

**AGENCY OF NATURAL RESOURCES  
DEPARTMENT OF ENVIRONMENTAL CONSERVATION  
1 NATIONAL LIFE DRIVE, MAIN 2  
MONTPELIER, VT 05620-3521**

**DRAFT  
INDIRECT DISCHARGE PERMIT  
AMENDMENT**

Permit No.: ID-9-0029-1  
PIN: RU97-0001

**SECTION A "ADMINISTRATION"**

In compliance with provisions of 10 V.S.A. §1263, and in accordance with the following conditions, the permittee:

Killington/Pico Ski Resort Partners, LLC  
4763 Killington Road  
Killington, Vermont 05751

is authorized to discharge treated domestic sewage from two spray disposal systems serving the Killington ski resort; one sprayfield discharging to groundwater and indirectly to Carpenters Brook and Falls Brook, and the other sprayfield discharging to groundwater and indirectly to East Branch of Roaring Brook, both in the Town of Killington, Vermont. **This permit amendment authorizes the construction of a 55,000-gallon equalization tank which increases the treatment capacity of the 0.250 MGD treatment facility to 305,000 gallons per day.**

A1. Permit Summary:

Expiration Date:	March 31, 2021
Type of Waste:	Treated Domestic Sewage
Treatment Systems:	Activated Sludge
Treatment Capacity:	
0.150 MGD Treatment Facility	150,000 gallons per day
0.250 MGD Treatment Facility	250,000 gallons per day (305,000 gallons after upgrade)
Effluent Storage Capacity (Mirror Lake):	11,665,000 gallons
Disposal Systems:	Sprayfields
Disposal Capacity:	
Bear Mountain Sprayfield	770,000 gallons/7 consecutive days
PUD Sprayfield	488,740 gallons/7 consecutive days (increased during peak use)
Drainage Basin:	Ottauquechee River
Receiving Streams:	
Bear Mountain Sprayfield	Carpenters Brook & Falls Brook
PUD Sprayfield	East Branch Roaring Brook

A1. Permit Summary (continued):

Drainage Areas at Compliance Points:	
Confluence of Carpenters Brook and Falls Brook	2.84 square miles
East Branch Roaring Brook	0.74 square miles
Low Median Monthly Flow (LMMF):	
Confluence of Carpenters Brook and Falls Brook	943,400 gallons per day (est.)
East Branch Roaring Brook	245,800 gallons per day (est.)
Dilution Ratio (LMMF to disposal capacity):	
Confluence of Carpenters Brook and Falls Brook	8.58 to 1
East Branch Roaring Brook	3.52 to 1

A2. Compliance Schedule:

The following schedule summarizes the actions and requirements necessary for compliance with the conditions of this permit. The permittee shall complete the requirements in accordance with the dates indicated. See the designated section for specific details.

<u>Condition # &amp; Description</u>	<u>Schedule Date</u>
A3. Apply for renewal of Indirect Discharge Permit	December 31, 2020
C3. Submit Construction Contract and Certificate	As specified
D3(A). Have a Vermont Registered Professional Engineer inspect the sewage collection, treatment, and disposal systems	Annually in April
D3(B). Submit Annual Inspection Report	Annually by July 1st
D3(C). Submit schedule for implementing engineer's recommendations	Annually by July 1st
D9. Submit Operations Report	Monthly
E1. Submit revised Quality Assurance/Quality Control Plan	By July 1, 2016

A2. Compliance Schedule (continued):

<u>Condition # &amp; Description</u>	<u>Schedule Date</u>
E2. Collect and analyze influent and treatment plant effluent samples	As specified
E3. Collect and analyze spray effluent samples	As specified
E4. Collect and analyze groundwater samples	As specified
E5. Collect and analyze surface water samples	As specified
E6. Submit sampling results	By the 15th of second month following sampling
E7. Conduct biological sampling	As specified
E8. Submit water quality evaluation	Annually, by September 1

A3. Expiration Date:

This permit, unless revoked, or amended shall be valid until March 31, 2021 despite any intervening change in Water Quality Standards or the classification of receiving waters. Renewal of this Indirect Discharge Permit will be subject to all rules applicable at the time of application for renewal, including biological standards to determine significant alteration of aquatic biota.

