

Preliminary & Field Evaluation Form

24-043

www.SepticResource.com vers 12.4

| Owner Information | | | |
|---------------------|--|-------------------------------|-----------------------------|
| Date | <u>4/25/2024</u> | Sec / Twp / Rng | <u>S-4, T-46, R-27</u> |
| Parcel ID | <u>07-1-151700</u> | LUG (county, city, township) | <u>Aitkin Co.</u> |
| Property Owner: | <u>Tracy Henry</u> | Owners address (if different) | |
| Property Address: | <u>33242 433rd Pl. Aitkin MN 56431</u> | | <u>5211 Sunnyside Rd</u> |
| City / State / Zip: | | | <u>Mounds View MN 55112</u> |

| Flow Information and Waste Type / Strength | | | |
|---|----------------|-----------------------------|---|
| Estimated Design flow | <u>400 GPD</u> | Anticipated Waste strength | <input type="checkbox"/> Hi Strength <input checked="" type="checkbox"/> Domestic |
| Comments: Rockbed is V shaped to follow contour of slope GPD Calculated using total sq. ft. of rockbed Owner wants as large of mound as possible Owner may build a 3 bedroom home in the future At that time system may be timed dosed. For now it will be used as a 2 bedroom system. | | 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 checked="" 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 | Existing 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 checked="" type="checkbox"/> Yes | <input 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 | <u>Possible Private Buried Power through Mound Area</u> <u>From Power Meter to the Garage</u> | | | | |

Designer meet with Aitkin Co. on site and went over the Septic System lay-out. Aitkin Co. Brock & Jody 4/26/24

Aitkin Co. OK with lay-out, (setbacks) and with Rockbed sizing at 400 GPD.

Soil Information

Soils were Verified with Aitkin Co. Brock on 4/24/24
 Designer and Brock conducted soils borings together

Evidence of site:

| | | |
|-----------|------------------------------|--|
| 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 |

Original soils Yes No

Soil logs completed and attached Yes No

Perk test completed and attached (if applicable) Yes No

Soil loading rate (gpd/ft²) 0.60

Percolation rate (if applicable) _____

Depth/elev to SHWT 19"

Flooding or run-on potential (comments) Yes No

Depth to system bottom maximum (or elev minimum) (+ 18")

Flood elevation (if applicable) _____

Depth/elev to standing water (if applicable) _____

Elevation of ordinary high water level (if applicable) NA

Depth/elev to bedrock (if applicable) _____

Floodplain designation and elev - 100 yr/10 yr (if applicable) NA

Soil Survey information determined (see attachment) Yes No

Differences between soil survey and field evaluation (if applicable) _____

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



 Designer Signature

Brummer Septic LLC.

 Company

L-1347

 License #

Soil Observation Log

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| Owner Information | |
|---------------------------|---|
| Property Owner / project: | <u>Tracy Henry</u> Date <u>4/25/2024</u> |
| Property Address / PID: | <u>33242 433rd Pl. Aitkin MN 56431</u> |

| Soil Survey Information | |
|--|---|
| <input type="checkbox"/> refer to attached soil survey | |
| Parent mat'l's: | <input checked="" type="checkbox"/> Till <input type="checkbox"/> Outwash <input 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 checked="" type="checkbox"/> Side slope <input type="checkbox"/> Toe slope |
| soil survey map units: | <u>928D & 504C</u> slope <u>11</u> % direction- <u>South</u> |

| Soil Log #1 | | | | | | | |
|--|---------|------------|--------------|-------------|-------------|-------|-------|
| Depth (in) | Texture | fragment % | matrix color | redox color | consistence | grade | shape |
| <input type="checkbox"/> Boring <input type="checkbox"/> Pit Elevation _____ Depth to SHWT _____ | | | | | | | |
| | | | | | | | |
| | | | | | | | |
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| | | | | | | | |
| | | | | | | | |
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| | | | | | | | |

Comments: **See Aitkin County Soils Verification Sheet**

Aitkin County Soils Verification Sheet

Property Owner Tracy Henry Date: 4/24/24
 RE Code : 07-1-151700 Site Address: 33242 433rd Pl. Aitkin MN 56431

| Pit | Boring X 1 | Elevation | 97.7' | Depth to SHWT | 19" | Date | 4/24/24 |
|------------|----------------|-----------|--------------|---------------|-------------|-------|----------|
| Depth (in) | Texture | Fragment% | Matrix Color | Redox Color | Consistence | Grade | Shape |
| 0 - 5 | Loam/ Top Soil | < 35% | 10YR4/3 | | Loose | Loose | Granular |
| 5 - 19 | Loam | < 35% | 10YR4/3 | | Loose | Loose | Granular |
| 19 - 22 | Loam | < 35% | 10YR4/3 | 7.5YR5/6 | Loose | Loose | Granular |
| | | | | | | | |
| | | | | | | | |

| Pit | Boring X 2 | Elevation | 96.9' | Depth to SHWT | 19" | Date | 4/24/24 |
|------------|----------------|-----------|--------------|---------------|-------------|-------|----------|
| Depth (in) | Texture | Fragment% | Matrix Color | Redox Color | Consistence | Grade | Shape |
| 0 - 5 | Loam/ Top Soil | < 35% | 10YR4/3 | | Loose | Loose | Granular |
| 5 - 19 | Loam | < 35% | 10YR4/3 | | Loose | Loose | Granular |
| 19 - 22 | Loam | < 35% | 10YR4/3 | 7.5YR5/6 | Loose | Loose | Granular |
| | | | | | | | |
| | | | | | | | |

Brock Anderson

Signature
Brock Anderson
 Designer/Inspector
 License #: C10147
 Phone Number: 218-839-4334
 Date: 4/24/24

Jeff Brummer

Signature
Jeff Brummer
 Designer/Inspector
 License #: L-1347
 Phone Number: 218-821-0704
 Date: 4/24/24

| < less than > greater than | | |
|----------------------------|----------|------------------|
| Consistence | Grade | Shape |
| Loose | Loose | Single Grain |
| Friable | Weak | Granular, Blocky |
| Firm | Moderate | Prismatic, Platy |
| Rigid | Strong | Massive |

Sketch
 See Design Sketch

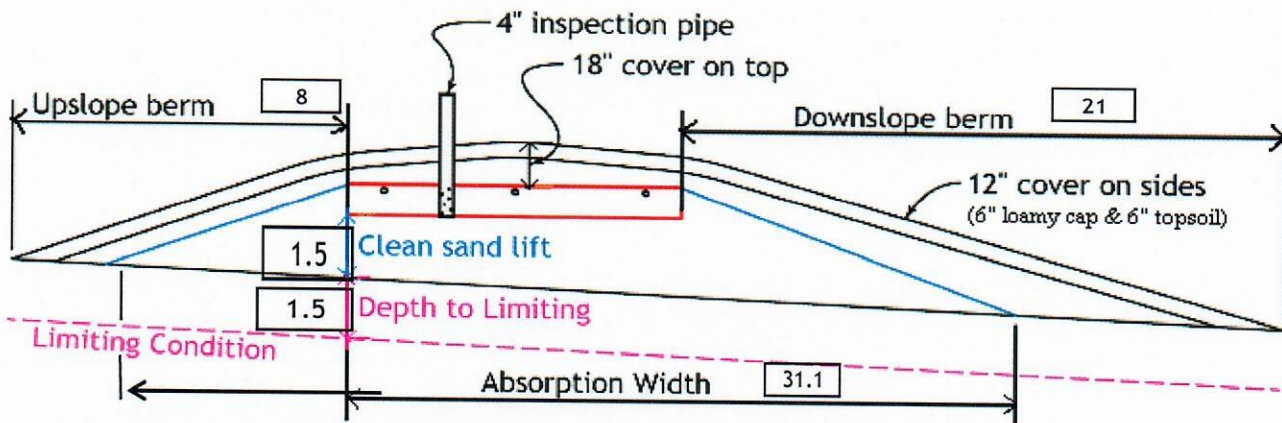
Mound Design - Aitkin county

Property Owner: Tracy Henry Date: 4/25/2024
 Site Address: 33242 433rd Pl. Aitkin MN 56431 PID: 07-1-151700
 Comments: V- Shaped Mound Follows Contour around Slope Rockbed sized for 400 GPD

