Becker County Planning & Zoning
915 Lake Ave
Detroit Lakes, MN 56501
(218) 846-7314
www.co.becker.mn.us

170281001-2024

Certificate of Compliance
Inspection Report - Permit #: SS2024-2099

Owner & Property Information

Owner Name:	TODD HOLMQUIST
Mailing Address:	TODD HOLMQUIST 22484 NELSON RD DETROIT LAKES MN 56501
Parcel #:	170281001
Secondary Parcel #:	

Site Address:	22484 NELSON RD
Township - Sec/Twp/Rng:	LAKE EUNICE - 25/138/042
Legal Description:	25-138-42 PT NE1/4 SE1/4, PT W1/2 SE1/4 SW1/4 LESS PT S OF LN: COMM N QTR COR SEC 25', S 3973.77', W 101.35' TO POB; NW 115.46', W 502.56', S 201.1', W 657.72' TO S LN W1/2 SE1/4 SW1/4 AND TERM (INCL TRACTS A, B). E 50' E1/2 SE1/4 SW1/4 & PT E OF LN: COMM N QTR COR SEC 25, S 3973.77', W 101.35' TO POB; SE 100.89' TO W LN E 50' AND TERM (TRACT C.).
Designer:	Dewey's Septic Service LLC, L2884 (Timothy Smith)
Installer:	Dewey's Septic Service LLC, L2884 (Timothy Smith)

Inspector Verified Specifications

Insp- Effluent Screen Installed:	No
Insp- Alarm Required:	No
Insp- Lift Pump in System:	No
Insp- Number of Bedrooms:	3

Insp- Tank Nbr/Size:	1/1500
Insp- Drainfield Type:	No Drainfield
Insp- Drainfield Size:	EXISTING DRAINFIELD COMPLIANT
Insp- Soil Verification:	#1:EXISTING #2:N/A #3:N/A

Inspector Verified Setbacks

Insp- Tank Dist to Road	10
Insp- Tank Dist to Nearest Prop Line	10+
Insp- Tank Dist to Nearest Structure	10
Insp- Tank Dist to Well	50+
Insp- Tank Dist to OHW	NA
Insp- Tank Dist to Pond/Wetland	NA
Insp- Tank Dist to Pressure Line	NA

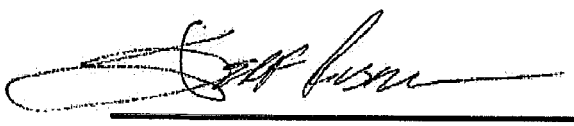
Insp- Drainfield Dist to Road	EXISTING
Insp- Drainfield Dist to Nearest Prop Line	EXISTING
Insp- Drainfield Dist to Nearest Structure	EXISTING
Insp- Drainfield Dist to Well	EXISTING
Insp- Drainfield Dist to OHW	NA
Insp- Drainfield Dist to Pond/Wetland	NA
Insp- Drainfield Dist to Pressure Line	NA

Certificate of Compliance

(Yes) Certificate is hereby granted based upon the application, addendum from, plans, specifications and all other supporting data. With proper maintenance, this system can be expected to function satisfactory, however this is not a guarantee.

Certification Date: 08/02/2024

Zoning Office Signature:



Jeff Rusness - ISTS Inspector

*** Certificate of Compliance is not valid unless signed by a Registered Qualified Employee ***

10:30

Field Review Form — Permit # SS2024-2099

Property and Owner

Owner: **TODD HOLMQUIST**	Parcel Number: **170281001**
Site Address: **22484 NELSON RD**	Secondary Parcel:

Home Information

Does the structure contain any of the following elements?	Designer submitted	Inspector verified
	Garbage disposal: No Dishwasher: Grinder pump: Lift pump in bsmt:	Garbage disposal? Y (N) Dishwasher? (Y) N Grinder pump? Y (N) Lift pump in basement? Y (N)
Number of bedrooms: **3**	Review - Number of bedrooms: 3	
Effluent screen	Effluent screen installed? Y (N) Mfr:	
Alarm: **No** Type:	Review - Alarm? Y (N) Type & Mfr: NA	
Lift pump in system: **No**	Review - Lift pump in system? Y (N) Mfr: NA	

Component Information

Tank size: **1500**	Review - Tank nbr: 1 size: 1500 Mfr: Brown Wilbert
Drainfield type:	Review - Drainfield type: Existing Drainfield
Drainfield size: Full size - Reduced/warr. size -	Review - Drainfield status: none / installed / next spring Review - Drainfield size: Existing
Absorption area size:	Review - Absorption area size:
Chamber type/num: Trench sqft/chamber -	Review - Chamber type: Num: Review - Trench sqft/chamber:
Drainfield rock depth:	Review - Rock depth:

