

FIELD EVALUATION SHEET

PRELIMINARY EVALUATION DATE 8-17-19, FIELD EVALUATION DATE 8-17-19
PROPERTY OWNER: Tom Sigg PHONE 612-619-6799
ADDRESS: 50078 405th Place CITY, STATE, ZIP: Palisade 56469
LEGAL DESCRIPTION: Lot 10 Blk 1 Northwood Shores
PIN# 52-1-045000 SEC 13 T 49 R 27 TWP NAME Un org
FIRE# _____ LAKE/RIVER Piquagamah LAKE CLASS RD OHWL FT _____

DESCRIPTION OF SOIL TREATMENT AREAS

	AREA #1	AREA #2	REFERENCE BM ELEV. <u>100"</u> FT
DISTURBED AREAS	YES ___ NO <u>X</u>	YES ___ NO ___	REFERENCE BM DESCRIPTION
COMPACTED AREAS	YES ___ NO <u>X</u>	YES ___ NO ___	<u>North west corner of T</u>
FLOODING	YES ___ NO <u>X</u>	YES ___ NO ___	_____
RUN ON POTENTIAL	YES ___ NO <u>X</u>	YES ___ NO ___	_____
SLOPE %	<u>6%</u>	YES ___ NO ___	_____
DIRECTION OF SLOPE	<u>westerly</u>	_____	_____
LANDSCAPE POSITION	<u>flat towards lake</u>	_____	_____
VEGETATION TYPES	<u>grass yard</u>	_____	_____

DEPTH TO STANDING WATER OR MOTTLED SOIL: BORING# 1 8", 1A _____, 2 9", 2A _____

BOTTOM ELEVATION—FIRST TRENCH OR BOTTOM OF ROCK BED: #1 _____ FT., #2 _____ FT.

SOIL SIZING FACTOR: SITE #1 1.67, SITE #2 _____

CONSTRUCTION RELATED ISSUES: Base 1500 combo to 10'x38' Rock Bed on 3' sand

LIC# 2088 SITE EVALUATOR SIGNATURE: Bob Bartel
SITE EVALUATOR NAME: Bob Bartel TELEPHONE# 218-831-10430

LUG REVIEW _____ DATE _____

Comments: _____

SOIL BORING LOGS ON REVERSE SIDE

52-1-045000

SOILS CHART'S FOR BOTH PROPOSED AND ALTERNATE SITES

1 (PROPOSED) SOILS DATA

DEPTH (INCHES)	TEXTURE	MUNSELL COLOR
5"	Top soil	10yr 3/3
1	Loam	7.5yr 4/4
8"		
	Cl mottles	7.5yr 4/2

2 (PROPOSED) SOILS DATA

DEPTH (INCHES)	TEXTURE	MUNSELL COLOR
5"	Top soil	10yr 3/3
1	Loam	7.5yr 4/4
9"		
	Cl mottles	7.5yr 4/2

1 (ALTERNATE) SOILS DATA

DEPTH (INCHES)	TEXTURE	MUNSELL COLOR
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2 (ALTERNATE) SOILS DATA

DEPTH (INCHES)	TEXTURE	MUNSELL COLOR
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ADDITIONAL SOIL BORINGS MAY BE REQUIRED

MOUND DESIGN WORK SHEET (For Flows up to 1200 gpd)

52-1-045000

A. Average Design FLOW

Estimated 450 gpd (see figure A-1)
 or measured _____ x 1.5 (safety factor) = _____ gpd

A-1: Estimated Sewage Flows in Gallons per Day

number of bedrooms	Class I	Class II	Class III	Class IV
2	300	225	180	60% of the values in the Class I, II, or III columns.
3	450	300	218	
4	600	375	256	
5	750	450	294	
6	900	525	332	
7	1050	600	370	
8	1200	675	408	

B. SEPTIC TANK Capacity

1500 ^{combo} gallons (see figure C-1)

C-1: Septic Tank Capacities (in gallons)

Number of Bedrooms	Minimum Liquid Capacity	Liquid capacity with garbage disposal	Liquid capacity with disposal lift inside
2 or less	750	1125	1500
3 or 4	1000	1500	2000
5 or 6	1500	2250	3000
7, 8 or 9	2000	3000	4000

