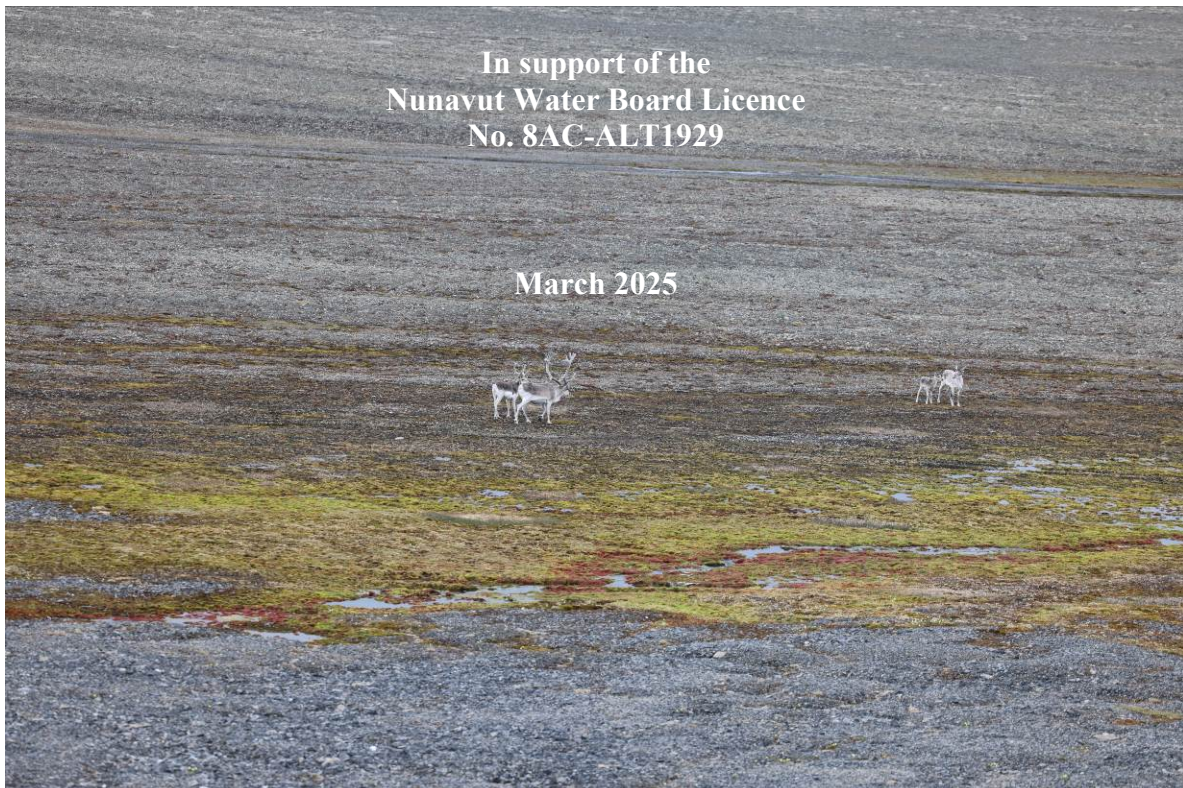




2024 Annual Report for CFS Alert, Nunavut



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 2025

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

Attention: Manager of Licensing

Subject: 2024 Annual Report for CFS Alert, Nunavut

Please find enclosed a copy of the 2024 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).

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

encls

8 Wing Environmental Management, Room 305, 74 Polaris Avenue, Box 1000 Stn Forces, Astra, Ontario, K0K 3W0
Tel: 613-392-2811 x4821 Fax: 613-965-3368

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2024 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 2025

Executive Summary

The 2024 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 DND licensee, Real Property Operations North (RP Ops N) - Assistant Deputy Minister of Infrastructure & Environment (ADM(IE)).

For 2024, the average daily water usage at CFS Alert was 605 m³. This usage is below the 875 cubic meters daily water usage allowed by the NWB Licence. The daily water usage amount being reported is 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 509 m³/day. This constant circulatory (return) flow of the raw water prevents freezing damages to the water pipelines. The average daily water consumption amount was 96 m³. The total annual quantity of water used in 2024 was 220,114 m³.

Hazardous wastes (Glycol, waste oils, batteries and other hazardous liquids) were backhauled from CFS Alert in 2024 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. No repairs to the sewage terrace system were completed in 2024. However, surveying of the sewage terrace was completed for major reworks in 2025 as indicated in design drawings submitted previously. DND will continue to monitor and repair as required until the new sewage treatment plant is constructed. All sewage was directed to the Sewage Terrace System.

DND maintains a positive commitment to demonstrating compliance to the NWB Licence and is planning to continue the CFS Alert Surveillance Network Program capabilities in Summer 2025.

Rapport annuel 2024 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 –
8^e Escadre/Base des forces canadiennes Trenton –
Gestion environnementale de la 8^e Escadre,
31 mars 2025

Sommaire

Le rapport annuel 2024 présenté à l’office des eaux du Nunavut (OEN) constitue une exigence aux termes du permis n° 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 1^{er} 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 8^e Escadre/Base des Forces canadiennes (BFC) Trenton, en Ontario, supervise la SFC Alert, la 8^e Escadre Trenton présente le rapport annuel au nom du nouveau détenteur de permis du MDN, les Ops Imm (Nord) du SMA(IE).

En 2024, l’utilisation quotidienne moyenne d’eau à la SFC Alert était de 605 m³, ce qui est inférieur à la consommation quotidienne de 875 m³ d’eau autorisée par le permis de l’OEN. La quantité d’eau utilisée quotidiennement qui est déclarée est 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 509 m³ 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 96 m³. La quantité annuelle totale d’eau utilisée en 2024 était de 220,114 m³.

En 2024, les déchets dangereux (glycol, huiles usées, piles et autres liquides dangereux) ont été réacheminés de la SFC Alert vers l’Ontario à des fins d’élimination à l’extérieur du Nunavut par des entrepreneurs externes. Les déchets ménagers non dangereux produits par la SFC Alert ont été acheminés à la décharge principale désignée. Aucune réparation du système de traitement des eaux usées à paliers n’a été effectuée en 2024. Toutefois, l’arpentage du système de traitement des eaux usées à paliers a été achevé en vue de travaux majeurs qui auront lieu en 2025, comme indiqué dans les plans de conception présentés précédemment. Le MDN continuera d’assurer la surveillance et la réparation de ce système jusqu’à ce qu’un nouveau système de traitement des eaux usées soit mis en place. Toutes les eaux usées ont été rejetées dans le système de traitement des eaux usées à paliers.

Le MDN demeure résolu à démontrer sa conformité au permis de l'OEN et prévoit maintenir les capacités du programme du réseau de surveillance de la SFC Alert à l'été 2025.

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NWB Annual Report 2024

NWB Annual Report

Year being reported: 2024

License
No:

8AC-ALT1929

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 accordance 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)

605

Actual Quantity Used Domestic (cu.m)

Quantity Allowable Drilling (cu.m)

Total Quantity Used Drilling (cu.m)

Waste Management and/or Disposal: ☒ Solid Waste Disposal ☒ Sewage ☐ Drill Waste ☒ Greywater ☒ Hazardous ☒ Other:

Landfarms

Additional Details:

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 /
Appendix H: Progressive and Final Reclamation Work Undertaken

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

Spill No.: 2024291 (as reported to the Spill Hot-line)
Date of Spill: June 20, 2024
Date of Notification to an Inspector: July 30, 2024
Additional Details: (impacts to water, mitigation measures, short/long term monitoring, etc)

Please see attached detailed spill report in Appendix I

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

Other: (see additional details)

Additional Details:

DND has retained a consultant to develop a reclamations options analysis for the historical waste deposits. DND expects to have a report in 2025/26.

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)

Inspection was completed By CIRNAC in summer of 2024. No report has been submitted to date.

Any additional comments or information for the Board to consider

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Date Submitted:

March 31, 2025

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			Longitude		
	Deg	Min	Sec	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: 2024

Name: Water Supply at Raw Water Intake

Licence Daily Water Use (to not exceed) Limit: 875 cubic metres [m³].

Results for: All Purpose Water Monitoring

Daily Water Usage Quantity: 605 cubic metres [m³].

Annual Water Usage Quantity: 220,114 cubic metres [m³].

Average Daily Water Usage at CFS Alert - 8AC-ALT1929										
Year [yr]	Month [mo]	Days [day]	Average Daily Intake (Usage) [m3/day]	Maximum Daily Intake [m3/day]	Average Daily Returned [m3/day]	Maximum Daily Return [m3/day]	Average Daily Utilized (Consumed) [m3/day]	Maximum Daily Utilized (Consumed) [m3/day]	Metered [Y/N]	Quantity Utilized [m3]
2024	JAN	31	612	737	525	625	87	112	Y	18,969
2024	FEB	28	598	660	510	570	87	147	Y	16,734
2024	MAR	30	601	703	500	625	102	528	Y	18,042
2024	APR	30	626	714	548	615	78	110	Y	18,778
2024	MAY	31	666	900	580	805	86	114	Y	20,640
2024	JUN	30	591	673	514	573	76	108	Y	17,716
2024	JUL	31	614	761	515	629	99	132	Y	19,028
2024	AUG	31	609	720	503	590	106	134	Y	18,883
2024	SEP	30	578	660	477	558	100	135	Y	17,328
2024	OCT	31	585	735	480	614	105	174	Y	18,123
2024	NOV	30	611	732	496	604	116	134	Y	18,336
2024	DEC	31	567	765	456	648	111	135	Y	17,567
Annual Average [m3/day]:			605	730	509	621	96	164	Total Annual [m3]:	220,144
Observed Minimum [m3/day]:			567	660	456	558	76	108		
Observed Maximum [m3/day]:			666	900	580	805	116	528		

Average Daily Water Intake (Usage) from Source: 605 cubic metres [m³].

Average Daily Water Return to Source: 509 cubic metres [m³].

Average Daily Water Utilized (Consumed): 96 cubic metres [m³].

The usage for 2024 was in compliance with, or below the Licence Daily Water Use Limit of 875 m³.

Please note: Due to staffing issues, a water plant treatment operator was not on site for 5 days in June, 3 days in August, and 12 days in September. No metering data was recorded during this time.

As requested by the Board during their technical review of the 2021 Annual report, please see daily, monthly annual quantities in cubic metres not reported as averages.

