



# Railway Construction Access Road Watercourse Crossing Assessments

## Crossing ID: R1

UTM: 17W 610803 / 7838890

Latitude / Longitude: 70°37'48.843" N / 78°0'20.077" W

Date / Time Surveyed: 14-Aug-07 / 21:40



Figure 1: Aerial view of area near crossing R1

### Watercourse Characteristics

Tributary Status: 2<sup>nd</sup> order trib of Cockburn

Channel Pattern: straight

#### Crossing Site

Bankfull Width (m): N/M

Wetted Width (m): N/M

Depth Profile (25%, 50%, 75%; m): N/M

Max. Depth (m): < 0.20

Flow Regime: intermittent

Gradient (°): N/M

#### Upstream

Wetted / Bankfull Width (m): no water

Max. Depth (m): N/A

#### Downstream

Wetted / Bankfull Width (m): N/M

Max. Depth (m): < 0.20

### Notes

Cockburn Lake is ~2 km downstream of the crossing site. Cascades between Cockburn lake and the crossing site act as barriers.

## Crossing ID: R2

UTM: 17W 611355 / 7838108

Latitude / Longitude: 70°37'22.755" N / 77°59'30.231" W

Date / Time Surveyed: 14-Aug-07 / 21:41



Figure 1: Aerial view of area near crossing R2

### Watercourse Characteristics

Tributary Status: 2<sup>nd</sup> order trib of Cockburn

Channel Pattern: straight

#### Crossing Site

Bankfull Width (m): N/M

Wetted Width (m): no water

Depth Profile (25%, 50%, 75%; m): N/A

Max. Depth (m): N/A

Flow Regime: intermittent

Gradient (°): N/M

#### Upstream

Wetted / Bankfull Width (m): no water

Max. Depth (m): N/A

#### Downstream

Wetted / Bankfull Width (m): no water

Max. Depth (m): N/A

### Notes

Cockburn Lake is ~2.5 km downstream of the crossing site. Cascades and a dry stretch between Cockburn lake and the crossing site act as barriers.

# Railway Construction Access Road Watercourse Crossing Assessments

## Crossing ID: R3

UTM: 17W 609475 / 7835480

Latitude / Longitude: 70°36'1.016" N / 78°2'45.181" W

Date / Time Surveyed: 14-Aug-07 / 21:43



Figure 1: Aerial view of area near crossing R3



Figure 2: Another aerial view of area near crossing R3

### Watercourse Characteristics

Tributary Status: 2<sup>nd</sup> order trib of Cockburn

Channel Pattern: straight

#### Crossing Site

Bankfull Width (m): N/M

Wetted Width (m): no water

Depth Profile (25%, 50%, 75%; m): N/A

Max. Depth (m): N/A

Flow Regime: intermittent

Gradient (°): N/M

#### Upstream

Wetted / Bankfull Width (m): no water

Max. Depth (m): N/A

#### Downstream

Wetted / Bankfull Width (m): small river

Max. Depth (m): N/A

### Notes

Cockburn Lake is several km downstream of the crossing site. A small river (flowing into Cockburn) is ~400 m downstream. All downstream areas are inaccessible.

## Crossing ID: R4

UTM: 17W 608367 / 7833657

Latitude / Longitude: 70°35'3.976" N / 78°4'41.151" W

Date / Time Surveyed: 14-Aug-07 / 21:44



Figure 1: Aerial view of area near crossing R4



Figure 2: Another aerial view of area near crossing R4

### Watercourse Characteristics

Tributary Status: 2<sup>nd</sup> order trib of Cockburn

Channel Pattern: straight

#### Crossing Site

Bankfull Width (m): N/M

Wetted Width (m): no water

Depth Profile (25%, 50%, 75%; m): N/A

Max. Depth (m): N/A

Flow Regime: intermittent

Gradient (°): N/M

#### Upstream

Wetted / Bankfull Width (m): no water

Max. Depth (m): N/A

#### Downstream

Wetted / Bankfull Width (m): small river

Max. Depth (m): N/A

### Notes

Cockburn Lake is several km downstream of the crossing site. A small river (flowing into Cockburn) is ~100 m downstream. All downstream areas are inaccessible.

