

The

NEW HAMPSHIRE DEPARTMENT OF ENVIRONMENTAL SERVICES

hereby issues

LARGE GROUNDWATER WITHDRAWAL PERMIT

NO. LGWP-2005-0001

to the permittee

LAKE WINNIPESAUKEE GOLF CLUB, LLC (LWGC)

for the withdrawal of the following volumes of groundwater from three wells:

Well IW-1 – 100,800 gallons over any 24-hour period

Well IW-2 – 14,400 gallons over any 24-hour period

Well IW-3 – 50,400 gallons over any 24-hour period

located at the Lake Winnepesaukee Golf Club facility in New Durham, New Hampshire.

TO: TIMOTHY REILLY  
LAKE WINNIPESAUKEE GOLF CLUB  
320 NEEDHAM STREET, SUITE 250  
NEWTON, MA 02464

Date of Issuance: JANUARY 26, 2005  
Date of Expiration: JANUARY 26, 2015

Pursuant to authority in N.H. RSA 485-C:21, the New Hampshire Department of Environmental Services (Department), hereby grants this permit to withdraw groundwater from well IW-1, IW-2 and well IW-3, subject to the following conditions:

1. Application of Env-Ws 388 - The permittee shall continue to comply with the requirements of Env-Ws 388 at all times.
2. Inspections - The permittee shall allow any authorized member of the Department's staff, or its agent, to enter the property covered by this permit for the purpose of collecting information, examining records, collecting water level measurements, or undertaking other action associated with this permit.
3. General NPDES Permit - The permittee shall apply for the General NPDES Permit as soon as it becomes available. At this time, the Department requires that the proposed discharge from any bedrock well to the surface water of Perry Brook meet surface water quality standards in accordance with Env-Ws 1700. As part of this requirement, LWGC must obtain a Temporary Surface Water Discharge Permit from the Department (contact Mitch Locker at 271-2858) prior to operating any of the bedrock wells designated IW-1, IW-2, and IW-3.
4. Water Level Monitoring and Reporting - The permittee shall measure the water level at each location according to paragraphs a.-d. below at least once during the last week of each calendar month. A summary of all monitoring data shall be prepared in a hard copy format and submitted in an annual report to the Department by January 31 of each year, commencing January 31, 2006. The annual report shall include data for the preceding year ending on December 31. Data collection shall begin, at a minimum, thirty days prior to operating the large withdrawals authorized by this permit and extend for thirty days after withdrawals are terminated. The annual report shall include a tabulated and graphed electronic spreadsheet submitted in a format approved by the Department. The annual report shall include an assessment of the potential impacts associated with the withdrawal including trends and variability. The permittee shall note any relevant observations that may affect water level measurements. The annual report shall include all field notes documenting the water level monitoring activities for the preceding year. All field notes shall be signed and dated by the personnel responsible for collecting measurements. All water level measurements shall be made to the nearest 0.01 foot increment by a person who can demonstrate by education or experience, competency in collecting hydrogeologic measurements. This requirement shall apply to the following locations:
  - a. Bedrock irrigation wells IW-1, IW-2 and IW-3 - The permittee shall provide the operation schedule and withdrawal rate at each well in addition to water level measurements collected once during the last week of each month. The withdrawal rate shall be recorded as total flow once during the last week of each month using a flow meter with a totalizer installed at each well. The permittee shall provide the Department with a certificate of calibration for each meter and meter performance specifications as prepared by the manufacturer. The permittee shall also provide the Department with meter maintenance and calibration requirements as prescribed by the manufacturer. Meters shall be

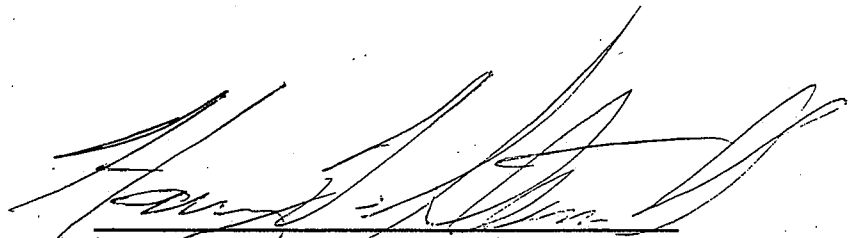
maintained and calibrated according to the manufacturer's specifications. The permittee shall maintain records of all meter maintenance and calibration activities and submit this information to the Department in the annual report.

