



September 14, 2016

Mr. Rick Nasby
11048 – 11th Street N,
Lake Elmo, MN 55042

Dear Mr. Nasby,

We were retained by Mr. Rick Nasby of 11048 – 11th Street N, Lake Elmo, MN 55042 (see figure 1) to review the septic system compliance inspection completed by Inspect Minnesota and signed by Mr. Brian Humpal. Mr. Nasby contracted with our firm to review the soils at the subject site to determine if the soils meet current regulations for compliant septic systems in Washington County. We were not retained to review the work of Inspect Minnesota or the soil profiles signed by Mr. Humpal. No effort to relate our observations to the previous observations were exerted.

We did not inspect or test the septic tank at the site. Our services were to review the soil profiles from our soil boring test holes. We completed our soil borings in excess of 10 feet from Inspect Minnesota and closer to the subsurface soil treatment system (see figure 2).

We used standard USDA NCRS methodology as prescribed in the “Keys to Soil Taxonomy”, the “Field Book for Describing and Sampling Soils” with selected references from the Soil Survey Manual. The Munsell Soil Color Chart was used along with the particle size booklet from Kent State. An AMS 3.5 inch bucket auger was used to recover soil for the profile. The recovered soil was placed in a “Soil Tray” by Soil Tools LLC in the order it was recovered and in the proper scale for the depth. Soil was recovered in four (4) to six (6) inch sections to prevent distortion, compaction, and or other modifications to the soil profile. After the soil profile was recovered and placed in order in the “Soil Tray” it was observed and analyzed by Mr. Paul Brandt PSS License number 30007.

We completed our investigation by selecting locations that did not receive storm water from runoff due to impervious surfaces. Soil boring 1 was completed near the lowest soil trench and away from the bermed surface that channels stormwater away from the Nasby residence. Our soil boring is located approximately 15 feet west and slightly north of Soil Boring 1 completed by Inspect Minnesota. Our soil boring 2 was completed approximately 15 feet north and slightly east of Soil Boring 2 completed by Inspect Minnesota.

It should be noted that detailed soil observations were collected at the time of obtaining the soil profile data. This included observing the soil particles under high resolution magnification, testing the oil fractions for free iron oxides, and detailed observation of potentially reduced areas to determine if reduction of iron had occurred or were the soil fractions native matrix materials. Some soil fractions were returned to our office and observed under a microscope to confirm field observations.




Soil Boring 1 was completed on August 22, 2016. The weather was clear and warm, the bucket auger was advanced to 70 inches below the surface. This soil profile did not exhibit redoximorphic features since no reduced soil morphology was observed. We observed oxidations that were well consolidated and did not rub off the soil particle surfaces when rubbed. This is indicative of relict conditions that reflect wetter conditions during a historical period of pedon development. We did observe a mixed matrix from 33 to 65 inches consisting of contrasting soil matrixes in lenses and in inclusions. While these materials in association are mottled (various colors), they are not redoximorphic in appearance. At a depth of 65 to 70 inches soil was wet and near field saturation conditions. According to our observations and information from the Inspect Minnesota report, there appears to be in excess of 36 inches of separation between the lowest elevation of the trenches and saturated soil.

Soil Boring 2 was completed on September 8, 2016. The weather was clear and warm. The bucket auger was advanced to 65 inches below the surface. This soil profile did not exhibit redoximorphic features since no reduced soil morphology was observed above 60 inches in depth. We observed oxidations that were well consolidated and did not rub off the soil particle surfaces when rubbed. This is indicative of relict conditions that reflect wetter conditions during a historical period of pedon development. We also observed mixed matrix from 33 to 65 inches consisting of contrasting soil matrixes in lenses and in inclusions. While these materials in association are mottled (various colors), they are not redoximorphic. According to our observations and information from the Inspect Minnesota report, there appears to be in excess of 36 inches of separation between the lowest elevation of the trenches and saturated soil.

Thank you for your time please feel, free to contact me with questions.

I hereby certify that this plan, document, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Soil Scientist under the Laws of the state of Minnesota.

Print Name: Paul J. Brandt PSS

Signature: 

Date: 09/10/2016 License # 30007 .

Name(s) Rick Nasby 11048 11th St. N Lake Elmo MN

No. of Horizons 8

Profile Depth 70"

Soil Investigation & Design, Inc.

