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By KW

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58 Fore Street
Portland, Maine 04101

February 28, 2016

Ms. Sharon Jackson
Town Manager
Town of Fryeburg
16 Lovewell Pond Road
Fryeburg, Maine 04037

RE: January 2016 Aquifer Monitoring Report

## INTRODUCTION

Luetje Geological Services (LGS) of Portland, Maine, an independent hydrogeologic consulting firm, has been contracted by Nestle Waters North America Inc. (Poland Spring) 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 by Poland Spring to compile an annual report of the hydraulic data for the Wards Brook Aquifer.

Data are presented for eleven monitoring wells, four 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), and withdrawal data from Borehole-1 (PBH-1; dedicated spring water borehole). Locations of all data collection stations are shown in Figure 1 located at the end of this report.

## GROUNDWATER

Groundwater levels are measured in eleven 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 January 22nd, 2016.

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**TABLE 1: GROUNDWATER ELEVATION DATA**
**JANUARY 22nd, 2016**

| Monitoring Well | Reference Elevation (feet NAVD) [1] | Groundwater Elevation (feet NAVD) [2] |
|---|---|---|
| MW-101 [3] | 408.32 | 399.24 |
| MW-103 | 421.42 | 411.18 |
| MW-105 | 404.98 | 380.44 |
| MW-107 | 432.05 | 425.60 |
| MW-108 | 419.88 | 410.53 |
| MW-109 | 420.08 | 398.95 |
| MW-110 | 461.84 | 416.64 |
| MW-113 | 441.11 | 420.41 |
| MW-114 | 405.25 | 385.16 |
| TW-2 [4] | 404.19 | Frozen |
| TW-9 | 409.17 | Frozen |

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) elevation in feet NAVD. New reference elevations were provided by Bliss Associates in November 2015.
2. The Groundwater Elevation is the elevation of the water table (feet NAVD) at the monitoring well.
3. MW refers to 'monitoring well'
4. TW refers to 'test well'

## SURFACE WATER

Surface water elevation is measured at four 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; and,
- 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.

Table 2 presents the surface water elevation data measured on January 22nd, 2016.

**TABLE 2: SURFACE WATER ELEVATION DATA JANUARY 22nd, 2016**

| Surface Water Station | Reference Elevation (feet NAVD) [1] | Surface Water Elevation (feet NAVD) [2] |
|---|---|---|
| LPSG-1 | 364.75 | 362.98 |
| WPMP-1 | 401.22 | Frozen |
| SRMP-1 | 418.85 | Frozen |
| WPSG-2A | 403.03 | Frozen |

Notes: 1. NAVD is the North American Vertical Datum (1988). The Reference Elevation is the measuring point (usually the top of the staff gage for surface water stations) elevation in feet NAVD. New reference elevations were provided by Bliss Associates in November 2015.
2. The Surface Water Elevation is the elevation of the water surface (feet NAVD) at the monitoring station.

## 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 3 presents monthly precipitation data for January 2016.

**TABLE 3: FRYEBURG AREA PRECIPITATION DATA JANUARY 2016**

| Station ID | Monthly Precipitation Total (Inches) |
|---|---|
| On-Site Rain Gauge (RG) | 2.31 |
| Fryeburg Eastern Slopes Airport (ICAO Station KIZG)[1] | 2.31 |

Notes: 1. Data provided by ICAO Station KIZG is preliminary prior to compilation of the Annual Report.

**WITHDRAWALS**

In accordance with the contract with the Fryeburg Water Company, PBH-1 withdrawal totals are presented as total gallons recorded as offloaded at plant facilities. Spring water withdrawals from PBH-1 totaled 9,163,580 gallons for the month of January 2016.