# Railway Construction Access Road Watercourse Crossing Assessments

## Crossing ID: R5

UTM: 17W 607745 / 7832940

Latitude / Longitude: 70°34'41.824" N / 78°5'44.753" W

Date / Time Surveyed: 14-Aug-07 / 21:44



Figure 1: Aerial view of area near crossing R5

### Watercourse Characteristics

Tributary Status: 2<sup>nd</sup> order trib of Cockburn

Channel Pattern: straight

#### Crossing Site

Bankfull Width (m): N/M

Wetted Width (m): no water

Depth Profile (25%, 50%, 75%; m): N/A

Max. Depth (m): N/A

Flow Regime: intermittent

Gradient (°): N/M

#### Upstream

Wetted / Bankfull Width (m): no water

Max. Depth (m): N/A

#### Downstream

Wetted / Bankfull Width (m): small river

Max. Depth (m): N/A

### Notes

Cockburn Lake is several km downstream of the crossing site. A small river (flowing into Cockburn) is ~50 m downstream. All downstream areas are inaccessible.

## Crossing ID: R6

UTM: 17W 607513 / 7832641

Latitude / Longitude: 70°34' 32.542" N / 78°6'8.612" W

Date / Time Surveyed: 14-Aug-07 / 21:46



Figure 1: Aerial view of area near crossing R6



Figure 2: Another aerial view of area near crossing R6

### Watercourse Characteristics

Tributary Status: 2<sup>nd</sup> order trib of Cockburn

Channel Pattern: straight

#### Crossing Site

Bankfull Width (m): N/M

Wetted Width (m): no water

Depth Profile (25%, 50%, 75%; m): N/A

Max. Depth (m): N/A

Flow Regime: intermittent

Gradient (°): N/M

#### Upstream

Wetted / Bankfull Width (m): no water

Max. Depth (m): N/A

#### Downstream

Wetted / Bankfull Width (m): small river

Max. Depth (m): N/A

### Notes

Cockburn Lake is several km downstream of the crossing site. A small river (flowing into Cockburn) is ~50 m downstream. All downstream areas are inaccessible.



# Railway Construction Access Road Watercourse Crossing Assessments

## Crossing ID: R7

UTM: 17W 606608 / 7831386

Latitude / Longitude: 70°33'53.468" N / 78°7'42.031" W

Date / Time Surveyed: 14-Aug-07 / 21:47



Figure 1: Aerial view of area near crossing R7



Figure 2: Another aerial view of area near crossing R7

### Watercourse Characteristics

Tributary Status: 2<sup>nd</sup> order trib of Cockburn

Channel Pattern: straight

#### Crossing Site

Bankfull Width (m): N/M

Wetted Width (m): no water

Depth Profile (25%, 50%, 75%; m): N/A

Max. Depth (m): N/A

Flow Regime: intermittent

Gradient (°): N/M

#### Upstream

Wetted / Bankfull Width (m): no water

Max. Depth (m): N/A

#### Downstream

Wetted / Bankfull Width (m): small river

Max. Depth (m): N/A

### Notes

Cockburn Lake is several km downstream of the crossing site. A small river (flowing into Cockburn) is ~50 m downstream. All downstream areas are inaccessible.

## Crossing ID: R8

UTM: 17W 606075 / 7830564

Latitude / Longitude: 70°33'27.778" N / 78°8'37.380" W

Date / Time Surveyed: 14-Aug-07 / 21:47



Figure 1: Aerial view of area near crossing R8

### Watercourse Characteristics

Tributary Status: 2<sup>nd</sup> order trib of Cockburn

Channel Pattern: straight

#### Crossing Site

Bankfull Width (m): N/M

Wetted Width (m): no water

Depth Profile (25%, 50%, 75%; m): N/A

Max. Depth (m): N/A

Flow Regime: intermittent

Gradient (°): N/M

#### Upstream

Wetted / Bankfull Width (m): no water

Max. Depth (m): N/A

#### Downstream

Wetted / Bankfull Width (m): small lake

Max. Depth (m): N/A

### Notes

Cockburn Lake is several km downstream of the crossing site. A small lake (flowing into Cockburn) is ~50 m downstream. All downstream areas are inaccessible.