The permittee shall apply for an Indirect Discharge Permit renewal by December 31, 2020. For the purposes of Title 3, an application for renewal of this indirect discharge permit will be considered timely if a complete application is received by the expiration date.

A4. Effective Date:

This permit amendment becomes effective on the date of signature.

A5. Revocation:

The Secretary may revoke this permit in accordance with 10 V.S.A. §1267.

A6. Transfer of Permit:

This permit is not transferable without prior written approval of the Secretary. The permittees shall notify the Secretary immediately, in writing, before any sale, lease or other transfer of ownership of the property from which the permitted discharge originates. The proposed transferee shall make application for a permit to be reissued in his name. Failure to apply shall be considered a violation of this permit. Responsibility for compliance with the conditions of this permit shall be the burden of the permittee until such time as transfer of the permit to the transferee is complete. This permit shall be transferred only upon showing by the permittee or proposed transferee of compliance with the following conditions:

- a. The transferee shall be a legal entity, financially and technically competent to operate, inspect, maintain and replace the systems.
- b. The transferee shall demonstrate that they have the legal authority to raise revenues for the proper operation, inspection, and maintenance of the system.
- c. The transferee shall provide a written agreement containing a specific date for transfer of permit responsibility, coverage, and liability between the current and new permittees to the Secretary.

A7. Minor Modifications of Permits:

The Secretary may modify this permit without requiring a permit application, a public notice, or a public hearing to correct typographical errors, or to increase monitoring frequency, in accordance with Section F of this permit.

A8. Indirect Discharge Rules:

This permit authorizes an existing indirect discharge.

This indirect discharge was reviewed and qualified for an Indirect Discharge Permit in accordance with Section 14-403(A) of the Indirect Discharge Rules for existing indirect discharges of sewage. No increase in sewage volume is allowed without the written approval of the Secretary.

A Water Supply and Wastewater Disposal Permit is required for any new buildings to be connected to the system.

A9. Right of the Agency to Inspect:

The permittees shall allow the Secretary or the Secretary's authorized representative upon the presentation of their credentials and at reasonable times:

- a. To enter upon permittee's premises in which any effluent source treatment or sprayfield system is located or in which any records are required to be kept under the conditions of the permit;
- b. To have access to and copy any records required to be kept under conditions of this permit;
- c. To inspect any monitoring equipment or method required in this permit;
- d. To sample any discharge of waste, groundwater or surface water; and
- e. To inspect any collection, treatment, pollution management, or sprayfield facilities required by this permit.

A10. Permit Availability:

A copy of this permit shall remain at the office of the permittee and, upon request, shall be made available for inspection by the Secretary.

A11. Minor Modifications to System:

Minor modifications of the engineering design which do not reduce the treatment effectiveness or increase the capacity of the system may be approved in writing by the Secretary without a permit amendment.

Before making modifications to the treatment and/or disposal system, the permittee shall submit plans to the Secretary for review. Plans for modification must be approved before any of the modifications or additions are made.

A12. Correction of Failed Systems:

The Secretary may, upon discretion, issue an Amendment to the Indirect Discharge Permit for the design and reconstruction of a failed wastewater disposal system where the replacement system design was not previously approved.

Before reconstruction of the failed system the permittee shall submit plans to the Secretary for review and approval. These plans must be approved before any reconstruction occurs. Due to the urgency of the need to correct failed disposal systems, the Secretary will process these Amendments as soon as possible.

A13. Operating Fees:

This indirect discharge is subject to operating fees. The permittee shall submit the operating fees in accordance with procedures provided by the Secretary.

**SECTION B "INDIRECT DISCHARGE"**

B1. Location of Indirect Discharge:

There are two indirect discharges associated with this wastewater disposal system. The PUD spray disposal site has an indirect discharge to the East Branch of Roaring Brook and is located adjacent to the Killington golf course in the town of Killington, Vermont. The drainage area of the East Branch of Roaring Brook is 0.74 square miles at the point of the indirect discharge. The location of the PUD spray disposal area can be found on the USGS Pico Peak, VT 7.5' quadrangle map at Latitude N 43° 37' 42" and Longitude W72° 47' 24".

