wastewater treatment device for residential use up to 1500 gpd. Refer to the manufacturer's Operation and Maintenance Manual for Bio-Microbics wastewater treatment products for detailed instructions on proper system operation and maintenance. Refer to your soil treatment system management plan (below or above-grade) for additional management requirements.

The Bio-Microbics Manual, submitted by the manufacturer as part of the registration of this product in Minnesota, can be found at the Minnesota Pollution Control Agency's website <http://www.pca.state.mn.us/programs/ists/productregistration.html>.

SYSTEM COMPONENT	TASK	FREQUENCY	RESPONSIBLE PARTY
BIO-MICROBICS RetroFAST® and MicroFAST® Products with Flows up to 1,500 gpd and Domestic Strength Waste	Monitor alarm	On-going	Homeowner
	Clean vents on housing	On-going	Homeowner or Service Provider
	Monitor flow	Annually	Service Provider
	Clean air filter on blower	Annually	Service Provider
	Check mechanical and electrical components	Annually	Service Provider
	Perform operational field tests on influent/effluent quality including odor, color, turbidity, temperature, dissolved oxygen and pH as appropriate	Annually	Service Provider
	Sample effluent as required in the local Operating Permit	See Operating Permit*	Service Provider
	Check sludge level in all tanks; follow manufacturers recommendations for solids removal refilling with clean	Annually	Service Provider and Maintainer

	water with pumped		
	For seasonal use, follow manufacturers guidelines	As required based on seasonal usage	Service Provider

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

At the time of each service visit, Form 7-2: Aerobic Treatment Unit should be completed. See <http://www.onsiteconsortium.org/omspchecklists.html>. **Sampling requirements** are specified in local operating permits. The protocol for collection of wastewater samples is specified in the Bio-Microbics Manual for Minnesota.

Items not permitted in the Bio-Microbics wastewater systems are specified in the Bio-Microbics Manual for Minnesota.



This Management Plan identifies some basic requirements for proper operation and maintenance of the Salcor 3G Ultraviolet Light (UV) disinfection device for residential use. Refer to Salcor's detailed Operation and Maintenance Manual for detailed instructions on proper operation and maintenance requirements.

Information regarding the Salcor UV disinfection device can be found at the Minnesota Pollution Control Agency's website at: <http://www.pca.state.mn.us/programs/ists/productregistration.html>.

SYSTEM COMPONENT	TASK	FREQUENCY	RESPONSIBLE PARTY
Salcor UV disinfection device	Monitor alarm ¹	On-going	Homeowner
	Check influent/effluent quality odor, color, turbidity	Every six months before cleaning and replacing the bulb	Service Provider
	Collect sample for fecal coliform bacteria	Every six months before cleaning and/or replacing the bulb	Service Provider
	Clean bulb ²	Every six months	Service Provider
	Replace bulb ²	May be needed if sampling results do not meet prescribed Treatment Level A or B	
A minimum of every two years per manufacturer requirements			Service Provider

- 1 Alarm activation as indicated by an audible or visual sign indicates the UV light bulb which disinfects the effluent may be malfunctioning. The homeowner is required to contact the Service Provider immediately to have the bulb assessed and fixed. This is a condition of the operating permit – to keep the UV bulb in working order.
- 2 The UV light on this wastewater treatment system has the potential to cause serious eye damage if you look directly at the UV light. The UV light **should never** be looked at directly. Only trained Service Providers can clean and replace UV light bulbs.

Additional sampling requirements are specified in local operating permits. The protocol for collection of wastewater samples is specified in the Salcor O&M manual.

**WLP550/450/650-FDL BIO 500
GPD MICROFAST[®]0.5
TANK SPECIFICATIONS**

DIMENSIONS:
 WALL: 3"
 BOTTOM: 3"
 COVER: 5"
 MANHOLE: 24" I.D. PRECAST CONCRETE RISER
 HEIGHT: 57"
 LENGTH: 160" O.D.
 WIDTH: 72" O.D.
 BELOW INLET: 46" O.D.
 LIQUID LEVEL: 41"
 WEIGHT: 15,000 LBS.