January

Month	Jan.	Year	2024											
	Raw													
	S	TR	Supply				Return						Station	Use
Day	PSI	PSI	PSI	Flow m³/d	read m³	total m³	PSI	0°F	Flow m³/d	Read m³	Total m³	Station Use m³		
1	56	60	58	631	1,493,045	655	52	15	531	1283271	559	96	1	
2	56	60	59	618	1,493,559	514	53	15	530	1283714	443	71	2	
3	14	20	73	618	1,494,176	617	68	15	531	1284243	529	88	2	
4	14	20	73	629	1,494,809	633	68	15	531	1284779	536	97	2	
5	56	60	73	625	1,495,428	619	68	15	529	1285301	522	97	2	
6	14	20	70	672	1,496,165	737	63	15	530	1285926	625	112	2	
7	56	60	71	645	1,496,778	613	66	15	529	1,286,452	526	87	2	
8	14	20	59	624	1,497,306	528	48	15	499	1,286,911	459	69	3	
9	52	60	53	634	1,497,906	600	48	15	499	1,287,420	509	91	3	
10	10	15	53	620	1,498,513	607	50	15	492	1,287,933	513	94	3	
11	8	15	52	635	1,499,088	575	49	15	501	1,288,418	485	90	3	
12	14	12	57	589	1,499,719	631	52	15	505	1,288,961	543	88	3	
13	8	12	57	570	1,500,377	658	51	15	503	1,289,528	567	91	3	
14	8	12	57	589	1,501,001	624	51	15	508	1,290,061	533	91	3	
15	10	14	54	621	1,501,492	491	48	16	483	1,290,484	423	68	1	
16	50	55	58	646	1,502,111	619	58	15	528	1,291,014	530	89	1	
17	15	20	60	609	1,502,738	627	55	16	529	1,291,552	538	89	1	
18	54	60	57	644	1,503,360	622	52	16	529	1,292,079	527	95	1	
19	54	60	58	641	1,503,987	627	52	15	526	1,292,612	533	94	1	
20	9	12	59	619	1,504,639	652	53	16	527	1,293,172	560	92	1	
21	11	18	58	638	1,505,236	597	52	156	528	1,293,687	515	82	1	
22	54	60	57	640	1,505,836	600	52	15	527	1,294,201	514	86	1	
23	54	60	56	638	1,506,457	621	50	16	528	1,294,740	539	82	2	
24	14	20	54	631	1,507,086	629	48	15	528	1,295,282	542	87	2	
25	15	20	59	605	1,507,714	628	54	15	529	1,295,823	541	87	2	
26	14	18	55	635	1,508,316	602	50	15	528	1,296,346	523	79	2	
27	14	20	56	643	1,508,912	596	51	16	494	1,296,861	515	81	2	
28	14	20	58	614	1,509,543	631	53	16	529	1,297,401	540	91	2	
29	11	18	56	659	1,510,164	621	51	16	491	1,297,941	540	81	3	
30	12	18	56	623	1,510,745	581	51	159	531	1,298,451	510	71	3	
31	9	18	58	611	1,511,359	614	52	16	528	1,298,989	538	76	3	

February

Month Feb.		Year	RT WTP Page 2 of 4 - PLANT PHYSICAL CHECKS												
	Raw *1	Distribution Loop *2													
	S	TR	Supply				Return								
Day	PSI	PSI	PSI	Flow m³/d	Read m³	Total m³	PSI	0°F	Flow m³/d	Read m³	Total m³	Station Use m³	SD		
1	9	14	55	626	1,511,992	633	50	16	510	1299532	543	90	1		
2	8	12	57	624	1,512,593	601	52	16	524	1300048	516	85	1		
3	8	12	58	616	1,513,220	627	52	16	524	1300528	480	147	1		
4	9	12	56	646	1,513,813	593	51	16	514	1301689	480	113	1		
5	9	12	55	632	1,514,465	652	50	17	521	1301638	520	132	2		
6	9	12	59	615	1,515,065	600	54	17	529	1302150	512	88	2		
7	12	16	55	651	1,515,680	615	53	165	494	1,302,684	534	81	2		
8	11	16	56	607	1,516,302	622	51	17	529	1,303,221	537	85	2		
9	12	16	59	608	1,516,919	617	53	17	531	1,303,758	537	80	2		
10	12	16	57	623	1,517,505	586	52	17	523	1,304,269	511	75	2		
11	12	17	56	622	1,518,140	635	51	17	519	1,304,809	540	95	2		
12	11	16	54	621	1,518,732	592	49	17	490	1,305,331	522	70	3		
13	12	18	53	601	1,519,331	599	49	17	477	1,305,839	508	91	3		
14	12	18	55	584	1,519,892	561	52	17	491	1,306,315	476	85	3		
15					1,520,493	601				1,306,846	531	70	3		
16					1,521,082	589				1,307,310	464	125	3		
17					1,521,682	600				1,307,838	528	72	3		
18					1,522,236	554				1,308,335	497	57	3		
19					1,522,800	564				1,308,815	480	84	3		
20					1,523,460	660				1,309,385	570	90	3		
21					1,524,080	620				1,309,925	540	80	3		
22	11	11	55	588	1,524,693	613	48	16	500	1,310,465	540	73	3		
23	11	15	52	600	1,525,298	605	49	16	482	1,310,969	504	101	3		
24	15	13	51	588	1,525,902	604	49	18	500	1,311,489	520	84	3		
25	52	15	51	592	1,526,489	587	51	15	487	1,311,992	503	84	3		
26	52	15	50	620	1,527,057	568	50	15	496	1,312,484	492	76	3		
27	55	15	55	579	1,527,620	563	56	15	509	1,312,969	485	78	3		
28	12	16	53	577	1,528,191	571	49	15	497	1,313,466	497	74	3		
29	55	60	54	594	1,528,691	500	49	15	503	1,313,898	432	68	3		

March

Month	Mar	Year	2024	#####										
	Raw *1	Distribution Loop *2												
	S	TR	Supply				Return						Station	Day
Day	PSI	PSI	PSI	Flow m³/d	Read m³	Total m³	PSI	0°F	Flow m³/d	Read m³	Total m³			
1	12	20	50	610	1,529,251	560	46	16	501	1314831	133	427	3	
2	56	60	54	593	1,529,902	651	50	15	494	1314954	123	528	3	
3	14	20	52	593	1,530,482	580	47	16	497	1315460	506	74	3	
4	56	60	53	614	1,530,982	500	49	16	506	1315890	430	70	1	
5	56	60	56	622	1,531,580	598	51	16	528	1316408	518	80	1	
6	16	10	58	625	1,532,193	613	52	16	532	1316943	535	78	1	
7	16	10	57	632	1,532,804	611	52	16	530	1,317,477	534	77	1	
8	60	56	56	649	1,533,436	632	52	16	527	1,318,028	551	81	1	
9	16	10	58	607	1,534,120	684	53	16	526	1,318,629	601	83	1	
10	16	10	57	622	1,534,691	571	52	16	531	1,319,132	503	68	1	
11					1,535,271	580				1,319,632	500	80		
12	16	10	57	624	1,535,842	571	52	16	534	1,320,123	491	80	2	
13	56	60	72	615	1,536,515	673	67	16	537	1,320,716	593	80	2	
14	56	60	73	616	1,537,070	555	67	16	551	1,321,201	485	70	2	
15	56	60	55	792	1,537,705	635	49	16	535	1,321,755	554	81	2	
16	56	60	72	632	1,538,408	703	62	16	540	1,322,362	607	96	2	
17	12	16	72	639	1,539,026	618	67	17	536	1,322,907	545	73	2	
18	56	60	71	647	1,539,538	512	66	17	541	1,323,357	450	62	2	
19	56	60	54	599	1,540,128	590	49	18	501	1,323,876	519	71	3	
20	12	16	55	582	1,540,724	596	50	18	502	1,324,398	522	74	3	
21	12	16	55	579	1,541,304	580	51	18	501	1,324,906	508	72	3	
22	12	20	53	599	1,541,919	615	49	18	480	1,325,428	522	93	3	
23	56	60	56	571	1,542,570	651	52	18	500	1,325,997	569	82	3	
24	12	20	54	600	1,543,096	526	49	18	503	1,326,462	465	61	3	
25	56	60	57	638	1,543,648	552	52	18	527	1,326,955	493	59	1	
26	56	68	57	648	1,544,259	611	52	17	535	1,327,492	537	74	1	
27	56	60	58	617	1,544,869	610	52	18	506	1,328,031	539	71	1	
28	12	9	58	621	1,545,531	662	52	18	530	1,328,600	569	93	1	
29	10	16	52	658	1,546,115	584	48	17	537	1,329,113	513	71	1	
30	10	16	57	633	1,546,667	552	51	17	536	1,329,567	454	98	1	
31	8	11	58	625	1,547,334	667	54	18	534	1,330,192	625	42	1	

April

Month	April	Year	2024		P Page 2 of 4 - PLANT PHYSICAL CHECKS								
	Raw *1		Distribution Loop *2										
	S	TR	Supply				Return						Duty HL
Day	PSI	PSI	PSI	Flow m³/d	Read m³	Total m³	PSI	0°F	Flow m³/d	Read m³	Total m³	Station Use m³	
1	9	12	55	678	1,547,958	624	48	18	536	1330736	544	80	1
2	56	60	56	615	1,548,570	612	52	18	538	1331261	525	87	1
3	10	16	65	685	1,549,186	616	59	18	544	1331799	538	78	2
4	14	20	67	647	1,549,804	618	62	18	538	1332339	540	78	2
5	56	60	62	689	1,550,473	669	57	17	541	1332898	559	110	2
6	14	20	62	680	1,551,187	714	57	17	539	1333513	615	99	2
7	14	20	64	676	1,551,811	624	58	16	540	1,334,044	531	93	2
8	56	60	66	645	1,552,349	538	61	17	543	1,334,513	469	69	2
9	56	60	54	612	1,552,975	626	49	17	482	1,335,053	540	86	1
10	56	60	53	609	1,553,570	595	48	17	510	1,335,559	506	89	1
11	54	60	55	585	1,554,189	619	50	17	510	1,336,088	529	90	3
12	11	16	56	574	1,554,801	612	51	17	500	1,336,614	526	86	3
13	12	16	52	620	1,555,356	555	48	17	465	1,337,096	482	73	3
14	12	16	55	594	1,555,962	606	50	17	470	1,337,617	521	85	3
15	11	14	59	626	1,556,556	594	54	16	538	1,338,122	505	89	1
16	11	17	53	685	1,557,177	621	46	17	576	1,338,656	534	87	1
17	11	15	55	637	1,557,817	640	48	17	524	1,339,204	548	92	1
18	11	15	56	624	1,558,455	638	50	17	534	1,339,748	544	94	1
19	12	15	55	652	1,559,074	619	50	17	531	1,340,276	528	91	1
20	11	16	57	643	1,559,687	613	51	168	557	1,340,809	533	80	1
21	12	16	54	647	1,560,291	604	49	17	532	1,341,334	525	79	1
22	12	16	59	606	1,560,955	664	54	17	447	1,341,892	558	106	2
23	12	15	65	667	1,561,621	666	61	17	583	1,342,462	570	96	2
24	12	15	60	732	1,562,306	685	55	17	560	1,343,050	588	97	2
25					1,562,940	634				1,343,645	595	39	
26					1,563,574	634				1,344,230	585	49	
27					1,564,208	634				1,344,825	595	39	
28					1,564,842	634				1,345,420	595	39	
29					1,565,476	634				1,346,015	595	39	
30					1,566,112	636				1,346,622	607	29	