The Bear Mountain spray disposal site has an indirect discharge near the confluence of Carpenter Brook and Falls Brook. The spray site is located off the Bear Mountain Access Road, in the Town of Killington, Vermont. The drainage area at the confluence of Carpenter Brook and Falls Brook is 2.84 square miles. The location of the Bear Mountain spray site can be found on the USGS Killington Peak, VT 7.5' quadrangle map at Latitude N43° 36' 28" and Longitude W72° 46' 24".

B2. Nature of Indirect Discharge:

The 0.150 MGD wastewater treatment facility (WWTF) consists of an activated sludge treatment system preceded by a 100,000 gallon equalization tank. The authorized treatment capacity of the 0.150 MGD facility is 150,000 gallons per day (gpd) for secondary treated and chlorinated wastewater. Treated wastewater from this facility is either discharged into Mirror Lake, the unlined treated effluent storage pond, or recycled as non-potable water in approved buildings, as approved by permit WW-ID-29-2, issued May 4, 2007.

There is an influent bypass at the 0.150 MGD treatment facility where all or a portion of the influent wastewater can be diverted to the 0.250 MGD treatment facility.

B2. Nature of Indirect Discharge (continued):

The 0.250 MGD wastewater treatment facility consists of an activated sludge treatment system with 2 oxidation ditches and 2 secondary clarifiers. The system is preceded by an equalization tank and followed by chlorination. The authorized treatment capacity of this facility is 250,000 gpd. The treatment capacity increases to a maximum of 305,000 gpd for secondary treated and chlorinated wastewater with the improvements to the existing flow equalization tank and influent flow control system. Treated wastewater from this facility is discharged to Mirror Lake or to the Rutland City wastewater treatment facility via the Alpine Pipeline from the permittee's Alpine Effluent Pump Station.

The effluent from Mirror Lake is sprayed on either the PUD spray disposal site or the Bear Mountain spray disposal site.

**SECTION C "SYSTEM CONSTRUCTION"**

C1. Previous Approvals:

The 0.150 MGD WWTF was originally approved in May, 1972 for 75,000 gpd treatment capacity by Land Use Permit #1R0046. This facility was approved for 150,000 gpd capacity with the addition of an equalization tank, by Certificate of Compliance #1R0046-1, issued March 22, 1982.

The 0.250 MGD WWTF was approved in 1983 for 250,000 gpd by Certificate of Compliance #1R0431-4, issued October 4, 1983.

The treated effluent storage facility, Mirror Lake, was originally approved in May, 1972 for 3.75 million gallons of storage by Land Use Permit #1R0046. Expansions have been approved and constructed subsequent to the original approval. As of the effective date of this permit, Mirror Lake has an approved and constructed storage capacity of 11,665,500 gallons.

The PUD spray disposal site was originally approved in 1972. On January 28, 1975, the Department of Water Resources authorized the disposal of 44,000 gpd at a rate of 1 inch per week on an area of 11.5 acres. The spray disposal area was later increased to 18 acres. At a disposal rate of 1 inch per week on 18 acres, the disposal capacity of the PUD spray disposal site is 69,820 gpd.

The Bear Mountain wastewater spray site was originally approved in 1983, by Certificate of Compliance 1R0431-4, for 110,000 gpd spray capacity for 10 months.

C2. Approved Plans for 0.25 MGD WWTF Expansion:

The proposed improvements to the existing flow equalization tank and influent flow control system shall be constructed in accordance with the following plans and specifications stamped by Wayne A. Elliott, P.E., of Forcier Aldrich & Associates:

Sheet T1 entitled "Title Sheet, Location Plan and Index of Drawings", dated January, 2017;

Sheet C1 entitled "General Construction Notes and Legend", dated January, 2017;

Sheet C2 entitled "Existing Site Plan", dated January, 2017;

Sheet C3 entitled "Proposed Site and Yard Piping Plan", dated January, 2017;

Sheet C4 entitled "Yard Piping Profiles and Miscellaneous Details", dated January, 2017;

Sheet C5 entitled "Erosion Control Details and Notes", dated January, 2017;

Sheet S1 entitled "Flow Equalization Tank Plan and Sections", dated February 24, 2017;

Sheet P1 entitled "Flow Equalization Tank Plan and Sections", dated January, 2017;

Sheet P2 entitled "Flow Divider Building Plans and Sections", dated January, 2017;

Sheet P3 entitled "Process Details", dated January, 2017; and

the document entitled "Killington/Pico Ski Resort, 0.25 MGD Wastewater Treatment Facility Expansion Basis for Final Design" dated January, 2017,

which have been stamped APPROVED by the Department of Environmental Conservation. No changes to the approved plans and specifications shall be made without the written approval of the Secretary.



