



CIVIL ENGINEERING ASSOCIATES, INC.

10 Mansfield View Lane
South Burlington, VT 05403

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RECEIVED

APR 21 2016

LOTTE
PLANNING & ZONING

April 19th, 2016

Ms. Jeannine McCrumb, Town Planner & Zoning Administrator
Town of Charlotte
P.O. Box 119
Charlotte, Vermont 05445

**Re: Hinsdale Property Wastewater – Charlotte Septic Permit 04-10-S
1376 Hinesburg Road, Charlotte, Vermont
State Wastewater & Potable Water Supply Permit Amendment Application
Water Supply Testing and Supplemental Information**

Dear Jeannine,

As previously discussed the property of Mindy Hinsdale located at 1376 Hinesburg Road in Charlotte is seeking approval for a minor amendment to convert the existing four bedroom single family home to a two unit multifamily home with one 2-bedroom unit, and one 1-bedroom unit.

Previously requested was information to demonstrate compliance with water supply quantity and quality for a two unit multifamily home. Water supply quantity was verified by performing a well yield and pump capacity test. This test was performed by Chevalier Drilling CO., Inc on March 16th 2016 for a duration of 2 hours. The water level was observed stabilized at approximately 35' from the surface of the 220' deep drilled well. A new 10 GPM capacity pump was also installed to meet the Total Instantaneous Peak Demand of 10 GPM as calculated in Section 11.3.2 of the Vermont Water Supply Rule.(5 GPM per residential unit)

Additionally water quality testing was also performed to meet the parameters of Tables A11-5 and A11-7 of the Vermont Water Supply Rule. The results of the test performed by the Vermont Health Lab are attached and comply with the requirements set forth in the referenced Tables.

If you should have any questions or need any additional information please feel free to contact me at jlrose@cea-vt.com or 864-2323 x306.

Respectfully,

Jacques D. Larose, Licensed Designer
Staff Engineer

Enclosures

Pump Test Results
Water Quality Testing Results

cc: Mindy Hinsdale. (w/ enclosures)
File 03282.00 (w/ enclosures)

CHEVALIER DRILLING CO., INC.

P.O. BOX 164
HIGHGATE SPRINGS, VT 05460
802-868-7709

3/16/16

PUMP TEST

Mindy Hinsdale

Re: 1376 Hinesburg Rd., Charlotte site

TIME	FLOW (GPM)	WATER LEVEL
START		0'
12:10 PM	10 GPM	0'
12:20	10 GPM	21'
12:30	10 GPM	27'
12:40	10 GPM	29'
12:50	10 GPM	31'
1 PM	10 GPM	32'
1:10	10 GPM	33'
1:20	10 GPM	33'
1:30	10 GPM	34'
1:40	10 GPM	34'
1:50	10 GPM	35'
2 PM	10 GPM	35'
END		

DEPARTMENT OF HEALTH LABORATORY

Results Report

State Health Dept # : 16-IC-0
 Report Status :
 Date Report Released : 03/16/

Report To Melinda Hinsdale
 ATTN OF
 Address 5111 Oak Hill Rd
 Williston, VT 05495

WSID
 Account Name Melinda Hinsdale
 Date Received 03/10/2016
 Time Received 16:20
 Approved Date 03/16/2016

Sample Desc.	ODOR	Sample Type	
Collection Date	03/10/2016	Free Chlorine Residual	
Collection Time	15:18	Total Chlorine Residual	
Sampled By	Melinda Hinsdale	Chlorinated?	No
Sampling Location	Kitchen Sink	Field Temp.	
Street Address	1379 Hinesburg Rd	Field Fluoride	
Town	Charlotte	Temp at Receipt	
Sampler's Comments			

