

**Wind Speed & Direction Frequency Distribution Table**

Direction	Percent Occurrence (%)								Total (%)
	0-1 m/s	1-3 m/s	3-6 m/s	6-9 m/s	9-12 m/s	12-15 m/s	15-18 m/s	18+ m/s	
ENE	-	2.49	1.59	-	-	-	-	-	4.08
NE	-	3.17	-	-	-	-	-	-	3.17
NNE	-	12.24	2.72	-	-	-	-	-	14.97
N	-	12.24	5.44	-	-	-	-	-	17.69
NNW	-	1.59	-	-	-	-	-	-	1.59
NW	-	0.23	-	-	-	-	-	-	0.23
WNW	-	0.45	-	-	-	-	-	-	0.45
W	-	1.36	0.23	0.45	-	-	-	-	2.04
WSW	-	2.04	9.75	4.76	-	-	-	-	16.55
SW	-	1.81	10.66	15.87	-	-	-	-	28.34
SSW	-	1.81	0.23	-	-	-	-	-	2.04
S	-	0.45	-	-	-	-	-	-	0.45
SSE	-	0.45	-	-	-	-	-	-	0.45
SE	-	-	-	-	-	-	-	-	-
ESE	-	0.45	-	-	-	-	-	-	0.45
E	-	2.49	-	-	-	-	-	-	2.49
Calm	4.99	-	-	-	-	-	-	-	4.99
<b>Total (%)</b>	<b>4.99</b>	<b>43.31</b>	<b>30.61</b>	<b>21.09</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>100.00</b>

Station Name: Emilia Rock  
 NAD 27 Location:  
 N53° 46' 4.5" W128° 57' 24.1"  
 Elev. above SL: 5 m  
 Tower height: 10 m  
 Record length: 18 days  
 Start Date: Sep. 12, 2005  
 End Date: Sep. 30, 2005

CONTRACTOR:  
HAY & COMPANY CONSULTANTS

PREPARED BY: 

PREPARED FOR: 