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

- 1) 2 bedroom Type I Residential System See Page ____ for GPD Calculation
- 2) 400 GPD design flow Because of Drainback Volume use 1820 tank
- 3) No Garbage disposal or pumped to septic Install 1820 Jacobson 2/Compartment Septic / Pump tank
- 4) 1000 Gal Septic tank (code minimum) 1000 Gal Septic tank (design size / LUG req'd)
 Tank options: none
- 5) 1.2 GPD/ft² mound sand loading rate contour loading rate of 12 req's a min 33.3 ft. long rockbed
- 6) 10.0 ft rockbed width 33.3 ft rockbed length See Notes on Square footage of rockbed
- 7) 3.0 ft lateral spacing 3.0 ft perforation spacing (maximum of 3 for both)
 end feed manifold connection
- 8) 3 laterals 31.3 feet long 11.0 perfs / lateral 33 perfs total
 (1/2 a perf means the first perf starts at the middle feed manifold)
- 9) 1/4" inch perfs at 1 feet residual head gives 0.74 gpm flow rate per perforation
 for this perf size & spacing, & pipe size on line 12, max perfs/lateral = 16, line #8 must be less --> OK
- 10) 7.0 doses per day (4 minimum)
- 11) 57 gallons per dose (treatment volume) 1.50 5x
- 12) 1.50 inch diameter laterals must be used to meet "4x pipe volume" requirement 2.00 3x
- 13) 170 feet of 2.0 inch supply line leads to 29 gallons of drainback volume
 (Tip: "top feed" manifold to control the drainback)
- 14) 86 gallons TOTAL pump out volume (treatment + drainback)
- 15) 26 feet vertical lift from pump to mound laterals, leads to a:
- 16) 25 GPM @ 35 feet of head, Pump requirement (note: >50gpm may require an extra 3-6' of head)
- 17) 500 gal Dose tank (code minimum) 666 gal Dose tank (design size / LUG req'd) at 15.85 gpi
 leads to a
- 18) 5.4 inch swing on Demand float, or timed dosing of 3.4 min ON (confirm pump rate with drawdown
 (this delivers Average flow, =70% of Peak design flow) 5.1 hrs OFF test and adjust as necessary)
- 19) 12 inches from bottom of tank to "Pump OFF" float
- 20) 17 inches from bottom of tank to "Pump ON" float, or 12 inches to "Timer ON" float if time dosed
- 21) 20 inches from bottom of tank to "Hi Level" float, or 30 inches to "Hi Level" float if time dosed
- 22) 349 gallons reserve capacity (after High Level Alarm is activated)

- 23) 0.60 gpd/ft² Absorption area Soil Loading Rate, which gives a mound ratio of 2 (minimum)
 (this must match the soil boring log) desired mound ratio 2.0
- 24) 11 percent site slope (0-20% range) 11 (% downslope site slope, if different than upslope)
- 25) 18 inches, or 1.5 ft. to Redox or other limiting condition (need at least 12" to be a Type I)
 Treatment zone contains 0 inches of 0% soil credit, and 0 inches of 50% soil credit. Giving a:
- 26) 18 inch, or 1.5 ft. Sand Lift Mound **CRITICAL FOR FUTURE CERTIFICATIONS!!!**
- 27) 20.0 ft. base absorption width (with sand beyond rockbed as follows):
 31.1 greater of: absorption width OR sand slope
- 28) 0.0 ft. upslope and sideslope sand upslope 5.0 Use 5 ft
 10.0 ft. Downslope sand down slope 16.1
- Individual slope ratios give BERM widths (topsoil beyond rockbed) of:
- 29) 3:1 upslope ratio 8 ft. upslope berm
- 30) 3:1 sideslope 14 ft. sideslope berms
- 31) 3:1 downslope 21 ft. downslope berm
- 32) Overall Dimensions: 10.0 ft. wide by 33.3 ft. long Rock bed
 39 ft. wide by 61 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:
 10.0 ft. by 33.3 ft. by 9 inches under pipe, plus 20% gives 15 yd³ or *1.4= 21 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)
 14.5 up + 59.5 downslope + 14.4 ends + 25.3 under rock = 136 yd³ or *1.4= 191 ton
 plus 20%
- 35) Loamy Cap:
 35 ft. by 57 ft. 6" deep, plus 20% gives 45 yd³ or *1.4= 63 ton
- 36) Topsoil:
 39 ft. by 61 ft. 6" deep, plus 20% gives 54 yd³ or *1.4= 76 ton

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

[Signature]
 Designer Signature

Brummer Septic LLC.
 Company

L-1347
 License#

4/25/2024
 Date

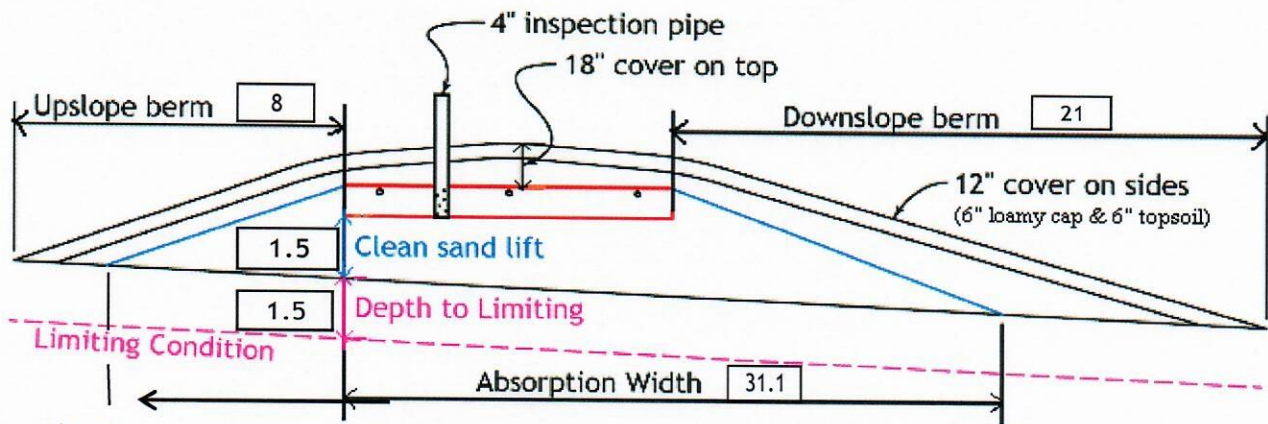
Installer Summary

- 1000 gallon Septic tank (minimum) Tank options: none
- 666 gallon Dose tank (minimum) Install 1820 Jacobson 2/Compartment Septic / Pump tank at 15.85 gpi
- 25 GPM @ 35 ft. of head, Pump required
- 5.4 inch swing on Demand float which translates to roughly 3.7 inches of float tether length if time dosing is required --> 3.4 minutes ON time & 5.1 hours OFF time
- 17 inches from bottom of tank to "pump ON" float, or 12 inches to "timer ON" float
- 20 inches from bottom of tank to "Hi Level Alarm" or 30 inches to "Hi level alarm" if time dosed
- 170 ft. of 2.0 inch supply line with end feed manifold connection (Tip: "top feed" manifold to control drainback)
- 18 inch, or 1.5 ft. Sand Lift Mound
- 10.0 ft. wide by 33.3 ft. long Rock bed
- 3 laterals 1.50 inch diameter 31.3 ft. long 3.0 ft. lateral spacing
- 1/4" inch perfs 3.0 ft. perforation spacing
- No Effluent filter & alarm
- 3 clean out & valve box assemblies

