# CITY OF IQALUIT
# SPECIAL CITY COUNCIL MEETING #12
# MAY 5, 2022 at 6:00 p.m.
# CITY COUNCIL CHAMBERS

**PRESENT FROM COUNCIL**
Mayor Kenny Bell
Deputy Mayor Solomon Awa
Councillor Ookalik Curley
Councillor Simon Nattaq
Councillor Kyle Sheppard

**ABSENT**
Councillor Joanasie Akumalik
Councillor Paul Quassa
Councillor Romeyn Stevenson

**PRESENT FROM ADMINISTRATION**
Amy Elgersma, Chief Administrative Officer
Tammy Ernst-Doiron, City Clerk
Sumon Ghosh, Director of Engineering and Capital Planning
Simon Doiron, Director of Public Works
Aleksey Cameron, Communications and Customer Service Manager

## MOMENT OF SILENCE

Mayor Bell opened the meeting at 6:01 p.m. with a moment of silence.

## SWEARING IN

None

## ADOPTION OF AGENDA

**Motion #22-152**

Moved by: Councillor Sheppard
Seconded by: Deputy Mayor Awa

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| Adoption of agenda as presented.<br>**Unanimously Carried** |

## 1. MINUTES

None

## 2. DECLARATION OF INTEREST

None

## 3. DELEGATIONS

None

## 4. AWARDS AND RECOGNITIONS

None

## 5. STATEMENTS

None

## 6. DEFERRED BUSINESS AND TABLED ITEMS

None

## 7. BY-LAWS

### a) First Reading of By-law(s)

None

### b) Second Reading of By-law(s)

None

### c) Third Reading of By-law(s)

None

## 8. OLD BUSINESS

None

## 9. NEW BUSINESS

### a) Iqaluit Water Quality Emergency Summary Report – Presentation

The following representatives from WSP were in attendance via visual conference:

- Justin Rak-Banville, Director, Water and Wastewater, Manitoba
- Ian Moran, Process Designer
- Dr. Charles Goss, Team Lead, Water Treatment

Mr. Rak-Banville introduced the representatives and provided a short background on their positions.

Mr. Rak-Banville noted that a team of engineers and chemists were in Iqaluit in October, November and December 2021, and January 2022. The presentation will cover the findings of the investigation, discuss the pathways for the movement of contaminants in the treated water system, provide forensic evidence to support the contamination assessments, recommendations for remediation, and return to service plan.

Mr. Rak-Banville explained that the water treatment plant continues to operate using the water treatment bypass system, which provides primary disinfection and secondary disinfection by chlorination of the water received from Lake Geraldine. The bypass system avoids contact with all below ground tanks. He noted that based on both water quality results provided by the City and Government of Nunavut, the water treatment plant continues to produce high quality drinking water that is in compliance with Health Canada Drinking Guidelines.

Mayor Bell explained that there were technical difficulties with the Internet and the live stream presentation would not be available.

Mr. Moran presented the Water Quality Emergency Summary Report. As part of the presentation, Mr. Moran reviewed background information, timelines, field investigation findings, water analysis, recommendations, upgrades and remediation, all of which were previously provided to Council from October to December 2021.

Dr. Goss reviewed the findings from the water samples taken to determine the Forensic Fingerprint Analysis.

Mr. Moran noted that on December 16, during the remediation work, an incident occurred:

- Hydrocarbon monitoring system on the treated water detected measurable levels of hydrocarbons.
- The detection was traced to one of the below ground tanks.
- Response was carried out quickly and followed the pre-established response plan that included:
    - A brief shutdown of the plant
    - Inspection to identify the issue
- Risk to the public was rapidly mitigated with localized flushing and monitoring.
- There were no detectable levels of hydrocarbons measured in the distribution system.
- Water production was temporarily stopped to allow an investigation and inspection of the mixing chamber and below ground treated water tanks.
    - Interior inspection of the mixing chamber revealed sections of concrete spall (concrete that was broken off) and revealed a black tar-like substance.