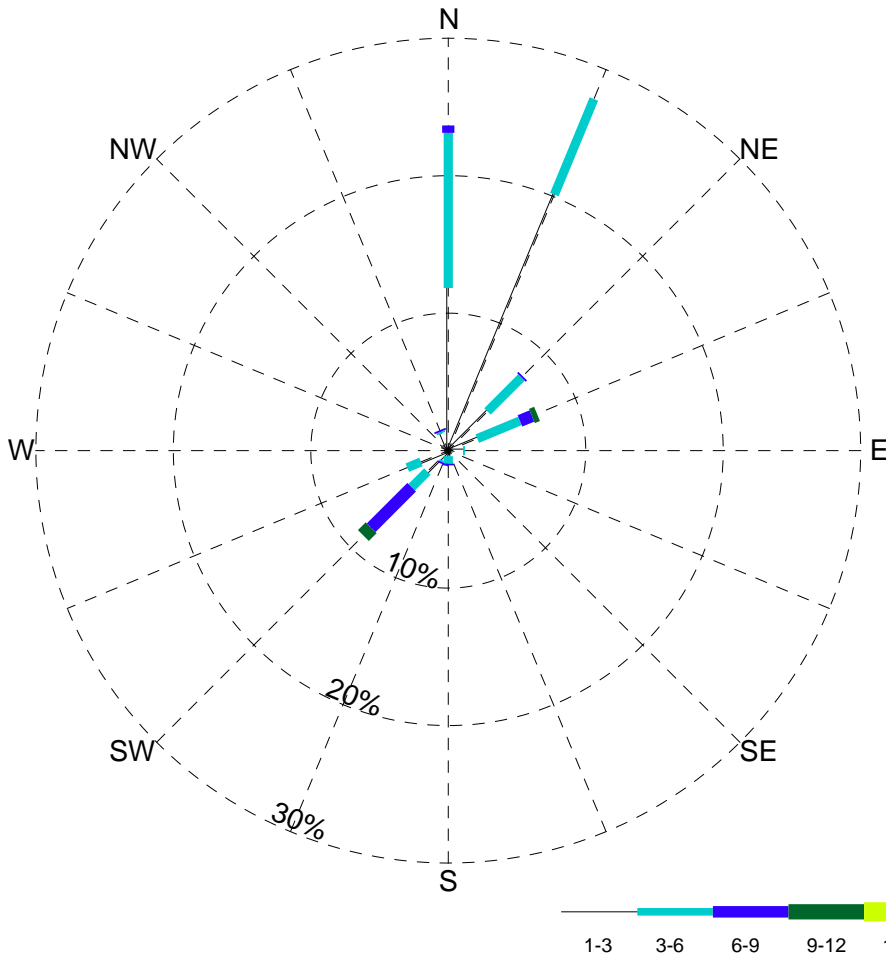
**ENBRIDGE NORTHERN GATEWAY PROJECT**

Emilia Rock Wind Rose, September 2005

FIGURE NUMBER: **B-2.01** DATE: 20090727

SCALE: AUTHOR: TM APPROVED BY: JAS

PROJECTION: DATUM:



**Wind Speed & Direction Frequency Distribution Table**

Direction	Percent Occurrence (%)								Total (%)
	0-1 m/s	1-3 m/s	3-6 m/s	6-9 m/s	9-12 m/s	12-15 m/s	15-18 m/s	18+ m/s	
ENE	-	2.29	3.36	0.94	0.40	-	-	-	6.99
NE	-	4.03	3.49	0.13	-	-	-	-	7.66
NNE	-	20.16	7.53	-	-	-	-	-	27.69
N	-	11.83	11.29	0.54	-	-	-	-	23.66
NNW	-	1.34	0.13	0.13	-	-	-	-	1.61
NW	-	0.67	-	-	-	-	-	-	0.67
WNW	-	0.27	-	-	-	-	-	-	0.27
W	-	0.27	-	-	-	-	-	-	0.27
WSW	-	2.15	1.08	-	-	-	-	-	3.23
SW	-	2.15	1.61	4.17	0.81	-	-	-	8.74
SSW	-	0.81	0.13	0.13	-	-	-	-	1.08
S	-	0.40	0.54	0.13	-	-	-	-	1.08
SSE	-	0.13	-	-	-	-	-	-	0.13
SE	-	0.13	-	-	-	-	-	-	0.13
ESE	-	0.40	-	-	-	-	-	-	0.40
E	-	1.08	0.13	-	-	-	-	-	1.21
Calm	15.19	-	-	-	-	-	-	-	15.19
<b>Total (%)</b>	<b>15.19</b>	<b>48.12</b>	<b>29.30</b>	<b>6.18</b>	<b>1.21</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>100.00</b>