Soil Verification

Vertical separation verified Compliance on Drainfield	Boring #1: Boring #2: Boring #3:

Setback Verification

	Designer submitted		Inspector verified	
Distance to...	Tank	Drainfield	Tank	Drainfield
Road	100's	100's	10	Existing COC
Nearest prop line	50	50	10	
Nearest structure	10+	20+	10	
Well	50+	50+	50	
OHW			NA	NA
Pond/Wetland			NA	
Pressure line	20+	20+	NA	

Date System Installed: 7-31-2024 Installer: Daveys Inspector:

Cubed B LLC
SEPTIC SYSTEM DESIGN & INSPECTION

BRANT B. BIGGER
Owner

13248 US Hwy 10
Lake Park, MN 56554
218-234-6906
brant.bigger@gmail.com
cubedbllc.com

Todd Holmquist
170281001
16 Jul 2024

Scale: 1" = 32'

N

Property Address: 22484 NELSON RD, DETROIT LAKES MN 56501
Business Name: Cubed B LLC Date: 7/16/2024

5. Soil separation – Compliance component #5 of 5

Date of installation 9/28/1990 *(mm/dd/yyyy)* ☐ Unknown

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:* Drainfield has at least a two-foot vertical separation distance from periodically saturated soil or bedrock.	☐ Yes ☐ No*
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:* Drainfield has a three-foot vertical separation distance from periodically saturated soil or bedrock.*	☒ Yes ☐ No*
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)* Drainfield meets the designed vertical separation distance from periodically saturated soil or bedrock.	☐ Yes ☐ No*

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

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	99' 10"
B. Periodically saturated soil/bedrock	<96' 7"
C. System separation	>39"
D. Required compliance separation*	36"

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

Describe verification methods and results:

Conducted a soil boring (elevation 101' 1"). Redoximorphic features were not found through 54" depth in the boring (elevation 96' 7")

Benchmark elevation (100') is located at the top of the concrete light post base that is west of the STA.

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.*

University of Minnesota Onsite Sewage Treatment Program

Soil Observation Log

Project ID:

v 03.15.2023

Client:	Todd Holmquist			Location / Address:	170281001 / 22484 NELSON RD, DETROIT LAKES MN
Soil parent material(s): (Check all that apply)	☑ Outwash	☐ Lacustrine	☐ Loess	☐ Till	☐ Alluvium ☐ Bedrock ☐ Organic Matter ☐ Disturbed/Fill
Landscape Position:	Back/Side Slope	Slope %: 8.0	Slope shape:	Linear, Linear	Flooding/Run-On potential: No
Vegetation:	Lawn	Soil survey map units:	711C—Arvilla-Sandberg cplx		Surface Elevation-Relative to benchmark: 101' 1"
Date/Time of Day/Weather Conditions:	16-Jul-24	18:45	hazy		Limiting Layer Elevation: <96' 7"
Observation #/Location:	#1	SE of the STA		Observation Type:	Auger

Depth (in)	Texture	Rock Frag. %	Matrix Color(s)	Mottle Color(s)	Redox Kind(s)	Indicator(s)	Structure		
							Shape	Grade	Consistence
0-12	Medium Loamy Sand	5	10R 2/2		None	None	Single grain	Structureless	Loose
12-18	Medium Sand	5	10R 3/4		None	None	Single grain	Structureless	Loose
18-28	Medium Sand	15	10R 3/6		None	None	Single grain	Structureless	Loose
28-48	Medium Sand	10	10R 5/4		None	None	Single grain	Structureless	Loose
48-54	Medium Sand	5	10R 6/4		None	None	Single grain	Structureless	Loose

Comments: Benchmark elevation (100') is located at the top of the concrete light post base that is west of the STA.

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

Brant Bigger		L4142	17-Jul-24
(Designer/Inspector)	(Signature)	(License #)	(Date)

Optional Verification: I hereby certify that this soil observation was verified according to Minn. R. 7082.0500 subp. 3 A. The signature below represents an infield verification of the periodically saturated soil or bedrock at the proposed soil treatment and dispersal site.