May

Month	May	Year	2024		P Page 2 of 4 - PLANT PHYSICAL CHECKS											
	Raw #1		Distribution Loop #2													
	S	TR	Supply				Return					Station Use m³	Duty HL			
Day	PSI	PSI	PSI	Flow m³/d	Read m³	Total m³	PSI	0°F	Flow m³/d	Read m³	Total m³					
1	16	20	60	740	1,567,349	900	52	18	612	1347427	805	95	2			
2	56	60	61	736	1,568,080	731	54	18	618	1348078	651	80	2			
3	56	60	59	752	1,568,817	737	51	18	628	1348723	645	92	2			
4	56	60	59	746	1,569,666	849	51	18	663	1349459	736	113	2			
5	16	20	59	743	1,570,411	745	52	18	641	1350130	671	74	2			
6	10	16	54	594	1,570,952	541	49	18	500	1350612	482	59	2			
7	12	20	55	599	1,571,552	600	50	17	487	1,351,119	507	93	3			
8	56	60	54	607	1,572,145	593	49	17	480	1,351,613	494	99	3			
9	56	60	54	599	1,572,744	599	49	16	490	1,352,098	485	114	3			
10	56	60	55	579	1,573,342	598	51	17	493	1,352,615	517	81	3			
11	12	20	53	597	1,574,004	662	48	17	499	1,353,185	570	92	3			
12	56	60	54	593	1,574,601	597	49	17	502	1,353,699	514	83	3			
13	56	60	52	611	1,575,091	490	49	17	476	1,354,128	429	61	1			
14	14	20	58	623	1,575,750	659	52	17	538	1,354,683	555	104	1			
15	56	60	58	620	1,576,364	614	53	17	536	1,355,218	535	79	1			
16	56	60	56	648	1,576,991	627	51	17	535	1,355,758	540	87	1			
17	56	60	57	635	1,577,645	654	52	17	544	1,356,320	562	92	1			
18	56	60	54	649	1,578,378	733	49	17	537	1,356,943	623	110	1			
19	16	20	55	682	1,578,989	611	50	17	543	1,357,481	538	73	1			
20	56	60	55	650	1,579,625	636	49	18	547	1,358,039	558	78	1			
21	56	60	56	630	1,580,171	546	51	18	534	1,358,517	478	68	2			
22	56	60	57	755	1,580,918	747	49	18	644	1,359,180	663	84	2			
23	12	20	59	744	1,581,656	738	51	18	643	1,359,832	652	86	2			
24	12	20	57	768	1,582,428	772	49	18	650	1,360,510	678	94	2			
25	12	20	54	762	1,583,285	857	49	18	634	1,361,270	760	97	2			
26	56	60	57	757	1,584,048	763	50	18	618	1,361,942	672	91	2			
27	10	20	55	607	1,584,689	641	50	18	516	1,362,512	570	71	3			
28	56	60	54	597	1,585,280	591	49	18	519	1,363,028	516	75	3			
29	12	20	54	609	1,585,871	591	49	18	508	1,363,545	517	74	3			
30	12	20	54	592	1,586,463	592	49	18	508	1,364,059	514	78	3			
31	56	60	49	622	1,587,089	626	44	18	526	1,364,589	530	96	3			

June

Month	June	Year	2024		P Page 2 of 4 - PLANT PHYSICAL CHECKS											
	Raw *1		Distribution Loop *2													
	S	TR	Supply				Return					Station Use m ³	Duty HL			
Day	PSI	PSI	PSI	Flow m ³ /d	Read m ³	Total m ³	PSI	0 ^F	Flow m ³ /d	Read m ³	Total m ³					
1	12	20	54	590	1,587,762	673	50	177	498	1365162	573	100	3			
2	14	20	52	627	1,588,354	592	47	18	483	1365669	507	85	3			
3	56	60	54	598	1,588,858	504	49	18	501	1366102	433	71	3			
4	56	60	55	594	1,589,455	597	49	18	520	1366613	511	86	3			
5	11	16	55	580	1,590,019	564	49	18	520	1367097	484	80	3			
6	11	16	56	581	1,590,689	670	51	19	500	1367659	562	108	3			
7	11	16	54	582	1,591,307	618	49	19	499	1,368,193	534	84	3			
8	11	16	55	598	1,591,867	560	49	19	516	1,368,700	507	53	3			
9	11	16	55	586	1,592,461	594	49	19	504	1,369,235	535	59	3			
10	11	16	54	596	1,593,055	594	48	19	517	1,369,767	532	62	1			
11	11	16	55	592	1,593,634	579	50	20	518	1,370,283	516	63	1			
12	11	16	51	659	1,594,215	581	47	20	512	1,370,798	515	66	1			
13	11	17	54	617	1,594,818	603	49	19	511	1,371,328	530	73	1			
14	11	16	53	617	1,595,439	621	49	18	483	1,371,866	538	83	1			
15	12	16	54	582	1,595,968	529	49	17	499	1,372,327	461	68	1			
16	12	18	54	603	1,596,582	614	49	16	488	1,372,866	539	75	1			
17	12	16	53	616	1,597,182	600	50	15	524	1,373,383	517	83	1			
18	12	16	54	600	1,597,769	587	50	15	491	1,373,893	510	77	1			
19	12	16	53	612	1,598,344	575	48	15	501	1,374,391	498	77	1			
20	12	13	54	606	1,598,941	597	49	15	498	1,374,910	519	78	1			
21	12	16	55	589	1,599,547	606	49	15	522	1,375,441	531	75	1			
22	12	16	54	613	1,600,084	537	49	14	489	1,375,908	467	70	1			
23	12	16	54	602	1,600,723	639	54	14	502	1,376,462	554	85	1			
24	12	15	55	574	1,601,272	549	51	14	504	1,376,942	480	69	3			
25	12	16	55	585	1,601,852	580	55	14	597	1,377,445	503	77	3			
26													3			
27													3			
28													3			
29													3			
30													3			

July

Month	July	Year	2024		P Page 2 of 4 - PLANT PHYSICAL CHECKS								
	Raw *1		Distribution Loop *2										
	S	TR	Supply				Return					Station Use m ³	Duty HL
Day	PSI	PSI	PSI	Flow m ³ /d	Read m ³	Total m ³	PSI	0 ^F	Flow m ³ /d	Read m ³	Total m ³		
1	5	14	52	613	1,605,368	592	47	13	513	1380470	498	94	3
2	14	17	55	586	1,605,998	630	50	13	512	1381006	536	94	3
3			52	611	1,606,622	624	49	13	503	1381537	531	93	3
4	12	16	53	600	1,607,201	579	49	13	508	1382030	493	86	3
5	15	20	50	641	1,607,812	611	45	13	516	1382543	513	98	3
6	56	60	54	600	1,608,502	690	49	15	504	1383132	589	101	3
7	14	20	49	638	1,609,085	583	45	16	486	1,383,626	494	89	3
8	56	60	51	622	1,609,572	487	47	15	518	1,384,062	436	51	3
9	14	20	52	650	1,610,191	619	47	15	435	1,384,566	504	115	3
10	14	20	55	601	1,610,795	604	49	15	530	1,385,077	511	93	3
11	56	60	53	611	1,611,394	599	49	14	516	1,385,592	515	84	3
12	15	20	52	628	1,611,996	602	47	14	507	1,386,101	509	93	3
13	56	60	53	604	1,612,694	698	49	14	479	1,386,697	596	102	3
14	12	20	54	597	1,613,296	602	49	14	490	1,387,201	504	98	3
15	12	20	54	595	1,613,788	492	49	14	523	1,387,627	426	66	3
16	12	20	54	597	1,614,386	598	48	14	500	1,388,130	503	95	3
17	14	20	53	621	1,614,987	601	48	14	503	1,388,630	500	101	3
18	56	60	54	598	1,615,601	614	50	14	493	1,389,135	505	109	3
19	14	20	52	614	1,616,202	601	48	14	483	1,389,630	495	106	3
20	56	60	52	611	1,616,834	632	48	13	481	1,390,145	515	117	3
21	14	20	52	627	1,617,495	661	47	13	507	1,390,678	533	128	3
22	14	20	52	636	1,618,009	514	47	13	482	1,391,109	431	83	1
23	14	20	56	642	1,618,653	644	50	13	541	1,391,637	528	116	1
24	14	20	58	623	1,619,278	625	52	13	535	1,392,178	541	84	1
25	56	60	57	627	1,619,941	663	52	14	533	1,392,719	541	122	1
26	14	20	56	642	1,620,591	650	50	14	532	1,393,251	532	118	1
27	14	20	56	653	1,621,320	729	51	15	524	1,393,863	612	117	1
28	14	20	56	612	1,621,967	647	53	16	532	1,394,397	534	113	1
29	14	20	58	664	1,622,728	761	48	15	533	1,395,026	629	132	1
30	14	20	53	640	1,623,157	429	50	14	528	1,395,388	362	67	2
31	14	20	55	642	1,623,804	647	52	14	513	1,395,925	537	110	2

