STATE OF VERMONT
AGENCY OF NATURAL RESOURCES
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

ENVIRONMENTAL PROTECTION RULES, CHAPTER 11
UNDERGROUND INJECTION CONTROL REGULATIONS

DRAFT

UIC PERMIT TO DISCHARGE WASTES INTO AN INJECTION WELL

Permit Number: 6-0075

PIN: PIN EJ96-0386

Contact: Gene Richards

Permittee: Burlington International Airport (BTV)
City of Burlington
1200 Airport Drive, #1
South Burlington, VT 05403-6028

Project: Disposal of Aircraft Deicing Fluid in Stormwater Runoff from the Main Carrier Apron to Two Class V Injection Wells (Main Apron and NOTE2) at the Burlington International Airport. Stormwater runoff to the Main Apron infiltration field is to be conveyed via existing storm drains to a new precast concrete diversion structure. From the diversion structure, runoff will pass by gravity via a 36-inch diameter reinforced concrete pipe and manhole to a new 138,400 gallon underground storage tank. Flow from the storage tank to a new pump station will be by gravity via an 18-inch pvc pipe. Flow from the pump station is pumped via a 6-inch diameter ductile iron pipe to a new metering vault. Flow from the metering vault to the new infiltration field is through an 8-inch pvc force main equipped with a cleanout manhole.

The NOTE2 system is unchanged from the original 2006 application.

Project Location: 1200 Airport Drive, #1
South Burlington, VT

Project Lat/Long: 44.473425 degrees north latitude and 73.156189 degrees west longitude, NAD 1983.

Project Technical Documentation:

1. UIC Permit Amendment Application Narrative: Air Carrier Apron UIC System Reconstruction. Burlington International Airport (BTV), South Burlington, Vermont, prepared by Vanasse Hangen, Brustlin, Inc. (VHB), dated January 15, 2016, Responses to Comments Memo, prepared by VHB, dated March 11 and March 18, 2016, and Response to Technical Review Comments Letter, prepared by Stantec, dated March 11 and 18, 2016.

2. Bid Plan Set for Burlington International Airport, South Burlington, Vermont, Air Carrier Apron – Glycol Treatment System Improvements, AIP Project No. 3-50-0005-XXX-2016, prepared by Stantec, dated March 18, 2016, specifically the following

Sheet	Title
C1	Site Plan
C6	Demolition Plan
C7	Layout Plan
C14	Drainage and Grading Plan
C15	Hydraulic and Stormwater Drainage System Profiles
C16	New ADF Infiltration Field Plan and Details
C17	New Pump Station and Miscellaneous Details
C18	Miscellaneous Site Details
C19	New Precast Diversion Structure Details
S1	New Storage Tank Plans, Sections and Structural Notes
S2	New Storage Tank Sections and Details
S3	New Storage Tank Details

Additional plans/figures not included in the bid set:

Sheets 1 and 2 Existing and Proposed Stormwater Collection System, prepared by Stantec, dated March 11, 2016.

Sheets 1 and 2 Existing Conditions Plan Glycol Treatment Area Survey, , prepared by Vermont Survey and Engineering, Inc., dated March 11, 2016.

Sheets 1 and 2 Existing Conditions Plan Terminal Apron, , prepared by Vermont Survey and Engineering, Inc.

Figure 1.1 Watershed Boundaries with Air Craft De-Icing Areas, prepared by Stantec, dated March 8, 2016.

Figure 1.2 Sodium Formate Application Areas, prepared by Stantec, dated March 8, 2016.

In accordance with all the "Terms and Conditions" hereinafter specified, the above named permittee is hereby granted permission to discharge stormwater runoff containing aircraft deicing fluid (ADF) from the Air Carrier Apron into two Class V injection wells (Main Apron and NOTE2), within the State of Vermont.

I. Discharge Limitations:

The Applicant is permitted to discharge 29,296 gallons (3,917 ft^3) per day of stormwater containing ADF, based on annual average precipitation, calculated runoff and ADF volumes outlined in the application materials.

The system is designed to accommodate the channel protection volume (see Vermont Stormwater Management Manual [VSWMM, dated 2002], equal to 67,100 ft^3 which is the maximum amount of water that would be infiltrated to the infiltration field on any one day and is likely to occur once per year. In larger storms, volumes in excess of 67,100 ft^3 per day will be directed from the diversion structure to the existing surface outfall.

