

Preliminary & Field Evaluation Form

Type III Mound

www.SepticResource.com vers 12.4

Owner Information			
Date	<u>8/24/2022</u>	Sec / Twp / Rng	<u>S-13, T-47, R-27</u>
Parcel ID	<u>01-0-019600</u>	LUG (county, city, township)	<u>Aitkin Co.</u>
Property Owner:	<u>Mark Kirchhof</u>	Owners address (if different)	
Property Address:	<u>South of 37973 410th Ave. Aitkin</u>	<u>10742 SE Shore Drive</u>	
City / State / Zip:		<u>Merrifield MN 56465</u>	

Flow Information and Waste Type / Strength			
Estimated Design flow	<u>450</u>	Anticipated Waste strength	<input type="checkbox"/> Hi Strength <input checked="" type="checkbox"/> Domestic
Comments: Type III Mound 10" to Mottles Located in a Flood Plane Flood Elv. = 1202.9 Nav29 Surveyor's Double Nail BM = 1202.9' or Septic Elv. = 99'		Any Non-Domestic Waste	<input type="checkbox"/> Yes (class V) <input checked="" type="checkbox"/> No
		Sewage ejector/grinder pump	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
		Water softener	<input type="checkbox"/> Yes <input type="checkbox"/> No
		Garbage Disposal	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
		Daycare / In home business	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

Site Information					
Existing & proposed lot improvements located (see site map)	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Well casing depth	Proposed deep well	
Easements on lot located (see site map)	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Drainfield w/in 100' of residential well	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Property lines determined (see site map)	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	Site w/in 200' of transient noncommunity water supply (TNCWS)	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Req'd setbacks determined (see site map)	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	Site w/in an inner wellhead mgmt zone (CWS/NTNCWS)	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Utilities located & identified (gopher state one call)	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	Buried water supply pipe w/in 50' of system	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Access for system maintenance (shown on site map)	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	Site located in Shoreland (w/in 1000' of lake, 300' of river)	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Soil treatment area protected	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	Site map prepared with previous items included	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
Construction related issues	_____ _____				

Soil Information

		Evidence of site:
Original soils	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Cut <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Filled <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Compacted <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Disturbed <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Soil logs completed and attached	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Perk test completed and attached (if applicable) <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Soil loading rate (gpd/ft ²)	<u>0.60</u>	Percolation rate (if applicable) _____
Depth/elev to SHWT	<u>10"</u>	Flooding or run-on potential <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No (comments)
Depth to system bottom maximum (or elev minimum)	<u>(+36")</u>	Flood elevation (if applicable) <u>1202.9' NAV29</u>
Depth/elev to standing water (if applicable)	_____	Elevation of ordinary high water level (if applicable) _____
Depth/elev to bedrock (if applicable)	_____	Floodplain designation and elev - 100 yr/10 yr (if applicable) <u>1202.9' NAV29</u>
Soil Survey information determined (see attachment)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Differences between soil survey and field evaluation (if applicable)	_____	

Thereby certify this evaluation was completed in accordance with MN 7080 and any local req's.


Designer Signature

Brummer Septic LLC.
Company

L-1347
License #

Thereby certify this

Soil Observation Log

www.SepticResource.com vers 12.4

Owner Information	
Property Owner / project: <u>Mark Kirchhof</u>	Date <u>8/24/2022</u>
Property Address / PID: <u>South of 37973 410th Ave. Aitkin</u>	

Soil Survey Information	
<input type="checkbox"/> refer to attached soil survey	
Parent mat'l's:	<input type="checkbox"/> Till <input type="checkbox"/> Outwash <input checked="" type="checkbox"/> Lacustrine <input type="checkbox"/> Alluvium <input type="checkbox"/> Organic <input type="checkbox"/> Bedrock
landscape position:	<input type="checkbox"/> Summit <input type="checkbox"/> Shoulder <input type="checkbox"/> Side slope <input type="checkbox"/> Toe slope Flat
soil survey map units:	<u>672</u> slope <u>0</u> % direction- <u> </u>

Soil Log #1							
		<input checked="" type="checkbox"/> Boring <input type="checkbox"/> Pit	Elevation <u>97'</u>	Depth to SHWT <u>10"</u>			
Depth (in)	Texture	fragment %	matrix color	redox color	consistence	grade	shape
0 - 10	Topsoil Loam	<35	10YR2/1		Friable	Loose	Blocky
10 - 14	Silt Loam	<35	2.5YR3/2	7.5YR4/6	Friable	Weak	Blocky
14 - 18	Clay Loam	<35	2.5YR4/2	7.5YR4/6	Friable	Weak	Blocky
Comments:							

South of 37973 410th Ave. Aitkin

Soil Log #2

		<input checked="" type="checkbox"/> Boring	<input type="checkbox"/> Pit	Elevation <u>97</u>	Depth to SHWT <u>11"</u>		
Depth (in)	Texture	fragment %	matrix color	redox color	consistence	grade	shape
0 - 11"	Topsoil Loam	<35	10YR2/1		Friable	Loose	Blocky
11 - 14	Silt Loam	<35	2.5YR3/2	7.5YR4/6	Friable	Weak	Blocky
14 - 18	Clay Loam	<35	2.5YR4/2	7.5YR4/6	Friable	Weak	Blocky

Soil Log #3

		<input type="checkbox"/> Boring	<input type="checkbox"/> Pit	Elevation _____	Depth to SHWT _____		
Depth (in)	Texture	fragment %	matrix color	redox color	consistence	grade	shape
		<35 35 - 50 >50			loose friable firm rigid	loose weak moderate strong	single grain granular blocky prismatic platy massive
		<35 35 - 50 >50			loose friable firm rigid	loose weak moderate strong	single grain granular blocky prismatic platy massive
		<35 35 - 50 >50			loose friable firm rigid	loose weak moderate strong	single grain granular blocky prismatic platy massive
		<35 35 - 50 >50			loose friable firm rigid	loose weak moderate strong	single grain granular blocky prismatic platy massive
		<35 35 - 50 >50			loose friable firm rigid	loose weak moderate strong	single grain granular blocky prismatic platy massive

I hereby certify this work was completed in accordance with MN 7080 and any local req's.


