



Luetje Geological Services, LLC
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153 Flying Point Road
Freeport, Maine 04032

January 24, 2022

Ms. Katie Haley
Town Manager
Town of Fryeburg
16 Lovewell Pond Road
Fryeburg, Maine 04037

RE: Evergreen Spring - December 2021 Aquifer Monitoring Report

INTRODUCTION

Luetje Geological Services (LGS) of Freeport, Maine, an independent hydrogeologic consulting firm, has been contracted by Poland Spring Bottling Company to collect and compile hydraulic data from the Wards Brook Aquifer in Fryeburg, Maine. These data are collected as part of regular routine monitoring by Poland Spring and while the monitoring program is not part of a regulatory compliance program, the data are voluntarily provided to the Town of Fryeburg on a monthly basis. The data in the monthly reports, in turn, are used to compile an annual report of the hydraulic data for the Wards Brook Aquifer.

Data are presented for ten monitoring wells, six surface water stations, from rain gauges at the Borehole-1 load-out facility and the Fryeburg Eastern Slopes Airport (ICAO Station KIZG, Northeast Regional Climate Center), withdrawal data from Borehole-1 (PBH-1, aka BH-1 or Well #1; dedicated spring water borehole), and stream flow data from two locations along Wards Brook. Locations of all data collection stations are shown in Figure 1 located at the end of this report.

GROUNDWATER

Groundwater levels are measured in ten monitoring wells at locations shown in Figure 1. These wells provide groundwater level data across and adjacent to the Wards Brook watershed (Figure 1). Table 1 provides a summary of groundwater elevations at these locations as measured on December 21, 2021.

SURFACE WATER

Surface water elevation is measured at six locations in and around the Wards Brook Aquifer watershed as seen in Figure 1. Spring water was flowing to the ground surface this month near PBH-1 as observed at the main spring pool weir and several nearby springs. The surface water elevation measuring locations are as follows:

- Saco River Monitoring Point (SRMP-1): surface water elevation is measured at the Route 113 bridge over the Saco River;
- Wards Pond Monitoring Point (WPMP-1): surface water elevation is measured at the Route 113 crossing over Wards Brook;
- Lovewell Pond Staff Gage (LPSG-1): surface water elevation is measured at the inlet from Wards Pond Brook;

- Wards Pond Staff Gage (WPSG-2A): surface water elevation is measured near the center of the watershed in a bog located to the south of Wards Pond; and,
- SG-2 and SG-3: These staff gauges are in Wards Brook at the upstream and downstream gauging locations.

Surface water elevation data appears in Table 1.

WARDS BROOK STREAM FLOW

Stream flow and stage measurements are conducted at two locations along Wards Brook; the upstream location (SG-2) is ~200' downstream from Route 113, and the downstream location (SG-3) is at the former grist mill site, upstream of Lovewell Pond and downstream of Evergreen Spring (Figure-1). Wards Brook stream flow and stage data is presented in Table 1.

PRECIPITATION

Precipitation is recorded on-site adjacent to PBH-1 using an Onset Data Logging Rain Gauge (RG) as shown on Figure 1. The on-site rain gauge has a self-tipping bucket that is activated with every 0.01 inches of precipitation. The gauge is also wrapped with heat tape that melts snowfall and allows measurement of precipitation through the winter months.

Precipitation data are also recorded at the Fryeburg Eastern Slopes Airport (ICAO Station KIZG, Northeast Regional Climate Center). The Fryeburg Eastern Slopes Airport is approximately two miles to the south of the on-site rain gauge. Table 1 presents monthly precipitation data for December 2021.

WITHDRAWALS

Spring water withdrawals from PBH-1 totaled 4,572,755 gallons for the month of December 2021.

Based on the groundwater and surface water data collected in Fryeburg, Luetje Geological Services has not observed any adverse impact to waters of the State, water-related natural resources and existing uses as a result of the sale of water by the Fryeburg Water Company to Poland Spring.

If you have any questions regarding the data included in this report, please do not hesitate to contact me at (207) 415-9898.

Sincerely,
Luetje Geological Services, LLC



Ed Luetje L.G.

cc: Fryeburg Water Company (Mr. George Weston)
Maine Water Company (Mr. Rick Knowlton, Mr. Aric Odone)
Emery & Garrett Groundwater, Inc. (Mr. Dan Tinkham)
Poland Spring (Mr. Mark Dubois)



FIGURE 1
MONITORING LOCATIONS
EVERGREEN SPRING
FRYEBURG, MAINE

0 400 800 1,600 2,400 Feet

NOTES:
1. ALL GENERAL DATA LAYERS ACQUIRED FROM THE
MAINE OFFICE OF GIS AND/OR ESRI ONLINE.
2. 2003 2FT ORTHOIMAGERY BASE MAP

N
DATE:
7/23/2020

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TABLE 1
EVERGREEN SPRING
FRYEBURG, MAINE
COLLECTION DATE: 12/21/2021

Groundwater Elevations (ft NAVD ¹)		
	Reference Elevation ²	Groundwater Elevation ³
MW-101 ⁴	408.32	398.32
MW-105	404.98	379.80
MW-107	432.05	422.91
MW-108	419.88	410.33
MW-109	420.08	397.53
MW-110	461.84	415.89
MW-113	441.11	419.31
MW-114	405.25	385.70
TW-2 ⁵	404.19	403.26
TW-9	409.17	ice

Monthly Withdrawal (December 2021)	
Total (gallons)	
PBH-1	4,572,755

Monthly Precipitation (December 2021)	
Total Inches	
Fryeburg Eastern Slopes Airport (ICAO Station KIZG) ⁹	2.99
On-Site gauge (RG)	3.33

Surface Water Elevations (ft NAVD)		
	Reference Elevation	Surface Water Elevation ⁶
LPSG-1 ⁷	365.54	363.24
WPMP-1	401.22	398.20
SRMP-1	418.85	ice
WPSG-2A ⁸	402.25	ice

Wards Brook Stream Flow		
	Stage (ft NAVD)	Flow (cfs) ¹⁰
SG-2 (Upstream)	386.98	2.64
SG-3 (Downstream)	367.77	5.17

Notes: 1. NAVD is the North American Vertical Datum (1988). The Reference Elevation is the measuring point (usually the top of casing for monitoring wells, or the top of the staff gauge for surface water stations) elevation in feet NAVD.

2. New Reference Elevations were provided by Bliss Associates in November 2015.

3. The Groundwater Elevation is the elevation of the water table (feet NAVD) at the monitoring well.

4. 'MW' refers to 'monitoring well'.

5. 'TW' refers to 'test well'.

6. The Surface Water Elevation is the elevation of the water surface (feet NAVD) at the monitoring station.

7. New stake was installed on 4/23/2020; Reference elevation for LPSG-1 after 4/23/2020 is 365.54 ft/NAVD. See text for detail.

8. New reference elevations were surveyed by LGS in April 2021, and are reflected in this report.

9. Data provided by ICAO Station KIZG is preliminary prior to compilation of the Annual Report.

10. 'cfs' refers to 'cubic feet per second'.