



Ingham county health department

Gary Skaggs
6497 M-33
Cheboygan, MI 49721

February 21, 2007

Bruce B. Bragg, M.P.H., Director
Dean G. Sienko, M.D., M.S., Medical Director

Environmental Health
Telephone: (517) 887-4312

RE: Soil evaluation in Aurelius Township, Section 20, at NW corner of Toles and Onondaga Roads,
Application # 02-16-07-027.

Dear Mr. Skaggs,

On February 20, 2007, a site evaluation was conducted to determine the soil conditions for the above referenced property for an on-site sewage treatment system for 3 lots, referred to as A, B, and C. The results of the evaluations are enclosed in this letter.

Seventeen backhoe cuts were made on the lots to find a suitable location for a sewage treatment system. Backhoe cuts #2 and #6 for lot C; cuts #9 and #12 for lot B; and cuts #14 and #17 for lot A; did not pass the minimum requirements for a conventional on-site wastewater treatment system. Soil conditions on these sites included a sandy loam to clay loam soil with evidence of a seasonal high water level at 18 to 22 inches below the ground surface as indicated by soil mottling. Conventional systems installed in such conditions may fail prematurely and pose serious health concerns. However, these backhoe cuts are suitable for the consideration of engineered wastewater treatment. A company from the county's approved Alternative Wastewater Design Consultant List must prepare a plan for an engineered system for review and approval by this office before the permit can be issued for both the wastewater system and water supply well.

Backhoe cuts #1, #3, #4, #5, #7, #8, #10, #11, #13, #15, and #16 are not suitable for a conventional or engineered wastewater treatment system. Soil conditions at these sites indicated a clay loam soil with seasonal high water level directly below the top soil as indicated by mottling. Systems installed in these conditions would fail prematurely and pose serious health concerns.

In closing, you are reminded to keep equipment off the area that was determined to be suitable for sewage disposal system. Protecting the natural condition of the soils is very important to the future operation of your system. If you have any questions or concerns, contact our office at (517)887-4312.

Sincerely,

Randy Fedewa

Randy Fedewa
Bureau of Environmental Health

RF/pm

CC: Aurelius Township

Enclosure

5303 South Cedar - P.O. Box 30161 - Lansing, Michigan 48909-4661 - Phone: (517)887-4312 - Fax: (517)887-4560 - www.ingham.org/hd/health.htm
Ingham County is an Equal Opportunity Employer

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SOIL EVALUATION DATA SHEET

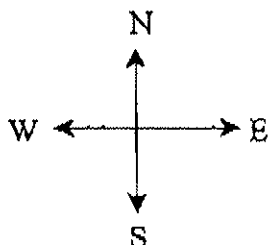
Ingham County Health Department
P.O. Box 30161 Lansing, MI 48909