 Designer Signature

Brummer Septic LLC.
 Company

L-1347
 License #

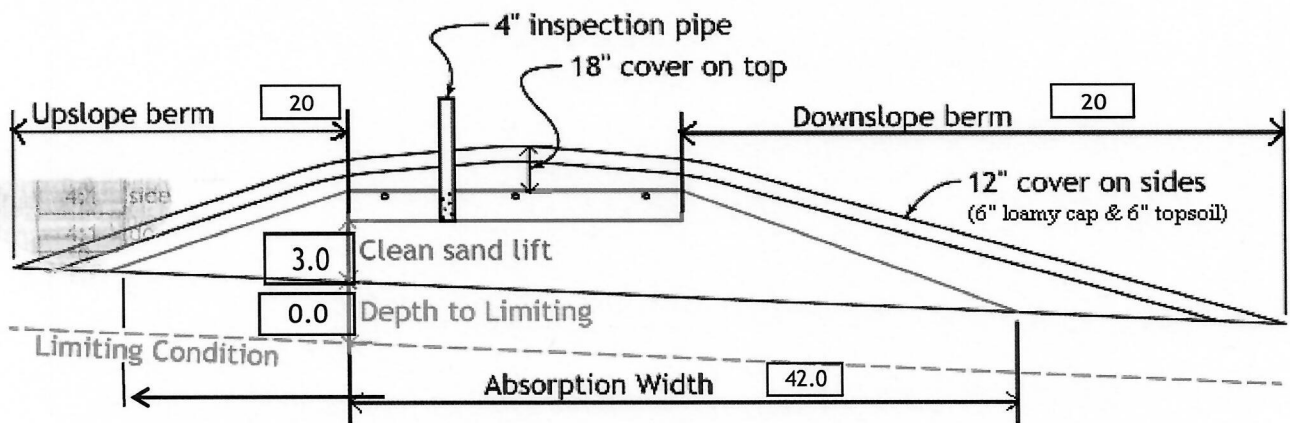
Mound Design - Aitkin county

Property Owner: Mark Kirchof Date: 8/24/2022
 Site Address: South of 37973 410th Ave. Aitkin PID: 01-0-019600
 Comments: Type III because of soils.

Instructions: = enter data = adjust if desired = computer calculated - DO NOT CHANGE!

- 1) bedroom Type Residential System
- 2) GPD design flow
- 3) Garbage disposal or pumped to septic Install 1650 Jacobson 2/Compartment tank
- 4) Gal Septic tank (code minimum) Gal Septic tank (design size / LUG req'd)
 Tank options: Effluent filter & alarm req'd
- 5) GPD/ft² mound sand loading rate contour loading rate of req's a min ft. long rockbed
- 6) ft rockbed width ft rockbed length
- 7) ft lateral spacing ft perforation spacing (maximum of 3 for both)
 manifold connection
- 8) laterals feet long perfs / lateral perfs total
 (1/2 a perf means the first perf starts at the middle feed manifold)
- 9) inch perfs at feet residual head gives gpm flow rate per perforation
 for this perf size & spacing, & pipe size on line 12, max perfs/lateral = , line #8 must be less --> OK
- 10) doses per day (4 minimum)
- 11) gallons per dose (treatment volume) 1.50 5x
- 12) inch diameter laterals must be used to meet "4x pipe volume" requirement 2.00 3x
- 13) feet of inch supply line leads to gallons of drainback volume
 (Tip: "top feed" manifold to control the drainback)
- 14) gallons TOTAL pump out volume (treatment + drainback)
- 15) feet vertical lift from pump to mound laterals, leads to a:
- 16) GPM @ feet of head, Pump requirement (note: >50gpm may require an extra 3-6' of head)
- 17) gal Dose tank (code minimum) gal Dose tank (design size / LUG req'd) at gpi
 leads to a
- 18) inch swing on Demand float, or timed dosing of min ON (confirm pump rate with drawdown
 (this delivers Average flow, =70% of Peak design flow) hrs OFF test and adjust as necessary)
- 19) inches from bottom of tank to "Pump OFF" float
- 20) inches from bottom of tank to "Pump ON" float, or inches to "Timer ON" float if time dosed
- 21) inches from bottom of tank to "Hi Level" float, or inches to "Hi Level" float if time dosed
- 22) gallons reserve capacity (after High Level Alarm is activated)

- 23) gpd/ft² Absorption area Soil Loading Rate, which gives a mound ratio of (minimum)
 (this must match the soil boring log) desired mound ratio
- 24) percent site slope (0-20% range) (% downslope site slope, if different than upslope)
- 25) inches, or ft. to Redox or other limiting condition (need at least 12" to be a Type I)
 Treatment zone contains inches of 0% soil credit, and inches of 50% soil credit. Giving a:
- 26) inch, or ft. Sand Lift Mound **CRITICAL FOR FUTURE CERTIFICATIONS!!!**
- 27) ft. base absorption width (with sand beyond rockbed as follows):
 greater of: absorption width OR sand slope
- 28) ft. upslope and sideslope sand upslope
 ft. Downslope sand down slope
- Individual slope ratios give BERM widths (topsoil beyond rockbed) of:
- 29) upslope ratio ft. upslope berm
- 30) sideslope ft. sideslope berms
- 31) downslope ft. downslope berm
- 32) Overall Dimensions: ft. wide by ft. long Rock bed
 ft. wide by ft. long Mound footprint



Note:
 For 0 to 1% slopes, *Absorption Width* is measured from the *Bed* equally in both directions.
 For slopes >1%, *Absorption Width* is measured downhill from the upslope edge of the *Bed*.