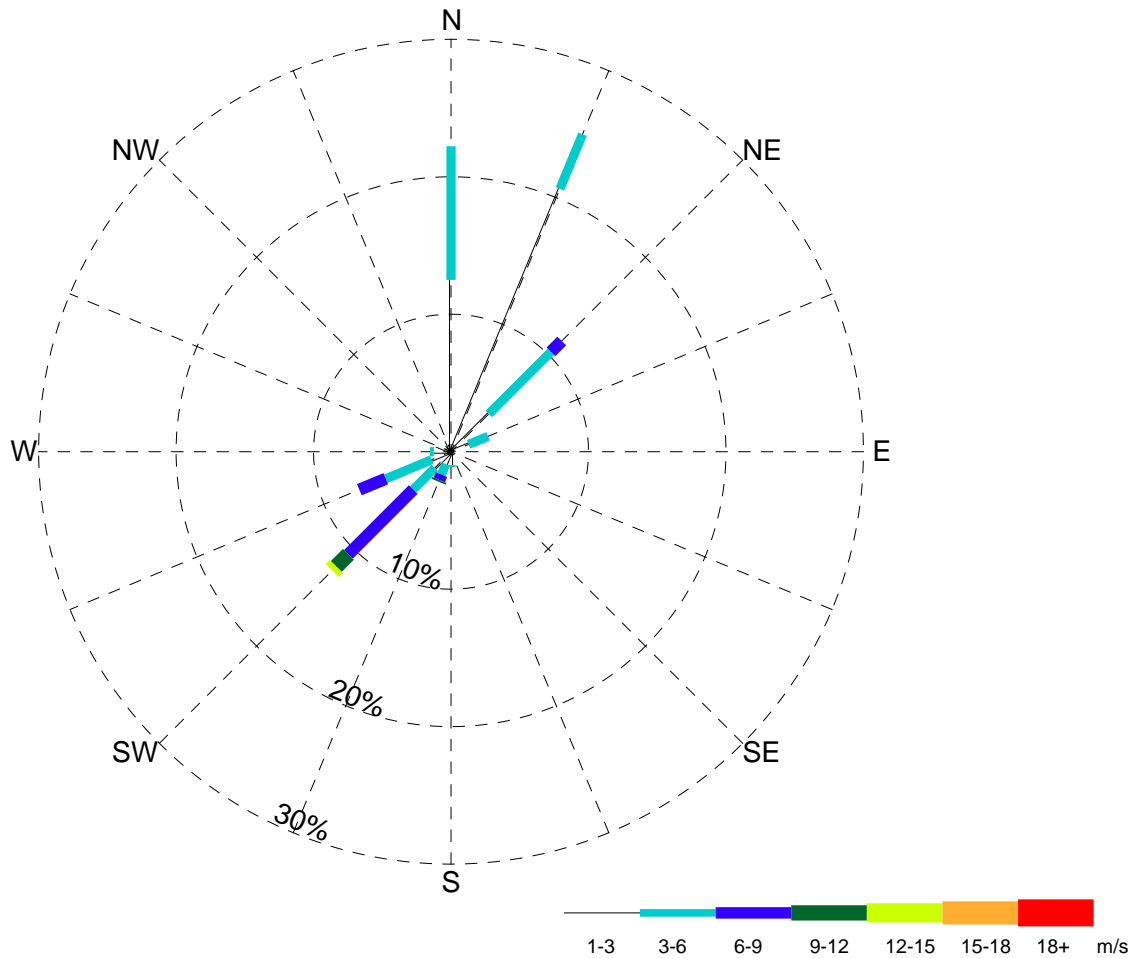
Station Name: Emilia Rock  
 NAD 27 Location:  
 N53° 46' 4.5" W128° 57' 24.1"  
 Elev. above SL: 5 m  
 Tower height: 10 m  
 Record length: 31 days  
 Start Date: Oct. 1, 2005  
 End Date: Oct. 31, 2005

CONTRACTOR:  
 HAY & COMPANY CONSULTANTS  
 PREPARED BY:  


PREPARED FOR:  


**ENBRIDGE NORTHERN GATEWAY PROJECT**  
 Emilia Rock Wind Rose, October 2005

FIGURE NUMBER: **B-2.02**      DATE: 20090727  
 SCALE:      AUTHOR: TM      APPROVED BY: JAS  
 PROJECT:      DATUM:



**Wind Speed & Direction Frequency Distribution Table**

Direction	Percent Occurrence (%)							Total (%)
	0-1 m/s	1-3 m/s	3-6 m/s	6-9 m/s	9-12 m/s	12-15 m/s	15-18 m/s	
ENE	-	1.39	1.53	-	-	-	-	2.92
NE	-	3.89	6.39	1.11	-	-	-	11.39
NNE	-	20.69	4.31	-	-	-	-	25.00
N	-	12.50	9.72	-	-	-	-	22.22
NNW	-	0.83	-	-	-	-	-	0.83
NW	-	0.42	-	-	-	-	-	0.42
WNW	-	1.11	-	-	-	-	-	1.11
W	-	1.25	0.28	-	-	-	-	1.53
WSW	-	1.53	3.61	2.08	-	-	-	7.22
SW	-	1.67	2.22	6.67	1.25	0.42	-	12.22
SSW	-	0.97	0.83	0.42	0.14	-	-	2.36
S	-	0.97	0.14	-	-	-	-	1.11
SSE	-	-	-	-	-	-	-	-
SE	-	-	-	-	-	-	-	-
ESE	-	-	-	-	-	-	-	-
E	-	0.14	-	-	-	-	-	0.14
Calm	11.53	-	-	-	-	-	-	11.53
<b>Total (%)</b>	<b>11.53</b>	<b>47.36</b>	<b>29.03</b>	<b>10.28</b>	<b>1.39</b>	<b>0.42</b>	<b>-</b>	<b>100.00</b>

