Dear [Redacted]

Re: Your request for access to information under Part II of the Access to Information and Protection of Privacy Act [Our file #ENV/034/2014]

On September 19, 2014, the Department of Environment and Conservation received your request for access to the following records/information:

"Dept. Of Enviroment & Conservation Recommendation Paper on Ground Water For Town of Torbay, Pine Ridge/Karon Dr. Area."

Please be advised that a thorough search of the Department of Environment and Conservation records has been unsuccessful in retrieving any document matching the description you specified in your request. However, a letter concerning groundwater use down-gradient from St. John’s International Airport was located. I am pleased to inform you that access to this document has been granted, in part, and may be of assistance to you. Specific lines of text in the enclosed records have been severed in accordance with the following exceptions to disclosure, as specified in the Access to Information and Protection of Privacy Act (the Act):

Section 30(1): “The head of a public body shall refuse to disclose personal information to an applicant where the disclosure would be an unreasonable invasion of a third party’s personal privacy.”

As required by subsection 7(2) of the Act, we have severed information that is exempted from disclosure. In accordance with your request, the appropriate copies of records in the custody and control of the Department of Environment and Conservation have been enclosed.

Section 43 of the Act provides that you may ask the Information and Privacy Commissioner to review this response or you may appeal to the Supreme Court Trial Division. A request to the information and Privacy Commissioner shall be made in writing within 60 days of the date of this letter or within a longer period that may be allowed by the Commissioner.

The address and contact information of the Information and Privacy Commissioner is as follows:

P.O. Box B700, St. John's, NL, Canada A1B 4J6 t 709.729.2672 f 709.729.0112
In the event that you choose to appeal to the Trial Division, you must do so within 30 days of the date of this letter. Section 60 of the Act sets out the process to be followed when filing such an appeal.

Please be advised that this response will be published following a 72 hour period after the response is sent electronically to you or five days in the case where the response is mailed to you. It is the goal to have the response posted to the Office of Public Engagement's website within one business day following the applicable period of time. Please note that requests for personal information will not be posted online.

If you have any further questions, please contact the Departmental ATIPP Coordinator at (709)729-7183.

Sincerely,

[Signature]

JAMIE CHIPRETT
Deputy Minister
Dear Mayor Codner:

Re: Groundwater Use Down-Gradient from St. John’s International Airport.

I write, at your request, as a follow up to a meeting held April 30, 2012 and the materials presented to the Town of Torbay by the Department of Environment and Conservation (ENVC). For ease of reference, I have attached a map of the area under review to illustrate points addressed in this letter.

Groundwater and surface water in the former Fire Fighting Training Area (FFTA), located on the grounds of the St. John’s airport, is highly contaminated. As you are aware this area is owned by the Government of Canada and is up-gradient from and adjacent to a number of recent residential sub-developments currently using individual groundwater wells for drinking water supply.

In order to ensure that the private wells used for drinking water are not affected by the contamination migrating from the FFTA area and to protect these wells from potential future contamination, Water Resources Management Division (WRMD) instructed Transport Canada to undertake a study to further delineate the extent of known contamination; collect water samples from wells installed between the FFTA and the homes on Karon Drive; collect water and sediment samples from both Kennedy’s Brook and South Pond Brook; and to produce a groundwater model to determine the future optimum sustainable pumping rate without intercepting contaminated water (from either shallow groundwater or surface water), as well as without adversely affecting the quality and quantity of existing wells.

Transport Canada (TC) contracted AMEC in November 2011 to conduct the study needed to address ENVC’s concerns. The completed report was submitted to ENVC for review on April 5, 2012. The study findings are summarized below and study areas are shown on the attached map. The Department of Environment and Conservation gives no warranty to the Town as to the accuracy of the findings in the AMEC report. If the Town has any concerns over the AMEC findings then the Department encourages it to have its own report prepared.

Currently, there is no detection of any contaminant from the FFTA in the deep aquifer used for drinking water supply (see approximate shallow/deep well pair locations on attached map).
While one sample showed detection of toluene, this could have been a result of other airport activity or with the drilling of wells.