- 33) Rock Bed:
 ft. by ft. by inches under pipe, plus 20% gives yd³ or *1.4= ton
- 34) Mound Sand: (note: volume is based on 3:1/4:1 slope from top of rockbed, Exchange sand for loamy cap if desired)
 up + downslope + ends + under rock = yd³ or *1.4= ton
 plus 20%
- 35) Loamy Cap:
 ft. by ft. 6" deep, plus 20% gives yd³ or *1.4= ton
- 36) Topsoil:
 ft. by ft. 6" deep, plus 20% gives yd³ or *1.4= ton

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

Brummer Septic LLC. L-1347 8/24/2022
 Designer Signature Company License# Date

Aitkin Co Operating Permit Required
 There will be 2 Electric alarms on system, one for Effluent filter , one for pump tank.

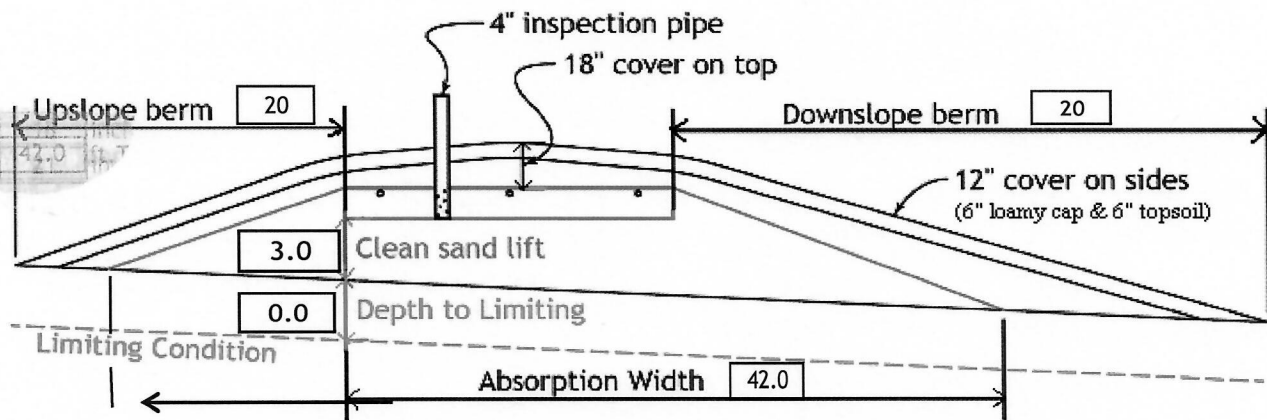
Installer Summary

- gallon Septic tank (minimum) Tank options: Effluent filter & alarm req'd
- gallon Dose tank (minimum) Install 1650 Jacobson 2/Compartment tank
- GPM @ ft. of head, Pump required
- inch swing on Demand float which translates to roughly inches of float tether length
- if time dosing is required --> minutes ON time & hours OFF time
- inches from bottom of tank to "pump ON" float, or inches to "timer ON" float
- inches from bottom of tank to "Hi Level Alarm" or inches to "Hi level alarm" if time dosed
- ft. of inch supply line with manifold connection
- (Tip: "top feed" manifold to control drainback)
- inch, or ft. Sand Lift Mound
- ft. wide by ft. long Rock bed
- laterals inch diameter ft. long ft. lateral spacing
- inch perfs ft. perforation spacing
- Effluent filter & alarm
- clean out & valve box assemblies

- ft. Total sand ABSORPTION width (minimum)
- ft. upslope and sideslope (sand beyond rockbed, minimum)
- ft. Downslope (sand beyond rockbed, minimum)

Specific slope ratios give BERM widths (topsoil beyond rockbed) of:

- | | |
|--|---|
| <input type="text" value="4:1"/> upslope ratio | <input type="text" value="20"/> ft. upslope berm |
| <input type="text" value="4:1"/> sideslope | <input type="text" value="20"/> ft. sideslope berms |
| <input type="text" value="4:1"/> downslope | <input type="text" value="20"/> ft. downslope berm |



Note:
 For 0 to 1% slopes, *Absorption Width* is measured from the *Bed* equally in both directions.
 For slopes >1%, *Absorption Width* is measured downhill from the upslope edge of the *Bed*.

Rock Bed:	<input type="text" value="17.0"/> yd ³ or *1.4=	<input type="text" value="24"/> ton	<input type="text" value="9"/> inches under pipe
Mound Sand:	<input type="text" value="276"/> yd ³ or *1.4=	<input type="text" value="387"/> ton	
Loamy Cap:	<input type="text" value="76"/> yd ³ or *1.4=	<input type="text" value="106"/> ton	<input type="text" value="6"/> inch deep
Topsoil:	<input type="text" value="87"/> yd ³ or *1.4=	<input type="text" value="122"/> ton	<input type="text" value="6"/> inch deep

INSPECTOR CHECKLIST - mound

South of 3/9/3 410th Ave. Aitkin

- WELL setbacks: 20' to pressure tested sewer line (5 psi for 15 min)
50' to everything 100' to dispersal area with shallow well
- PROPERTY LINES setback: 10' to everything
- Road setback: platted: 10' prop line. Metes & bounds: out of road easement, or outer ditch.
- LAKE / BLUFF setback: 20' for bluff. Lakes: GD ____, RD ____, NE _____. Protected wetland ____.
- Building setbacks: 10' for everything, 20' for dispersal area.
- WATER LINE under pressure se 10' to bed, tank & sewer line. (else sewer line > 12" below, else ok w/pvc)

- Sewer line & baffle connection (no 90's, 3' between 45's, slope min 1" in 8', max 2" in 8')
(no depth req's, clean out every 100', Sch 40 pipe)