August

Month	August	Year	2024	P Page 2 of 4 - PLANT PHYSICAL CHECKS											
	Raw #1		Distribution Loop #2												
	S	TR	Supply				Return								
Day	PSI	PSI	PSI	Flow m³/d	Read m³	Total m³	PSI	0°F	Flow m³/d	Read m³	Total m³	Station Use m³	Duty HL		
1	14	20	55	685	1,624,513	709	50	14	519	1396509	584	125	1		
2	56	60	57	636	1,625,126	613	51	14	519	1397010	501	112	1		
3	14	20	56	642	1,625,846	720	51	15	515	1397600	590	130	1		
4	14	20	55	642	1,626,492	646	50	15	513	1398129	529	117	1		
5	56	60	53	659	1,627,143	651	48	15	525	1398655	526	125	1		
6	56	60	55	647	1,627,685	542	50	15	519	1399106	451	91	3		
7	14	20	52	600	1,628,289	604	48	15	489	1,399,599	493	111	3		
8	14	20	54	583	1,628,887	598	49	16	501	1,400,090	491	107	3		
9	14	20	52	608	1,629,507	620	49	15	486	1,400,599	509	111	3		
10	56	60	51	620	1,630,172	665	46	14	472	1,401,144	545	120	3		
11	14	20	53	598	1,630,773	601	48	15	486	1,401,634	490	111	3		
12	14	20	54	583	1,631,269	496	50	15	504	1,402,054	420	76	3		
13	14	20	50	631	1,631,869	600	45	16	515	1,402,554	500	100	3		
14	56	60	52	601	1,632,487	618	48	15	490	1,403,048	494	124	3		
15	56	60	53	596	1,633,076	589	48	15	495	1,403,546	498	91	3		
16	12	20	52	608	1,633,678	602	48	16	488	1,404,046	500	102	3		
17	56	60	53	605	1,634,358	680	48	16	487	1,404,609	563	117	3		
18	56	60	50	638	1,634,966	608	45	16	475	1,405,113	504	104	3		
19	56	60	51	615	1,635,658	692	49	17	491	1,405,684	571	121	3		
20	56	60	55	578	1,636,070	412	50	17	510	1,406,034	350	62	3		
21	56	60	52	622	1,636,669	599	47	17	498	1,406,533	499	100	3		
22	56	60	50	624	1,637,272	603	47	17	479	1,407,030	497	106	3		
23	56	60	51	619	1,637,874	602	48	17	481	1,407,540	510	92	3		
24	56	60	50	626	1,638,567	693	46	17	470	1,408,099	559	134	3		
25	14	20	52	615	1,639,170	603	47	17	485	1,408,605	506	97	3		
26	56	60	54	587	1,639,666	496	49	18	504	1,409,027	422	74	1		
27	56	60	51	615	1,640,263	597	47	18	485	1,409,525	498	99	3		
28	56	60	54	588	1,640,860	597	49	18	504	1,410,022	497	100	3		
29	d DW Operator at site														
30															
31															

September

Month	September	Year	2024		P Page 2 of 4 - PLANT PHYSICAL CHECKS											
	Raw #1			Distribution Loop #2												
	S	TR	Supply				Return									
Day	PSI	PSI	PSI	Flow m³/d	Read m³	Total m³	PSI	0°F	Flow m³/d	Read m³	Total m³	Station Use m³	Duty HL			
1	d DW Operator at site															
2	d DW Operator at site															
3	d DW Operator at site															
4	d DW Operator at site															
5	d DW Operator at site															
6	d DW Operator at site															
7	d DW Operator at site															
8	d DW Operator at site												3			
9	d DW Operator at site												2			
10	d DW Operator at site												2			
11	d DW Operator at site												2			
12	d DW Operator at site															
13	23	22	56	649	1,650,543	585	52	12	516	1,418,128	494	91	1			
14	12	13	55	657	1,651,150	607	44	16	539	1,418,636	508	99	1			
15	12	13	56	657	1,651,810	660	49	16	506	1,419,194	558	102	1			
16	11	11	51	637	1,652,451	641	46	17	520	1,419,724	530	111	1			
17	8	8	50	639	1,653,029	578	46	17	483	1,420,230	506	72	1			
18	8	9	49	476	1,653,525	496	49	17	403	1,420,591	361	135	2			
19	9	8	51	474	1,654,015	490	47	17	475	1,420,976	385	105	2			
20	5	8	49	482	1,654,464	449	50	17	345	1,421,353	377	72	2			
21	8	7	54	487	1,655,012	548	48	16	456	1,421,766	413	135	2			
22	7	7	52	648	1,655,464	452	47	16	511	1,422,127	361	91	2			
23	12	12	55	591	1,656,088	624	50	16	492	1,422,647	520	104	2			
24	12	16	54	668	1,656,686	598	48	16	553	1,423,156	509	89	2			
25	12	17	55	659	1,657,331	645	50	16	542	1,423,708	552	93	1			
26	12	18	53	623	1,657,927	596	48	16	499	1,424,217	509	87	1			
27	14	16	53	610	1,658,573	646	48	16	507	1,424,766	549	97	1			
28	12	16	51	633	1,659,176	603	46	15	484	1,425,260	494	109				
29	14	16	54	599	1,659,764	588	49	15	488	1,425,744	484	104				
30	10	16	52	623	1,660,355	591	47	14	477	1,426,224	480	111				

October

Month	Oct.	Year	2024		P Page 2 of 4 - PLANT PHYSICAL CHECKS											
	Raw #1		Distribution Loop #2													
	S	TR	Supply				Return					Station Use m³	Duty HL			
Day	PSI	PSI	PSI	Flow m³/d	Read m³	Total m³	PSI	0°F	Flow m³/d	Read m³	Total m³					
1	11	16	54	621	1,661,002	647	49	14	535	1426755	531	116	1			
2	11	16	54	609	1,661,672	670	48	14	543	1427369	614	56	1			
3	8	17	58	684	1,662,316	644	50	14	520	1427839	470	174	1			
4	12	17	53	635	1,663,005	689	55	14	518	1428404	565	124	1			
5	12	18	50	483	1,663,466	461	53	14	357	1428765	361	100	2			
6	12	17	53	488	1,663,971	505	51	14	448	1429156	391	114	2			
7	12	17	52	492	1,664,433	462	53	14	470	1,429,506	350	112	2			
8	48	34	42	481	1,664,924	491	50	15	477	1,429,902	396	95	2			
9	12	11	54	480	1,665,401	477	49	15	302	1,430,291	389	88	2			
10	9	15	42	484	1,665,904	503	51	15	264	1,430,690	399	104	2			
11	12	17	52	494	1,666,368	464	50	15	301	1,431,059	369	95	2			
12	12	17	53	482	1,666,911	543	54	15	312	1,431,482	423	120	2			
13	12	18	53	491	1,667,382	471	49	16	341	1,431,858	376	95	2			
14	12	17	54	490	1,667,866	484	49	16	496	1,432,249	391	93	3			
15	8	10	53	611	1,668,450	584	49	15	507	1,432,737	488	96	3			
16	8	13	53	630	1,669,099	649	48	15	491	1,433,272	535	114	3			
17	12	17	54	601	1,669,696	597	49	15	511	1,433,769	497	100	3			
18	10	16	54	604	1,670,310	614	49	15	507	1,434,277	508	106	3			
19	12	17	54	607	1,670,937	627	49	15	506	1,434,809	532	95	3			
20	12	17	52	630	1,671,548	611	47	15	494	1,435,325	516	95	3			
21	12	17	57	630	1,672,096	548	50	15	525	1,435,787	462	86	1			
22	9	15	58	623	1,672,759	663	52	15	521	1,436,342	555	108	1			
23	10	16	57	631	1,673,395	636	52	15	541	1,436,877	535	101	1			
24	35	34	53	658	1,674,015	620	47	15	536	1,437,405	528	92	1			
25	14	20	55	661	1,674,642	627	50	14	505	1,437,929	524	103	1			
26	14	20	54	651	1,675,377	735	49	13	522	1,438,517	588	147	1			
27	14	20	57	651	1,676,003	626	51	11	534	1,439,040	523	103	1			
28	14	20	55	649	1,676,559	556	49	12	540	1,439,498	458	98	1			
29	14	20	56	634	1,677,199	640	51	13	529	1,440,031	533	107	1			
30	56	60	54	655	1,677,830	631	49	13	536	1,440,560	529	102	1			
31	10	14	55	653	1,678,478	648	50	14	535	1,441,096	536	112	1			

November

Month	NOV	Year	2024		P Page 2 of 4 - PLANT PHYSICAL CHECKS									
	Raw *1		Distribution Loop *2											
	S	TR	Supply				Return					Sation Use m3	Duty HL	
Day	PSI	PSI	PSI	Flow m³/d	Read m³	Total m³	PSI	0°F	Flow m³/d	Read m³	Total m³			
1	12	21	53	680	1,679,135	717	47	15	533	1441642	546	171	1	
2	10	20	54	662	1,679,856	721	49	14	515	1442238	596	125	1	
3	10	20	54	684	1,680,518	662	47	15	503	1442787	549	113	1	
4	4	10	51	690	1,681,053	535	46	15	531	1443233	446	89	1	
5	12	16	55	655	1,681,692	639	50	15	526	1443751	518	121	2	
6	12	16	54	663	1,682,348	656	50	15	537	1444303	552	104	2	
7	12	16	54	663	1,682,987	639	49	15	522	1,444,814	511	128	2	
8	12	16	54	663	1,683,653	666	49	14	503	1,445,351	537	129	2	
9	14	20	53	631	1,684,385	732	52	14	503	1,445,945	594	138	2	
10	14	20	57	621	1,685,020	635	53	13	517	1,446,466	521	114	2	
11	14	20	58	650	1,685,632	612	50	13	578	1,446,967	501	111	2	
12	14	20	55	656	1,686,202	570	50	14	540	1,447,438	471	99	2	
13	14	20	55	489	1,686,705	503	49	13	321	1,447,804	366	137	2	
14	34	30	55	492	1,687,201	496	46	12	360	1,448,190	386	110	2	
15	14	20	53	494	1,687,709	508	46	13	323	1,448,577	387	121	2	
16	54	60	53	488	1,688,261	552	47	13	312	1,449,013	436	116	2	
17	14	20	52	496	1,688,748	487	50	13	440	1,449,412	399	88	2	
18	12	20	51	499	1,689,170	422	50	14	335	1,449,750	338	84	2	
19	12	20	52	622	1,689,776	606	47	14	484	1,450,241	491	115	3	
20	12	20	51	641	1,690,386	610	46	14	480	1,450,734	493	117	3	
21					1,691,003	617				1,451,221	487	130	3	
22	12	20	51	628	1,691,635	632	46	14	498	1,451,743	522	110	3	
23	54	60	54	602	1,692,312	677	50	13	471	1,452,296	553	124	3	
24	54	60	55	608	1,692,899	587	50	13	487	1,452,783	487	100	3	
25	30	34	55	587	1,693,401	502	50	13	491	1,453,201	418	84	1	
26	30	34	54	666	1,694,045	644	49	13	559	1,453,712	511	133	1	
27	12	16	57	641	1,694,712	667	51	13	537	1,454,268	556	111	1	
28	12	16	57	643	1,695,366	654	51	13	536	1,454,812	544	110	1	
29	12	16	52	686	1,696,037	671	46	13	540	1,455,361	549	122	1	
30	12	26	56	655	1,696,754	717	50	13	530	1,455,965	604	113	1	
31														

