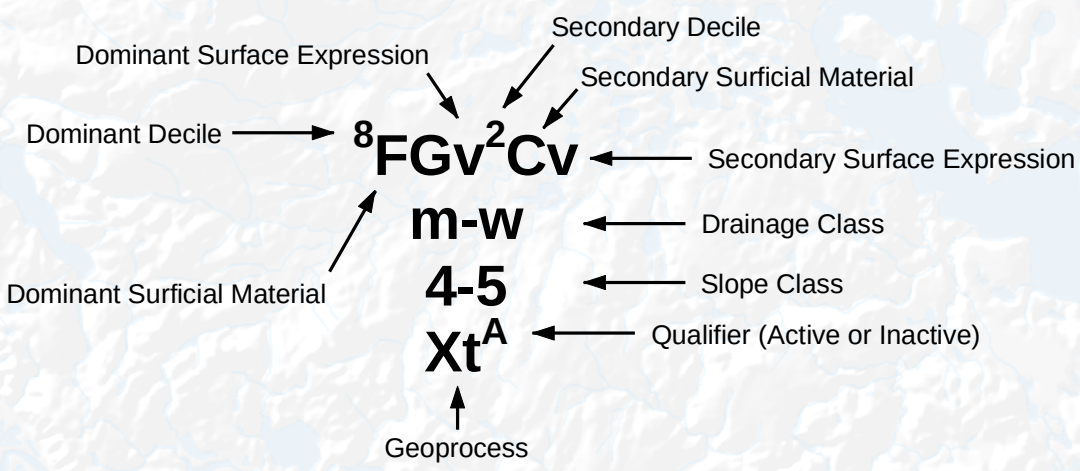
Surficial Geology and Terrain Constraints

Inuvik to Tuktoyaktuk Highway

Surface Materials		Description
M	Till	Poorly sorted diamicton deposited directly, or without major reworking, by glacier ice; consists of heterogeneous mixture of sand, silt and clay with variable amounts of coarse fragments; commonly modified by cryoturbation and thermokarst; thicknesses range from veneers (50 cm) to several meters thick.
FG	Glaciofluvial	Mixture of sand and gravel with variable amounts of silt; includes sediments deposited along floodplains, outwash plains and hummocky ice-contact deposits; thicknesses range from veneers (50 cm) to several meters thick; commonly modified by thermokarst.
L	Lacustrine	Interbedded silt, clayey silt and sand; can include organic material and layers of peat; thicknesses range from thin veneers (50 cm) to several meters thick; includes sediment deposited in recent lake basins as well as sediment deposited during high water phase of Eskimo Lakes.
F	Fluvial/Alluvial	Well to moderately well sorted sediment deposited in modern rivers, deltas and fans; includes material deposited in small, poorly defined, intermittent and ephemerals channels; thicknesses range from thin veneers (50 cm) to several meters thick.
C	Colluvial	Poorly sorted clay, silt, sand and rubble; the texture of the material directly relates to the underlying parent material; thicknesses range from thin veneers (50 cm) to 2-3 meters thick.
O	Organic	Accumulation of organic materials in bogs, fens, swamps and peatlands; can include interbeds of silt and fine sands; thicknesses generally range from 0.5 to 3 m thick; deposited in shallow depressions and generally underlain by poorly drained fine-grained sediment.
W	Marine	Moderately well to well sorted, bedded or massive silt, sand or sand and gravels; can include minor organic materials; generally more than 1 m thick; deposited at or near present sea level, commonly found as intertidal plains and beaches.
A	Anthropogenic Materials	Disturbed materials or modified geological material whose original properties have been drastically modified: generally flat or terraced.

