2021 Annual Report for CFS Alert, Nunavut

Prepared for:
Nunavut Water Board

Licensee:
RP Ops Group North
Department of National Defence

Prepared & Submitted by:
8 Wing Environmental Management,
8 Wing Trenton,
Department of National Defence

31 March 2021

Nunavut Water Board
P.O. Box 119
Gjoa Haven, Nunavut, X0B 1J0

Attention: Manager of Licensing

Subject: 2021 Annual Report for CFS Alert, Nunavut

Please find enclosed a copy of the 2021 Annual Report to the Nunavut Water Board and Executive Summary in English and Inuktitut for the following site:

1. Canadian Forces Station (CFS) Alert – 8AC-ALT1929 Type "A"

The Annual Report is being submitted by the Department of National Defence at 8 Wing/Canadian Forces Base Trenton on behalf of the licensee, the Department of National Defence at RP Ops N- ADM (IE).

As see around the world, due to the COVID -19 world pandemic these past few year saw reduced reporting capabilities on Station and consequently limited/reduced data collection associated with the Water Licence this year as well.

Should the Nunavut Water Board have comments or require additional information regarding the Annual Report, please contact Mr. Nathan Koutroulides, 8 Wing Deputy Environment Officer, 8 Wing Environmental Management at (613) 392-2811 x4821 or by e-mail at: Nathan.Koutroulides@forces.gc.ca.

Sincerely,

Nathan Koutroulides, B.Sc, CD, PMP.
8 Wing Deputy Environment Officer, Environmental Management
Department of National Defence / Government of Canada
Nathan.Koutroulides@forces.gc.ca / Tel: 613-392-2811 Ext. 4821

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2021 Annual Report to the Nunavut Water Board

Licensee: Department of National Defence – RP Ops - ADM (IE)
Licence: 8AC-ALT1929 Type "A",
Location: Canadian Forces Station Alert, Ellesmere Island, Qikiqtani Region, Nunavut.

Report submitted by: Department of National Defence –
8 Wing/Canadian Forces Base Trenton –
8 Wing Environmental Management,
31 March 2022

Executive Summary

The 2021 annual report to the Nunavut Water Board (NWB) is a requirement under Licence Number 8AC-ALT1929 Type "A", Part B, Paragraph 1. This annual report is for Canadian Forces Station (CFS) Alert, Nunavut. The Licence was issued on November 1st, 2019, to the Department of National Defence (DND) Real Property Operations North (RP Ops N) - Assistant Deputy Minister of Infrastructure & Environment (ADM(IE)). As 8 Wing – Canadian Forces Base (CFB) Trenton, Ontario, oversees CFS Alert, 8 Wing Trenton is filing the annual report on behalf of the new DND licensee, Real Property Operations North (RP Ops N) - Assistant Deputy Minister of Infrastructure & Environment (ADM(IE)). This is the first submission under the new Licence conditions.

For 2021, the average daily water usage at CFS Alert was 483 m^3. This usage is below the 875 cubic meters daily water usage allowed by the NWB Licence. The daily water usage amount being reported is slightly less than the daily intake amount of raw water from the source at Upper Dumbell Lake. A large portion of this usage water is directly returned (raw and untreated) to the source concurrently to the intake process, the average return amount was 431 m^3/day. This constant circulatory (return) flow of the raw water prevents freezing damages to the water pipelines. The average daily water consumption amount was 52 m^3. The total annual quantity of water used in 2021 was 176,121 m^3.

Hazardous wastes (Glycol, batteries, hazardous liquids, asbestos) were backhauled from CFS Alert in 2021 for disposal outside of Nunavut in Ontario, by external contractors. Non-hazardous domestic wastes produced from CFS Alert were directed to the designated Main Station Landfill. Annual repairs to the sewage terrace system were not completed in 2021 due to limited manning. All sewage were directed to the Sewage Terrace System.

As seen around the world, due to the COVID-19 World Pandemic CFS Alert support crew were reduced with no visitor allowed on station in order to prevent unwanted spread/transmission at the Station. As such, the environmental sampling and support crew were unable to attend the station in 2021. Consequently, the sampling requirements for the 2021 CFS Alert Surveillance Network Program were severely impacted and reduced with only two sampling events taken. DND maintains a positive commitment to demonstrating compliance to the NWB Licence and is planning to restore the CFS Alert Surveillance Network Program capabilities in Summer 2022.

2021 ᐊᕐᕌᖕᒍᑕᒫᖅᓯᐅᑎᖕᒐᓐᓂ ᐅᓂᒃᑳᖅ ᓄᓇᕗᑦ ᐃᒪᕐᒧᑦ ᑲᑎᒪᔩᑦ

ᓚᐃᓴᔅᓯᖕᒐ: ᑲᓇᑕᒥ ᐅᓇᓖᑦ – RP Ops - ADM (IE)
ᓚᐃᓴᔅᓯᖕᒐ: 8AC-ALT1929 ᓇᓗᓇᐃᒃᑯᑎᖓ "A",
ᓇᒦᓐᓂᖓ: ᑲᓇᑕᒥ ᐅᓇᓖᑦ ᖃᐅᔨᒃᑲᐃᔾᔪᑎᖏᑦ, ᐊᐅᓯᐃᑦᑑᑉ ᕿᑭᖅᑖᓗᐊ, ᕿᑭᖅᑖᓗᒃ, ᓄᓇᕗᑦ

ᐅᓂᒃᑳᖅ ᑐᓂᔭᐅᓯᒪᔪᖅ ᐅᑯᓇᓐᖕᒐᑦ: ᑲᓇᑕᒥ ᐅᓇᓖᑦ
8–ᖕᒐᓐᓃᖅᑐᖅ ᐊᓪᓚᕕᖕᒐᑕ/ᑲᓇᑕᒥ ᐅᓇᓖᑦ ᑐᑦᑕᕐᕕᖓ ᑐᕋᓐᑕᓐ
8–ᖕᒐᓃᑦᑐᖅ ᐊᕙᑎᓕᕆᓂᕐᒧᑦ ᐊᐅᓚᑦᑎᔩᑦ
ᒫᔾᔨ 31, 2022

ᓇᐃᓈᖅᓯᒪᔪᖅ

2021 ᐊᕐᕌᒍᑕᒫᖅᓯᐅᑎᖕᒐᓐᓂ ᐅᓂᒃᑳᖅ ᓄᓇᕗᑦ ᐃᒪᕐᒧᑦ ᑲᑎᒪᔩᖕᒋᓐᓂ (NWB) ᒪᓕᒋᐊᖃᕐᖓᑕ ᓚᐃᓴᔅᓯ ᒪᓕᑦᑐᒍ 8AC-ALT1929 ᓇᓗᓇᐃᒃᑯᑎᖓ "A", ᐃᓚᖓ B, ᑎᑎᕋᖅᓯᒪᔪᖅ 1. ᑖᓐᓇ ᐅᓂᒃᑳᖅ ᐊᕐᕌᒍᑕᒫᖅᓯᐅᑎ ᑲᓇᑕᒥ ᐅᓇᓕᓐᓅᖕᒐᔪᖅ (CFS) ᖃᐅᔨᒃᑲᐃᔾᔪᑎ, ᓄᓇᕗᑦ. ᓚᐃᓴᔅᓯᖕᒐ ᑐᓂᔭᐅᓚᐅᖅᓯᒪᔪᖅ ᓅᕕᑉᐱᕆ 1–ᒥ, 2019–ᖑᑎᓪᓗᒍ, ᑲᓇᑕᒥ ᐅᓇᓕᓐᓄᑦ (DND) ᐱᕐᑯᑎᓄᑦ ᐊᐅᓚᑦᑎᓂᖕᒋᓐᓂ ᐅᑭᐅᖅᑕᖅᑐᒥ (RP Ops N) – ᒥᓂᔅᑕᐅᑉ ᑐᖕᒋᓕᖕᒐᑕ ᐃᑲᔪᖅᑎᖕᒐᓐᓂ ᐃᓪᓗᕐᑯᑎᓄᑦ ᐊᕙᑎᑦᑎᓄᓪᓗ (ADM(IE)). 8–ᖕᒐᓐᓃᖅᑐᖅ ᐊᓪᓚᕕᖓ – ᑲᓇᑕᒥ ᑐᑦᑕᕐᕕᒃ ᐅᓇᓕᓄᑦ CFB) ᑐᕋᓐᑕᓐ ᐊᓐᑎᐅᕆᔪ, ᑲᒪᖃᑦᑕᖅᑐᑦ CFS–ᓂᒃ ᖃᐅᔨᒃᑲᐃᔾᔪᑎᓂᑦ, 8–ᖕᒐᓐᓃᖅᑐᖅ ᐊᓪᓚᕕᖕᒐᑕ ᑐᕋᓐᑕᓐ ᐅᓂᒃᑳᓕᐅᖅᑐᑦ ᐊᕐᕌᒍᑕᒫᖅᓯᐅᑎᖕᒐᓐᓂ ᓄᑖᕐᒧᑦ DND–ᒧᑦ ᓚᐃᓴᔅᓯᖕᒐᓐᓄᑦ, ᐱᕐᑯᑎᓄᑦ ᐊᐅᓚᑦᑎᓂᕐᒥᑦ ᐅᑭᐅᖅᑕᖅᑐᒥ (RP Ops N) – ᒥᓂᔅᑕᐅᑉ ᑐᖕᒋᓕᖕᒐᑕ ᐃᑲᔪᖅᑎᖕᒐᓐᓂ ᐃᓪᓗᕐᑯᑎᓄᑦ ᐊᕙᑎᑦᑎᓄᓪᓗ (ADM(IE)). ᑖᓐᓇ ᓯᕗᓪᓕᖅᐹᖅ ᑐᓂᔭᐅᓂᐊᖅᑐᖅ ᒪᓕᑦᑐᒍ ᓚᐃᓴᔅᓯᖕᒐᑕ ᖃᓄᐃᒋᐊᖃᕐᓂᖕᒋᓐᓂ.