# Railway Construction Access Road Watercourse Crossing Assessments

## Crossing ID: R9

UTM: 17W 606069 / 7829957

Latitude / Longitude: 70°33'8.217" N / 78°8'40.724" W

Date / Time Surveyed: 14-Aug-07 / 21:48



Figure 1: Aerial view of area near crossing R9



Figure 2: Another aerial view of area near crossing R9

### Watercourse Characteristics

Tributary Status: 2<sup>nd</sup> order trib of Cockburn

Channel Pattern: straight

#### Crossing Site

Bankfull Width (m): N/M  
Wetted Width (m): no water or nearly none  
Depth Profile (25%, 50%, 75%; m): N/A  
Max. Depth (m): N/A  
Flow Regime: intermittent  
Gradient (°): N/M

#### Upstream

Wetted / Bankfull Width (m): no water  
Max. Depth (m): N/A

#### Downstream

Wetted / Bankfull Width (m): small lake  
Max. Depth (m): N/A

### Notes

Cockburn Lake is several km downstream of the crossing site. A small lake (flowing into Cockburn) is ~100 m downstream. All downstream areas are inaccessible.

## Crossing ID: R10

UTM: 17W 605463 / 7829719

Latitude / Longitude: 70°33'1.461" N / 78°9'40.438" W

Date / Time Surveyed: 14-Aug-07 / 21:40



Figure 1: Aerial view of area near crossing R10

### Watercourse Characteristics

Tributary Status: 3<sup>rd</sup> order trib of Cockburn

Channel Pattern: straight

#### Crossing Site

Bankfull Width (m): N/M  
Wetted Width (m): no water or nearly none  
Depth Profile (25%, 50%, 75%; m): N/A  
Max. Depth (m): N/A  
Flow Regime: intermittent  
Gradient (°): N/M

#### Upstream

Wetted / Bankfull Width (m): no water  
Max. Depth (m): N/A

#### Downstream

Wetted / Bankfull Width (m): large lake  
Max. Depth (m): N/A

### Notes

Cockburn Lake is several km downstream of the crossing site. There is an unnamed large lake ~700 m downstream of the crossing site. All downstream areas are inaccessible.

# Railway Construction Access Road Watercourse Crossing Assessments

## Crossing ID: R11

UTM: 17W 605171 / 7829297

Latitude / Longitude: 70°32'48.295" N / 78°10'10.593" W

Date / Time Surveyed: 14-Aug-07 / 21:49



Figure 1: Aerial view of area near crossing R11

### Watercourse Characteristics

Tributary Status:	2 <sup>nd</sup> order trib of Cockburn
Channel Pattern:	straight
<b>Crossing Site</b>	
Bankfull Width (m):	N/M
Wetted Width (m):	no water
Depth Profile (25%, 50%, 75%; m):	N/A
Max. Depth (m):	N/A
Flow Regime:	intermittent
Gradient (°):	N/M
<b>Upstream</b>	
Wetted / Bankfull Width (m):	no water
Max. Depth (m):	N/A
<b>Downstream</b>	
Wetted / Bankfull Width (m):	large lake
Max. Depth (m):	N/A

### Notes

Cockburn Lake is several km downstream of the crossing site. There is an unnamed large lake ~300 m downstream of the crossing site. All downstream areas are inaccessible.

## Crossing ID: R12

UTM: 17W 604798 / 7828829

Latitude / Longitude: 70°32'33.765" N / 78°10'48.778" W

Date / Time Surveyed: 14-Aug-07 / 21:49



Figure 1: Aerial view of area near crossing R12

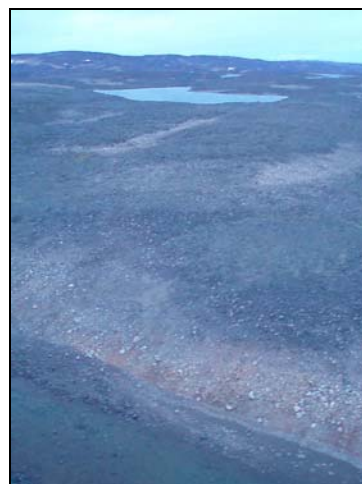


Figure 2: Another aerial view of area near crossing R12

### Watercourse Characteristics

Tributary Status:	2 <sup>nd</sup> order trib of Cockburn
Channel Pattern:	straight
<b>Crossing Site</b>	
Bankfull Width (m):	N/M
Wetted Width (m):	no water
Depth Profile (25%, 50%, 75%; m):	N/A
Max. Depth (m):	N/A
Flow Regime:	intermittent
Gradient (°):	N/M
<b>Upstream</b>	
Wetted / Bankfull Width (m):	no water
Max. Depth (m):	N/A
<b>Downstream</b>	
Wetted / Bankfull Width (m):	large lake
Max. Depth (m):	N/A

### Notes

Cockburn Lake is several km downstream of the crossing site. There is an unnamed large lake ~50 m downstream of the crossing site. All downstream areas are inaccessible.