Polygon Label



Surface Expression		Drainage Classes		Slope Classes	
b	Blanket	v	Very poor	1	0-2 %
f	Fan	p	Poor	2	>2-5 %
h	Hummocky	i	Imperfect	3	>5-9 %
m	Rolling	m	Moderate	4	>9-15 %
p	Plain	w	Well	5	>15-30 %
r	Ridge	r	Rapid	6	>30-45 %
t	Terrace	x	Very rapid	7	>45-60 %
u	Undulating			8	>60-85 %
v	Veneer			9	>85 %
j	Gentle slope (6-26%)				
a	Moderate slope (26-50%)	-	One class grading to another		
k	Moderately steep slope (50-70%)	,	Two distinct class portions		
s	Steep slope (>70%)				

Geoprocesses	
Xw	Ice-wedge polygons
Xt	Thermokarst
Xf	Retrogressive thaw slump
Xe	Thermal erosion by water
Rs	Debris slide
S	Solifluction
V	Gullying
C	Creep
L	Surface Seepage

Base Data provided by Government of the Northwest Territories

Tuktoyaktuk

N

Pingo Canadian Landmark

38

37

36

35

34

47

BORROW AREA 177

33

48

GP7 KP112

32

30

31

29

53

46

BORROW AREA 170

28

52

Husky Lakes

27

51

26

50

BORROW AREA 174

25

44

49

24

45

23

GP6 KP81

21

22

BORROW AREA 309

42

20

Parsons Lake

43

Old

19

18

Husky Lakes

17

16

15

GP5 KP50

14

13

41

12

BORROW AREA 314/325

11

10

09

08

07

GP4 KP23.5

06

GP3 KP18

GP2 KP17

05

GP1 KP12.5

Noell Lake

04

Sitidgi Lake

03

02

01

39

40

BORROW AREA PW2

Inuvik

Mackenzie River

Holmes Creek

East Channel

Map Sheet

Alternative Route 1

Alternative Route 3

Potential Aggregate Source

Provincial Park/Reserve

Geophysical Survey Site

0 5 10 15

Kilometres - 1:350,000

Project Location

Inuvik – Tuktoyaktuk Highway, Baseline Data Acquisition Program

Surficial Geology and Terrain Constraints Map Index

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Last Modified: August 30 2012 By: jacho

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7589699 7590699 7591699 549403

550403 550403

^{10}Fp p 1

^{10}Fp p 1

^{10}Cv i-p 2 Xf^{A}

KP0

^{10}Fb m-i 1-2

^{10}Fb i-p 1-2 L

KP1

^{10}Fb i-p 1-2 L

^{10}Fb m-i 2

^{10}Fb m-i 1-2

^{10}Fb i-p 1-2 L

1

2

^{10}Fb i-p 1-2 L

KP2

3

^{10}Fb m-i 1-2

^{10}Fb m-i 1-2

^{10}Fp i-p 1

^{10}Fb i-p 1 L

^{10}Fb m-i 1-2

551403 551403

7589699 7590699 7591699

Project Location

Alternative Route 1
Alternative Route 3
Alternative Route 1 Kilometre Post
Alternative Route 3 Kilometre Post

Terrain Unit
Potential Aggregate Source
Drainage Flow Path
Pingo
Geophysical Survey Site

Crossing
Minor Crossing < 2.5m
Crossing > 2.5m & <5.0m
Major Crossing > 5.0m

Inuvik – Tuktoyaktuk Highway, Baseline Data Acquisition Program

Surficial Geology and Terrain Constraints

Base Data and Imagery provided by Government of the Northwest Territories; Surficial Data: Stantec

N

0 0.125 0.25 0.5 0.75 1 1:10,000 Kilometers

UTM Zone 8 NAD 83

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FIGURE NO. 01

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7593419 7594419 7595419 549502

550502 551502

^{10}Fb m-i 1-2
^{10}Fp i-p 1
^{10}Fb i-p 1 L
^{10}Fb m-i 1-2
^{10}Fb m-i 1
^{10}Fb i-p 1 L
^{10}Fp m 1
^{10}Fb m-i 1
^{10}Fb i-p 1 L
^{10}Fb m-i 2
^{10}Fb i-p 2 L
^{10}Cv i-p 3-4 Xf^{A}
^{10}Fb m-i 2
^{10}Mj m 3
^{10}Fv i-p 3
^{10}Mj m 3
^{10}Fp m 1
^{8}Mj^{2}Cv m 3-4
^{6}Cv^{4}Mb m-i 4-5 L
^{8}Mj^{2}Cv m 3-4
^{6}Cv^{4}Mb m-i 3-4 L
^{10}Mb m 3
^{8}Mb^{2}Cv m-i 4 L
^{10}Mj m 2
^{10}Mb m 3-4
^{10}Fv i-p 1 L
^{10}Mb m 3-4
^{8}Mb^{2}Cv m-w 3-4
^{8}Mb^{2}Cv m-i 3-4 L