2021, ᖃᐅᑕᒫᑦ ᐃᒥᕐᒥᑦ ᐊᑐᖃᑦᑕᕐᓂᖕᒋᓐᓂ CFS ᖃᐅᔨᒃᑲᐃᓂᕐᒧᑦ ᐃᒪᐃᑦᑑᓚᐅᖅᑐᖅ 483 m^3. ᐊᑐᓚᐅᖅᓯᒪᔪᑦ 875 (cubic meters) ᐃᒥᕐᒥᑦ ᖃᐅᑕᒫᑦ ᐊᑐᕈᓐᓇᖅᑎᑕᐅᓂᖕᒋᓐᓄᑦ ᓄᓇᕗᑦ ᐃᒪᕐᒧᑦ ᑲᑎᒪᔩᖕᒋᓐᓄᑦ ᓚᐃᓴᔅᓯᖕᒐᓐᓂ. ᖃᑕᐅᒫᑦ ᐊᑐᕈᓐᓇᖅᑕᖕᒋᓐᓂ ᖃᑦᐲᓇᐅᓂᖅᓴᓚᐅᑉ ᐃᒥᕐᒥᑦ ᐱᕙᑦᑕᖕᒋᑦ ᑕᐃᑲᖕᒐᑦ (Upper Dumbell) ᑕᓯᕐᒥᑦ. ᐊᖕᒋᔪᐊᓗᒃ ᐃᒥᕐᒥᑦ ᐊᑐᖅᑕᒥᓂᖅ ᐅᑎᖅᑎᑕᐅᓪᓗᓂ (ᑭᓈᓗᒃ ᓴᓗᒻᒪᓴᖅᓯᒪᓐᖕᒋᑦᑐᖅ) ᐱᕕᒋᖃᑦᑕᖅᑕᖕᒋᓐᓂ, ᑕᒪᓂᖃᐃᑦ ᐅᑎᖅᐸᑦᑐᑦ ᐊᖕᒋᓂᓖᑦ 431 m^3/ᐅᓪᓗᒃ. ᑕᒪᓐᓇ ᐃᖕᒋᕐᕋᓂᖓ (ᐅᑎᖃᑦᑕᕐᓂᖓ) ᑰᑦᑐᖅ ᐃᒥᖅ ᓴᓗᒻᒪᓴᖅᓯᒪᓐᖕᒋᑦᑐᖅ ᖁᐊᖅᑎᑦᑎᒍᓐᓇᐃᓕᓪᓗᓂ ᐃᒥᕐᒥᑦ ᑑᓪᓗᓕᒃᑰᖅᑐᓂᒃ. ᖃᐅᑕᒫᑦ ᐃᒥᕐᒥᑦ ᐱᔭᐅᕙᑦᑐᑦ ᑕᒪᓂ 52 m^3. ᑲᑎᑦᑐᒋᑦ ᐊᕐᕌᒍᑕᒪᑦ ᐃᒥᕐᒥᑦ ᐊᑐᖃᑦᑕᖅᑐᑦ 2021–ᒥ 176,121 m^3.

ᐅᓗᕆᐊᓇᖅᑐᑦ ᑕᒪᒃᑯᐊ (Glycol, ᐹᑕᓖᑦ, ᐅᓗᕆᐊᓇᖅᑐᑦ ᑭᓂᖅᑐᑦ, asbestos) ᑕᐃᑲᓐᖕᒐᑦ ᐱᔭᐅᓯᒪᔪᑦ CFS–ᒥᑦ ᖃᐅᔨᓴᐅᑎᒥᒃ 2021–ᒥ ᐃᒋᑕᒥᓂᑦ ᓯᓚᑖᓂ ᓄᓇᕗᑦ ᐊᓐᑎᐅᕆᔪᒥ, ᑳᓐᑐᕌᑦᑎᓄᑦ ᓯᓚᑖᓃᓐᖑᖅᓯᒪᔪᓂᒃ. ᐅᓗᕆᐊᓇᓐᖕᒋᑦᑐᓂᓪᓗ ᐊᓯᖕᒋᓂ ᐱᔭᐅᓯᒪᔪᑦ CFS ᖃᐅᔨᒃᑲᐃᔾᔪᑎᓂᒃ ᓇᓗᓇᐃᖅᑕᐅᓯᒪᔪᓂᒃ ᓄᓇᒦᓐᖑᖅᑐᓂᒃ ᓴᓂᒃᑯᕕᓐᓂᑦ. ᐊᕐᕌᒍᑕᒪᑦ ᓴᓇᔭᐅᕙᑦᑐᑦ ᑭᓈᓗᖃᕕᐅᔪᒃ ᐱᔭᓖᖅᑕᐅᓚᐅᖅᓯᒪᓐᖕᒋᒪᑦ 2021–ᒥᑦ ᑲᒪᔅᓴᖃᑦᑎᐊᓐᖕᒋᓗᐊᕐᓂᖕᒋᓐᓄᑦ. ᑭᓈᓗᐃᑦ ᑕᐃᑯᓐᖕᒐᖃᖅᑐᖅ ᑭᓈᓗᖃᕐᕕᒻᒧᑦ.

ᑕᐃᒧᑦ ᓯᓚᖅᔨᒥᒥ ᑕᐅᓴᐅᓘᒪᑕ, ᐳᖏᐃᑭᓐᓇᖅ ᓯᓚᖅᔨᐊᓕᒻᒥᓘᒪᑦ CFS ᖃᐅᔨᓴᖃᐃᔪᓕᑦ ᐃᓄᐃᓘᓐᓂᖅᓴᐅᓕᓕᐅᖅᓯᒪᑕ ᐅᐸᔪᑎᑕᐊᕆᖃᖅᓴᓂᑦ ᓯᐊᖏᓐᓇᖅᓴᓇᓂᑦ ᖃᓂᒪᓐᓇᓗᒥᑦ ᑕᐃᑲᓂ ᓴᓇᕝᕙᒥ. ᑕᐃᒪᐃᓐᓂᖏᓐᓄᑦ, ᐊᐋᑎᑦᑎᓐᓂ ᖃᐅᔨᓴᖅᑕᐅᔪᑎᑦ ᐃᑲᔨᖃᑦᑕᖅᑐᓪᓗ ᐃᖅᑲᓇᐃᔭᖅᑎᑦ ᐅᐸᔪᑎᔾᓇᖅᖃᑦᑕᓕᐅᕐᓯᒪᑕ 2021-ᒥ ᑕᐃᒪᓕ, ᖃᐅᔨᓴᐅᑎᓴᓂᑦ ᐱᒋᐊᖃᖅᓯᒪᑕ 2021–ᒥ CFS ᖃᐅᔨᑲᐃᔪᐸᑎᓂᑲ ᐅᑦᔨᓯᖅᑕᐅᓂᖏᓐᓂ ᐊᑦᑐᐃᓂᖃᓪᓚᓕᐅᖅᑐᑦ ᐊᒻᒪᓗ ᒪᑭᐅᐊᖅᑎᑐᐃᓐᓇᖅ ᖃᐅᔨᓴᓴᓴᓂᑲ ᐱᓯᒪᓪᓗᑎᒃ. DND–ᓂᑦ ᓯᓚ ᐱᓂᐊᑦᓂᕆᑎᐊᖅᓯᒪᔪᖅ ᒪᓚᑦᑎᐊᑦᓗᑎᑦ NWB–ᓂᑦ ᓪᐃᓴᓴᓯᖏᓐᓂ ᐊᒻᒪᓗ ᐅᑎᖅᑎᑦᑎᐊᑦᓂᐅᓴᔪᑦ CFS ᖃᐅᔨᑲᐃᔪᐸᑎᓄᑲ ᐅᑦᔨᖅᓯᑎᓴᓄᑦ ᐱᔪᓐᓇᑦᓂᐊᑦᓂᕆᖅᑐᑎᑦ ᐊᐅᐳᑲᓂ 2022–ᒥ.