(LGU/Designer/Inspector)	(Signature)	(Cert #)	(Date)

Textures:	
C	Clay
SiC	Silty Clay
SC	Sandy Clay
CL	Clay Loam
SiCL	Silty Clay Loam
SCL	Sandy Clay Loam
Si	Silt
SiL	Silt Loam
L	Loam
SL	Sandy Loam*
LS	Loamy Sand*
S	Sand*

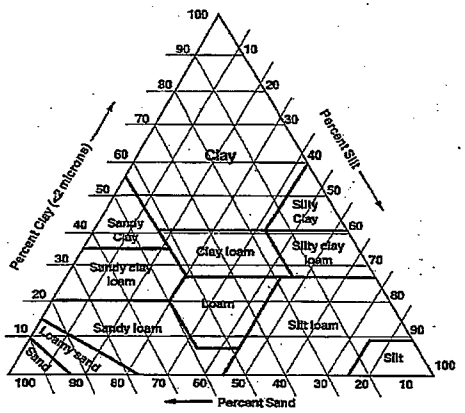
*Sand Modifiers:	
Co	Coarse
M	Medium
F	Fine
VF	Very Fine

Topsoil Indicator(s) of Saturation:

T1. Wetland Vegetation
T2. Depressional Landscape
T3. Organic texture or organic modifiers
T4. N 2.5/ 0 color
T5. Redox features in topsoil
T6. Hydraulic indicators

Subsoil Indicator(s) of Saturation:

S1. Depleted matrix (value >/=4 and chroma </=2)
S2. Distinct gray or red redox features (any Matrix Hue)
S3. Matrix Hue of 5Y with a chroma </= 3
S4. Matrix Hue of 7.5 YR or redder with faint redox concentrations or redox depletions



Shape:

Granular	The peds are approximately spherical or polyhedral and are commonly found in topsoil. These are the small, rounded peds that hang onto roots when soil is turned over.
Platy	The peds are flat and plate like. They are oriented horizontally and are usually overlapping. Platy structure is commonly found in forested areas just below the leaf litter or shallow topsoil.
Blocky	The peds are block-like or polyhedral, and are bounded by flat or slightly rounded surface that are castings of the faces of surrounding peds. Blocky structure is commonly found in the lower topsoil and subsoil.
Prismatic	Flat or slightly rounded vertical faces bound the individual peds. Peds are distinctly longer vertically, and faces are typically casts or molds of adjoining peds. Prismatic structure is commonly found in the lower subsoil.
Single Grain	The structure found in a sandy soil. The individual particles are not held together.

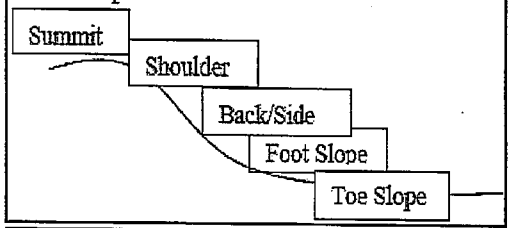
Grade:

Loose	No peds, sandy soil
Weak	Poorly formed, indistinct peds, barely observable in place
Moderate	Well formed, distinct peds, moderately durable and evident, but not distinct in undisturbed soil
Strong	Durable peds that are quite evident in un-displaced soil, adhere weakly to one another, withstand displacement, and become separated when soil is disturbed
Massive	No observable aggregates, or no orderly arrangement of natural lines of weakness

Consistence:

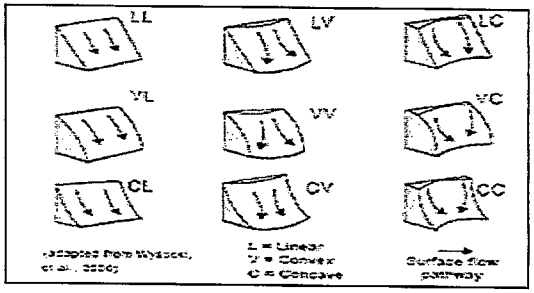
Loose	Intact specimen not available
Friable	Slight force between fingers
Firm	Moderate force between fingers
Extremely Firm	Moderate force between hands or slight foot pressure
Rigid	Foot pressure

Landscape Position:



Slope Shape:

Slope shape is described in two directions: up and down slope (perpendicular to the contour), and across slope (along the horizontal contour); e.g. Linear, Convex or LV'.



170281001-2024

MINNESOTA POLLUTION CONTROL AGENCY

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

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: 170281001 Reason for Inspection property sale

Local regulatory authority info: Becker County

Property address: 22484 NELSON RD, DETROIT LAKES MN 56501

Owner/representative: Todd Holmquist Owner's phone: 502-806-8656

Brief system description: 1,000 gallon septic tank with gravity graveless pipe trenches

System status

System status on date (mm/dd/yyyy): 7/16/2024

☐ **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

There is a valve with an unknown purpose beyond the end of the drainfield. The area beyond the mowed yard was searched for a surfaced/daylighted septic line but nothing was found.
Owner states there is not not a system in the garage (no fixtures).