Test Odor Date/Time of Analysis 03/11/2016 12:25
 Test Method SM 2150B

Analyte	Final Result	Units	Limit
Threshold Odor Number	2	TON	3

** See below.

Analyte	Result
Odor Classification	Unclassified, State

** See below.

** Note: Sample temperature was not recorded by the laboratory upon receipt

Units of Measurement and Definitions:

mg/L = milligrams per liter or ppm (parts per million) ug/L = Micrograms per liter or ppb (parts per billion) < = less than TON = Threshold Odor Number
 MCL = Maximum Contaminant Level SMCL = Secondary Maximum Contaminant Level MRDL = Maximum Residual Disinfectant Level
 VML = Vermont Health Advisory VMCL = Vermont Maximum Contaminant Level NLE = No Limit Established
 Action Level = Level at or above which a water treatment action is determined for public water supplies and should be considered for private supplies.

The test results included on this report meet all National Environmental Laboratory Accreditation Program requirements unless noted otherwise.
 Test results relate only to the samples tested and are representative of the samples as they were received at the laboratory.
 This is a public record. Information contained in this report may be used for statistical purposes and may be released upon request, pursuant to Vermont
 Access to Public Documents law (1 V.S.A. 315-320).
 This report shall not be reproduced, except in full, without the written approval of the laboratory.

Mary Collett
 Mary Collett, Laboratory Director

If you have any questions about this report or if you have questions about this report, please call the laboratory at (802) 338-4724

Results Report

State Health Dept # : 16-WB-011
 Report Status : F1
 Date Report Released : 03/11/2016

Report To Melinda Hinsdale
 ATTN OF
 Address 5111 Oak Hill Rd
 Williston, VT 05495

WSID
 Account Name Melinda Hinsdale
 Date Received 03/10/2016
 Time Received 16:17
 Approved Date 03/11/2016

Sample Desc. KIT A
 Collection Date 03/10/2016
 Collection Time 15:24
 Sampled By Melinda Hinsdale
 Sampling Location Kitchen Sink
 Street Address 1379 Hinesburg Rd
 Town Charlotte
 Sampler's Comments

Sample Type
 Free Chlorine Residual
 Total Chlorine Residual
 Chlorinated? No
 Field Temp.
 Field Fluoride
 Temp at Receipt

Test Enzyme Substrate Test

Date/Time of Analysis 03/11/2016 11:40
 Test Method SM20 9223B

Analyte	Result
Total Coliform	Not detected
E.coli	Not detected

THE WATER SAMPLE TESTED IS BACTERIOLOGICALLY SUITABLE FOR DRINKING (POTABLE)

IMPORTANT: Bacteriological testing of a single sample of water is only one means of determining the suitability of water for drinking. It is also critical that the water source location, system construction and ongoing maintenance/treatment are adequate to consistently protect against bacterial contamination.

Abbreviations and Definitions

MPN = Most Probable Number, CFU = Colony Forming Unit, TNTC = Too Numerous To Count

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Mary Cahill

Mary Cahill, Laboratory Director



DEPARTMENT OF HEALTH LABORATORY

359 SOUTH PARK DRIVE
COLCHESTER, VT 05446
(802) 338-4724 or (800) 660-9997 (VT only)
www.healthvermont.gov

Results Report

State Health Dept # : 16-IC-4
Report Status :
Date Report Released : 03/17

Report To Melinda Hinsdale
ATTN OF
Address 5111 Oak Hill Rd
Williston, VT 05495

WSID
Account Name Melinda Hinsdale
Date Received 03/10/2016
Time Received 16:19
Approved Date 03/17/2016

Sample Desc. KIT C
Collection Date 03/10/2016
Collection Time 15:15
Sampled By Melinda Hinsdale
Sampling Location Kitchen Sink
Street Address 1379 Hinesburg Rd
Town Charlotte
Sampler's Comments

Sample Type
Free Chlorine Residual
Total Chlorine Residual
Chlorinated? No
Field Temp.
Field Fluoride
Temp at Receipt 8.0 C

Test Anions

Date/Time of Analysis 03/10/2016 16:41
Test Method EPA 300.0

Analyte	Final Result	Units	Limit
Chloride	<5	mg/L	250 SMCL
Fluoride	<0.3	mg/L	4 MCL
Nitrate as N	<0.5	mg/L	10 MCL
Nitrite as N	<0.1	mg/L	1 MCL

* See below for Nitrate and/or Nitrite.