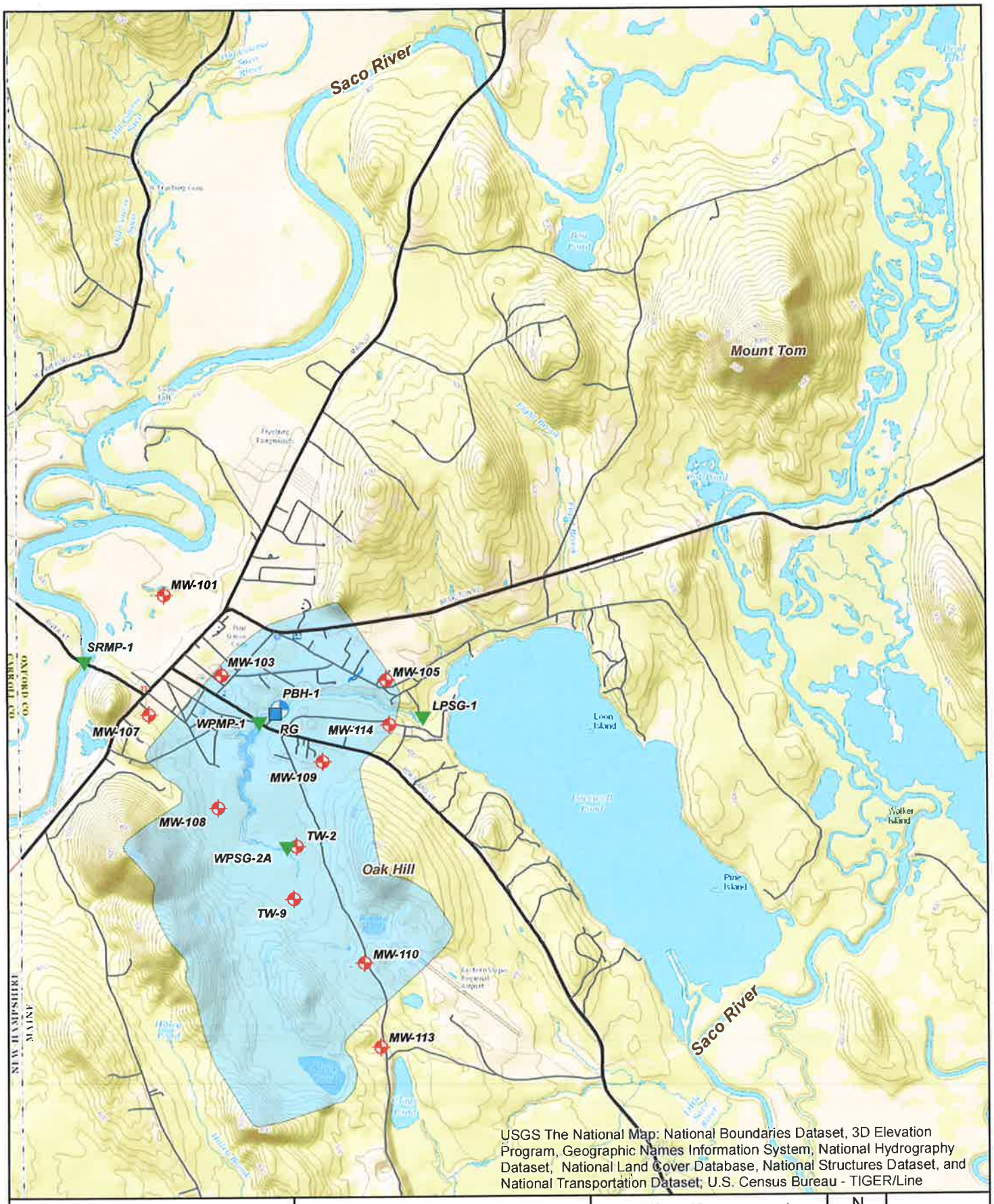
Based on the groundwater and surface water data collected in Fryeburg, Luetje Geological Services has not observed any adverse impact to waters of the State, water-related natural resources and existing uses as a result of the sale of water by the Fryeburg Water Company to Poland Spring.

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 C.G.

cc: Fryeburg Water Company (Mr. John Hastings)
Emery & Garrett Groundwater, Inc. (Mr. Peter Garrett)
Poland Spring (Mr. Mark Dubois)




BOREHOLE
MONITORING WELL
RAIN GAUGE
SURFACE WATER STATION
WARDS BROOK WATERSHED (APPROXIMATE)

FIGURE 1
MONITORING LOCATIONS
EVERGREEN SPRING
FRYEBURG, MAINE

0 0.25 0.5 1 Miles

NOTES:
1. ALL GENERAL DATA LAYERS ACQUIRED FROM THE MAINE OFFICE OF GIS AND/OR ESRI ONLINE.

N

DATE:
2/11/2016

LGS
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