# Railway Construction Access Road Watercourse Crossing Assessments

## Crossing ID: R13

UTM: 17W 604070 / 7828095

Latitude / Longitude: 70°32'11.186" N / 78°12'2.462" W

Date / Time Surveyed: 14-Aug-07 / 21:50



Figure 1: Aerial view of area near crossing R13



Figure 2: Another aerial view of area near crossing R13

### Watercourse Characteristics

Tributary Status: 2<sup>nd</sup> order trib of Cockburn

Channel Pattern: straight

#### Crossing Site

Bankfull Width (m): N/M

Wetted Width (m): N/M

Depth Profile (25%, 50%, 75%; m): N/M

Max. Depth (m): < 0.10

Flow Regime: intermittent

Gradient (°): N/M

#### Upstream

Wetted / Bankfull Width (m): N/M

Max. Depth (m): < 0.10

#### Downstream

Wetted / Bankfull Width (m): small lake

Max. Depth (m): N/A

### Notes

Cockburn Lake is several km downstream of the crossing site. There are unnamed lakes ~50 m upstream and downstream of the crossing site. Accessibility is limited.

## Crossing ID: R14

UTM: 17W 603792 / 7827456

Latitude / Longitude: 70°31'50.997" N / 78°12'32.182" W

Date / Time Surveyed: 14-Aug-07 / 21:52



Figure 1: Aerial view of area near crossing R14

### Watercourse Characteristics

Tributary Status: 2<sup>nd</sup> order trib of Cockburn

Channel Pattern: straight

#### Crossing Site

Bankfull Width (m): N/M

Wetted Width (m): no water or nearly none

Depth Profile (25%, 50%, 75%; m): N/A

Max. Depth (m): N/A

Flow Regime: intermittent

Gradient (°): N/M

#### Upstream

Wetted / Bankfull Width (m): no water

Max. Depth (m): N/A

#### Downstream

Wetted / Bankfull Width (m): large lake

Max. Depth (m): N/A

### Notes

Cockburn Lake is several km downstream of the crossing site. There is an unnamed large lake ~50 m downstream of the crossing site. All downstream areas are inaccessible.

# Railway Construction Access Road Watercourse Crossing Assessments

## Crossing ID: R15

UTM: 17W 603548 / 7827038

Latitude / Longitude: 70°31'37.881" N / 78°12'57.620" W

Date / Time Surveyed: 14-Aug-07 / 21:53



Figure 1: Aerial view of area near crossing R15



Figure 2: Another aerial view of area near crossing R15

### Watercourse Characteristics

Tributary Status:	2 <sup>nd</sup> order trib of Cockburn
Channel Pattern:	straight
<b>Crossing Site</b>	
Bankfull Width (m):	N/M
Wetted Width (m):	no water
Depth Profile (25%, 50%, 75%; m):	N/A
Max. Depth (m):	N/A
Flow Regime:	intermittent
Gradient (°):	N/M
<b>Upstream</b>	
Wetted / Bankfull Width (m):	no water
Max. Depth (m):	N/A
<b>Downstream</b>	
Wetted / Bankfull Width (m):	large lake
Max. Depth (m):	N/A

### Notes

Cockburn Lake is several km downstream of the crossing site. There is an unnamed large lake ~50 m downstream of the crossing site. All downstream areas are inaccessible.

## Crossing ID: R16

UTM: 17W 603311 / 7826653

Latitude / Longitude: 70°31'25.817" N / 78°13'22.227" W

Date / Time Surveyed: 14-Aug-07 / 21:54



Figure 1: Aerial view of area near crossing R16 (white arrow)



Figure 2: Another aerial view of area near crossing R16 (white arrow)

### Watercourse Characteristics

Tributary Status:	2 <sup>nd</sup> order trib of Cockburn
Channel Pattern:	straight, braided
<b>Crossing Site</b>	
Bankfull Width (m):	N/M
Wetted Width (m):	no water
Depth Profile (25%, 50%, 75%; m):	N/A
Max. Depth (m):	N/A
Flow Regime:	intermittent
Gradient (°):	N/M
<b>Upstream</b>	
Wetted / Bankfull Width (m):	no water
Max. Depth (m):	N/A
<b>Downstream</b>	
Wetted / Bankfull Width (m):	large lake
Max. Depth (m):	N/A

### Notes

Cockburn Lake is several km downstream of the crossing site. There is an unnamed large lake ~200 m downstream of the crossing site. All downstream areas are inaccessible.