Test Hardness (EDTA)

Date/Time of Analysis 03/10/2016
Test Method SM 2340 C

Analyte	Final Result	Units	Limit
Hardness	234	mg/L	.

* 151 mg/L to 300 mg/L = Hard Water

Test Iron by Flame AA

Date/Time of Analysis 03/15/2016 10:57
Test Method SM 3111 (B)

Analyte	Final Result	Units	Limit
Iron	<0.10	mg/L	0.3 SMCL

State Health Dept # : 16

Report Status :

Date Report Released :

Results Report

<u>Test</u> Metals by ICPMS		Date/Time of Analysis 03/15/2016 11:01	
		Test Method EPA 200.8	
Analyte	Final Result	Units	Limit
Arsenic	0.002	mg/L	0.010 MCL
Copper	<0.02	mg/L	1.3 AL
Lead	<0.001	mg/L	0.015 AL
Manganese	0.018	mg/L	0.05 SMCL and 0.300 VHA
Uranium	<0.001	mg/L	0.020 VMCL

<u>Test</u> Sodium by Flame AA		Date/Time of Analysis 03/14/2016 16:04	
		Test Method SM 3500-Na D	
Analyte	Final Result	Units	Limit
Sodium	19	mg/L	250 SMCL

**** Note:** The sample, upon receipt, was warmer than the test method suggests. There was evidence that the sample was being cooled from the time of sample collection to receipt by the laboratory.

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 MCHL = Maximum Contaminant Level Health Advisory VMCL = Vermont Maximum Contaminant Level NLE = No Limit Established
 VHA = Vermont Health Advisory Level at or above which a water treatment action is determined for public water supplies and should be considered for private supplies.

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Results Report

State Health Dept # : 16-IC-01306
 Report Status : Final
 Date Report Released : 04/06/2016

Report To: Melinda Hincdale
 ATTN OF:
 Address: 5111 Oak Hill Rd
 Williston, VT 05495

WSID
 Account Name: Melinda Hincdale
 Date Received: 04/01/2016
 Time Received: 12:45
 Approved Date: 04/06/2016

Sample Desc.	MISC tests	Sample Type	
Collection Date	04/01/2016	Free Chlorine Residual	
Collection Time	11:42	Total Chlorine Residual	
Sampled By	Melinda Hincdale	Chlorinated?	No
Sampling Location	Kitchen Sink	Field Temp.	
Street Address	1379 Hinesburg Rd	Field Fluoride	
Town	Chesham	Temp at Receipt	
Sampler's Comments	Chlorine put in system 3/16/16 when pump test done on well.		

Test: pH

Date/Time of Analysis: 04/01/2016 13:25
 Test Method: EPA 150.1

Analyte	Final Result	Units	Limit
pH	7.5	Unit	

Normal Range is 6.5 - 8.5

Sample holding time greater than method requirement.

Units of Measurement and Definitions:

mg/L = Milligrams per liter or ppm (parts per million) ug/L = Micrograms per liter or ppb (parts per billion) < = less than TDN = Threshold Odor Number
 MCL = Maximum Contaminant Level SMCL = Secondary Maximum Contaminant Level MRL = Maximum Residual Disinfectant Level
 VHA = Vermont Health Advisory VMCL = Vermont Maximum Contaminant Level NLE = No Limit Established
 AL (Action Level) = Level at or above which a water treatment action is determined for public water supplies and should be considered for private supplies.

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Test Report Authorized By:

Mary Celosi
 Mary Celosi, Laboratory Director

If you have received this report in error or if you have questions about this report, please call the laboratory at (802) 338-0724