

BRISTOL, VERMONT

2019-2020

ANNUAL CORE AREA WASTEWATER SYSTEM  
EVALUATION

APRIL 2020

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TABLE OF CONTENTS

		<u>PAGE</u>
SECTION I	INTRODUCTION	I - 1
SECTION II	WASTEWATER SYSTEM INSPECTION	
	Collection System	II - 1
	Treatment / Disposal System	II - 2
SECTION III	WASTEWATER SYSTEM EVALUATION AND RECOMMENDATIONS	
	Collection System	III - 1
	Treatment/Disposal System	III - 1

APPENDICES

APPENDIX A	TABLES	
	Table #1: Field Usage and Flow Summary	
	Table #2: Wastewater Quality Results	
	Table #3: Groundwater Level Measurements	
	Table #4: Required Repairs and Maintenance	
APPENDIX B	FIGURES	
	Figure #1: Core Area Sewer System Flow Schematic	
	Figure #2: Septic Tank Flow Schematic	
APPENDIX C	PART I, SECTION D, ITEM #D2 OF DISCHARGE PERMIT	
APPENDIX D	TREATMENT FACILITY FLOW DATA	
APPENDIX E	DISCHARGE MONITORING RESULTS	

**SECTION I**

**INTRODUCTION**

## SECTION I

### INTRODUCTION

This 2020 Annual Report on the inspection and evaluation of the Bristol Core Area Wastewater System has been prepared to fulfill the conditions of Bristol's Discharge Permit No. ID-9-0208-1A.

The system has been operating since September 1, 1993 and consists of collection sewers, septic tank, and disposal fields.

Inspection of the sewage collection, treatment and disposal systems was performed on April 21, 2020 by Alan Huizenga of Green Mountain Engineering, Inc. with the assistance of Mr. Cyrus Marsano of Vermont Utility Management Services (VTUMS).

The Report shows a list of items inspected; the conditions encountered, and recommended repairs or changes in operation required. The Report is organized so each item is designated by the same letter as appears in Section D2, Annual Inspection, of Bristol's Discharge Permit. GME will be available to the Operator for review of the recommendations.



SECTION II

WASTEWATER SYSTEM INSPECTION

## SECTION II

### WASTEWATER SYSTEM INSPECTION

#### Item A: Collection System Inspection

MH#11 -Good flow/good condition  
-Dirty shelves  
-No evidence of back-up

MH#10A - Good flow / good condition  
- Rim chipped in two places from traffic – no action required  
- Frame has shifted – keep an eye on in future inspections

MH#10 - Excellent condition

#### Mary's Grease Trap

- Not in use, not inspected due to on-going construction in area and presence of temporary gravel surface over the access cover

MH#9 - Good flow / good condition

MH#8 - Shallow manhole  
- gravel on shelves  
- Excellent condition

MH#7 - Under stone drive - not inspected

#### Hendee's Grease Trap

- Presently in use  
- Good Condition, nearly empty due to recent pumping  
- Quarterly Pumping Schedule – Last pumping 4/08/20

MH#6 -Good Condition

MH#5 - Good condition  
-Dead end, low flow, dirty shelves

MH#4 - Good Condition, low flow

MH#3 - Good flow / good condition

#### Snap's Grease Trap

- Good Condition, low level due to recent pumping  
- Quarterly Pumping Schedule – Last pumping 4/08/20

MH#2            - Not found  
                     -Paved over by streetscape project

MH#1            - Good condition  
                     -Dead end, low flow

Bakery Grease Trap

- Quarterly Pumping Schedule - Last pumping 4/08/20  
- Good Condition

Cubbers Grease Trap

- Quarterly Pumping Schedule - Last pumping 4/08/20  
- Good Condition,

Treatment/Disposal System

-South wells (2) – Field #5 new caps have been installed.  
-Operator has worked on clearing sumac growth near field edges and site looks very good...future clearing should focus on access SW well – Field #3  
-some subsidence near SW well – Field #3 – no action at this time

Interior Grease Traps

-Not inspected  
-Operator reports that some establishments are doing better than others with cleaning and reminders need to go out with bills

Viens Dosing Siphon

-Riser and Cover needs to be reset – possibly damaged by snow plow this winter  
-Siphon appears operational

**Item B: Septic Tank Inspection**

- Sludge/Scum Depth measurements performed by Operator
- Pumping Cell #1 recommended at time of inspection.

**Cell #1**

- Compartment #1 – Sludge 12” – Scum 12”
- Compartment #2 – Sludge 12” – Scum 12”

**Cell #2**

- Compartment #1 – Sludge 9” – Scum 6”
- Compartment #2 – Sludge 6” – Scum 3”

- Pistons – inoperable – have been removed
- Slide gates repaired last year.
- Interior handles rusted, close to inoperable
- Locks and hasps on hatches, for safety, in good operable condition

**Item C: Grease Interceptor Inspection**

- Part of Item A. above

**Item D: Splitter Box Inspection**

- Fields #1, #2, #4 and #6 in operation at time of inspection. Fields were switched by Operator during inspection.
- good flow, no grease observed
- Periodic skimming every other week ongoing by Operator

**Item E: Dosing Siphon Inspection**

- Siphons appeared to be operating properly at time of inspection.
- Operator should verify operation of siphons on Fields #3, #5, #7 and #8 once receiving sufficient flow
- Counters not operational

**Item F: Field Rotation**

- Fields currently in operation (#1, #2, #4 and #6). Fields were switched to Fields #3, #5, #7 and #8 during inspection.

**Item G: Shallow In-field Observation Wells**

- In-ground observation wells opened up for observation.
- All observation wells found, except Fields Nos. 1, NW corner well
- Field #1 – dry
- Field #2 – dry
- Field #3 – dry
- Field #4 – dry
- Field #5 – dry
- Field #6 – dry, except 12” in SW corner well
- Field #7 – dry
- Field #8 – dry

**Item H: Groundwater Level Measurements**

- Table 3 summarizes groundwater levels for June 2019 and September 2019, showing values of groundwater depths ranging from 16.2 feet to 40.3 feet below ground surface.

**SECTION III**

**WASTEWATER SYSTEM EVALUATION AND RECOMMENDATIONS**

## SECTION III

### WASTEWATER SYSTEM EVALUATION AND RECOMMENDATIONS

#### A. Collection System

##### 1. Evaluation / Recommendations

- a. Review Table 4

#### B. Treatment / Disposal System

##### 1. Evaluation

The system is in good working condition and is in its 27th year of operation. The site is in good condition. Effluent testing has been performed as per Permit conditions. The siphon counters are not working at this point. The Operator should consider replacing the counters with mechanical counters when the siphons are repaired. GME recommends pumping of Cell #1 at this time.

The fields show no signs of effluent surfacing. The groundwater monitor wells show the natural groundwater level to be well below the trench bottoms. Sumac and other vegetation that was encroaching onto the fields on the north and west sides has been cut back, but should be continued to be cut back to the steep bank.

Recent improvements noted include replacement of slide gates.

Nitrate levels appear to be varying substantially in recent years. Monitoring Well No. 3 results were 3.5 and 3.8 mg/l in 2017, 4.5 and <0.2 in 2018, and 2.0 and < 0.2 in 2019. Monitoring Well No. 4 were <0.20 and 0.12 mg/l in 2017, 1.5 and 17 in 2018 and 1.7 and 5.9 in 2019. The September 2018 result appears to be an outlier, but the levels will continue to need to be monitored.

Wastewater quality results for the system are shown in Table 2. These results indicate the wastewater is of relatively high strength as might be expected for a small municipal system lacking industrial type users. Grease levels were also higher this year.

Treatment Facility flow data is presented in Appendix D. Average Daily Flow (ADF) was 9,046 gpd, based on water meter readings from April 8, 2019 to April 9, 2020.

##### 2. Recommendations

- a. Review Table 4, with special attention to the Viens Dosing Siphon, which is in need of repairs.
- b. Make sure checklists are utilized as shown in the O & M Manual,

- c. Monitor split closely, which will be easier as checklists are followed and as a consistent number of fields are used. Clean v-notches with a toilet brush on a rod, kept at the facility. This task should be performed bi-weekly. This will help maintain more consistent split. Maintain splitter box on regular pumping schedule (with grease traps),
- d. Maintain grounds by mowing, trimming, repairing road, etc., as needed. (Presently mowing is subcontracted and performed weekly).
- e. Inventory interior grease traps and require reporting of maintenance and pumping. (ie. Wokkies, Bobcat, & former Corner Store)
- f. Pump Cell #1 septic tank contents this summer.



# **APPENDIX A**

## **TABLES**

**TABLE 1**  
**FIELD USAGE AND FLOW SUMMARY \***  
**BRISTOL, VT (April 1, 2020 - March 31, 2020)**

<b>FIELD</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>
<b>DAYS IN SERVICE</b>	---	---	---	---	---	---	---	---
<b>TOTAL GALLONS</b>	---	---	---	---	---	---	---	---
<b>ADF</b>	---	---	---	---	---	---	---	---

\* Siphon counters are not operational.