C3. Construction Inspection Requirements:

Before the start of any construction on any portion of the sewage collection, treatment, and disposal system, the permittee shall submit a copy of a signed contract with a Vermont Registered Professional Engineer to provide inspection of the approved construction to the Secretary. The contract, at a minimum, shall provide for the following items:

- a. The names and qualifications of personnel providing inspection services.
- b. The location of major components of the proposed improvements shall be staked out by a Vermont Registered Professional Engineer or Surveyor in accordance with the approved plans.
- c. The engineer or designated representative shall be present for the installation of all major system components.
- d. The engineer or designated representative shall be present for all required leakage and pressure testing and shall verify the proper operation of all valves and piping for the proposed improvements to the air lines, drain lines, main plant piping and foundation drains.
- e. The engineer shall provide general inspection of the work at reasonable intervals to assure that construction is in accordance with the approved plans and specifications.
- f. The engineer shall maintain written reports of all inspections performed including dates, items inspected and comments. Copies of all inspection reports shall be submitted to the Secretary upon request.
- g. When the construction of the proposed improvements is complete and before the inspecting engineer has issued his certification, the permittee shall contact the Secretary to arrange an inspection of the system with the inspecting engineer.
- h. Within 30 days following completion of construction and before the proposed improvements are put into service, the inspecting Professional Engineer shall certify, in writing to the Secretary, that the construction is complete and in accordance with approved plans and specifications, and shall submit As-Built plans for the improvements. The numerical results of any leakage and pressure tests shall be submitted as part of the inspecting engineer's certification of construction. The engineer's certification of construction shall be subject to the review and acceptance of the Secretary.

## SECTION D "SYSTEM OPERATION"

### D1. System Operation:

The wastewater collection, treatment and disposal system shall be operated at all times in a manner that will (1) not result in the discharge of untreated sewage onto the surface of the ground; (2) not result in the resurfacing of spray effluent outside the spray disposal areas; (3) not result in the direct discharge of sewage or treated effluent into the waters of the State; and (4) not result in a violation of Water Quality Standards.

The spray disposal fields shall be operated at all times in accordance with the following limits:

- a. No spraying shall be conducted when the groundwater table is closer than one foot to the ground surface in the disposal area as indicated by the groundwater level in field monitors.
- b. The groundwater table shall not rise closer than one foot to the ground surface in the disposal area as a result of spraying.
- c. No spraying shall be conducted in any area of the sprayfield where surface runoff is occurring.
- d. No spraying shall be conducted when air temperatures are below 10°F.
- e. The approved application rate for the PUD spray disposal area is 1 inch (488,740 gallons) per seven (7) consecutive days. This application rate may be increased to 2 inches (977,480 gallons) per seven (7) consecutive days during the resort's peak use period (December – March) only after the permittee fully utilizes the spray disposal capacity of the Bear Mountain spray disposal area and optimizes the use of storage in Mirror Lake.
- f. For the Bear Mountain spray disposal area, the total wastewater applied to the sprayfield shall not exceed 770,000 gallons in any consecutive seven (7) day period.
- g. The maximum hourly rate of wastewater application shall not exceed 0.25 inches per hour.
- h. There shall be a minimum of a 12-hour rest period between spray applications for any spray line.

D1. System Operation (continued):

- i. The effluent shall have a minimum of 4.0 mg/L total chlorine residual or 1.0 mg/L free chlorine residual at the spray nozzle at all times unless the permittees chooses to utilize disinfection prior to effluent storage as allowed under §14-1705(a)(2) of the Indirect Discharge Rules, effective April 30, 2003.
- j. Spraying during the winter shall be conducted during the daylight hours only.
- k. In accordance with Condition D4, spraying during the spring, summer, and fall shall be conducted during the night hours on the PUD spray disposal area when the golf course is open to the public.