December

Month	Dec	Year	2024		P Page 2 of 4 - PLANT PHYSICAL CHECKS									
	Raw *1		Distribution Loop *2											
	S	TR	Supply				Return					Station Use m³	Duty HL	
Day	PSI	PSI	PSI	Flow m³/d	Read m³	Total m³	PSI	0°F	Flow m³/d	Read m³	Total m³			
1	14	20	53	675	1,697,426		48	13	542	1,456,529			1	
2	14	20	53	649	1,697,966	540	48	14	539	1,456,992	463	77	2	
3	10	15	50	493	1,698,527	561	47	13	467	1,457,438	446	115	2	
4	10	16	52	497	1,699,026	499	46	12	475	1,457,848	410	89	2	
5	10	16	51	504	1,699,522	496	49	12	415	1,458,254	406	90	2	
6	54	59	52	500	1,700,031	509	50	12	423	1,458,665	411	98	2	
7	8	14	53	500	1,700,586	555	48	13	446	1,459,113	448	107	2	
8	45	56	51	500	1,701,080	494	50	14	449	1,459,519	406	88	2	
9	8	13	53	504	1,701,514	434	49	14	474	1,459,874	355	79	3	
10	54	58	55	597	1,702,116	602	50	14	493	1,460,382	508	94	3	
11	11	16	53	617	1,702,693	577	48	14	489	1,460,865	483	94	3	
12	10	15	55	586	1,703,361	668	51	15	486	1,461,417	552	116	3	
13	11	16	52	630	1,703,968	607	47	15	483	1,461,914	497	110	3	
14	54	60	55	594	1,704,586	618	50	15	499	1,462,432	518	100	3	
15	11	16	51	635	1,705,247	661	47	15	479	1,462,981	549	112	3	
16	12	17	54	677	1,705,749	502	49	14	509	1,463,337	356	146	1	
17	10	17	53	679	1,706,412	663	49	14	496	1,463,854	517	146	1	
18	11	17	55	660	1,707,057	645	49	13	510	1,464,359	505	140	1	
19	54	60	56	648	1,707,739	682	51	13	516	1,464,894	535	147	1	
20	11	17	56	648	1,708,384	645	51	13	528	1,465,411	517	128	1	
21	11	17	54	668	1,709,149	765	48	14	540	1,466,059	648	117	1	
22	11	17	54	657	1,709,662	513	49	15	538	1,466,499	440	73	1	
23	12	17	54	670	1,710,316	654	48	14	526	1,467,026	527	127	2	
24	11	16	51	494	1,710,824	508	47	14	416	1,467,411	385	123	2	
25	53	60	53	503	1,711,313	489	50	14	462	1,467,783	372	117	2	
26	11	17	53	503	1,711,811	498	50	14	453	1,468,165	382	116	2	
27	11	17	53	501	1,712,310	499	50	14	452	1,468,541	376	123	2	
28	13	17	53	504	1,712,867	557	47	15	481	1,468,994	453	104	2	
29	12	17	53	503	1,713,372	505	49	16	483	1,469,398	404	101	2	
30	11	17	54	500	1,713,810	438	47	16	487	1,469,757	359	79	1	
31	12	17	55	648	1,714,426	616	49	16	530	1,470,214	457	159	1	

Appendix B

Monitoring Program Station No. ALT-2 & ALT 3

Year: 2024

Month: June, July, August and September

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:

Client Sample ID				ALT-2	ALT-2	ALT-2	ALT-3	ALT-3	ALT-2	ALT-3	ALT-2 Lower Terrace	ALT-3 Upper Terrace	ALT-2	ALT-3	ALT-2	ALT-3	ALT-2	ALT-3	ALT-2	ALT-3
Date Sampled				21-Jun-2024	24-Jun-2024	24-Jun-2024	24-Jun-2024	25-Jun-2024	17-Jul-2024	17-Jul-2024	17-Jul-2024	17-Jul-2024	13-Aug-2024	13-Aug-2024	30-Aug-2024	30-Aug-2024	04-Sep-2024	04-Sep-2024	10-Sep-2024	10-Sep-2024
Analyte	Low est Detection Limit	Units	Criteria	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water
Physical Tests (Matrix: Water)																				
Conductivity	2.0	µS/cm		616	528	481	472	476	563	589	569	458	563	549	469	416	440	566	511	517
Alkalinity, total (as CaCO ₃)	2.0	mg/L		219	206	188	163	162	197	211	615	164	191	197	163	149	149	187	190	186
Hardness (as CaCO ₃), from total Ca/Mg	0.50	mg/L		168	149	152	252	332	144	258	1220	141	110	125	114	230	118	219	123	
Solids, total suspended [TSS]	3.0	mg/L	70	241	65.0	74.0	134	424	72.8	634	2920	54.1	61.9	57.5	172	74.8	59.2	117	54.6	61.4
pH	0.10	pH units	6 to 9	7.53	7.56	7.58	7.87	7.85	7.39	7.16	7.31	7.67	7.48	7.58	7.20	7.44	7.15	7.56	7.41	7.50
Anions and Nutrients (Matrix: Water)																				
Ammonia, total (as N)	0.0050	mg/L		14.9	12.4	9.59	8.10	8.10	13.3	8.67	9.22	6.83	11.8	11.7	9.32	6.28	7.62	10.3	14.3	11.0
Chloride	0.50	mg/L		45.9	30.8	27.2	38.6	41.0	29.8	54.3	43.5	20.7	33.1	44.8	30.0	29.9	36.5	52.0	27.0	35.0
Nitrate (as N)	0.020	mg/L		<0.020	<0.020	<0.020	0.193	0.079	<0.020	<0.020	<0.020	0.022	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	0.028
Nitrite (as N)	0.010	mg/L		0.224	<0.010	<0.010	0.048	0.050	0.012	0.016	<0.010	0.012	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Sulfate (as SO ₄)	0.30	mg/L		7.06	5.93	6.27	5.80	5.95	7.34	5.45	4.96	5.45	10.6	9.90	7.79	6.27	5.02	7.93	8.46	7.59
Organic / Inorganic Carbon (Matrix: Water)																				
Carbon, total organic [TOC]	0.50	mg/L		117	36.8	41.3	20.9	32.8	47.4	72.8	78.8	40.3	37.4	44.7	61.6	63.6	61.1	57.0	39.9	32.8
Microbiological Tests (Matrix: Water)																				
Coliforms, thermotolerant [fecal]	1	CFU/100mL		330000	100000	310000	260000	85000	2700000	1800000	640000	62000	150000	130000	300000	35000	160000	81000		
Total Metals (Matrix: Water)																				
Aluminum, total	0.0030	mg/L		0.337	0.262	0.193	6.63	11.0	0.172	4.92	37.0	0.168	0.0970	0.270	0.102	3.71	0.194	3.10	0.0799	
Arsenic, total	0.00010	mg/L		0.00461	0.00359	0.00366	0.0112	0.0148	0.00231	0.00974	0.0449	0.00113	0.00063	0.00169	0.00065	0.00566	0.00079	0.00555	0.00094	
Cadmium, total	0.0000050	mg/L		0.000113	0.0000902	0.0000448	0.0000983	0.000134	0.0000467	0.000112	0.000715	0.0000710	0.0000485	0.0000475	0.000105	0.000241	0.000190	0.000195	0.000534	
Calcium, total	0.050	mg/L		53.2	47.1	47.8	74.7	97.8	45.8	80.2	377	44.9	34.5	38.6	35.4	70.2	36.4	66.4	39.2	
Chromium, total	0.00050	mg/L		0.00150	0.00092	0.00074	0.0127	0.0188	0.00073	0.00968	0.0723	0.00099	0.00054	0.00110	0.00083	0.00869	0.00128	0.00721	<0.00050	
Copper, total	0.00050	mg/L		0.259	0.131	0.116	0.0804	0.101	0.143	0.137	0.620	0.117	0.112	0.124	0.142	0.498	0.186	0.368	0.139	
Iron, total	0.010	mg/L		1.71	1.87	1.64	12.8	19.7	1.72	11.3	81.9	0.782	0.449	1.20	0.397	9.01	0.693	7.74	0.421	
Lead, total	0.050	µg/L		2.75	1.28	1.11	8.34	13.6	1.04	7.80	69.7	1.42	1.11	1.53	1.15	8.56	2.49	8.55	0.710	
Magnesium, total	0.0050	mg/L		8.66	7.64	7.92	16.0	21.3	7.18	14.0	68.7	6.92	5.81	6.86	6.28	13.4	6.57	13.0	6.21	
Mercury, total	0.0000050	mg/L		<0.0000500	<0.0000500	<0.0000500	<0.0000500	<0.0000500	<0.0000500	<0.0000500	<0.0000500	0.0000059	0.0000053	0.0000052	0.0000100	<0.0000500	0.0000061	0.0000095	0.0000058	
Nickel, total	0.00050	mg/L		0.0109	0.0123	0.00774	0.0358	0.0482	0.00484	0.0296	0.156	0.00228	0.00156	0.00535	0.00175	0.0182	0.00294	0.0179	0.00223	
Potassium, total	0.050	mg/L		12.5	7.80	7.04	6.73	7.16	8.58	8.87	8.89	7.13	8.17	7.85	6.92	6.12	6.13	9.44	9.08	
Silver, total	0.000010	mg/L		0.000139	0.000040	0.000036	0.000057	0.000085	0.000031	<0.000100	0.000503	0.000025	0.000032	0.000046	0.000038	0.000191	0.000285	0.000208	0.000022	
Sodium, total	0.050	mg/L		45.8	23.2	21.8	31.9	33.5	23.4	41.8	34.6	18.2	29.1	45.0	22.7	24.0	31.5	44.7	21.6	
Zinc, total	0.0030	mg/L		0.0627	0.0313	0.0242	0.0431	0.0599	0.0336	0.0486	0.287	0.0370	0.0607	0.0474	0.0406	0.108	0.0699	0.0919	0.0403	
Aggregate Organics (Matrix: Water)																				
Biochemical oxygen demand [BOD]	2.0	mg/L	80	102	48.3	41.7	13.0	15.4	49.6	87.0	189	50.1	46.7	50.6	108	33.7	82.7	49.0	285	34.6
Oil & grease (gravimetric)	5.0	mg/L		82.8	11.0	14.8	<5.0	5.4	14.4	30.0	9.1	8.2	10.0	14.6	41.8	25.0	25.1	48.4	20.4	13.8
Oil & grease, animal/vegetable (gravimetric)	5.0	mg/L	5 (no sheen)	82.8	11.0	14.8	<5.0	5.4	14.4	30.0	9.1	8.2	10.0	14.6	41.8	25.0	25.1	48.4	20.4	13.8
Oil & grease, mineral (gravimetric)	5.0	mg/L		<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Phenols, total (4AAP)	0.0010	mg/L		0.0267	0.0174	0.0127	0.0055	0.0063	0.0171	0.0108	0.0103	0.0085	0.0124	0.0124	0.0215	0.0484	0.0295	0.0144	0.0568	0.0141

- Oil and Grease parameters exceed the maximum allowable concentrations at ALT-2 and once for ALT-3 for Oil and Grease.
- TSS exceeded the Licence parameters of 70mg/L.
- The analytical certificates detailing the 2024 performance of the Alert Sewage Terrace System is included in this Appendix (B).