C. SOILS (refer to site evaluation)

1. Depth to restricting layer = 8" feet
2. Depth of percolation tests = _____ feet
3. Texture loam
Percolation rate _____ mpi
4. Soil loading rate 2.00 gpd/sqft (see figure D-33)
5. Percent land slope 6 %

D. ROCK LAYER DIMENSIONS

1. Multiply average design flow (A) by 0.83 to obtain required rock layer area.
450 gpd x 0.83 sqft/gpd = 380 sqft
2. Determine rock layer width = 0.83 sqft/gpd x linear Loading Rate (LLR)
0.83 sqft/gpd x _____ gpd/sqft = _____ ft
3. Length of rock layer = area ÷ width =
380 sqft (D1) ÷ 10 ft (D2) = 38 ft

Mound LLR

< 120 MPI	≤ 12
≥ 120 MPI	≤ 6

E. ROCK VOLUME

1. Multiply rock area (D1) by rock depth of 1 ft to get cubic feet of rock
380 sqft x 1 ft = 380 cuft
2. Divide cuft by 27 cuft/cuyd to get cubic yards
380 cuft ÷ 27 cuyd/cuft = 14 cuyd
3. Multiply cubic yards by 1.4 to get weight of rock in tons
14 cuyd x 1.4 ton/cuyd = 20 tons

F. SEWAGE ABSORPTION WIDTH

Absorption width equals absorption ratio (See Figure D-33) times rock layer width (D2)
2.00 x 10 ft = 20 ft

D-33: Absorption Width Sizing Table

Percolation Rate in Minutes per Inch (MPI)	Soil Texture	Loading Rate Gallons per day per square foot	Absorption Ratio
Faster than 5	Coarse Sand Medium Sand Leamy Sand Fine Sand	1.20	1.00
6 to 15	Sandy Loam	0.75	1.50
16 to 30	Loam	0.60	2.00
31 to 45	Silt Loam	0.50	2.00
46 to 60	Silt Sandy Clay Loam	0.45	2.67
61 to 120	Silty Clay Loam Clay Loam	0.35	5.00
Slower than 120*	Silty Clay Sandy Clay Clay		

*Systems designed for these soils must be other of performance

52-1-045060
 <=1% land slope

G. Mound Slope Width and Length
 (landslope less than or equal to 1%)

1. Absorption width (F) 20 ft.

2. Calculate mound size

a. Determine depth of clean sand fill

at upslope edge of rock layer = 3 ft
 minus the distance to restricting layer (C1)

3 ft - 0 ft = 3 ft

b. Mound height at the upslope edge of rock layer = depth of clean sand for separation (G2a) at upslope edge plus depth of rock layer (1 ft) plus depth of cover (1 ft)

3 ft + 1ft + 1ft = 5 ft

c. Berm width = upslope mound height (G2b) times 4 (4 is recommended, but could be 3-12)

5 x 4 = 20 ft

d. The total landscape width is the sum of berm (G2c) width plus rock layer width (D2) plus berm width (G2c):

20 ft + 10 ft + 20 ft = 50 ft

e. Additional width necessary for absorption = absorption width (F) minus the landscape width (G2c)

20 ft - 20 ft = 0 ft, if number is negative (<0) skip to g

f. Final berm width = additional width (G2e) plus the berm width (G2c)

0 ft + 20 ft = 20 ft

g. Total mound width is the sum of berm width (G2f or G2c) plus rock layer width (D2) plus berm width (G2f or G2c):

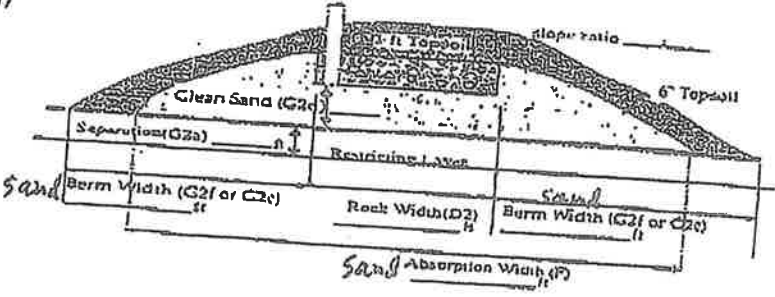
20 ft + 10 ft + 20 ft = 50 ft

h. Total mound length is the sum of berm (G2f or G2c) plus rock layer length (D3) plus berm (G2f or G2c):