**TABLE 2**  
**TOWN OF BRISTOL WASTEWATER QUALITY RESULTS**  
**2009 - 2019**

PARAMETER	June 2009	Oct. 2009	June 2010	Sept. 2010	Sept. 2011	Oct. 2011	June 2012	Sept. 2012	June 2013	Sept. 2013	June 2014	Sept. 2014	June 2015	Sept. 2015	June 2016	Sept. 2016	June 2017	Sept. 2017	June 2018	Sept. 2018
Chloride	64	59	59	57	72	72	74	54	56	52	71	83	110	100	98	110	100	99	99	62
Nitrogen, Ammonia	27	46	44	49	66	63	64	53*	67*	48*	66	68	68*	NR	NR	NR	NR	NR	NR	NR
Nitrogen, Nitrite	<0.02	<0.2	<0.2	<0.2	<0.20	0.83	<0.20	<0.04	<0.04	<0.04	<0.2	<0.2	<0.2	<0.2	<0.2	<0.04	<0.02	<0.2	0.31	<0.2
Nitrogen, Nitrate	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<0.020	<0.04	<0.04	<0.2	<0.02	<0.2	<0.2	<0.02	<0.04	<0.02	<0.2	<0.02	<0.2
Total Dissolved Phosphorus	11	<0.000	9.5	9.3	11	10.0	12	7.7	8	6.2	9	8.9	7.3	8	8	8.7	8.4	8	8.9	6.5
Biochemical Oxygen Demand (5-day)	440	400	370	290	340	380	540	320	450	330	500	510	460	480	510	470	700	510	650	550
Total Suspended Solids	100	61	85	44	53	67	79	65	68	97	108	164	106	88	82	88	160	86	140	96
Oil and Grease	38.1	24.4	25.8	14.7	18.7	19	25.9	17.8	31.6	45.4	28.1	34.6	76.1	15.7	26	23.4	27.3	19.1	22.4	31.7

**NOTES:**

1. TESTED PARAMETERS ARE REPORTED IN MILLIGRAMS PER LITER (PPM)
2. WASTEWATER QUALITY RESULTS PRIOR TO 2009 ARE NOT DISPLAYED, BUT ARE AVAILABLE
3. WASTEWATER QUALITY RESULTS ARE FOR SAMPLES FROM THE SPLITTER BOX (AFTER THE SEPTIC TANK)
4. NR = NOT REPORTED

\* Reported as TKN

**TABLE 3  
GROUNDWATER LEVEL MEASUREMENTS  
BRISTOL, VERMONT  
#ID-9-0208-1A**

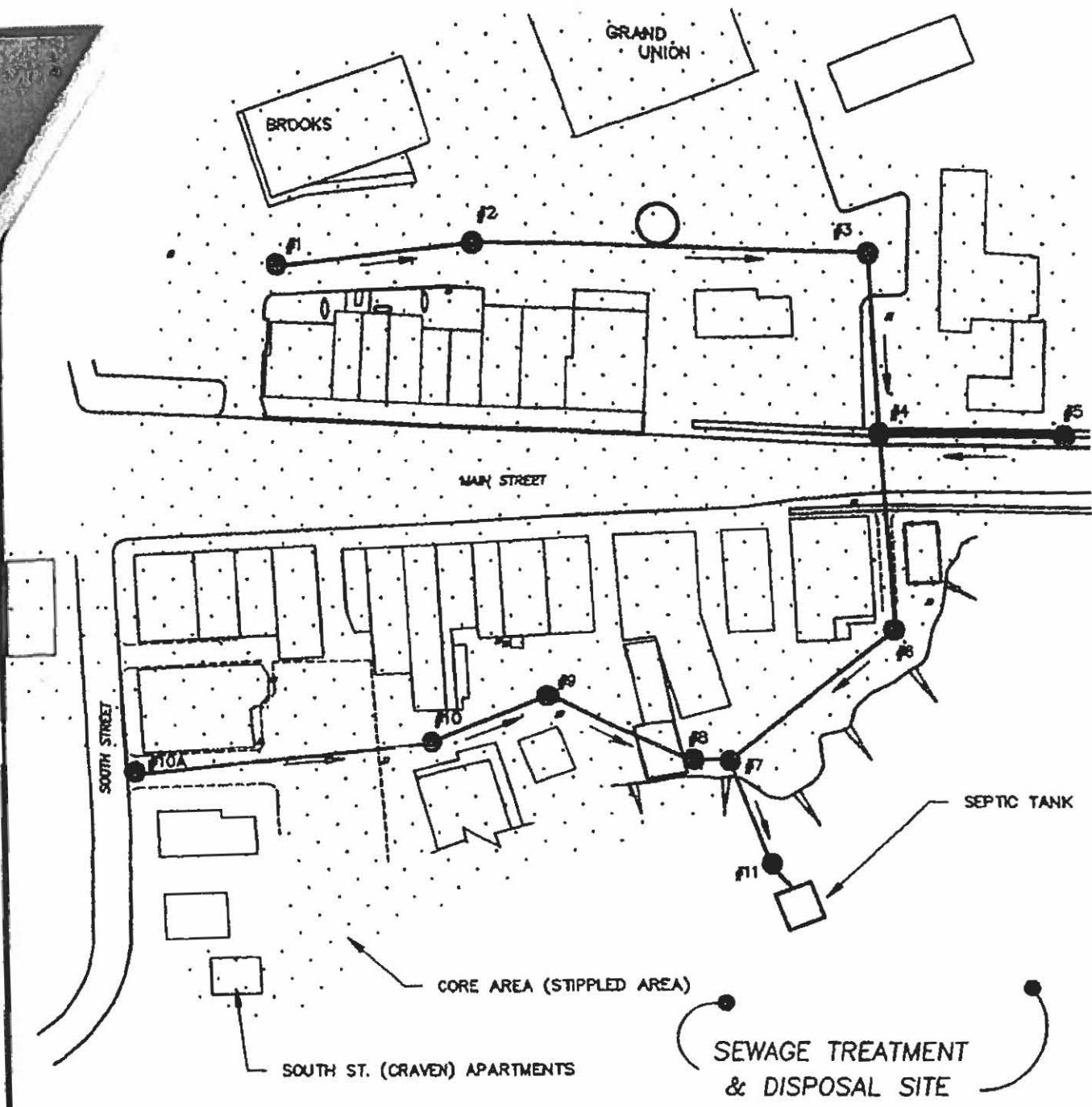
<u>DATE</u>	<u>Well #</u>	<u>Well Depth (Feet)</u>
6/1/19	2	18.8'
	3	31.7'
	4	39.2'
6/8/19	2	16.2'
	3	31.1'
	4	39.0'
6/15/19	2	17.1'
	3	31.9'
	4	39.4'
6/22/19	2	19.8'
	3	31.7'
	4	39.0'
6/29/19	2	17.0'
	3	32.0'
	4	39.5'
9/7/19	2	17.6'
	3	32.8'
	4	40.0'
9/14/19	2	18.0'
	3	33.9'
	4	40.3'
9/21/19	2	18.4'
	3	34.1'
	4	40.3'
9/28/19	2	18.1'
	3	33.7'
	4	38.6'

**Table 4  
Manhole Conditions - Bristol, Vermont - 2020  
Required Repairs and Maintenance Actions - #ID-9-0208-1A**

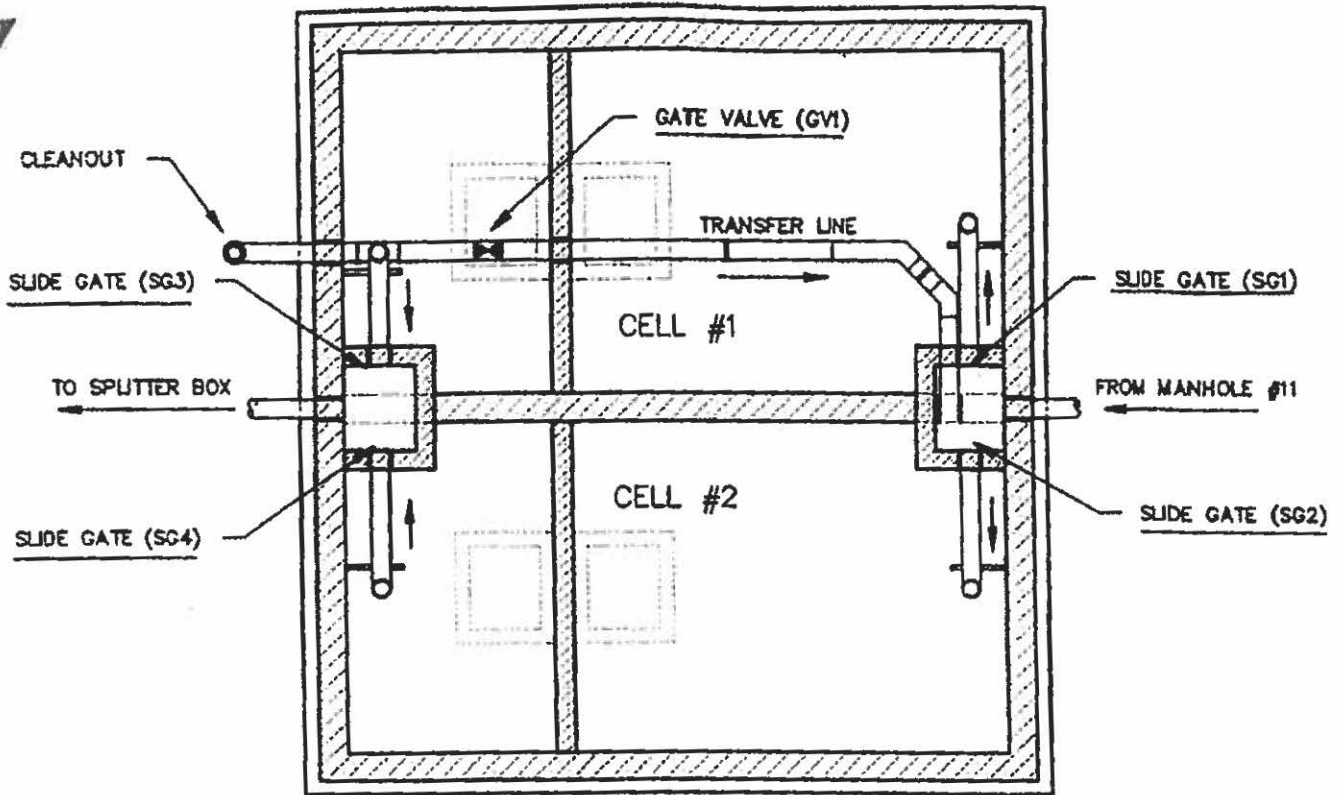
Manhole Number	Frame and cover				Clean invert	Clean shelves	Repair infiltration	Comments / additional items to repair
	Replace	Mortar	Center	Raise				
S.T. Inlet								
S.T. Outlet								
Split box								Good condition - quarterly pumping
D.S.# 1								In service
D.S.# 2								In service
D.S.# 3								out of service
D.S.# 4								In service
D.S.# 5								out of service, jet to valve, troubleshoot
D.S.# 6								In service
D.S.# 7								out of service
D.S.# 8								out of service
M.H.# 1								Good condition
M.H.# 2								Not Found
M.H.# 3								Good condition
M.H.# 4								Good condition
M.H.# 5								Good condition
M.H.# 6								Good condition
M.H.# 7								Not inspected
M.H.# 8								Excellent condition
M.H.# 9								Good condition
M.H.# 10								Excellent condition
M.H.# 10A								Possible future centering required - watch
M.H.# 11								Good condition
Mary's GT								Inactive - not inspected, temp. construction
Hendee GT								Good condition - quarterly pumping done 4/8
Snap's GT								Good condition - quarterly pumping done 4/8
Bakery GT								Good condition - quarterly pumping done 4/8
Cubbers GT								Good condition - quarterly pumping done 4/8
Viens D.S.	X	X	X	X				Reset top - siphon appears operational

