

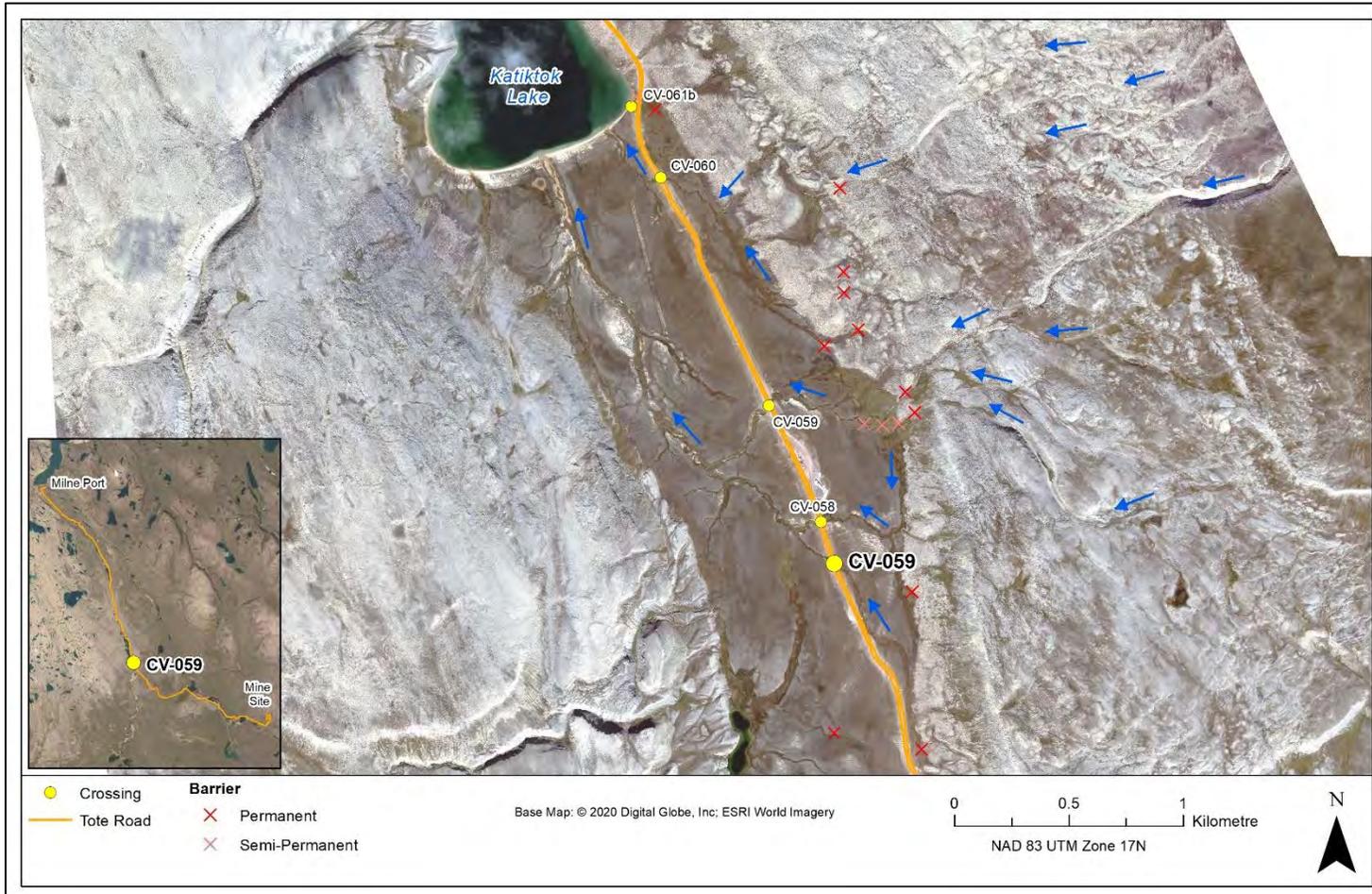
TOTE ROAD CV-059

LOCATION AND CROSSING DESCRIPTION

Site ID:	CV-059	Dates Surveyed:	3-Jul-23	Waterbody Type:	Stream
Project Interaction:	Tote Road Culvert	UTM Coordinates:	17W 528094 E 7929347 N		

GENERAL PHYSICAL CHARACTERISTICS

Flow Regime: Seasonal Stream Order: 2



BAFFINLAND IRON MINES
MARY RIVER PROJECT

 **North/South Consultants Inc.**
Aquatic Environment Specialists

FISH HABITAT:

ARCTIC CHAR - YES

NINESPINE STICKLEBACK - POTENTIAL

TOTE ROAD CV-059

SITE SUMMARY

The Tote Road crosses a small, unnamed stream at site CV-059 that flows southwest, merging with other small drainages, and then northwest into the south end of Katiktok Lake 2 km downstream of the crossing. Katiktok Lake is of sufficient depth to support overwintering of both species. This stream is part of the same catchment as streams crossed by the road at sites CV-057 and CV-058 and collectively they represent the southernmost streams in the Phillips Creek drainage area.

This stream is wide, deep, and slow moving. Wetted widths ranged from 2.5 to 16.1 m. Maximum depths reached as high as 1.05 m. Velocities ranged from 0.08-1.09 m/s. Stream morphology varied in accordance with wetted width. In wider areas, morphology tended to be primarily deep pools, whereas riffle-run was more common where the stream narrowed. Wider areas of the stream were nearly uniformly composed of fine substrate, with cobble-gravel dominating in the narrow areas.

Juvenile Arctic char use habitat in the vicinity of the Tote Road crossing at CV-057 rearing/feeding throughout the open-water period. There is no char spawning habitat and no overwintering habitat for either species in this stream.

Ninespine Stickleback have never been captured or observed in this stream since the monitoring program began in 2009 despite an abundance of suitable habitat. It is unknown if they are present in Katiktok Lake.

TOTE ROAD CV-059

FISH HABITAT POTENTIAL

Species	Spawning	Overwintering	Rearing	Adults Present
ARCH	N	N	Y	N
NNST	P	N	P	P

FISHERIES DATA

Location	Species	Survey Date	Temperature (°C)	Distance Fished (m)	Effort (Seconds)	# Fish Captured	# Fish Observed	CPUE (No. Fish/60 Seconds)	Length Range (mm)
Downstream	ARCH	3-Jul-23	4.0	50	136	0	0	0.00	-
	NNST					0	0	0.00	-
Upstream	ARCH			50	117	0	0	0.00	-
	NNST			50	117	0	0	0.00	-

OTHER NOTES / OBSERVATIONS

No fish were observed or captured in spring 2023. Juvenile Arctic Char are typically commonly encountered in this stream during the open-water period for rearing/feeding. Stickleback have never been captured in this stream and it is unknown if they are present in the watershed.

