



18 March 2021  
Project Number: 200607

Mr. Michael Brownlee  
Public Services and Procurement Canada  
Western Region  
9700 Jasper Avenue  
Edmonton, AB T5J 4C3

**RE: Well Decommissioning Letter, Compliance Long Term Monitoring Iqaluit Airport, Iqaluit, NU. Transport Canada**

Dear Mr. Brownlee:

Below is a summary of the well decommissioning work completed of the previously-installed PFAS investigation monitoring well network at the Iqaluit Airport in 2020. This letter has been prepared by BluMetric as requested by Public Services and Procurement Canada (PSPC).

## **BACKGROUND**

The Iqaluit airport is located adjacent the City of Iqaluit on the southeastern edge of Baffin Island, NU. It is serviced by domestic and international flights, including occasional Canadian military exercises. Recent construction has replaced or refurbished the main runways and air terminal building.

The airport was transferred to the Government of Northwest Territories through divestiture by Transport Canada and then to the Government of Nunavut (GN) in 1999. Former Fire Fighting activities at this and other airports may have impacted or continue to impact the local groundwater.

During the Fiscal Year 2019-20 a groundwater sampling plan was developed and implemented a groundwater sampling plan. Three (3) groundwater monitoring wells were installed and samples collected, thus completing the initial investigation program.

The objective of this work was to perform decommissioning of the three (3) existing monitoring wells; MW19-1, MW19-2, and MW19-3, as per the most recent applicable guidelines/standards and best practices for Nunavut.

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## SITE-SPECIFIC HEALTH AND SAFETY PLAN

BluMetric developed a site-specific Health and Safety Plan for the well decommissioning program, including measures specific to the COVID-19 pandemic.

## ABANDONMENT AND RESTORATION PLAN

BluMetric technical staff reviewed the draft well Abandonment and Restoration (**Attachment A**) plan prepared by Transport Canada and provided technical input to ensure that the plan met conditions in accordance with the Nunavut Water Board (NWB) License #1BR-IAG1924. NWB granted approval to complete the decommissioning program in a letter to Transport Canada dated September 20, 2020 (**Attachment B**).

## MONITORING WELL DECOMMISSIONING

On October 29<sup>th</sup> 2020 three monitoring wells at the Former Iqaluit Metals Dump were decommissioned; MW19-01, MW19-02, MW19-03 in accordance with the ASTM D5299 Standard for Decommissioning of Groundwater Wells. Decommissioning work was conducted by Kudlik Construction Ltd. (Kudlik), under the direct supervision of BluMetric Staff.

Prior to decommissioning, BluMetric staff located, visually inspected and photographed each monitoring well.

Due to frozen ground conditions the metal protective casings were removed by excavating around the base of the casings using a Deere 710J backhoe operated by Kudlik. Following casing removal the remaining PVC pipe was cut off approximately 30 cm below ground surface and the monitoring wells were purged dry using dedicated Waterra tubing and foot valves, discharging to the ground. Once the wells were dry bentonite chips (3/8") were used to fill the PVC piping and seal the borehole. Water was added in conjunction with the bentonite to ensure a proper seal throughout the entire well. The top 30 cm of the well and was filled with excavated material to contain the bentonite swelling. Following sealing of the wells the area was leveled to grade using the backhoe. Photographs of the decommissioning are presented within **Attachment C** at the end of the text.

Kudlik removed the PVC piping and metal well casings from the site for disposal at the Inuvik Landfill.

## CLOSURE

The information presented within this memo has been prepared for Public Services and Procurement Canada and Transport Canada. Any use a third party makes of this report, any reliance on the report, or decisions based upon the report, are the responsibility of those third parties unless authorization is received from BluMetric Environmental Inc. in writing. BluMetric Environmental Inc. accepts no responsibility for any loss or damages suffered by any unauthorized third party as a result of decisions made or actions taken based on this report.

If you have any questions please do not hesitate to contact the undersigned.