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

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

| | |
|-------------------|------------------------|
| 3:1 upslope ratio | 8 ft. upslope berm |
| 3:1 sideslope | 14 ft. sideslope berms |
| 3:1 downslope | 21 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: | 15.0 yd ³ or *1.4= | 21 ton | 9 inches under pipe |
| Mound Sand: | 136 yd ³ or *1.4= | 191 ton | |
| Loamy Cap: | 45 yd ³ or *1.4= | 63 ton | 6" deep |
| Topsoil: | 54 yd ³ or *1.4= | 76 ton | 6" deep |

INSPECTOR CHECKLIST - mound

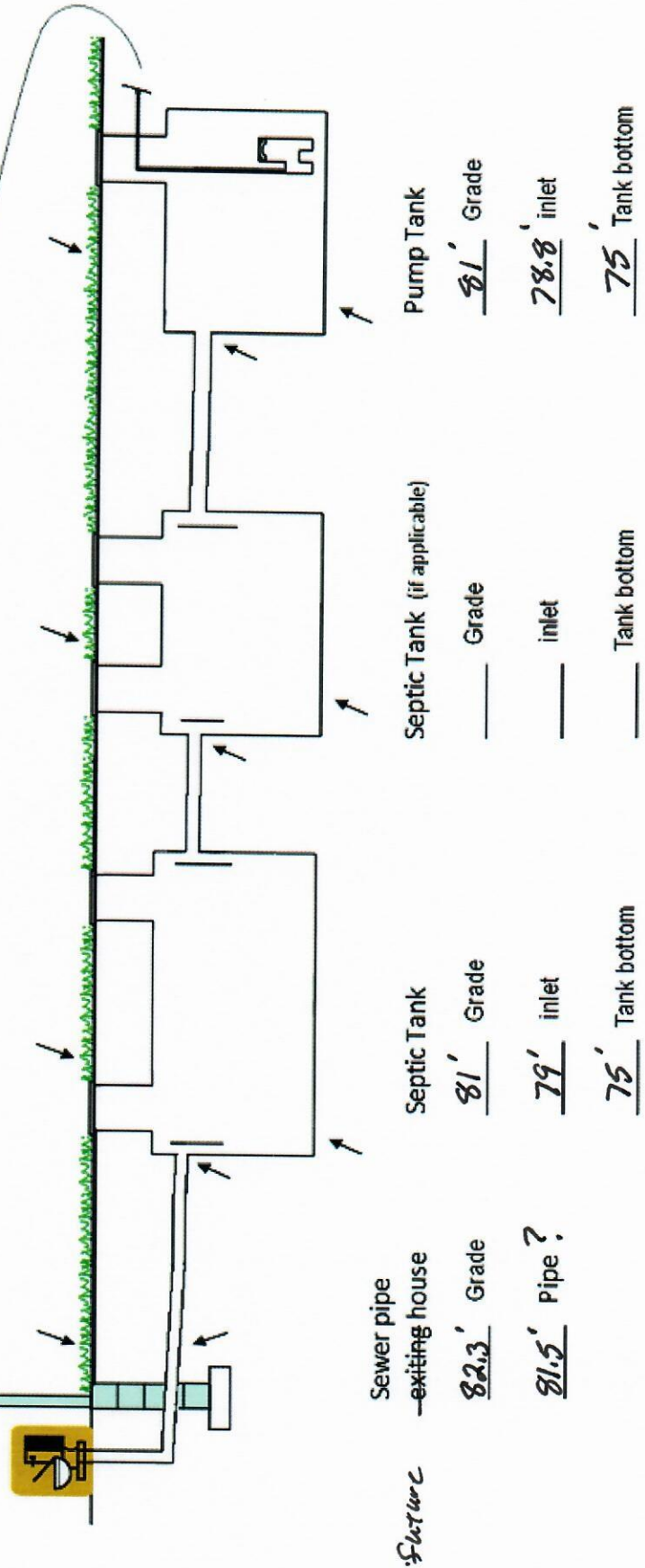
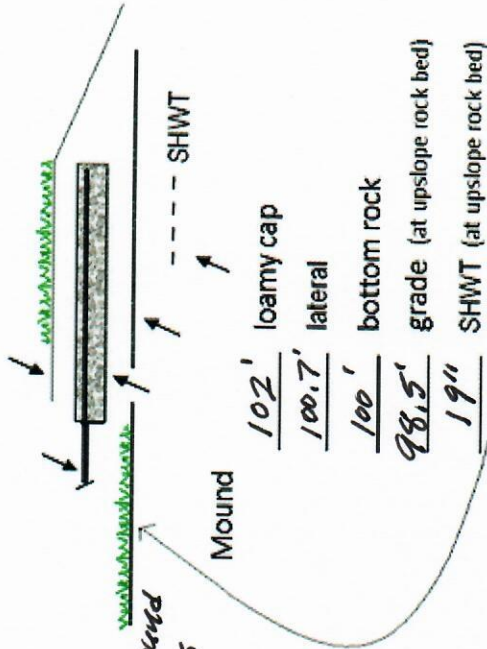
33242 433rd Pl. Aitkin MN 56431

- 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)
mfg _____ 1000 gallons none _____
- Riser over outlet, riser over inlet or center, and 6"+ inspection pipe over any remaining baffles.
- No _____ effluent filter & alarm
- Dose tank risers and piping (water tight, insulated, proper depth, drainback)
mfg _____ 666 gallons
- dose pump _____ 25 gpm 35 head VERIFY PUMP CURVE 3.4 min ON 5.1 hr OFF
- float setting drop 5.4 inches at 15.9 gpi "DESIGNED" 3.7 inches approx float tether length
86.0 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 33.3
- Sand lift depth 18 inches. (Jar test : 2" sand leaves < 1/8" silt after 30 min)
- Absorption Sand beyond rock 5.0 upslope 16.1 downslope
- Bermed topsoil beyond rockbed 8 upslope 14 sideslope 21 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