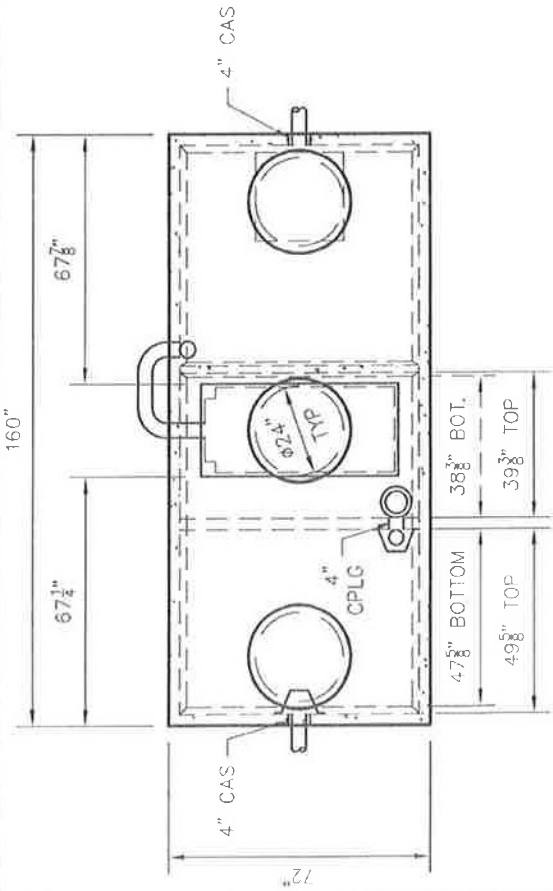
INLET AND OUTLET:
 4" CAST-A-SEAL BOOT OR EQUAL
INLET AND OUTLET BAFFLE AND FILTER:
 SEE DETAIL #10

LIQUID CAPACITY: 13.61 GAL/IN (SEPTIC)
 11.13 GAL/IN (BIO)
 15.93 GAL/IN (PUMP)

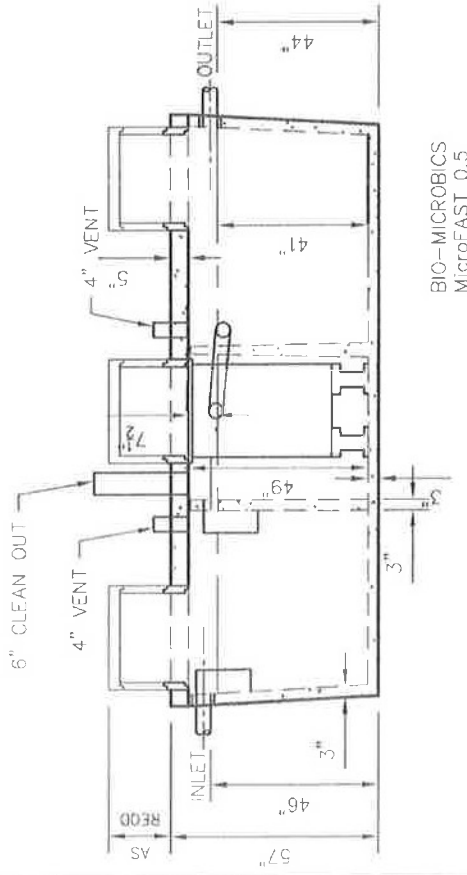
LOADING DESIGN: 8' 0" UNSATURATED SOIL

COVER: MIX DESIGN #8 (NO FIBER)
TANK: MIX DESIGN #9 (SMALL FIBER)

CUSTOMIZED TANKS:
 FOR CUSTOM TANKS CONTACT WIESER CONCRETE



TOP VIEW



SIDE VIEW

TANKS ARE MANUFACTURED TO MEET OR EXCEED ASTM C-1227 REQUIREMENTS

**DRAWINGS SUBMITTED
FOR APPROVAL**

APPROVED BY: _____
 APPROVAL DATE: _____
 PRODUCTS NEEDED BY: _____

SHEET NO.
 1 OF 1

WLP550/450/650-FDL
 500 GPD
 SEPTIC MANUAL

**WIESER
CONCRETE**
 W3716 US HWY 10 MAIDEN ROCK, W 54750
 800-325-8456

FILE: WLP550-450-650-FDL MICROFAST 500
 DATE: 00/00/00
 DRAWN BY: WCP
 SCALE: 1/4"=1'-0"
 REV. _____
 POST-POUR: _____
 PRE-POUR: _____

AITKIN COUNTY ENVIRONMENTAL SERVICES

APPLICATION for an OPERATING PERMIT FOR WASTEWATER TREATMENT AND DISPERSAL

PERMITTEE Ron Schreckenhurst PARCEL NUMBER 24-1-086400

ADDRESS 32681-355th Ave Aitkin MN 56431

LEGAL DESCRIPTION _____

TELEPHONE # 612-363-3404 GIS LOCATION _____

A. DESCRIPTION OF WASTEWATER TREATMENT AND DISPERSAL SYSTEM:
(Attach ISTS site evaluation and design; estimated cost of system construction, operation, monitoring, service, component replacement, and management; anticipated system life, hydraulic and organic loading rates)

Instal 2 Wieser three compartment treatment tank with 2 microfast O.S. Treatment unit. Reuse existing mound.