TOTE ROAD CV-059

HYDROLOGY CHARACTERISTICS: 3-JUL-23

Wetted/Dry/Shallow (<0.02 m)/Unconnected Pools: Wetted

Stage: High

Site	Channel Width (m)		Water Depth (m)				Water Velocity (m/s)			
	Bankfull	Wetted	25%	50%	75%	Max	25%	50%	75%	Max
100D	33.5	13.5	-	-	-	0.15	-	-	-	0.27
60D	37.8	16.1	-	-	-	0.64	-	-	-	0.48
20D	12.1	2.9	-	-	-	0.48	-	-	-	1.09
0 (Centreline)	UNDER TOTE ROAD									
20U	15.9	Obscured	-	-	-	0.48	-	-	-	0.15
60U	28.8	21.5	-	-	-	1.05	-	-	-	0.08
100U	7.6	2.5	-	-	-	0.88	-	-	-	0.81

OTHER NOTES / OBSERVATIONS

This stream is wide, deep, and slow moving. Wetted widths ranged from 2.5 to 16.1 m. Maximum depths reached as high as 1.05 m. Velocities ranged from 0.08-1.09 m/s.

TOTE ROAD CV-059

HABITAT CHARACTERISTICS: 3-JUL-23

Wetted/Dry/Shallow (<0.02 m)/Unconnected Pools: Wetted

Stage: High

Site	Stream Morphology Composition (%)							Substrate Composition (%)				
	Riffle	Pool (<0.2 m)	Pool (>0.2 m)	Run	Cascade	Rapids	Flat	Fines	Gravel	Small Cobble	Large Cobble	Boulders
100D	20	-	-	80	-	-	-	100	-	-	-	-
60D	20	-	-	80	-	-	-	95	5	-	-	-
20D	90	-	-	10	-	-	-		30	60	10	-
0 (Centreline)	UNDER TOTE ROAD											
20U	-	10	80	10	-	-	-	80	10	10	-	-
60U	5	10	85		-	-	-	100	-	-	-	-
100U	10	30	10	50	-	-	-	100	-	-	-	-

OTHER NOTES / OBSERVATIONS

Stream morphology varied in accordance with wetted width. In wider areas, morphology tended to be primarily deep pools, whereas riffle-run was more common where the stream narrowed. Wider areas of the stream were nearly uniformly composed of fine substrate, with cobble-gravel dominating in the narrow areas.

TOTE ROAD CV-059

3-JUL-23



A



B



C



D



E



F

Photos 1-1. Photos taken 20 m downstream (top) and 60 m downstream (bottom) in spring 2023: (A,D) facing upstream; (B,E) facing downstream; and (C,F) across (left bank looking at right bank).

TOTE ROAD CV-059

3-JUL-23



A



B

C

No Photo

Photos 1-2. Photos taken 100 m downstream in spring 2023: (A) facing upstream; (B) facing downstream; and (C) across (left bank looking at right bank).

TOTE ROAD CV-059

3-JUL-23



A



B



C



D



E



F

Photos 1-3. Photos taken 20 m upstream (top) and 60 m upstream (bottom) in spring 2023: (A,D) facing upstream; (B,E) facing downstream; and (C,F) across (left bank looking at right bank).

TOTE ROAD CV-059

3-JUL-23



A



B



C

Photos 1-4. Photos taken 100 m upstream in spring 2023: (A) facing upstream; (B) facing downstream; and (C) across (left bank looking at right bank).