# Railway Construction Access Road Watercourse Crossing Assessments

## Crossing ID: R17

UTM: 17W 603117 / 7826389

Latitude / Longitude: 70°31'17.591" N / 78°13'42.137" W

Date / Time Surveyed: 14-Aug-07 / 21:55



Figure 1: Aerial view of area near crossing R17

### Watercourse Characteristics

Tributary Status: 2<sup>nd</sup> order trib of Cockburn

Channel Pattern: straight

#### Crossing Site

Bankfull Width (m): N/M

Wetted Width (m): no water

Depth Profile (25%, 50%, 75%; m): N/A

Max. Depth (m): N/A

Flow Regime: intermittent

Gradient (°): N/M

#### Upstream

Wetted / Bankfull Width (m): no water

Max. Depth (m): N/A

#### Downstream

Wetted / Bankfull Width (m): small lake

Max. Depth (m): N/A

### Notes

Cockburn Lake is several km downstream of the crossing site. There is an unnamed small lake ~50 m downstream of the crossing site. All downstream areas are inaccessible.

## Crossing ID: R18

UTM: 17W 602826 / 7826066

Latitude / Longitude: 70°31'17.605" N / 78°14'11.674" W

Date / Time Surveyed: 14-Aug-07 / 21:56



Figure 1: Aerial view of area near crossing R18

### Watercourse Characteristics

Tributary Status: 2<sup>nd</sup> order trib of Cockburn

Channel Pattern: straight, braided

#### Crossing Site

Bankfull Width (m): N/M

Wetted Width (m): nearly dry

Depth Profile (25%, 50%, 75%; m): N/M

Max. Depth (m): N/M

Flow Regime: intermittent

Gradient (°): N/M

#### Upstream

Wetted / Bankfull Width (m): no water

Max. Depth (m): N/A

#### Downstream

Wetted / Bankfull Width (m): small lake

Max. Depth (m): N/A

### Notes

Cockburn Lake is several km downstream of the crossing site. There is an unnamed small lake ~50 m downstream of the crossing site. All downstream areas are inaccessible.

# Railway Construction Access Road Watercourse Crossing Assessments

## Crossing ID: R19

UTM: 17W 602779 / 7825996

Latitude / Longitude: 70°31'5.417" N / 78°14'16.522" W

Date / Time Surveyed: 14-Aug-07 / 21:56



Figure 1: Aerial view of area near crossing R19



Figure 2: Another aerial view of area near crossing R19

### Watercourse Characteristics

Tributary Status:	2 <sup>nd</sup> order trib of Cockburn
Channel Pattern:	straight
<b>Crossing Site</b>	
Bankfull Width (m):	N/M
Wetted Width (m):	no water
Depth Profile (25%, 50%, 75%; m):	N/A
Max. Depth (m):	N/A
Flow Regime:	intermittent
Gradient (°):	N/M
<b>Upstream</b>	
Wetted / Bankfull Width (m):	no water
Max. Depth (m):	N/A
<b>Downstream</b>	
Wetted / Bankfull Width (m):	small lake
Max. Depth (m):	N/A

### Notes

Cockburn Lake is several km downstream of the crossing site. There is an unnamed small lake ~50 m downstream of the crossing site. All downstream areas are inaccessible.

## Crossing ID: R20

UTM: 17W 602547 / 7825624

Latitude / Longitude: 70°30'53.762" N / 78°14'40.565" W

Date / Time Surveyed: 14-Aug-07 / 21:57



Figure 1: Aerial view of area near crossing R20



Figure 2: Another aerial view of area near crossing R20

### Watercourse Characteristics

Tributary Status:	2 <sup>nd</sup> order trib of Cockburn
Channel Pattern:	straight, braided
<b>Crossing Site</b>	
Bankfull Width (m):	N/M
Wetted Width (m):	no water
Depth Profile (25%, 50%, 75%; m):	N/A
Max. Depth (m):	N/A
Flow Regime:	intermittent
Gradient (°):	N/M
<b>Upstream</b>	
Wetted / Bankfull Width (m):	no water
Max. Depth (m):	N/A
<b>Downstream</b>	
Wetted / Bankfull Width (m):	small river
Max. Depth (m):	N/A

### Notes

Cockburn Lake is several km downstream of the crossing site. There is an unnamed lake ~1 km downstream of the crossing site. All downstream areas are inaccessible.