Rapport annuel de 2021 à l'Office des eaux du Nunavut

Détenteur du permis : Ministère de la Défense nationale – Ops Imm – SMA(IE)
Permis : 8AC-ALT1929 Type « A »
Lieu : Station des Forces canadiennes Alert, île d'Ellesmere, région de Qikiqtani (Nunavut)

Rapport présenté par : Ministère de la Défense nationale – 8e Escadre/Base des Forces canadiennes Trenton – Gestion environnementale de la 8e Escadre,
31 mars 2022

Sommaire

Le rapport annuel 2021 présenté à l'Office des eaux du Nunavut (OEN) constitue une exigence aux termes du permis no 8AC-ALT1929 Type « A », partie B, paragraphe 1. Le présent rapport annuel vise la Station des Forces canadiennes (SFC) Alert, au Nunavut. Le permis a été délivré le 1er novembre 2019 au ministère de la Défense nationale (MDN) – Opérations immobilières (Nord) [Ops Imm (Nord)] du sous-ministre adjoint (Infrastructure et environnement) [SMA(IE)]. Comme la 8e Escadre/Base des Forces canadiennes (BFC) Trenton, en Ontario, supervise la SFC Alert, la 8e Escadre Trenton présente le rapport annuel au nom du nouveau détenteur de permis au MDN, les Ops Imm (Nord) du SMA(IE). Il s'agit du premier rapport présenté conformément aux nouvelles conditions du permis.

En 2021, l'utilisation quotidienne moyenne d'eau à la SFC Alert était de 483 m^3. Cette utilisation est inférieure aux 875 m^3 quotidiens d'eau qui sont autorisés par le permis de l'OEN. La quantité d'eau utilisée quotidiennement qui est déclarée est légèrement inférieure à la quantité d'eau brute puisée quotidiennement de la source du lac Upper Dumbell. Une grande partie de l'eau utilisée est retournée directement (brute et non traitée) à la source en même temps qu'elle est puisée, et la quantité moyenne d'eau retournée s'élève à 431 m^3 par jour. Cette circulation constante de l'écoulement (restitué) de l'eau brute empêche le gel d'endommager les canalisations d'eau. La quantité moyenne d'eau consommée quotidiennement était de 52 m^3. La quantité annuelle totale d'eau utilisée en 2021 était de 176,121 m^3.

En 2020, les déchets dangereux (glycol, piles, liquides dangereux, amiante) ont été réacheminés de la SFC Alert vers l'Ontario pour être éliminés à l'extérieur du Nunavut par des entrepreneurs externes. Les déchets domestiques non dangereux qui ont été produits par la SFC Alert ont été acheminés au site d'enfouissement principal désigné. Les réparations annuelles du système de traitement des eaux usées à paliers n'ont pas été effectuées en 2021 en raison d'un effectif limité. Toutes les eaux usées ont été rejetées dans ce système.

Comme c'est le cas partout dans le monde en raison de la pandémie mondiale de COVID-19, l'équipe de soutien de la SFC Alert a été réduite et aucune visite n'a été autorisée sur les lieux afin d'éviter toute propagation ou transmission du virus. Par conséquent, l'équipe de soutien et d'échantillonnage environnemental n'a pas pu se rendre à la SFC Alert en 2021, ce qui a

grandement limité les activités liées aux exigences d'échantillonnage pour le programme du réseau de surveillance de la SFC Alert de 2021, car seulement deux activités d'échantillonnage ont pu être menées. Le ministère de la Défense nationale maintient son engagement positif à démontrer sa conformité au permis de l'OEN et prévoit rétablir les capacités du programme du réseau de surveillance de la SFC Alert à l'été 2022.

NWB Annual Report 2021

NWB Annual Report

Year being reported: 2021

License No: 8AC-ALT1926

Issued Date: November 1, 2019

Expiry Date: October 31, 2029

Project Name: Canadian Forces Station (CFS) Alert, Nunavut

Licensee: Department of National Defence - Real Property Operations-ADM(IE)

Mailing Address:
Real Property Operations Group
Department of National Defence
Assistant Deputy Minister (Infrastructure & Environment)
101 Col By Drive, Ottawa, ON, K1A 0K2

Name of Company filing Annual Report (if different from Name of Licensee please clarify relationship between the two entities, if applicable):

8 Wing Environmental Management
Room 308, Building 22, 74 Polaris Ave.
Department of National Defence - 8 Wing/ CFB Trenton
Box 1000, Stn Forces
Astra, Ontario, K0K 3W0

General Background Information on the Project (*optional):

Formerly: 8AC-ALT---- Type A until Oct 31, 2019.
Formerly: 3BC-ALT1015 Type B.

Licence Requirements: the licensee must provide the following information in accodance with

Part B | Item 1

A summary report of water use and waste disposal activities, including, but not limited to: methods of obtaining water; sewage and greywater management; drill waste management; solid and hazardous waste management.

Water Source(s):	Upper Dumbell Lake, Nunavut.	
Water Quantity:	875	Quantity Allowable Domestic (cu.m)
	483	Actual Quantity Used Domestic (cu.m)

	Quantity Allowable Drilling (cu.m)
	Total Quantity Used Drilling (cu.m)

Waste Management and/or Disposal

- [x] Solid Waste Disposal
- [x] Sewage
- [ ] Drill Waste
- [x] Greywater
- [x] Hazardous
- [x] Other: Landfarms

Appendix A: Monitoring Program Station No. ALT-1
Appendix B: Monitoring Program Stations No. ALT-2-3-13
Appendix C: Monitoring Program Stations No. ALT-4-5-6-7
Appendix D: Monitoring Program Stations No. ALT-8-9-10-11
Appendix E: June/July Analysis Results for ALT-4-8-9-10
Appendix F: Aug/Sept Analysis Results for ALT-4
Appendix G: List of Waste Disposal Activities / Copies of Movement Documents
Appendix H: Progressive and Final Reclamation Work Undertaken
Appendix I: Compliance Plan
Appendix J: DND to CIRNAC Inspection response letter dated 20 Dec 2019

A list of unauthorized discharges and a summary of follow-up actions taken.

Spill No.: (as reported to the Spill Hot-line)
Date of Spill:
Date of Notification to an Inspector:
Additional Details: (impacts to water, mitigation measures, short/long term monitoring, etc)

No Major Spills reported

Revisions to the Spill Contingency Plan

SCP submitted and approved - no revision required or proposed

Additional Details:

No revisions required.

Revisions to the Abandonment and Restoration Plan

AR plan submitted and approved - no revision required or proposed

Additional Details:

No revisions required.

Progressive Reclamation Work Undertaken

Additional Details (i.e., work completed and future works proposed)

See Appendix H.

Results of the Monitoring Program including:

The GPS Co-ordinates (in degrees, minutes and seconds of latitude and longitude) of each location where sources of water are utilized;

Details described below

Additional Details:

The GPS Co-ordinates (in degrees, minutes and seconds of latitude and longitude) of each location where wastes associated with the licence are deposited;

Details described below

Additional Details:

Results of any additional sampling and/or analysis that was requested by an Inspector

No additional sampling requested by an Inspector or the Board

Additional Details: (date of request, analysis of results, data attached, etc)

Any other details on water use or waste disposal requested by the Board by November 1 of the year being reported.

No additional sampling requested by an Inspector or the Board

Additional Details: (Attached or provided below)

Any responses or follow-up actions on inspection/compliance reports

No inspection and/or compliance report issued by INAC

Additional Details: (Dates of Report, Follow-up by the Licensee)

Any additional comments or information for the Board to consider

Sampling program was reduced this year due to logistics associated with COVID restrictions and reduced precence in CFS Alert.

Date Submitted:	March 31, 2022	
Submitted/Prepared by:	Nathan Koutroulides, BSc, PMP	
Contact Information:	**Tel:**	613-392-2811 x4821
	Fax:	613-965-3368
	email:	Nathan.Koutroulides@forces.gc.ca

GPS Coordinates for water sources utilized

Source Description	**Latitude** Deg °	Min ′	Sec ″	**Longitude** Deg °	Min ′	Sec ″
Upper Dumbell Lake	82	29	6.2	-62	28	9.5

GPS Locations of areas of waste disposal

Location Description (type)	Latitude			Longitude		
	Deg °	Min '	Sec "	Deg °	Min '	Sec "
Alert Battery Dump	82	29	16	-62	23	15.32
Alert Main Station Landfill	82	30	17	-62	20	14.89
Alert Dump # 3	82	29	18	-62	20	57.01
Landfarm (ALT-11)	82	30	40	-62	18	37.6
Millionaire's Dump	82	29	19	-62	21	30.4
Sewage Terrace/Outfall	82	29	56	-62	21	4.8
Landfarm (ALT-10, new)	82	29	58	-62	21	16

Appendix A

Monitoring Program Station No. ALT-1
Year: 2021
Name: Water Supply at Raw Water Intake
Licence Daily Water Use (to not exceed) Limit: 875 cubic metres [m^3].

Results for: All Purpose Water Monitoring
Daily Water Usage Quantity: 483 cubic metres [m^3].
Annual Water Usage Quantity: 176,121 cubic metres [m^3].