  - An inspection of all other below ground tanks was carried out to ensure there were no other areas of concern and no black tar-like substance was found.
  - A Forensic Fingerprint Analysis was carried out on the black tar-like substance. Dr. Goss explained that F3 and F4 petroleum hydrocarbons were found.
- On December 17, the City chose to bypass the mixing chamber where the black tar-like substance was found, which prevented the treated water from making contact with the substance.
  - A Concrete Material and Structural Assessment on the compromised wall in the mixing chamber was scheduled for late January 2022.
  - The mixing chamber remained off-line until the assessment was complete and the necessary repairs were made.
  - The pumping chamber functioned as the new mixing chamber, which created additional turbulence.

Mr. Moran provided a review of the event in January 2022, and the following are the highlights:

- Between January 14 to 17, the City received over 100 complaints of a fuel-like smell coming from the taps.
- Samples were taken by the two S::CANS, as well as being sent to a third-party laboratory.
- Results showed F3 and F4 petroleum hydrocarbons, which were similar to the incident in December 2021.
- On January 19, the City initiated the Water Treatment Plant Bypass System, which takes raw water from Lake Geraldine through the UV disinfection and chlorine systems and sends disinfected water directly to the reservoir.
- The bypass system would be used until the source was identified and addressed.
- WSP personnel conducted a detailed assessment on all below ground tanks.
  - The assessment found that there were two different qualities of walls in some of the tanks.
    - This was a result of being constructed in 1962, with various upgrades over the years.
    - In 2003 to 2004, a major upgrade was carried out to the capacity treatment process and below ground tank arrangement.
  - The original 1962 walls appeared to be in excellent condition for their age, and the walls installed in the 2003 to 2004 upgrade were in poorer condition.
  - There were numerous areas in one of the walls in the pumping chamber with concrete spall, which revealed a black tar-like substance.
    - This was the same material found in the mixing chamber in December, which was confirmed by Forensic Fingerprint Analysis.
- During the investigation in December, the black tar-like substance and concrete spall was not found in the pumping chamber.
- A sample of the black tar-like substance in the pumping chamber was collected for physical and chemical analysis.

  - The physical analysis determined that the material dissociates into smaller pieces and the material uniformly mixes in the water column when mixed and sinks to the bottom when still.
- It is noted that the material would not be observed or sampled on the surface when the water is still, and with the interconnecting pipes at the bottom of the tanks, the material would readily pass through the tanks.
- Dr. Goss provided an explanation on the chemical findings on the Forensic Fingerprint Analysis on the black tar-like substance.
- It was concluded that the turbulent conditions of the pumping chamber caused concrete spall.

Deputy Mayor Awa left the meeting at this time.

Mr. Moran noted that it is WSP's assessment that there were two distinct and separate hydrocarbon contamination events: one in October 2021 and one in January 2022.

- There were different contamination characteristics:
  - In October, there was a high concentration of light volatile fractions floating on the surface.
  - In January, there was low concentrations of heavy non-volatile fractions observed in concentrated clusters at the bottom of the pumping chamber.
- Where possible, Concrete Material and Structural Assessments were completed.
- An extensive inspection of all below ground tanks, and where possible, an exterior inspection of the tanks within the void.
- In general, all below ground tanks and walls are structurally sound.
- Concrete core and concrete powder sections were also taken to assess the structural elements at various treatment stages within the water treatment plant.
  - Concrete core samples determined that the concrete tanks and walls are in good structural condition.
  - Concrete powder section samples determined that all petroleum hydrocarbons were below detection.

Mr. Moran noted that it was determined that the tanks were in good structural condition with no detectable petroleum hydrocarbons in the concrete. The real issue at this time is the exposed water stop product in select walls in the water treatment plant.

- WSP has proposed a number of recommendations for addressing the risks associated with the water stop product.
  - Includes the removal of any and all water stop product without sufficient manufacturer specified concrete cover.
  - Surface remediation of all below ground tanks
  - Application of a protective concrete coating
  - Development of a return to service plan
- Until the remedial actions are completed, the City intends to continue operation of the water treatment plant bypass system.