- b. Wetland piezometers and staff gauges P-1, SG-1, P-2, SG-2, P-3, and SG-3.
- c. Bedrock observation wells LWGC-1, LWGC-2, LWGC-4, and LWGC-7.
- d. Overburden observation wells OW-5I, and OW-5D.

5. Wetlands Monitoring and Reporting

- a. The permittee shall conduct the wetlands monitoring and reporting program at monitoring sites designated Plot #1 and Plot #2, as described in Attachment A of the letter report titled "Response to NHDES July 27, 2004 Comments", prepared for Lake Winnepesaukee Golf Club, LLC by Geosphere Environmental Management, Inc., dated October 15, 2004. The permittee shall propose one monitoring control site and shall submit its designation, description, and location shown on Figure 1, Site Plan, to the Department prior to initiating the wetlands monitoring and reporting program. The permittee shall revise the wetlands monitoring and reporting program and incorporate the monitoring control site upon Department approval of the proposed monitoring control site. The wetlands monitoring and reporting program shall be maintained as a condition of the permit unless the permit is modified according to Env-Ws 388.25.
- b. Data collection and analysis shall be performed once annually prior to the end of each growing season (August to October 15) beginning in 2005. All work shall be conducted under the direct oversight of a New Hampshire Certified Wetland Scientist.
- c. The permittee shall submit an annual wetlands monitoring report to the Department by January 31 of each year, commencing January 31, 2005. The annual wetlands report shall include the following information:
  - i. the locations of each wetlands monitoring site.
  - ii. a description of the soil profiles at each wetlands monitoring site.
  - iii. a description of the soil moisture at each wetlands monitoring site.
  - iv. a description of the condition and type of wetlands indicator plants at each wetlands monitoring site.
  - v. an assessment of the differences from year to year in soil moisture and the condition and type of wetlands indicator plants within the wetlands monitoring sites.
  - vi. an assessment as to whether or not an adverse impact to the wetlands has occurred, may soon occur, or has not occurred over the monitoring period.

6. Water Conservation - The permittee shall complete a leak detection survey for the entire irrigation system once every three years. The permittee shall repair any leaks that are identified during the leak detection survey. The permittee shall provide the Department with a summary of the results of the leak detection survey once every three years.
7. Mitigation Requirements - In the event that adverse impacts occur, the permittee shall comply with the requirements of Env-Ws 388:19.
8. Registered Water User - The permittee shall become a Registered Water User and maintain the water use reporting requirements of Env-Wr 700 at all times. Withdrawals IW-1, IW-2, and PW-3 shall be continuously metered in accordance with Env-Ws 388.04 (c) (17) f. Withdrawal volumes from these wells must be reported separately.
9. Permit Renewal - The permittee shall apply for renewal of this permit at least 90 days prior to its expiration date in accordance with Env-Ws 388.04 (c) (17) e. The permittee shall continue to comply with all conditions in this permit until the permit is renewed or the facility is closed in accordance with all applicable requirements, regardless of whether a renewal application is filed.



Harry T. Stewart, P.E.,  
Director Water Division

Any person aggrieved by any terms or conditions of this permit may appeal in accordance with RSA 541 within 30 days.

**DECISION STATEMENT**  
**LARGE GROUNDWATER WITHDRAWAL PERMIT NO. LGWP 2005-0001**  
**LAKE WINNIPESAUKEE GOLF CLUB – NEW DURHAM, NEW HAMPSHIRE**

The purpose of this Decision Statement is 1) To inform the public that pursuant to the provisions of RSA 485-C, the Lake Winnepesaukee Golf Club (LWGC) has been issued a permit to withdrawal up to 100,800 gallons per day (gpd) of water over any 24-hour period from irrigation well IW-1, up to 14,400 gpd of water over any 24-hour period from irrigation well IW-2, and up to 50,400 gpd over any 24-hour period from irrigation well IW-3, for a combined withdrawal volume of 165,600 gpd over any 24-hour period; and 2) To summarize the regulatory process and considerations that occurred as part of the Large Groundwater Withdrawal permitting process in accordance with New Hampshire Administrative Rule Env-Ws 388, *Major Groundwater Withdrawal*.