Average Daily Water Usage at CFS Alert - 8AC-ALT1929

Year	Month	Days	Average Daily Intake (Usage)	Maximum Daily Intake	Average Daily Returned	Maximum Daily Return	Average Daily Utilized (Consumed)	Maximum Daily Utilized (Consumed)	Metered	Quantity Utilized
[yr]	*[mo]*	*[day]*	*[m3/day]*	*[m3/day]*	*[m3/day]*	*[m3/day]*	*[m3/day]*	*[m3/day]*	[Y/N]	[m3]
2021	JAN	31	**529**	604	481	531	**48**	**73**	Y	16,407
2021	FEB	28	**514**	545	479	511	**35**	**41**	Y	14,394
2021	MAR	31	**523**	667	475	597	**48**	**76**	Y	16,217
2021	APR	30	**502**	669	450	602	**52**	**136**	Y	15,060
2021	MAY	31	**465**	667	412	594	**53**	**77**	Y	14,409
2021	JUN	30	**454**	640	403	578	**51**	**65**	Y	13,618
2021	JUL	31	**480**	704	427	663	**52**	**77**	Y	14,867
2021	AUG	31	**490**	1615	434	1958	**56**	**645**	Y	15,192
2021	SEP	30	**487**	639	434	581	**53**	**125**	Y	14,624
2021	OCT	31	**459**	664	403	602	**56**	**113**	Y	14,230
2021	NOV	30	**466**	656	408	590	**59**	**645**	Y	13,993
2021	DEC	31	**423**	980	367	598	**56**	**125**	Y	13,110
Annual Average [m3/day]:			**483**	754	431	700	**52**	183	**Total Annual [m3]:**	**176,121**
Observed Minimum [m3/day]:			423	545	367	***511***	35	41		
Observed Maximum [m3/day]:			***529***	1615	481	1958	59	645		

Average Daily Water Intake (Usage) from Source: 483 cubic metres [m^3].
Average Daily Water Return to Source: 431 cubic metres [m^3].
Average Daily Water Utilized (Consumed): 52 cubic metres [m^3].

The usage for 2021 was in compliance with, or below the Licence Daily Water Use Limit of 875 m^3.

Appendix B

Monitoring Program Station No. ALT-2 & ALT 3
Year: 2021
Month: July to August
ALT-2 Name: Sewage Terrace Outfall Point
ALT-3 Name: Sewage Terrace Final Discharge Point
Description: Effluent Quality Results.

Notes:
The Alert Sewage Terrace System is being monitored by Nasittuq Corporation, under service contract by DND and administrated by 8 Wing Trenton Environmental Management in Trenton, Ontario. Water quality samples are collected and analyzed by ALS Canada Ltd., Ontario.

Summary of Results:

ALT-2 is located at the Sewage Terrace Outfall Point.
ALT-3 is located at the Sewage Terrace Final Discharge Point (Parr Inlet).

In reference to **Part E, Item 4**, for ALT-3 and /or Alt 13, the results are summarized:

			03-Jul	03-Jul	07-Jul	07-Jul	13-Jul	13-Jul
	Licence Specific Criteria		**Alt-2**	**Alt-3**	**Alt-2**	**Alt-3**	**Alt-2**	**Alt-3**
Benzene (ug/L)	370		NA	NA	NA	NA	NA	NA
Toluene (ug/L)	2		NA	NA	NA	NA	NA	NA
Ethylbenzene (ug/L)	90		NA	NA	NA	NA	NA	NA
Lead (ug/L)	1		**1.14**	2.02	2.31	2.4	1.32	2.74
Oil and Grease (mg/L)	15 (NVS)		14.4	ND	90.3	13.6	17.5	6.2
Phenols (ug/L)	20		NA	NA	NA	NA	14	ND
BOD_{5} (mg/L)	80		54	7.3	833	54	48.3	56
pH			7.83	7.94	6.83	7.41	7.66	7.47
TSS (mg/L)	70		41.7	21	128	112	45.6	39
Oil and Grease (mg/L)	5 (NVS)		**14.4**	ND	90.3	13.6	17.5	6.2
	CCME Criteria (marine)							
pH	7.0 to 8.7		7.83	7.94	6.83	7.41	7.66	7.47
Conductivity	---		551	510	522	680	509	654
Temperature (field)	---							
TSS (mg/L)	---		41.7	21	128	112	45.6	39

Oil and Grease (mg/L)	---		14.4	ND	90.3	13.6	17.5	6.2
Nitrate-Nitrite (mg/L)	---		ND	0.193	ND	ND	ND	0.076
Ammonia Nitrogen (mg/L)	---		33	7.11	0.026	16.9	12.2	7.1
Sulphate (mg/L)	---		8.85	5.57	7.26	11.1	7.8	ND
Total Hardness (mg/L)	---		121	161	99	179	116	158
Total Alkalinity (mg/L)	---		200	195	100	255	188	212
Total Phenols (mg/L)	---		NA	NA	NA	NA	14	ND
TOC (mg/L)	---		21.5	19.1	225	43	44.6	54
Fecal Coliforms (CFU/100mL)	---		NA	NA	7800000	191000	6900000	420
Aluminum (mg/L)	---		0.0762	0.0868	0.0825	0.245	0.153	0.211
Antimony (mg/L)	0.5		0.00016	0.00031	0.00026	0.00036	NA	NA
Arsenic (mg/L)	0.0125		0.00068	0.00911	0.00054	0.00979	0.00038	0.00938
Cadmium (mg/L)	0.12		0.0000398	0.0000508	0.000134	0.00012	0.000129	0.0000774
Calcium (mg/L)	---		38.5	45.4	30.9	54.2	37	42.9
Chromium (mg/L)	---		ND	ND	0.00115	0.00085	0.00084	0.00074
Copper (mg/L)	0.002		0.187	0.0353	0.19	0.0727	0.112	0.0625
Iron (mg/L)	---		0.12	1.51	0.19	1.68	0.189	1.81
Lead (mg/L)	0.002		1.14	2.02	2.31	2.4	1.32	2.74
Magnesium (mg/L)	---		6.08	11.6	5.3	10.6	5.79	12.3
Mercury (mg/L)	0.00016		ND	0.0000052	ND	0.0000081	ND	ND
Nickle (mg/L)	0.0083		0.00129	0.0332	0.00426	0.0284	0.00134	0.0323
Potassium (mg/L)	---		16.4	9.05	7.68	11.4	6.67	11.2
Sodium (mg/L)	---		34.8	35.8	58.8	40.2	22.5	53
Zinc (mg/L)	0.01		0.0505	0.0101	0.0579	0.0319	0.0345	0.02045
BOD5 (mg/L)	---		54	7.3	833	58.8	48.3	56
Chloride (mg/L)	---		41.7	40.5	48.8	56.2	28.7	65.3
Benzene (ug/L)	110		NA	NA	NA	NA	NA	NA
Ethylbenzene (ug/L)	25		NA	NA	NA	NA	NA	NA
Toluene (ug/L)	215		NA	NA	NA	NA	NA	NA

Xylenes (ug/L)	---		NA	NA	NA	NA	NA	NA
F1 (ug/L)	---		NA	NA	NA	NA	NA	NA
F2 (ug/L)	---		NA	NA	NA	NA	NA	NA
F3 (ug/L)	---		NA	NA	NA	NA	NA	NA
F4 (ug/L)	---		NA	NA	NA	NA	NA	NA
Acenaphthene (ug/L)	---		NA	NA	NA	NA	NA	NA
Acenaphthylene (ug/L)	---		NA	NA	NA	NA	NA	NA
Acridine (ug/L)	---		NA	NA	NA	NA	NA	NA
Benzo(a)anthracene (ug/L)	---		NA	NA	NA	NA	NA	NA
Benzo(o)pyrene (ug/L)	---		NA	NA	NA	NA	NA	NA
Benzo(b)fluoranthere (ug/L)	---		NA	NA	NA	NA	NA	NA
Benzo(g,h,i)perylene (ug/L)	---		NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthere (ug/L)	---		NA	NA	NA	NA	NA	NA
Chrysene (ug/L)	---		NA	NA	NA	NA	NA	NA
Dibenzo(ah)anthracene (ug/L)	---		NA	NA	NA	NA	NA	NA
Fluoranthene (ug/L)	---		NA	NA	NA	NA	NA	NA
Fluorene (ug/L)	---		NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene (ug/L)	---		NA	NA	NA	NA	NA	NA
1+2-Methylnapthalenes (ug/L)	---		NA	NA	NA	NA	NA	NA
1-Methylnapthalene (ug/L)	---		NA	NA	NA	NA	NA	NA
2-Methylnapthalene (ug/L)	---		NA	NA	NA	NA	NA	NA
Napthalene (ug/L)	1.4		NA	NA	NA	NA	NA	NA
Phenanthrene (ug/L)	---		NA	NA	NA	NA	NA	NA
Pyrene (ug/L)	---		NA	NA	NA	NA	NA	NA
Quinoline (ug/L)	---		NA	NA	NA	NA	NA	NA

- Oil and Grease parameters exceed the maximum allowable concentrations at ALT-2 for Oil and Grease.
- TSS exceeded the Licence parameters of 70mg/L. DND will conduct a background sampling program of other small tributaries away from DND activities to ascertain if the 70mg/L set criteria is achievable in natural tributaries in the Alert area.