# Railway Construction Access Road Watercourse Crossing Assessments

## Crossing ID: R21

UTM: 17W 602404 / 7825299

Latitude / Longitude: 70°30'43.492" N / 78°14'55.800" W

Date / Time Surveyed: 14-Aug-07 / 21:57



Figure 1: Aerial view of area near crossing R21



Figure 2: Another aerial view of area near crossing R21

### Watercourse Characteristics

Tributary Status:	2 <sup>nd</sup> order trib of Cockburn
Channel Pattern:	straight, braided
<b>Crossing Site</b>	
Bankfull Width (m):	N/M
Wetted Width (m):	no water
Depth Profile (25%, 50%, 75%; m):	N/A
Max. Depth (m):	N/A
Flow Regime:	intermittent
Gradient (°):	N/M
<b>Upstream</b>	
Wetted / Bankfull Width (m):	no water
Max. Depth (m):	N/A
<b>Downstream</b>	
Wetted / Bankfull Width (m):	small river
Max. Depth (m):	N/A

### Notes

Cockburn Lake is several km downstream of the crossing site. There is a small, unnamed river ~50 m downstream of the crossing site. All downstream areas are inaccessible.

## Crossing ID: R22

UTM: 17W 601813 / 7824550

Latitude / Longitude: 70°30'20.203" N / 78°15'56.134" W

Date / Time Surveyed: 14-Aug-07 / 21:58



Figure 1: Aerial view of area near crossing R22



Figure 2: Another aerial view of area near crossing R22

### Watercourse Characteristics

Tributary Status:	2 <sup>nd</sup> order trib of Cockburn
Channel Pattern:	straight, braided
<b>Crossing Site</b>	
Bankfull Width (m):	N/M
Wetted Width (m):	no water or nearly none
Depth Profile (25%, 50%, 75%; m):	N/A
Max. Depth (m):	N/A
Flow Regime:	intermittent
Gradient (°):	N/M
<b>Upstream</b>	
Wetted / Bankfull Width (m):	no water
Max. Depth (m):	N/A
<b>Downstream</b>	
Wetted / Bankfull Width (m):	small river
Max. Depth (m):	N/A

### Notes

Cockburn Lake is several km downstream of the crossing site. There is a small, unnamed river ~50 m downstream of the crossing site. All downstream areas are inaccessible.



# Railway Construction Access Road Watercourse Crossing Assessments

## Crossing ID: R23

UTM: 17W 601700 / 7824386

Latitude / Longitude: 70°30'15.079" N / 78°16'7.756" W

Date / Time Surveyed: 14-Aug-07 / 21:58



Figure 1: Aerial view of area near crossing R23



Figure 2: Another aerial view of area near crossing R23

### Watercourse Characteristics

Tributary Status: 2<sup>nd</sup> order trib of Cockburn

Channel Pattern: straight

#### Crossing Site

Bankfull Width (m): N/M

Wetted Width (m): no water

Depth Profile (25%, 50%, 75%; m): N/A

Max. Depth (m): N/A

Flow Regime: intermittent

Gradient (°): N/M

#### Upstream

Wetted / Bankfull Width (m): no water

Max. Depth (m): N/A

#### Downstream

Wetted / Bankfull Width (m): small river

Max. Depth (m): N/A

### Notes

Cockburn Lake is several km downstream of the crossing site. There is a small, unnamed river ~50 m downstream of the crossing site. All downstream areas are inaccessible.

## Crossing ID: R24

UTM: 17W 601653 / 7824319

Latitude / Longitude: 70°30'12.986" N / 78°16'12.584" W

Date / Time Surveyed: 14-Aug-07 / 21:59



Figure 1: Aerial view of area near crossing R24



Figure 2: Another aerial view of area near crossing R24

### Watercourse Characteristics

Tributary Status: 2<sup>nd</sup> order trib of Cockburn

Channel Pattern: straight, braided

#### Crossing Site

Bankfull Width (m): N/M

Wetted Width (m): no water or nearly none

Depth Profile (25%, 50%, 75%; m): N/A

Max. Depth (m): N/A

Flow Regime: intermittent

Gradient (°): N/M

#### Upstream

Wetted / Bankfull Width (m): no water

Max. Depth (m): N/A

#### Downstream

Wetted / Bankfull Width (m): small river

Max. Depth (m): N/A

### Notes

Cockburn Lake is several km downstream of the crossing site. There is a small, unnamed river ~50 m downstream of the crossing site. All downstream areas are inaccessible.