KP3 KP4 KP5 KP6

4 5 5a 6

7593419 7594419 7595419

Project Location

- Alternative Route 1
- Alternative Route 3
- Alternative Route 1 Kilometre Post
- Alternative Route 3 Kilometre Post
- Terrain Unit
- Potential Aggregate Source
- Drainage Flow Path
- Pingo
- Geophysical Survey Site
- Crossing
- Minor Crossing < 2.5m
- Crossing > 2.5m & <5.0m
- Major Crossing > 5.0m

Inuvik – Tuktoyaktuk Highway, Baseline Data Acquisition Program

Surficial Geology and Terrain Constraints

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N

0 0.125 0.25 0.5 0.75 1 Kilometers

1:10,000

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FIGURE NO. 02

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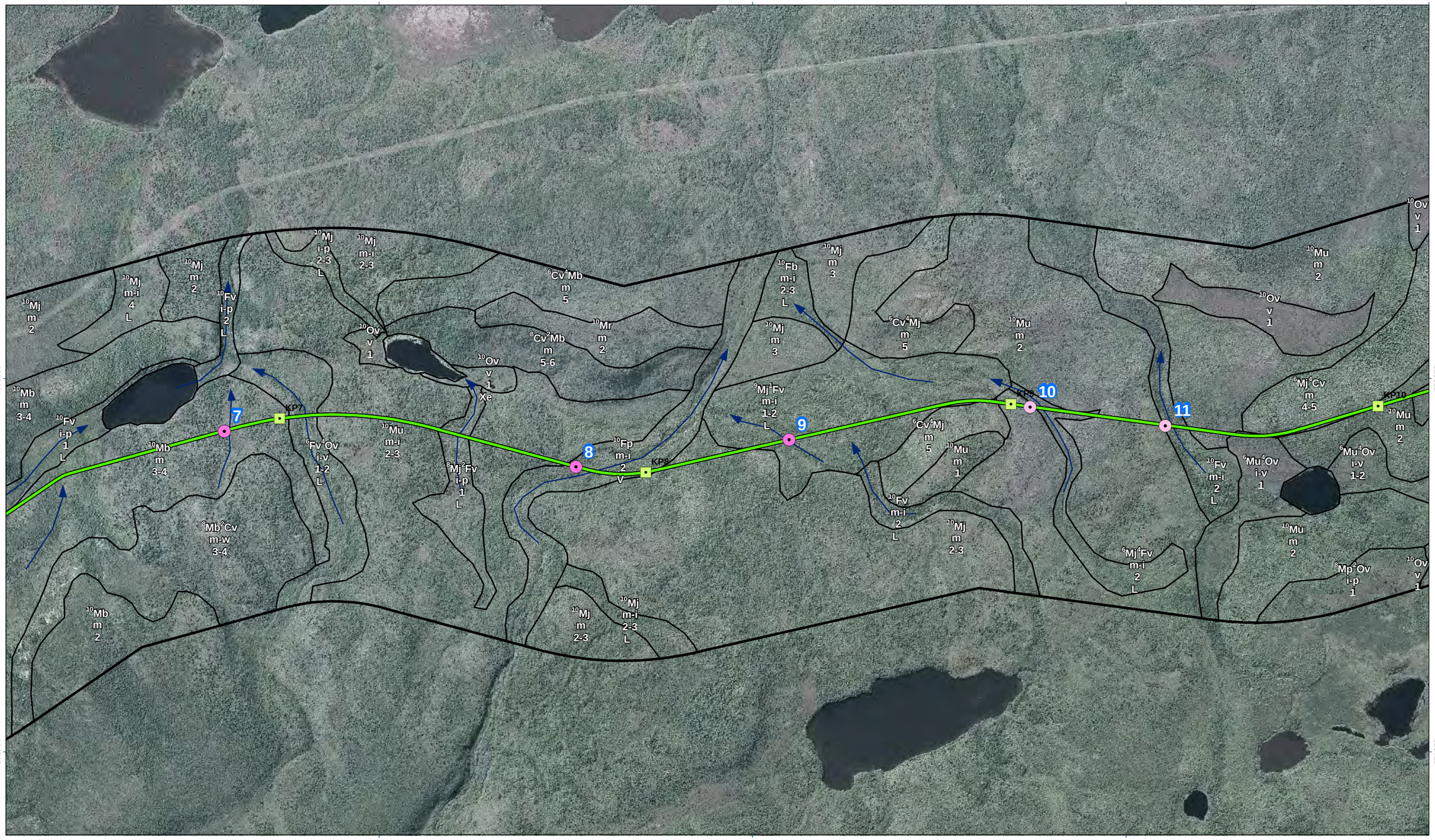
7597165 7598165 7599165 549359