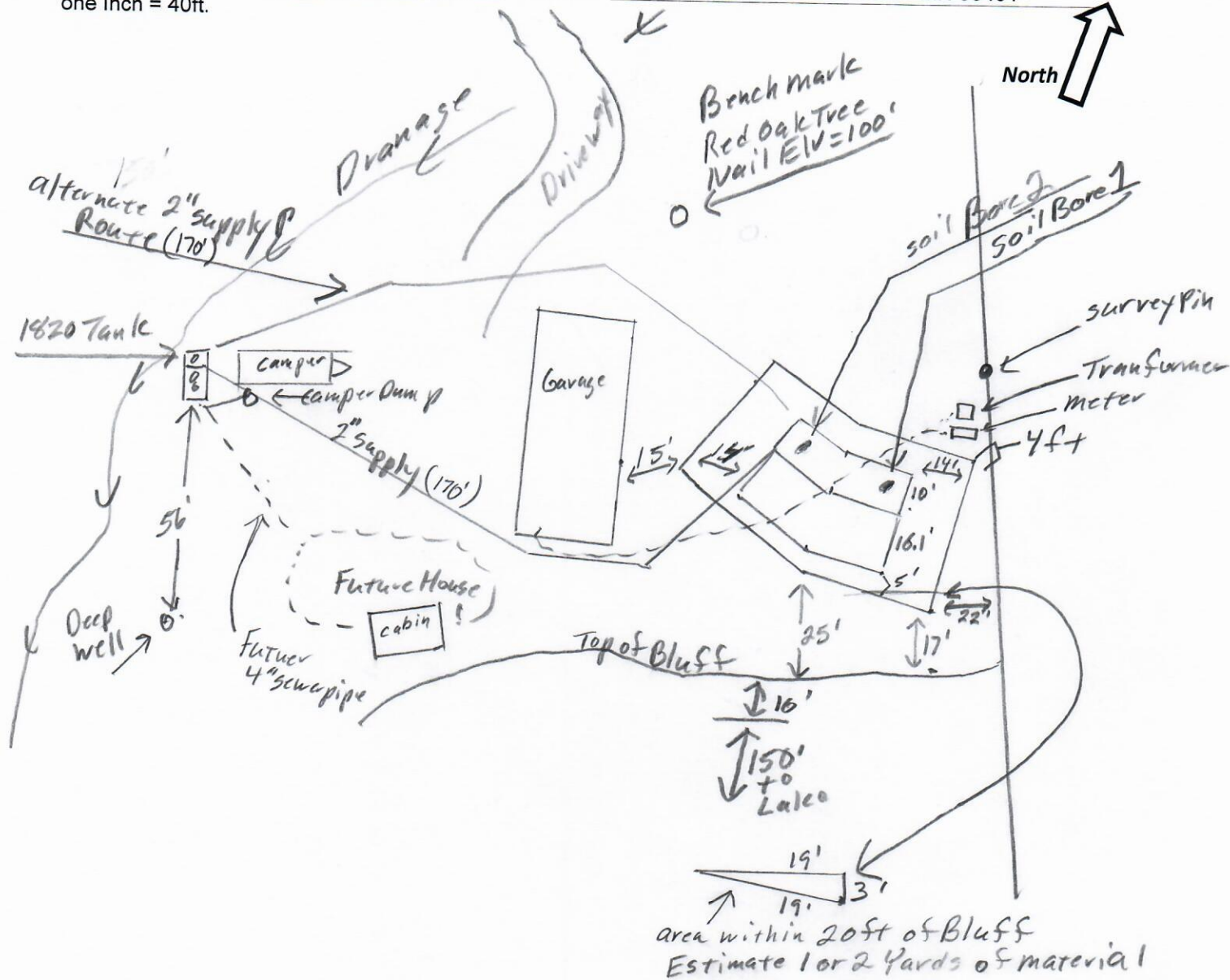
Elv = 100' benchmark Nail on Red Oak NW of mound
 Top of survey pin NE of power meter Elv = 105.5

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



{ Design Drawing }

Property Owner: Tracy Henry Date: 4/25/24 Designer's Initials: JB
 Parcel ID. Number: 07-1-151700 Address: 33242 433rd Pl. Aitkin MN 56431
 one Inch = 40ft.



Top of Survey Pin NE of Power Transformer Elv. = 105.5'

Grade at Front of Garage Elv. = 84.7'

| Surface/ SHWT | | Nail on Oak Tree = Bench Mark 100' | | Existing Grade | |
|---------------|-------------|------------------------------------|-------|------------------------------------|-------|
| Soil Bore 1 | 97.7' / 19" | Bench Mark | 100' | Upslope Edge of Rockbed Elv. = | 98.5 |
| Soil Bore 2 | 96.9' / 19" | Ground Elv. BM | 99.7' | Bottom of Rockbed Elv. = | 100' |
| Soil Bore 3 | | Ground Elv. Tank | 81' | Top of Washed Sand Elv. = | 100' |
| | Ground at | Small Cabin | 82.3' | Elv. Of Sewer pipe at Cabin Elv. = | 94.8' |

Please show all that apply (Existing)

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

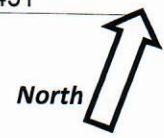
- Wells within 100ft. Of Drain field.
- Water lines within 10 ft. of Drain field.
- Drain field Areas:

- Disturbed/Compacted Areas
- Component Location
- OHW ordinary high water
- Lot Easements

- Access Route for Tank Maintenance
- Property Lines
- Structures
- Setbacks

{ Design Drawing }

Property Owner: Tracy Henry Date: 4/25/24 Designer's Initials: JB
 Parcel ID. Number: 07-1-151700 Address: 33242 433rd Pl. Aitkin MN 56431
 one Inch = 40ft.



Up-Slope Edge of Rockbed Elv. = 98.5'
 Top Of Washed Sand Elv.= 100'
 Bottom Of rockbed Elv.= 100'
 Nail on Oak Tree Elv. = 100' Grade at Tree Elk.= 99.7'
 SE Corner of Berm Toe Elv.= 94.2' Top Of Bluff 17 ft SE of corner Elv.= 94.6'
 Center Downslope of Berm Toe Elv.= 93.3' Top Of Bluff 26 ft away Elv.= 93.8'
 Deep Well Grade Elv.= 79.1'
 Estimated Lake Elv.= 51' (Calculated from Aitkin Co. GIS Map.)

Soil Bore 1 grade Elv.= 97.7'
 Soil Bore 2 grade Elv.= 96.9'

Calculations for Rockbed

Up-Slope Edge of rockbed is 32 ft long
 Down-slope Edge of Rockbed is 35 ft long

If rockbeds were rectangle

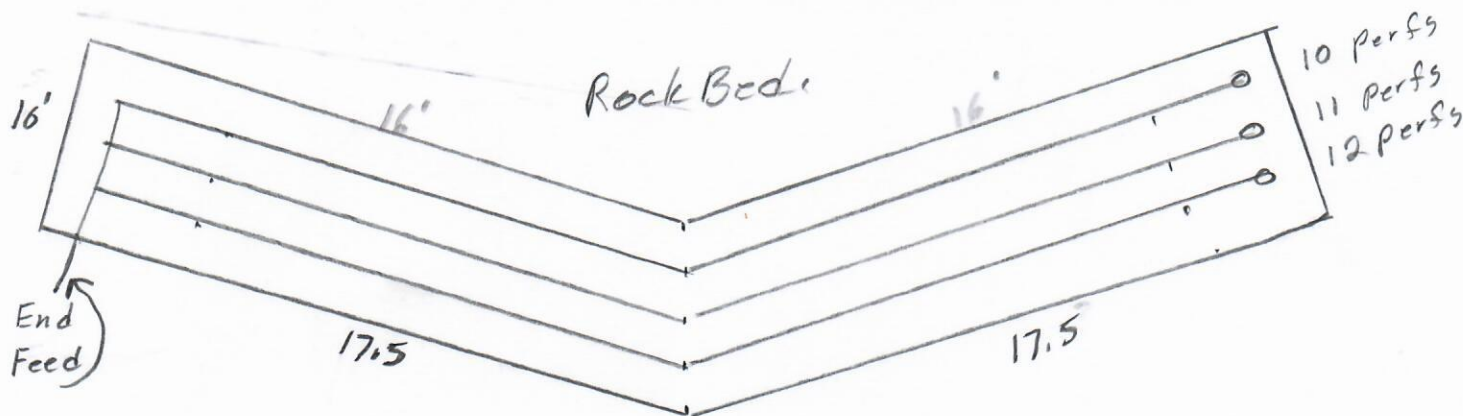
$32' \times 10' = 320 \text{ Sq Ft.} / .83 = 385 \text{ GPD}$

$35' \times 10' = 350 \text{ Sq Ft.} / .83 = 421 \text{ GPD}$

So the average of both is 403 GPD

This Mound Rockbed should be rated at 400 GPD.