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: Cubed B LLC Certification number: C1835

Inspector signature: Brant B Bigger License number: L4142

(This document has been electronically signed)

Phone: 218-234-6906

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): Site Sketch

Property Address: 22484 NELSON RD, DETROIT LAKES MN 56501
Business Name: Cubed B LLC Date: 7/16/2024

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.

Attached supporting documentation:

☐ Other:

☒ Not applicable

Describe verification methods and results:

Visual inspection of the immediate area did not indicate any issues of a surface outlet or seeping in the yard.

Property owner testified on 16 Jul 2024 that there were not any issues with the septic system and didn't know what the valve was for in the small riser in the yard.

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:	septic tank

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

Attached supporting documentation:

☒ Empty tank(s) viewed by inspector

Name of maintenance business: Stenger's Septic Pumping

License number of maintenance business: L2911

Date of maintenance: 7/16/2024

☐ Existing tank integrity assessment (Attach)

Date of maintenance (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:

Describe verification methods and results:

The concrete has corroded/deteriorated around the outlet of the septic tank. It is not water tight below the operating level.

Property Address: 22484 NELSON RD, DETROIT LAKES MN 56501
Business Name: Cubed B LLC Date: 7/16/2024

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:

The mainenance hole cover is below the soil surface.

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) ☐

Property Address: 22484 NELSON RD, DETROIT LAKES MN 56501
Business Name: Cubed B LLC Date: 7/16/2024

5. Soil separation – Compliance component #5 of 5

Date of installation 9/28/1990 *(mm/dd/yyyy)* ☐ Unknown

Shoreland/Wellhead protection/Food beverage lodging? ☐ Yes ☒ No

Attached supporting documentation:

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

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:* Drainfield has at least a two-foot vertical separation distance from periodically saturated soil or bedrock.	☐ Yes ☐ No*
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:* Drainfield has a three-foot vertical separation distance from periodically saturated soil or bedrock.*	☒ Yes ☐ No*
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)* Drainfield meets the designed vertical separation distance from periodically saturated soil or bedrock.	☐ Yes ☐ No*

Indicate depths or elevations

A. Bottom of distribution media	99' 10"
B. Periodically saturated soil/bedrock	<96' 7"
C. System separation	>39"
D. Required compliance separation*	31"

*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:

Conducted a soil boring (elevation 101' 1"). Redoximorphic features were not found through 54" depth in the boring (elevation 96' 7")

Benchmark elevation (100') is located at the top of the concrete light post base that is west of the STA.

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.*

University of Minnesota Onsite Sewage Treatment Program

Soil Observation Log

Project ID:

v 03.15.2023

Client:	Todd Holmquist	Location / Address:	170281001 / 22484 NELSON RD, DETROIT LAKES MN

Soil parent material(s): (Check all that apply) ☑ Outwash ☐ Lacustrine ☐ Loess ☐ Till ☐ Alluvium ☐ Bedrock ☐ Organic Matter ☐ Disturbed/Fill

Landscape Position:	Back/Side Slope	Slope %:	8.0	Slope shape:	Linear, Linear	Flooding/Run-On potential:	No
Vegetation:	Lawn	Soil survey map units:	711C—Arvilla-Sandberg cplx			Surface Elevation-Relative to benchmark:	101' 1"
Date/Time of Day/Weather Conditions:		16-Jul-24	18:45	hazy		Limiting Layer Elevation:	<96' 7"
Observation #/Location:	#1	SE of the STA		Observation Type:	Auger		

Depth (in)	Texture	Rock Frag. %	Matrix Color(s)	Mottle Color(s)	Redox Kind(s)	Indicator(s)	Structure Shape	Structure Grade	Structure Consistence
0-12	Medium Loamy Sand	5	10R 2/2		None	None	Single grain	Structureless	Loose
12-18	Medium Sand	5	10R 3/4		None	None	Single grain	Structureless	Loose
18-28	Medium Sand	15	10R 3/6		None	None	Single grain	Structureless	Loose
28-48	Medium Sand	10	10R 5/4		None	None	Single grain	Structureless	Loose
48-54	Medium Sand	5	10R 6/4		None	None	Single grain	Structureless	Loose

Comments: Benchmark elevation (100') is located at the top of the concrete light post base that is west of the STA.

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

Brant Bigger	Brant Bigger	L4142	17-Jul-24
(Designer/Inspector)	(Signature)	(License #)	(Date)

Optional Verification: I hereby certify that this soil observation was verified according to Minn. R. 7082.0500 subp. 3 A. The signature below represents an infield verification of the periodically saturated soil or bedrock at the proposed soil treatment and dispersal site.