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Respectfully submitted,  
**BluMetric Environmental Inc.**



Heather Wolczanski, M.Sc., P.Geo,  
Geoscientist



Andrea Jenney P.Eng. (NU/NT)  
Senior Engineer

Encl:

Attachment A: Abandonment and Restoration Plan (*Transport Canada*)

Attachment B: Abandonment and Restoration Plan – Acceptance Letter (*Nunavut Water Board*)

Attachment C: Photo Log

## ATTACHMENT A

Abandonment and Restoration Plan  
Iqaluit Airport Monitoring Wells - September 11, 2020  
*(Transport Canada)*



# **ABANDONMENT AND RESTORATION PLAN**

**Iqaluit Airport Monitoring Wells, Nunavut**

**NWB Licence # 1BR-IAG1924**

**Prepared by:  
Transport Canada**

**September 2020**

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## **1.0 INTRODUCTION**

The purpose of this Abandonment and Restoration Plan is to provide information regarding the current status of the project and to propose decommissioning of the three monitoring wells installed on behalf of Transport Canada in 2019 at Iqaluit Airport, Nunavut.

### **1.1 Site Description and Project Status**

Prior to July 1, 1995 Iqaluit Airport was owned by the Government of Canada and operated by the Department of Transport. From July 1, 1995 until April 1, 1999 the airport was owned by the Government of Northwest Territories and operated by the Arctic Airports Division of the Department of Transportation. Since April 1, 1999 the airport has been owned and operated by the Government of Nunavut.

As part of responsible airport operations, onsite fire training exercises are undertaken by airports to provide appropriate aircraft firefighting services. Per- and polyfluoroalkyl substances (PFAS) were a key ingredient in the Aqueous Film-Forming Foams (AFFF) used in fire-training exercises at firefighting training areas. Transport Canada proactively undertook PFAS sampling to detect offsite PFAS concentrations surrounding the fire training area at Iqaluit Airport. The planned monitoring well installation and sampling work is now complete and the results were shared with the Government of Nunavut and submitted to the Nunavut Water Board.

## **2.0 SCHEDULE**

Decommissioning of the monitoring wells will be completed following the Nunavut Water Board approval of this restoration plan. Decommissioning would need to take place prior to October 15<sup>th</sup> to allow for access to the monitoring wells, prior to deep snow cover. All restoration work will be completed prior to the date of expiry of the water licence.

### 3.0 DECOMMISSIONING

Transport Canada plans to decommission the monitoring wells according to the requirements under Nunavut Water Board Licence #1BR-1AG1924 and all applicable territorial laws. The wells are located on airport property, an industrial/commercial site where the ground was previously disturbed prior to the project commencement. The area of impact at each monitoring well is <1m<sup>2</sup>.

The following tasks will be undertaken as part of the decommissioning:

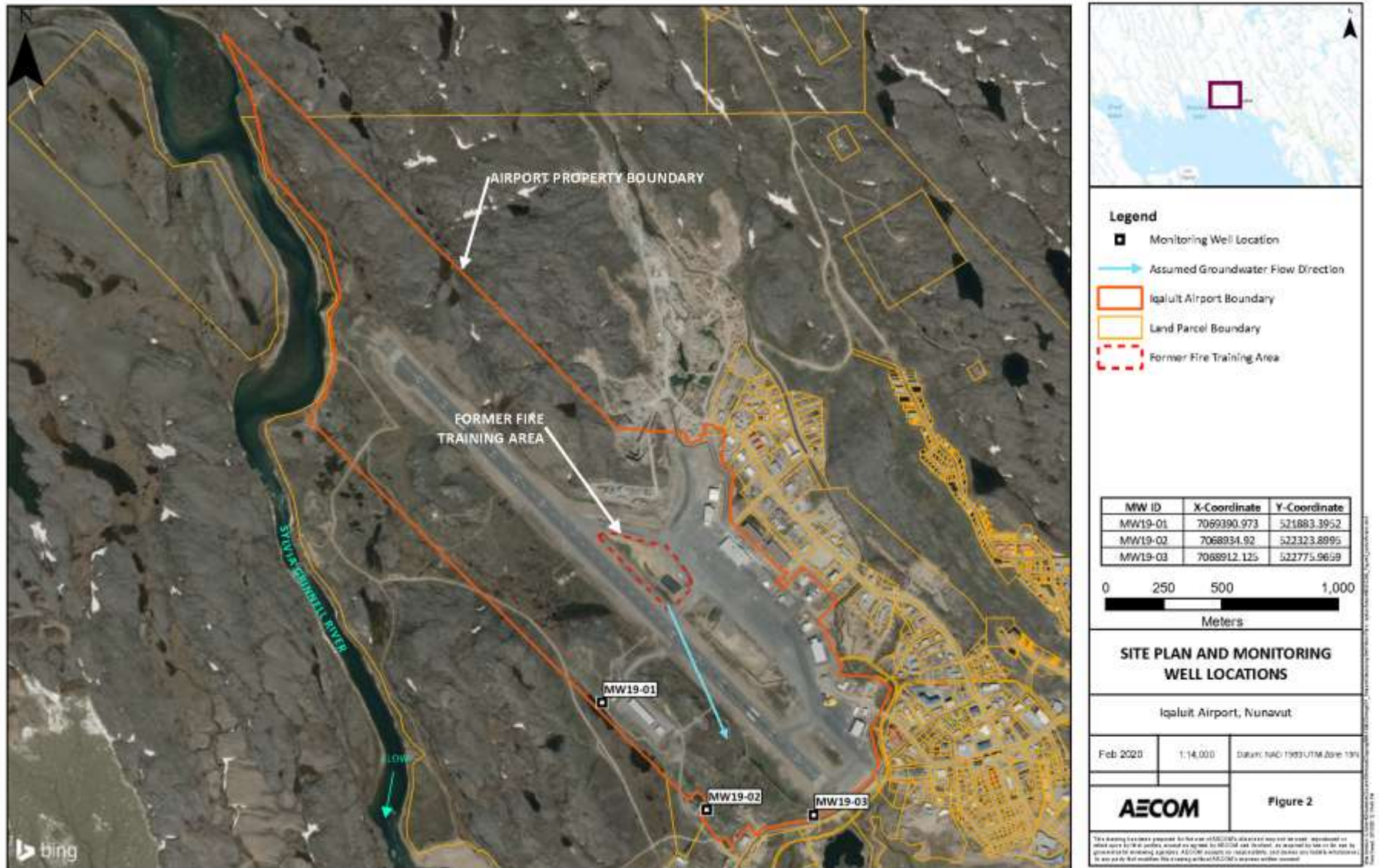
- Abandonment and restoration of all monitoring wells and disturbed areas to the conditions before well installation took place. Monitoring well abandonment will include the removal of well casing materials, and the removal of PVC. If the PVC cannot be removed, the ground will be manually dug out and the PVC will be cut as low as possible below ground surface and identified with signage. If, having encountered artesian flow, work would include the capping of holes with a permanent seal. Holes will be backfilled with bentonite, to stop the flow of surface water below ground followed by clean, local, material to surface.
- Dispose of well casings and PVC at the local approved landfill facility.

No special or hazardous waste will be produced during the decommissioning.

Following the completion of work, and prior to March 31st 2021, TC will provide a description of the work completed and photos of the restoration to the Nunavut Water Board.



## ANNEX I – SITE DRAWING



## ATTACHMENT B

Approval Letter - Abandonment and Restoration Plan  
Iqaluit Airport Monitoring Wells – September 29, 2020  
*(Nunavut Water Board)*





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NUNAVUT WATER BOARD  
NUNAVUT IMALIRIYIN KATIMAYINGI  
OFFICE DES EAUX DU NUNAVUT

File: 1BR-IAG1924/I1

September 29, 2020

Reid Campbell  
Environmental Officer – Contaminated Sites  
Transport Canada  
344 Edmonton St. Winnipeg, MB  
R3C 0P6

