

## GREGSAK ENGINEERING, INC. CONSULTING ENGINEERS & PLANNERS

October 20, 2010

David W. Presby, CEO Presby Environmental, Inc. 143 Airport Road Whitefield, NH 03598

Re: Enviro-Septic (ES) Treatment System

Advanced Enviro-Septic (AES) Treatment System

Pipe Load Capacity Analysis

Dear Mr. Presby,

As requested, Gregsak Engineering, Inc. has analyzed the Presby Environmental, Inc. pipe products known as Enviro-Septic (ES) and Advanced Enviro-Septic (AES) Treatment Systems and the product manual for H-10 and H-20 Loading Guidelines. Our analysis included the following:

- 1. Review of the specifications of the Enviro-Septic (ES) and the Advanced Enviro-Septic (AES) Treatment Systems.
- 2. Review of the manual for the Enviro-Septic (ES) and the Advanced Enviro-Septic (AES) Treatment Systems, H-10 and H-20 Loading Guidelines.

An analysis of the pipes used in the ES and AES systems reveals a number of inherent structural pipe attributes. Its shape, corrugations, and HDPE (High Density Polyethylene) material used in its manufacture are all features that compare similarly to HDPE pipe that has been previously evaluated for its structural capability in the subsurface environment.

According to the American Association of State Highway Transportation Official (AASHTO) Section 30 – Thermoplastic Pipe, the minimum cover for HDPE pipe is 1'-0" for H-20 traffic loads. Section 18.4.1.5 of the AASHTO specifications defines the minimum cover calculated as ID/8 (Inside Diameter/8) but not less than 12 inches. This cover is measured from the top of the pipe to the top of a rigid (concrete) pavement or the bottom of a flexible (bituminous) pavement. For construction loads greater than H-20 loading both AASHTO and ASTM (American Society of Materials), as well as most manufacturers, require additional cover during these periods.



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Page 2 Presby 10/20/10

Furthermore, the foregoing structural analysis has been demonstrated and supported in the field. There have been more than 80,000 systems using this type of pipe installed in New Hampshire over the past 15 years with no structural failures experienced.

Therefore, based upon our review, we have determined that the Enviro-Septic (ES) and the Advanced Enviro-Septic (AES) Treatment System pipes will support H-20 and H-10 loading when installed as directed by the manufacturer's manual titled "H-10 and H-20 Loading Guidelines".

If you have any questions regarding the above analysis, please do not hesitate to call.

Very truly yours,

William Gregsak, PE