The permittee shall not allow any person to discharge or cause to be discharged anything other than sanitary wastewater to this treatment and disposal facility.

The permittee shall immediately report any failure of the wastewater collection, treatment, or disposal system to the Secretary, first by telephone within 24 hours of the failure and then in writing within 5 days of the failure. The written notice shall include a discussion of the actions taken or to be taken to correct the failure and to prevent its reoccurrence.

D2. Effluent Limits:

The treatment plant effluent and the effluent to the spray fields shall comply with the following limits:

**TREATMENT PLANT EFFLUENT (0.150 MGD and 0.250 MGD WWTF's)**

<u>Parameter</u>	<u>Monthly Avg.</u>	<u>Maximum Day</u>
BOD5	30 mg/l	50 mg/l
TSS	30 mg/l	50 mg/l
Escherichia coli	N/A	77 col/100 ml

D2. Effluent Limits (continued):

**SPRAY EFFLUENT**

<u>Parameter</u>	<u>Maximum in 7-Day Period</u>	<u>Maximum at Anytime</u>
Discharge Flow		
PUD Sprayfield	488,740 gallons <sup>1</sup>	N/A
Bear Mountain Sprayfield	770,000 gallons	N/A
BOD5	N/A	30 mg/l
TSS	N/A	30 mg/l
Escherichia coli	N/A	77 col/100 ml
Chlorine Residual (at spray nozzle)		
(a) Total or	N/A	4 mg/l (minimum) <sup>2</sup>
(b) Free	N/A	1 mg/l (minimum) <sup>2</sup>

<sup>1</sup>This application rate may be increased to 977,480 gallons per 7 consecutive days during the resort's peak use period (December – March) only after the permittee fully utilizes the spray disposal capacity of the Bear Mountain spray disposal area and optimizes storage in Mirror Lake.

<sup>2</sup> Unless the permittee chooses to utilize disinfection prior to effluent storage as allowed under §14-1705(a)(2) of the Indirect Discharge Rules, effective April 30, 2003.

D3. Annual Inspection, Report and Implementation Schedule:

A. Annual Inspection:

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

1. either inspecting the entire collection system or reviewing the collection system report by the Certified Operator for the treatment system, which includes removing each manhole cover to observe the condition of the sewers and manholes, and noting any signs of inflow or excess infiltration;

D3. Annual Inspection, Report and Implementation Schedule (continued):

A. Annual Inspection:

2. verifying the proper operation of all lift station pumps, alarms, and controls in each pump station;
3. verifying the proper operation and maintenance of all components of the activated sludge treatment facilities;
4. checking the calibration of the influent and effluent flow meters;
5. walking each spray lateral in the sprayfields and checking for the proper operation of the spray systems, noting any repairs needed and any areas of erosion or concentrated surface runoff;
6. evaluating the performance of the sewage treatment facility over the past year against the permitted effluent limits; and
7. noting any necessary repairs or maintenance that needs to be performed.

B. Annual Inspection Report:

By July 1st each year the permittee shall have a Professional Engineer submit an annual inspection report including the following items:

1. a complete list of the items inspected and the results of the inspection;
2. a discussion of the recommended repairs and maintenance required; and
3. an evaluation of the past year's influent flow records, spray records, and groundwater table levels in the sprayfields to verify compliance with permit requirements.

C. Implementation Schedule:

By July 1st of 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 recommended repairs and maintenance.

D4. Fencing and Signs:

A. Bear Mountain Spray Field:

The permittee shall maintain a fence or other approved means of isolation a minimum of 200 feet from the edge of the sprayfield around the entire perimeter of the sprayfield. The permittee shall maintain signs along the fence at intervals of a minimum of 100 feet, with the signs stating the use of the spray site for sewage disposal.

B. PUD Spray Field:

The permittee shall not be required to maintain a 200 foot isolation distance from the edge of the wetted area. Spraying during the spring, summer, and fall shall be conducted during the night hours when the golf course is open to the public. The permittee shall maintain a fence or other approved means of isolation around the entire perimeter of the sprayfield and shall maintain signs along the fence at a maximum interval of 100 feet with the signs notifying the public of the location and use of the spray site for sewage disposal.