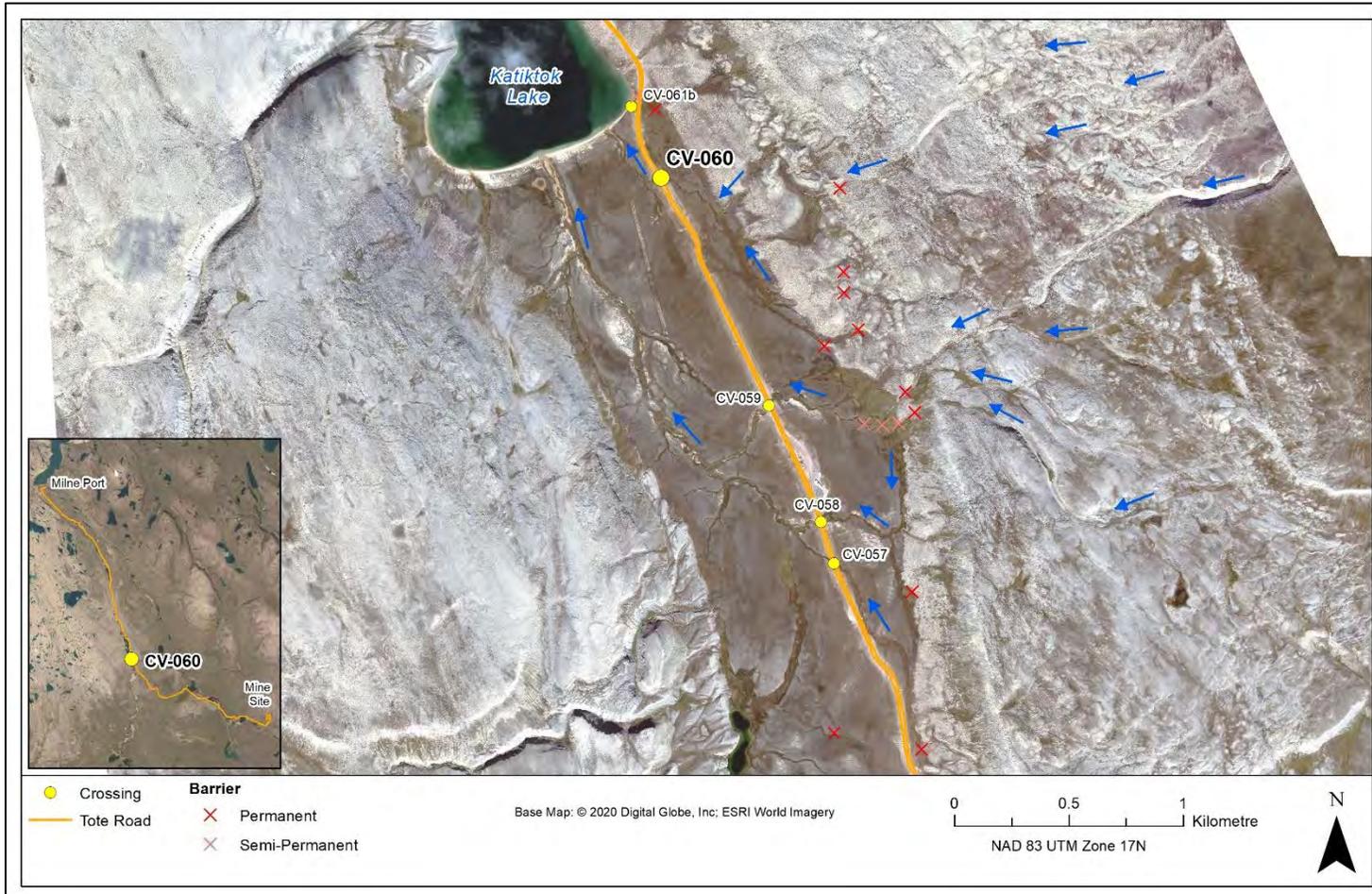
TOTE ROAD CV-060

LOCATION AND CROSSING DESCRIPTION

Site ID:	CV-060	Dates Surveyed:	3-Jul-23	Waterbody Type:	Stream
Project Interaction:	Tote Road Culvert	UTM Coordinates:	17W 527622 E 7930342 N		

GENERAL PHYSICAL CHARACTERISTICS

Flow Regime: Seasonal Stream Order: 2



**BAFFINLAND IRON MINES
MARY RIVER PROJECT**

North/South Consultants Inc.
Aquatic Environment Specialists

FISH HABITAT:

ARCTIC CHAR - YES

NINESPINE STICKLEBACK - POTENTIAL

TOTE ROAD CV-060

SITE SUMMARY

The Tote Road crosses a small, unnamed stream at site CV-060 that flows 360 m northwest into the south end of Katiktok Lake. The lake is of sufficient depth to support overwintering of both species.

This stream had wetted widths ranging from 4.4-11.6 m in spring 2023. Measured maximum depths were typically >0.50 m and reached as high as 1.15 m. Velocities ranged from 0.31-1.16 m/s. Stream morphology was comprised of shallow and deep pools separated by narrow runs and riffles. Fines were the dominant substrate throughout the stream.

Juvenile Arctic char use habitat in the vicinity of the Tote Road crossing at CV-060 for rearing/feeding throughout the open-water period. There is no char spawning habitat and no overwintering habitat for either species in this stream.

Ninespine Stickleback have never been captured or observed in this stream since the monitoring program began in 2009 despite an abundance of suitable habitat. It is unknown if they are present in Katiktok Lake.

TOTE ROAD CV-060

FISH HABITAT POTENTIAL

Species	Spawning	Overwintering	Rearing	Adults Present
ARCH	N	N	Y	N
NNST	P	N	P	P

FISHERIES DATA

Location	Species	Survey Date	Temperature (°C)	Distance Fished (m)	Effort (Seconds)	# Fish Captured	# Fish Observed	CPUE (No. Fish/60 Seconds)	Length Range (mm)
Downstream	ARCH	3-Jul-23	7.0	50	151	0	1	0.00	-
	NNST					0	0	0.00	-
Upstream	ARCH			50	186	0	0	0.00	-
	NNST			50	186	0	0	0.00	-

OTHER NOTES / OBSERVATIONS

One Arctic Char was observed in the downstream end of the culvert in spring 2023. Juvenile Arctic Char have been previously observed in this stream on both sides of the crossing during the open-water season. Stickleback have never been captured in this stream and it is unknown if they are present in the watershed.

TOTE ROAD CV-060

HYDROLOGY CHARACTERISTICS: 3-JUL-23

Wetted/Dry/Shallow (<0.02 m)/Unconnected Pools: Wetted

Stage: High

Site	Channel Width (m)		Water Depth (m)				Water Velocity (m/s)			
	Bankfull	Wetted	25%	50%	75%	Max	25%	50%	75%	Max
100D	35.1	8.9	-	-	-	0.69	-	-	-	0.31
60D	28.3	4.4	-	-	-	0.69	-	-	-	1.16
20D	19.0	11.6	-	-	-	0.42	-	-	-	0.80
0 (Centreline)	UNDER TOTE ROAD									
20U	20.5	9.2	-	-	-	0.79	-	-	-	0.64
60U	20.9	9.3	-	-	-	1.15	-	-	-	0.46
100U	13.0	7.7	-	-	-	1.06	-	-	-	0.32

OTHER NOTES / OBSERVATIONS

This stream had wetted widths ranging from 4.4-11.6 m in spring 2023. Measured maximum depths were typically >0.50 m and reached as high as 1.15 m. Velocities ranged from 0.31-1.16 m/s.

TOTE ROAD CV-060

HABITAT CHARACTERISTICS: 3-JUL-23

Wetted/Dry/Shallow (<0.02 m)/Unconnected Pools: Wetted

Stage: High

Site	Stream Morphology Composition (%)							Substrate Composition (%)				
	Riffle	Pool (<0.2 m)	Pool (>0.2 m)	Run	Cascade	Rapids	Flat	Fines	Gravel	Small Cobble	Large Cobble	Boulders
100D	-	10	50	40	-	-	-	100	-	-	-	-
60D	30	30	20	20	-	-	-	100	-	-	-	-
20D	20	40	30	10	-	-	-	50	30	20	-	-
0 (Centreline)	UNDER TOTE ROAD											
20U	5	35	30	30	-	-	-	70	20	5	5	-
60U	20	20	50	30	-	-	-	95	-	5	-	-
100U	5	10	70	15	-	-	-	95	-	5	-	-

OTHER NOTES / OBSERVATIONS

Stream morphology was comprised of shallow and deep pools separated by narrow runs and riffles. Fines were the dominant substrate throughout the stream.

TOTE ROAD CV-060

3-JUL-23



A



B



C



D



E



F

Photos 1-1. Photos taken 20 m downstream (top) and 60 m downstream (bottom) in spring 2023: (A,D) facing upstream; (B,E) facing downstream; and (C,F) across (right bank looking at left bank).

TOTE ROAD CV-060

3-JUL-23



A



B



C

Photos 1-2. Photos taken 100 m downstream in spring 2023: (A) facing upstream; (B) facing downstream; and (C) across (right bank looking at left bank).

TOTE ROAD CV-060

3-JUL-23



A



B



C



D



E



F

Photos 1-3. Photos taken 20 m upstream (top) and 60 m upstream (bottom) in spring 2023: (A,D) facing upstream; (B,E) facing downstream; and (C,F) across (left bank looking at right bank).

