

DYE-M SITE-SPECIFIC INFORMATION

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A. SITE SPECIFIC INFORMATION – DYE-M CAPE DYER

A.1 Introduction

The former DYE-M (Cape Dyer) DEW Line site is located on Cumberland Peninsula on the easternmost point of Baffin Island (Qikiqtaaluk), at approximately 66° 39' 55" N, 61° 21' 21" W. DYE-M is approximately 150 km southeast of Qikiqtarjuaq, and is accessible via charter aircraft.

The former DEW Line station was located 700 m above sea level. The landscape is characterized by a narrow coastal region along the southwest perimeter, broad glacial U-shaped valleys and broad, sub-rounded hills within the interior, and boulder-covered volcanic and metamorphic uplands, bound, in part, by sheer cliff walls, along the eastern coast. Extensive patterned ground, particularly evident within the valley till sheets and frost shattered bedrock, common at higher elevations, are among the more prominent periglacial features.

DYE-M was a main site within the original DEW line system. The station was constructed in the 1950s and was converted into a long range radar (LRR) station in 1993, as part of the more modern North Warning System (NWS).

The environmental clean-up and demolition of DEW Line facilities not required for NWS operations began in 2004 and were completed in 2013. Several DEW line structures were left in place, including a hangar, three module trains, a weather station, a warehouse, a garage, a heated vehicle storage building and some communications infrastructure. The clean-up included the complete excavation of seven landfills (Lower Camp Landfill – West, Lower Camp Landfill – East, Beach Landfill – North, Beach Landfill – South, DEW Drop Landfill, South Landfill – East, Construction Camp Landfill), the remediation and closure of eight existing landfills and the Helipad Buried Debris Area, as well as the construction of four new engineered facilities consisting of two non-hazardous waste landfills for the disposal of site debris and demolition waste, and two Tier II Disposal Facilities for the disposal of Tier II contaminated soil.

The landfills subject to long term monitoring are shown on the site plan, Figure DYE-M.1, and are listed below:

- Lower Site NWS Landfill
- Lower Site Tier II Disposal Facility
- Lower Site Crossroads Landfill
- Lower Site Foundation Landfill
- Lower Site Powerhouse Landfill
- Lower Site Non-Hazardous Waste Landfill
- Upper Site Tier II Disposal Facility
- Upper Site West Landfill – West, Centre and East Lobes
- Upper Site Pallet Line Landfill
- Upper Site Non-Hazardous Waste Landfill
- Upper Site NWS Landfill
- Upper Site South Landfill – West
- Upper Site Helipad Debris Area

The monitoring schedule for DYE-M is provided in Table A.1.

Table A.1: Monitoring Schedule		
Monitoring Event Name ¹	Monitoring Event Number	Year
Year 1	1	2014
Year 2	2	2015
Year 3	3	2016
Year 4	4	2017
Year 5	5	2018
Year 10	6	2023
Year 12 ²	7	2025
Year 15	8	2028
Year 25	9	2038

Notes:

1. The monitoring event name represents the number of years since site clean-up was completed.
2. The Year 7 monitoring event was originally scheduled for 2020; due to COVID-19, the monitoring schedule has been adjusted and a Year 12 event will take its place in 2025.

A summary of the monitoring locations associated with each landfill is provided in Table A.2. Approximate locations are shown on Figures DYE-M.2 through DYE-M.14.

Table A.2: Summary of Landfill Monitoring Locations		
Monitoring Locations	Northing (m)	Easting (m)
Lower Site NWS Landfill		
DM-07 (soil)	7388950.0	561374.4
DM-08 (soil)	7388941.0	561453.1
DM-09 (soil)	7388905.0	561459.6
DM-10 (soil)	7388888.0	561419.9
Lower Site Tier II Disposal Facility		
MW05-13 (soil and groundwater)	7388341.9	561968.6
MW05-15 ² (soil and groundwater)	7388319.1	561788.8
MW05-16 (soil and groundwater)	7388147.7	561876.5
MW12-01 (soil and groundwater)	7388361.7	561888.3
VT-1 (temperature)	7388321.9	561880.9
VT-2 (temperature)	7388235.5	561836.6
VT-3 (temperature)	7388281.8	561927.1
VT-4 (temperature)	7388184.4	561861.4
VT-BL (temperature)	7388226.9	561629.6

Table A.2: Summary of Landfill Monitoring Locations

Monitoring Locations	Northing (m)	Easting (m)
Lower Site Crossroads Landfill		
DM-01 (soil)	7387618.0	562645.0
DM-02 (soil)	7387637.0	562572.7
DM-03 (soil)	7387678.0	562597.6
Lower Site Foundation Landfill		
DM-04 (soil)	7387533.0	562762.7
DM-05 (soil)	7387597.0	562704.5
DM-06 (soil)	7387622.0	562762.3
Lower Site Powerhouse Landfill		
MW05-05 (soil and groundwater)	7387493.0	562718.8
MW05-06 (soil and groundwater)	7387511.2	562779.2
MW05-07 (soil and groundwater)	7387471.1	562811.4
MW05-08 ⁴ (soil and groundwater)	7387401.8	562748.1
VT-5 (temperature)	7387478.1	562757.9
VT-6 (temperature)	7387454.4	562755.9
VT-7 (temperature)	7387448.9	562789.8
Lower Site Non-Hazardous Waste Landfill		
MW05-09 (soil and groundwater)	7387070.2	563034.5
MW05-12 (soil and groundwater)	7387075.3	563106.6
MW09-26 (soil and groundwater)	7386910.8	563062.9
MW09-27 (soil and groundwater)	7386963.5	562926.1
MW09-28 (soil and groundwater)	7387018.0	562933.5