550359 550359

551359 551359

7597165 7598165 7599165



Project Location

- Alternative Route 1
- Alternative Route 3
- Alternative Route 1 Kilometre Post
- Alternative Route 3 Kilometre Post
- Terrain Unit
- Potential Aggregate Source
- Drainage Flow Path
- Pingo
- Geophysical Survey Site
- Crossing
- Minor Crossing < 2.5m
- Crossing > 2.5m & <5.0m
- Major Crossing > 5.0m

Inuvik – Tuktoyaktuk Highway, Baseline Data Acquisition Program

Surficial Geology and Terrain Constraints

Page 3 of 53

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N

0 0.125 0.25 0.5 0.75 1

1:10,000 Kilometers

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FIGURE NO. 03

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Project Location

- Alternative Route 1
- Alternative Route 3
- Alternative Route 1 Kilometre Post
- Alternative Route 3 Kilometre Post
- Terrain Unit
- Potential Aggregate Source
- Drainage Flow Path
- Pingo
- Geophysical Survey Site
- Crossing
- Minor Crossing < 2.5m
- Crossing > 2.5m & <5.0m
- Major Crossing > 5.0m

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Surficial Geology and Terrain Constraints

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N

0 0.125 0.25 0.5 0.75 1 Kilometers

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FIGURE NO. 04

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Project Location

- Alternative Route 1
- Alternative Route 3
- Alternative Route 1 Kilometre Post
- Alternative Route 3 Kilometre Post
- Terrain Unit
- Potential Aggregate Source
- Drainage Flow Path
- Pingo
- Geophysical Survey Site
- Crossing
- Minor Crossing < 2.5m
- Crossing > 2.5m & <5.0m
- Major Crossing > 5.0m

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Surficial Geology and Terrain Constraints