# Railway Construction Access Road Watercourse Crossing Assessments

## Crossing ID: R25

UTM: 17W 601183 / 7823778

Latitude / Longitude: 70°29'56.222" N / 78°17'0.294" W

Date / Time Surveyed: 14-Aug-07 / 21:59



Figure 1: Aerial view of area near crossing R25



Figure 2: Another aerial view of area near crossing R25

### Watercourse Characteristics

Tributary Status:	2 <sup>nd</sup> order trib of Cockburn
Channel Pattern:	meandering
<b>Crossing Site</b>	
Bankfull Width (m):	N/M
Wetted Width (m):	N/M
Depth Profile (25%, 50%, 75%; m):	N/M
Max. Depth (m):	< 0.20
Flow Regime:	intermittent – persistent
Gradient (°):	N/M
<b>Upstream</b>	
Wetted / Bankfull Width (m):	N/M
Max. Depth (m):	< 0.20
<b>Downstream</b>	
Wetted / Bankfull Width (m):	small river
Max. Depth (m):	N/A

### Notes

Cockburn Lake is several km downstream of the crossing site. There is a small, unnamed river ~50 m downstream of the crossing site. All downstream areas are inaccessible.

## Crossing ID: R26

UTM: 17W 601051 / 7823699

Latitude / Longitude: 70°29' 53.865" N / 78°17' 13.374" W

Date / Time Surveyed: 14-Aug-07 / 22:01

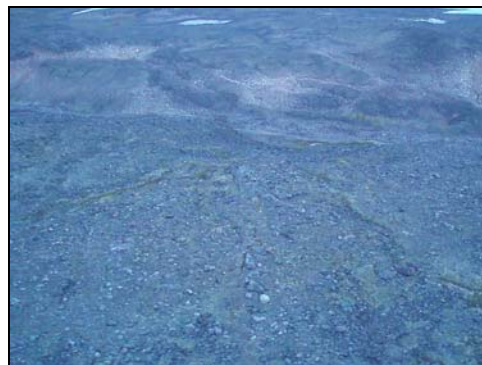


Figure 1: Aerial view of area near crossing R26

### Watercourse Characteristics

Tributary Status:	2 <sup>nd</sup> order trib of Cockburn
Channel Pattern:	sinuous, braided
<b>Crossing Site</b>	
Bankfull Width (m):	N/M
Wetted Width (m):	no water
Depth Profile (25%, 50%, 75%; m):	N/A
Max. Depth (m):	N/A
Flow Regime:	intermittent
Gradient (°):	N/M
<b>Upstream</b>	
Wetted / Bankfull Width (m):	no water
Max. Depth (m):	N/A
<b>Downstream</b>	
Wetted / Bankfull Width (m):	small river
Max. Depth (m):	N/A

### Notes

Cockburn Lake is several km downstream of the crossing site. There is a small, unnamed river ~50 m downstream of the crossing site. All downstream areas are inaccessible.

# Railway Construction Access Road Watercourse Crossing Assessments

## Crossing ID: R27

UTM: 17W 600833 / 7823158

Latitude / Longitude: 70°29'36.735" N / 78°17'36.741" W

Date / Time Surveyed: 14-Aug-07 / 22:01



Figure 1: Aerial view of area near crossing R27



Figure 2: Another aerial view of area near crossing R27

### Watercourse Characteristics

Tributary Status:	2 <sup>nd</sup> order trib of Cockburn
Channel Pattern:	straight
<b>Crossing Site</b>	
Bankfull Width (m):	N/M
Wetted Width (m):	no water
Depth Profile (25%, 50%, 75%; m):	N/A
Max. Depth (m):	no water
Flow Regime:	intermittent
Gradient (°):	N/M
<b>Upstream</b>	
Wetted / Bankfull Width (m):	no water
Max. Depth (m):	N/A
<b>Downstream</b>	
Wetted / Bankfull Width (m):	small river
Max. Depth (m):	N/A

### Notes

Cockburn Lake is several km downstream of the crossing site. There is a small, unnamed river ~50 m downstream of the crossing site. All downstream areas are inaccessible.