Appendix C

Monitoring Program Stations No. ALT-4-5-6-7

Year: 2024

Description: Runoff and Leachate.

Results:

June (Runoff Season)

Analytical Results for ALT-4, 5,6 and 7 are summarized below and attached in Appendix E and Appendix F.

Sample ID			ALT-4	ALT-5	ALT-6	ALT-7
Date Sampled			25-Jun-2024	20-Jun-2024	20-Jun-2024	20-Jun-2024
Analyte	Low est Detection Limit	Units	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water	Sub-Matrix: Water
Physical Tests (Matrix: Water)						
Conductivity	2.0	µS/cm	319	99.0	358	151
Alkalinity, total (as CaCO3)	2.0	mg/L	85.1	34.3	72.0	43.4
Hardness (as CaCO3), from total Ca/Mg	0.50	mg/L	152	45.1	112	107
Solids, total suspended [TSS]	3.0	mg/L	131	19.2	50.8	9.0
pH	0.10	pH units	7.99	7.62	8.11	7.69
Anions and Nutrients (Matrix: Water)						
Ammonia, total (as N)	0.0050	mg/L	0.0304	0.0140	<0.0050	0.0324
Nitrate (as N)	0.020	mg/L	0.943	0.036	<0.020	0.060
Nitrite (as N)	0.010	mg/L	0.012	<0.010	<0.010	<0.010
Sulfate (as SO4)	0.30	mg/L	25.8	5.97	47.8	17.8
Organic / Inorganic Carbon (Matrix: Water)						
Carbon, total organic [TOC]	0.50	mg/L	2.87	1.22	2.50	3.46
Total Metals (Matrix: Water)						
Aluminum, total	0.0030	mg/L	2.07	2.12	0.546	0.310
Arsenic, total	0.00010	mg/L	0.00527	0.00262	0.00206	0.00044
Cadmium, total	0.0000050	mg/L	0.0000340	0.0000107	0.0000124	0.0000142
Calcium, total	0.050	mg/L	42.5	12.7	27.3	23.0
Chromium, total	0.00050	mg/L	0.00423	0.00382	0.00114	0.00083
Copper, total	0.00050	mg/L	0.00791	0.00663	0.00350	0.00164
Iron, total	0.010	mg/L	3.53	3.26	0.679	0.506
Lead, total	0.050	µg/L	3.84	2.30	0.988	0.574
Magnesium, total	0.0050	mg/L	11.1	3.26	10.7	12.0
Mercury, total	0.0000050	mg/L	<0.0000050	0.0000328	<0.0000050	0.0000082
Nickel, total	0.00050	mg/L	0.0111	0.00881	0.00335	0.00162
Potassium, total	0.050	mg/L	3.47	4.36	6.43	0.948
Silver, total	0.000010	mg/L	0.000019	0.000011	0.000015	<0.000010
Sodium, total	0.050	mg/L	13.2	4.01	27.8	13.3
Zinc, total	0.0030	mg/L	0.0227	0.0186	0.0058	<0.0030
Aggregate Organics (Matrix: Water)						
Oil & grease (gravimetric)	5.0	mg/L	<5.0	<5.0	<5.0	<5.0
Oil & grease, animal/vegetable (gravimetric)	5.0	mg/L	<5.0	<5.0	<5.0	<5.0
Oil & grease, mineral (gravimetric)	5.0	mg/L	<5.0	<5.0	<5.0	<5.0
Phenols, total (4AAP)	0.0010	mg/L	<0.0010	0.0017	<0.0010	<0.0010

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 2024. Unfortunately, there was no water to sample at ALT- 5,6 and 7 for analytical results. Analytical Results for ALT-4, are summarized below and attached in Appendix E and Appendix F.

Sample ID			ALT-4 JULY
Date Sampled			17-Jul-2024
Analyte	Lowest Detection Limit	Units	Sub-Matrix: Water
Physical Tests (Matrix: Water)			
Conductivity	2.0	µS/cm	276
Alkalinity, total (as CaCO ₃)	2.0	mg/L	112
Hardness (as CaCO ₃), from total Ca/Mg	0.50	mg/L	176
Solids, total suspended [TSS]	3.0	mg/L	287
pH	0.10	pH units	8.19
Anions and Nutrients (Matrix: Water)			
Ammonia, total (as N)	0.0050	mg/L	0.0119
Nitrate (as N)	0.020	mg/L	0.494
Nitrite (as N)	0.010	mg/L	<0.010
Sulfate (as SO ₄)	0.30	mg/L	14.6
Organic / Inorganic Carbon (Matrix: Water)			
Carbon, total organic [TOC]	0.50	mg/L	4.32
Total Metals (Matrix: Water)			
Aluminum, total	0.0030	mg/L	7.85
Arsenic, total	0.00010	mg/L	0.0153
Cadmium, total	0.0000050	mg/L	0.000100
Calcium, total	0.050	mg/L	47.5
Chromium, total	0.00050	mg/L	0.0147
Copper, total	0.00050	mg/L	0.0282
Iron, total	0.010	mg/L	13.2
Lead, total	0.050	µg/L	14.2
Magnesium, total	0.0050	mg/L	14.0
Mercury, total	0.0000050	mg/L	<0.0000050
Nickel, total	0.00050	mg/L	0.0390
Potassium, total	0.050	mg/L	3.28
Silver, total	0.000010	mg/L	<0.000100
Sodium, total	0.050	mg/L	8.07
Zinc, total	0.0030	mg/L	0.0858
Aggregate Organics (Matrix: Water)			
Oil & grease (gravimetric)	5.0	mg/L	<5.0
Oil & grease, animal/vegetable (gravimetric)	5.0	mg/L	<5.0
Oil & grease, mineral (gravimetric)	5.0	mg/L	<5.0
Phenols, total (4AAP)	0.0010	mg/L	<0.0010

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 2024 as the sampling stations were frozen over and free from any standing or flowing water.

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 2024 as the sampling stations were frozen over and free from any standing or flowing water.

Appendix D

Monitoring Program Stations No. ALT-8-9-10-11

Year: 2024

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 2024. 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 30 June 2023 and analyzed; analytical results are summarized below and 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.

ALT-8 had one exceedance of Lead. No water was discharged from this location.

In June 2023, analytical results (Appendix E) of the berm water results at the Lower Airfield Tank Farm (ALT- 8.1), Upper Tank Farm (ALT-9), and the Day Tank (Dry) (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-11 and ALT-12.

Notes (extra spaces removed):

From: Monteith, Joseph (he) <joseph.monteith@rcaanc-cirnac.gc.ca>

Sent: August 12, 2024 12:01 PM

To: Koutroulides NG@CFB Trenton WENV@Trenton
<NATHAN.KOUTROULIDES@forces.gc.ca>

Cc: Fraser, Jeremy <jeremy.fraser@rcaanc-cirnac.gc.ca>; Pasalic, Omer
<omer.pasalic@rcaanc-cirnac.gc.ca>

Subject: RE: ALERT Water Licence: July 2024 Results

Hello,

Apologies, I had a problem with finding your original request with the Effluent Quality Limits results, and need to measure sample results with Water License requirements. I've reviewed both sample results now(metals and effluent), and they both are within the Effluent Quality Limits. Just to clarify with my supervisors. You took sample results, lead was not up to specifications outlined in your water license. You did a metals sample

to cover the lead sampling requirement. Once the lead was up to specification, you requested authorization to decant. I couldn't find your original sample results, and which I was trying to review again to ensure compliance.

Now, that we have both sample results, I am confident that you can decant as per your Effluent Quality limits outlined in Part E:subsection 4 of your water license 8AC-ALT1929.

If you have further questions, concerns, don't hesitate to reply, or call. Sometimes our office might be vacant out in the field or on holidays for the summer. So, we might not be able to review and provide you with a quick measure of your decant request. Thank you for your patience, and understanding.

Regards,

JM

Joseph Monteith
Resource Management Officer
Qikiqtani Region
Crown-Indigenous Relations
And Northern Affairs Canada
P.O. Box 2200
Iqaluit, NU
X0A 3H0
Ph: 867 975-4289
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Crown-Indigenous Relations
and Northern Affairs Canada

Relations Couronne-Autochtones
et Affaires du Nord Canada

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Appendix E

Analytical Results for June/July ALT-2-3-4-5-6-7-8-9-10-11-12

Year: 2024

Description: Analytical Results for June/July 2024 attached as separate PDF.

Appendix F

Analytical Results for August/September ALT-2-3-4-5-6-7-8-9-10-11-12

Year: 2024

Description: Analytical Results for August/September 2024 attached as separate PDF.

Appendix G

List of Waste Disposal Activities

Year: 2024

Reference: 8AC-ALT1929

Monthly Waste Incineration at CFS Alert - 8AC-ALT1929					
Year [yr]	Month [mo]	Incineration Days per Month [day]	Loose waste Incinerated [lbs]	Liquid Waste Incinerated [Liters]	Loose Waste Incinerated (Main Station Landfill)* [lbs]
2024	JAN	10	8000	0	1600
2024	FEB	11	8800	0	1760
2024	MAR	8	6700	0	1340
2024	APR	9	7200	0	1440
2024	MAY	9	5827	0	1165
2024	JUN	9	8627	0	1725
2024	JUL	14	10115	965	2023
2024	AUG	8	5993	0	1199
2024	SEP	14	10993	0	2199
2024	OCT	12	7500	360	1510
2024	NOV	8	5300	180	1060
2024	DEC	8	4300	6	860
Annual Average [lbs/L/mo]:			7446	126	1490
Observed Minimum [Lbs/L/mo]:			4300	0	860
Observed Maximum [Lbs/L/mo]:			10993	965	2199

*Calculations are based on 80% reduction by volume through incineration

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 2024.