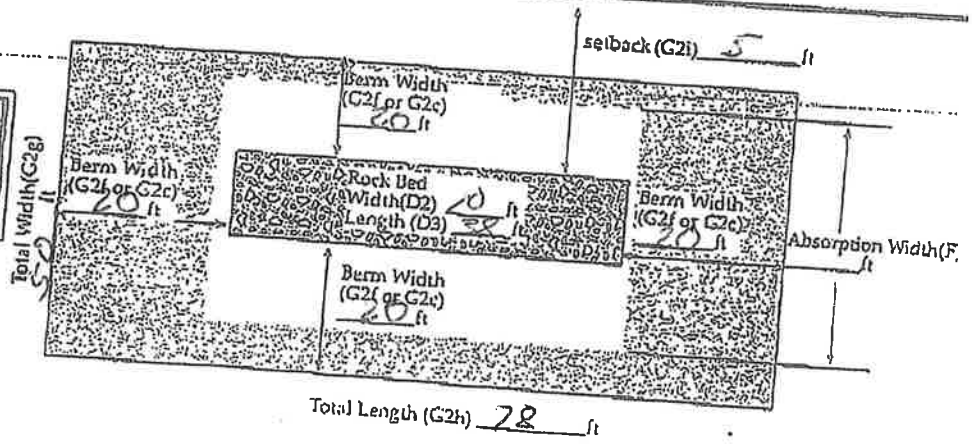
20 ft + 28 ft + 20 ft = 78 ft

i. Setbacks from the rockbed are calculated as follows: the absorption width (F) minus the rock bed width (D2) divided by 2:

(20 ft - 10 ft) ÷ 2 = 5 ft



Final Dimensions:
50 x 78



I hereby certify that I have completed this work in accordance with applicable ordinances, rules and laws.
Bob Bault (signature) 2028 (license #) 8-17-19 (date)

PRESSURE DISTRIBUTION SYSTEM

52-1-045000

- Select number of perforated laterals 3
- Select perforation spacing = 3 ft
- Since perforations should not be placed closer than 1 foot to the edge of the rock layer (see diagram), subtract 2 feet from the rock layer length.

$\frac{38}{\text{Rock layer length}} - 2 \text{ ft} = \underline{36} \text{ ft}$

- Determine the number of spaces between perforations. Divide the length (3) by perforation spacing (2) and round down to nearest whole number.

Perforation spacing = $\underline{36} \text{ ft} \div \underline{3} \text{ ft} = \underline{12} \text{ spaces}$

- Number of perforations is equal to one plus the number of perforation spaces (4). Check figure E-4 to assure the number of perforations per lateral guarantees <10% discharge variation.

$\underline{12} \text{ spaces} + 1 = \underline{13} \text{ perforations/lateral}$

- A. Total number of perforations = perforations per lateral (5) times number of laterals (1)

$\underline{13} \text{ perfs/lat} \times \underline{3} \text{ lat} = \underline{39} \text{ perforations}$

- Calculate the square footage per perforation. Should be 6-10 sqft/perf. Does not apply to at-grades.
Rock bed area = rock width (ft) x rock length (ft)

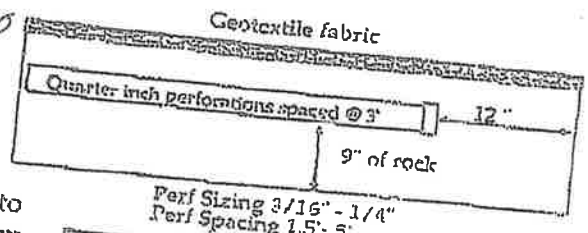
$\underline{10} \text{ ft} \times \underline{38} \text{ ft} = \underline{380} \text{ sqft}$
Square foot per perforation = Rock bed area \div number of perfs (6)

- Determine required flow rate by multiplying the total number of perforations (6A) by flow per perforation (see figure E-6)

$\underline{39} \text{ perfs} \times \underline{74} \text{ gpm/perf} = \underline{29} \text{ gpm}$

- If laterals are connected to header pipe as shown on upper example, to select minimum required lateral diameter; enter figure E-4 with perforation spacing (2) and number of perforations per lateral (5) Select minimum diameter for perforated lateral = 2 inches.

- If perforated lateral system is attached to manifold pipe near the center, lower diagram, perforated lateral length (3) and number of perforations per lateral (5) will be approximately one half of that in step 8. Using these values, select minimum diameter for perforated lateral = 2 inches.