D5. Sludge Disposal:

All sludge removed from the sewage treatment facility shall be disposed of at locations approved by the Residual Management Section of the Department of Environmental Conservation. The permittee shall comply with the reporting procedures specified in the Certification from the Residuals Management Section or approved Sludge Management Plan.

D6. Operator Certification:

The permittee are required at all times to employ a wastewater treatment plant chief operator and assistant operator each with a minimum Grade II operator certificate from the Department of Environmental Conservation in accordance with the September 25, 2014 Wastewater Treatment Facility Operator Certification Rule.

The permittee shall notify the Secretary in writing immediately of any change of chief operator or assistant operator.

D7. System Operation and Maintenance:

The wastewater collection, treatment, and disposal system shall be operated and maintained at all times in a manner satisfactory to the Secretary and in a manner that will not pose a risk to the public health and safety, or cause contamination of drinking water supplies, groundwater and/or surface water.

D8. Freeboard:

The permittee shall maintain a minimum freeboard in Mirror Lake of 1.4 feet measured from the free water surface to the top of the emergency spillway.

Any failure to maintain the required freeboard must be immediately reported to the Secretary, first by telephone within 24 hours of the exceedence and then in writing within 5 days of the exceedence. The written notice shall include a discussion of the actions taken or to be taken to correct the situation.

The permittee shall measure the freeboard on a daily basis and include the measurements in the monthly Operations Reports.

D9. Operations Reports:

Daily operations data shall be compiled on report forms supplied or approved by the Secretary. The operations report shall be submitted to the Secretary by the 15th of the month for the previous month's data.

**SECTION E "MONITORING"**

E1. Quality Assurance/Quality Control Plan:

By July 1, 2016, the permittee shall submit a revised Quality Assurance/Quality Control Plan (QA/QC Plan) to the Secretary for review and approval. The revised QA/QC Plan shall address influent, effluent, groundwater and surface water sampling procedures, including sampling location maps, in accordance with the sampling requirements indicated in the conditions below.

The laboratory identified in the Quality Assurance/Quality Control Plan shall demonstrate successful performance for U.S. EPA check samples for all parameters and shall analyze any check samples provided by the Secretary. Failure to obtain an acceptable result for either samples provided by the Secretary or EPA check samples may be a basis for requiring an alternate analytical laboratory.

E2. Influent and Treatment Plant Effluent Monitoring:

The permittee shall sample the influent to and effluent from the 0.150 MGD and 0.250 MGD treatment facilities, in accordance with an approved QA/QC Plan and the following:

<b>Parameter</b>	<b>Units</b>	<b>Sample Type<sup>(1,2)</sup></b>	<b>Sample Frequency</b>
Flow	MGD	Daily total, minimum and maximum	Continuous
pH	S.U.	Grab	Daily
Biochemical Oxygen Demand (5-day)	mg/L	8-hour composite <sup>(3)</sup>	Weekly
Total Suspended Solids (TSS)	mg/L	8-hour composite <sup>(3)</sup>	Weekly
Escherichia coli <sup>(4)</sup>	colonies/100 ml	Grab	Weekly
Chloride (Cl-) <sup>(4)</sup>	mg/L	8-hour composite <sup>(3)</sup>	Monthly

Notes:

1. Influent samples shall be taken at the headworks.
2. For the 0.150 MGD treatment facility, effluent samples shall be taken at the non-potable water system wet well. For the 0.250 MGD treatment facility, effluent samples shall be taken at the effluent pump station wet well.
3. Composite samples shall be taken between the hours of 6:00 A.M. and 6:00 P.M., unless otherwise specified by the Secretary.
4. Required for effluent only.