Email: [reid.campbell@tc.gc.ca](mailto:reid.campbell@tc.gc.ca)

**Subject: Abandonment and Restoration Plan – Iqaluit Airport Monitoring Wells, Nunavut; Type “B” Water Licence 1BR-IAG1924, Monitoring Well Installation and Groundwater Sampling at Iqaluit Airport Project, Transport Canada**

Dear Reid Campbell:

On September 11, 2020, the Nunavut Water Board (NWB or Board) acknowledged the receipt of the *Abandonment and Restoration Plan – Iqaluit Airport Monitoring Wells, Nunavut* (Plan) dated September 2020 from Transport Canada (TC or Licensee) as per requirement of Part I, Item 1 of Water Licence No: 1BR-IAG1924 (Licence).

The Licensee requested an expedited review of the Plan as opposed to the six-month period designated by the Licence. TC explained<sup>1</sup>:

*Transport Canada's program related to licence # 1BR-IAG1924 consisted of a single sampling event. TC has funding available this fiscal year to decommission the three groundwater wells and a professional consultant is available to complete the work this fall. TC is requesting a shortened review period of 2 weeks to support decommissioning in October 2020 to be able to complete the work prior to the onset of winter conditions and ensure that the work is able to be completed while local resources are available. Transport Canada would like to address the site as travel restrictions and the impacts of Covid 19 [sic] pandemic continue to evolve.*

The NWB distributed the Plan for public review with a deadline for submissions set for September 21, 2020. On September 21, 2020, Crown-Indigenous Relations and Northern Affairs (CIRNA) recommended that photos of the site prior to restoration be included in the description of the

<sup>1</sup> Reid Campbell (TC) to Richard Dwyer (NWB), RE: 1BR-IAG1924 Transport Canada Water Licence - Well decommissioning, dated September 11, 2020.

completed restoration work.<sup>2</sup>

The NWB fully reviewed the submitted Plan. Therefore, by way of this correspondence and in accordance with Motion No. 2020-B1-021, the Board approves the document entitled *Abandonment and Restoration Plan – Iqaluit Airport Monitoring Wells, Nunavut* (Plan) dated September 2020. The Licensee is advised that the Plan can be implemented upon the issuance of this letter by the Board. The NWB agrees with CIRNA's recommendation and requires the Licensee to include the photos of the site prior to restoration within the 2020 Annual Report.

The NWB notes that TC did not submit the 2019 Annual Report as required by Licence Part B, Item 1. The Board also reminds the Licensee of the requirement to submit a Quality Assurance/Quality Control Plan (QA/QC Plan) that conforms to the guidance document "*Quality Assurance (QA) and Quality Control (QC) Guidelines For Use by Class "B" Licensees in Collecting Representative Water Samples in the Field and for Submission of a QAQC Plan*" INAC (1996). The QA/QC Plan shall include a covering letter from the accredited laboratory confirming acceptance of the QA/QC Plan for analyses to be performed under the Licence.

Should you have any questions, please feel free to contact the undersigned at (867) 360-6338 or [assol.kubeisinova@nwb-oen.ca](mailto:assol.kubeisinova@nwb-oen.ca) at your earliest convenience.

Regards,



Assol Kubeisinova  
Technical Advisor

cc: Distribution List - Qikiqtani

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<sup>2</sup> Godwin Okonkwo (CIRNA) to Richard Dwyer (NWB), RE: Monitoring Wells Iqaluit Airport AR Plan Transport Canada water licence 1BR-IAG1924, dated September 21, 2020.

## ATTACHMENT C

### Photo Log







Photo 1: Metal Casing Excavation MW19-01



Photo 2: PVC cut below ground surface



Photo 3: Excavation to grade following MW19-01 decommissioning



Photo 4: Metal Casing Excavation MW19-02





Photo 5: Water removal using Waterra tubing at MW19-02



Photo 6: Filling MW19-02 with bentonite chips



Photo 7: MW19-03 casing excavation



Photo 8: MW19-03 location to grade following decommissioning

## BluMetric Environmental Inc.

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