Should anyone have any comments or questions pertaining to this Large Groundwater Withdrawal Permit, please contact Tim Nowack at 271-8866 or [tnowack@des.state.nh.us](mailto:tnowack@des.state.nh.us).

**BACKGROUND**

**Permit Application**

A withdrawal of groundwater that exceeds 57,600 gallons over any 24-hour period from a wellhead installed after July 31, 1998 requires a Large Groundwater Withdrawal Permit. Geosphere Environmental Management, Inc., (Geosphere), on behalf of Mr. Timothy Reilly of LWGC, submitted a Permit Application to the New Hampshire Department of Environmental Services (DES) for a Large Groundwater Withdrawal Permit titled "Preliminary Hydrogeological Report", dated November 26, 2002. The Permit Application requested a withdrawal of up to 216,000 gallons of groundwater from three bedrock irrigation wells, designated IW-1, IW-2, and IW-3, located on LWGC property. The Permit Application also included a description of the proposed withdrawal and results of recent hydrogeologic testing completed at the site.

**Public Notification**

In accordance with the provisions of RSA 485-C:21, community water suppliers and municipalities located within the study area of the proposed withdrawal must be notified of a proposed new large groundwater withdrawal. Accordingly, seven community water suppliers and three municipalities located in the defined study area were notified about the proposed withdrawal and received a copy of the Permit Application. The entities that were notified and provided a copy of the Permit Application include: New Durham, Wolfeboro, Alton, Sherwood Forest Water Supply, Point Breeze Condo Association, Kehonka, Camp Bernadette, Copples Crown Village District, Lakeside at Winnepesaukee Association, and Wentworth Estates. The last date of notification was December 23, 2002. Suzanne Glidden, Secretary/Treasurer of the Copples Crown Village District requested a public meeting in lieu of a formal hearing in a letter to DES dated December 19, 2002. As a result of this request, a public meeting was scheduled for January 30, 2003 at 2:00 PM at the LWGC facility.

**Public Meeting**

A public meeting was conducted at 2:00 PM on January 30, 2003 at the LWGC facility in New Durham. The meeting began with an overview of the Large Groundwater Withdrawal permitting process, presented by DES, and a project summary provided by Geosphere representing LWGC. As requested, a question and answer period was conducted following the project summary to give those attending the opportunity to exchange information. Those attending were encouraged

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to submit their concerns in the form of written comments to DES. Written public comments were incorporated into a DES review of the Permit Application. To facilitate public review, it was requested by the public during the meeting that copies of the Permit Application be made available at the town libraries of New Durham, Wolfeboro, and Alton. The applicant agreed to do this. At the close of the meeting, the public was invited to participate in the permitting process by adding their names to a project contact list. Persons on the project contact list received periodic updates regarding the status of the Permit Application. Also, the contact list group received written responses to public comments submitted during the 45-day public comment period, interim written communications between the applicant and DES, and a copy of the Large Groundwater Withdrawal Permit and this Decision Statement.

**COMPLIANCE WITH ENV-WS 388**

**Final Report**

A Final Report titled "Final Hydrogeological Report", dated May 24, 2004, was received at DES on June 3, 2004. The Final Report includes results of a withdrawal test program conducted by Geosphere at the LWGC facility from November 6 to November 25, 2003. Objectives of the testing program in accordance with Env-Ws 388.09(f) require the applicant to: 1) Demonstrate production of the maximum withdrawal volumes requested; 2) Identify the response of the aquifer(s) and other interconnected water resources to pumping at the wellhead; 3) Refine the conceptual hydrologic model and study area delineation in accordance with Env-Ws 388.14; and 4) Quantify the impacts of the withdrawal and conclude if the impacts meet the criteria for adverse impacts as specified by Env-Ws 388.18.