- Lead, Copper, Nickle and Zinc exceedances are likely attributable to atmospheric deposition. DND will conduct a background sampling program away from DND activities to link correlations in the summer of 2022. For 2022 sampling DND will field filter samples for dissolved metals analysis.
- The analytical certificates detailing the 2021 performance of the Alert Sewage Terrace System is included in this Appendix (B).
- Due to limited personnel on Station during 2021 and COVID 19 constraints and frequent safety concerns associated with wildlife interactions, limited samples were collected. DND is committed to demonstrating compliance to the NWB Licence once capabilities are increased in the summer 2022.

Appendix C

Monitoring Program Stations No. ALT-4-5-6-7
Year: 2021
Description: Runoff and Leachate.

Results:

June (Runoff Season)
Unfortunately, there was no water to sample at ALT- 5,6 and 7 for analytical results. Analytical Results for ALT-4, are attached in Appendix E and Appendix F.
.

		30-June
	Licence Specific Criteria	Alt-4
Benzene (ug/L)	370	ND
Toluene (ug/L)	2	ND
Ethylbenzene (ug/L)	90	ND
Lead (ug/L)	1	5.99
Oil and Grease (mg/L)	15 (NVS)	ND
Phenols (ug/L)	20	ND
BOD_5 (mg/L)	80	NA
pH		8.16
TSS (mg/L)	70	127
Oil and Grease (mg/L)	5 (NVS)	ND
	CCME Criteria (marine)	
pH	7.0 to 8.7	8.16
Conductivity	---	170
Temperature (field)	---	NA
TSS (mg/L)	---	127
Oil and Grease (mg/L)	---	ND
Nitrate-Nitrite (mg/L)	---	0.079
Ammonia Nitrogen (mg/L)	---	ND
Sulphate (mg/L)	---	8.14
Total Hardness (mg/L)	---	101
Total Alkalinity (mg/L)	---	71.1
Total Phenols (mg/L)	---	ND
TOC (mg/L)	---	2.55
Fecal Coliforms (CFU/100mL)	---	1
Aluminum (mg/L)	---	3.49

Antimony (mg/L)	0.5	0.0018
Arsenic (mg/L)	0.0125	0.0069
Cadmium (mg/L)	0.12	ND
Calcium (mg/L)	---	30.8
Chromium (mg/L)	---	ND
Copper (mg/L)	0.002	0.0111
Iron (mg/L)	---	5.92
Lead (mg/L)	0.002	5.99
Magnesium (mg/L)	---	5.77
Mercury (mg/L)	0.00016	0.0000076
Nickle (mg/L)	0.0083	0.0154
Potassium (mg/L)	---	1.74
Sodium (mg/L)	---	4.32
Zinc (mg/L)	0.01	ND
BOD5 (mg/L)	---	ND
Chloride (mg/L)	---	5.04
Benzene (ug/L)	110	ND
Ethylbenzene (ug/L)	25	ND
Toluene (ug/L)	215	ND
Xylenes (ug/L)	---	ND
F1 (ug/L)	---	ND
F2 (ug/L)	---	ND
F3 (ug/L)	---	ND
F4 (ug/L)	---	ND
Acenaphthene (ug/L)	---	NA
Acenaphthylene (ug/L)	---	NA
Acridine (ug/L)	---	NA
Benzo(a)anthracene (ug/L)	---	NA
Benzo(o)pyrene (ug/L)	---	NA
Benzo(b)fluoranthere (ug/L)	---	NA
Benzo(g,h,i)perylene (ug/L)	---	NA
Benzo(k)fluoranthere (ug/L)	---	NA
Chrysene (ug/L)	---	NA
Dibenzo(ah)anthracene (ug/L)	---	NA
Fluoranthene (ug/L)	---	NA
Fluorene (ug/L)	---	NA
Indeno(1,2,3-cd)pyrene (ug/L)	---	NA
1+2-Methylnapthalenes (ug/L)	---	NA
1-Methylnapthalene (ug/L)	---	NA
2-Methylnapthalene (ug/L)	---	NA

Napthalene (ug/L)	1.4	NA
Phenanthrene (ug/L)	---	NA
Pyrene (ug/L)	---	NA
Quinoline (ug/L)	---	NA

- TSS exceeded the Licence parameters of 70mg/L. DND will conduct a background sampling program of other small tributaries away from DND activities to ascertain if the 70mg/L set criteria is achievable in natural tributaries in the Alert area.
- Lead, Copper, Nickle and Zinc exceedances are likely attributable to atmospheric deposition. DND will conduct a background sampling program away from DND activities to link correlations in the summer of 2022. For 2022 sampling DND will field filter samples for dissolved metals analysis.

July

The Department of National Defence was successful in collecting and analyzing samples at Monitoring Program Station ALT-4, during the period of runoff in July 2021. Unfortunately, there was no water to sample at ALT- 5,6 and 7 for analytical results. Analytical Results for ALT-4, are attached in Appendix E and Appendix F.

	Licence Specific Criteria	**Alt-4**
Benzene (ug/L)	370	ND
Toluene (ug/L)	2	ND
Ethylbenzene (ug/L)	90	ND
Lead (ug/L)	1	6.46
Oil and Grease (mg/L)	15 (NVS)	ND
Phenols (ug/L)	20	ND
BOD_5 (mg/L)	80	ND
pH		8.09
TSS (mg/L)	70	166
Oil and Grease (mg/L)	5 (NVS)	ND
	CCME Criteria (marine)	
pH	7.0 to 8.7	8.09
Conductivity	---	166
Temperature (field)	---	166
TSS (mg/L)	---	
Oil and Grease (mg/L)	---	ND
Nitrate-Nitrite (mg/L)	---	0.073
Ammonia Nitrogen (mg/L)	---	ND
Sulphate (mg/L)	---	8.54
Total Hardness (mg/L)	---	100
Total Alkalinity (mg/L)	---	66.3
Total Phenols (mg/L)	---	ND
TOC (mg/L)	---	3.4
Fecal Coliforms (CFU/100mL)	---	ND
Aluminum (mg/L)	---	3.93
Antimony (mg/L)	0.5	0.00175
Arsenic (mg/L)	0.0125	0.00704
Cadmium (mg/L)	0.12	0.0000366
Calcium (mg/L)	---	29.6
Chromium (mg/L)	---	0.0074
Copper (mg/L)	0.002	0.0116

Iron (mg/L)	---	6.01
Lead (mg/L)	0.002	6.46
Magnesium (mg/L)	---	6.44
Mercury (mg/L)	0.00016	0.0000096
Nickle (mg/L)	0.0083	0.0178
Potassium (mg/L)	---	1.84
Sodium (mg/L)	---	4.36
Zinc (mg/L)	0.01	0.0271
BOD5 (mg/L)	---	ND
Chloride (mg/L)	---	5.18
Benzene (ug/L)	110	ND
Ethylbenzene (ug/L)	25	ND
Toluene (ug/L)	215	ND
Xylenes (ug/L)	---	ND
F1 (ug/L)	---	ND
F2 (ug/L)	---	ND
F3 (ug/L)	---	ND
F4 (ug/L)	---	ND
Acenaphthene (ug/L)	---	ND
Acenaphthylene (ug/L)	---	ND
Acridine (ug/L)	---	ND
Benzo(a)anthracene (ug/L)	---	ND
Benzo(o)pyrene (ug/L)	---	ND
Benzo(b)fluoranthere (ug/L)	---	ND
Benzo(g,h,i)perylene (ug/L)	---	ND
Benzo(k)fluoranthere (ug/L)	---	ND
Chrysene (ug/L)	---	ND
Dibenzo(ah)anthracene (ug/L)	---	ND
Fluoranthene (ug/L)	---	ND
Fluorene (ug/L)	---	ND
Indeno(1,2,3-cd)pyrene (ug/L)	---	ND
1+2-Methylnapthalenes (ug/L)	---	ND
1-Methylnapthalene (ug/L)	---	ND
2-Methylnapthalene (ug/L)	---	ND
Napthalene (ug/L)	1.4	ND
Phenanthrene (ug/L)	---	ND
Pyrene (ug/L)	---	ND
Quinoline (ug/L)	---	ND

- TSS exceeded the Licence parameters of 70mg/L. DND will conduct a background sampling program of other small tributaries away from DND activities to ascertain if the 70mg/L set criteria is achievable in natural tributaries in the Alert area.

- Arsenic, Lead, Copper, Nickle and Zinc exceedances are likely attributable to atmospheric deposition. DND will conduct a background sampling program away from DND activities to link correlations in the summer of 2022. For 2022 sampling DND will field filter samples for dissolved metals analysis.

August

The Department of National Defence was not successful in collecting samples at Monitoring Program Station ALT-4, 5, 6 or 7, during the period of runoff in August 2021 due to logistical constrains associated with COVID-19.

September

The Department of National Defence was not successful in collecting samples at Monitoring Program Station ALT-4, 5, 6 or 7, during the period of runoff in September 2021 due to logistical constrains associated with COVID-19.