# **APPENDIX B**

## **FIGURES**



OPERATION AND MAINTENANCE MANUAL VILLAGE OF BRISTOL, VERMONT CORE AREA SEWER IMPROVEMENTS		
SEWER SYSTEM FLOW SCHEMATIC		
<b>GREEN MOUNTAIN ENGINEERING</b>	4050 WILLISTON RD, SUITE 11 SOUTH BURLINGTON, VT 05403 FAX & PHONE: (802)862-558	
	CML WATER WASTEWATER	
DATE AUG. 1993	PROJECT NO. 2-009	FIGURE # 1



**SEPTIC TANK - PLAN VIEW**  
SCALE: NONE

OPERATION OF VALVES							
VALVE	NORMAL POSITION	O.O.	BY-PASS CELL #1	O.O.	BY-PASS CELL #2	O.O.	CLEAN TRANSFER LINE
SG1	OPEN	2	⊗ CLOSED ⊗		OPEN	2	⊗ CLOSED ⊗
SG2	CLOSED	1	⊗ OPEN ⊗		CLOSED	1	⊗ OPEN ⊗
SG3	CLOSED		CLOSED	1	⊗ OPEN ⊗		CLOSED
SG4	OPEN		OPEN	2	⊗ CLOSED ⊗		OPEN
GV1	OPEN	3	⊗ CLOSED ⊗	3	⊗ CLOSED ⊗		OPEN

⊗ ⊗ = DEVIATION FROM NORMAL POSITION

o.o. = ORDER OF OPERATION - WHEN PLACING VALVES IN OTHER THAN NORMAL POSITION, CHANGE POSITIONS IN THIS ORDER.

OPERATION AND MAINTENANCE MANUAL  
VILLAGE OF BRISTOL, VERMONT  
CORE AREA SEWER IMPROVEMENTS

SEPTIC TANK FLOW SCHEMATIC

**GREEN MOUNTAIN ENGINEERING**

4050 WILLISTON RD, SUITE 11  
SOUTH BURLINGTON, VT 0540.  
FAX & PHONE: (802)862-551

CIVIL WATER WASTEWATER

DATE  
AUG. 1993

PROJECT NO.  
2-009

FIGURE #  
2



## **APPENDIX C**

### **PART 1, SECTION D, ITEM #D2 OF DISCHARGE PERMIT**

C2. Construction Inspection:

The construction of the sewage collection, treatment and disposal system was completed in accordance with the approved plans and under the inspection of a Vermont Registered Professional Engineer.

On September 3, 1993 Brent Whitney, P.E., of Green Mountain Engineering provided certification that the construction and inspection of the subsurface disposal system was completed in accordance with the approved plans and specifications.

SECTION D "SYSTEM OPERATION"

D1. General Operating Requirements.

The sewage treatment and disposal system shall be operated at all times in a manner that will: (1) not permit the discharge of sewage onto the surface of the ground; (2) not result in the surfacing of sewage; (3) not result in the direct discharge of sewage into the waters of the State; (4) not result in a violation of the Vermont Water Quality Standards and (5) not cause a Significant Alteration of the Aquatic Biota in the receiving waters.

In accordance with accepted design practices, the effluent disposal rate to the disposal fields shall not exceed 20,000 gallons per day except as may occur on an occasional basis during normal operation.

D2. Annual Inspection, Report and Implementation Schedule:

(A) Annual Inspection

Annually during the month of April, the permittee shall engage a Vermont Registered Professional engineer to make a thorough inspection, evaluation, and report of the complete sewage collection, treatment and disposal system. The engineer's inspection shall include, but not be limited to the following:

- a. inspecting the entire collection system, removing manhole covers to observe the condition of the sewers, grease interceptors, septic tanks, and manholes, and noting any signs of inflow or excess infiltration;
- b. evaluating the accumulation of solids and scum in both compartments of the septic tank and verifying the pumping of the septic tank;
- c. evaluating the accumulation of grease in the grease interceptors and verifying cleaning of the interceptors, if necessary;
- d. inspecting the evenness of distribution through the flow splitter box and making required adjustments;

D2. Annual Inspection, Report and Implementation Schedule:

(A) Annual Inspection (continued):

- e. verification of the proper operation of the dosing siphons;
- f. verifying the alternation of the fields;
- g. checking the depth of ponding in all shallow in-field observation wells;
- h. tabulating the groundwater level measurements made for the months of March and April (current year) and June and September (previous year); and
- i. noting any necessary repairs or maintenance that needs to be performed on the sewage collection, treatment, and disposal system.

(B) Annual Inspection Report

Before July 1<sup>st</sup> each year the permittee shall have a professional engineer submit an annual report including the following items:

- a. a complete list of the items inspected and the results of the inspection;
- b. an evaluation of the degree of ponding observed in the shallow in-field observation wells;
- c. an evaluation of the seasonal high groundwater level below the disposal fields; and
- d. a discussion of the recommended repairs and maintenance required

(C) Implementation Schedule

Before July 1<sup>st</sup> each year the permittee shall notify the Secretary in writing stating how the engineer's recommendations are to be implemented and including a schedule for the required repairs and maintenance.

D3. Septage Disposal:

During the system's annual inspection the depth of sludge and scum shall be measured in all septic tanks. The septic tanks shall be pumped if: 1) the sludge is closer than twelve (12) inches to the outlet baffle or 2) the scum layer is closer than three (3) inches to the septic tank outlet baffle or 3) if otherwise recommended by the inspecting engineer. As part of the annual inspection report, the permittee's engineer shall supply the Secretary with the name and address of the pumpier and the municipal sewage treatment facility where the septage is to be disposed (or was) or other facility approved by the Secretary.

## **APPENDIX D**

### **TREATMENT FACILITY FLOW DATA**

er Descript	Pres #	Prev #	Total Gal.	Current D	Prev. Date	Days	ADF	Limit	Exc?
CHEERS	98	93	5	#####	4/8/2019	32	156	799	no
BROWN-M	21	20	1	#####	4/8/2019	32	31	393	no
THREE MA	150	143	7	#####	4/8/2019	32	219	458	no
WILLIAM 8	581	566	15	#####	4/8/2019	32	469	824	no
RITE AID	45	43	2	#####	4/8/2019	32	63	100	no
WELLS MC	49	47	2	#####	4/8/2019	32	63	100	no
IVAN HENI	1046	1018	28	#####	4/8/2019	32	875	2440	no
H & M MO	136	136	0	#####	4/8/2019	32	0	1180	no
FORAND, E	168	165	3	#####	4/8/2019	32	94	271	no
ASA LIMIT	42	41	1	#####	4/8/2019	32	31	119	no
TREEFORT	48	47	1	#####	4/8/2019	32	31	100	no
CUBBER'S/	777	750	27	#####	4/8/2019	32	844	1025	no
SHEUN LAI	213	205	8	#####	4/8/2019	32	250	241	yes
WELLS MC	205	197	8	#####	4/8/2019	32	250	769	no
VILLAGE C	56	55	1	#####	4/8/2019	32	31	519	no
TREEFORT	665	647	18	#####	4/8/2019	32	563	829	no
WADE PRC	147	142	5	#####	4/8/2019	32	156	174	no
FIVE MAIN	786	763	23	#####	4/8/2019	32	719	1492	no
JAMES T. H	78	76	2	#####	4/8/2019	32	63	302	no
JOHN MOY	148	144	4	#####	4/8/2019	32	125	732	no
ARTHUR C	275	267	8	#####	4/8/2019	32	250	384	no
FOLKHEAR	16	16	0	#####	4/8/2019	32	0	240	no
SHAWS	684	665	19	#####	4/8/2019	32	594	488	yes
JOHN MOY	32	31	1	#####	4/8/2019	32	31	183	no
ASMG/ 30	515	494	21	#####	4/8/2019	32	656	1199	no
ASMG/34	226	217	9	#####	4/8/2019	32	281	549	no
HART & W	12	11	1	#####	4/8/2019	32	31	100	no
NATIONAL	32	31	1	#####	4/8/2019	32	31	149	no
SNAP'S RES	491	474	17	#####	4/8/2019	32	531	1503	no
TYLER WES	32	32	0	#####	4/8/2019	32	0	159	no
TOWN OF	48	47	1	#####	4/8/2019	32	31	100	no
BRISTOL RI	60	58	2	#####	4/8/2019	32	63	241	no
JOHN MOY	242	235	7	#####	4/8/2019	32	219	604	no
FREDDIE B	37	36	1	#####	4/8/2019	32	31	113	no
Total Gallo	8161	7912	249000	#####	4/8/2019				
Total ADF: (gallons/day)			7781						