Stormwater containing ADF is the only waste allowed to be discharged to the injection well. The permittee shall not cause a violation of the State of Vermont's Drinking Water Standards or Groundwater Quality Standards in the receiving groundwater, or Water Quality Standards in the receiving surface waters.

II. EXPIRATION DATE: **March 31, 2021**

III. RENEWAL APPLICATION DEADLINE (180 days prior to permit expiration):
September 30, 2020

IV. Conditions

1. Revocation: 10 V.S.A. § 1267 provides as follows:

   "The Secretary may revoke any permit issued pursuant to this subchapter if he or she finds that the permit holder submitted false or inaccurate information in his application or has violated any requirement, restriction or condition of the permit issued. Revocation shall be effective upon actual notice thereof to the permit holder."

2. The issuance of this permit, 6-0075, to the Burlington International Airport by the Secretary relies upon the data, designs, judgement and other information supplied by the applicant, the applicant's 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.

3. Operating Fees – This discharge is subject to operating fees. The permittee shall submit operating fees in accordance with procedures provided by the Secretary. Operating fees for this discharge are calculated based on the discharge meeting Groundwater Enforcement Standards at the Point of Compliance based on the Drinking Water and Groundwater Protection Division operating fees for UIC permits effective July 1, 2015. The annual operating fee is based on the permitted discharge of 29,296 gallons per day.

4. Construction 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:

   (i) The names and qualifications of personnel providing inspection services.

   (ii) 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.

   (iii) The engineer or designated representative shall be present for the installation of all major system components.

   (iv) The engineer or designated representative shall be present for all required leakage and pressure testing of all tankage and sewer lines, and shall verify the proper operation of all alarms, floats, valves, pumps, controls and any other component of the treatment and disposal system.

   (v) 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.

   (vi) 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 a minimum of once every two weeks during construction.

   (vii) When the construction of the proposed improvements is complete and before the inspecting engineer has issued his certification, the permittee shall arrange an inspection of the treatment and disposal system with the inspecting engineer and the Secretary's representative(s). **Notify the Secretary prior to pressure testing of the system so that the Secretary's representative can be present.**

(viii) Within 30 days following completion of construction and before the treatment and disposal system is put into service, the inspecting Professional Engineer shall certify in writing to the Secretary that the construction was completed in accordance with approved plans and specifications, and shall submit as-built plans of the construction. 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.

(ix) The permittee shall construct the stormwater collection, treatment, and disposal system in accordance with the referenced project technical documentation. No changes may be physically incorporated into the construction of the stormwater collection, treatment and disposal system without prior written approval from the Secretary.

(5) Inspection, Monitoring, Recording, and Reporting Requirements

The following inspection, monitoring, recording, and reporting requirements are conditions of this permit.

(i) Inspection and Reporting

The permittee shall inspect the stormwater collection, treatment, and disposal system, including the pump station and components (level sensors, magnetic meter, and pumps), manholes, and infiltration areas on an annual basis during the period from April 1st – April 30th. All inspections must be performed by a Professional Engineer licensed in Civil or Environmental Engineering in the State of Vermont.

The engineer shall prepare a report on the inspection of the stormwater collection, treatment, and discharge system. The report shall include:

(A) The condition of the physical infrastructure;

(B) A description and date of any maintenance and repairs performed on the system during the previous year;

(C) A description of the repair outcomes;

(D) A description of any necessary maintenance to be performed;

(E) A description of any operational and performance issues associated with the system along with recommended changes to physical infrastructure/operational regimes/maintenance practices to address these issues.

The Permittee shall notify the Secretary in writing how the engineer's recommendations are to be implemented and include a schedule for recommended repairs and maintenance (implementation schedule) as well as an approach to measure the outcomes. The implementation schedule shall be included with the inspection report.

The annual inspection reports shall be submitted by the 30th of June each year of this permit and shall be signed by the Professional Engineer licensed in Civil or Environmental Engineering in the State of Vermont.

(ii) Monitoring and reporting:

(A) QA/QC Plan –Within 60 days of the issuance of this permit, the permittee shall submit a Quality Assurance/Quality Control plan of all required monitoring for review and approval. The plan shall include baseline data for each well and parameter, identification of all analytical procedures, detection limits, personnel who will conduct sampling, sampling methods, sample preservation methods, all sampling locations, sampling frequency, reporting times, laboratory used for analysis and quality control measures for both sampling and analysis. The plan shall be subject to the review and approval of the Secretary.