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N

0 0.125 0.25 0.5 0.75 1 1:10,000 Kilometers

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FIGURE NO. 05

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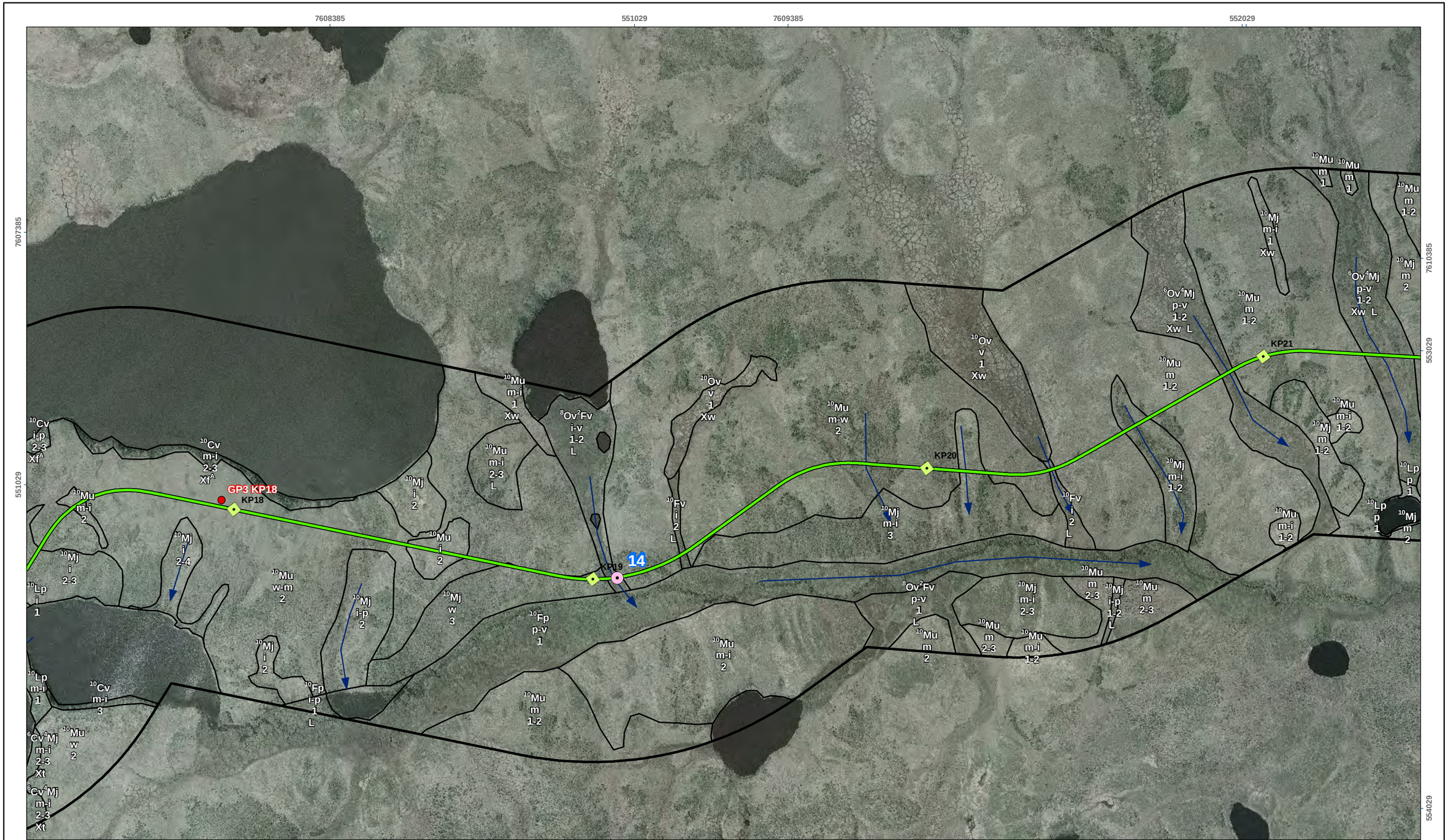

Alternative Route 1
Alternative Route 3
Alternative Route 1 Kilometre Post
Alternative Route 3 Kilometre Post

Terrain Unit
Potential Aggregate Source
Drainage Flow Path
Pingo
Geophysical Survey Site