TOTE ROAD CV-060

3-JUL-23



A



B



C

Photos 1-4. Photos taken 100 m upstream in spring 2023: (A) facing upstream; (B) facing downstream; and (C) across (left bank looking at right bank).

TOTE ROAD CV-061

LOCATION AND CROSSING DESCRIPTION

Site ID:	CV-061	Dates Surveyed:	3-Jul-23	Waterbody Type:	Stream
Project Interaction:	Tote Road Culvert	UTM Coordinates:	17W 527263 E 7931366 N		

GENERAL PHYSICAL CHARACTERISTICS

Flow Regime: Seasonal Stream Order: 1



BAFFINLAND IRON MINES
MARY RIVER PROJECT

 **North/South Consultants Inc.**
Aquatic Environment Specialists

FISH HABITAT:

ARCTIC CHAR - YES

NINESPINE STICKLEBACK - POTENTIAL

TOTE ROAD CV-061

SITE SUMMARY

The Tote Road crosses a small, unnamed stream at site CV-061 that flows 90 m west into the south end of Katiktok Lake. During high water conditions, the backwatering effect from the lake can extend to within a few metres of the culvert. The lake is of sufficient depth to support overwintering.

This stream is largely a wetland area and, as such, is wide with wetted widths ranging from 11.0-43.0 m in spring 2023. The stream is shallow with maximum depths <0.20 m. Maximum velocities ranged from 0.57-1.15 m/s in spring 2023. Stream morphology was mainly riffle with increased proportions of runs upstream. Fines were dominant upstream and cobble downstream. Previous surveys of the area have shown that velocities drop to negligible levels following the freshet and morphology shifts to primarily pool habitat by summer/fall.

Although not captured in spring 2023, juvenile Arctic char can use habitat in the vicinity of the Tote Road crossing at CV-061 for rearing/feeding throughout the open-water period. As water levels decrease the culvert becomes slightly perched (0.05 m), which may affect movements of smaller fish. There is no char spawning habitat and no overwintering habitat for either species in this stream.

Ninespine Stickleback have never been captured or observed in this stream since the monitoring program began in 2019 despite an abundance of suitable habitat. It is unknown if they are present in Katiktok Lake.

TOTE ROAD CV-061

FISH HABITAT POTENTIAL

Species	Spawning	Overwintering	Rearing	Adults Present
ARCH	N	N	Y	N
NNST	P	N	P	P

FISHERIES DATA

Location	Species	Survey Date	Temperature (°C)	Distance Fished (m)	Effort (Seconds)	# Fish Captured	# Fish Observed	CPUE (No. Fish/60 Seconds)	Length Range (mm)
Downstream	ARCH	3-Jul-23	6.0	50	87	0	0	0.00	-
	NNST					0	0	0.00	-
Upstream	ARCH			50	92	0	0	0.00	-
	NNST					0	0	0.00	-

OTHER NOTES / OBSERVATIONS

No fish were observed or captured in spring 2023. Small numbers of char have been captured in this stream in previous years. Stickleback have never been captured in this stream and it is unknown if they are present in the watershed.

TOTE ROAD CV-061

HYDROLOGY CHARACTERISTICS: 3-JUL-23

Wetted/Dry/Shallow (<0.02 m)/Unconnected Pools: Wetted

Stage: High

Site	Channel Width (m)		Water Depth (m)				Water Velocity (m/s)			
	Bankfull	Wetted	25%	50%	75%	Max	25%	50%	75%	Max
100D	95	21.2	-	-	-	0.14	-	-	-	1.15
60D	34	13.3	-	-	-	0.12	-	-	-	0.90
20D	30	11.0	-	-	-	0.10	-	-	-	0.82
0 (Centreline)	UNDER TOTE ROAD									
20U	132	31.5	-	-	-	0.12	-	-	-	0.57
60U	129	43.0	-	-	-	0.18	-	-	-	0.65
100U	68	15.7	-	-	-	0.19	-	-	-	0.83

OTHER NOTES / OBSERVATIONS

This stream is largely a wetland area and, as such, is wide with wetted widths ranging from 11.0-43.0 m in spring 2023. The stream is shallow with maximum depths <0.20 m. Maximum velocities ranged from 0.57-1.15 m/s in spring 2023.

TOTE ROAD CV-061

HABITAT CHARACTERISTICS: 3-JUL-23

Wetted/Dry/Shallow (<0.02 m)/Unconnected Pools: Wetted

Stage: High

Site	Stream Morphology Composition (%)							Substrate Composition (%)				
	Riffle	Pool (<0.2 m)	Pool (>0.2 m)	Run	Cascade	Rapids	Flat	Fines	Gravel	Small Cobble	Large Cobble	Boulders
100D	90	-	-	10	-	-	-	10	-	40	40	10
60D	80	10	-	10	-	-	-	10	-	40	45	5
20D	80	10	-	10	-	-	-	10	40	50	-	-
0 (Centreline)	UNDER TOTE ROAD											
20U	20	40	-	40	-	-	-	95	-	5	-	-
60U	30	40	-	30	-	-	-	90	10	-	-	-
100U	50	30	-	20	-	-	-	40	10	30	20	-

OTHER NOTES / OBSERVATIONS

Stream morphology was mainly riffle with increased proportions of runs upstream. Morphology shifts to primarily pool habitat by summer/fall. Fines were dominant upstream and cobble downstream.

TOTE ROAD CV-061

3-JUL-23



A



B



C



D



E



F

Photos 1-1. Photos taken 20 m downstream (top) and 60 m downstream (bottom) in spring 2023: (A,D) facing upstream; (B,E) facing downstream; and (C,F) across (right bank looking at left bank).

TOTE ROAD CV-061

3-JUL-23



A



B



C

Photos 1-2. Photos taken 100 m downstream in spring 2023: (A) facing upstream; (B) facing downstream; and (C) across (right bank looking at left bank).

TOTE ROAD CV-061

3-JUL-23



A



B



C



D



E



F

Photos 1-3. Photos taken 20 m upstream (top) and 60 m upstream (bottom) in spring 2023: (A,D) facing upstream; (B,E) facing downstream; and (C,F) across (left bank looking at right bank).

TOTE ROAD CV-061

3-JUL-23



A



B



C

Photos 1-4. Photos taken 100 m upstream in spring 2023: (A) facing upstream; (B) facing downstream; and (C) across (left bank looking at right bank).