-Millionaire's dump was also recapped and the south-east side of landfill as per CIRNAC Inspectors direction in July 2024.

Battery Dump:

-No wastes were deposited at this site; no waste deposition is allowed at this site. The battery dump was successfully recapped in September 2022.

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 farm) is currently at capacity. No new material was added to this location in 2024.

ALT 12 (Day tank)

- ALT -12 (Day Tank Land Farm) is currently at capacity. The land farm was then treated and turned in fall 2024. Future sampling will be conducted and monitored as the remediation process continues.

The Temporary Land Farm planned to be constructed in 2023 was completed.

Hazardous Waste Backhauled from CFS Alert in 2024:

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

Please see copies of waste backhauled in 2024:

13. TYPE GENRE CODE	14. TCN / PID NCT / IDP	DTA ATD	15. DESCRIPTION OF ARTICLES / DANGEROUS GOODS AND NET QUANTITY DESCRIPTION DES ARTICLES / MATIERES DANGEREUSES ET QUANTITE NETTE	16. GROSS WEIGHT POIDS BRUT		17. CUBE VOLUME	
				LBS	KG	CU FT/PI CU	M3
OTH	AL4099WJ001 001	08	CGR FIRE EXTINGUISHER	345	156.5	58.869	1.6670
OTH	AL4099WJ001 002	08	CGR FIRE EXTINGUISHER	35	15.9	.964	.0273
CRT	AL4107WJ002 001	5G	CGR WASTE BATTERIES, NON SPILLABLE	390	176.9	16.626	.4708
PAL	AL4107WJ002 004	5G	CGR WASTE BATTERIES, WET FILLED WITH ACID	84	38.1	8.889	.2517
OTH	AL4107WJ003 001	08	CGR FIRE EXTINGUISHERS	305	138.3	8.666	.2454
CRT	AL4107WJ004 001	08	CGR AIR CYLINDERS (EMPTY)	205	93.0	8.723	.2470
PAL	AL4107WJ005 001	5G	CGR WASTE BATTERIES (NON RESTRICTED)	141	64.0	13.889	.3933
PAL	AL4107WJ005 002	5G	CGR WASTE BATTERIES (NON RESTRICTED)	84	38.1	13.896	.3935
OTH	AL4107WJ006 001	5G	CGR FIRE EXTINGUISHERS	370	167.8	13.038	.3692
PAL	AL4107WJ007 001	5G	CGR WASTE BATTERIES	161	73.0	6.667	.1888
CTN	AL4107WJ007 002	5G	CGR WASTE BATTERIES	60	27.2	1.003	.0284
CTN	AL4110WJ001 001	5G	CGR ISOPROPONOL	5	2.3	.516	.0146
CTN	AL4110WJ002 001	5G	CGR LITHIUM ION BATTERIES	22	10.0	.999	.0283
CTN	AL4110WJ003 001	5G	CGR FIRE EXTINGUISHERS	14	6.4	1.501	.0425
CTN	AL4110WJ004 001	QA	CGR FUEL SAMPLE	9	3.9	.470	.0133

13. TYPE GENRE CODE	14. TCN / PID NCT / IDP	DTA ATD	15. DESCRIPTION OF ARTICLES / DANGEROUS GOODS AND NET QUANTITY DESCRIPTION DES ARTICLES / MATIERES DANGEREUSES ET QUANTITE NETTE	16. GROSS WEIGHT POIDS BRUT		17. CUBE VOLUME	
				LBS	KG	CU FT/PI CU	M3
CTN	AL4096WJ001 001	QA	CGR FUEL SAMPLES	34	15.4	2.084	.0590
CTN	AL4096WJ002 001	02	CGR SODIUM HYDROXIDE SOLUTION	14	6.4	.999	.0283
CTN	AL4096WJ002 002	02	CGR SODIUM HYDROXIDE SOLUTION	14	6.4	1.003	.0284
PAL	AL4107WJ001 001	5G	CGR 3X GENERATORS	480	217.7	31.098	.8806
PAL	AL4107WJ001 002	5G	CGR 2X GENERATORS	305	138.3	19.441	.5505
CRT	AL4107WJ002 002	5G	CGR WASTE BATTERIES, NON SPILLABLE	940	426.4	19.158	.5425
CRT	AL4107WJ002 003	5G	CGR WASTE BATTERIES, NON SPILLABLE	1027	465.8	23.989	.6793
PAL	AL4107WJ002 005	5G	CGR WASTE BATTERIES, WET FILLED WITH ACID	994	450.9	19.165	.5427
CTN	AL4108WJ001 001	5G	CGR WASTE BATTERIES	2	.9	.124	.0035
CTN	AL4108WJ001 002	5G	CGR WASTE BATTERIES	8	3.6	.498	.0141
CTN	AL4108WJ001 003	5G	CGR WASTE BATTERIES	25	11.3	1.501	.0425
CTN	AL4108WJ001 004	5G	CGR WASTE BATTERIES	7	3.2	.519	.0147
CTN	AL4109WJ001 001	05	CGR DIESEL FUEL SAMPLE	30	13.6	2.221	.0629
CTN	AL4109WJ001 002	05	CGR DIESEL FUEL SAMPLE	15	6.8	1.624	.0460
CTN	AL4109WJ002 001	5G	CGR PHENOLPHTHALEIN INDICATOR	5	2.3	.572	.0162

13. TYPE GENRE CODE	14. TCN / PID NCT / IDP	DTA ATD	15. DESCRIPTION OF ARTICLES / DESCRIPTION DES ARTICLES	16. GROSS WEIGHT POIDS BRUT		17. CUBE VOLUME	
				LBS	KG	CU FT/PI CU	M3
ENV	AL4158MB001 001	5G	CGR UNIFORM PATCH		.1	.025	.0007
P/B	AL4159MB002 001	5G	CGR EMPTY FOOD PAUL BUNYAN	1360	616.9	151.665	4.2947
PKG	AL4162MB001 001	12	CGR PROPYLENE GLYCOL DE-ICING FLUID SAMPLE REF # 20240604_01 - 05	19	8.6	1.501	.0425
DTW	AL4162MB002 001	5G	CGR POP CANS	48	21.8	19.864	.5625
DTW	AL4162MB002 002	5G	CGR BEER	73	33.1	19.864	.5625
DTW	AL4162MB004 001	5G	CGR HAZMAT NONE CUMBUSTABLE NONE BURNABLE	158	71.7	19.871	.5627

13. TYPE GENRE CODE	14. TCN / PID NCT / IDP	DTA ATD	15. DESCRIPTION OF ARTICLES / DESCRIPTION DES ARTICLES	16. GROSS WEIGHT POIDS BRUT		17. CUBE VOLUME	
				LBS	KG	CU FT/PI CU	M3
TWL	AL4162MB003 001	5G	CGR SCRAP METAL	400	181.4	38.136	1.0799
DTW	AL4163MB001 001	5G	CGR HAZMAT NON COMBUSTABLE NON BURNABLE	80	36.3	19.871	.5627
PAL	AL4163MB002 001	5G	CGR CISCO NETWORK SERVERS	197	89.4	19.864	.5625
PAL	AL4166MB001 001	5G	CGR TIRES	618	280.3	63.725	1.8045

13. TYPE GENRE CODE	14. TCN / PID NCT / IDP	DTA ATD	15. DESCRIPTION OF ARTICLES / DESCRIPTION DES ARTICLES	16. GROSS WEIGHT POIDS BRUT		17. CUBE VOLUME	
				LBS	KG	CU FT/PI CU	M3
TWL	AL4172MB001 001	5G	CGR INCINERATION TOILET SET	153	69.4	25.052	.7094
DTW	AL4172MB002 001	5G	CGR SCRAP METAL	228	103.4	19.871	.5627
DTW	AL4172MB002 002	5G	CGR SCRAP METAL	108	49.0	19.864	.5625
DTW	AL4172MB002 003	5G	CGR SCRAP METAL	216	98.0	19.864	.5625
DTW	AL4172MB002 004	5G	CGR SCRAP PLASTIC	80	36.3	19.864	.5625
DTW	AL4172MB003 001	5G	CGR HAZMAT NON BURNABLE NON COMBUSTIBLE	87	39.5	19.864	.5625
CDO	AL4172MB004 001	5G	CGR EMPTY CREDO CUBE	103	46.5	9.768	.2766
CDO	AL4172MB004 002	5G	CGR EMPTY CREDO CUBE	105	47.4	9.768	.2766
CDO	AL4172MB004 003	5G	CGR MEDICATIONS	61	27.7	4.164	.1179

13. TYPE GENRE CODE	14. TCN / PID NCT / IDP	DTA ATD	15. DESCRIPTION OF ARTICLES / DESCRIPTION DES ARTICLES	16. GROSS WEIGHT POIDS BRUT		17. CUBE VOLUME	
				LBS	KG	CU FT/PI CU	M3
TWL	AL4180MB002 001	5G	CGR HAZMAT GENERAL WASTE	342	155.1	38.154	1.0804
TWL	AL4180MB002 002	5G	CGR HAZMAT GENERAL WASTE	319	144.7	38.136	1.0799
DTW	AL4180MB002 003	5G	CGR HAZMAT GENERAL WASTE	148	67.1	19.864	.5625
P/B	AL4180MB003 001	5G	CGR EMPTY FOOD BUNYAN	1360	616.9	151.665	4.2947

13. TYPE GENRE CODE	14. TCN / PID NCT / IDP	DTA ATD	15. DESCRIPTION OF ARTICLES / DESCRIPTION DES ARTICLES	16. GROSS WEIGHT POIDS BRUT		17. CUBE VOLUME	
				LBS	KG	CU FT/PI CU	M3
CDO	AL4190MB003 001	5G	CGR SOIL WATER SAMPLE	21	9.5	.579	.0164
CDO	AL4190MB003 002	5G	CGR SOIL WATER SAMPLE	33	15.0	.579	.0164
TWL	AL4190MB004 001	5G	CGR SCRAP METAL	441	200.0	38.154	1.0804
DTW	AL4190MB004 002	5G	CGR SCRAP METAL	426	193.2	19.871	.5627
TWL	AL4190MB005 001	5G	CGR HAZMAT GENERAL WASTE	343	155.6	38.154	1.0804