Water samples from wells completed in the shallow aquifer in the vicinity of Karon Drive were shown to have exceedences of cobalt, iron and manganese (see approximate shallow/deep well pair locations on attached map). While iron and manganese are naturally occurring, cobalt can be attributed to either landfill leachate or particulate deposition from airplane exhaust during take-offs and landings.

Water samples from Kennedy’s Brook and South Pond Brook indicate significant water quality impacts, with exceedences of perfluorooctane sulfonate (PFOS), metals (aluminum, cadmium, copper, lead, iron and zinc), and anthracene (a component of coal-tar). Sediment samples from both Kennedy’s Brook and South Pond Brook also indicated exceedences of metals (including arsenic, cadmium, copper, lead, mercury and zinc) and polycyclic aromatic hydrocarbons (PAH).

Based on the groundwater model results, contamination from the FFTA could be drawn into wells completed at the western portion of the site (see attached map; AMEC, page 50). Results also indicate that a commercial development would be unlikely to draw in contaminants from the FFTA if wells for supply were drilled to the east, adjacent to the Torbay Road area (AMEC, page 50).

Contamination from the FFTA would be drawn into new wells completed in the area of the 120-lot development adjacent to South Pond watershed (see attached map; AMEC, page 50). Additionally, results indicate that existing houses on Karon Drive area at the extreme western side of development would be at risk for intercepting contaminated water under this scenario (AMEC, page 49).

Wells constructed in the 20-lot development would not draw contaminants from the FFTA into existing wells along Karon Drive (see attached map; AMEC, page 50); however, the effect of these wells on water quantity was not tested (page 50).

Model results indicate there is limited groundwater quantity available for use in the area of development north of the airport between Torbay Road and the edge of current development (see attached map). Two simulations were run: the first, to simulate water use for a commercial park adjacent to the FFTA, and the second, simulating 120 new homes and wells, which represents potential growth of homes in the area (S.30 (1) development). In both scenarios, initial model results indicate that existing wells in the developed area would dry up.

Results for reduced pumping in the commercial park indicate that withdrawals of 75 m$^3$/day could be sustained without drying up existing wells (AMEC, page 48) or intercepting contaminants if wells are located near Torbay Road; however, the predicted recharge used for the model was 25 percent, which, given the fractured nature of the aquifer is very liberal, and this value should be viewed cautiously. Recharge rates to fractured rock aquifers are in the order of 5-10%. This limited recharge will decrease sustainable use rates. This would indicate that 75 m$^3$/day for the commercial park, the 20-lot development, and in-fill homes within the existing development should not be exceeded.
Results for reduced pumping of the proposed 120-lot development area indicate that withdrawals of 200 m$^3$/day could be sustained without drying up either new or existing wells (AMEC, page 48); however, given the results above that any wells completed in this area would draw known contaminated groundwater into the drinking water wells with potential contaminant risk to new and existing wells, the Department of Environment and Conservation strongly recommends that no new development using groundwater be considered in this area.

As discussed above, limited wells can likely be sustained and won't draw in contaminated groundwater if they are completed in the central and eastern portion of the proposed commercial park; for in-fill development within the area of existing development; and for the proposed 20-lot development.

The area can sustain limited expansion using groundwater. In order not to exceed the potential supply and dry up the existing wells and potentially contaminate new and existing wells all future groundwater use must be less than 75 m$^3$/day (or 75,000 L/day). Allocation of this limited potential supply should be a paramount consideration of the Town of Torbay as it considers its future planning priorities.

Please do not hesitate to contact this office at 729-2563 if you have any questions.

Yours truly,

Dorothea Hanchar
Groundwater Resources Manager

cc. Martin Goebel, Assistant Deputy Minster, Department of Environment and Conservation
Haseen Khan, Director, Water Resources Management Division
Dawn Chaplin, Town Clerk, Town of Torbay
Kevin Parsons, MHA Cape St. Francis
Michelle Craig, Engineer, Service Newfoundland and Labrador
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If you wish to obtain a copy please contact the ATIPP Office at (709) 729-7072 or atippoffice@gov.nl.ca.