



CIVIL ENGINEERING ASSOCIATES, INC.

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October 3, 2016

Mr. Joe Rheame, Town Zoning Administrator
Town of Charlotte
P.O. Box 119
Charlotte, Vermont 05445

**Re: Philo Ridge Farm, Philo Ridge Farm, LLC
Wastewater Disposal and Potable Water Supply Permit Application
2766 Mt. Philo Road, Charlotte**

Dear Joe:

The Philo Ridge Farm is proposing to construct a new wastewater disposal system and utilize an existing water supply to support its proposed farm market building to be located at 2766 Mt. Philo Road. As part of this project, the Farm is looking to discontinue the use of the historic wastewater disposal system serving the Brick House and consolidate that with the new system.

The system components include:

Grease Traps – to be installed at both the Brick House (2,000 Gallon) and the new Barn (2,500 gallon) to protect the long term operation of the new wastewater disposal system.

Gravity Sewer collection of the flows from the existing Brick House and proposed Barn via 4" SDR 35 PVC pipe. A total of 620 LF of pipe is proposed. This has been accounted for in the design infiltration portion of the design flows for the project which is set at 2,146 GPD. A copy of the break-down of design flows is attached.

Primary Treatment – To be provided through the installation of a 5,000 gallon septic tank.

Disposal – Construction of a 275-foot long mound pressurized by a duplex pump station. A hydrogeologic study for the system has been attached which demonstrates compliance with the Performance Based design criteria of the EPR's. A basis of design of the proposed pump station and disposal field are attached.

Water Supply – There are two wells on the property. The existing well serving the brick house will continue to be used for that purpose. This has a well driller's yield estimate of 10 GPM and a recent 3-hour yield test of 12 GPM. With a design flow of 820 GPD, this well can easily meet the peak flow and average daily demand for the building with no additional storage required.

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The so called Sheep Barn well on the east side of Mt. Philo Road will be utilized to service all of the remaining components of the proposed project. This well has a published well driller's yield estimate of 10 GPM, which when the 2.0 factor of safety is applied, can provide up to 3,600 GPD without further testing. A copy of the basis of design including the computation for the required storage is attached.

Isolation Distance – We have submitted a Time of Travel study which demonstrates that there is greater than a 2-year time of travel from the proposed mound to the proposed supply well. In this case, the aquifer benefits from 114-feet of clay and hardpan till overburden as a means of protecting the aquifer pathogen sources. As such, the normal 150' setback from the well to the downgradient toe of the mound is eligible to be reduced to 50'.

This completes our summary of the proposed wastewater system and potable water supply components for the property at 2766 Mt. Philo Road. If you should have any questions, please feel free to contact me at 864-2323 x310.

Respectfully,



David S. Marshall. P.E.
Project Engineer

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Enclosures

- Application Form
- Application Fee \$1,000 (\$500 for residential unit and \$500 for commercial unit)
- Act 145 Form 4 Abutter Notice Certification
- Two sets of full size plans, one set of 11x17
- Hydrostudy Report w Attachments
- Design Flows
- Wastewater Basis of Design
- Pump Cut Sheets
- Water Supply Basis of Design
- Well Time of Travel Study

CD of PDF's of application

cc: (all w enclosures) B. Harvey; CEA File 16107.00