If this owner ever builds a 3 bedroom house this mound should be timed dosed at $400 \times 70\% = 280 \text{ GPD}$



Top of Survey Pin NE of Power Transformer Elv.= 105.5'

Grade at Front of Garage Elv.= 84.7'

| | Surface/ SHWT | Nail on Oak Tree= Bench Mark 100' | | Existing Grade | |
|-------------|---------------|-----------------------------------|-------|---|--|
| Soil Bore 1 | 97.7' / 19" | Bench Mark | 100' | Upslope Edge of Rockbed Elv.= 98.5 | |
| Soil Bore 2 | 96.9' / 19" | Ground Elv. BM | 99.7' | Bottom of Rockbed Elv.= 100' | |
| Soil Bore 3 | | Ground Elv. Tank | 81' | Top of Washed Sand Elv.= 100' | |
| | Ground at | Small Cabin | 82.3' | Elv. Of Sewer pipe at Cabin Elv.= 94.8' | |

Please show all that apply (Existing)

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

- Wells within 100ft. Of Drain field.
- Water lines within 10 ft. of Drain field.
- Drain field Areas:

- Disturbed/Compacted Areas
- Component Location
- OHW ordinary high water
- Lot Easements

- Access Route for Tank Maintenance
- Property Lines
- Structures
- Setbacks

Mound Design Notes - Aitkin county

Property Owner: Tracy Henry

Date: 4/25/24

Site Address: 33242 433rd Pl. Aitkin MN 56431

PID: 07-1-151700

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

- 1 This is a type I mound Sized for a 2.5 bedroom House, 400 GPD.
Owner will start by using as 2 bedroom system. May build a future 3 bedroom house, at that time will time dose system.
Owner wants as large of mound as possible on this site. Rockbed is V shaped and follows contour of slope.
Existing deep well location will be West of House.
- 2 Lot has a bluff below mound area, Downslope Berm toe is plus 20 ft from top of bluff except for very SE corner
Approx. 28.5 sq ft will impact bull setback, approx. 1 to 2 yards of mound fill soils. Absorption area +4 ft from setback.
- 3 East Property line has survey markers, NE mound berm corner will be Plus 4 ft from property line.
Rockbed and absorption areas all will be +25 ft from buildings, Plus 15 ft from property lines.
- 4 Bench Mark Elevation is a nail on a Red Oak tree near NW corner of mound area.
- 5 Install Jacobson 1820 2/Compartment Septic/Pump tank for gravity flow from Future Slab on grade house (Elv. not set)
Install camper dump station that gravity drains into septic tank.
Designer used 1820 tank because of the volume of drainback. (Approx. 30 gal.) Set Alarm higher because of drainback.
- 6 Elevation contour of rock bed upslope edge is 98.5'.
The area size of the rock bed is 10' x 30 on upslope edge, 35 ft on downslope edge' . Approx. 335 sq. ft. of rockbed.
See Notes on Rockbed Calculations.
Absorption Area Is Approx. 32 by 31.1 Plus it will be wider at Downslope edge (approx. 40 ft on downslope Edge).
Sand absorption area is 5 ft. up slope + 10 ft. rockbed + 16.1 downslope = approx. 31.1 ft. wide sand base.
Berms are 8ft. Upslope, 21ft. Down slope, 10ft. Rock bed = approx. 38ft. Wide.
Overall mound size is approx. 38' wide x 70' long and approx. 3.5' high. It will Be V shaped, follows contour.
- 7 The bench mark is the nail on the Red Oak tree NW 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.
- 8 The top of the washed sand and bottom of rock bed is Elv. 100'.
It is important that the soils do not get compacted, and that clean washed sand is used.
- 9 The Jacobson 1820 compartment tank will be gravity flow from dwelling. Install the pump for 7 demand doses per day. approx. 86 gallons per dose, 5.4 inches of tank level. Install alarm at 5 inches from pump on level.
Install all manholes, inspection pipes and clean-outs to grade or above, insulate top of tank.
- 10 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" holes for Perf sizing, 36" on centers. (Approx. 33 perfs.)**
Install 4" inspection pipe to bottom of rock bed, secure in rock bed and raise to above final grade.
MPCA recommends Installing an Effluent filter and Alarm on septic tank outlet.
MPCA recommends installing an event counter on all systems with a pump.

Designed to Aitkin Co. and MPCA recommendations and requirements.


Designer Signature

Brummer Septic LLC.
Design Company

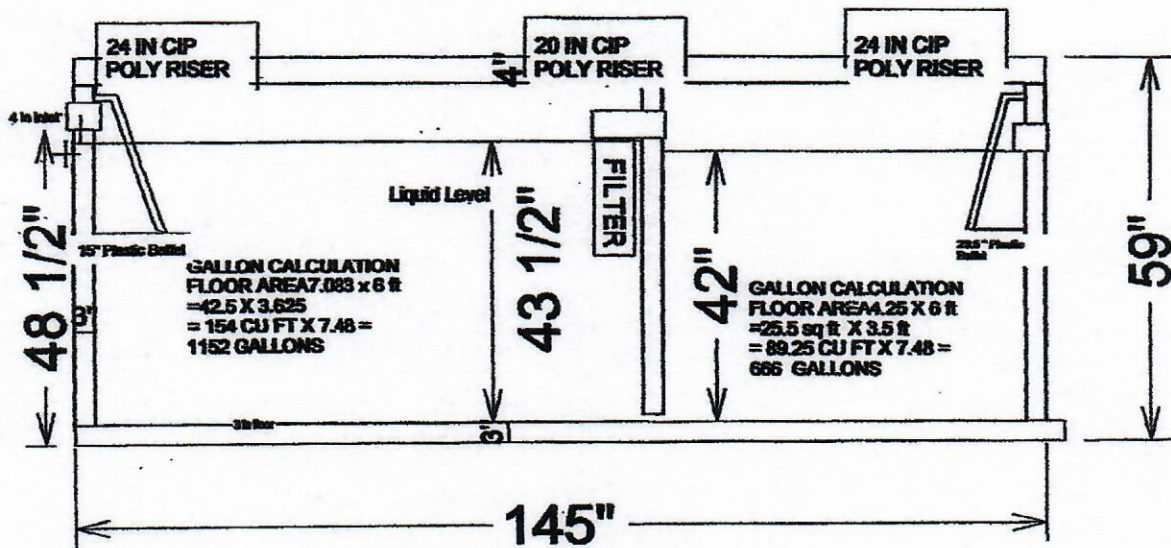
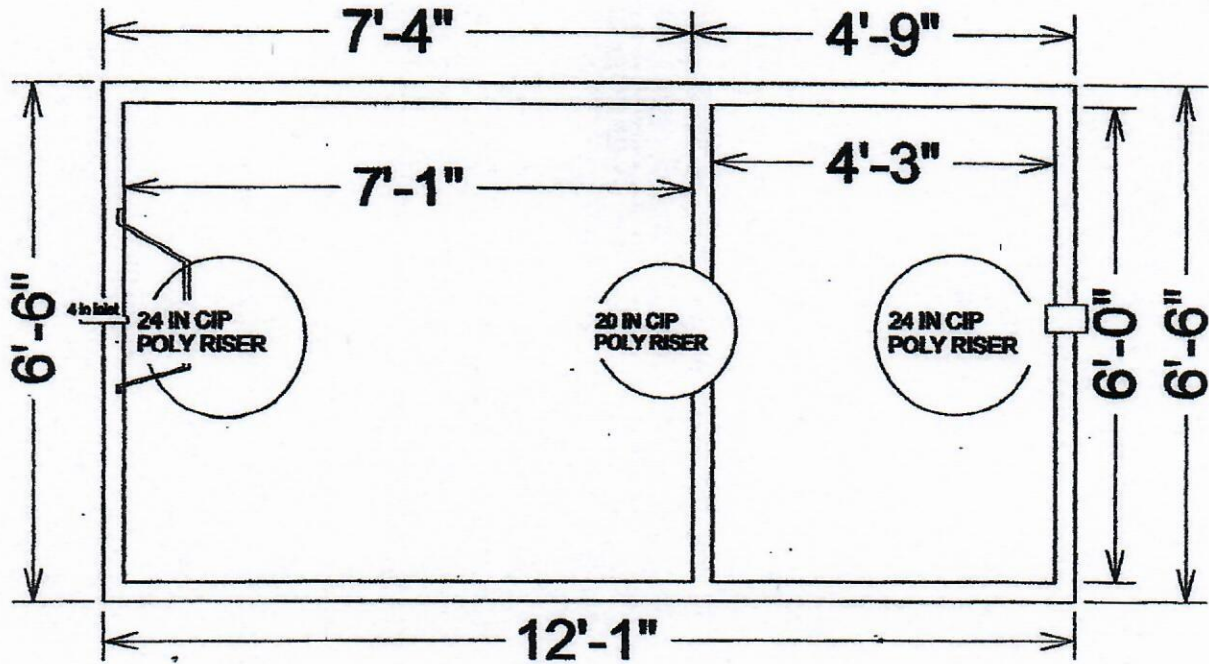
L-1347
License#