**April 2019 System Data**

Dr Descript	Pres #	Prev #	Total Gal.	Current D	Prev. Date	Days	ADF	Limit
10-12 MAI	99	98	1	6/6/2019	5/10/2019	27	37	799
BROWN-M	22	21	1	6/6/2019	5/10/2019	27	37	393
THREE MA	157	150	7	6/6/2019	5/10/2019	27	259	458
WILLIAM &	591	581	10	6/6/2019	5/10/2019	27	370	824
WALGREE	46	45	1	6/6/2019	5/10/2019	27	37	100
WELLS MO	50	49	1	6/6/2019	5/10/2019	27	37	100
IVAN HEN	1070	1046	24	6/6/2019	5/10/2019	27	889	2440
H & M MO	136	136	0	6/6/2019	5/10/2019	27	0	1180
MOYERS, J	171	168	3	6/6/2019	5/10/2019	27	111	271
ASA LIMIT	43	42	1	6/6/2019	5/10/2019	27	37	119
TREEFORT	48	48	0	6/6/2019	5/10/2019	27	0	100
CUBBER'S/	802	777	25	6/6/2019	5/10/2019	27	926	1025
SHEUN LAI	220	213	7	6/6/2019	5/10/2019	27	259	241
WELLS MO	216	205	11	6/6/2019	5/10/2019	27	407	769
VILLAGE C	58	56	2	6/6/2019	5/10/2019	27	74	519
TREEFORT	679	665	14	6/6/2019	5/10/2019	27	519	829
WADE PRO	152	147	5	6/6/2019	5/10/2019	27	185	174
FIVE MAIN	810	786	24	6/6/2019	5/10/2019	27	889	1492
KEITH, MI	81	78	3	6/6/2019	5/10/2019	27	111	580
JOHN MOY	151	148	3	6/6/2019	5/10/2019	27	111	732
ARTHUR C	282	275	7	6/6/2019	5/10/2019	27	259	384
FOLKHEAR	16	16	0	6/6/2019	5/10/2019	27	0	240
SHAWS	701	684	17	6/6/2019	5/10/2019	27	630	488
JOHN MOY	35	32	3	6/6/2019	5/10/2019	27	111	183
ASMG/ 30	535	515	20	6/6/2019	5/10/2019	27	741	1199
ASMG/34	235	226	9	6/6/2019	5/10/2019	27	333	549
HART & W	12	12	0	6/6/2019	5/10/2019	27	0	100
NATIONAL	33	32	1	6/6/2019	5/10/2019	27	37	149
SNAP'S RES	507	491	16	6/6/2019	5/10/2019	27	593	1503
TYLER WES	33	32	1	6/6/2019	5/10/2019	27	37	159
TOWN OF	49	48	1	6/6/2019	5/10/2019	27	37	100
BRISTOL R	62	60	2	6/6/2019	5/10/2019	27	74	241
JOHN MOY	249	242	7	6/6/2019	5/10/2019	27	259	604
FREDDIE B	39	37	2	6/6/2019	5/10/2019	27	74	113
Total Gallons:			229000	6/6/2019	5/10/2019			
Total ADF: (gallons/day)			8481					

**May 2019 System Data**

Dr Descript	Pres #	Prev #	Total Gal.	Current Dat	Prev. Date	Days	ADF	Limit
10-12 MAI	101	99	2	7/11/2019	6/6/2019	35	57	799
BROWN-M	22	22	0	7/11/2019	6/6/2019	35	0	393
THREE MA	165	157	8	7/11/2019	6/6/2019	35	229	458
WILLIAM 8	607	591	16	7/11/2019	6/6/2019	35	457	824
RITE AID	49	46	3	7/11/2019	6/6/2019	35	86	100
WELLS MO	53	50	3	7/11/2019	6/6/2019	35	86	100
IVAN HEND	1099	1070	29	7/11/2019	6/6/2019	35	829	2440
H & M MO	136	136	0	7/11/2019	6/6/2019	35	0	1180
FORAND, B	175	171	4	7/11/2019	6/6/2019	35	114	271
ASA LIMIT	44	43	1	7/11/2019	6/6/2019	35	29	119
TREEFORT	49	48	1	7/11/2019	6/6/2019	35	29	100
CUBBER'S/	836	802	34	7/11/2019	6/6/2019	35	971	1025
SHEUN LAI	229	220	9	7/11/2019	6/6/2019	35	257	241
WELLS MO	234	216	18	7/11/2019	6/6/2019	35	514	769
VILLAGE C	61	58	3	7/11/2019	6/6/2019	35	86	519
TREEFORT	699	679	20	7/11/2019	6/6/2019	35	571	829
WADE PRO	157	152	5	7/11/2019	6/6/2019	35	143	174
FIVE MAIN	841	810	31	7/11/2019	6/6/2019	35	886	1492
KEITH, MIC	87	81	6	7/11/2019	6/6/2019	35	171	580
JOHN MOY	156	151	5	7/11/2019	6/6/2019	35	143	732
ARTHUR C	291	282	9	7/11/2019	6/6/2019	35	257	384
FOLKHEAR	18	16	2	7/11/2019	6/6/2019	35	57	240
SHAWS	724	701	23	7/11/2019	6/6/2019	35	657	488
JOHN MOY	36	35	1	7/11/2019	6/6/2019	35	29	183
ASMG/ 30	560	535	25	7/11/2019	6/6/2019	35	714	1199
ASMG/34	243	235	8	7/11/2019	6/6/2019	35	229	549
HART & W	13	12	1	7/11/2019	6/6/2019	35	29	100
NATIONAL	34	33	1	7/11/2019	6/6/2019	35	29	149
SNAP'S RES	535	507	28	7/11/2019	6/6/2019	35	800	1503
TYLER WES	33	33	0	7/11/2019	6/6/2019	35	0	159
TOWN OF	51	49	2	7/11/2019	6/6/2019	35	57	100
BRISTOL R	65	62	3	7/11/2019	6/6/2019	35	86	241
JOHN MOY	256	249	7	7/11/2019	6/6/2019	35	200	604
FREDDIE B	40	39	1	7/11/2019	6/6/2019	35	29	113
Total Gallons:			309000	7/11/2019	6/6/2019			
Total ADF: (gallons/day)			8829					

**June 2019 System Data**





Tr Descript	Pres #	Prev #	Total Gal.	Current D	Prev. Date	Days	ADF	Limit	Exc?
10-12 MAI	120	101	19	#####	8/7/2019	41	463	799	no
BROWN-M	23	22	1	#####	8/7/2019	41	24	393	no
THREE MA	197	165	32	#####	8/7/2019	41	780	458	yes
WILLIAM 8	629	607	22	#####	8/7/2019	41	537	824	no
WALGREE	53	49	4	#####	8/7/2019	41	98	100	no
WELLS MO	59	53	6	#####	8/7/2019	41	146	100	yes
IVAN HEN	1158	1099	59	#####	8/7/2019	41	1439	2440	no
H & M MO	137	136	1	#####	8/7/2019	41	24	1180	no
MOYERS, J	181	175	6	#####	8/7/2019	41	146	271	no
ASA LIMIT	46	44	2	#####	8/7/2019	41	49	119	no
TREEFORT	50	49	1	#####	8/7/2019	41	24	100	no
CUBBER'S/	904	836	68	#####	8/7/2019	41	1659	1025	yes
SHEUN LAI	246	229	17	#####	8/7/2019	41	415	241	yes
WELLS MO	257	234	23	#####	8/7/2019	41	561	769	no
VILLAGE C	68	61	7	#####	8/7/2019	41	171	519	no
TREEFORT	738	699	39	#####	8/7/2019	41	951	829	yes
WADE PRO	176	157	19	#####	8/7/2019	41	463	174	yes
FIVE MAIN	900	841	59	#####	8/7/2019	41	1439	1492	no
KEITH, MIC	92	87	5	#####	8/7/2019	41	122	580	no
JOHN MOV	167	156	11	#####	8/7/2019	41	268	732	no
ARTHUR C	311	291	20	#####	8/7/2019	41	488	384	yes
FOLKHEAR	18	18	0	#####	8/7/2019	41	0	240	no
SHAWS	793	724	69	#####	8/7/2019	41	1683	488	yes
JOHN MOV	38	36	2	#####	8/7/2019	41	49	183	no
ASMG/ 30	608	560	48	#####	8/7/2019	41	1171	1199	no
ASMG/34	259	243	16	#####	8/7/2019	41	390	549	no
HART & W	13	13	0	#####	8/7/2019	41	0	100	no
NATIONAL	36	34	2	#####	8/7/2019	41	49	149	no
SNAP'S RES	590	535	55	#####	8/7/2019	41	1341	1503	no
TYLER WES	33	33	0	#####	8/7/2019	41	0	159	no
TOWN OF	53	51	2	#####	8/7/2019	41	49	100	no
BRISTOL R	70	65	5	#####	8/7/2019	41	122	241	no
JOHN MOV	272	256	16	#####	8/7/2019	41	390	604	no
FREDDIE B	42	40	2	#####	8/7/2019	41	49	113	no
Total Gallo	9337	8699	638000	#####	8/7/2019				
Total ADF: (gallons/day)			15561						

**August 2019 System Data**

Dr Descript	Pres #	Prev #	Total Gal.	Current D	Prev. Dat	Days	ADF	Limit	Exc?
10-12 MAI	127	120	7	#####	#####	28	250	799	no
BROWN-M	23	23	0	#####	#####	28	0	393	no
THREE MA	204	197	7	#####	#####	28	250	458	no
WILLIAM &	641	629	12	#####	#####	28	429	824	no
RITE AID	55	53	2	#####	#####	28	71	100	no
WELLS MO	60	59	1	#####	#####	28	36	100	no
IVAN HENI	1185	1158	27	#####	#####	28	964	2440	no
H & M MO	137	137	0	#####	#####	28	0	1180	no
FORAND, E	184	181	3	#####	#####	28	107	271	no
ASA LIMIT	48	46	2	#####	#####	28	71	119	no
TREEFORT	50	50	0	#####	#####	28	0	100	no
CUBBER'S/	932	904	28	#####	#####	28	1000	1025	no
SHEUN LAI	253	246	7	#####	#####	28	250	241	yes
WELLS MO	270	257	13	#####	#####	28	464	769	no
VILLAGE Co	70	68	2	#####	#####	28	71	519	no
TREEFORT	754	738	16	#####	#####	28	571	829	no
WADE PRO	180	176	4	#####	#####	28	143	174	no
FIVE MAIN	923	900	23	#####	#####	28	821	1492	no
KEITH, MIC	94	92	2	#####	#####	28	71	580	no
JOHN MOY	172	167	5	#####	#####	28	179	732	no
ARTHUR C	319	311	8	#####	#####	28	286	384	no
FOLKHEAR	19	18	1	#####	#####	28	36	240	no
SHAWS	813	793	20	#####	#####	28	714	488	yes
JOHN MOY	39	38	1	#####	#####	28	36	183	no
ASMG/ 30	629	608	21	#####	#####	28	750	1199	no
ASMG/34	266	259	7	#####	#####	28	250	549	no
HART & W	14	13	1	#####	#####	28	36	100	no
NATIONAL	36	36	0	#####	#####	28	0	149	no
SNAP'S RES	608	590	18	#####	#####	28	643	1503	no
TYLER WES	33	33	0	#####	#####	28	0	159	no
TOWN OF	55	53	2	#####	#####	28	71	100	no
BRISTOL RI	72	70	2	#####	#####	28	71	241	no
JOHN MOY	280	272	8	#####	#####	28	286	604	no
FREDDIE B	43	42	1	#####	#####	28	36	113	no
Total Gallo	9588	9337	251000	#####	#####				
Total ADF: (gallons/day)			8964						