Soil Profile Description Sheet

Soil Boring Number 1

Date: 8/22/2016

MORPHOLOGY

Observ	Boundary	Boundary	Matrix Color	TEXTURE	Rock Frags	STRUCTURE	Consistence	Notes	
Method	Lower Dist. Depth		Hue Val./Chr.		KND % Rnd Sz	Grade Shape	Dry, Moist, Stk, Pis		
Auger	0 - 17	gradual	wavy	10YR 3/2	Loam	little	Subangular blocky	Moderate, Moist, Friable	Surface Grass, minor compaction from mowing and foot traffic, common fauna.
Auger	17 - 24	gradual	even	7.5YR 3/3	Loam	little	Subangular blocky	Moderate, Moist, Friable	
Auger	24 - 33	gradual	even	7.5YR 4/4	Silt Loam	little	Subangular blocky	Strong, Moist, Friable	
Auger	33 - 41	clear	abrupt	10YR 4/4	Silt Loam	little	Subangular blocky	Strong, Moist, Friable	Recent oxidations no active oxidations roots or stones, no observed reductions in association with oxidations, light soils are light matrix not reductions.
Auger	41 - 54	gradual	even	10YR 4/4	Silt Loam	little	Subangular blocky	Strong, Moist, Friable	Recent oxidations no active oxidations roots or stones, no observed reductions in association with oxidations, light soils are light matrix not reductions.
Auger	54 - 60	clear	even	10YR 4/4	Silt Loam	little	Subangular blocky	Strong, Moist, Friable	
Auger	60 - 65	clear	even	10YR 4/4	Silt Loam	little	Subangular blocky	Strong, Moist, Friable	
Auger	65 - 70	clear	abrupt	10YR 5/4	Sand	Gravel .25 - 2" .9/.9	Granular	Weak, Moist, Friable	

oxidation Feat	Reductions	Roots	Pores
Lower Dist % sz cn Hd sp	% sz cn Hd sp	Qty, Sz, Loc	Qty, Sz, Shape Other
Depth Loc Bd Col	Loc Bd Col		
0 - 17	None	Many Fine Roots	.2 to .5 mm round
17 - 24	None	Many Fine Roots	.2 to .5 mm round
24 - 33	None	Many Fine Roots	
33 - 41	5YR 3/4, 4/4 & 4/6 10YR 6/4	Fine and large Roots	
41 - 54	5YR 3/4, 4/4 & 4/6 10YR 6/4	Fine and large Roots	
54 - 60	None		3 - 7 cm round common
60 - 65	None		
65 - 70	None		

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Print Name: Paul J. Brandt PSS

Signature:



Date: 09/10/2016 License # 30007

Name(s) Rick Nasby 11048 11th St. N Lake Elmo MN

No. of Horizons 8

Profile Depth 70"

Soil Investigation & Design, Inc.

Soil Profile Description Sheet

Soil Boring Number 2

Date: 9/08/2016

MORPHOLOGY

Observ Method	Lower Dist. Depth	Boundary	Boundary	Matrix Color	TEXTURE	Rock Frags	STRUCTURE	Consistence	Notes
				Hue Val./Chr.		KND % Rnd Sz	Grade Shape	Dry, Moist, Stk, Pis	

Auger	0 - 14	gradual	wavy	10YR 3/2	Silt Loam	little	Subangular blocky	Moderate, Moist, Friable	Surface Grass, minor compaction from mowing and foot traffic, common fauna,
Auger	14 - 24	gradual	even	7.5YR 3/3	Silt Loam	little	Subangular blocky	Moderate, Moist, Friable	
Auger	24 - 26	gradual	even	7.5YR 4/4	Loam	little	Subangular blocky	Strong, Moist, Friable	
Auger	26 - 39	clear	abrupt	10YR 4/4	Sand	little	Granular	Strong, Moist, Friable	Gravel 1mm to 2 cm rounded, water worked, no oxidation materials on surface of gravels
Auger	39 - 49	gradual	even	10YR 4/4	Sand	little	Granular	Moderate, Moist, Friable	
Auger	49 - 60	clear	even	10YR 4/4	Sand	little	Granular	Moderate, Moist, Friable	
Auger	60 - 65	clear	even	10YR 4/4	Sand	little	Granular	Moderate, Moist, Friable	Recent oxidations no active oxidations roots or stones, no observed reductions in association with oxidations, light soils are light matrix not reductions.

oxidation Feat		Reductions		Roots		Pores	
Lower Dist	% sz cn Hd sp	% sz cn Hd sp	Qty, Sz, Loc	Qty, Sz, Shape	Other		
Depth	Loc Bd Col	Loc Bd Col					
0 - 14	None	None	Many Fine Roots				Kroatavina
14 - 24	None	None	Many Fine Roots	.2 to .5 mm round			Kroatavina
24 - 26	None	None	Some fine & large Roots	.2 to .5 mm round			Kroatavina
26 - 39		None	Few fine and larger Roots				Kroatavina
39 - 49		None					Kroatavina
49 - 60	None	None		3 - 7 cm round common			
60 - 65	5YR 3/6	None					Some oxidations rub off on abrasion.