- Septic tank and risers (water tight, insulated, proper depth, existing verified by pumping)
WELL mfg _____ 1000 gallons Effluent filter & alarm req'd _____
- Riser over outlet, riser over inlet or center, and 6"+ inspection pipe over any remaining baffles.
- Yes effluent filter & alarm
- Dose tank risers and piping (water tight, insulated, proper depth, drainback)
mfg _____ 533 gallons
- dose pump _____ 27 gpm 22 head VERIFY PUMP CURVE 2.7 min ON 5.1 hr OFF
- float setting drop 5.8 inches at 12.7 gpi "DESIGNED" 3.9 inches approx float tether length
73.0 gal dose divided by _____ gpi "INSTALLED" = _____ inches float drop (field corrected)
- LABEL pump requirements and drawdown on riser or panel
- Cam lock reachable from grade - 30" max. J-hook weep hole. Supply line access (no hard 90's)
2.0 inch supply pipe: Sch40, sloped 1/8"+, supported by 4" sch40 sleeve or compacted, and buried 6"+.
- splice box / control panel / electrical connections
- flow measurement: CT, ETM, time dosed, home water meter
- mound absorption area rough up
- mound rock dimensions 10.0 X 37.5
- Sand lift depth 36 inches. (Jar test : 2" sand leaves < 1/8" silt after 30 min)

- Absorption Sand beyond rock 16.0 upslope 16.0 downslope
- Bermed topsoil beyond rockbed 20 upslope 20 sideslope 20 downslope

- cover depth of 12-18"+ VERIFY
- 3 laterals (1-2' from edge of rock)
- 1.50 inch pipe size (Sch40 pipe & fittings)
- 3.0 ft lateral spacing

- 1/4" inch perforations
- 3.0 ft perforation spacing

- Air inlet at end of laterals, and at top feed manifold if necessary. VERIFY
- clean outs (no hard 90's)
- 4" inspection pipe to bottom of rock, anchored VERIFY

- Abandon existing system - if necessary Re-use existing tank certification
- monitoring plan and type _____
- well abandonment form - if necessary

System Elevations

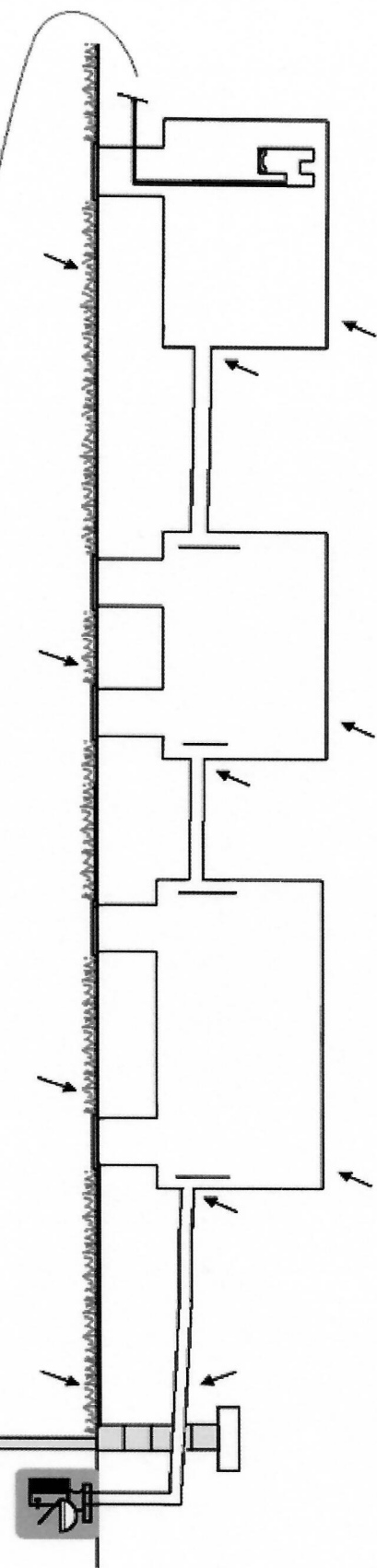
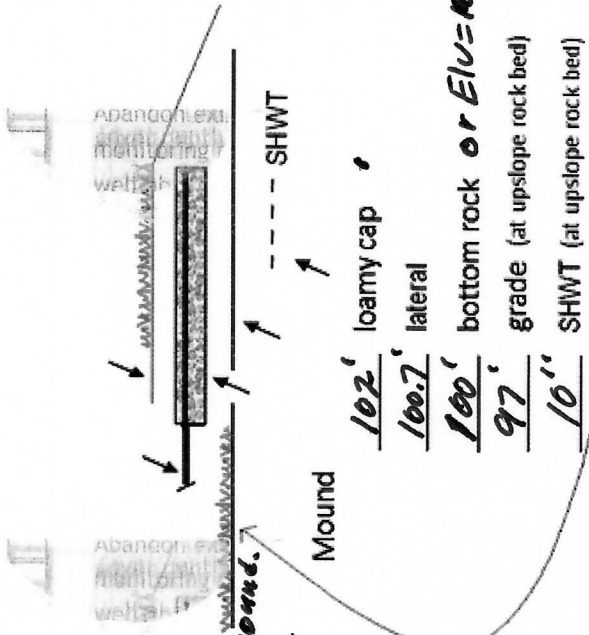
ELV = 100'

benchmark Nail on Aspen Tree East of mound.
ELV = 99' or 1202.9' Double Nail on White Oak
 South of House

(Grade elevations are existing. If a different final grade is desired it should be shown and described here.)

