



June 7, 2021

Jamie J. Teague
Business Administrator
SAU70 – Hanover/Norwich/Dresden
41 Lebanon, #2
Hanover, NH 03755

RE: Dresden Recreation Property
Wastewater Capacity Analysis
Preliminary Results

Dear Jamie:

The preliminary wastewater capacity analysis of the Dresden Recreation Property (Dresden) is complete. The site, soil and hydrogeologic evaluation was initiated on May 04, 2021 with the evaluation of test holes by Tim McCormick, Soil Scientist and Stephen Revell, CPG, Hydrogeologist. Two areas, Area #1 and Area #2, shown on the attached test pit location plan were evaluated with a total of 12 test pits. The Dresden evaluation follows an evaluation of twelve test pits in Area #1 on June 21, 2000 by Tim McCormick, as part of a Geotechnical Evaluation related to the creation of the athletic fields.



The two Dresden areas that were evaluated have a reasonable amount of on-site wastewater disposal potential. Area #1 has at least 24" of unsaturated fine sandy loam soils with +/- 500' of available mound system frontage. If 6" of the available 24" is used to handle effluent mounding impacts, Area #1 has the reasonable potential of handling 4488 gpd. It is possible to increase the capacity of Area #1, if greater than 6" of the available 24" is utilized for effluent mounding but an accurate Site Plan with Lidar topography and all test pits accurately located is required to provide the design details of the mound disposal area.

Area #2 also has reasonable capacity based on the four test pits that were evaluated. This area has +/- 100 feet of available mound system frontage with 30" of unsaturated fine sandy loam. If 6" of the available 30" is utilized for effluent mounding, Area #2 has the reasonable potential of handling 1000 gpd. An accurate Site Plan with Lidar topography and all test pits accurately located is required to provide the design details of the mound disposal area.

All in all, the results of the preliminary soil and hydrogeologic evaluation of Area #1 and #2 indicate substantial wastewater disposal capacity and certainly enough to handle Marion Cross School (MCS) wastewater flows which I believe are less than 4000 gpd. It will be important to document the flow data being collected by Tony Daigle in order to determine the amount of capacity potentially available to other potential users.

If there are questions or concerns related to this preliminary capacity analysis, please do not hesitate to call me at 802-453-4384 or email me at srevell@lagvt.com

Yours Truly,
Lincoln Applied Geology, Inc.



Stephen Revell, CPG
Principal Hydrogeologist

Cc: Jeff Goodrich, P.E., Pathways Consulting
Tim McCormick, Pathways Consulting

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MARION CROSS SCHOOL

DRESDEN TEST HOLES (PROJECT NO. 11647)

TEST HOLE INFORMATION (EVALUATED ON (05/04/21))

TEST HOLE D

- 0-6" DARK GRAYISH BROWN 10YR 4/2; FINE SANDY LOAM; FRIABLE; GRANULAR (MANY ROOTS)**
- 6-20" BROWN 10YR 4/3; FINE SANDY LOAM; FRIABLE; GRANULAR**
- 20-36" DARK GRAYISH BROWN 2.5Y4/2; FINE SANDY LOAM; FIRM; WEAK PLATY (NOTE: FRACTURED LEDGE UP TO 20 INCHES FROM THE SURFACE ON THE "DOWNSLOPE" SIDE OF THE TEST PIT. LEDGE AS DEEP AS 36 INCHES ON THE "UPSLOPE SIDE OF THE TEST HOLE". REDOXIMORPHIC FEATURES AT 24 INCHES. NO WATER TO DEPTH.**

TEST HOLE E

- 0-6" DARK GRAYISH BROWN 10YR 4/2; FINE SANDY LOAM; FRIABLE; GRANULAR (MANY ROOTS)**
- 6-12" BROWN 10YR 4/3; FINE SANDY LOAM; FRIABLE; GRANULAR**
- 12-24" DARK YELLOWISH BROWN 10YR4/2; FINE SANDY LOAM; FRIABLE; GRANULAR**
- 24-30" DARK GRAYISH BROWN 2.5Y 4/2 FINE SANDY LOAM; FRIABLE, FIRM IN PLACES**
- REDOXIMORPHIC FEATURES AT 24 INCHES, LEDGE AT 30 INCHES**

TEST HOLE F

- 0-6" DARK GRAYISH BROWN 10YR 4/2; FINE SANDY LOAM; FRIABLE; GRANULAR (MANY ROOTS)**
- 6-12" BROWN 10YR 4/3; FINE SANDY LOAM; FRIABLE; GRANULAR**
- 12-26" DARK YELLOWISH BROWN 10YR4/2; FINE SANDY LOAM; FRIABLE; GRANULAR**
- 26-28" DARK GRAYISH BROWN 2.5Y 4/2 FINE SANDY LOAM; FRIABLE, FIRM IN PLACES**
- REDOXIMORPHIC FEATURES AT 26 INCHES, LEDGE AT 28 INCHES**

TEST HOLE G

- 0-6" DARK GRAYISH BROWN 10YR 4/2; FINE SANDY LOAM; FRIABLE; GRANULAR (MANY ROOTS)**
- 6-12" BROWN 10YR 4/3; FINE SANDY LOAM; FRIABLE; GRANULAR**
- 12-26" OLIVE BROWN 10YR4/3; FINE SANDY LOAM AND BROKEN ROCK; FRIABLE; GRANULAR**
- 26-36" DARK GRAYISH BROWN 2.5Y 4/2 FINE SANDY LOAM AND BROKEN ROCK; FRIABLE; FIRM IN PLACES**
- REDOXIMORPHIC FEATURES AT 36 INCHES, LEDGE AT 36 INCHES**