Installer may route 2" supply pipe around NW end of Garage to stay away from future house site.

1820 Gallon 2 Compartment Septic Tank

Weight: 13,780 Lbs

TOP VIEW



666 gal. / 42" = 15.85 GPI

SIDE VIEW

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



Detailed Parcel Report

Parcel Number: 07-1-151700

General Information

1985

Township/City: FARM ISLAND TWP
 Taxpayer Name: HENRY, TRACY & DEANNA
 Taxpayer Address: 5211 SUNNYSIDE RD
 MOUNDS VIEW MN 55112
 Property Address: 33242 433rd Pl
 Township: 46 Lake Number: 1016200
 Range: 27 Lake Name: FOUR LAKE *NE*
 Section: 4 Acres: 0.00
 Green Acres: No School District: 1.00
 Plat: BLUE RIDGE ESTATES
 Brief Legal Description: LOT 5 BLK 5

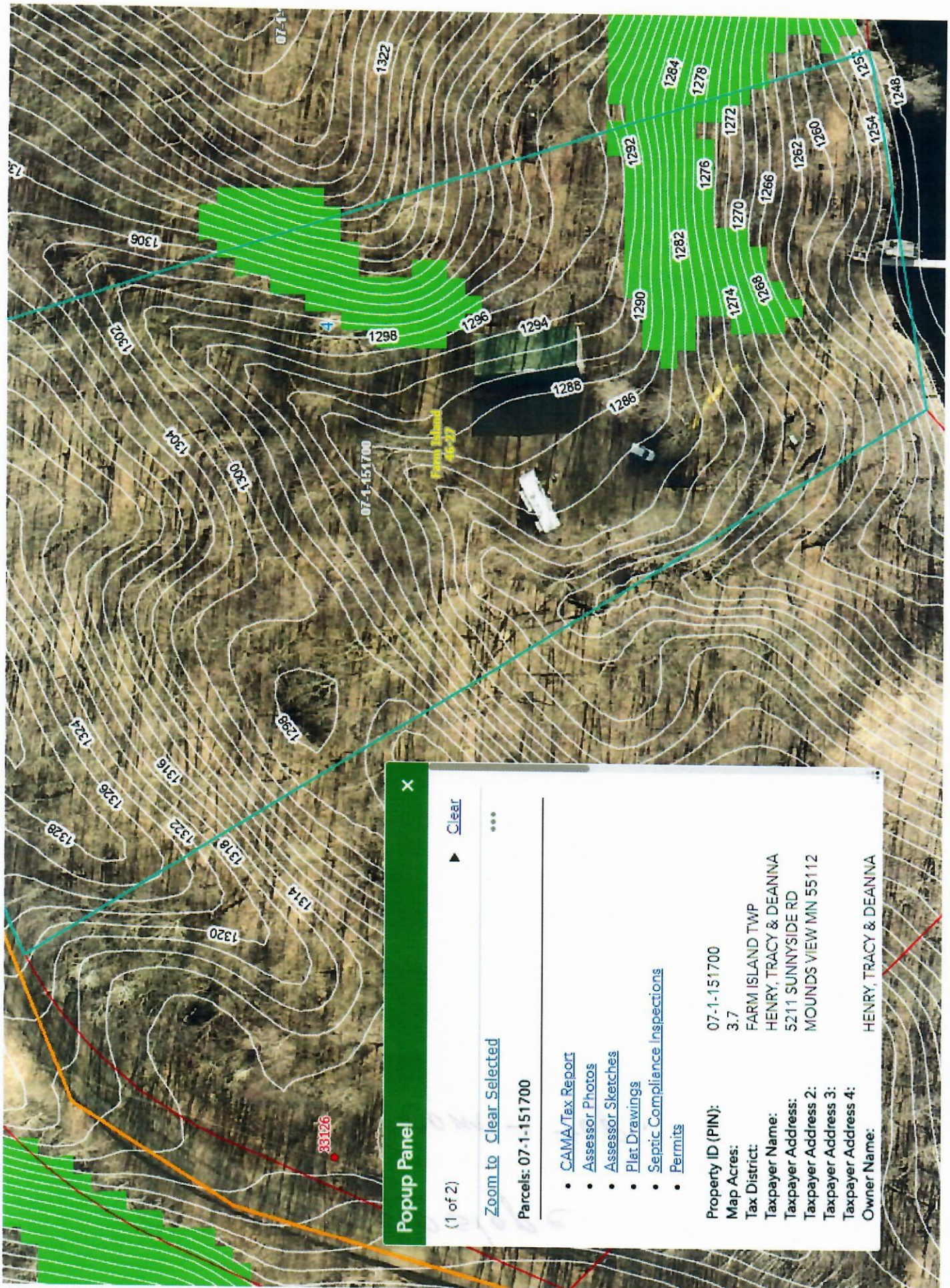
Tax Information

Class Code 1: Non-Comm Seasonal Residential Recreational
 Class Code 2: Unclassified
 Class Code 3: Unclassified
 Homestead: Non Homestead
 Assessment Year: 2023

Estimated Land Value: \$77,800.00
 Estimated Building Value: \$72,600.00
 Estimated Total Value: \$150,400.00
 Prior Year Total Taxable Value: \$103,479.00
 Current Year Net Tax (Specials Not Included): \$294.00
 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.



Popup Panel

(1 of 2) [Clear](#)

[Zoom to](#) [Clear Selected](#) ...