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

(B) Wastewater Monitoring – Flows from the collection system pump station to the infiltration system shall be measured with an in-line magnetic meter. During the first twelve months of operation, weekly flow measurements shall be obtained. Subsequently, flows shall be measured monthly. The physical and chemical characteristics of the wastewater, as specified in Table 1, shall be analyzed with samples collected from a sample port installed at the pump station (not from the sump). Wastewater quality shall be sampled twice annually, in the Fall (October/November) and Spring (April/May), concurrent with the groundwater quality sampling.

(C) Groundwater quality monitoring will be performed for all of the monitoring wells associated with this permit and the other two Burlington International Airport Underground Injection Control Permits (6-0084 and 6-0117), addressing stormwater runoff containing aircraft deicing fluid. Samples shall be collected twice annually during the Fall (October/November) and Spring (April/May). These samples shall be analyzed for the parameters specified in Table 1. Water levels in the monitoring wells shall also be measured, on the same date of the groundwater sampling event, to determine the groundwater gradients and flow directions. The wells proposed for monitoring of the groundwater quality associated with the stormwater runoff containing airport deicing fluid from the Air Carrier Apron are:

Main Apron UIC area:
Upgradient: MW12P
Downgradient: MW1, MW2, MW4, MW9P, MW10P

NOTE2 UIC area:
Upgradient: MW11P
Downgradient: MW13P, MW14P

(D) If groundwater quality monitoring results indicate BOD_5 levels exceed the Maximum Acceptable Change of 25 mg/l in downgradient monitoring wells, as compared to baseline data for each well, monitoring of the unnamed tributary to the Winooski River shall commence. Dissolved oxygen levels and temperature shall be measured at locations upstream and downstream from the groundwater plume and at frequencies to be outlined in the QA/QC Plan specified above.

Table 1. Wastewater & Groundwater Monitoring Program

Constituent	EPA Method
BOD_5	405.1
COD	410.2
Propylene Glycol (PG)	SW 8015B
Ethylene Glycol	SW 8015B
Chloride	325.1
Nitrate	300.0
Total Dissolved Solids	160.1
Alkalinity	310.1
pH	150.1
Conductivity	120.1 (Field Msmt.)
Temperature	170.1 (Field Msmt.)

(iii) Recording and Reporting Requirements:

The following recording and reporting requirements are necessary to meet the terms of this permit:

(A) Wastewater and groundwater monitoring reports shall be submitted semi-annually within 45 days of each sampling event (no later than July 15th for the Spring sampling events and no later than January 15th for the Fall sampling events). Reports shall include all groundwater levels, flow and chemistry data collected during the current sampling round, a tabulation of all historic data, a current groundwater contour map based on the groundwater level measurements, a narrative describing the stormwater collection, treatment, and discharge system operation, and assessment of regulatory compliance.

(B) The monitoring reports, annual inspection reports and any other notification required by any condition of this permit shall be submitted to the Department at:

Underground Injection Control Program
Department of Environmental Conservation
Drinking Water & Groundwater Protection Division
One National Life Drive – Main 2,
Montpelier, VT 05620-3521

5. Conditions applicable to all permits

i. Duty to comply - The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Underground Injection Control (UIC) Rule and the Safe Drinking Water Act (SDWA) and is grounds for enforcement action; for permit termination, revocation and reissuance, or modifications; or for denial of a permit renewal application;

ii. Duty to reapply - If the permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the permittee must apply for, no later than 180 days prior to expiration, and obtain a new permit.

iii. Duty to halt or reduce activity - It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit;

iv. Duty to mitigate - The permittee shall take all reasonable steps to minimize or correct any adverse impact on the environment resulting from noncompliance with this permit;

v. Proper operation and maintenance - The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls, including appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems only when necessary to achieve compliance with the conditions of the permit;

vi. Permit actions - This permit may be modified, revoked and reissued, or terminated for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance, does not stay any permit condition;

vii. Property rights - This permit does not convey any property rights of any sort, or any exclusive privilege;

viii. Duty to provide information -The permittee shall furnish to the Secretary, within a reasonable time, any information which the Secretary may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The permittee shall also furnish to the Secretary, upon request, copies of records required to be kept by this permit;

ix. Inspection and entry - The permittee shall allow the Secretary, or authorized representative, upon presentation of credentials and other documents as may be required by law, to:

(A) Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;

(B) Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;

(C) Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and

(D) Sample or monitor at reasonable times, for the purpose of assuring permit compliance or as otherwise authorized by the appropriate Act, any substances or parameters at any location.

x. Monitoring and records:

(A) Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity;

(B) The permittee shall retain records of all monitoring information including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least five (5) years from the date of the sample, measurement, report or application. This period may be extended by request of the Secretary at any time;

(C) Records of monitoring information shall include:

(1) the date, exact place, and time of sampling or measurements;
(2) the individual(s) who performed the sampling or measurements;
(3) the date(s) analyses were performed;
(4) the individual(s) who performed the analyses;
(5) the analytical techniques or methods used; and
(6) the results of such analyses.