Appendix D

Monitoring Program Stations No. ALT-8-9-10-11
Year: 2021
Description: Discharge from Tank Farm Secondary Containments ALT-8-9-10 & Landfarm Facility ALT-10-11.

Results:

The Department of National Defence (DND) intended to discharge water from the Fuel Tank Farm Secondary Containments at ALT-8-9-10 in June 2021. At least 10 days notice was provided to the Inspector and Nunavut Water Board, the email chain is attached below.

Water samples from within the secondary containments of ALT-8-8.1-9-10 were collected on 06 July 2021 and analyzed; analytical results are attached in Appendix E.

Two samples were taken at ALT-8 (sample identifications: ALT-8 and ALT-8.1) to better represent the freshet quality due to the large size of the Secondary Containment facility.

In July 2021, analytical results (Appendix E) of the berm water results at the Lower Airfield Tank Farm (ALT-8, -8.1), Upper Tank Farm (ALT-9), and the Day Tank (ALT-10) are compliant to the Effluent Quality Limits of the Alert Water Licence, as per Part E, Item 12 and 13.

DND had no intentions to discharge any water from Land Farm Treatment Facilities at ALT-10 and ALT-11.

Notes (extra spaces removed):

From: Koutroulides NG@CFB Trenton WENV@Trenton
Sent: July 27, 2021 12:12 PM
To: 'Jonathan.Mesher@aandc-aadnc.gc.ca' <Jonathan.Mesher@aandc-aadnc.gc.ca>; 'joseph.monteith@canada.ca' <joseph.monteith@canada.ca>
Cc: 'Erik.Allain@aandc-aadnc.gc.ca' <Erik.Allain@aandc-aadnc.gc.ca>; Tam A@CFB Trenton WENV@Trenton <Andrew.Tam@forces.gc.ca>
Subject: 8AC-ALT1929 - CFS Alert - Berm Secondary Containment Water Discharge Approval Request 2021

Hello Jonathan and Joseph;

Attached is the lab analytical results of the water grab samples obtained during June 2021 Surveillance Monitoring Program at CFS Alert, Nunavut.

The berm water results at the Lower Airfield Tank Farm (ALT-8 Orange Tanks and ALT-8.1 White Tanks) and the Upper Tank Farm (ALT-9) are compliant to the Effluent Quality Limits of the Alert Water Licence, as per Part E, Item 12.

As per the condition of Part E, Item 13, I am providing DND's intent to discharge the effluents from the ALT 8 & ALT-9 fuel tank farms within 10 days; however, to help expedite the process and given Alert's short outdoor summer season, may I please request your approval to discharge the effluents from these two facilities as soon as possible?

I will also issue DND direction the CFS Alert staff responsible for the water discharges to ensure that no ruts in the tundra are created and to ensure that sediment erosion protections are taken as per the Alert Water Management plan.

Thank you for your assistance.

Regards,
Nathan

Nathan Koutroulides, B.Sc, CD, PMP.
8 Wing Deputy Environment Officer, Environmental Management
Department of National Defence / Government of Canada
Nathan.Koutroulides@forces.gc.ca / Tel: 613-392-2811 Ext. 4821

Adjoint Officier de l'environnement de la 8ième escadre, Gestion d'environnement
Ministère de la Défense nationale / Gouvernement du Canada
Nathan.Koutroulides@forces.gc.ca / Tél: 613-392-2811 Ext. 4821

Appendix E

Analytical Results for ALT-2-3-4-5-6-7-8-9-10-11
Year: 2021

Description: Analytical Results for June/July 2021 attached as separate PDF.

Appendix F

List of Waste Disposal Activities
Year: 2021
Reference: 8AC-ALT1929

Monthly Waste Incineration at CFS Alert - 8AC-ALT1929					
Year *[yr]*	**Month** *[mo]*	**Incineraion Days per Month** *[day]*	**Solid waste Incinerated (Millionaire's Dump)** *[lbs]*	**Liquid Waste Incinerated** *[Liters]*	**Loose Waste Incinerated (Main Station Landfill)** *[lbs]*
2021	JAN	6	**3200**	470	800
2021	FEB	0	**0**	0	0
2021	MAR	0	**0**	0	0
2021	APR	8	**4800**	0	235
2021	MAY	17	**4750**	288	7350
2021	JUN	9	**3000**	0	5560
2021	JUL	11	**0**	0	5300
2021	AUG	7	**2800**	190	3900
2021	SEP	10	**800**	1	9200
2021	OCT	13	**3050**	210	6950
2021	NOV	6	**800**	37	5300
2021	DEC	6	**4000**	0	1900
Annual Average [lbs/L/mo]:			**2267**	100	3875
Observed Minimum [Lbs/L/mo]:			0	0	0
Observed Maximum [Lbs/L/mo]:			***4800***	470	9200

Main Station Landfill:
-Deposition of non-hazardous incinerator ash and all acceptable materials to site.

Millionaire's Dump:
-In 2018 the Millionaire's dump was closed to disposal of all station waste. No material was placed in the dump in 2021.

Battery Dump:

-No wastes were deposited at this site; no waste deposition is allowed at this site.

Dump #3:
-No wastes were deposited at this site; no waste deposition is allowed at this site.

Landfarms:

ALT-11 Landfarm
- ALT-11 (Airfield Land arm) is currently at capacity. No new material was added to this location in 2021.

ALT 12 (Day tank)
- Contaminated materials was deposited into ALT-11 landfarm in 2019; this material was treated and existing material was rotated to facilitate aeration.
The ALT 12 landfarm was taken temporarily out of commission in 2018 due to a punctured liner during the material transfer. All material was removed. Planed repairs to the liner are to take place during the summer of 2022.

Hazardous Waste Backhauled from CFS Alert in 2021:

As listed in Movement Document 2464626-7:
- 232 lbs of waste Sulfuric Acid to 8 Wing Trenton.
- 196 lbs of waste batteries to 8 Wing Trenton
- 7399lbs waste diesel fuel to 8 Wing Trenton

As listed in Movement Document 2581635-6:
- 1857 lbs of asbestos ceiling tiles to 8 Wing Trenton

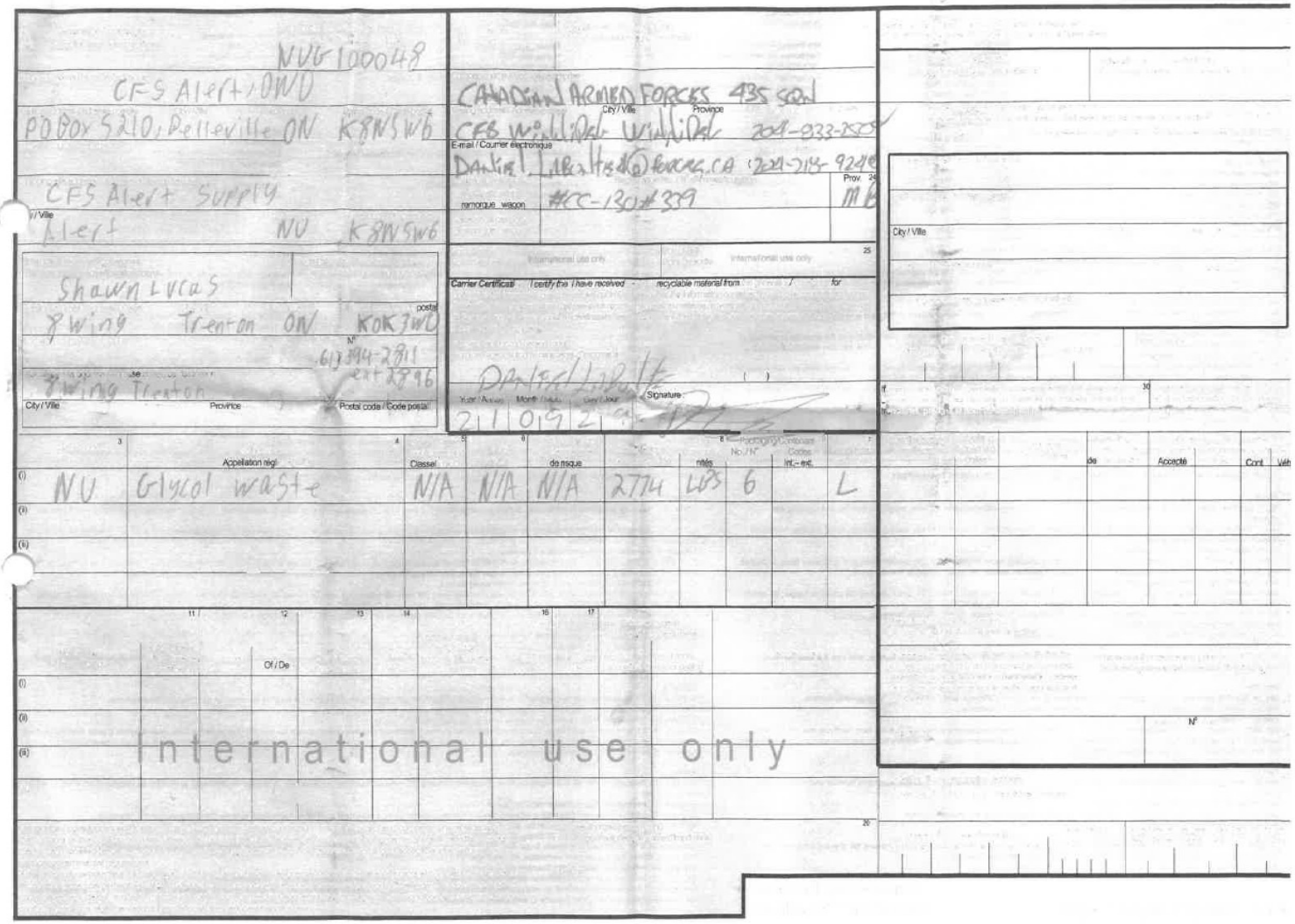
As listed in Movement Document 2581637-2:
- 2620 lbs of waste glycol to 8 Wing Trenton

As listed in Movement Document 2581638-0:
- 2774 lbs of waste glycol to 8 Wing Trenton

As listed in Movement Document 2581640-6:
- 780 L of waste Aviation turbine fuel to 8 Wing Trenton.
- 70 L of Petroleum distillate NOS to 8 Wing Trenton

CFS Alert Hazardous Waste Generator #NUG100048;
DND Hazardous Waste Carrier #NUC200012.