**September 2019 System Data**

Dr Descript	Pres #	Prev #	Total Gal.	Current D	Prev. Dat	Days	ADF	Limit	Exc?
10-12 MAI	127	127	0	#####	#####	20	0	799	no
BROWN-M	24	23	1	#####	#####	20	50	393	no
THREE MA	209	204	5	#####	#####	20	250	458	no
WILLIAM &	648	641	7	#####	#####	20	350	824	no
RITE AID	56	55	1	#####	#####	20	50	100	no
WELLS MO	61	60	1	#####	#####	20	50	100	no
IVAN HEND	1204	1185	19	#####	#####	20	950	2440	no
H & M MO	137	137	0	#####	#####	20	0	1180	no
FORAND, E	186	184	2	#####	#####	20	100	271	no
ASA LIMIT	48	48	0	#####	#####	20	0	119	no
TREEFORT	50	50	0	#####	#####	20	0	100	no
CUBBER'S/	950	932	18	#####	#####	20	900	1025	no
SHEUN LAI	258	253	5	#####	#####	20	250	241	yes
WELLS MO	273	270	3	#####	#####	20	150	769	no
VILLAGE CO	72	70	2	#####	#####	20	100	519	no
TREEFORT	764	754	10	#####	#####	20	500	829	no
WADE PRO	182	180	2	#####	#####	20	100	174	no
FIVE MAIN	947	923	24	#####	#####	20	1200	1492	no
KEITH, MIC	95	94	1	#####	#####	20	50	580	no
JOHN MOY	176	172	4	#####	#####	20	200	732	no
ARTHUR C	323	319	4	#####	#####	20	200	384	no
FOLKHEAR	19	19	0	#####	#####	20	0	240	no
SHAWS	826	813	13	#####	#####	20	650	488	yes
JOHN MOY	40	39	1	#####	#####	20	50	183	no
ASMG/ 30	643	629	14	#####	#####	20	700	1199	no
ASMG/34	270	266	4	#####	#####	20	200	549	no
HART & W	14	14	0	#####	#####	20	0	100	no
NATIONAL	37	36	1	#####	#####	20	50	149	no
SNAP'S RES	619	608	11	#####	#####	20	550	1503	no
TYLER WES	34	33	1	#####	#####	20	50	159	no
TOWN OF	56	55	1	#####	#####	20	50	100	no
BRISTOL R	73	72	1	#####	#####	20	50	241	no
JOHN MOY	285	280	5	#####	#####	20	250	604	no
FREDDIE B	46	43	3	#####	#####	20	150	113	yes
Total Gallo	9752	9588	164000	#####	#####				
Total ADF: (gallons/day)			8200						

**October 2019**

Dr Descript	Pres #	Prev #	Total Gal.	Current D	Prev. Dat	Days	ADF	Limit	Exc?
10-12 MAI	130	127	3	#####	#####	35	86	799	no
BROWN-M	24	24	0	#####	#####	35	0	393	no
THREE MA	215	209	6	#####	#####	35	171	458	no
WILLIAM &	660	648	12	#####	#####	35	343	824	no
WALGREE	57	56	1	#####	#####	35	29	100	no
WELLS MC	62	61	1	#####	#####	35	29	100	no
IVAN HENI	1240	1204	36	#####	#####	35	1029	2440	no
H & M MO	137	137	0	#####	#####	35	0	1180	no
MOYERS, J	190	186	4	#####	#####	35	114	271	no
ASA LIMIT	50	48	2	#####	#####	35	57	119	no
TREEFORT	50	50	0	#####	#####	35	0	100	no
CUBBER'S/	973	950	23	#####	#####	35	657	1025	no
SHEUN LAI	265	258	7	#####	#####	35	200	241	no
WELLS MC	282	273	9	#####	#####	35	257	769	no
VILLAGE C	74	72	2	#####	#####	35	57	519	no
TREEFORT	778	764	14	#####	#####	35	400	829	no
WADE PRO	187	182	5	#####	#####	35	143	174	no
FIVE MAIN	986	947	39	#####	#####	35	1114	1492	no
KEITH, MIC	98	95	3	#####	#####	35	86	580	no
JOHN MOY	182	176	6	#####	#####	35	171	732	no
ARTHUR C	333	323	10	#####	#####	35	286	384	no
FOLKHEAR	19	19	0	#####	#####	35	0	240	no
SHAWS	849	826	23	#####	#####	35	657	488	yes
JOHN MOY	40	40	0	#####	#####	35	0	183	no
ASMG/ 30	663	643	20	#####	#####	35	571	1199	no
ASMG/34	278	270	8	#####	#####	35	229	549	no
HART & W	14	14	0	#####	#####	35	0	100	no
NATIONAL	38	37	1	#####	#####	35	29	149	no
SNAP'S RES	634	619	15	#####	#####	35	429	1503	no
TYLER WES	34	34	0	#####	#####	35	0	159	no
TOWN OF	57	56	1	#####	#####	35	29	100	no
BRISTOL R	74	73	1	#####	#####	35	29	241	no
JOHN MOY	293	285	8	#####	#####	35	229	604	no
FREDDIE B	51	46	5	#####	#####	35	143	113	yes
Total Gallo	10017	9752	265000	#####	#####				
Total ADF: (gallons/day)			7571						

**November 2019 System Data**

er Descript	Pres #	Prev #	Total Gal.	Current D	Prev. Dat	Days	ADF	Limit	Exc?	
10-12 MAI	133	130	3	1/9/2019	#####	30	100	799	no	
BROWN-M	25	24	1	1/9/2019	#####	30	33	393	no	
THREE MA	226	215	11	1/9/2019	#####	30	367	458	no	
WILLIAM &	675	660	15	1/9/2019	#####	30	500	824	no	
RITE AID	58	57	1	1/9/2019	#####	30	33	100	no	
WELLS MO	64	62	2	1/9/2019	#####	30	67	100	no	
IVAN HEND	1267	1240	27	1/9/2019	#####	30	900	2440	no	
H & M MO	138	137	1	1/9/2019	#####	30	33	1180	no	
FORAND, E	193	190	3	1/9/2019	#####	30	100	271	no	
ASA LIMIT	51	50	1	1/9/2019	#####	30	33	119	no	
TREEFORT	51	50	1	1/9/2019	#####	30	33	100	no	
CUBBER'S/	995	973	22	1/9/2019	#####	30	733	1025	no	
SHEUN LAI	273	265	8	1/9/2019	#####	30	267	241	yes	
WELLS MO	290	282	8	1/9/2019	#####	30	267	769	no	
VILLAGE C	76	74	2	1/9/2019	#####	30	67	519	no	
TREEFORT	792	778	14	1/9/2019	#####	30	467	829	no	
WADE PRO	193	187	6	1/9/2019	#####	30	200	174	yes	
FIVE MAIN	1023	986	37	1/9/2019	#####	30	1233	1492	no	
KEITH, MIC	101	98	3	1/9/2019	#####	30	100	580	no	
JOHN MOY	188	182	6	1/9/2019	#####	30	200	732	no	
ARTHUR C	344	333	11	1/9/2019	#####	30	367	384	no	
FOLKHEAR	20	19	1	1/9/2019	#####	30	33	240	no	
SHAWS	873	849	24	1/9/2019	#####	30	800	488	yes	
JOHN MOY	41	40	1	1/9/2019	#####	30	33	183	no	
ASMG/ 30	681	663	18	1/9/2019	#####	30	600	1199	no	
ASMG/34	284	278	6	1/9/2019	#####	30	200	549	no	
HART & W	15	14	1	1/9/2019	#####	30	33	100	no	
NATIONAL	39	38	1	1/9/2019	#####	30	33	149	no	
SNAP'S RES	652	634	18	1/9/2019	#####	30	600	1503	no	
TYLER WES	34	34	0	1/9/2019	#####	30	0	159	no	
TOWN OF	59	57	2	1/9/2019	#####	30	67	100	no	
BRISTOL RI	76	74	2	1/9/2019	#####	30	67	241	no	
JOHN MOY	301	293	8	1/9/2019	#####	30	267	604	no	
FREDDIE B	56	51	5	1/9/2019	#####	30	167	113	yes	
Total Gallo	10287	10017	270000	1/9/2019	#####					
Total ADF: (gallons/day)			9000							