E3. Spray Effluent Monitoring:

The permittee shall sample the spray effluent in accordance with an approved QA/QC Plan and the following:

<b>Parameter</b>	<b>Sample Location</b>	<b>Sample Type</b>	<b>Sample Frequency</b>
pH	Spray Nozzle <sup>(1)</sup>	Grab	Daily, when spraying
Total Chlorine Residual	Spray Nozzle <sup>(1)</sup>	Grab	Daily, when spraying <sup>(2)</sup>
Escherichia coli	Spray Nozzle <sup>(1)</sup>	Grab	Weekly <sup>(3)</sup>
Biochemical Oxygen Demand (BOD <sub>5</sub> )	Pump House	Grab	Weekly <sup>(3)</sup>
Total Suspended Solids (TSS)	Pump House	Grab	Weekly <sup>(3)</sup>
Chlorides (Cl <sup>-</sup> )	Pump House	Grab	Monthly <sup>(4)</sup>
Total Phosphorus (TP)	Pump House	Grab	Monthly <sup>(4)</sup>
Total Dissolved Phosphorus (TDP)	Pump House	Grab	Monthly <sup>(4)</sup>
Total Kjeldahl Nitrogen (TKN)	Pump House	Grab	Monthly <sup>(4)</sup>
Ammonia Nitrogen (NH <sub>3</sub> as N)	Pump House	Grab	Monthly <sup>(4)</sup>
Nitrate Nitrogen (NO <sub>3</sub> )	Pump House	Grab	Monthly <sup>(4)</sup>
Nitrite Nitrogen (NO <sub>2</sub> )	Pump House	Grab	Monthly <sup>(4)</sup>
Air Temperature	Sprayfields	Instant.	At start and finish of spraying period
Volume, Hours and Rate Sprayed	Sprayfields	Continuous	Daily, when spraying

Notes:

- On the day the E. coli grab sample is collected, the daily total residual chlorine sample and pH for that day shall be collected at the same time and location as the E. coli sample. Samples shall be collected after the spray system has been operated for a minimum of 30 minutes.
- Sampling frequency may be modified if the permittee choose to utilize disinfection prior to effluent storage as allowed under §14-1705(a)(2) of the Indirect Discharge Rules, effective April 30, 2003.

E3. Spray Effluent Monitoring (continued):

<p><u>Notes:</u></p> <p>3. The weekly effluent sample is required only if effluent is sprayed any time during that week (Sunday through Saturday).</p> <p>4. The monthly effluent sample is required only if effluent is sprayed any time during the calendar month.</p>
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E4. Groundwater Monitoring:

The permittee shall sample groundwater at established monitoring wells upgradient and downgradient of the PUD Sprayfield and the Bear Mountain Sprayfield in accordance with an approved QA/QC Plan and the following:

Parameter	Units	Sample Type	Sample Frequency <sup>(1)</sup>
pH	S.U.	Grab	Monthly
Escherichia coli	colonies/100 ml	Grab	Monthly
Chlorides (Cl-)	mg/L	Grab	Monthly
Total Dissolved Phosphorus (TDP)	mg/L	Grab	Monthly
Nitrate Nitrogen (NO <sub>3</sub> )	mg/L	Grab	Monthly
Depth to groundwater <sup>(2)</sup>	inches	Instantaneous	Weekly, and at time of sampling

<p><u>Notes:</u></p> <p>1. If a monitoring well has water at any time during the month then a sample is required to be collected and analyzed.</p> <p>2. The depth to groundwater (below ground surface) shall be measured and recorded weekly in all the groundwater monitoring wells. Dry wells shall be recorded as “no water to depth of well”.</p>
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E5. Surface Water Monitoring:

The permittee shall sample surface water at established monitoring locations upstream and downstream of the discharge zones from the PUD Sprayfield and the Bear Mountain Sprayfield in accordance with an approved QA/QC Plan and the following:

Parameter	Units	Sample Type	Sample Frequency
pH	S.U.	Grab	Monthly in February, June - October
Escherichia coli	colonies/100 ml	Grab	Monthly in February, June - October
Chlorides (Cl-)	mg/L	Grab	Monthly in February, June - October
Total Phosphorus (TP)	mg/L	Grab <sup>(1)</sup>	Monthly in February, June - October
Total Dissolved Phosphorus (TDP)	mg/L	Grab <sup>(1)</sup>	Monthly in February, June - October
Nitrate Nitrogen (NO <sub>3</sub> )	mg/L	Grab	Monthly in February, June - October
Temperature	Degrees C	Grab	Monthly in February, June - October
Turbidity	NTU	Grab	Monthly in February, June - October
Dissolved Oxygen	mg/L	Grab	Monthly in February, June - October
<p><u>Notes:</u></p> <p>1. Two independent samples shall be taken and analyzed on each sampling date.</p> <p>5. The permittee shall not sample the receiving stream within 24 hours of any storm event affecting the watershed of that stream.</p>			

E6. Submittal of Monitoring Results:

The results of all the influent, treatment plant effluent, effluent spray, groundwater and surface water sampling required by Conditions E2 – E5 above shall be submitted to the Secretary by the 15th day of the second month following the date of sampling.