Station Name: Emilia Rock

NAD 27 Location:

N53° 46' 4.5" W128° 57' 24.1"

Elev. above SL: 5 m

Tower height: 10 m

Record length: 30 days

Start Date: Nov. 1, 2005

End Date: Nov. 30, 2005

CONTRACTOR:  
HAY & COMPANY CONSULTANTS

PREPARED BY:

PREPARED FOR:

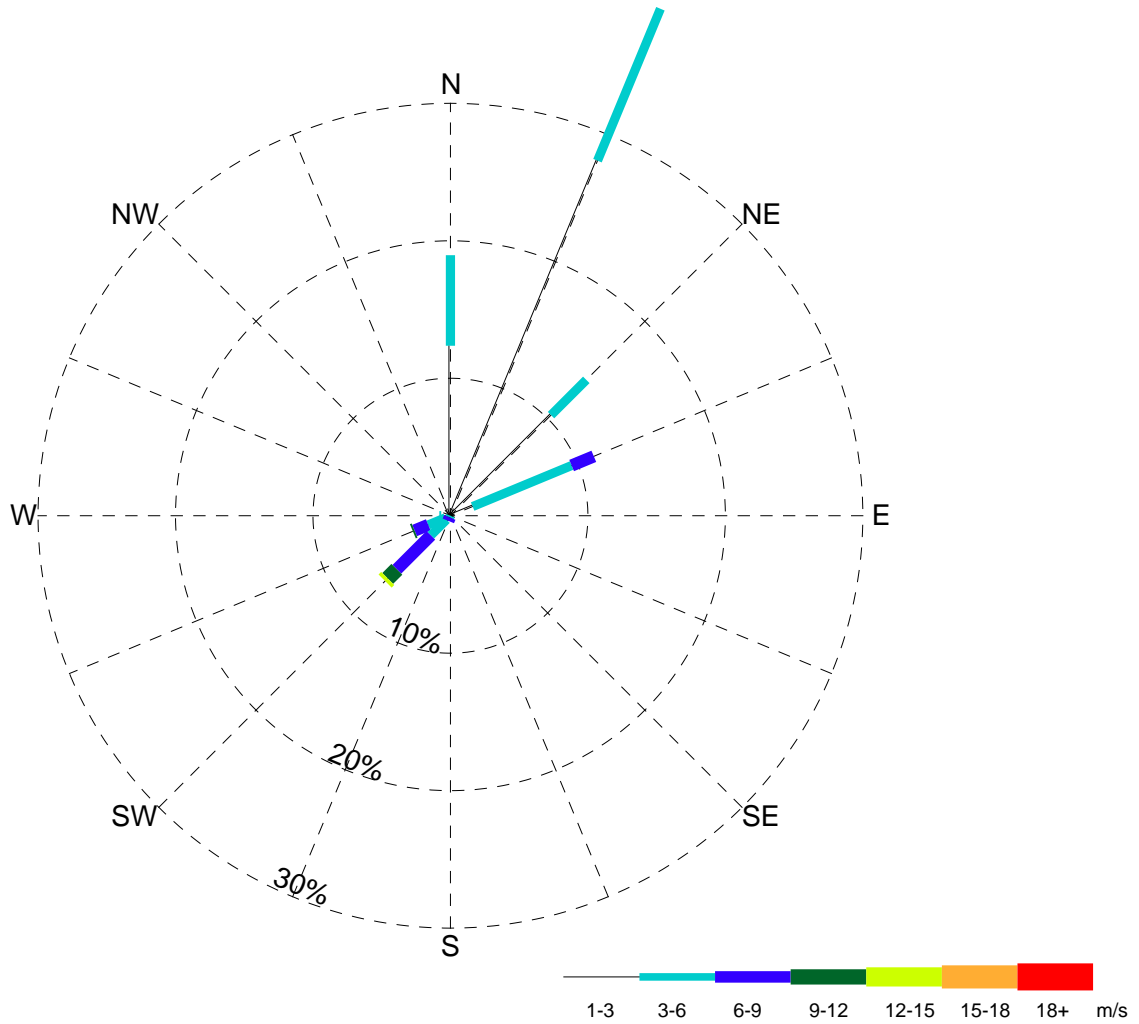
**ENBRIDGE NORTHERN GATEWAY PROJECT**

Emilia Rock Wind Rose, November 2005

FIGURE NUMBER: **B-2.03** DATE: 20090727

SCALE: AUTHOR: TM APPROVED BY: JAS

PROJECTION: DATUM:



**Wind Speed & Direction Frequency Distribution Table**

Direction	Percent Occurrence (%)								Total (%)
	0-1 m/s	1-3 m/s	3-6 m/s	6-9 m/s	9-12 m/s	12-15 m/s	15-18 m/s	18+ m/s	
ENE	-	1.75	7.80	1.75	-	-	-	-	11.29
NE	-	10.35	3.63	-	-	-	-	-	13.98
NNE	-	27.96	11.96	-	-	-	-	-	39.92
N	-	12.37	6.59	-	-	-	-	-	18.95
NNW	-	1.08	-	-	-	-	-	-	1.08
NW	-	0.27	-	-	-	-	-	-	0.27
WNW	-	0.13	-	-	-	-	-	-	0.13
W	-	0.67	0.13	-	-	-	-	-	0.81
WSW	-	0.40	1.34	1.08	0.13	-	-	-	2.96
SW	-	0.40	1.61	3.49	0.94	0.27	-	-	6.72
SSW	-	-	0.13	0.27	-	-	-	-	0.40
S	-	-	-	-	-	-	-	-	-
SSE	-	-	-	-	-	-	-	-	-
SE	-	-	-	-	-	-	-	-	-
ESE	-	-	-	-	-	-	-	-	-
E	-	0.13	-	-	-	-	-	-	0.13
Calm	3.36	-	-	-	-	-	-	-	3.36
<b>Total (%)</b>	<b>3.36</b>	<b>55.51</b>	<b>33.20</b>	<b>6.59</b>	<b>1.08</b>	<b>0.27</b>	<b>-</b>	<b>-</b>	<b>100.00</b>

Station Name: Emilia Rock  
 NAD 27 Location:  
 N53° 46' 4.5" W128° 57' 24.1"  
 Elev. above SL: 5 m  
 Tower height: 10 m  
 Record length: 31 days  
 Start Date: Dec. 1, 2005  
 End Date: Dec. 31, 2005