Crossing
Minor Crossing < 2.5m
Crossing > 2.5m & <5.0m
Major Crossing > 5.0m

Inuvik – Tuktoyaktuk Highway, Baseline Data Acquisition Program

Surficial Geology and Terrain Constraints

0 0.125 0.25 0.5 0.75 1 Kilometers

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FIGURE NO. 06

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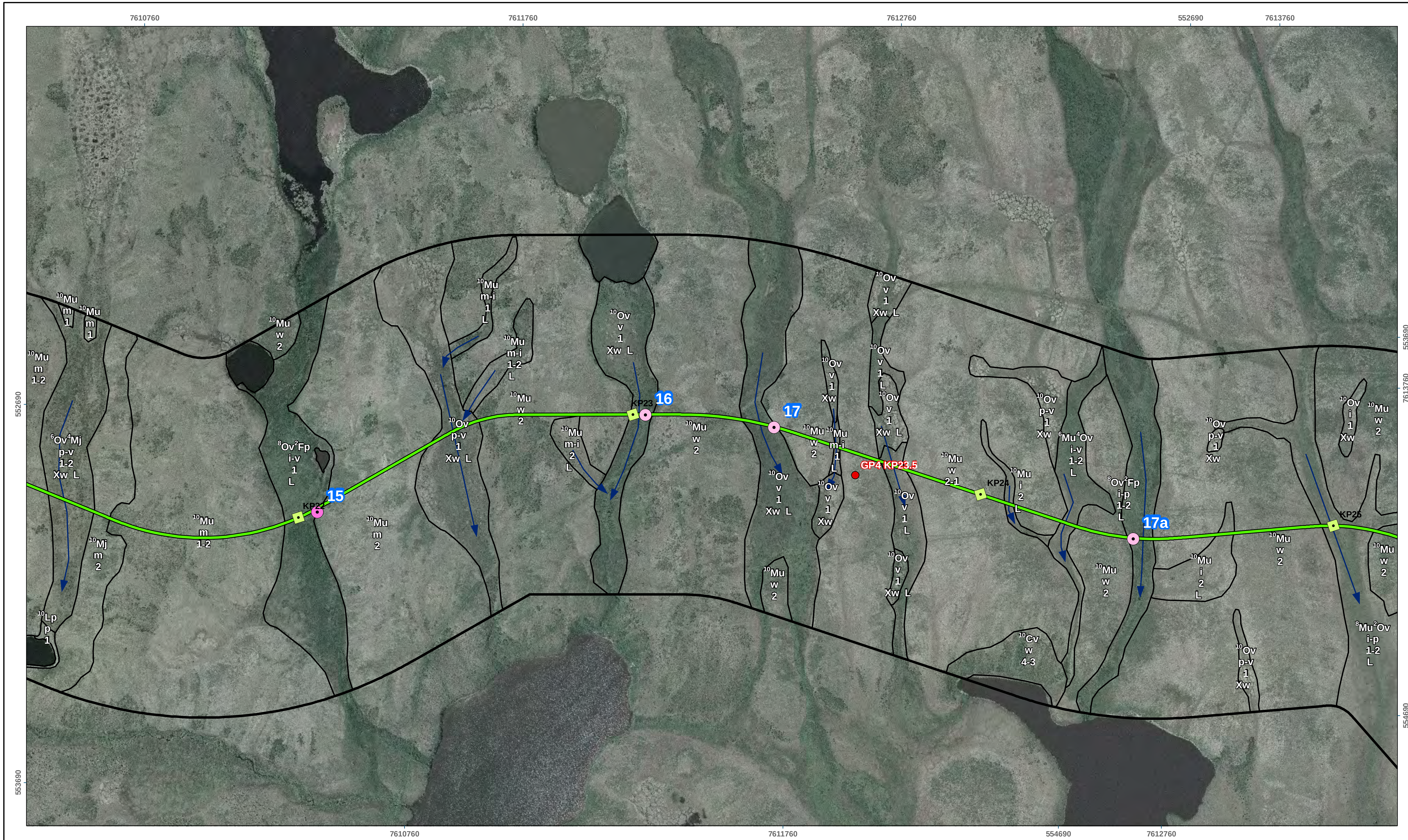

Project Location

- Alternative Route 1
- Alternative Route 3
- Alternative Route 1 Kilometre Post
- Alternative Route 3 Kilometre Post
- Terrain Unit
- Potential Aggregate Source
- Drainage Flow Path
- Pingo
- Geophysical Survey Site
- Crossing
- Minor Crossing < 2.5m
- Crossing > 2.5m & <5.0m
- Major Crossing > 5.0m

Inuvik – Tuktoyaktuk Highway, Baseline Data Acquisition Program

Surficial Geology and Terrain Constraints

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0 0.125 0.25 0.5 0.75 1 Kilometers

1:10,000

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FIGURE NO. 07

Alternative Route 1
Alternative Route 3
Alternative Route 1 Kilometre Post
Alternative Route 3 Kilometre Post

Terrain Unit
Potential Aggregate Source
Drainage Flow Path
Pingo
Geophysical Survey Site

Crossing
Minor Crossing < 2.5m
Crossing > 2.5m & <5.0m
Major Crossing > 5.0m

Inuvik – Tuktoyaktuk Highway, Baseline Data Acquisition Program

Surficial Geology and Terrain Constraints

Page 8 of 53

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0 0.125 0.25 0.5 0.75 1 Kilometers

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FIGURE NO.