Mound

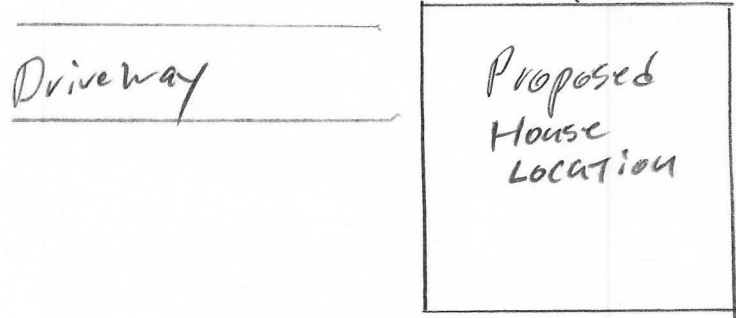
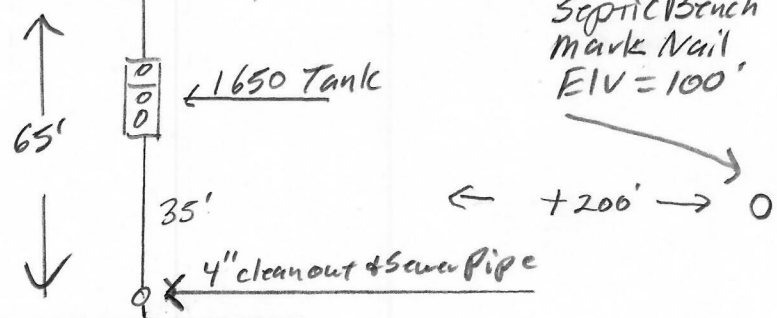
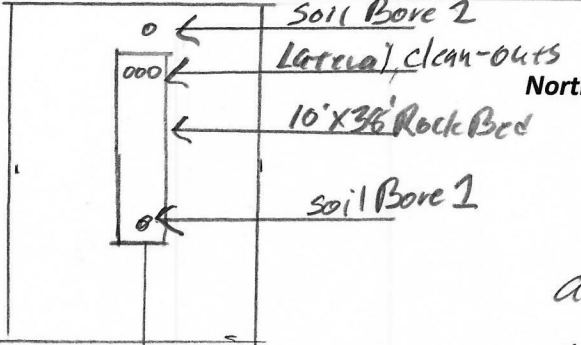
- 102' loamy cap
- 100.7' lateral
- 100' bottom rock or ELV = 1203.9'
- 97' grade (at upslope rock bed)
- 10" SHWT (at upslope rock bed)



Sewer pipe	Septic Tank	Septic Tank (if applicable)	Pump Tank
Proposed existing house	Septic Tank	Septic Tank (if applicable)	Pump Tank
Estimated <u>94'</u> Grade	<u>96.6'</u> Grade	Grade	<u>96.6'</u> Grade
Estimated <u>95'</u> Pipe	<u>91.5'</u> inlet	inlet	<u>94.3'</u> inlet
	<u>90.5'</u> Tank bottom	Tank bottom	<u>90.5'</u> Tank bottom

{ Design Drawing }

Property Owner: Mark Kirchof Date: 8/24/22 Designer's Initials: JB
 Parcel ID. Number: 01-0-019600 Address: South of 37973 410th Ave. Aitkin
 one Inch = 40ft.



Surveyor's Double Nail BM = EIV = 1202.9' +200'
white oak

Flood Plane Elv. = 1202.9' NAV 29
 Surveyor's Double Nail Benchmark Elv. = 1202.9' or Septic Elv. = 99' White Oak Tree SE of House
 Bottom of Rockbed Elv. = 1203.9' or Elv. = 100' Septic Benchmark Aspen tree East of House Nail at Elv. = 100'

	Surface/ SHWT	Nail on Aspen Tree = Bench Mark 100'		Existing Grade	
Soil Bore 1	97' / 10"	Bench Mark	100'		Upslope Edge of Rockbed Elv. = 97'
Soil Bore 2	97' / 11"	Ground Elv. BM	96.2'		Bottom of Rockbed Elv. = 100'
Soil Bore 3		Ground Elv. Tank	96.6'	Existing	Top of Washed Sand Elv. = 100'
	Ground at	Proposed house	96.7'	Existing	Estimated Sewer pipe at House Elv. = 95'

Please show all that apply (Existing)
 Wells within 100ft. Of Drain field.
 Water lines within 10 ft. of Drain field.
 Drain field Areas:

Please Draw to Scale with North to Top or Left Side of Page:

Disturbed/Compacted Areas	Access Route for Tank Maintenance
Component Location	Property Lines
OHW ordinary high water	Structures
Lot Easements	Setbacks

Surveyor's Doub
 Bottom of Rock'

Mound Design Notes - Aitkin county

Property Owner: Mark Kirchhof Date: 8/24/22
Site Address: South of 37973 410th Ave. Aitkin PID: 01-0-019600

Comments: Mound design may not follow Aitkin co. Auto fill form for mound design.