B. MONITORING PLAN AND REPORTING FREQUENCY:

PARAMETER	COMPLIANCE LIMIT	SAMPLE LOCATION	SAMPLE FREQUENCY	SAMPLE TYPE	REPORTING FREQUENCY
FLOW	450 gpd	Timer	Annual	recording	Annual
5-DAY BOD	N/A				
TOTAL NITROGEN					
TOTAL PHOSPHORUS					
TSS					
FATS, OILS AND GREASE		L			
FECAL COLIFORM	1000 per 100ml	Pump Tank	Annual	drop sample	Annual
SEPARATION DISTANCE	12"				

_____ will perform the monitoring of this septic system.

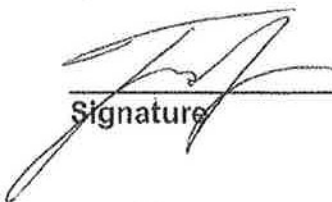
C. MAINTENANCE PLANS

PARAMETER	LOCATION	FREQUENCY

D. MITIGATION PLAN:

Adjust treatment & timer if
 necessary.

I hereby certify with my signature as the designer, that all data for the operating permit application is true and correct to the best of my knowledge. I agree to indemnify and hold Aitkin County harmless from loses, damages, costs and charges that may be incurred by the County because of the information submitted with this application.



 Signature

2624

 License Number

4/27/17

 Date

Travis Johnson

 Name (please print)

6074 Keystone Rd Mticez

 Address

320-983-2447

 Telephone #

AITKIN COUNTY ZONING

PERMIT NUMBER **42731**

PARCEL NUMBER 24-1-086400

Location 9 2 11 46 26
Lot Block Gov't. Lot Section Twp. Rge.

Issued May 5, 2017 To Ron Schreckenghaust
Nature of Authorization "Other" septic system
with operating permit # 527

New Construction _____ Alteration _____

Sewer Installation

Flood Plain and Lowest Floor Elev. _____

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.

This permit expires one year from date of issuance
NOT TRANSFERABLE

Kaleas.

ZONING ADMINISTRATOR

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

AITKIN COUNTY
CERTIFICATE OF INSTALLATION/~~NOTICE OF NONCOMPLIANCE~~

This certificate of installation/~~notice of noncompliance~~ has been issued this 15th day of May, 2017 to certify compliance/~~noncompliance~~ with Aitkin County's Subsurface Sewage Treatment System Ordinance.

The premises covered by this certificate are legally described as: _____
Lot 9 Block 2 ALLIES DUCK PASS

Section 11 Township 46 Range 26 Lake Section 10 Lake
PERMIT NO. 42731 Owner Name Rose Olson
Address 32681 355th Ave, Aitkin, MN 56431
Installer Name _____ Septic Check _____
Type of System Inspected _____ Tank replacement _____
Parcel Number 24-1-086400

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

**INDIVIDUAL SEWAGE TREATMENT SYSTEM INSPECTION FORM
AITKIN COUNTY, MINNESOTA**

Township Nordland Date of Inspection 5/11/2017 Permit Number 42731
 Owner Rose Olson Parcel Number 24-1-086400
 Project Address 32681 355th Ave Installer Septic Check
 City Aitkin Zip Code 56431 Replacement tank

New Repair DIST. or DROP BOX & TYPE _____

SETBACKS:
 Buildings to tank(s) _____
 Buildings to drainfield _____
 Well(s) 50' or 100' _____
 Lake/Creek/Wetland _____

TRENCHES, BEDS, OR GRAVELLESS LEACHFIELD:
 Trench depth _____
 Trench length _____
 Trench bottom width _____
 Trench spacing _____
 Drainfield rock below pipe _____
 Size of gravelless pipe _____
 Depth of backfill _____
 Absorption area: square feet _____
 lineal feet _____