Table A.2: Summary of Landfill Monitoring Locations

Monitoring Locations	Northing (m)	Easting (m)
Upper Site Tier II Disposal Facility		
MW07-22 (soil and groundwater)	7394674.6	571164.7
MW07-23 (soil and groundwater)	7394521.5	571120.1
MW08-24 (soil and groundwater)	7394583.7	571023.4
MW08-25 (soil and groundwater)	7394664.9	571009.6
MW12-02 ⁷ (soil and groundwater)	7394707.4	571095.9
VT-8 (temperature)	7394615.5	571051.5
VT-9 (temperature)	7394558.0	571088.7
VT-10 (temperature)	7394609.0	571121.0
VT-11 (temperature)	7394655.5	571132.2
VT-BU (temperature)	7394470.7	571142.6
Upper Site West Landfill – West Lobe		
DM-31 (soil)	7394956.0	571167.8
DM-32 (soil)	7394900.0	571095.4
DM-33 (soil)	7394960.0	571075.6
DM-34 (soil)	7395021.0	571141.8
DM-35 (soil)	7394934.0	571361.6
DM-36 (soil)	7394933.0	571282.7
DM-37 (soil)	7394924.0	571202.8
DM-38 (soil)	7395054.0	571236.7
DM-39 (soil)	7395039.0	571356.9

Table A.2: Summary of Landfill Monitoring Locations

Monitoring Locations	Northing (m)	Easting (m)
Upper Site West Landfill – Centre and East Lobes		
DM-40 (soil)	7395002.0	571548.6
DM-41 (soil)	7395000.0	571450.7
DM-42 (soil)	7395042.0	571389.5
DM-43 (soil)	7395083.0	571427.4
DM-44 (soil)	7395114.0	571480.9
DM-45 (soil)	7395113.0	571556.5
DM-46 (soil)	7395113.0	571623.6
DM-47 (soil)	7395054.0	571694.1
DM-48 (soil)	7395124.0	571671.6
DM-49 (soil)	7395108.0	571733.4
DM-50 (soil)	7394986.0	571697.8
DM-51 (soil)	7394974.0	571627.8
DM-52 (soil)	7395024.0	571644.6
Upper Site Pallet Line Landfill		
DM-53 (soil)	7394991.0	571759.4
DM-54 (soil)	7394853.0	571668.2
DM-55 (soil)	7394827.0	571545.5
DM-56 (soil)	7394764.0	571530.2
DM-57 (soil)	7394753.0	571588.1
DM-58 (soil)	7394774.0	571730.9
DM-59 (soil)	7394751.0	571793.5
DM-60 (soil)	7394953.0	571936.0
DM-61 (soil)	7394822.0	571874.7
DM-62 (soil)	7394767.0	571858.1
Upper Site Non-Hazardous Waste Landfill¹		
MW06-18 (soil and groundwater)	7395066.5	572282.3
MW06-19 (soil and groundwater)	7395142.0	572112.7
MW06-20 (soil and groundwater)	7395203.3	572222.0
MW07-21 (soil and groundwater)	7395177.9	572300.7

Table A.2: Summary of Landfill Monitoring Locations

Monitoring Locations	Northing (m)	Easting (m)
Upper Site NWS Landfill		
DM-18 (soil)	7394733.0	572599.1
DM-19 (soil)	7394632.0	572597.7
DM-20 (soil)	7394659.0	572561.1
DM-21 (soil)	7394689.0	572522.6
DM-22 (soil)	7394701.0	572492.0
Upper Site South Landfill – West		
DM-23 (soil)	7394632.0	572576.2
DM-24 (soil)	7394547.0	572617.0
DM-25 (soil)	7394550.0	572564.6
DM-26 (soil)	7394548.0	572518.3
DM-27 (soil)	7394519.0	572481.7
DM-28 (soil)	7394547.0	572450.2
DM-29 (soil)	7394591.0	572453.7
DM-30 (soil)	7394618.0	572493.1
Upper Site Helipad Buried Debris Area		
DM-11 (soil)	7394825.0	572704.3
DM-12 (soil)	7394843.0	572750.1
DM-13 (soil)	7394815.0	572757.1
DM-14 (soil)	7394791.0	572733.2
DM-15 (soil)	7394764.0	572710.7
DM-16 (soil)	7394776.0	572684.4
DM-17 (soil)	7394798.0	572654.3
Projection: NAD83 – Zone 20		