- 1 This is a type III mound , (Soil Separation 10") sized for a 3 bedroom system.
- 2 House Elv. Not set at time of design. House location is in a Flood Plane. Elv.= 1202.9' NAV29
Septic Design Elv.= 99' same as Elv. =1202.9'
Septic tank manholes should be raised to above Elv. = 1202.9' or Elv. 99'. Cover soils could be that high also.
Landscape septic tank cover soil so surface water does not pond at tank location.
In a Flood Plane The Septic system must be on a separate circuit so power can be disconnected in case the tank is inundated with flood water. Septic tank must be pumped before being used after tank is flooded.
Reason for pumping tank after it has been flooded is the tank fills with silt which will plug up the mound.
- 3 Proposed Deep well South of House + 25 ft.. Proposed deep well will meet all setbacks to septic system.
- 4 The house will be gravity flow from North side of house, install clean-out near house.
- 5 Lot is Flat, install 1650 Jacobson compartment tank for gravity flow from house.
Install tank low enough for drainback from mound to pump tank.
Install effluent filter in septic tank outlet. Install alarm on Effluent filter. Insulate tank tops.
- 6 The berm slopes are at 4:1.
- 7 Elevation contour of rock bed upslope edge is 97' .
The area size of the rock bed is 10' x 38' . Absorption area is 38' x 42'.
Sand absorption area is 16 ft. up slope + 10 ft. rockbed + 16 downslope = approx. 42 ft. wide sand base.
Berms are 20ft. Upslope, 20ft. Down slope, 10ft. Rock bed = approx. 50ft. Wide.
Overall mound size is approx. 50' wide x 78' long and approx. 5' high. End berms are 20ft. Wide.
- 8 The bench mark is the nail on the Aspen tree East of mound area, BM = Elv. 100'.
Installer to double check bench mark. Installer should confirm bench mark and sand height Elv. with inspector.
Installer should record bench mark Elv. and sand height on installation inspection form.
The top of the sand and bottom of rock bed is Elv. 100'.
- 9 It is important that the soils do not get compacted, and that clean Washed sand is used.
- 10 The Jacobson 1650 tank will be gravity flow from dwelling. Install the pump for 7 demand doses per day. approx. 73 gallons per dose, 5.8 inches of tank level. Install alarm at 3 inches from pump on level.
Install all manholes, inspection pipes and clean-outs to Elv.= 1202.9' or Elv. 99'
Recommend raising manholes 4" above finished grade.
Install a 2" supply pipe from tank to end manifold in rock bed, install so pipe drains back to tank.
Install 1.5" laterals with 9" of rock under them. (Install Lateral clean-outs at far end of laterals. Recommended)
- 11 **Drill 1/4" perf holes spaced 3 ft. on center.**
Install 4" inspection pipe to bottom of rock bed, secure in rock bed and raise to above final grade.
- 12 **Install Event counter on Effluent pump, calibrate pump and give gallons per event to Owner.**
- 13 Designer does not guarantee or warranty any Type III systems.
Designed to Aitkin Co. and MPCA recommendations and requirements.


Designer Signature

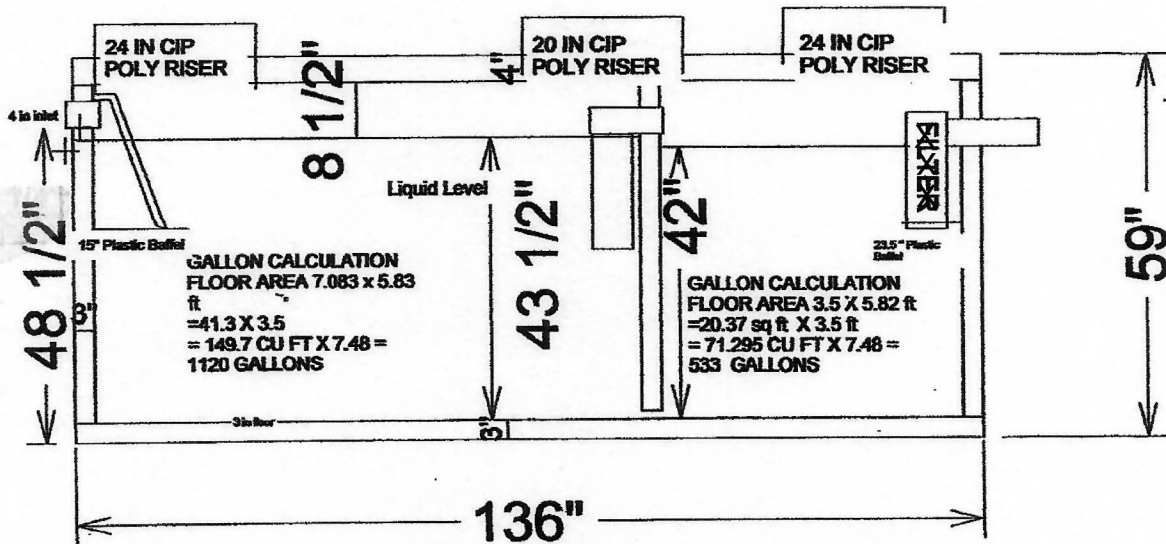
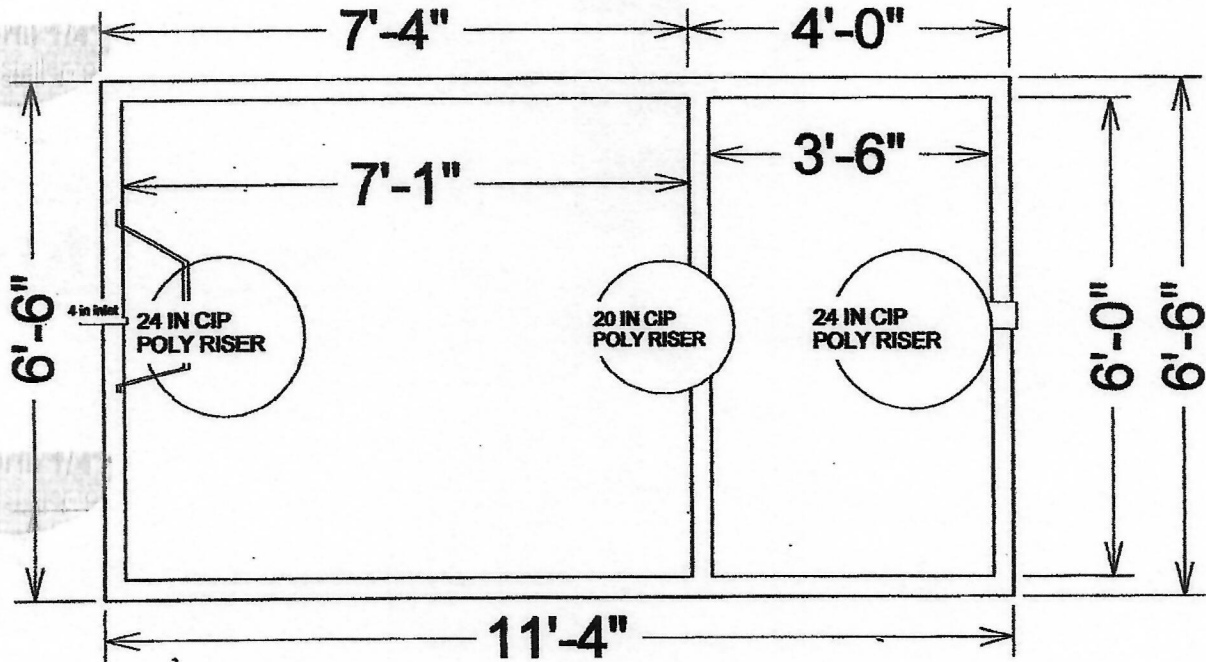
Brummer Septic LLC.
Design Company