SEPTIC TANKS: New Existing _____
 Number of tanks installed 1
 Liquid capacity and type Weiser 1650 Tri-chamber
 Type of baffle Plastic
 Inspection pipes 1 6"
 Manholes size 24"
 Manhole to grade Yes No _____
30" risers

MOUNDS: Existing
 Percent slope _____
 Upslope dike width _____
 Downslope dike width _____
 Sideslope dike width _____

PUMPS: New Existing _____
 Tank capacity and type 650G Pump tank - part of
 Pump manufacturer & model # Champion Tank
 Horsepower & GPM 0.4 HP 2960 CPE 4A
 Feet of head 16.1' min.
 Gallons per cycle 75G/cycle
 Size of discharge line 2"
 Type & location of alarm Elec Alarm on tank
 Water meter Event counter on tank

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)

Inspector's Comments: Tank has pretreatment unit in middle Chamber. Tying in to existing 10'x37' mound. 550G/450 PT chamber / 650 Bio Weiser tank
 Inspector's Signature Bryan Hargrave Installer's Signature _____

Permit 42.731
24-1-086400
Septic Check
5/11/2017



355TH AVE

Section 10
lake



Minnesota Pollution Control Agency

520 Lafayette Road North
St. Paul, MN 55155-4194

Compliance Inspection Form

Existing Subsurface Sewage Treatment Systems (SSTS)

Doc Type: Compliance and Enforcement

Inspection results based on Minnesota Pollution Control Agency (MPCA) requirements and attached forms – additional local requirements may also apply.

Submit completed form to Local Unit of Government (LUG) and system owner within 15 days

Included for Soils information
System replaced with pretreatment 1' separation req.

For local tracking purposes:

letter sent 3-14-17

System Status

System status on date (mm/dd/yyyy): 3/2/2017

Compliant – Certificate of Compliance
(Valid for 3 years from report date, unless shorter time frame outlined in Local Ordinance.)

Noncompliant – Notice of Noncompliance
(See Upgrade Requirements on page 3.)

Reason(s) for noncompliance (check all applicable)

- Impact on Public Health (Compliance Component #1) – Imminent threat to public health and safety
- Other Compliance Conditions (Compliance Component #3) – Imminent threat to public health and safety
- Tank Integrity (Compliance Component #2) – Failing to protect groundwater
- Other Compliance Conditions (Compliance Component #3) – Failing to protect groundwater
- Soil Separation (Compliance Component #4) – Failing to protect groundwater
- Operating permit/monitoring plan requirements (Compliance Component #5) – Noncompliant

Property Information

Parcel ID# or Sec/Twp/Range: 24-1-086400

Property address: 32681 355th Ave Aitkin MN 56431

Reason for inspection: Property Transfer

Property owner: Ron Schreckenghaust

Owner's phone: 6123633404

Owner's representative: _____

Representative phone: _____

Local regulatory authority: Aitkin County

Regulatory authority phone: 218-927-7342

Brief system description: 750/250 Combo tank to a mound.

Comments or recommendations:

Certification

I hereby certify that all the necessary information has been gathered to determine the compliance status of this system. No determination of future system performance has been nor can be made due to unknown conditions during system construction, possible abuse of the system, inadequate maintenance, or future water usage.

Inspector name: Tom O'neil

Certification number: 3365

Business name: _____

License number: 2132

Inspector signature: Tom O'neil

Phone number: (218)927-6070

Necessary or Locally Required Attachments

- Soil boring logs
- System/As-built drawing
- Forms per local ordinance
- Other information (list): _____

1. Impact on Public Health – Compliance component #1 of 5

Compliance criteria:

System discharges sewage to the ground surface.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
System discharges sewage to drain tile or surface waters.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
System causes sewage backup into dwelling or establishment.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

Any "yes" answer above indicates the system is an imminent threat to public health and safety.