Mr. Moran noted the following:

- Since October 12, 2021, the City has been sending water samples for petroleum hydrocarbon testing to an accredited laboratory for analysis.
- On October 24, the S::CAN hydrocarbon monitoring system was installed on the treated water.
- In December 2021, a second S::CAN hydrocarbon monitoring system was installed on the raw water line.
- WSP provided a technical review of all analytical laboratory data including BTEX, petroleum hydrocarbons and polycyclic aromatic hydrocarbons.
    - From the first lab sample on October 21, 2021 until now, concentrations of hydrocarbons in the distribution system have not exceeded Health Canada Drinking Water Screening Values or the maximum acceptable concentrations.
    - According to Health Canada standards, the water in the distribution system has been safe to consume during this time with respect to hydrocarbons.
    - Health Canada standards indicate that a lifetime exposure to the water during this time would not expect an increase to health risks for any consumer, including children.
- WSP also performed a technical review of all general water chemistry and confirmed that the treated water continues to meet all Territorial and Federal Drinking Water Guidelines.

Councillor Sheppard asked if there was any data or evidence that might suggest any third-party or other source of contamination at this time.

Dr. Goss advised that the WSP investigation looked at other sources that may have potentially caused contamination, and all investigations did not find any other sources.

Mr. Moran noted that both the City and WSP wanted to provide further confirmation of the contamination pathway. To do this, a Phase 2 Environmental Site Assessment, site inspection of all exterior components of the water treatment plant and other possible known sources of contamination that may have been present in the water treatment plant was carried out.

Councillor Sheppard noted that extensive work has been carried out to rule out additional potential sources of contamination and it is important that residents are aware of this.

Mayor Bell noted that the Environmental Site Assessment was carried out during the winter when the ground was frozen. He asked if the same results would be received if another Environmental Site Assessment was carried out during the summer. Mr. Moran did not feel there would be a different result.

Councillor Nattaq expressed concern regarding snowmobiles travelling over the area and dogs swimming in lakes and rivers that flow into Lake Geraldine that could create contamination.

Councillor Curley was concerned about water quality and wanted to know more about the testing for the tar-like substance.

Dr. Goss explained that the event in October 2021 was different than in January 2022 and testing was done to confirm the type of contamination.

Mayor Bell asked if the water stop product installed in 2003 was considered a safe product at that time.

Dr. Goss advised that was correct and explained that any product used in a water treatment plant that would be in contact with the drinking water must meet NSF61 Certification. The water stop product used in 2003 did meet the NSF61 Certification.

Mayor Bell asked if the product was still considered safe today.

Dr. Goss advised that the product does not retain the same NSF61 Certification. This does not mean that the product has changed or become unsafe; the manufacturer for that product did not want to carry forth the certification process.

Councillor Sheppard understood that the option going forward was to entirely line the tanks. He asked if all the walls have been identified that contain the water stop product.

Mr. Moran explained that in reviewing the 2003 records, the documentation and photographs showed the water stop product. The product was also included in the specifications by the consulting engineer to install the product. Mr. Moran advised that based on WSP's visual inspection of the product installed in the walls, it did not meet the installation specifications by the product manufacturer.

Mr. Moran also advised that there were concrete spalls on small segments on four walls that were installed in 2003, as well as in the concrete on the upper floors.

Mayor Bell thanked the WSP team for the presentation and for the work carried out since October 2021. He noted that understanding what happened and where it happened is important.

Mayor Bell thanked Amy Elgersma and her team, City staff, and various companies in Iqaluit, Government of Nunavut, federal government, as well as the media for all their work and support in various ways. Mayor Bell thanked fellow citizens for their patience.

## 10. COMMITTEE REPORTS

None

## 11. CORRESPONDENCE

None

## 12. IN CAMERA SESSION

( ) as per Section 22 (2) (a) CTV Act and By-law 526 Section 67

## 13. ADJOURNMENT

**Motion #22-153**

Moved by: Councillor Sheppard
Seconded by: Councillor Nattaq

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| Council adjourns at 7:15 p.m.<br>**Unanimously Carried** |

Kenny Bell
Mayor

Tammy Ernst-Doiron
Tammy Ernst-Doiron
City Clerk

Approved by City Council on the 24th day of May, 2022.