E-4: Maximum allowable number of 1/4-inch perforations per lateral to guarantee <10% discharge variation

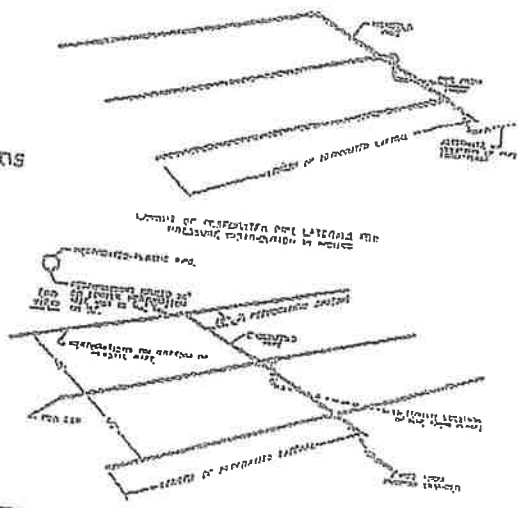
perforation spacing (feet)	1 inch	1.25 inch	1.5 inch	2.0 inch
2.5	8	14	10	20
3.0	8	13	17	26
3.3	7	12	16	25
4.0	7	11	15	23
5.0	6	10	14	22

E-6: Perforation Discharge in gpm

head (feet)	perforation diameter (inches)			
	1/8	3/16	7/32	1/4
1.0 ^a	0.18	0.42	0.56	0.74
2.0 ^b	0.26	0.59	0.80	1.04
5.0	0.41	0.94	1.26	1.65

^a Use 1.0 foot for single-family homes.
^b Use 2.0 feet for anything else.

MANIFOLD LOCATED AT END OF PRESSURE DISTRIBUTION SYSTEM



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Bob Bustel (signature) 2088 (license #) 8-17-19 (date)

PUMP SELECTION PROCEDURE

52-1-045-000

1. Determine pump capacity:

A. Gravity distribution

1. Minimum required discharge is 10 gpm
2. Maximum suggested discharge is 45 gpm. For other establishments at least 10% greater than the water supply rate, but no faster than the rate at which effluent will flow out of the distribution device.

B. Pressure distribution

See pressure distribution work sheet

From A or B Selected pump capacity: 29 gpm

2. Determine pump head requirements:

A. Elevation difference between pump and point of discharge?
5 feet

B. Special head requirement? (See Figure at right - Special Head Requirements)
5 feet

C. Calculate Friction loss

1. Select pipe diameter 2 in

2. Enter Figure E-9 with gpm (1A or B) and pipe diameter (C1).
Read friction loss in feet per 100 feet from Figure E-9

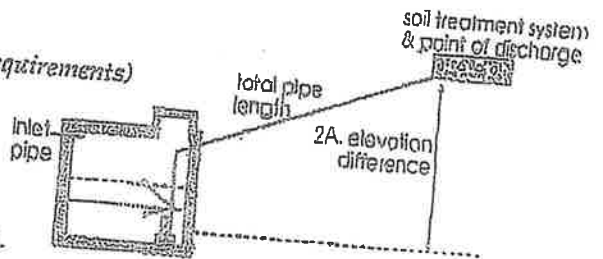
Friction Loss = 1.53 ft/100ft of pipe

3. Determine total pipe length from pump discharge to soil treatment discharge point. Estimate by adding 25 percent to pipe length for fitting loss. Total pipe length times 1.25 = equivalent pipe length
40 feet \times 1.25 = 50 feet

4. Calculate total friction loss by multiplying friction loss (C2) in ft/100 ft by the equivalent pipe length (C3) and divide by 100.
= 1.53 ft/100ft \times 50 + 100 = 5.7 ft

D. Total head required is the sum of elevation difference (A), special head requirements (B), and total friction loss (C4)
5 ft + 5 ft + 5.7 ft =

Total head: 5.7 feet



Special Head Requirements	
Gravity Distribution	0 ft
Pressure Distribution	5 ft

flow rate gpm	E-9: Friction Loss in Plastic Pipe Per 100 feet		
	nominal pipe diameter		
	1.5"	2"	3"
20	2.47	0.73	0.11
25	3.73	1.11	0.16
30	5.23	1.55	0.23
35	6.96	2.06	0.30
40	8.91	2.64	0.39
45	11.07	3.28	0.48
50	13.46	3.99	0.58
55		4.76	0.70
60		5.60	0.82
65		6.48	0.95
70		7.44	1.09