(LGU/Designer/Inspector)	(Signature)	(Cert #)	(Date)

Textures:	
C	Clay
SiC	Silty Clay
SC	Sandy Clay
CL	Clay Loam
SiCL	Silty Clay Loam
SCL	Sandy Clay Loam
Si	Silt
SiL	Silt Loam
L	Loam
SL	Sandy Loam*
LS	Loamy Sand*
S	Sand*

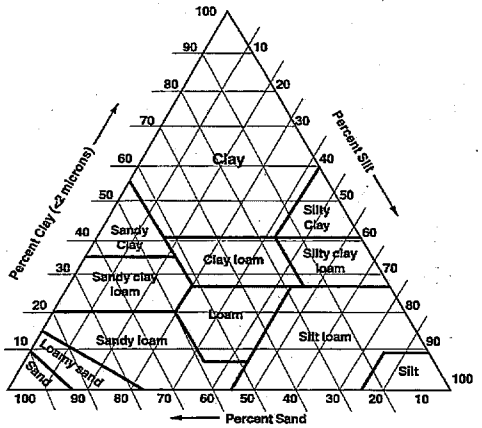
*Sand Modifiers:	
Co	Coarse
M	Medium
F	Fine
VF	Very Fine

Topsoil Indicator(s) of Saturation:

T1. Wetland Vegetation
T2. Depressional Landscape
T3. Organic texture or organic modifiers
T4. N 2.5/ 0 color
T5. Redox features in topsoil
T6. Hydraulic indicators

Subsoil Indicator(s) of Saturation:

S1. Depleted matrix (value >/=4 and chroma </=2)
S2. Distinct gray or red redox features (any Matrix Hue)
S3. Matrix Hue of 5Y with a chroma </= 3
S4. Matrix Hue of 7.5 YR or redder with faint redox concentrations or redox depletions



Shape:

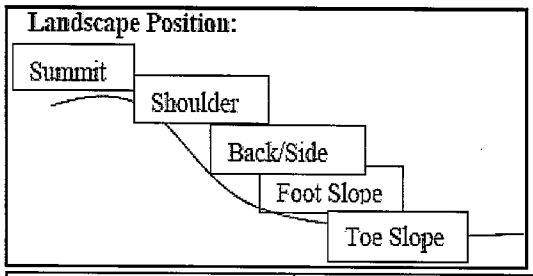
Granular	The peds are approximately spherical or polyhedral and are commonly found in topsoil. These are the small, rounded peds that hang onto roots when soil is turned over.
Platy	The peds are flat and plate like. They are oriented horizontally and are usually overlapping. Platy structure is commonly found in forested areas just below the leaf litter or shallow topsoil.
Blocky	The peds are block-like or polyhedral, and are bounded by flat or slightly rounded surface that are castings of the faces of surrounding peds. Blocky structure is commonly found in the lower topsoil and subsoil.
Prismatic	Flat or slightly rounded vertical faces bound the individual peds. Peds are distinctly longer vertically, and faces are typically casts or molds of adjoining peds. Prismatic structure is commonly found in the lower subsoil.
Single Grain	The structure found in a sandy soil. The individual particles are not held together.

Grade:

Loose	No peds, sandy soil
Weak	Poorly formed, indistinct peds, barely observable in place
Moderate	Well formed, distinct peds, moderately durable and evident, but not distinct in undisturbed soil
Strong	Durable peds that are quite evident in un-displaced soil, adhere weakly to one another, withstand displacement, and become separated when soil is disturbed
Massive	No observable aggregates, or no orderly arrangement of natural lines of weakness

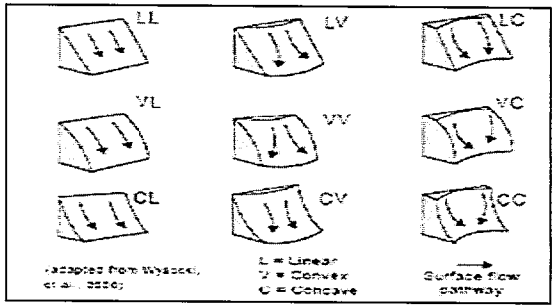
Consistence:

Loose	Intact specimen not available
Friable	Slight force between fingers
Firm	Moderate force between fingers
Extremely Firm	Moderate force between hands or slight foot pressure
Rigid	Foot pressure



Slope Shape:

Slope shape is described in two directions: up and down slope (perpendicular to the contour), and across slope (along the horizontal contour); e.g. Linear, Convex or LV'.



Cubed B LLC
SEPTIC SYSTEM DESIGN & INSPECTION

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Todd Holmquist
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16 Jul 2024

Scale: 1" = 32'

N