E7. Biological Sampling:

The permittee shall retain a qualified aquatic biologist to conduct two rounds of kicknet sampling in the East Branch of Roaring Brook, Carpenter Brook and Falls Brook at approved locations downstream of the sprayfield discharge zones. The first round of kicknet sampling shall be conducted between September 1, 2016 and October 15, 2016, and the second round shall be conducted between September 1, 2018 and October 15, 2018. The permittee shall coordinate these sampling events with the Agency's aquatic biologist. The kicknet sampling results shall be submitted to the Secretary by April 1st of the following year.

E8. Water Quality Evaluation:

Annually by September 1st, the permittee shall have a qualified water quality specialist submit an evaluation to the Secretary of all the past groundwater and surface water quality data and determine what, if any, short or long term impacts there have been on groundwater or surface water quality. The report shall cover, at a minimum, the previous year (June 1 - May 31). Biological monitoring data, if required, shall also be included. The chemical and biological data shall be subjected to analysis by the Secretary to determine if there have been any violations of the Vermont Water Quality Standards.

E9. Sampling and Testing Procedures:

All wastewater, groundwater and surface water sampling, preservation, handling and test procedures used to comply with the monitoring requirements herein shall conform to procedures specified in the most current edition of Standard Methods for the Examination of Water and Wastewater APHA - AWWA - WPCF, and the Vermont Water Quality Standards unless written approval of an alternate method is received from the Agency.

The permittee shall calibrate and perform maintenance procedures on all monitoring and analytical instrumentation at regular intervals to ensure accuracy of measurements or shall ensure that both activities will be conducted. Samples shall be representative of the volume and quality over the sampling and reporting period.

E10. Miscellaneous Monitoring:

If the permittee monitor any required parameter set forth in this permit for the treatment and sprayfield systems more frequently or at additional locations outside the treatment facilities than required by this permit, the results of such monitoring shall be submitted to the Secretary in accordance with Condition E6.

E10. Miscellaneous Monitoring (continued):

All records and information resulting from the monitoring activities required by this permit including all records of analyses performed and calibration and maintenance of instrumentation and recordings from continuous monitoring instrumentation shall be retained for a minimum of three (3) years or longer, if requested by the Secretary. Records shall include laboratory bench sheets showing exact location, time and composites of sample as well as analytical procedures used, interim results obtained and all calculations supporting the reported test results.

**SECTION F "COMPLIANCE REVIEW"**

If the results of monitoring and analysis of the effluent or groundwater indicates that a violation of the effluent sprayfield limits or application rate, or a violation of the Vermont Water Quality Standards has occurred, is occurring, or is likely to occur, the Secretary may increase the frequency of, or change the location and/or type of monitoring of the ground and surface water, and/or require the permittees to take appropriate corrective actions to eliminate or reduce the possibility of a violation.

The issuance of this permit amendment, ID-9-0029-1, to the Killington/Pico Ski Resort Partners, LLC by the Secretary relies upon the data, designs, judgment and other information supplied by the applicant, their consultants and other experts who have participated in the preparation of the application. The Secretary makes no assurance that this system will meet the performance objectives of the applicant and no warranties or guarantees are given or implied.

**SECTION G "EFFECTIVE DATE"**

This Indirect Discharge Permit Amendment, ID-9-0029-1, issued to the Killington/Pico Ski Resort Partners, LLC for the discharge of treated domestic sewage from the Killington Ski Resort in Killington, Vermont is effective on this \_\_\_\_\_ day of April, 2017.

Emily Boedecker, Commissioner  
Department of Environmental Conservation

By \_\_\_\_\_ **DRAFT** \_\_\_\_\_  
Bryan Redmond, Director  
Drinking Water and Groundwater Protection Division