3. Pump selection

A pump must be selected to deliver at least 29 gpm (1A or B) with at least 5.7 feet of total head (2D)

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

Bob Bull (signature)

(signature)

2088 (license #)

(license #)

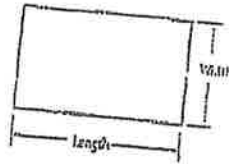
8-17-19 (date)

(date)

DOSING CHAMBER SIZING

52-1-045006

- Determine area
 - Rectangular area = $L \times W$
_____ x _____ = _____ square feet
 - Circle area = $\pi (3.14) \times \text{radius in feet} \times \text{radius in feet}$
 $3.14 \times \text{ft} \times \text{ft} = \text{_____ sqft}$
 - Get area from manufacturer: _____ sqft



- Calculate gallons per inch
There are 7.5 gallons per cubic foot of volume, therefore multiply the area (1A, B or C) times the conversion factor and divide by 12 inches per foot to calculate gallon per inch.
Area x 7.5 ÷ 12 = _____ sqft ÷ 7.5 ÷ 12 in/ft = 11.81 gallon per inch

Legal Tank:
500 gallons or
100% the Daily flow
or
Alternating Pumps

- Calculate total tank volume
 - Depth from bottom of inlet pipe to tank bottom 46 in
 - Total tank volume = depth from bottom of inlet pipe to tank bottom (3A) x gal/in (2)
= 46 in x 11.81 gal/in = 543 gal

- Calculate gallons to cover pump (with 2-3 inches of water covering pump)
(Pump and block height (inch) + 2 inch) x gallon/inch
(12 in + 2 in) x 11.81 gal/in = 165 gallon

- Calculate total pumpout volume
 - Select pump size for 4-5 does per day. Gallon per dose = gpd (see figure A-1)
/ doses per day = 450 gpd ÷ 4 doses/day = 112.5 gallons
 - Calculate drainback

A-1: Estimated Sewage Flows in Gallons per Day

number of bedrooms	Class I	Class II	Class III	Class IV
2	300	225	160	105
3	450	300	210	of the
4	600	375	250	volumes
5	750	450	290	in the
6	900	525	330	Class I
7	1050	600	370	II, III
8	1200	675	400	columns

- Determine total pipe length, 40 feet
- Determine liquid volume of pipe, 17 gal per ft (see figure E-20)
- Drainback quantity = 40 ft (SB1) x 17 gal per ft (SB2) = 68 gal
- Total pump out volume = dose volume (5A) + drainback (SB3)
112.5 gal + 68 gal = 119.3 Total gallon

E-20: Volume of Liquid in Pipe

Pipe Diameter inches	Gallons per foot
1	0.045
1.25	0.078
1.5	0.11
2	0.17
2.5	0.25
3	0.38
4	0.66

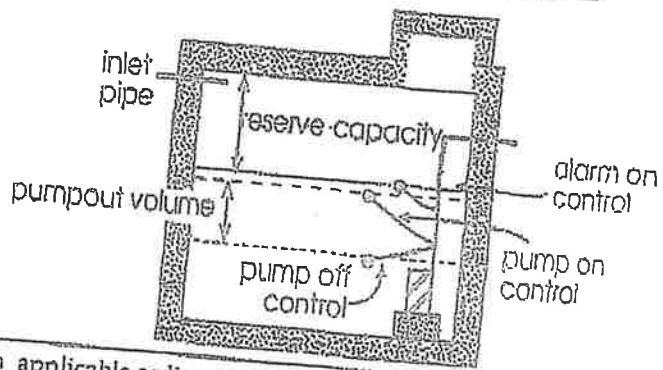
- Float separation distance (using total pumpout volume)
Total pumpout volume (5C) ÷ gal/inch (2)
119.3 gal ÷ 11.81 gal/in = 9 inch

- Calculate volume for alarm (typically 2 to 3 inches)
Alarm depth (inch) x gallon/inch (2) = 11.81 in x 2 gal/in = 23.6 gal

- Calculate total gallon = gallons over pump (4) + gallons pumpout (5C) + gallons alarm (7)
112.5 gal + 119.3 gal + 23.6 gal = 308 gallons