L-1347
License#

This System will require an Aitkin Co. Operator permit, annual inspection
There will be 2 alarms on this system one on the Effluent filter, one on the pump tank.
Owner and installer are responsible for owner knowing how system is maintained.
Owner should clean Effluent filter at least twice a year and check alarms and pump.

1650 Gallon 2 Compartment Septic Tank

TOP VIEW



$533 / 42" = 12.69 \text{ GPI}$

SIDE VIEW

Drawings Owned BY Jacobson Precast, Inc.
36641 HWY 169, Aitkin, Mn 56431

Fwd: BFE Elevation

1 message

Jared Spaid <jared.spaid@surveymn.com>
To: Eric Lee <Eric.Lee@surveymn.com>

Wed, Aug 3, 2022 at 2:18 PM

----- Forwarded message -----

From: Strauss, Ceil C (DNR) <ceil.strauss@state.mn.us>
Date: Wed, Aug 3, 2022 at 2:16 PM
Subject: RE: BFE Elevation
To: Jared Spaid <jared.spaid@surveymn.com>
Cc: Lindgren, Heidi (DNR) <heidi.lindgren@state.mn.us>, aitkinpz@co.aitkin.mn.us <aitkinpz@co.aitkin.mn.us>

1 message

Adding a nice FIRMette for panel 240 with site location that Heidi had done and I saw right after sending the email.

Ceil

From: Strauss, Ceil C (DNR)
Sent: Wednesday, August 3, 2022 2:10 PM
To: Jared Spaid <jared.spaid@surveymn.com>
Cc: Lindgren, Heidi (DNR) <heidi.lindgren@state.mn.us>; aitkinpz@co.aitkin.mn.us
Subject: RE: BFE Elevation

Hi Jared,

I'm attaching a FIRMette of the Floodway and Flood Boundary map for panel 245, and key pages from the FIS. The property report and the location map shows it is in the western part of Section 13. It appears the site has XS Q and XS R. The BFE at XS R is 1202.9' NGVD29 and at XS Q is 1202.8' NGVD29. So I'd agree with using 1202.9 NGVD29 for the site.

Subject: RE: BF

For the Regulatory Flood Protection Elevation we'd be adding 0.1' stage increase and the foot of freeboard, but assuming this is for a LOMA you would just be using the BFE.

Ceil Strauss, CFM

State Floodplain (NFIP) Manager | Ecological and Water Resources Division

Minnesota Department of Natural Resources

500 Lafayette Road

Subject: RE: BF

For the Regu



Detailed Parcel Report

Parcel Number: 01-0-019600

General Information

Township/ City: AITKIN TWP Flood Plane Elv= 1202.9' NAV29
 Taxpayer Name: KIRCHHOF, MARK & RAMONA
 Taxpayer Address: 10742 E SHORE DR
 MERRIFIELD MN 56465
 Property Address: Site Location South of 37973 410th Ave. Aitkin MN 56431
 Township: 47 Lake Number: 0
 Range: 27 Lake Name:
 Section: 13 Acres: 38.18
 Green Acres: No School District: 1.00
 Plat:
 Brief Legal Description: NW SW LESS 1.82 AC ROAD ROW

Tax Information

Class Code 1: Non-Homestead Agricultural Land
 Class Code 2: Non-Homestead Agricultural Land
 Class Code 3: Unclassified
 Homestead: Non Homestead
 Assessment Year: 2022

Estimated Land Value:	\$48,400.00
Estimated Building Value:	\$0.00
Estimated Total Value:	<u>\$48,400.00</u>
Prior Year Total Taxable Value:	\$36,900.00
Current Year Net Tax (Specials Not Included):	\$258.00
Total Special Assessments:	\$0.00
** Current Year Balance Not Including Penalty:	\$0.00
Delinquent Taxes:	No

* For more information on delinquent taxes, please call the Aitkin County Treasurer's Office at 218-927-7325.

** Balance Due on a parcel does not include late payment penalties.



These data are provided on an "AS-IS" basis, without warranty of any type, expressed or implied, including but not limited to any warranty as to their performance, merchantability, or fitness for any particular purpose.

Kirchhof

Map may not be valid at this scale. Data was mapped at an accuracy of 1:24,000 so any representation of the data at a larger scale is not advised.

