

GIFFORD ENGINEERING*Geotechnical & Geoenvironmental Services*

November 15, 2006

Mr. Marshall White  
White Engineering, Inc  
55 South Merriam St  
Pittsfield, MA 01201

Re: Comment on Hydrogeologic Conditions, Churchill Estates 37-lot Subdivision, Churchill Street, Pittsfield, MA, File No. 0680

Gentlemen:

At your request, a hydrogeologic review of the conditions at the referenced site has been conducted. The review includes; a meeting and site visit with you, review of a packet of project related information provided by you, telecons with you, the developers, and members of the Conservation Commission. The packet includes:

- The Subcatchment Layout Dwg No. 06-02-07-D1 with layout, contours, and test pit locations for Churchill Estates Subdivision.
- A memo from you to Lisa Haynes, City Planner, dated June 29, 2006 describing the potential impact of septic systems and the MADEP Title 5 requirements.
- A memo from Joel Less and Ed Fahey, of the Health Department, to Lisa Haynes dated July 20, 2006 that requests a hydrologic study. It is understood that the actual request was for a hydrogeologic study.
- Excerpts of sections 15 of 310 CMR by the MADEP Title 5 relating to septic systems.
- USDA Soil Survey map of the area and description of the local soils.
- MADEP Form 11 - Suitability Assessment for On-Site Sewage Disposal includes deep test pit information for this site. It was prepared Brent White of White Engineering.
- The City of Pittsfield Percolation Test Form 12 includes results of three perc test that were performed by Brent White and observed by Ed Fahey of the Board of Health.
- The Stormwater Management Plan dated October 2006 that was prepared by you was reviewed for project background information.
- Information on Enviro-Septic, innovative septic technologies, by Presby Environmental. It is understood that you intend to use this new technology instead of conventional pipe and stone laterals at the leach fields.

The 54 acre site is located to the east of Churchill Street in the City of Pittsfield, MA. It is understood that there are 37 lots proposed for the site. The average lot size will be approximately one acre. These lot sizes will allow plenty of room for septic systems. The water supply will be city water so there are no issues with set back distances to wells. The stormwater management is planned to include several isolated infiltration areas rather than in one location, which may cause changes in groundwater levels locally. These design components are positive to minimize impacts to the groundwater and the aquifer.

The site is bordered to the east by the Daniels Brook. This brook flows southward into the north end of Onota Lake. Further to the east is Pecks Road that runs approximately parallel to Churchill and supports a residential neighborhood. A gravel mine/farm road extends from Churchill Street to the east to Pecks Road and traverses a concrete bridge over the brook.

FROM : GIFFORD ENGINEERING

PHONE NO. : 518 382 5494

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It is understood that there is a medium yield aquifer underlying the eastern approximate two-thirds of the site which is the primary reason that this review was requested. It is understood that the aquifer is one of three identified in the City. It is reported that the aquifer is not formally identified as an alternative water source by the MADEP. There are numerous homes in the area with septic systems that are situated within this aquifer.

The southern portion of the site has been mined for gravel and sand. The pit extends onto neighboring property to the south and is still active. The northern portion of the site is a vacant meadow and a portion to the east is used for grazing cattle. The northern property boundary is at the City line separating Pittsfield and Lanesboro.

The ground surface at the northern approximately third of the site slopes gently down to the east from Churchill Street to Daniels Brook. There is evidence of a drainage path toward the east of the proposed development that is delineated on the subdivision Subcatchment plan. Due to mining activities, the ground surface at the southern approximately two-thirds of the site slopes down steeply immediately east of Churchill Street then gently down to the east. The gravel access road enters the site near the SW corner then heads northward and parallel to Churchill Street as it loses grade to the mine floor.

The vegetation throughout the site is meadow grass, trees, and brush. There are hedgerows comprised of young trees that separate the mine area from the cattle grazing area to the east and undisturbed meadow area to the north. The trees are estimated at 20 to 30 years old.

The disturbed ground surface at three of the test pit locations was observed. The observed soil at the disturbances is identified as glacial outwash comprised of sand and gravel with occasional cobbles. The USDA Soil Survey of Berkshire County identifies HoB, Hoosic Gravelly fine Sandy Loam, 3 to 8 percent slopes, HoD, Hoosic Gravelly fine Sandy Loam, 15 to 25 percent slopes, and Pp Pits, Gravel. This is consistent with the soil observed on the site and described in Form 11 Soil Suitability Assessment, and Form 12 Percolation Test.

These forms were examined. The depth to groundwater or mottling is 5 to 7 feet. The percolation rate is 2 minutes per inch or less. It is concluded that the in situ soils are such that septic systems which meet the Title 5 requirements can be designed at this site. The Title 5 regulations were developed to regulate septic system design and installation and ultimately to protect groundwater. It is my professional opinion that there will be no detrimental impacts to the groundwater or aquifer if septic systems which meet or exceed the requirements of Title 5 are designed, installed, and maintained at this site.

If I can be of further assistance in this matter, please contact me.

Truly yours,

Gifford Engineering LLC

  
Gregory Gifford PhD PE  
President

cc Mr. Don Ferry