13. TYPE GENRE CODE	14. TCN / PID NCT / IDP	DTA ATD	15. DESCRIPTION OF ARTICLES / DANGEROUS GOODS AND NET QUANTITY DESCRIPTION DES ARTICLES / MATIERES DANGEREUSES ET QUANTITE NETTE	16. GROSS WEIGHT POIDS BRUT		17. CUBE VOLUME	
				LBS	KG	CU FT/PI CU	M3
BRL	AL4215MR001 001	5G	CGR WASTE GASOLINE (DRUM) IN YELLOW OVERPACK	485	220.0	23.339	.6609
BRL	AL4215MR001 002	5G	CGR WASTE GASOLINE (DRUM) IN YELLOW OVERPACK	440	199.6	23.339	.6609
BRL	AL4215MR001 003	5G	CGR WASTE GASOLINE (DRUM) IN YELLOW OVERPACK	485	220.0	23.339	.6609
BRL	AL4215MR001 004	5G	CGR WASTE GASOLINE (DRUM) IN YELLOW OVERPACK	315	142.9	23.339	.6609
BRL	AL4215MR001 005	5G	CGR WASTE GASOLINE (DRUM) IN YELLOW OVERPACK	455	206.4	23.339	.6609
BRL	AL4215MR001 006	5G	CGR WASTE GASOLINE (DRUM) IN YELLOW OVERPACK	310	140.6	23.339	.6609

13. TYPE GENRE CODE	14. TCN / PID NCT / IDP	DTA ATD	15. DESCRIPTION OF ARTICLES / DANGEROUS GOODS AND NET QUANTITY DESCRIPTION DES ARTICLES / MATIERES DANGEREUSES ET QUANTITE NETTE	16. GROSS WEIGHT POIDS BRUT		17. CUBE VOLUME	
				LBS	KG	CU FT/PI CU	M3
BRL	AL4215MR002 001	5G	CGR WASTE FUEL AVIATION(DRUM) IN YELLOW OVERPACK	435	197.3	23.339	.6609
BRL	AL4215MR002 002	5G	CGR WASTE FUEL (DRUM) IN YELLOW OVERPACK	450	204.1	23.339	.6609
BRL	AL4215MR002 003	5G	CGR WASTE FUEL AVIATION(DRUM) IN YELLOW OVERPACK	418	189.6	23.339	.6609
BRL	AL4215MR003 001	5G	CGR CRUSHED BULBS (DRUM) IN YELLOW OVERPACK	418	189.6	23.339	.6609
BRL	AL4215MR003 002	5G	CGR CRUSHED BULBS (DRUM) IN YELLOW OVERPACK	401	181.9	23.339	.6609
BRL	AL4215MR005 001	5G	CGR WASTE WATER CONTAMATED WITH HYDRAULIC OIL IN YELLOW OVERPACK	425	192.8	23.339	.6609

13. TYPE GENRE CODE	14. TCN / PID NCT / IDP	DTA ATD	15. DESCRIPTION OF ARTICLES / DANGEROUS GOODS AND NET QUANTITY DESCRIPTION DES ARTICLES / MATIERES DANGEREUSES ET QUANTITE NETTE	16. GROSS WEIGHT POIDS BRUT		17. CUBE VOLUME	
				LBS	KG	CU FT/PI CU	M3
BRL	AL4215MR004 001	5G	CGR WASTE GLYCOL (DRUM) IN YELLOW OVERPACK	445	201.9	23.339	.6609
BRL	AL4215MR004 002	5G	CGR WASTE GLYCOL (DRUM) IN YELLOW OVERPACK	551	249.9	23.339	.6609
BRL	AL4215MR004 003	5G	CGR WASTE GLYCOL (DRUM) IN YELLOW OVERPACK	491	222.7	23.339	.6609
BRL	AL4215MR004 004	5G	CGR WASTE GLYCOL (DRUM) IN YELLOW OVERPACK	454	205.9	23.339	.6609
BRL	AL4215MR005 003	5G	CGR WASTE WATER CONTAMATED WITH HYDRAULIC OIL IN YELLOW OVERPACK	226	102.5	23.339	.6609
BRL	AL4215MR005 004	5G	CGR WASTE WATER CONTAMATED WITH HYDRAULIC OIL IN YELLOW OVERPACK	427	193.7	23.339	.6609

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.

Appendix F

Progressive and Final Reclamation Work Undertaken

Year: 2024

Reference: 8AC-ALT1929, Part B, Item 1.

Progressive Reclamation Work Undertaken in 2024:

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.

Develop long term monitoring program for PHC contamination in key areas.

These locations were monitored in 2024, however no sampling or work was completed in these 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.

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 was conducted at the ALT-11 Landfarms. No water was discharged from this facility in 2024.

D. Rotation of Soils in the Landfarm (ALT-12) 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 was conducted at the ALT-12 Landfarms. No water was discharged from this facility in 2024

Future works proposed for 2024:

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.

Develop long term monitoring program for PHC contamination in key areas.

B. 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.

C. Rotation of Soils in the Landfarm (ALT-12) 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-12 Landfarms

D. In-Situ Bio-Containment Pilot Research Study:

As indicated with the INAC Inspectors during the 2018 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- and polyfluoroalkyl substances (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.

E. Phase 2 Environmental Site Assessment (ESA)/ Detailed Risk Assessment

DND has procured a firm/consultant to conduct a Phase 2 ESA/ detailed risk assessment in 2020. Due to COVID related constraints the consultants first time to site was in 2023. They conducted sampling in areas identified in their Phase 1 ESA. This program is expected to continue for the next few years.

Findings of the 2023 Phase 2 ESA confirmed historical contaminated sites data. This report is available upon request. This contract is now complete. DND is currently working with interdepartmental partners (DFO, HC, ECCC) to develop a risk-based management strategy based on historical findings.

F. Landfill Reclamation Plan

DND is currently developing a Landfill Reclamation plan. This plan will consist of a remedial options analysis to define the best remediation plan to address concerns regarding landfill reclamation. Current submission schedule is planned for 2025. Once the detailed report is completed, the report will be distributed to the Board for review.

Appendix H

Proposed/ future Infrastructure Works

Year: 2024

Reference: 8AC-ALT1929 Schedule B item I.

Future works proposed for 2025:

A. Sewage Discharge Flow Monitoring:

Installation of a flow monitor on the discharge point of ALT-2 was installed in the summer of 2023 as was previously planned for 2020 but delayed due to COVID and engineering issues with current piping system and the gage. Unfortunately, the flow meter installed did not function as intended. A new flow monitor will be installed in 2025.

B. Construct new waterline planned 2025/26.

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.

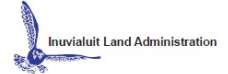
Appendix I

Detailed Spill Report

Year: 2024

NT-NU SPILL REPORT

OIL, GASOLINE, CHEMICALS AND
OTHER HAZARDOUS MATERIALS



NT-NU 24-HOUR SPILL REPORT LINE

Tel: (867) 920-8130 • Fax: (867) 873-6924 • Email: spills@gov.nt.ca

REPORT LINE USE ONLY

A	Report Date:	07/13/24	Report Time:	12:00	☒ Original Spill Report OR ☐ Update # _____ to the Original Spill Report	Report Number: 2024291
	B	Occurrence Date:	06/20/24	Occurrence Time:		
C	Land Use Permit Number (if applicable):			Water Licence Number (if applicable): 8AC-ALT1929		
D	Geographic Place Name or Distance and Direction from the Named Location: CFS Alert				Region: ☐ NT ☒ Nunavut ☐ Adjacent Jurisdiction or Ocean	
E	Latitude: 82 Degrees 30 Minutes 1 Seconds			Longitude: 62 Degrees 20 Minutes 37 Seconds		
F	Responsible Party or Vessel Name: DND			Responsible Party Address or Office Location: Astra, Ontario		
G	Any Contractor Involved: Nasittuq Corporation			Contractor Address or Office Location: Belleville, Ontario		
H	Product Spilled: ☐ Potential Spill Suspected Hydraulic Fluid		Quantity in Litres, Kilograms or Cubic Metres: 2 Litres		U.N. Number: UN 3082	
I	Spill Source: Barrel leak into secondary containment overflow		Spill Cause: Secondary Containment overflow		Area of Contamination in Square Metres: 2 m2	
J	Factors Affecting Spill or Recovery: none		Describe Any Assistance Required: None at this time		Hazards to Persons, Property or Environment: Contaminants to ground or environment	
K	Additional Information, Comments, Actions Proposed or Taken to Contain, Recover or Dispose of Spilled Product and Contaminated Materials: During maintenance to the secondary containment stand/risers it was noticed that a barrel over the winter had leaked into the secondary containment tray. During the snow melt the Hydraulic fluid breached the secondary containment tray capacity and split to the ground. Secondary containment has since been cleaned and emptied. The suspected barrel has since been placed into an overpack to be sent south for disposal. Contaminated soil will be hand dug and placed into our contaminated soils landfarm for treatment. The spill location is 560 metres away from nearest water body (Parr Inlet) North-East.					
L	Reported to Spill Line by: Nathan Koutroulides	Position: Deputy Env Officer	Employer: DND	Location Calling From: Trenton	Telephone: 6133922811	
M	Any Alternate Contact: Andrew Tam	Position: Env Officer	Employer: DND	Alternate Contact Location: Trenton	Alternate Telephone: 6133922811	

REPORT LINE USE ONLY

N	Received at Spill Line by:	Position:	Employer:	Location Called:	Report Line Number:
Lead Agency: ☐ EC ☐ CCG/TCMSS ☐ GNWT ☐ GN ☐ ILA ☐ AANDC ☐ NEB ☐ Other: _____			Significance: ☐ Minor ☐ Major ☐ Unknown		File Status: ☐ Open ☐ Closed
Agency:		Contact Name:	Contact Time:	Remarks:	
Lead Agency:					
First Support Agency:					
Second Support Agency:					
Third Support Agency:					

Report compiled by:

//Nathan//

Nathan Koutroulides
8 Wing Trenton
Deputy Environment Officer

Appendix J

Investigation into background lead (Pb) within meltwater, the surrounding environment and other locations at CFS Alert.

Attached as a separate PDF Document.