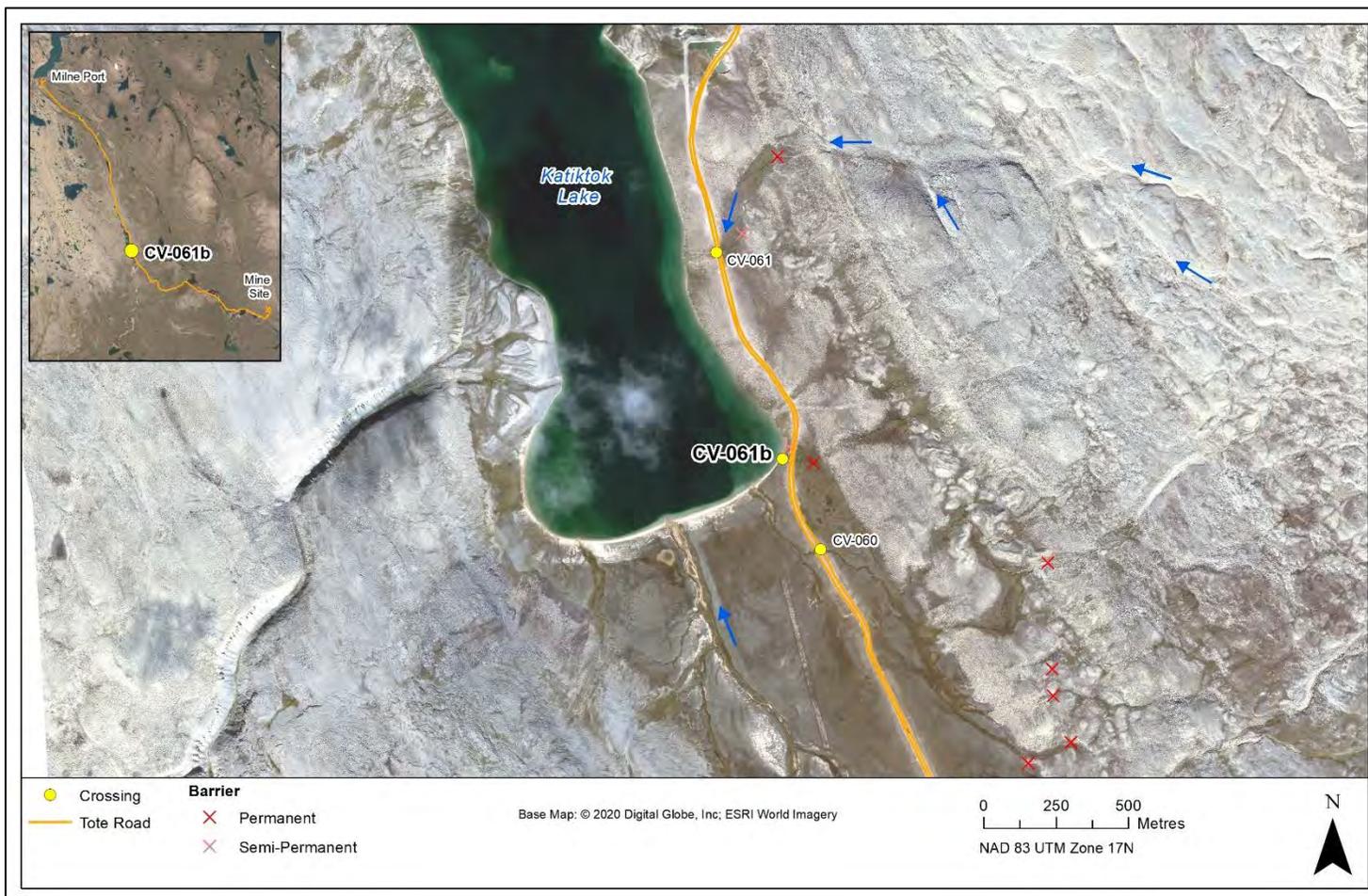
TOTE ROAD CV-061B

LOCATION AND CROSSING DESCRIPTION

Site ID:	CV-061b	Dates Surveyed:	3-Jul-23	Waterbody Type:	Stream
Project Interaction:	Tote Road Culvert	UTM Coordinates:	17W 527491 E 7930654 N		

GENERAL PHYSICAL CHARACTERISTICS

Flow Regime: Seasonal Stream Order: 1



BAFFINLAND IRON MINES
MARY RIVER PROJECT

 **North/South Consultants Inc.**
Aquatic Environment Specialists

FISH HABITAT:

ARCTIC CHAR - YES

NINESPINE STICKLEBACK - POTENTIAL

TOTE ROAD CV-061B

SITE SUMMARY

The Tote Road crosses a small, unnamed stream at site CV-061b that flows 20 m west into the south end of Katiktok Lake. During high water conditions, the backwatering effect from the lake can extend up to the culvert. The lake is of sufficient depth to support overwintering.

This stream is largely a wetland area upstream and, as such, is wide with wetted widths ranging from 12.0-74.0 m in spring 2023. The stream had maximum depths ranging from 0.10-0.64 m. Maximum velocities ranged from 0.04-0.50 m/s. Stream morphology was mainly pools connected by riffles/runs. Fines were dominant at all but the most upstream transect where cobble predominated. Previous surveys of the area have shown that velocities drop to negligible levels following the freshet and morphology shifts to primarily pool habitat by summer/fall.

Juvenile Arctic char can use habitat in the vicinity of the Tote Road crossing at CV-061b for rearing/feeding throughout the open-water period. As water levels decrease the culverts become slightly perched (0.07-0.10 m), which may affect movements of smaller fish. There is no char spawning habitat and no overwintering habitat for either species in this stream.

Ninespine Stickleback have never been captured or observed in this stream since the monitoring program began in 2019 despite an abundance of suitable habitat. It is unknown if they are present in Katiktok Lake.

TOTE ROAD CV-061B

FISH HABITAT POTENTIAL

Species	Spawning	Overwintering	Rearing	Adults Present
ARCH	N	N	Y	N
NNST	P	N	P	P

FISHERIES DATA

Location	Species	Survey Date	Temperature (°C)	Distance Fished (m)	Effort (Seconds)	# Fish Captured	# Fish Observed	CPUE (No. Fish/60 Seconds)	Length Range (mm)
Downstream	ARCH	3-Jul-23	8.0	50	172	1	0	0.35	44
	NNST					0	0	0.00	-
Upstream	ARCH			50	110	0	0	0.00	-
	NNST					0	0	0.00	-

OTHER NOTES / OBSERVATIONS

One Arctic Char was captured downstream of the road crossing in spring 2023. Small numbers of char have also been captured in this stream in previous years. Stickleback have never been captured in this stream and it is unknown if they are present in the watershed.