- Total Tank Depth = total gallon (8) ÷ gallon/inch (2)
308 gal ÷ 11.81 gal/in = 60 in

Recommended:
Calculate reserve capacity (75% the daily flow)
Daily flow x .75 = 450 x .75 = 338 gallons



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Bob Burtel (signature) 2088 (license #) 8-17-19 (date)

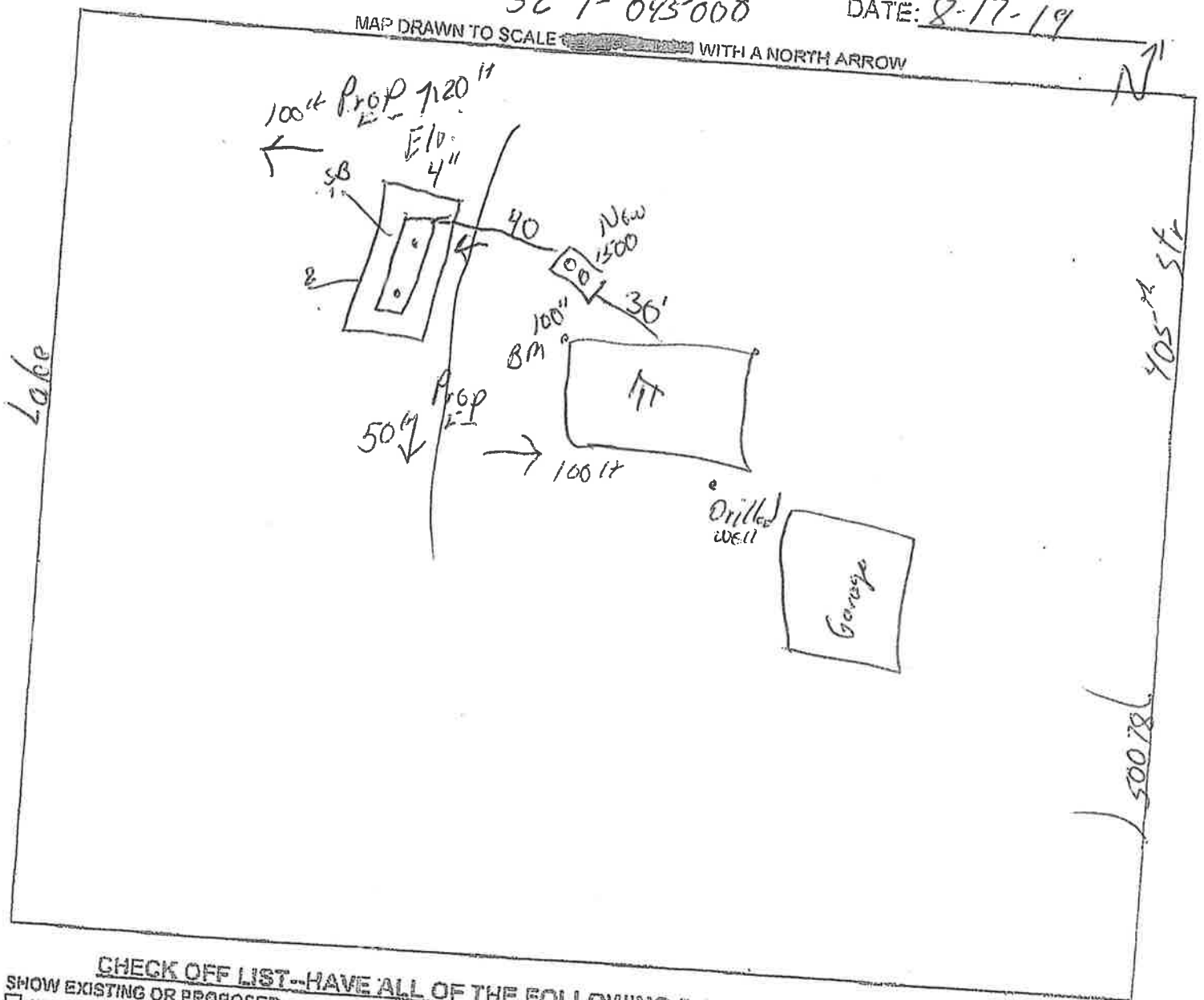
CLIENT: Tom Sipe

SKETCH SHEET

52-1-045000

DATE: 8-17-19

MAP DRAWN TO SCALE WITH A NORTH ARROW



CHECK OFF LIST--HAVE ALL OF THE FOLLOWING BEEN DRAWN ON THE MAP??