TEST HOLE H

- 0-4" BLACK 10YR 2/1; FINE SANDY LOAM TO LOAMY SAND; FRIABLE; GRANULAR (MANY ROOTS)**
- 4-10" DARK YELLOWISH BROWN 10YR 4/4; FINE SANDY LOAM TO LOAMY SAND; FRIABLE; GRANULAR**
- 16-24" DARK GRAYISH BROWN 2.5Y 4/2 LOAMY SAND; LOOSE; SINGLE GRAIN**
- NO REDOXIMORPHIC FEATURES, LEDGE AT 24 INCHES**

TEST HOLE I

- 0-4" BLACK FINE SANDY LOAM 10YR 2/1; FINE SANDY LOAM AND ORGANICS; FRIABLE; GRANULAR (MANY ROOTS)**
- 4-7" DARK YELLOWISH BROWN 10YR 4/4; FINE SANDY LOAM; FRIABLE; GRANULAR**
- 7-15" OLIVE BROWN 2.5Y4/3; LOAMYSAND; FRIABLE; GRANULAR**
- 15-25" DARK GRAYISH BROWN 2.5Y 4/2 LOAMY SAND; WEAK SUBANGULAR BLOCKY**
- 25- 29" DARK GRAYISH BROWN 2.5Y 4/2 FINE SANDY LOAM; WEAK SUBANGULAR BLOCKY**
- REDOXIMORPHIC FEATURES AT 25 INCHES, LEDGE AT 29 INCHES**

TEST HOLE J

- 0-5" VERY DARK GRAY 10YR 3/1; FINE SANDY LOAM AND ORGANICS; FRIABLE; GRANULAR**
- 5-17" BROWN 10YR4/3; FINE SANDY LOAM; FRIABLE; GRANULAR**
- 17-24" BROWN 10YR 4/3 TO DARK GRAYISH BROWN 2.5Y4/2; FINE SANDY LOAM; FRIABLE; SUBANGULAR BLOCKY; WEAK PLATY**
- 24-48" DARK GRAYISH BROWN 2.5Y4/2; FINE SANDY LOAM; FIRM; WEAK PLATY**

REDOXIMORPHIC FEATURES AT 24 INCHES, NO LEDGE TO 48 INCHES

TEST HOLE K

- 0-5" VERY DARK GRAY 10YR 3/1; FINE SANDY LOAM; FRIABLE; GRANULAR**
- 5-24" DARK YELLOWISH BROWN 10YR 4/4 TO BROWN 10YR4/3; FINE SANDY LOAM; FRIABLE; GRANULAR**
- 24-48" DARK GRAYISH BROWN 2.5Y4/2; FINE SANDY LOAM; FIRM; WEAK PLATY**

REDOXIMORPHIC FEATURES AT 24 INCHES, LEDGE AT 48 INCHES

TEST HOLE L

- 0-4" VERY DARK GRAYISH BROWN 10YR 3/3; FINE SANDY LOAM; FRIABLE; GRANULAR**
- 4-18" DARK YELLOWISH BROWN 10YR 4/4 TO BROWN 10YR4/3; FINE SANDY LOAM; FRIABLE; GRANULAR**
- 18-36" DARK GRAYISH BROWN 2.5Y4/2; GRAVELLY FINE SANDY LOAM; FRIABLE, SUBANGULAR BLOCKY**
- 36-48" DARK GRAYISH BROWN 2.5Y4/2; FINE SANDY LOAM; FIRM; WEAK PLATY**

REDOXIMORPHIC FEATURES AT 36 INCHES, LEDGE AT 48 INCHES

TEST HOLE M

- 0-4" VERY DARK GRAYISH BROWN 10YR 3/3; FINE SANDY LOAM; FRIABLE; GRANULAR**
- 4-12" DARK YELLOWISH BROWN 10YR 4/4; FINE SANDY LOAM; FRIABLE; GRANULAR**

LEDGE AT 12 INCHES

TEST HOLE N

- 0-4" BLACK 10YR 2/1; FINE SANDY LOAM; FRIABLE; GRANULAR**
- 4-11" DARK YELLOWISH BROWN 10YR 4/4; FINE SANDY LOAM; FRIABLE; GRANULAR**
- 11-30" DARK GRAYISH BROWN 2.5Y4/2; FINE SANDY LOAM; FRIABLE, GRANULAR TO SUBANGULAR BLOCKY**
- 30-36" DARK GRAYISH BROWN 2.5Y4/2; FINE SANDY LOAM; FIRM; WEAK PLATY**

REDOXIMORPHIC FEATURES AT 30 INCHES, LEDGE AT 36 INCHES

TEST HOLE O

**0-4" VERY DARK GRAYISH BROWN 10YR 3/2; FINE SANDY LOAM;
FRIABLE; GRANULAR**

**4-18" DARK YELLOWISH BROWN 10YR 4/4; FINE SANDY LOAM;
FRIABLE; GRANULAR**

18-36" OLIVE BROWN 2.5Y4/3; FINE SANDY LOAM; FRIABLE, GRANULAR

**36-48" DARK GRAYISH BROWN 2.5Y4/2; GRAVELLY FINE SANDY LOAM;
FIRM; WEAK PLATY**

REDOXIMORPHIC FEATURES AT 36 INCHES, NO LEDGE TO DEPTH



3/4/21 Test Plot - Timothy McCormick, Steve Herrell, and Tony Daigle