## Crossing ID: R28

UTM: 17W 599543 / 7820936

Latitude / Longitude: 70°28'26.928" N / 78°19'50.641" W

Date / Time Surveyed: 14-Aug-07 / 22:03



Figure 1: Aerial view of area near crossing R28



Figure 2: Another aerial view of area near crossing R28

### Watercourse Characteristics

Tributary Status:	2 <sup>nd</sup> order trib of Cockburn
Channel Pattern:	straight
<b>Crossing Site</b>	
Bankfull Width (m):	N/M
Wetted Width (m):	no water
Depth Profile (25%, 50%, 75%; m):	N/A
Max. Depth (m):	no water
Flow Regime:	intermittent
Gradient (°):	N/M
<b>Upstream</b>	
Wetted / Bankfull Width (m):	no water
Max. Depth (m):	N/A
<b>Downstream</b>	
Wetted / Bankfull Width (m):	small river
Max. Depth (m):	N/A

### Notes

Cockburn Lake is several km downstream of the crossing site. There is a small, unnamed river ~50 m downstream of the crossing site. All downstream areas are inaccessible.



# Railway Construction Access Road Watercourse Crossing Assessments

## Crossing ID: R29

UTM: 17W 599468 / 7820792

Latitude / Longitude: 70°28'22.390" N / 78°19'58.481" W

Date / Time Surveyed: 14-Aug-07 / 22:03



Figure 1: Aerial view of area near crossing R29



Figure 2: Another aerial view of area near crossing R29

### Watercourse Characteristics

Tributary Status: 2<sup>nd</sup> order trib of Cockburn

Channel Pattern: straight, braided

#### Crossing Site

Bankfull Width (m): N/M

Wetted Width (m): no water

Depth Profile (25%, 50%, 75%; m): N/A

Max. Depth (m): N/A

Flow Regime: intermittent

Gradient (°): N/M

#### Upstream

Wetted / Bankfull Width (m): no water

Max. Depth (m): N/A

#### Downstream

Wetted / Bankfull Width (m): small river

Max. Depth (m): N/A

### Notes

Cockburn Lake is several km downstream of the crossing site. There is a small, unnamed river ~50 m downstream of the crossing site. All downstream areas are inaccessible.

## Crossing ID: R30

UTM: 17W 599295 / 7820490

Latitude / Longitude: 70°28'12.897" N / 78°20'16.433" W

Date / Time Surveyed: 14-Aug-07 / 22:04



Figure 1: Aerial view of area near crossing R30



Figure 2: Another aerial view of area near crossing R30

### Watercourse Characteristics

Tributary Status: 2<sup>nd</sup> order trib of Cockburn

Channel Pattern: straight, braided

#### Crossing Site

Bankfull Width (m): N/M

Wetted Width (m): no water

Depth Profile (25%, 50%, 75%; m): N/A

Max. Depth (m): N/A

Flow Regime: intermittent

Gradient (°): N/M

#### Upstream

Wetted / Bankfull Width (m): no water

Max. Depth (m): N/A

#### Downstream

Wetted / Bankfull Width (m): small river

Max. Depth (m): N/A

### Notes

Cockburn Lake is several km downstream of the crossing site. There is a small, unnamed river ~50 m downstream of the crossing site. All downstream areas are inaccessible.

# Railway Construction Access Road Watercourse Crossing Assessments

## Crossing ID: R31

UTM: 17W 599028 / 7820130

Latitude / Longitude: 70°28'1.665" N / 78°20'43.685" W

Date / Time Surveyed: 14-Aug-07 / 22:05



Figure 1: Aerial view of area near crossing R31



Figure 2: Another aerial view of area near crossing R31

## Watercourse Characteristics

Tributary Status: 2<sup>nd</sup> order trib of Cockburn

Channel Pattern: meandering

### Crossing Site

Bankfull Width (m): N/M

Wetted Width (m): no water

Depth Profile (25%, 50%, 75%; m): N/A

Max. Depth (m): N/A

Flow Regime: intermittent

Gradient (°): N/M

### Upstream

Wetted / Bankfull Width (m): no water

Max. Depth (m): N/A

### Downstream

Wetted / Bankfull Width (m): small river

Max. Depth (m): N/A

## Notes

Cockburn Lake is ~2 km downstream of the crossing site. There is a small, unnamed river ~50 m downstream of the crossing site. All downstream areas are inaccessible.