TOTE ROAD CV-061B

HYDROLOGY CHARACTERISTICS: 3-JUL-23

Wetted/Dry/Shallow (<0.02 m)/Unconnected Pools: Wetted

Stage: Moderate

Site	Channel Width (m)		Water Depth (m)				Water Velocity (m/s)			
	Bankfull	Wetted	25%	50%	75%	Max	25%	50%	75%	Max
100D	LAKE									
60D										
20D										
0 (Centreline)	UNDER TOTE ROAD									
20U	141	74.0	-	-	-	0.64	-	-	-	0.04
60U	130	12.0	-	-	-	0.33	-	-	-	0.50
100U	135	25.0	-	-	-	0.10	-	-	-	0.45

OTHER NOTES / OBSERVATIONS

This stream is largely a wetland area upstream of the road and, as such, is wide with wetted widths ranging from 12.0-74.0 m in spring 2023. The stream had maximum depths ranging from 0.10-0.64 m and maximum velocities ranging from 0.04-0.50 m/s in spring 2023.

TOTE ROAD CV-061B

HABITAT CHARACTERISTICS: 3-JUL-23

Wetted/Dry/Shallow (<0.02 m)/Unconnected Pools: Wetted

Stage: Moderate

Site	Stream Morphology Composition (%)							Substrate Composition (%)				
	Riffle	Pool (<0.2 m)	Pool (>0.2 m)	Run	Cascade	Rapids	Flat	Fines	Gravel	Small Cobble	Large Cobble	Boulders
100D	LAKE											
60D												
20D												
0 (Centreline)	UNDER TOTE ROAD											
20U	-	-	95	5	-	-	-	90	10	-	-	-
60U	30	30	10	30	-	-	-	100	-	-	-	-
100U	10	60	-	30	-	-	-	10	-	30	55	5

OTHER NOTES / OBSERVATIONS

Stream morphology was mainly pools connected by riffles/runs. Fines were dominant at all but the most upstream transect where cobble predominated.

TOTE ROAD CV-061B

3-JUL-23



A



B



C



D



E



F

Photos 1-1. Photos taken 20 m upstream (top) and 60 m upstream (bottom) in spring 2023: (A,D) facing upstream; (B,E) facing downstream; and (C,F) across (left bank looking at right bank).

TOTE ROAD CV-061B

3-JUL-23



A



B



C

Photos 1-2. Photos taken 100 m upstream in spring 2023: (A) facing upstream; (B) facing downstream; and (C) across (left bank looking at right bank).

TOTE ROAD CV-072

LOCATION AND CROSSING DESCRIPTION

Site ID:	CV-072	Dates Surveyed:	3-Jul-23	Waterbody Type:	Stream
Project Interaction:	Tote Road Culvert	UTM Coordinates:	17W 526897 E 7934576 N		

GENERAL PHYSICAL CHARACTERISTICS

Flow Regime: Seasonal Stream Order: 3



BAFFINLAND IRON MINES
MARY RIVER PROJECT

 **North/South Consultants Inc.**
Aquatic Environment Specialists

FISH HABITAT:

ARCTIC CHAR - YES

NINESPINE STICKLEBACK - POTENTIAL

TOTE ROAD CV-072

SITE SUMMARY

The Tote Road crosses a small, unnamed stream at site CV-072 that flows 100 m west into Katiktok Lake. The lake is of sufficient depth to support overwintering.

The stream had wetted widths ranging from 5.4-13.1 m in spring 2023. Measured maximum depths ranged from 0.24-0.31 m. Maximum velocities were high, typically exceeding 1.00 m/s and reaching as high as >2.00 m/s. Morphology was mainly riffle/run and substrates were predominantly cobble/gravel.

Juvenile Arctic char can use habitat in the vicinity of the Tote Road crossing at CV-072 for rearing/feeding throughout the open-water period. There is no char spawning habitat and no overwintering habitat for either species in this stream.

Ninespine Stickleback have never been captured or observed in this stream since the monitoring program began in 2009. It is unknown if they are present in Katiktok Lake.

TOTE ROAD CV-072

FISH HABITAT POTENTIAL

Species	Spawning	Overwintering	Rearing	Adults Present
ARCH	N	N	Y	N
NNST	P	N	P	P

FISHERIES DATA

Location	Species	Survey Date	Temperature (°C)	Distance Fished (m)	Effort (Seconds)	# Fish Captured	# Fish Observed	CPUE (No. Fish/60 Seconds)	Length Range (mm)
Downstream	ARCH	3-Jul-23	3.0	50	124	0	0	0.00	-
	NNST					0	0	0.00	-
Upstream	ARCH			50	111	0	0	0.00	-
	NNST			50	111	0	0	0.00	-

OTHER NOTES / OBSERVATIONS

No fish were observed or captured in spring 2023. However, char have frequently been captured in this stream in previous years. Stickleback have never been captured in this stream and it is unknown if they are present in the watershed.

TOTE ROAD CV-072

HYDROLOGY CHARACTERISTICS: 3-JUL-23

Wetted/Dry/Shallow (<0.02 m)/Unconnected Pools: Wetted

Stage: High

Site	Channel Width (m)		Water Depth (m)				Water Velocity (m/s)			
	Bankfull	Wetted	25%	50%	75%	Max	25%	50%	75%	Max
100D	LAKE									
60D	180.0	5.4	-	-	-	0.29	-	-	-	1.21
20D	200.0	13.1	-	-	-	0.24	-	-	-	1.69
0 (Centreline)	UNDER TOTE ROAD									
20U	45.6	9.4	-	-	-	0.28	-	-	-	0.97
60U - Snow	-	-	-	-	-	0.31	-	-	-	1.69
100U	17.9	9.8	-	-	-	0.31	-	-	-	2.02

OTHER NOTES / OBSERVATIONS

This stream had wetted widths ranging from 5.4-13.1 m in spring 2023. Measured maximum depths ranged from 0.24-0.31 m. Maximum velocities were high, typically exceeding 1.00 m/s and reaching as high as 2.02 m/s.

TOTE ROAD CV-072

HABITAT CHARACTERISTICS: 3-JUL-23

Wetted/Dry/Shallow (<0.02 m)/Unconnected Pools: Wetted

Stage: High

Site	Stream Morphology Composition (%)							Substrate Composition (%)				
	Riffle	Pool (<0.2 m)	Pool (>0.2 m)	Run	Cascade	Rapids	Flat	Fines	Gravel	Small Cobble	Large Cobble	Boulders
100D	LAKE											
60D	70	10	-	20	-	-	-	-	40	55	10	5
20D	80	5	-	15	-	-	-	-	20	50	20	10
0 (Centreline)	UNDER TOTE ROAD											
20U	70	10	-	20	-	-	-	5	35	40	10	10
60U	70	-	-	30	-	-	-	5	30	40	10	15
100U	45	15	10	10	-	20	-	-	5	25	10	30

OTHER NOTES / OBSERVATIONS

Morphology was mainly riffle/run. Substrates were predominantly cobble/gravel.