Comments/Explanation:

Verification method(s):

- Searched for surface outlet
- Searched for seeping in yard/backup in home
- Excessive ponding in soil system/D-boxes
- Homeowner testimony (See Comments/Explanation)
- "Black soil" above soil dispersal system
- System requires "emergency" pumping
- Performed dye test
- Unable to verify (See Comments/Explanation)
- Other methods not listed (See Comments/Explanation)

2. Tank Integrity – Compliance component #2 of 5

Compliance criteria:

System consists of a seepage pit, cesspool, drywell, or leaching pit. <i>Seepage pits meeting 7080.2550 may be compliant if allowed in local ordinance.</i>	<input type="checkbox"/> Yes <input type="checkbox"/> No
Sewage tank(s) leak below their designed operating depth. If yes, which sewage tank(s) leaks:	<input type="checkbox"/> Yes <input type="checkbox"/> No

Any "yes" answer above indicates the system is failing to protect groundwater.

Comments/Explanation:

Tank not pumped due to failing drainfield

Verification method(s):

- Probed tank(s) bottom
- Examined construction records
- Examined Tank Integrity Form (Attach)
- Observed liquid level below operating depth
- Examined empty (pumped) tanks(s)
- Probed outside tank(s) for "black soil"
- Unable to verify (See Comments/Explanation)
- Other methods not listed (See Comments/Explanation)

3. Other Compliance Conditions – Compliance component #3 of 5

- a. Maintenance hole covers are damaged, cracked, unsecured, or appear to be structurally unsound. Yes* No Unknown
- b. Other issues (electrical hazards, etc.) to immediately and adversely impact public health or safety. Yes* No Unknown
***System is an imminent threat to public health and safety.**

Explain:

- c. System is non-protective of ground water for other conditions as determined by inspector. Yes* No
***System is failing to protect groundwater.**

Explain:

4. Soil Separation – Compliance component #4 of 5

Date of installation: 7/26/1983 Unknown
(mm/dd/yyyy)

Shoreland/Wellhead protection/Food beverage lodging? Yes No

Compliance criteria:

For systems built prior to April 1, 1996, and not located in Shoreland or Wellhead Protection Area or not serving a food, beverage or lodging establishment: Yes No

Drainfield has at least a two-foot vertical separation distance from periodically saturated soil or bedrock.

Non-performance systems built April 1, 1996, or later or for non-performance systems located in Shoreland or Wellhead Protection Areas or serving a food, beverage, or lodging establishment: Yes No

Drainfield has a three-foot vertical separation distance from periodically saturated soil or bedrock.*

"Experimental", "Other", or "Performance" systems built under pre-2008 Rules; Type IV or V systems built under 2008 Rules (7080.2350 or 7080.2400 (Advanced Inspector License required) Yes No

Drainfield meets the designed vertical separation distance from periodically saturated soil or bedrock.

Any "no" answer above indicates the system is failing to protect groundwater.

Verification method(s):

Soil observation does not expire. Previous soil observations by two independent parties are sufficient, unless site conditions have been altered or local requirements differ.

- Conducted soil observation(s) (Attach boring logs)
- Two previous verifications (Attach boring logs)
- Not applicable (Holding tank(s), no drainfield)
- Unable to verify (See Comments/Explanation)
- Other (See Comments/Explanation)

Comments/Explanation:

Indicate depths or elevations

A. Bottom of distribution media	100.1
B. Periodically saturated soil/bedrock	98.8
C. System separation	1.3
D. Required compliance separation*	31" - (2.55')

*May be reduced up to 15 percent if allowed by Local Ordinance.

5. Operating Permit and Nitrogen BMP* – Compliance component #5 of 5 Not applicable

Is the system operated under an Operating Permit? Yes No If "yes", A below is required

Is the system required to employ a Nitrogen BMP? Yes No If "yes", B below is required

BMP = Best Management Practice(s) specified in the system design

If the answer to both questions is "no", this section does not need to be completed.

Compliance criteria

- a. Operating Permit number: _____ Yes No
Have the Operating Permit requirements been met?
- b. Is the required nitrogen BMP in place and properly functioning? Yes No

Any "no" answer indicates Noncompliance.

Upgrade Requirements (Minn. Stat. § 115.55) An imminent threat to public health and safety (ITPHS) must be upgraded, replaced, or its use discontinued within ten months of receipt of this notice or within a shorter period if required by local ordinance. If the system is failing to protect ground water, the system must be upgraded, replaced, or its use discontinued within the time required by local ordinance. If an existing system is not failing as defined in law, and has at least two feet of design soil separation, then the system need not be upgraded, repaired, replaced, or its use discontinued, notwithstanding any local ordinance that is more strict. This provision does not apply to systems in shoreland areas, Wellhead Protection Areas, or those used in connection with food, beverage, and lodging establishments as defined in law.