- SHOW EXISTING OR PROPOSED
- WATER WELLS WITHIN 100 FT OF TREATMENT AREAS
- PRESSURE WATER LINES WITHIN 10 FT OF TREATMENT AREAS
- STRUCTURES
- ALL SOIL TREATMENT AREAS
- HORIZONTAL AND VERTICAL REFERENCE
- POINT OF SOIL BORINGS
- LOT EASEMENTS
- DISTURBED/COMPACTED AREAS
- SITE PROTECTION--LATHE AND RIBBON EVERY 15 FT
- ACCESS ROUTE FOR TANK MAINTENANCE
- REQUIRED SETBACKS
- STRUCTURES
- OHWL
- LOT IMPROVEMENTS
- ALL ISTS COMPONENTS
- DIRECTION OF SLOPE
- ALL LOT DIMENSIONS
- PROPERTY LINES

INDICATE ELEVATIONS

- BENCHMARK 100' / 4''
- ELEVATION OF SEWER LINE @ HOUSE 96''
- ELEVATION @ TANK INLET 76''
- ELEVATION @ BOTTOM OF ROCK LAYER 40''
- ELEVATION @ BOTTOM OF BORING OR RESTRICTIVE LAYER 4''
- ELEVATION OF PUMP 30''
- ELEVATION OF DISTRIBUTION DEVICE 49''

DESIGNER SIGNATURE Bob Bault
LICENSE# 2088

DATE 8-17-19

52-1-045060

Subsurface Sewage Treatment System Management Plan

Property Owner: Tom Sipe

Phone: 612-619-6799 Date: 8-17-19

Mailing Address: 6732 83rd Pl. N

City: Brooklyn Park Zip: 55445

Site Address: 56078 405th Place

City: Palisade Zip: 56469

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 service provider.

System Designer: check every _____ months.

Local Government: check every _____ months.

State Requirement: check every 36 months.

(State requirements are based on MN Rules Chapter 7000.2450, Subp. 2 & 3)

My System needs to be checked every _____ months.

Homeowner Management Tasks

Leaks - Check (look, listen) for leaks in toilets and dripping faucets. Repair leaks promptly.

Surfacing sewage - Regularly check for wet or spongy soil around your soil treatment area.

Effluent filter - Inspect and clean twice a year or more.

Alarms - Alarm signals when there is a problem. Contact a service provider any time an alarm signals.

Event counter or water meter - Record your water use.

-recommend meter readings be conducted (circle one): DAILY WEEKLY MONTHLY

Professional Management Tasks

- Check to make sure tank is not leaking
- Check and clean the in-tank effluent filter
- Check the sludge/scum layer levels in all septic tanks
- Recommend if tank should be pumped
- Check inlet and outlet baffles
- Check the drainfield effluent levels in the rock layer
- Check the pump and alarm system functions
- Check wiring for corrosion and function
- Check dissolved oxygen and effluent temperature in tank
- Provide homeowner with list of results and any action to be taken
- Flush and clean laterals if cleanouts exist

"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 the 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: _____

Designer Signature: Bob Bald

Date: 8-17-19

See Reverse Side for Management Log

52-1-045600
Maintenance Log

Activity	Date Accomplished
<i>Check frequently:</i>	
* Leaks: check for plumbing leaks	
* Soil treatment area check for surfacing	
Lint filter: check, clean if needed	
Effluent screen: if owner-maintained	
Water usage rate (monitor frequency _____)	
<i>Check annually:</i>	
* Caps: inspect, replace if needed	
* Sludge & Scum/Pump	
* Inlet & Outlet baffles	
* Drainfield effluent leaks	
Pump, alarm, wiring	
Flush & clean laterals if cleanouts exists	
Other:	
Other:	

Notes: _____

Mitigation/corrective action plan: _____

**MAINTENANCE SERVICE, MONITORING AND INSPECTION
CONTRACT
FOR INDIVIDUAL SEWAGE TREATMENT SYSTEM**

It is hereby agreed this 11 day of May, 2000 by and between
Bob Bartel (Inspector) and Tom Sipa (client)

(Client) Name & Address

Thomas Sipa

Street Address 50078 405th Places

City, State, Zip Palisade 50469

That in consideration of the payments provided herein, the Inspector shall provide services to perform Preventative Maintenance, Monitoring and Inspection of the Individual Sewage Treatment System (ISTS) located at the property described in the Aitkin County Operating Permit.