THIS RECORD SHALL NOT CONSTITUTE A PERMIT

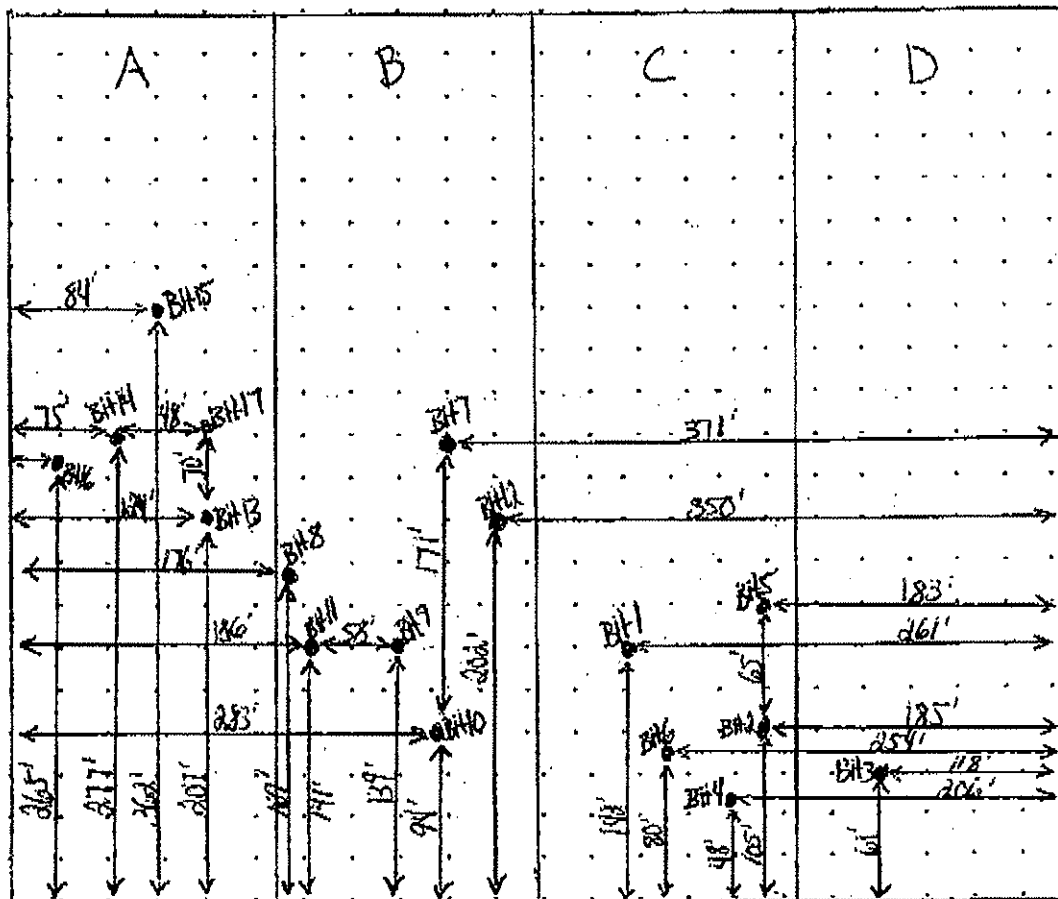
Requested by Gary Skaggs
Address 6497 M 33
Cheboygan, MI 49721
Phone # 313-625-9270

Township Aurelius Section 20
Road Location NW corner of
Toles & Onondaga Rd.
Subdivision M+B
Lot # A-C Side of Road N
File Search
Parcel No. 33- 09-09-20-400-015
Soil Survey Sheet No.
Parcel Size 10 acres
WAG Zone Y (N) WAG SITE

☒ Land Owner
☐ Prospective Buyer
☐ Installer
☐ Realtor
☐ Builder
☐ Other



PLOT PLAN



Toles

Test #	1	2	3	4	5
Type of Test	BH	BH	BH	BH	BH
Depth	43"	48"	48"	48"	48"
Soil	0-10" TS 10-43" CL (MT) 12"	0-15" TS 15"-48" SL to SCL (MT) 20"	0-14" TS 14-48" CL (MT) 14"	0-6" TS 6"-48" CL (MT) 6"	0-18" TS 18-48" CL (MT) 18"
Location					
Notes					
Plan					
Remarks					
Number	No	Engineered	No	No	No

SOIL REPORT KEY

- | | | | | |
|------------|------|-----------------|-----|---------------------------------------|
| Sand | SCL | Sandy Clay Loam | B | Hand Auger Boring |
| Loamy Sand | SiCL | Silty Clay Loam | BH | Backhoe Cut |
| Sandy Loam | CL | Clay Loam | TS | Top Soil |
| Loam | C | Clay | MT | Seasonal High Water Level (mottling) |
| Silty Loam | M | Muck | WL | Water Level Observed (saturation) |
| | | | NS | No Observed Seasonal High Water Level |
| | | | UMT | |

Limitations of the site that affect use of on-site subsurface sewage disposal:

- ☒ 1) Severely restrictive soil features.
- ☒ 2) Impervious layer within 48" of ground surface.
- ☒ 3) High seasonal water level.
- ☐ 4) Wet depressions or poor surface drainage.
- ☐ 5) Slope limitations (exceeds %).
- ☐ 6) Overflow of run-off water from adjacent higher areas.
- ☐ 7) Insufficient space for replacement of drainfield.
- ☐ 8) Insufficient isolation distance from _____

SOIL STRUCTURE KEY

- | | |
|---------------|--------------|
| BK = blocky | 1 = weak |
| GR = granular | 2 = moderate |
| PL = platy | 3 = strong |
| M = massive | |

Comments: Site A, B, and C are not suitable for conventional wastewater treatment systems. However, sites A, B, and C are suitable for the consideration of alternative wastewater treatment systems.

Observer: Gary Skaggs

Sanitarian: Randi Fedewa

Date: 2-20-07

(3)

Test #	6	7	8	9	10
Type of Test	BH	BH	BH	BH	BH
Depth	48"	42"	48"	48"	48"
Each test hole located on Plot Plan by number	0-14" TS 14"-48" SL to LS (MT) 22"	0-11" TS 11"-42" CL (MT) 11"	0-12" TS 12"-48" CL (MT) 12"	0-10" TS 10"-40" L (MT) 18" 40"-48" SL (MT)	0-12" TS 12"-48" L (MT) 12"

SOIL REPORT KEY

- | | | |
|------------|----------------------|--|
| Sand | SCL Sandy Clay Loam | B Hand Auger Boring |
| Loamy Sand | SiCL Silty Clay Loam | BH Backhoe Cut |
| Sandy Loam | CL Clay Loam | TS Top Soil |
| Loam | C Clay | MT Seasonal High Water Level (mottling) |
| Silty Loam | M Muck | WL Water Level Observed (saturation) |
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Comments: _____

Observer: Gary Skaggs
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Test #	11	12	13	14	15
Type of Test	BH	BH	BH	BH	BH
Depth	24"	48"	48"	48"	48"
Each	0-12" TS	0-10" TS	0-12" TS	0-12" TS	0-10" TS
test	12"-24" CL	10"-22" L	12"-48" CL	12"-24" SL	10"-48" CL
hole	(MT) 12"	NMT Dry	(MT) 12"	(MT) 18"	(MT) 10"
located	water	22"-48" CL		24"-48" CL	water
on		(MT)		(MT)	
Plot					
Plan					
by					
number	No	Engineered	No	Engineered	No

SOIL REPORT KEY

- | | | | | |
|------------|------|-----------------|-----|---------------------------------------|
| Sand | SCL | Sandy Clay Loam | B | Hand Auger Boring |
| Loamy Sand | SiCL | Silty Clay Loam | BH | Backhoe Cut |
| Sandy Loam | CL | Clay Loam | TS | Top Soil |
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|---------------|--------------|
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Comments:

Observer: Gary Skayes

Date: 2-20-07

5

Test #	16	17			
Type of Test	BH	BH			
Depth	48"	48"			
Each test hole located on Plot Plan by number	0-12" TS 12"-48" CL (MT) 12"	0-12" TS 12"-22" SL (MT) 18" 22"-48" CL (MT)			

SOIL REPORT KEY

- | | | |
|----------------|----------------------|---|
| S Sand | SCL Sandy Clay Loam | B Hand Auger Boring |
| LS Loamy Sand | SiCL Silty Clay Loam | BH Backhoe Cut |
| SL Sandy Loam | CL Clay Loam | TS Top Soil |
| L Loam | C Clay | MT Seasonal High Water Level (mottling) |
| Sil Silty Loam | M Muck | WL Water Level Observed (saturation) |
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Comments:

Observer: Gary Skaggs

Sanitarian: Randy Farlow

Date: 2-20-07

(6)