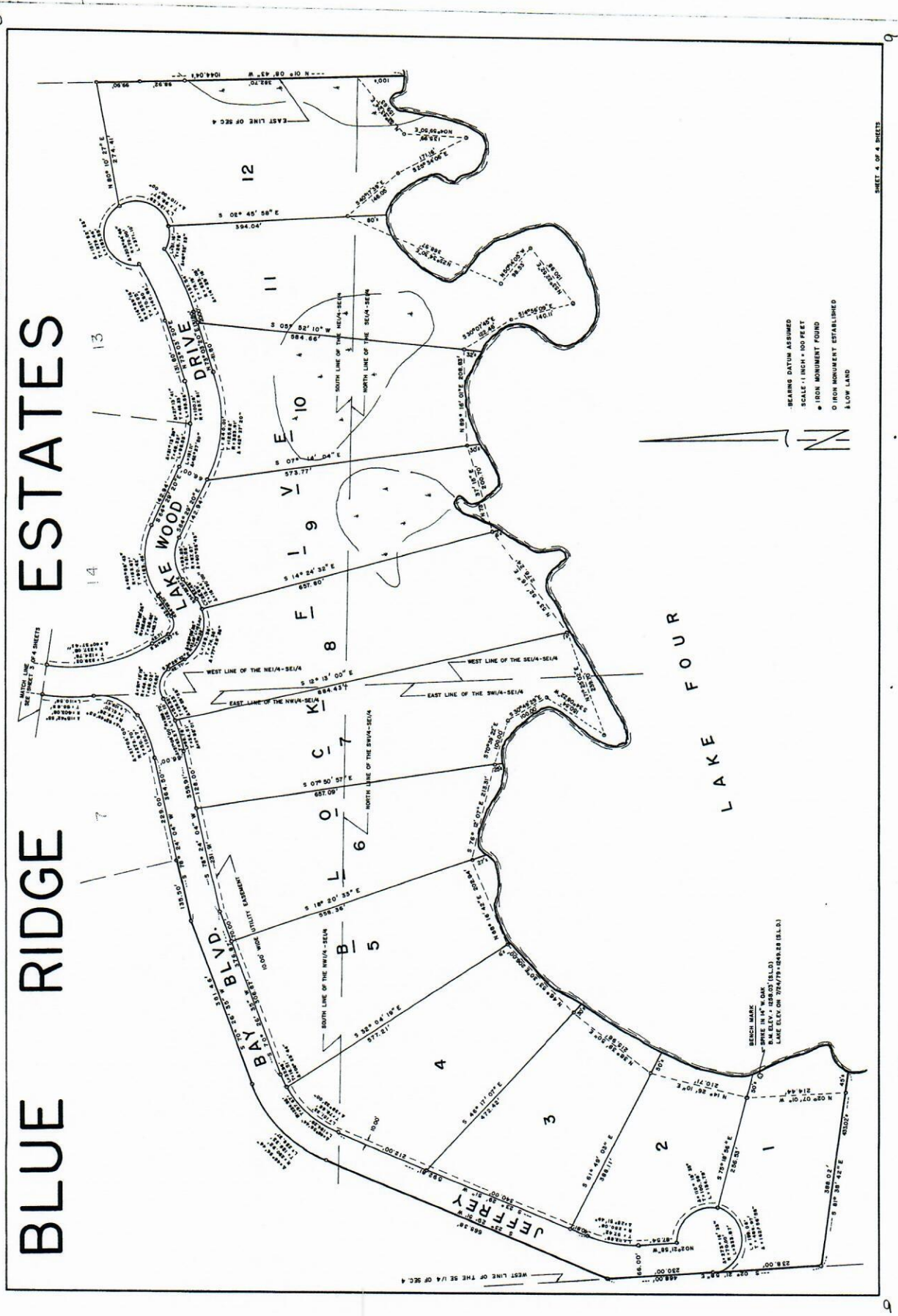
Parcels: 07-1-151700

- [CAMA/Tax Report](#)
- [Assessor Photos](#)
- [Assessor Sketches](#)
- [Plat Drawings](#)
- [Septic Compliance Inspections](#)
- [Permits](#)

| | |
|---------------------|-----------------------|
| Property ID (PIN): | 07-1-151700 |
| Map Acres: | 3.7 |
| Tax District: | FARM ISLAND TWP |
| Taxpayer Name: | HENRY, TRACY & DEANNA |
| Taxpayer Address: | 5211 SUNNYSIDE RD |
| Taxpayer Address 2: | MOUNDS VIEW MN 55112 |
| Taxpayer Address 3: | |
| Taxpayer Address 4: | |
| Owner Name: | HENRY, TRACY & DEANNA |

OFFICIAL PLAT

BLUE RIDGE ESTATES



BEARING DATUM ASSUMED
 SCALE: 1 INCH = 100 FEET
 * IRON MONUMENT FOUND
 O IRON MONUMENT ESTABLISHED
 S LOW LAND

SHEET 4 OF 4 SHEETS



Minnesota Well Index

General Information

| | | | | | | | |
|--------------------------------------|---------------------------|----------------------------|-------------------------------|-----------------------------|-------------------|--------------------------|--|
| Unique Well ID: | 600915 | Well Name: | MUEHLBERG, CHARLIE | County: | Aitkin | Aquifer: | Quat. buried artes. aquifer |
| Well Elevation (msl in feet): | 1287 | Drilled Depth (ft): | 170 | Well Completed (ft): | 170 | Date Drilled: | 08/26/1997 |
| Township: | 46 | Range: | 27 | Dir: | W | Section: | 4 |
| Subsection: | DCABDB | Use: | domestic | Well Status: | Active | Depth To Bedrock: | |
| Driller: | Northland Well Co. | Entry Date: | 11/10/1997 | Update Date: | 09/05/2017 | | |

Related Resources:

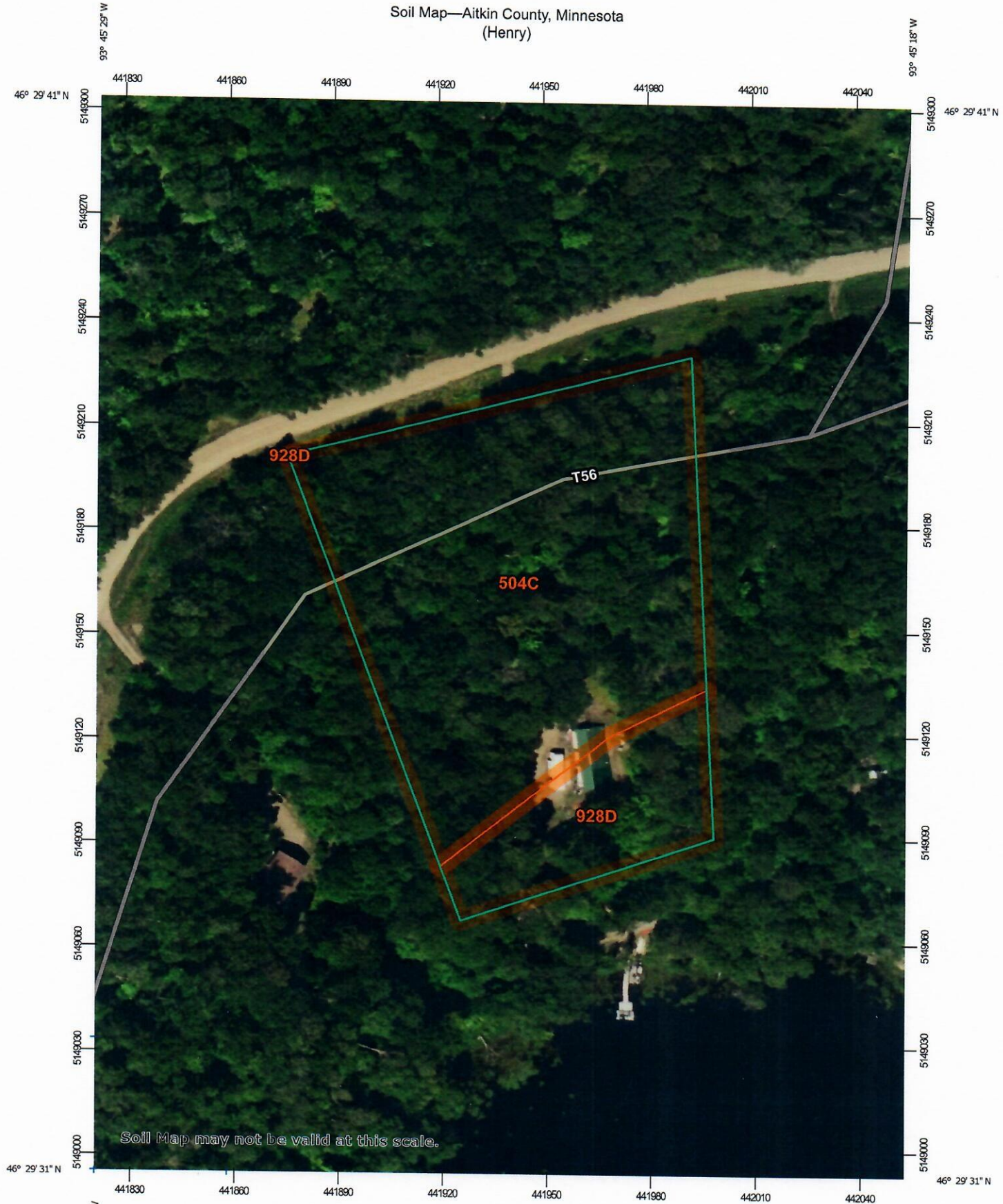
[Go to MN Well Index Map](#) [Well Log Report](#) [Scanned Record\(s\)](#) [Stratigraphy Report](#)

[More Details](#)
 [Stratigraphy](#)
 [Address](#)
 [Chemical Data](#)
 [Construction](#)
 [Pump Test](#)
 [Static Water](#)
 [Comments](#)
 [Location Changes](#)

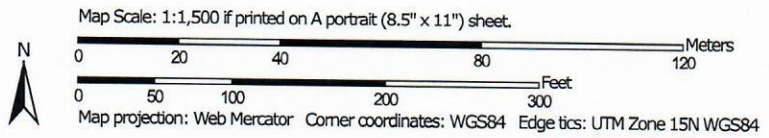
Overview Map

| Description | From(ft) | To(ft) | Color | Hardness | Lith Primary | Lith Secondary | Interpretation |
|--------------|----------|--------|-------|----------|--------------|----------------|-----------------------------|
| CLAY (ROCKY) | 0 | 100 | BROWN | HARD | CLAY | | pebbly sand/silt/clay-brown |
| CLAY (ROCKY) | 100 | 162 | GRAY | HARD | CLAY | | pebbly sand/silt/clay-gray |
| SAND | 162 | 170 | GRAY | MEDIUM | SAND | | sand-gray |

Soil Map—Aitkin County, Minnesota
(Henry)



Soil Map may not be valid at this scale.



Aitkin County, Minnesota

504C—Duluth fine sandy loam, 6 to 12 percent slopes

Map Unit Setting

National map unit symbol: gjh8

Elevation: 980 to 1,640 feet

Mean annual precipitation: 25 to 30 inches

Mean annual air temperature: 39 to 45 degrees F

Frost-free period: 120 to 140 days

Farmland classification: Farmland of statewide importance

Map Unit Composition

Duluth and similar soils: 85 percent

Minor components: 15 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Duluth

Setting

Landform: Moraines

Landform position (two-dimensional): Backslope

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Loamy till

Typical profile

A - 0 to 3 inches: fine sandy loam

E,Bw,2BE,2Bt - 3 to 49 inches: clay loam

2C - 49 to 60 inches: loam

Properties and qualities

Slope: 6 to 12 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Capacity of the most limiting layer to transmit water

(Ksat): Moderately low to moderately high (0.06 to 0.60 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 5 percent

Available water supply, 0 to 60 inches: High (about 10.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 3e

Hydrologic Soil Group: C

Ecological site: F090AY015WI - Loamy Upland with Carbonates

Forage suitability group: Sloping Upland, Acid (G090AN006MN)

Other vegetative classification: Sloping Upland, Acid (G090AN006MN)

Hydric soil rating: No

Minor Components

Blackhoof

Percent of map unit: 3 percent

Landform: Depressions

Hydric soil rating: Yes

Mahtowa

Percent of map unit: 3 percent

Landform: Depressions

Hydric soil rating: Yes

Rifle

Percent of map unit: 3 percent

Landform: Bogs

Hydric soil rating: Yes

Cromwell

Percent of map unit: 2 percent

Hydric soil rating: No

Cutaway

Percent of map unit: 2 percent

Hydric soil rating: No

Dusler

Percent of map unit: 2 percent

Hydric soil rating: No

Data Source Information

Soil Survey Area: Aitkin County, Minnesota

Survey Area Data: Version 24, Sep 9, 2023

Aitkin County, Minnesota

928D—Cushing-Mahtomedi complex, 10 to 25 percent slopes

Map Unit Setting

National map unit symbol: gjk5
Elevation: 980 to 1,640 feet
Mean annual precipitation: 25 to 30 inches
Mean annual air temperature: 39 to 45 degrees F
Frost-free period: 120 to 140 days
Farmland classification: Not prime farmland

Map Unit Composition

Cushing and similar soils: 45 percent
Mahtomedi and similar soils: 40 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Cushing

Setting

Landform: Moraines
Landform position (two-dimensional): Shoulder, backslope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loamy till

Typical profile

E - 0 to 7 inches: loam
B/E - 7 to 17 inches: loam
Bt - 17 to 30 inches: loam
C - 30 to 60 inches: loam

Properties and qualities

Slope: 10 to 25 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 10 percent
Available water supply, 0 to 60 inches: High (about 9.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: C
Ecological site: F090AY015WI - Loamy Upland with Carbonates
Forage suitability group: Sloping; Fine Texture (G090AN023MN)

Other vegetative classification: Sloping; Fine Texture
(G090AN023MN)
Hydric soil rating: No

Description of Mahtomedi

Setting

Landform: Moraines
Landform position (two-dimensional): Shoulder, backslope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Sandy and gravelly outwash

Typical profile

A - 0 to 3 inches: loamy coarse sand
E - 3 to 13 inches: coarse sand
Bw - 13 to 25 inches: gravelly coarse sand
C - 25 to 60 inches: gravelly sand

Properties and qualities

Slope: 10 to 25 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Excessively drained
Capacity of the most limiting layer to transmit water (Ksat): High to very high (6.00 to 20.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Available water supply, 0 to 60 inches: Low (about 4.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: A
Ecological site: F090AY019WI - Dry Sandy Uplands
Forage suitability group: Sandy (G090AN022MN)
Other vegetative classification: Sandy (G090AN022MN)
Hydric soil rating: No

Minor Components

Alstad

Percent of map unit: 8 percent
Hydric soil rating: No

Cathro

Percent of map unit: 7 percent
Landform: Bogs

Hydric soil rating: Yes

Data Source Information

Soil Survey Area: Aitkin County, Minnesota
Survey Area Data: Version 24, Sep 9, 2023