

# HALLOWEN & ASSOCIATES INC.

SOIL & ENVIRONMENTAL SCIENTISTS

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30 January, 2008

Mr. Jason Kolesar  
P.O. Box 1  
Kipling, NC 27543

Reference: Septic System Expansion for Jonathan's House School

Dear Mr. Kolesar,

Enclosed please find the septic system design that was submitted to the Harnett County Environmental Health Department for review and the permitting process. This report represents my professional opinion but does not guarantee or represent permit approval for any lot by the local Health Department. The permit you receive from the Health Department may contain some modifications or amendments to our submitted design. Please carefully review your permit and adhere to all prescribed requirements.

The septic system has been demonstrated with various colored pin flags that are located on the lot. It is important that you do not disturb the septic system area. It is recommended that a staked line or protective fence be placed around the system prior to construction to eliminate any potential damage to the soil or the layout of the system.

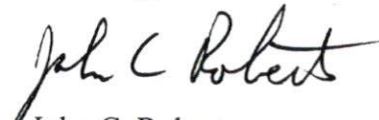
Please be advised that the soils and the topography are complex and are subject to professional interpretation. Additional site visits with the Harnett County Health Department may be required, and/or additional site investigations may also be required to adjust or change the proposed septic system.

Mathematically it was determined that if the proposed system expansion is permitted, it appears that the system would be adequate to allow for no more than 130 students/teachers/staff. However, it is conservatively recommended that total occupancy of the two facilities not exceed 95 students/teachers/staff. This is in part due to the marginal soils observed at the site and the complexity of the proposed system to be installed. Other concerns include the wide range of wastewater flows observed from the existing facility and the occurrence of at least two water leaks documented by staff at the facility within the last year. Furthermore, the proposed system has been designed for the acceptance of wastewater Monday through Friday. It is imperative that wastewater not be generated over the weekends so that the system can be allowed to rest and recover.

It is strongly recommended that care be taken to preserve the life of your septic system. The septic tank, pump tank, and distribution devices should be kept accessible for pumping and adjustment. Your septic system should be inspected periodically and septic tanks pumped out every 2 to 5 years by a professional contractor. Practicing water conservation in the facilities, such as promptly repairing leaky fixtures (e.g. running toilets) will help to avoid overloading the septic system. It is understood that washing machines and dishwashers along with any food preparation activities will not and should not be utilized at the facilities. Also, disposal of oils, fats, and grease into the septic system will have to be avoided because they could clog drainlines and conveyance pipes.

I appreciate the opportunity to provide this service and hope to be allowed to assist you again in the future. If you have any questions or need additional information, please contact me at your convenience.

Sincerely,



John C. Roberts

Attachment 3.

Calculation of Peaking Factor:

Peaking Factor = Highest monthly consumption / Sum of 30 day consecutive water meter readings

Peaking Factor = 4800 gallons / 3800 gallons

Peaking Factor = **1.26**

Calculation of Adjusted Daily Design Sewage Flow:

Adjusted daily design flow = Highest average water usage per school day x peaking factor

Adjusted daily design flow = 224 gallons x 1.26

Adjusted daily design sewage flow = **282 gallons per day**

Calculation of average gallons consumed per person:

Average gallons consumed per person = Calculated adjusted daily design flow / number of occupants

Average gallons consumed per person = 282 gallons per day / 49 occupants

Average gallons consumed per person = 5.76 gallons per person  $\approx$  **6.0 gallons per person**

Table 1. Total monthly water consumption values, school days and calculated average water usage per school day.

Date of Reading <sup>a</sup>	Total Actual Consumption (gallons) <sup>a</sup>	School days during reading period	Average water usage per school day (gallons/school day) <sup>c</sup>
9/26/06	3200	N/A	N/A
10/24/06	3100	20	155
11/30/06	4800✓	27	178
12/22/06	2800	16	175
1/26/07	3900	22	178
2/23/07	3800	20	190
3/26/07	4700	21	224 <sup>d</sup>
4/26/07	4200	22	191
5/23/07	4000	20	200
6/27/07	4800✓	25	192
7/25/07	2300	21	109
8/21/07	6200 <sup>b</sup>	18	345
9/25/07	4600	25	184

- a. See Attachment 2
- b. Data has been excluded due to a toilet that was running
- c. Average water usage per school day was calculated by dividing total consumption by number of school days.
- d. Value used to determine adjusted daily design sewage flow.

# Attachment 1

**Johnathan's House, Inc.**  
*Educational Tutoring and Testing Center*  
 PO Box 42  
 Kipling, NC 27543  
 919-567-1626

## 30 Day Water Usage

### November 2007

7	176-000
8	176-100
9	176-200/300
12	176-400
13	176-500
14	176-600
15	176-700
16	176-800
19	176-900
20	177-100
21	177-200
23	177-300
26	177-400
27	177-500
28	177-600
29	177-800
30	177-900

150  
 150  
 200  
 200  
 100  
 ---  
 900

160  
 1754  
 275

### December 2007

3	178-100
4	178-200
5	178-300
6	178-400
7	178-500
10	178-800 (water leak over the weekend)
11	178-900
12	179-100
13	179-200
14	179-300
17	179-400
18	179-500
19	179-600
20	179-700
21	179-800

Attachment 2

ACCOUNT CONSUMPTION HISTORY

PREPARED TO: 05/07  
PROGRAM 014787  
HARNETT COUNTY PUBLIC UTILITIES

CUSTOMER: STEWART, DR MELAINE 8818

PO BOX 42

KIPLING

NC 27543

LOCATION: 4834 15 RANDY CT 08

CYCLE/ROUTE: 06-28

STATUS: A

WATER

METER NUMBER: 11517667

METER SIZE: 0150

READING	DATE	TYPE	DAYS	PERIOD/DATE	BILLING	ACTUAL CONSUMPTION	ACTUAL DEMAND
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9/23/07	REG	35	9/07	9/23/07		4600.00	4600.00
8/21/07	REG	27	8/07	8/30/07		6200.00 *	6200.00
7/25/07	REG	28	7/07	8/01/07		2300.00	2300.00
6/27/07	REG	35	6/07	7/03/07		4800.00	4800.00
5/23/07	REG	27	5/07	6/02/07		4000.00	4000.00
4/26/07	REG	31	4/07	5/01/07		4200.00	4200.00
3/26/07	REG	31	3/07	3/30/07		4700.00	4700.00
2/23/07	REG	28	2/07	3/01/07		3800.00	3800.00
1/26/07	REG	35	1/07	2/01/07		3900.00	3900.00
12/22/06	REG	22	12/06	1/05/07		2800.00	2800.00
11/30/06	REG	37	11/06	12/05/06		4800.00	4800.00
10/24/06	REG	28	10/06	11/02/06		3100.00	3100.00
9/26/06	REG	29	9/06	10/03/06		3200.00	3200.00

Toilet was running

TOTALS: 193 52400.00  
 AVERAGE DAILY USAGE: 133.33

CONSUMPTION PARAMETERS FOR WATER  
 EXCEPTION REPORT FLAG :  
 CONSUMPTION ESTIMATE : .00  
 DEMAND CONSUMPTION ESTIMATE : .00  
 AVERAGE CONSUMPTION : 84.02  
 AVERAGE DEMAND CONSUMPTION : .00  
 TOTAL CONSUMPTION : 150907.00  
 TOTAL DEMAND CONSUMPTION : .00  
 TOTAL READING DAYS : 1796