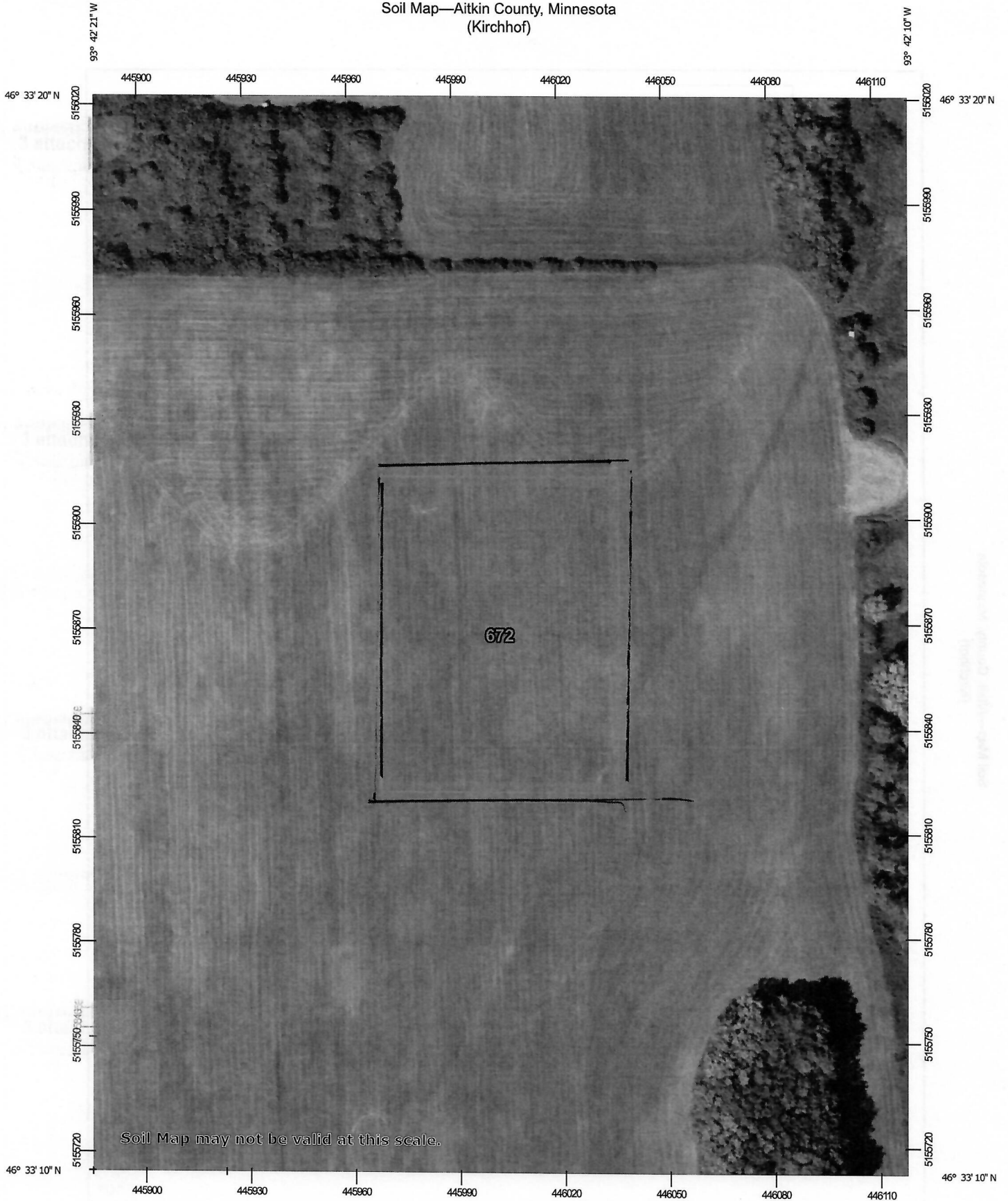


1:18,056 0 0.1 0.2 mi 1 inch = 1,505 feet

Web AppBuilder for ArcGIS

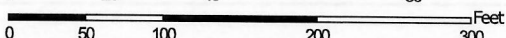
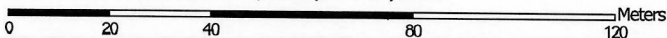
Date: 7/29/2022

Soil Map—Aitkin County, Minnesota
(Kirchhof)



Soil Map may not be valid at this scale.

Map Scale: 1:1,500 if printed on A portrait (8.5" x 11") sheet.



Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 15N WGS84



Natural Resources
Conservation Service

Web Soil Survey
National Cooperative Soil Survey

Aitkin County, Minnesota

672—Willosippi loam

Map Unit Setting

National map unit symbol: gjjb
Elevation: 980 to 1,310 feet
Mean annual precipitation: 20 to 27 inches
Mean annual air temperature: 37 to 41 degrees F
Frost-free period: 95 to 105 days
Farmland classification: Not prime farmland

Map Unit Composition

Willosippi and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Willosippi

Setting

Landform: Swales on lake plains
Down-slope shape: Linear
Across-slope shape: Concave
Parent material: Loamy glaciolacustrine deposits

Typical profile

Ap - 0 to 7 inches: loam
Eg - 7 to 12 inches: fine sandy loam
Btg1-4,Cg1 - 12 to 42 inches: stratified loamy sand to silty clay loam
Cg2,Cg3 - 42 to 60 inches: stratified loamy sand to silty clay loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 2.00 in/hr)
Depth to water table: About 6 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Available water supply, 0 to 60 inches: High (about 10.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4w
Hydrologic Soil Group: B/D
Forage suitability group: Level Swale, Acid (G088XN005MN)
Other vegetative classification: Level Swale, Acid (G088XN005MN)

Hydric soil rating: Yes

Minor Components

Hamre and similar soils

Percent of map unit: 3 percent

Landform: Depressions

Hydric soil rating: Yes

Sandwich and similar soils

Percent of map unit: 3 percent

Landform: Flats

Hydric soil rating: Yes

Aftad and similar soils

Percent of map unit: 2 percent

Hydric soil rating: No

Gravelly soils

Percent of map unit: 2 percent

Landform: Swales

Hydric soil rating: Yes

Data Source Information

Soil Survey Area: Aitkin County, Minnesota

Survey Area Data: Version 22, Sep 10, 2021