TOTE ROAD CV-072

3-JUL-23



A



B



C



D



E



F

Photos 1-1. Photos taken 20 m downstream (top) and 60 m downstream (bottom) in spring 2023: (A,D) facing upstream; (B,E) facing downstream; and (C,F) across (right bank looking at left bank).

TOTE ROAD CV-072

3-JUL-23



A



B



C



D



E



F

Photos 1-3. Photos taken 20 m upstream (top) and 60 m upstream (bottom) in spring 2023: (A,D) facing upstream; (B,E) facing downstream; and (C,F) across (left bank looking at right bank).

TOTE ROAD CV-072

3-JUL-23



A



B



C

Photos 1-4. Photos taken 100 m upstream in spring 2023: (A) facing upstream; (B) facing downstream; and (C) across (left bank looking at right bank).

TOTE ROAD CV-076

LOCATION AND CROSSING DESCRIPTION

Site ID:	CV-076	Dates Surveyed:	3-Jul-23	Waterbody Type:	Stream
Project Interaction:	Tote Road Culvert	UTM Coordinates:	17W 526586 E 7935498 N		

GENERAL PHYSICAL CHARACTERISTICS

Flow Regime: Seasonal Stream Order: 3



BAFFINLAND IRON MINES
MARY RIVER PROJECT

 **North/South Consultants Inc.**
Aquatic Environment Specialists

FISH HABITAT:

ARCTIC CHAR - YES

NINESPINE STICKLEBACK - POTENTIAL

TOTE ROAD CV-076

SITE SUMMARY

The Tote Road crosses a small, unnamed stream at site CV-076 that flows 340 m southwest into the north end of Katiktok Lake. The lake is of sufficient depth to support overwintering of both species.

Detailed habitat data were collected for this site in spring 2023. This stream is generally wide, shallow, and slow-flowing throughout most of the open-water period. In spring 2023, wetted widths ranged from 13.4-20.5 m, maximum depths ranged from 0.13-0.27 m, and maximum velocities ranged from 0.09-0.88 m/s. Morphology was a combination of riffle/run/pool. Substrates consisted of fines, gravel, and small cobble.

Juvenile Arctic char can use habitat in the vicinity of the Tote Road crossing at CV-076 for rearing/feeding throughout the open-water period. There is no char spawning habitat and no overwintering habitat for either species in this stream.

Ninespine Stickleback have never been captured or observed in this stream since the monitoring program began in 2009. It is unknown if they are present in Katiktok Lake.

TOTE ROAD CV-076

FISH HABITAT POTENTIAL

Species	Spawning	Overwintering	Rearing	Adults Present
ARCH	N	N	Y	N
NNST	P	N	P	P

FISHERIES DATA

Location	Species	Survey Date	Temperature (°C)	Distance Fished (m)	Effort (Seconds)	# Fish Captured	# Fish Observed	CPUE (No. Fish/60 Seconds)	Length Range (mm)
Downstream	ARCH	3-Jul-23	6.0	50	148	1	1	0.81	88 - 100
	NNST					0	0	0.00	-
Upstream	ARCH			50	105	0	0	0.00	-
	NNST					0	0	0.00	-

OTHER NOTES / OBSERVATIONS

Two juvenile char were captured/observed downstream of the crossing in spring 2023. Char have frequently been captured in this stream in previous years in the open-water season. Stickleback have never been captured in this stream and it is unknown if they are present in the watershed.

TOTE ROAD CV-076

HYDROLOGY CHARACTERISTICS: 3-JUL-23

Wetted/Dry/Shallow (<0.02 m)/Unconnected Pools: Wetted

Stage: High

Site	Channel Width (m)		Water Depth (m)				Water Velocity (m/s)			
	Bankfull	Wetted	25%	50%	75%	Max	25%	50%	75%	Max
100D	62.9	13.4	-	-	-	0.16	-	-	-	0.88
60D	40.0	13.6	-	-	-	0.27	-	-	-	0.52
20D	40.8	18.0	-	-	-	0.23	-	-	-	0.09
0 (Centreline)	UNDER TOTE ROAD									
20U	79	17.3	-	-	-	0.27	-	-	-	0.43
60U	96.1	19.0	-	-	-	0.13	-	-	-	0.27
100U	10.1	20.5	-	-	-	0.18	-	-	-	0.61

OTHER NOTES / OBSERVATIONS

This stream is generally wide, shallow, and slow-flowing throughout most of the open-water period. In spring 2023, wetted widths ranged from 13.4-20.5 m. Maximum depths ranged from 0.13-0.27 m. Maximum velocities ranged from 0.09-0.88 m/s.

TOTE ROAD CV-076

HABITAT CHARACTERISTICS: 3-JUL-23

Wetted/Dry/Shallow (<0.02 m)/Unconnected Pools: Wetted

Stage: High

Site	Stream Morphology Composition (%)							Substrate Composition (%)				
	Riffle	Pool (<0.2 m)	Pool (>0.2 m)	Run	Cascade	Rapids	Flat	Fines	Gravel	Small Cobble	Large Cobble	Boulders
100D	60	20	-	20	-	-	-	20	30	40	10	-
60D	20	40	10	30	-	-	-	50	30	20	-	-
20D	-	30	10	60	-	-	-	60	10	20	10	-
0 (Centreline)	UNDER TOTE ROAD											
20U	10	30	20	40	-	-	-	50	10	20	20	-
60U	40	20	-	40	-	-	-	20	50	20	-	10
100U	60	10	-	30	-	-	-	20	50	15	-	10

OTHER NOTES / OBSERVATIONS

Morphology was a combination of riffle/run/pool. Substrates were composed of fines, gravel and small cobble.

TOTE ROAD CV-076

3-JUL-23



A



B



C



D



E



F

Photos 1-1. Photos taken 20 m downstream (top) and 60 m downstream (bottom) in spring 2023: (A,D) facing upstream; (B,E) facing downstream; and (C,F) across (right bank looking at left bank).

TOTE ROAD CV-076

3-JUL-23



A



B



C

Photos 1-2. Photos taken 100 m downstream in spring 2023: (A) facing upstream; (B) facing downstream; and (C) across (right bank looking at left bank).