Each inspection includes an examination of the ISTS followed by a written report to the client. This inspection report shall contain recommendations for operation and maintenance for failure-preventative measures, if any are deemed appropriate by the inspector and a list of recommended corrective measures or replacement parts. The Inspector is authorized to submit a copy of the report to the Aitkin County Environmental Services Department.

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 Inspector can only contract or subcontract for parts or labor after authorization. Billings for service calls shall be made on a case by case basis. This contract only covers maintenance, monitoring and inspection services per current Aitkin County Operating Permit and does not cover alarm calls of any kind.

The Inspector shall be provided access to the site and the system in order to perform the following services:

SEPTIC TANK AND LIFT STATIONS INSPECTION

(check the boxes needed to fill the requirements of the Operating Permit)

Check septic tank and compartments for solids buildup and general appearance. If necessary, have tanks pumped (cost of pumping is the responsibility of the client).

Check effluent filter for buildup and clean, if applicable.

Check pumping system, including control panel and floats.

Record and date the readings of the elapsed time meter and cycle counter(s), if applicable.

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

Other: _____

**If the septic tank or lift stations need pumping to be in compliance with the operating permit the cost of the pumping is the responsibility of the Client.

TREATMENT DEVICE

Inspect pretreatment unit (aerobic tank, sand filter, etc.) per manufacturer's recommendations, if applicable.

Inspect and clean any parts per manufacturer's recommendations.

Inspect and clean laterals, if applicable.

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

Sample effluent per Operating Permit monitoring requirements.

(Cost of sampling and analysis is the responsibility of the Client)

Other: _____

DISPERSAL FIELD

Inspect for visible signs of failure (surface discharge, soggy ground, wet spots, settling, etc.)

If liquid level monitors are installed, levels will be observed and recorded.

Flush filters and clean cartridges, if applicable.

Check field control unit solenoid operations or manual control, if applicable.

Other: _____

In no event shall the Inspector 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 or 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.

This contract shall be effective: Beginning after installed cert. issued
and Ending 2 years later

Cost for Maintenance Service, Monitoring and Inspection Contract is:
\$ _____ /yr. For _____ years totaling \$ _____

The Inspector 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 of the amounts paid in advance for service. This contract may be renewed 30 days from the ending date.

Payment for all services shall be paid _____

Client:

Inspector:

Sign: _____

Sign: Bob Bartel

Print: Tom Sipe

Print: Bob Bartel

Date: 2-11-20

Date: 5-11-20

AITKIN COUNTY ENVIRONMENTAL SERVICES

APPLICATION for an OPERATING PERMIT FOR WASTEWATER TREATMENT AND DISPERSAL

PERMITTEE Tom Sipe PARCEL NUMBER 52-1-045000
 ADDRESS 50028 405th Place Palisade 56469
 LEGAL DESCRIPTION lot 10 Blk 1 Northwood Shores
 TELEPHONE # 612-619-6799 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)

Event counter on 3' sand base

B. MONITORING PLAN AND REPORTING FREQUENCY:

PARAMETER	COMPLIANCE LIMIT	SAMPLE LOCATION	SAMPLE FREQUENCY	SAMPLE TYPE	REPORTING FREQUENCY
FLOW		<u>and do. l. flow</u>			
5-DAY BOD		<u>Event counter</u>	<u>on motor at lift pump</u>	<u>Event counter</u>	
TOTAL NITROGEN			<u>monthly</u>		
TOTAL PHOSPHORUS					
TSS					
FATS, OILS AND GREASE					
FECAL COLIFORM					
SEPARATION DISTANCE					

inspect drainfield for leaks annually

_____ will perform the monitoring of this septic system.

C. MAINTENANCE PLANS

PARAMETER	LOCATION	FREQUENCY
<i>Drain Field</i>		<i>Annually</i>

D. MITIGATION PLAN:

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.

Bob Ba-tel
Signature

2088
License Number

5-11-20
Date

Bob Ba-tel
Name (please print)

P.O. Box 62
Address

218-831-16430
Telephone #