**December 2019 System Data**

er Descript	Pres #	Prev #	Total Gal.	Current D	Prev. Date	Days	ADF	Limit	Exc?
10-12 MAI	135	133	2	#####	1/9/2020	32	63	799	no
BROWN-M	25	25	0	#####	1/9/2020	32	0	393	no
THREE MA	233	226	7	#####	1/9/2020	32	219	458	no
WILLIAM &	682	675	7	#####	1/9/2020	32	219	824	no
RITE AID	60	58	2	#####	1/9/2020	32	63	100	no
WELLS MO	65	64	1	#####	1/9/2020	32	31	100	no
IVAN HENI	1297	1267	30	#####	1/9/2020	32	938	2440	no
H & M MO	138	138	0	#####	1/9/2020	32	0	1180	no
FORAND, E	196	193	3	#####	1/9/2020	32	94	271	no
ASA LIMIT	53	51	2	#####	1/9/2020	32	63	119	no
TREEFORT	51	51	0	#####	1/9/2020	32	0	100	no
CUBBER'S/	1018	995	23	#####	1/9/2020	32	719	1025	no
SHEUN LAI	281	273	8	#####	1/9/2020	32	250	241	yes
WELLS MO	300	290	10	#####	1/9/2020	32	313	769	no
VILLAGE C	77	76	1	#####	1/9/2020	32	31	519	no
TREEFORT	807	792	15	#####	1/9/2020	32	469	829	no
WADE PRO	198	193	5	#####	1/9/2020	32	156	174	no
FIVE MAIN	1071	1023	48	#####	1/9/2020	32	1500	1492	yes
KEITH, MI	103	101	2	#####	1/9/2020	32	63	580	no
JOHN MOY	194	188	6	#####	1/9/2020	32	188	732	no
ARTHUR C	353	344	9	#####	1/9/2020	32	281	384	no
FOLKHEAR	20	20	0	#####	1/9/2020	32	0	240	no
SHAWS	899	873	26	#####	1/9/2020	32	813	488	yes
JOHN MOY	42	41	1	#####	1/9/2020	32	31	183	no
ASMG/ 30	697	681	16	#####	1/9/2020	32	500	1199	no
ASMG/34	291	284	7	#####	1/9/2020	32	219	549	no
HART & W	15	15	0	#####	1/9/2020	32	0	100	no
NATIONAL	40	39	1	#####	1/9/2020	32	31	149	no
SNAP'S RES	669	652	17	#####	1/9/2020	32	531	1503	no
TYLER WES	35	34	1	#####	1/9/2020	32	31	159	no
TOWN OF	61	59	2	#####	1/9/2020	32	63	100	no
BRISTOL R	77	76	1	#####	1/9/2020	32	31	241	no
JOHN MOY	309	301	8	#####	1/9/2020	32	250	604	no
FREDDIE B	61	56	5	#####	1/9/2020	32	156	113	yes
Total Gallons:		10287	266000	#####	1/9/2020				
Total ADF: (gallons/day)			8313						
<b>January 2020</b>									



er Descript	Pres #	Prev #	Total Gal.	Current D	Prev. Dat	Days	ADF	Limit	Exc?
10-12 MAI	135	135	0	3/9/2020	#####	28	0	799	no
BROWN-M	25	25	0	3/9/2020	#####	28	0	393	no
THREE MA	233	233	0	3/9/2020	#####	28	0	458	no
WILLIAM 8	689	682	7	3/9/2020	#####	28	250	824	no
WALGREE	60	60	0	3/9/2020	#####	28	0	100	no
WELLS MO	65	65	0	3/9/2020	#####	28	0	100	no
IVAN HEN	1297	1297	0	3/9/2020	#####	28	0	2440	no
H & M MO	138	138	0	3/9/2020	#####	28	0	1180	no
MOYERS, J	196	196	0	3/9/2020	#####	28	0	271	no
ASA LIMIT	53	53	0	3/9/2020	#####	28	0	119	no
TREEFORT	51	51	0	3/9/2020	#####	28	0	100	no
CUBBER'S/	1018	1018	0	3/9/2020	#####	28	0	1025	no
SHEUN LAI	281	281	0	3/9/2020	#####	28	0	241	no
WELLS MO	300	300	0	3/9/2020	#####	28	0	769	no
VILLAGE C	77	77	0	3/9/2020	#####	28	0	519	no
TREEFORT	807	807	0	3/9/2020	#####	28	0	829	no
WADE PRO	198	198	0	3/9/2020	#####	28	0	174	no
FIVE MAIN	1071	1071	0	3/9/2020	#####	28	0	1492	no
KEITH, MIC	103	103	0	3/9/2020	#####	28	0	580	no
JOHN MOY	194	194	0	3/9/2020	#####	28	0	732	no
ARTHUR C	12	0	12	3/9/2020	#####	28	429	384	yes
FOLKHEAR	20	20	0	3/9/2020	#####	28	0	240	no
SHAWS	924	899	25	3/9/2020	#####	28	893	488	yes
JOHN MOY	42	42	0	3/9/2020	#####	28	0	183	no
ASMG/ 30	712	697	15	3/9/2020	#####	28	536	1199	no
ASMG/34	297	291	6	3/9/2020	#####	28	214	549	no
HART & W	15	15	0	3/9/2020	#####	28	0	100	no
NATIONAL	40	40	0	3/9/2020	#####	28	0	149	no
SNAP'S RES	669	669	0	3/9/2020	#####	28	0	1503	no
TYLER WES	35	35	0	3/9/2020	#####	28	0	159	no
TOWN OF	62	61	1	3/9/2020	#####	28	36	100	no
BRISTOL R	78	77	1	3/9/2020	#####	28	36	241	no
JOHN MOY	324	309	15	3/9/2020	#####	28	536	604	no
FREDDIE B	63	61	2	3/9/2020	#####	28	71	113	no
Total Gallo	10284	9752	84000	3/9/2020	#####				
Total ADF: (gallons/day)			3000						

**February 2020 System Data**

er Descript	Pres #	Prev #	Total Gal.	Current D	Prev. Date	Days	ADF	Limit	Exc?
10-12 MAI	137	135	2	4/9/2020	3/9/2020	30	67	799	no
BROWN-M	26	25	1	4/9/2020	3/9/2020	30	33	393	no
THREE MA	247	233	14	4/9/2020	3/9/2020	30	467	458	yes
WILLIAM &	700	689	11	4/9/2020	3/9/2020	30	367	824	no
RITE AID	79	60	19	4/9/2020	3/9/2020	30	633	100	yes
WELLS MO	67	65	2	4/9/2020	3/9/2020	30	67	100	no
IVAN HEND	1351	1297	54	4/9/2020	3/9/2020	30	1800	2440	no
H & M MO	138	138	0	4/9/2020	3/9/2020	30	0	1180	no
FORAND, B	203	196	7	4/9/2020	3/9/2020	30	233	271	no
ASA LIMIT	55	53	2	4/9/2020	3/9/2020	30	67	119	no
TREEFORT	51	51	0	4/9/2020	3/9/2020	30	0	100	no
CUBBER'S/	1049	1018	31	4/9/2020	3/9/2020	30	1033	1025	yes
SHEUN LAI	295	281	14	4/9/2020	3/9/2020	30	467	241	yes
WELLS MO	315	300	15	4/9/2020	3/9/2020	30	500	769	no
VILLAGE C	80	77	3	4/9/2020	3/9/2020	30	100	519	no
TREEFORT	828	807	21	4/9/2020	3/9/2020	30	700	829	no
WADE PRO	206	198	8	4/9/2020	3/9/2020	30	267	174	yes
FIVE MAIN	1108	1071	37	4/9/2020	3/9/2020	30	1233	1492	no
KEITH, MIC	108	103	5	4/9/2020	3/9/2020	30	167	580	no
JOHN MOY	205	194	11	4/9/2020	3/9/2020	30	367	732	no
ARTHUR C	17	12	5	4/9/2020	3/9/2020	30	167	384	no
FOLKHEAR	23	20	3	4/9/2020	3/9/2020	30	100	240	no
SHAWS	948	924	24	4/9/2020	3/9/2020	30	800	488	yes
JOHN MOY	44	42	2	4/9/2020	3/9/2020	30	67	183	no
ASMG/ 30	728	712	16	4/9/2020	3/9/2020	30	533	1199	no
ASMG/34	305	297	8	4/9/2020	3/9/2020	30	267	549	no
HART & W	16	15	1	4/9/2020	3/9/2020	30	33	100	no
NATIONAL	42	40	2	4/9/2020	3/9/2020	30	67	149	no
SNAP'S RES	689	669	20	4/9/2020	3/9/2020	30	667	1503	no
TYLER WES	35	35	0	4/9/2020	3/9/2020	30	0	159	no
TOWN OF	63	62	1	4/9/2020	3/9/2020	30	33	100	no
BRISTOL RI	79	78	1	4/9/2020	3/9/2020	30	33	241	no
JOHN MOY	331	324	7	4/9/2020	3/9/2020	30	233	604	no
FREDDIE B	77	63	14	4/9/2020	3/9/2020	30	467	113	yes
Total Gallo	10645	10284	361000	4/9/2020	3/9/2020				
Total ADF: (gallons/day)			12033						

**March 2020 System Data**



## **APPENDIX E**

# **DISCHARGE MONITORING RESULTS**



Bristol, Town of  
PO Box 249 070294  
Bristol, VT 05443  
Atten: Rick Chaput

PROJECT: Bristol Core Area Sewer  
WORK ORDER: 1906-14053  
DATE RECEIVED: June 17, 2019  
DATE REPORTED: June 26, 2019  
SAMPLER: Jill

### Laboratory Report

Enclosed please find the results of the analyses performed for the samples referenced on the attached chain of custody. All required method quality control elements including instrument calibration were performed in accordance with method requirements and determined to be acceptable unless otherwise noted.

The column labeled Lab/Tech in the accompanying report denotes the laboratory facility where the testing was performed and the technician who conducted the assay. A "W" designates the Williston, VT lab under NELAC certification ELAP 11263; "R" designates the Lebanon, NH facility under certification NH 2037 and "N" the Plattsburgh, NY lab under certification ELAP 11892. "Sub" indicates the testing was performed by a subcontracted laboratory. The accreditation status of the subcontracted lab is referenced in the corresponding NELAC and Qual fields.

The NELAC column also denotes the accreditation status of each laboratory for each reported parameter. "A" indicates the referenced laboratory is NELAC accredited for the parameter reported. "N" indicates the laboratory is not accredited. "U" indicates that NELAC does not offer accreditation for that parameter in that specific matrix. Test results denoted with an "A" meet all National Environmental Laboratory Accreditation Program requirements except where denoted by pertinent data qualifiers. Test results are representative of the samples as they were received at the laboratory

Endyne, Inc. warrants, to the best of its knowledge and belief, the accuracy of the analytical test results contained in this report, but makes no other warranty, expressed or implied, especially no warranties of merchantability or fitness for a particular purpose.