TOTE ROAD CV-076

3-JUL-23



A



B



C



D



E



F

Photos 1-3. Photos taken 20 m upstream (top) and 60 m upstream (bottom) in spring 2023: (A,D) facing upstream; (B,E) facing downstream; and (C,F) across (left bank looking at right bank).

TOTE ROAD CV-076

3-JUL-23



A



B



C

Photos 1-4. Photos taken 100 m upstream in spring 2023: (A) facing upstream; (B) facing downstream; and (C) across (left bank looking at right bank).

TOTE ROAD CV-078

LOCATION AND CROSSING DESCRIPTION

Site ID:	CV-078	Dates Surveyed:	3-Jul-23	Waterbody Type:	Stream
Project Interaction:	Tote Road Culvert	UTM Coordinates:	17W 523852 E 7936787 N		

GENERAL PHYSICAL CHARACTERISTICS

Flow Regime: Seasonal Stream Order: 3



BAFFINLAND IRON MINES
MARY RIVER PROJECT

 **North/South Consultants Inc.**
Aquatic Environment Specialists

FISH HABITAT:

ARCTIC CHAR - YES

NINESPINE STICKLEBACK - POTENTIAL

TOTE ROAD CV-078

SITE SUMMARY

The Tote Road crosses an unnamed stream at site CV-078 that flows 100 m west before splitting into two main channels; one that flows 640 m southwest to Phillips Creek at its outflow from Katiktok Lake and another that flows 700 m west to a small lake adjacent and connected to Phillips Creek. Flows from the CV-078 stream merge with those from the stream crossed by the road at CV-079 prior to emptying into the small lake. Although a bathymetric survey of has not been conducted, the lake is believed to be of sufficient depth to support overwintering of both species.

Detailed habitat data were collected in the stream crossing area in spring 2023. This stream was wide, with moderate depths and moderate to high velocities in spring 2023. Wetted widths ranged from 17.3-30.8 m. Measured maximum depths ranged from 0.31->0.70 m. Maximum velocities consistently exceeded 1.50 m/s. Morphology was mainly riffle/run and substrates were largely gravel/cobble.

Juvenile Arctic char can use habitat in the vicinity of the Tote Road crossing at CV-078 for rearing/feeding throughout the open-water period. There is no char spawning habitat and no overwintering habitat for either species in this stream.

Ninespine Stickleback have never been captured or observed in this stream since the monitoring program began in 2009. It is unknown if they are present in the watershed.

TOTE ROAD CV-078

FISH HABITAT POTENTIAL

Species	Spawning	Overwintering	Rearing	Adults Present
ARCH	N	N	Y	N
NNST	P	N	P	P

FISHERIES DATA

Location	Species	Survey Date	Temperature (°C)	Distance Fished (m)	Effort (Seconds)	# Fish Captured	# Fish Observed	CPUE (No. Fish/60 Seconds)	Length Range (mm)
Downstream	ARCH	3-Jul-23	2.0	50	90	0	0	0.00	-
	NNST					0	0	0.00	-
Upstream	ARCH			50	78	0	0	0.00	-
	NNST					0	0	0.00	-

OTHER NOTES / OBSERVATIONS

No fish were captured/observed in spring 2023. High flows and low water temperatures likely restricted fish to the lower reaches near the potential downstream overwintering lake. Char have frequently been captured in this stream in previous open-water seasons, using habitat for rearing. Stickleback have never been captured in this stream and it is unknown if they are present in the watershed.

TOTE ROAD CV-078

HYDROLOGY CHARACTERISTICS: 3-JUL-23

Wetted/Dry/Shallow (<0.02 m)/Unconnected Pools: Wetted

Stage: High

Site	Channel Width (m)		Water Depth (m)				Water Velocity (m/s)			
	Bankfull	Wetted	25%	50%	75%	Max	25%	50%	75%	Max
100U	130.6	30.2	-	-	-	0.31	-	-	-	1.96
60U	57.5	22.0	-	-	-	0.38	-	-	-	1.74
20U	63.0	29.9	-	-	-	0.56	-	-	-	1.56
0 (Centreline)	UNDER TOTE ROAD									
20D	67.0	34.3	-	-	-	>0.70	-	-	-	1.67
60D	38.9	17.3	-	-	-	0.42	-	-	-	1.59
100D	58.0	38.0	-	-	-	0.58	-	-	-	1.32

OTHER NOTES / OBSERVATIONS

This stream was wide, with moderate depths and moderate to high velocities in spring 2023. Wetted widths ranged from 17.3-30.8 m. Measured maximum depths ranged from 0.31->0.70 m. Maximum velocities consistently exceeding 1.50 m/s.

TOTE ROAD CV-078

HABITAT CHARACTERISTICS: 3-JUL-23

Wetted/Dry/Shallow (<0.02 m)/Unconnected Pools: Wetted

Stage: High

Site	Stream Morphology Composition (%)							Substrate Composition (%)				
	Riffle	Pool (<0.2 m)	Pool (>0.2 m)	Run	Cascade	Rapids	Flat	Fines	Gravel	Small Cobble	Large Cobble	Boulders
100U	70	5	-	25	-	-	-	-	5	60	30	5
60U	70	10	5	15	-	-	-	10	10	50	25	5
20U	60	5	15	20	-	-	-	5	30	35	30	-
0 (Centreline)	UNDER TOTE ROAD											
20D	40	10	20	20	-	10	-	5	20	30	40	5
60D	50	5	5	20	-	20	-	-	10	70	20	-
100D	60	5	5	20	-	10	-	10	20	60	10	-

OTHER NOTES / OBSERVATIONS

Morphology was mainly riffle/run and substrates were largely gravel/cobble.

TOTE ROAD CV-078

3-JUL-23



A



B



C



D



E



F

Photos 1-1. Photos taken 20 m downstream (top) and 60 m downstream (bottom) in spring 2023: (A,D) facing upstream; (B,E) facing downstream; and (C,F) across (right bank looking at left bank).

TOTE ROAD CV-078

3-JUL-23



A



B



C

Photos 1-2. Photos taken 100 m downstream in spring 2023: (A) facing upstream; (B) facing downstream; and (C) across (right bank looking at left bank).

TOTE ROAD CV-078

3-JUL-23



A



B



C



D



E



F

Photos 1-3. Photos taken 20 m upstream (top) and 60 m upstream (bottom) in spring 2023: (A,D) facing upstream; (B,E) facing downstream; and (C,F) across (left bank looking at right bank).

TOTE ROAD CV-078

3-JUL-23



A



B



C

Photos 1-4. Photos taken 100 m upstream in spring 2023: (A) facing upstream; (B) facing downstream; and (C) across (left bank looking at right bank).