I hereby certify that this plan, document, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Soil Scientist under the Laws of the state of Minnesota.

Print Name: Paul J. Brandt PSS

Signature: 

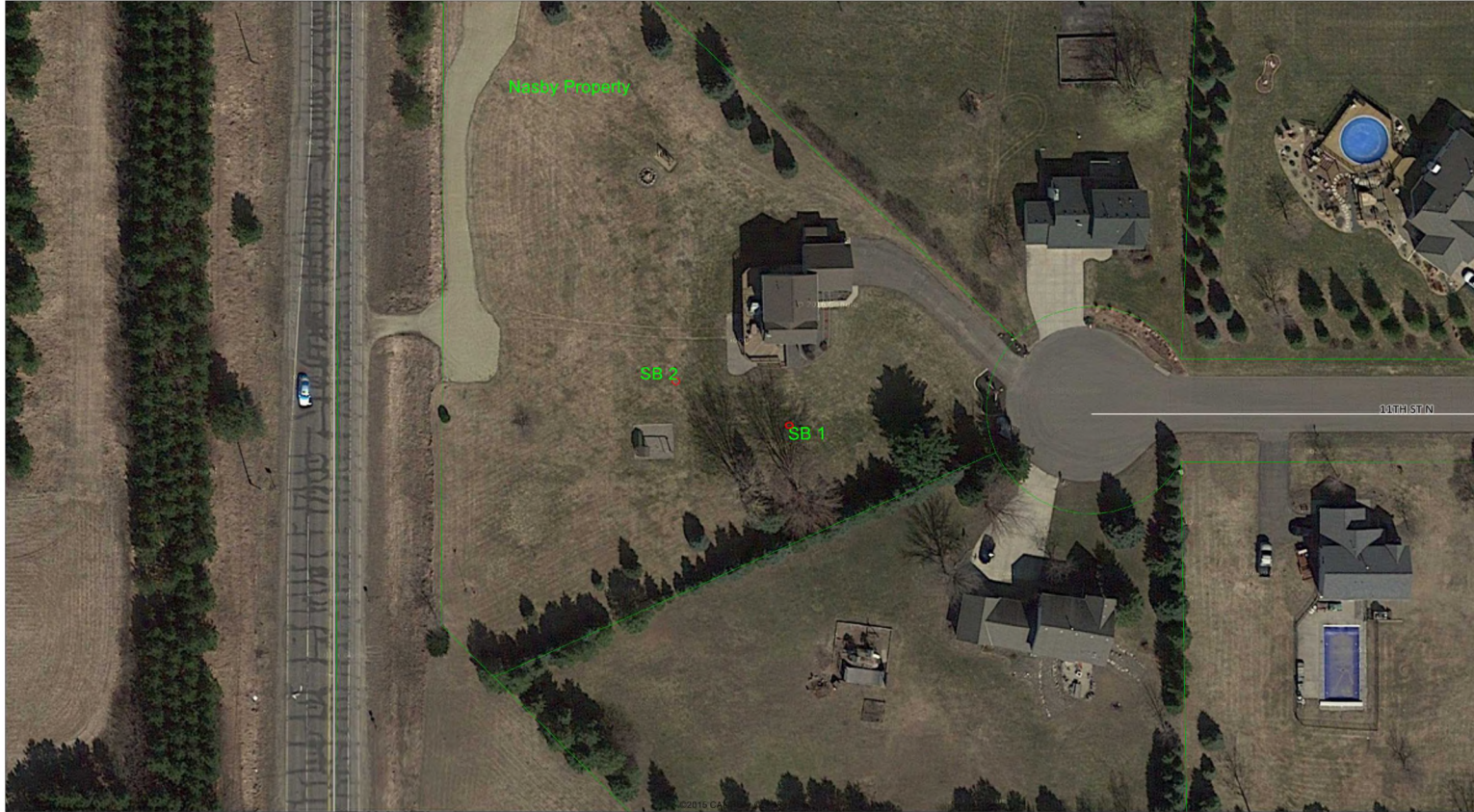
Date: 09/10/2016 License # 30007

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Soil Investigation & Design, Inc.
 2809 78th Ave. N
 Brooklyn Park, MN 55444
 Metro 651-260-3783

pbrandt@soilinvestigations.us
 soilinvestigations.us

TITLE
Figure 1: Site Location Map

PROJECT
**Nasby
 11048 11th St. N
 Lake Elmo, MN**

SIZE 8x11.5	PROJECT NOS. 03162016SIDA	REV
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SCALE Given	SHEET 1	OF 1
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