Reviewed by:

Harry B. Locker, Ph.D.  
Laboratory Director

[www.endynelabs.com](http://www.endynelabs.com)



160 James Brown Dr., Williston, VT 05495  
Ph 802-879-4333 Fax 802-879-7103

56 Etna Road, Lebanon, NH 03766  
Ph 603-678-4891 Fax 603-678-4893



**Laboratory Report**

DATE REPORTED: 06/26/2019

CLIENT: Bristol, Town of  
PROJECT: Bristol Core Area SewerWORK ORDER: 1906-14053  
DATE RECEIVED: 06/17/2019

001		Site: Splitter Box			Date Sampled: 6/17/19		Time: 10:55		
Parameter	Result	Units	Method	Analysis Date/Time	Lab/Tech	NELAC	Qual.		
pH per Client	6.20	SU at _C	Client Data	6/17/19 10:55	W CLI	N			
BOD-5day	720	mg/L	SM 5210B(11)	6/19/19 8:47	W JSS	A			
Chloride	86	mg/L	EPA 300.0	6/17/19	W AKJ	A			
Nitrate as N	< 0.20	mg/L	EPA 300.0	6/17/19 19:36	W AKJ	A			
Nitrite as N	< 0.20	mg/L	EPA 300.0	6/17/19 19:36	W AKJ	A			
TKN	78	mg/L	EPA 351.2, R.2(1993)	6/24/19	N JGM	A			
Phosphorus, Total Dissolved	9.3	mg/L	SM20 4500 P-F	6/24/19 14:49	R RLS	A			
Solids, Total Suspended	150	mg/L	SM 2540 D-11	6/20/19	W JSS	A		DS-	
Oil & Grease	42.8	mg/L	EPA 1664A	6/24/19	W KAS	A			

002		Site: MW #3			Date Sampled: 6/17/19		Time: 10:25		
Parameter	Result	Units	Method	Analysis Date/Time	Lab/Tech	NELAC	Qual.		
pH per Client	6.57	SU at _C	Client Data	6/17/19 10:25	W CLI	N			
e. coli	< 1.0	MPN/100ml	SM20 9223B(04)	6/17/19 15:18	W AKJ	A			
Chloride	17	mg/L	EPA 300.0	6/17/19	W AKJ	A			
Nitrate as N	2.0	mg/L	EPA 300.0	6/17/19 19:57	W AKJ	A			
Phosphorus, Total Dissolved	0.009	mg/L	SM20 4500 P-F	6/24/19 14:58	R RLS	A			

003		Site: MW #4			Date Sampled: 6/17/19		Time: 10:36		
Parameter	Result	Units	Method	Analysis Date/Time	Lab/Tech	NELAC	Qual.		
pH per Client	6.87	SU at _C	Client Data	6/17/19 10:36	W CLI	N			
e. coli	< 1.0	MPN/100ml	SM20 9223B(04)	6/17/19 15:18	W AKJ	A			
Chloride	17	mg/L	EPA 300.0	6/17/19	W AKJ	A			
Nitrate as N	1.7	mg/L	EPA 300.0	6/17/19 20:18	W AKJ	A			
Phosphorus, Total Dissolved	0.011	mg/L	SM20 4500 P-F	6/24/19 15:00	R RLS	A			

**Report Summary of Qualifiers and Notes**

DS-: The Laboratory Duplicate analysis of this sample was not within method acceptance limits. The value of the Laboratory Duplicate was 138 mg/L.

Bristol Core Area Sewer

Endyne Inc. COC

Prepared: 4/5/19

1906-14053



Bristol, Town of  
Bristol Core Area Sewer

Bill to:  
Pam Correia  
Bristol, Town of  
PO Box 249  
Bristol VT 05443  
Ph: (802)453-2410

Report to:  
Rick Chaput  
Bristol, Town of  
PO Box 249  
Bristol VT 05443  
town@bristolvt.org;vrchaput@gmail.

Cust # 0  
COREAREAST  
W-7C

Splitter Box

Sampled Date/Time: 6/17/19 @ 10:55am Sampler: Jill Marsano

pH Client Data	6.20 su @ 20.7°C	
Oil & Grease	2 - 1L Amber Glass	<6C, HCl
Chloride	1 - 2 oz-Plastics Anion	<6C
Nitrate as N		
Nitrite as N		
BOD-5day	1 - 1/2 gal Plastic	<6C
Solids, Total Suspended		
TKN	1 - 16 oz plastic	<6C, NY Phos, H2SO4
Phosphorus, Total Dissolved	1 - 4 oz Glass	<6C, Filter then preserve

MW #3

Sampled Date/Time: 6/17/19 @ 10:25am Sampler: Jill Marsano

pH Client Data	6.57 su @ 9.9°C	
E. coli	1 - 150ml Sterile Plastic	<10C, Na2S2O3 If Cl2
Chloride	1 - 2 oz-Plastics Anion	<6C
Nitrate as N		
Phosphorus, Total Dissolved	1 - 4 oz Glass	<6C, Filter then preserve

MW #4

Sampled Date/Time: 6/17/19 @ 10:36am Sampler: Jill Marsano

pH Client Data	6.87 su @ 13.3°C	
E. coli	1 - 150ml Sterile Plastic	<10C, Na2S2O3 If Cl2
Chloride	1 - 2 oz-Plastics Anion	<6C
Nitrate as N		
Phosphorus, Total Dissolved	1 - 4 oz Glass	<6C, Filter then preserve

~~Downstream Bridge #31~~

~~Sampled Date/Time: / / @ Sampler:~~

<del>pH Client Data</del>		
<del>Chloride</del>	<del>1 - 2 oz-Plastics Anion</del>	<del>&lt;6C</del>
<del>Nitrate as N</del>		
<del>Turbidity</del>	<del>1 - 8 oz Plastic</del>	<del>&lt;6C</del>
<del>Phosphorus, Total Dissolved</del>	<del>1 - 8 oz Glass</del>	<del>Filtered in Lab then both Total and Dissolved are preserved</del>
<del>Phosphorus, Total</del>		

~~Downstream Duplicate~~

~~Sampled Date/Time: / / @ Sampler:~~

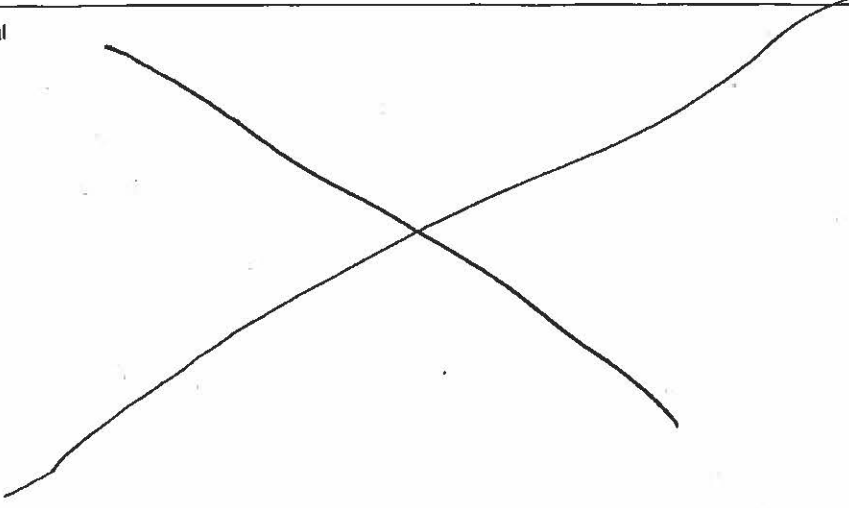
<del>Phosphorus, Total Dissolved</del>	<del>1 - 8 oz Glass</del>	<del>Filtered in Lab then both Total and Dissolved are preserved</del>
<del>Phosphorus, Total</del>		

Upstream Core Area Disposal Fi Sampled Date/Time: \_\_\_/\_\_\_/\_\_\_ @ \_\_\_ Sampler: \_\_\_\_\_

pH Client Data		
Chloride	1 - 2 oz-Plastics Anion	<6C
Nitrate as N		
Turbidity	1 - 8 oz Plastic	<6C
Phosphorus, Total Dissolved	1 - 8 oz Glass Filtered in Lab then both Total and Dissolved are preserved	
Phosphorus, Total	60 mL Glass	<6C, H2SO4


Upstream Duplicate Sampled Date/Time: \_\_\_/\_\_\_/\_\_\_ @ \_\_\_ Sampler: \_\_\_\_\_

Phosphorus, Total Dissolved	1 - 8 oz Glass Filtered in Lab then both Total and Dissolved are preserved	
Phosphorus, Total		



One or more sample bottles in this project must be kept refrigerated or on ice until delivery at the laboratory.

Your initials will allow Endyne to proceed with analysis if the temperature preservation requirement is not satisfied.

*JAM* 

Relinquished by: \_\_\_\_\_ Date Time \_\_\_\_\_ Accepted by: *E. Torrey* 6/17/19 @ 1412 Date Time \_\_\_\_\_

Relinquished by: \_\_\_\_\_ Date Time \_\_\_\_\_ Received by: \_\_\_\_\_ Date Time \_\_\_\_\_

Sites/Parameters correct as listed. Client Initials \_\_\_\_\_

Client Authorization to use Subcontract lab Client Initials \_\_\_\_\_

Sample origin: VT  NH  NY  Other

Special reporting instructions: (PO#) \_\_\_\_\_

Requested Turnaround Time: Routine: Rush Due Date \_\_\_\_\_

Delv: <i>Client</i>	Temp C: <i>89</i>	Comment:
Tmpl Ck	Log by	Lab use Only

Aqueous samples requiring metals testing require acid preservation for a 24 hr period prior to analysis.