Antecedent or background data were collected at twenty-five on-site monitoring locations and three off-site locations prior to initiating the pumping portion of the withdrawal test from November 6, 2003 through November 18, 2003. On-site monitoring locations included three production wells, nine on-site bedrock observation wells, five on-site overburden and weathered bedrock observation wells, three on-site wetland piezometers, and five on-site surface water staff gages. Gage Off-site monitoring locations consisted of two bedrock wells at community water systems and one residential bedrock well. The off-site community wells are owned by Copple Crown Village District, located on Mountain Drive, New Durham, and Sherwood Forest Water Supply Association, located at 41 Friar Tuck Way, Wolfeboro. It is reported that

own the one residential well that was monitored as part of the test. This well is located at \_\_\_\_\_, New Durham. Data were also collected during and after the pumping portion of the withdrawal test at these locations.

Conclusions supported by data and technical analysis demonstrate the following: 1) The pumping portion of the withdrawal test program was conducted over a 8-day period from November 18, 2003 to November 25, 2003. During the pumping portion of the test, irrigation well IW-1 was pumped at a rate of 70 gallons per minute (or 100,800 gallons per day), IW-2 was pumped at a rate of 10 gallons per minute (or 14,400 gallons per day), and IW-3 was pumped at a rate of 35 gallons per minute (or 50,400 gallons per day). 2) Figure 9, Conceptual Hydrogeologic Map, is based on results of the withdrawal test and indicates that water levels beyond the LWGC property boundary will not significantly influenced after 180 days of continuous pumping at permitted production volumes without recharge to groundwater; 3) A

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review of withdrawal test results indicates no impacts to on-site wetlands are anticipated, however, a long-term water level monitoring and reporting program and wetland monitoring and reporting program are required as conditions of this permit to verify this assessment. The purpose of the water level monitoring and reporting program and wetland monitoring and reporting program are to assess wetland changes from year to year and to assess whether or not an adverse impact to wetlands has occurred, may soon occur, or has not occurred over the monitoring period; 4) No response to pumping was observed as part of the withdrawal test in the Supplemental Irrigation Pond located northeast of IW-3 or the unnamed pond northwest and downgradient of IW-1. However, drawdowns of 1.08 feet and 0.48 feet were observed in piezometer P-1 and staff gage SG-1, respectively, located in the pond adjacent to IW-1. It is anticipated that water levels in this pond will decrease during the pumping period due to the drainage of the pond by a culvert, and will continue to decrease until water levels drop below the culvert intake. It is reported that the pond has a history of being dry during the months of June, July and August. Impacts to the pond adjacent to IW-1 and associated wetlands will be monitored as part of the water level monitoring and reporting program and the wetland monitoring and reporting program; 5) Piezometer measurements and staff gage measurements conducted during the withdrawal test indicate that stream water levels will not be significantly influenced as a result of the withdrawal; 6) The pumping of the irrigation wells IW-1, IW-2 and IW-3 caused no measurable impacts at the residential well and community bedrock wells. Under long-term seasonal pumping conditions, these wells are not likely to be affected.

**Large Groundwater Withdrawal Permit**

DES has issued a Large Groundwater Withdrawal Permit No. LGWP 2005-0001 (Withdrawal Permit) to Lake Winnepesaukee Golf Club for the withdrawal of 100,800 gallons of groundwater over any 24-hour period from well IW-2, 14,400 gallons over any 24-hour period from well IW-2, and 50,400 gallons over any 24-hour period from well IW-3 located at the LWGC facility in New Durham, New Hampshire. The Withdrawal Permit is issued for a ten-year period beginning on January 26, 2005. Conditions have been included in the Withdrawal Permit to: 1) confirm withdrawal test program results and conclusions, and 2) assess the potential for long-term impacts to wetlands. These conditions require the permittee to establish a water level monitoring and reporting program and wetlands monitoring and reporting program. The water level monitoring and reporting program will be conducted at the following locations: production wells IW-1, IW-2, and IW-3; wetland piezometers P-1, P-2, P-3; wetland staff gages and SG-1, SG-2, and SG-3; bedrock observation wells LWGC-1, LWGC-2, LWGC-4, LWGC-7; and overburden observation wells OW-5I, and OW-5D. The wetlands monitoring and reporting program will be conducted at monitoring sites designated Plot #1 and Plot #2, and one monitoring control site. An annual report summarizing the water level monitoring program and wetlands monitoring and reporting program including all field data collected, will be submitted to DES by January 31 of each year. This annual report will be made available to the public for review.

**Permit Appeal**

Any person aggrieved by any terms or conditions of this permit may appeal in accordance with RSA 541 within 30 days.