08

7614679 7615679 7616679 556585

557585

558585

21 [20b]

KP28

KP29

21a

KP30

KP31

^{6}Mu ^{4}Ov i-p 1-2 L

^{10}Mu w-m 2

^{10}Fb m 1-2 L

^{10}Fp m-i 1

^{10}Ov v 1 Xw

^{10}Lv i 1

^{8}Mb ^{2}Ov i-p 1 Xw

^{10}Mu w-m 2 L

^{8}Mb ^{2}Cv w-m 3-2

^{10}Lv m 1

^{10}Cv m 4

^{10}Mb w 3

^{10}Ov v 1 Xw

^{8}Mb ^{2}Ov p 1 Xw

^{10}Ov p 1 Xw

^{8}Mb ^{2}Fv i 2-3 L

^{8}Mb ^{2}Cv m-i 3-2

^{10}Fv i 1 L

^{10}Ov p 1 Xw

^{10}Mu i 1-2 L

^{10}Mb m-i 3-2 L

^{10}Ov v 1 Xw

^{8}Mb ^{2}Fv i 1-2 L

^{8}Mb ^{2}Fv i 2 L

^{8}Mj ^{2}Fv i 1 L

^{10}Ov v 1 Xw

Project Location

Alternative Route 1
Alternative Route 3
Alternative Route 1 Kilometre Post
Alternative Route 3 Kilometre Post

Terrain Unit
Potential Aggregate Source
Drainage Flow Path
Pingo
Geophysical Survey Site

Crossing
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Crossing > 2.5m & <5.0m
Major Crossing > 5.0m

Inuvik – Tuktoyaktuk Highway, Baseline Data Acquisition Program

Surficial Geology and Terrain Constraints

N

0 0.125 0.25 0.5 0.75 1 Kilometers

1:10,000

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FIGURE NO. 09

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7618223 7619223 7620223 556951

557951 557951

^{8}Mb^{2}Fv i 2-3 L
^{10}Mb w-m 3-2
^{7}Fp^{3}Ov i-p 1 L
^{10}Mb w 2-3
^{10}Lp i-p 1
^{10}Lp i 1 Xw
^{10}Ov v 1
^{10}Mb m-i 3 L
^{10}Fv i 3 L
^{8}Mb^{2}Cv w 4
^{10}Ov v 1 Xw
^{8}Mb^{2}Fv i 2 L
^{10}Mb m-i 3-2 L
KP31
^{8}Mb^{2}Cv w 4-5 L V
^{8}Mb^{2}Fv i 3 V L
KP32
22a
^{10}Mj m-i 2 Xw
KP33
^{10}Mb m-i 2 L
^{8}Mj^{2}Ov i-p 1-2
^{8}Lv^{2}Ov i-v 1 Xw
^{10}Mb w 3-2
^{10}Mb w-m 3
KP34
^{10}Mb w 2-3
^{9}Mb^{1}Fv m-i 1-2 L
^{10}Ov v 1 Xw
^{6}Lv^{1}Mb m 1
^{8}Mb^{2}Fv i 2 L
^{10}Mb m-i 3-2 L
^{8}Mj^{2}Fv i 1 L
^{7}Fp^{3}Ov i-p 1 L
^{10}Mb m 3
^{10}Ov v 1 Xw
^{10}Mb m 3
^{10}Ov i 1-2 L
^{8}Mb^{2}Fv m-i 2 L
^{10}Mb w 2
^{10}Ov v 1 Xw
^{10}Mb m-i 3-4 L
^{10}Mb i 2 L
^{10}Ov v 1 Xw
^{10}Cv w-r 5
^{10}Cb i-p 1-2 Xw
^{8}Cv^{2}Mv w-m 4-5
^{10}Cf i 3
^{10}Mb m-i 2 L
^{10}Mb w 2
^{10}Mb m-i 2 L
^{10}Mb m 1

558951 558951

7618223 7619223 7620223

Project Location

Alternative Route 1
Alternative Route 3
Alternative Route 1 Kilometre Post
Alternative Route 3 Kilometre Post
Terrain Unit
Potential Aggregate Source
Drainage Flow Path
Pingo
Geophysical Survey Site
Crossing
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Major Crossing > 5.0m

Inuvik – Tuktoyaktuk Highway, Baseline Data Acquisition Program

Surficial Geology and Terrain Constraints

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N

0 0.125 0.25 0.5 0.75 1 1:10,000 Kilometers

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Project Location

- Alternative Route 1
- Alternative Route 3
- Alternative Route 1 Kilometre Post
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Inuvik – Tuktoyaktuk Highway, Baseline Data Acquisition Program

Surficial Geology and Terrain Constraints

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N

0 0.125 0.25 0.5 0.75 1 Kilometers

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FIGURE NO. 11

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