160 James Brown Dr.  
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Ph 603-678-4891  
Fax 603-678-4893

315 New York Rd.  
Plattsburgh, NY 12903  
Ph 518-583-1720  
Fax 518-583-0052



Bristol, Town of  
PO Box 249  
Bristol, VT 05443  
Atten: Rick Chaput

070294

PROJECT: Bristol Core Area Sewer  
WORK ORDER: 1909-23171  
DATE RECEIVED: September 10, 2019  
DATE REPORTED: September 24, 2019  
SAMPLER: Jill Marsano

### Laboratory Report

Enclosed please find the results of the analyses performed for the samples referenced on the attached chain of custody. All required method quality control elements including instrument calibration were performed in accordance with method requirements and determined to be acceptable unless otherwise noted.

The column labeled Lab/Tech in the accompanying report denotes the laboratory facility where the testing was performed and the technician who conducted the assay. A "W" designates the Williston, VT lab under NELAC certification ELAP 11263; "R" designates the Lebanon, NH facility under certification NH 2037 and "N" the Plattsburgh, NY lab under certification ELAP 11892. "Sub" indicates the testing was performed by a subcontracted laboratory. The accreditation status of the subcontracted lab is referenced in the corresponding NELAC and Qual fields.

The NELAC column also denotes the accreditation status of each laboratory for each reported parameter. "A" indicates the referenced laboratory is NELAC accredited for the parameter reported. "N" indicates the laboratory is not accredited. "U" indicates that NELAC does not offer accreditation for that parameter in that specific matrix. Test results denoted with an "A" meet all National Environmental Laboratory Accreditation Program requirements except where denoted by pertinent data qualifiers. Test results are representative of the samples as they were received at the laboratory

Endyne, Inc. warrants, to the best of its knowledge and belief, the accuracy of the analytical test results contained in this report, but makes no other warranty, expressed or implied, especially no warranties of merchantability or fitness for a particular purpose.

Reviewed by:

Harry B. Locker, Ph.D.  
Laboratory Director

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Ph 802-879-4333 Fax 802-879-7103

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Ph 603-678-4891 Fax 603-678-4893



**Laboratory Report**

DATE REPORTED: 09/24/2019

CLIENT: Bristol, Town of  
PROJECT: Bristol Core Area SewerWORK ORDER: 1909-23171  
DATE RECEIVED: 09/10/2019

001	Site: Splitter Box	Date Sampled: 9/10/19		Time: 12:20			
Parameter	Result	Units	Method	Analysis Date/Time	Lab/Tech	NELAC	Qual.
pH per Client	6.28	SU at _C	Client Data	9/10/19 12:20	W CLI	N	
BOD-5day	560	mg/L	SM 5210B(11)	9/12/19 10:33	W JSS	A	
Chloride	81	mg/L	EPA 300.0	9/11/19	W AKJ	A	
Nitrate as N	< 0.20	mg/L	EPA 300.0	9/11/19 17:41	W AKJ	A	
Nitrite as N	< 0.20	mg/L	EPA 300.0	9/11/19 17:41	W AKJ	A	
TKN	82	mg/L	EPA 351.2, R.2(1993)	9/20/19	N JGM	A	
Phosphorus, Total Dissolved	8.6	mg/L	SM20 4500 P-F	9/16/19 12:46	R IC	A	
Solids, Total Suspended	98	mg/L	SM 2540 D-11	9/17/19	W JSS	A	
Oil & Grease	65.9	mg/L	EPA 1664A	9/11/19	W TRP	A	

002	Site: MW #3	Date Sampled: 9/10/19		Time: 10:48			
Parameter	Result	Units	Method	Analysis Date/Time	Lab/Tech	NELAC	Qual.
pH per Client	6.72	SU at _C	Client Data	9/10/19 10:48	W CLI	N	
e. coli	< 1.0	MPN/100ml	SM 9223B(04)	9/10/19 17:45	W AKJ	A	CL2A
Chloride	7.8	mg/L	EPA 300.0	9/11/19	W AKJ	A	
Nitrate as N	< 0.20	mg/L	EPA 300.0	9/11/19 18:02	W AKJ	A	
Phosphorus, Total Dissolved	< 0.005	mg/L	SM20 4500 P-F	9/16/19 12:47	R IC	A	

003	Site: MW #4	Date Sampled: 9/10/19		Time: 12:04			
Parameter	Result	Units	Method	Analysis Date/Time	Lab/Tech	NELAC	Qual.
pH per Client	7.04	SU at _C	Client Data	9/10/19 12:04	W CLI	N	
e. coli	< 1.0	MPN/100ml	SM 9223B(04)	9/10/19 17:45	W AKJ	A	
Chloride	48	mg/L	EPA 300.0	9/11/19	W AKJ	A	
Nitrate as N	5.9	mg/L	EPA 300.0	9/11/19 18:24	W AKJ	A	
Phosphorus, Total Dissolved	< 0.005	mg/L	SM20 4500 P-F	9/16/19 12:49	R IC	A	

**Report Summary of Qualifiers and Notes**

CL2A: Sample was identified and submitted as non-chlorinated water. The DPD Chlorine Check indicated that chlorine or other oxidizer was present. The sample did not smell of Chlorine, so analysis was performed. The DPD analysis is a more sensitive screen, but is susceptible to interference. The presence of Chlorine will kill bacteria and bias the results low. Please contact the laboratory with questions.

# Bristol Core Area Sewer

Endyne Inc. COC

1909-23171

Prepared: 4/5/19

Bill to:  
Pam Correia  
Bristol, Town of  
PO Box 249  
Bristol VT 05443  
Ph: (802)453-2410

Report to:  
Rick Chaput  
Bristol, Town of  
PO Box 249  
Bristol VT 05443  
town@bristolvt.org; vrchaput@gmail.

Cust # ( )  
COREAREAS  
W-7



Bristol, Town of  
Bristol Core Area Sewer

## Splitter Box

Sampled Date/Time: 9/10/19 @ 12:20pm Sampler: Jill Marsano

pH Client Data	<u>6.28 su @ 22.7°C</u>	
Oil & Grease	2 - 1L Amber Glass	<6C, HCl
Chloride	1 - 2 oz-Plastics Anion	<6C
Nitrate as N		
Nitrite as N		
BOD-5day	1 - 1/2 gal Plastic	<6C
Solids, Total Suspended		
TKN	1 - 16 oz plastic	<6C, NY Phos, H2SO4
Phosphorus, Total Dissolved	1 - 4 oz Glass	<6C, Filter then preserve

## MW #3

Sampled Date/Time: 9/10/19 @ 10:48am Sampler: Jill Marsano

pH Client Data	<u>6.72 su @ 10.8°C</u>	
E. coli	1 - 150ml Sterile Plastic	<10C, Na2S2O3 If Cl2
Chloride	1 - 2 oz-Plastics Anion	<6C
Nitrate as N		
Phosphorus, Total Dissolved	1 - 4 oz Glass	<6C, Filter then preserve

## MW #4

Sampled Date/Time: 9/10/19 @ 12:04pm Sampler: Jill Marsano

pH Client Data	<u>7.04 su @ 11.0°C</u>	
E. coli	1 - 150ml Sterile Plastic	<10C, Na2S2O3 If Cl2
Chloride	1 - 2 oz-Plastics Anion	<6C
Nitrate as N		
Phosphorus, Total Dissolved	1 - 4 oz Glass	<6C, Filter then preserve

## Downstream Bridge #31

Sampled Date/Time:  / / @  Sampler:

<del>pH Client Data</del>		
<del>Chloride</del>	<del>1 - 2 oz-Plastics Anion</del>	<del>&lt;6C</del>
<del>Nitrate as N</del>		
<del>Turbidity</del>	<del>1 - 8 oz Plastic</del>	<del>&lt;6C</del>
<del>Phosphorus, Total Dissolved</del>	<del>1 - 8 oz Glass Filtered in Lab then both Total and Dissolved are preserved</del>	
<del>Phosphorus, Total</del>		

## Downstream Duplicate

Sampled Date/Time:  / / @  Sampler:

<del>Phosphorus, Total Dissolved</del>	<del>1 - 8 oz Glass Filtered in Lab then both Total and Dissolved are preserved</del>	
<del>Phosphorus, Total</del>		



~~Upstream Core Area Disposal Fi~~ Sampled Date/Time:  ~~/ / @~~ Sampler: ~~\_\_\_\_\_~~

~~pH Client Data~~

~~Chloride 1 - 8 oz-Plastics Anion <6C~~

~~Nitrate as N~~

~~Turbidity 1 - 8 oz Plastic <6C~~

~~Phosphorus, Total Dissolved 1 - 8 oz Glass Filtered in Lab then both Total and Dissolved are preserved~~


~~Phosphorus, Total 60 mL Glass <6C, H2SO4~~

~~Upstream Duplicate~~ Sampled Date/Time:  ~~/ / @~~ Sampler: ~~\_\_\_\_\_~~

~~Phosphorus, Total Dissolved 1 - 8 oz Glass Filtered in Lab then both Total and Dissolved are preserved~~

~~Phosphorus, Total~~

One or more sample bottles in this project must be kept refrigerated or on ice until delivery at the laboratory.

Your initials will allow Endyne to proceed with analysis if the temperature preservation requirement is not satisfied. 

Relinquished by: *[Signature]* Date Time: 9/10/19 15:55

Accepted by: *[Signature]* Date Time: 9/10/19 15:55

Relinquished by: *[Signature]* Date Time: 9/10/19 15:55

Received by: *[Signature]* Date Time: 9/10/19 15:55

Sites/Parameters correct as listed. Client Initials \_\_\_\_\_

Client Authorization to use Subcontract lab Client Initials \_\_\_\_\_

Sample origin: VT  NH  NY  Other

Special reporting instructions: (PO#) \_\_\_\_\_

Delv: Client	Temp C: -2.8	Temp Ck	Log by	Lab use Only
Comment:				

Requested Turnaround Time: Routine: Rush Due Date \_\_\_\_\_

Aqueous samples requiring metals testing require acid preservation for a 24 hr period prior to analysis.



160 James Brown Dr.  
Williston, VT 05495  
Ph 802-879-4333  
Fax 802-879-7103

58 Etna Road  
Lebanon, NH 03768  
Ph 603-678-4891  
Fax 603-678-4893

315 New York Rd.  
Plattsburgh, NY 12903  
Ph 518-583-1720  
Fax 518-583-0052