All hazardous wastes from CFS Alert were collected at 8 Wing Trenton and transferred to contractors for proper disposal under 8 Wing Trenton's Ontario Hazardous Waste Generator #ON0046507.



8AC-ALT1929-2021

NUG100048

CFS Alert / DND
PO Box 5210 Belleville ON K8N 5W6
E-mail / Courriel électronique
( )

CFS Alert / Supply
City / Ville
Alert NU K8N 5W6

2
Coralee Bain
City / Ville
8 Wing Trenton
N°
613 392-2811 (7679)
8 Wing Trenton
City / Ville Province

B
DND
address
CFB Trenton ON
( )
N°
remorque wagon CC170J 130601
Prov. 24

Trenton Alert
Certification I certify recyclable material from the for

CAM LANE
( )
Signature
21 09 04

3	Shipping name / Appellation réglementaire	4 Class / Classe / Sub. class(es) / Classe(s) sub.	5 UN No. / N° NU	6 Packing / risk gr. / Gr. d'emballage/ de risque	7 Quantity shipped / Quantité expédiée	8 Units / L or / ou Kg / Unités	9 Packaging/Contenant No. / N°	Codes Int.–ext.	10 Phys. state / État phys.
(i) NU	Ceiling tiles	NA	NA	NA	1877	LBS	3	07	5
(ii)									
(iii)									
(iv)									

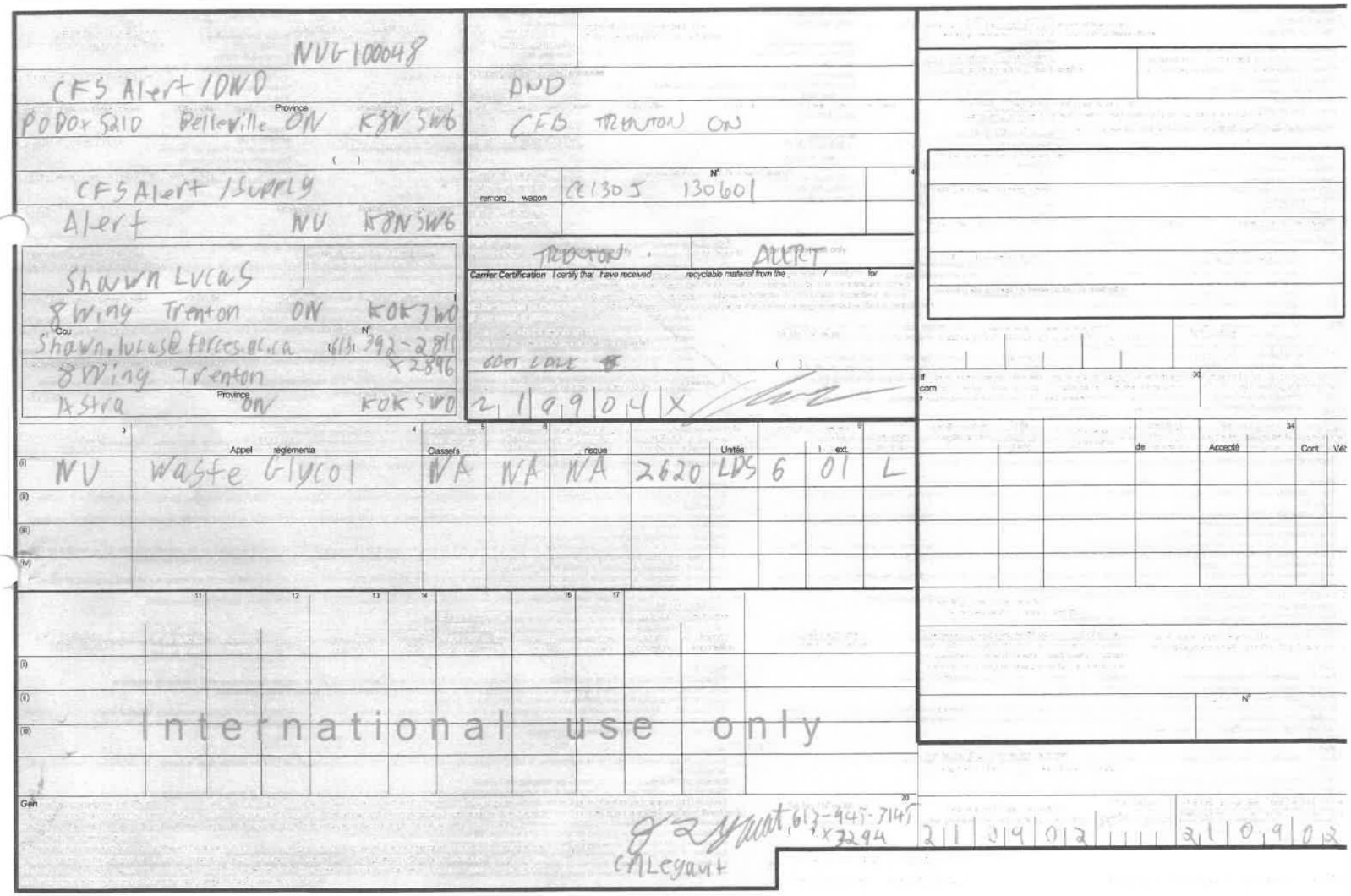
Quantity received / Quantité reçue	31 Units / L or / ou Kg / Unités	32 Comments / Commentaires	33 Handling Code / Code de manutention	34 Shipment / Envoi Accepted / Accepté	Refused / Refusé	Decont. Pack. / Cont.	Veh. / Véh.

	11	12	13	14	15	16	17	18
(i)								
(ii)								
(iii)								

International use only

Tel. No. / N° de tél.

20
Shipped under S 61 of ICAO TI 2021-2022
ext 3294 21 09 02 21 09 02
C Legault



8AC-ALT1929-2021

MOVEMENT DOCUMENT / MANIFEST
DOCUMENT DE MOUVEMENT / MANIFESTE

This Movement document/manifest conforms to all federal and provincial transport and environmental legislation.

A

NUG 100048

CFS ALERT DND

P.O. BOX 5200 STN FORCES Belleville, ON K8N 5W6

Alertsupptech@forces.gc.ca ( )

CFS ALERT SUPPLY

ALERT NU K8N 5W6

Mr. Kevin Stuart

CFB TRENTON Astra ON K0K 3W0 (postal)

Base: Trenton - WSupply HazWaste

Astra ON K0K 3W0

NUG 200013

DND/CF ~~434~~ 436 SQN

(CFB Trenton Astra ON K0K 3W0 (Postal code / Code postal)

613 392 2811 (Prov.)

remorqu wagon

Carrier Certification: I certify that I have received ... from th... for

Tyler Holland 613 392-2811 x5056

2019 2 8 [signature]

				de risque		Units L or/ou Kg Unités		Int. ext.	
NU	Waste Sulfuric Acid	8	1830	II	232	lbs	5	03	L
NU	Waste Batteries Wet, Non-Spillable?	8	2800	III	196	lbs	6	03	S
NU	Waste Diesel Fuel	3	1202	III	7399	lbs	9	01	L

(i) (ii) (iii) (iv)

International use only

MCpl Canuel Mel [signature] ( ) 3294

C Receiver / consignee
Réceptionnaire / destinataire

Registration No. / Provincial ID No.
N° d'immatriculation - c/id. provincial

Receiver / consignee information same as in Part A
Les renseignements du réceptionnaire / destinataire est la même qu'à la Partie A