The permittee shall retain all records concerning the nature and composition of injected fluids until five (5) years after completion of any plugging and abandonment procedures specified in the permit. The Secretary may require the owner or operator to deliver the records to the Secretary at the conclusion of the retention period.

xi. Signatory requirement - All applications, reports, or information submitted to the Secretary shall be signed and certified (See § 11-401(b));

xii. Reporting requirements:

(A) Planned changes - The permittee shall give notice to the Secretary as soon as possible of any planned physical alterations or additions to the permitted facility;

(B) Anticipated noncompliance - The permittee shall give advance notice to the Secretary of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements;

(C) Transfers - This permit is not transferable without prior written approval of the Secretary (See § 11-604). The permittee shall notify the Secretary immediately, in writing, of any sale, lease or other transfer of ownership of the property from which the discharge originates. The permittee shall also inform the new owner or tenant of his responsibility to make application for a permit which shall be issued in his name. Any failure to so notify shall be considered a violation of this permit. All application and operating fees must be paid in full prior to transfer of this permit.

(D) Monitoring reports - Monitoring results shall be reported at the intervals specified elsewhere in this permit;

(E) Compliance schedules - Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit shall be submitted no later than 14 days following each schedule date;

(F) Twenty-four hour reporting - The permittee shall report any noncompliance which may violate drinking water standards, or endanger health or the environment. Any information shall be provided orally within 24 hours from the time the permittee becomes aware of the circumstances. A written submission shall also be provided within five (5) days of the time the permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected; the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance. The following shall be included as information which must be reported with 24 hours:

(1) Any monitoring or other information which indicates that any contaminant may cause an endangerment to a underground source of drinking water (USDW); and

(2) Any noncompliance with a permit condition or malfunction of the injection system which may cause fluid migration into or between USDWs.

(G) Other noncompliance - The permittee shall report all instances of noncompliance not reported under paragraphs (xii) (A) (D) (E) and (F) of this section, at the time monitoring reports are submitted. The reports shall contain the information listed in paragraph (xii) (F) of this section;

(H) Other information - Where the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Secretary, it shall promptly submit such facts or information.

xiii. Requirements prior to commencing injection:

The permittee may not commence injection into a new injection well until construction is complete; and

(A) The permittee has submitted notice of completion of construction to the Secretary; and

(1) The Secretary has inspected or otherwise reviewed the new injection well and finds it is in compliance with the conditions of the permit; or

(2) the permittee has not received notice from the Secretary of his or her intent to inspect or otherwise review the new injection well within 13 days of the date of the notice in paragraph (A)(1) of this section, in which case prior inspection or review is waived and the permittee may commence injection.

xiv. Plugging and abandonment:

(A) Prior to abandoning a Class V well, the owner or operator shall close the well in a manner that prevents the movement of fluid containing any contaminant into an underground source of drinking water,

(B) The owner or operator shall dispose of or otherwise manage any soil, gravel, sludge, liquids, or other materials removed from or adjacent to the well in accordance with all applicable Federal, State, and local regulations and requirements.

xv. Plugging and abandonment report shall include:

(A) Within 30 days of plugging or abandoning a well, a statement that the well was plugged in accordance with the plan previously submitted to the Secretary; or

(B) Where actual plugging or abandonment differed from the plan previously submitted, an updated version of the plan on the form supplied by the Secretary, specifying the differences. With the notice, the permittee shall submit a revised plugging and abandonment plan updated as appropriate.

(7) Effect of this permit: The issuance of this permit does not authorize any injury to persons or property or invasion of other private rights, or any infringement of other State or local law or regulations.

(8) This permit is effective this **____ day of April, 2016.**

Alyssa Schuren, Commissioner
Department of Environmental Conservation

By:_____
George Desch, Acting Director
Drinking Water & Groundwater Protection Division