

BARNARD & GERVAIS, LLC

Land Surveyors, Licensed Designers, Environmental Consultants

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November 5, 2019

Ms. Hilary Maslow
c/o Greg Roberts
359 Holmes Road
Charlotte, VT 05445

Subject: Hilary Maslow, 125+/- Acre Parcel, South Side of Lake Road, Charlotte, VT- Site and Test Pit Soil Evaluations for Domestic Wastewater Disposal and Future Development

Dear Hilary & Greg:

On October 29, 2019, I evaluated fourteen (14) test pits at your 125+/- acre parcel of land located on the south side of Lake Road in Charlotte, Vermont. The purpose of the October 29th test pit evaluations was to identify soils on the subject property that are suitable for the proper treatment and disposal of domestic wastewater so that you have an idea of the development potential and/or wastewater capacity associated with the subject property. Before the parcel can be developed and/or subdivided, a Potable Water Supply and Wastewater System Permit must be obtained from the Town of Charlotte Planning and Zoning Office and subdivision approval will need to be obtained from the Charlotte Development Review Board.

During the October 29th site visit, nine (9) test pits (TP-1 through TP-6, and TP-12, 13 and 14) were excavated on the isolated knoll near the Lake Road access to the parcel. Additionally, five (5) test pits (TP-7 through TP-11) were excavated in the westerly portion of the southerly most pasture area. The test pits were evaluated with respect to the State of Vermont, Environmental Protection Rules, Chapter 1, "Wastewater System and Potable Water Supply Rules" effective April 12, 2019 with Town of Charlotte Wastewater Official, Brian Trembach, in attendance. Results of the site and soil test pit evaluations are presented below, and the location of the test pits are shown on an ortho-based sketch that has been prepared by Barnard & Gervais, LLC. The soils associated with the 125+/- acre parcel were relatively consistent at the two (2) evaluated areas and are generally described below:

TP-1 through TP-6 and TP-12, 13 and 14 – Isolated Knoll Near the Property Access

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|-------------|---|
| 0 – 4/12" | 10 YR 4/3, fine sandy loam that has a granular structure with a friable consistency and is well drained. No redoximorphic features or evidence of a seasonal high water table (SHWT) were identified. |
| 4/12 - 24" | 10 YR 5/4, very fine sandy loam that is friable with a sub-angular blocky structure and is well drained. Redoximorphic features (i.e. soil mottling) were identified between 15 inches and 26 inches below ground surface, which is indicative of a seasonal high water table (SHWT). |
| 24 – 39/72" | 10 YR 3/2, very fine sandy loam, clay loam, medium sand and gravel with shells that has a sub-angular blocky to granular structure that is well drained to poorly drained. Soils associated with the southerly end and easterly side of the knoll ranged between very well drained medium sands and gravels and poorly drained clay loam. With the exception of TP-14 redoximorphic features were noted in all test pits in this soil horizon. No groundwater or ledge was noted to depths of between 39" and 72" below ground surface. |

TP-7 through TP-11 – Westerly Pasture Area

- 0 – 3/10” 10 YR 4/3, very fine sandy loam that is loose with a granular structure. No redoximorphic features or evidence of a SHWT were noted.
- 3/10 – 18/22” 10 YR 4/3, very fine sandy loam to loamy, fine sand that is loose with a granular structure. Redoximorphic features were identified between 11 inches and 16 inches below ground surface in TP-7, 8, 10 and 11. Redoximorphic features were not identified in TP-9.
- 18/22 – 40” 10 YR 6/1, very fine sandy loam, clay loam or a very fine sand that has either a sub-angular blocky, granular or platy structure and is friable. With the exception of TP-9, prominent, common and distinct redoximorphic features were present. Groundwater seeps were encountered below ground surface in TP-11, and ledge was not encountered to depths of at least 36 inches below ground surface.

Overall, results of the October 29th site and test pit evaluations show that soils associated with the isolated knoll near the property access are suitable for the proper treatment and disposal of domestic wastewater via mound wastewater disposal systems. The test pit soil evaluations also show there are sand and gravel deposits at the southerly end of the knoll that may support a very limited number of in-ground disposal system(s). Based on the test pit results and observations made in the field, this area appears to be large enough to support several wastewater systems and depending on further testing and layout of a future project, this area may have enough suitable area to support between four (4) to eight (8) wastewater disposal systems. It is important to realize maximizing the wastewater potential and final project layout is subject to design and permitting requirements and Town of Charlotte approval. The test pit results also show that soils associated with the westerly portion of the pasture in the vicinity of test pits TP-7 through TP-11 are suitable for the proper treatment and disposal of domestic wastewater via mound-type wastewater system(s) with upslope curtain drains. Based on the existing topographic conditions and test pit coverage, the area in the westerly portion of the pasture appears to be large enough to support one (1) or possibly two (2) mound systems and is subject to further testing and final design approval by the Town of Charlotte.

At this juncture, we have identified a considerably sized area (i.e. the isolated knoll) with soils that are suitable for wastewater disposal. Depending on how you wish to proceed with the project, I can prepare and send you a formal proposal which outlines the necessary steps and costs associated with either a complete boundary survey of the parcel or starting the preliminary steps for planning/designing a subdivision of the parcel. If you are considering putting the parcel up for sale and/or completing a subdivision of the parcel in the future, it is recommended that a complete boundary survey of the parcel be completed. In my opinion, this is one of the first steps in the process and would allow you to know the exact acreage of the parcel and would assist with future planning for the property. In the meantime, should you have any questions or comments regarding the test pit results and/or the permitting requirements, give me a call at (802) 482-2597.

Sincerely,



Jason S. Barnard
Licensed Designer #126179