☐ Yes / Oui ☐ No, complete the box below / Non, remplir la case ci-dessous

CFB Trenton DND

PO Box 1000

City / Ville: Astra Province: ON Postal code / Code: K0K 3W0

stuart.kp@forces.gc.ca 613 392-2811

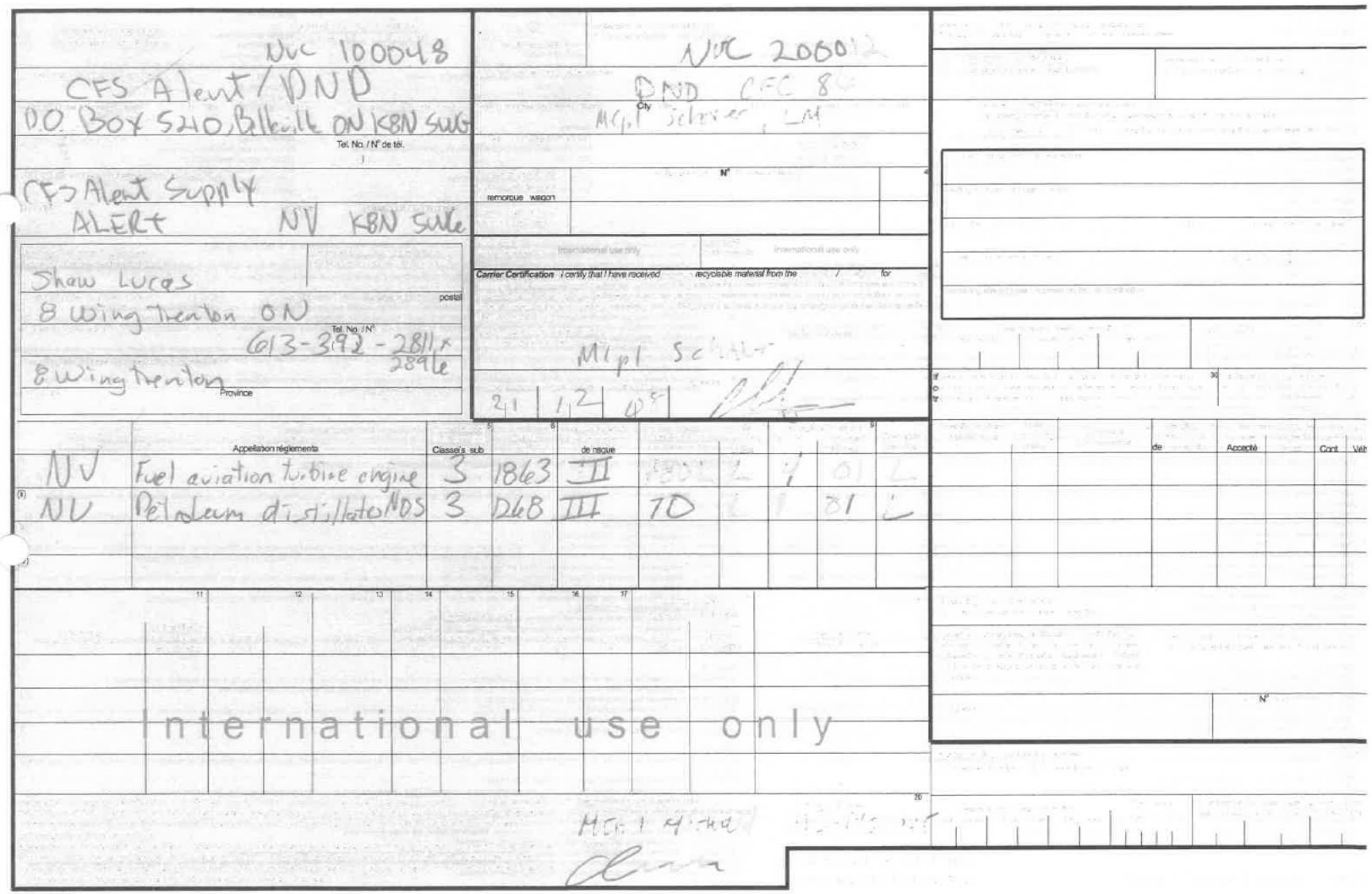
Receiving: Bldg 165, 27 ALERT Blvd ext 2896

☐ A.M. ☐ P.M.

de | Accepté | Cont. | Vé...

Signature

Tel. No. / N° de tél. ( )



NVC 100048
CFS Alert / DND
P.O. Box 5210, Belleville ON K8N 5W6
Tel. No. / N° de tél.
CFS Alert Supply
ALERT NV K8N 5W6
Shaw Lucas
8 Wing Trenton ON
postal
Tel. No. / N°
613-392-2811 x 2896
8 Wing Trenton
Province

NVC 20001
DND CFC 8
City
MCpl Scriver, LM
N°
remorque wagon
International use only
International use only
Carrier Certification I certify that I have received recyclable material from the / for
MCpl Scriver
21 12 05

	Appellation réglementaire	Classe/s sub		de risque				
NV	Fuel aviation turbine engine	3	1863	III	180	L	01	L
NV	Petroleum distillates NOS	3	D68	III	70	L	81	L

International use only

MCpl Scriver

de / Accepté / Cont / Véh

N°

8AC-ALT1929-2021

Appendix F

Progressive and Final Reclamation Work Undertaken
Year: 2021
Reference: 8AC-ALT1929, Part B, Item 1.

Progressive Reclamation Work Undertaken in 2021:

Due to COVID-19 world pandemic the Station was a minimal manning during the 2021 season. Limited to Emergency access only. As such no work was completed as previously scheduled.

Future works proposed for 2022:

A. Contaminated Sites In-Situ Bioremediation Work:
Continuation of the pilot scale in-situ bioremediation study for petroleum hydrocarbon biodegradation at the following sites:
1) Oxidator Building;
2) Baker's Dozen.
Soil samples will be collected for chemical and microbiological analyses including laboratory studies involving microcosm mineralization assays. Develop long term monitoring program for PHC contamination in key areas.

B. Reclaim of Soils in the Landfarm (ALT-11) Treatment Facility:
Regular monitoring of the downgrade area adjacent to the large biopile area will be performed to ensure no PHC contamination is moving from biopile area or from contaminated areas upgradient and to the west of the large biopile area.

Repairs to the north east corner of the berm were repaired in in 2020. This was identified in the 2019 inspection conducted by CIRNA.

C. Rotation of Soils in the Landfarm (ALT-11) Treatment Facilities:
Continuation of the microbial nutrient augmentation and aeration process to increase oxygen content in the contaminated soil to promote microbial and bacterial activity within the landfarm facilities. This will be conducted at the ALT-11 Landfarms.

ALT-12 treatment facility is currently closed awaiting liner repairs due to 2018 liner breach. All material has been removed for this location and transferred to the ALT-11 location. We are expecting that repairs will be completed this season 2022.

D. In-Situ Bio-Containment Pilot Research Study:
As indicated with the INAC Inspectors during the 2015 & 2017 Inspections, DND is taking a proactive approach, developing novel bio-containment barriers, to treat runoff and subsurface waters generated and passing through the boundaries of Federal Contaminated Sites. This activity will be conducted, and the effectiveness assessed, through a pilot research project with the National Research Council of Canada. The general purpose of these bio-containment barriers

is to develop a microbial technology solution for bioremediation of runoff and subsurface waters that pass through and/or are generated from contaminated sites prior to reaching the Arctic Ocean. This work has applicability for the entire Canadian Arctic environment.

E. Environmental Sampling for Per/Polyfluorocarbon (PFC) Delineation
Further conduct environmental sampling and screening for PFCs as well as to evaluate the potential of biodegradation of PFC as a remediation approach.

F. Phase 2 Environmental Site Assessment (ESA)/ Detailed Risk Assessment
DND has procured a firm to conduct a Phase 2 ESA/ detailed risk assessment to be conducted on the entire station for 2022 limited to contracting and COVID restrictions.

Appendix H

Proposed/ future Infrastructure Works
Year: 2021
Reference: 8AC-ALT1929 Schedule B item l.

Infrastructure Work Undertaken in 2021:

Due to COVID-19 world pandemic the Station was a minimal manning during the 2021 season. Limited to Emergency access only. As such no work was completed as previously scheduled.

Future works proposed for 2022:

A. Sewage Discharge Flow Monitoring:
Installation of a flow monitor on the discharge point of ALT-2 will be installed in the summer of 2022 as was previously planned for 2020 but delayed due to COVID. Results will be published in the 2022 Annual report or when requested.

B. ALT-12 Landfarm Liner Repair:
ALT-12 treatment facility is currently closed awaiting liner repairs due to 2018 liner breach. All material has been removed for this location and transferred to the ALT-11 location. We are expecting that repairs will be completed this season 2022.

C. Temporary Contaminated Soil Storage
DND is purposing a 1,000m3 capacity contaminated soils storage, this would allow existing contaminated soil piles that are not currently contained to be place in a safe storage space, until the new large storage space is construct North East (NE) of the Alert's Runway. The overall foot print is 33m x 43m x 1.75m in height and located 200m West by North West (WNW) of the "Millionaire's Dump" (ALT-6).

D. Construct new waterline
During the winter of 2020/2021 the current water lines from Dumbell Bay to the Alert water treatment facility froze solid and broke the waterlines in 26 places along the 2km stretch of line. This summer, construction of a new waterline is expected to take place to replace the existing waterline and provide upgraded safeguards to ensure freeze protection going forward.