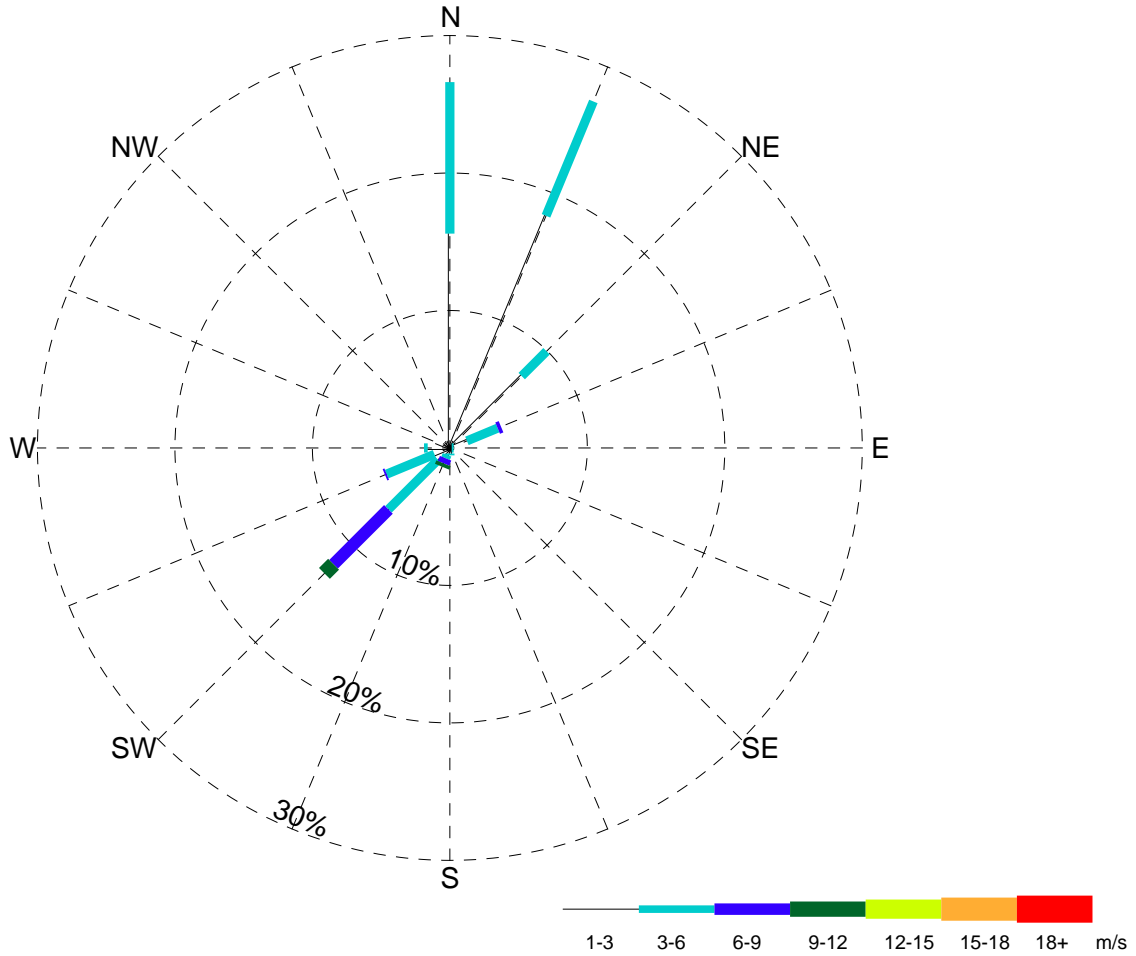
CONTRACTOR:  
 HAY & COMPANY CONSULTANTS  
 PREPARED BY:  


PREPARED FOR:  


**ENBRIDGE NORTHERN GATEWAY PROJECT**

Emilia Rock Wind Rose, December 2005

FIGURE NUMBER: **B-2.04**  
 DATE: 20090727  
 SCALE:  
 AUTHOR: TM  
 APPROVED BY: JAS  
 PROJECTION:  
 DATUM:



**Wind Speed & Direction Frequency Distribution Table**

Direction	Percent Occurrence (%)								Total (%)
	0-1 m/s	1-3 m/s	3-6 m/s	6-9 m/s	9-12 m/s	12-15 m/s	15-18 m/s	18+ m/s	
ENE	-	1.34	2.42	0.27	-	-	-	-	4.03
NE	-	7.39	2.55	-	-	-	-	-	9.95
NNE	-	18.28	9.01	-	-	-	-	-	27.28
N	-	15.59	11.02	-	-	-	-	-	26.61
NNW	-	0.54	-	-	-	-	-	-	0.54
NW	-	0.54	-	-	-	-	-	-	0.54
WNW	-	1.08	-	-	-	-	-	-	1.08
W	-	1.61	0.27	-	-	-	-	-	1.88
WSW	-	1.21	3.76	0.13	-	-	-	-	5.11
SW	-	1.21	5.11	5.64	0.94	-	-	-	12.90
SSW	-	0.54	0.27	0.40	0.27	-	-	-	1.48
S	-	0.40	0.13	-	-	-	-	-	0.54
SSE	-	-	-	-	-	-	-	-	-
SE	-	-	-	-	-	-	-	-	-
ESE	-	-	-	-	-	-	-	-	-
E	-	0.13	0.13	-	-	-	-	-	0.27
Calm	7.80	-	-	-	-	-	-	-	7.80
<b>Total (%)</b>	<b>7.80</b>	<b>49.87</b>	<b>34.68</b>	<b>6.45</b>	<b>1.21</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>100.00</b>

Station Name: Emilia Rock  
 NAD 27 Location:  
 N53° 46' 4.5" W128° 57' 24.1"  
 Elev. above SL: 5 m  
 Tower height: 10 m  
 Record length: 31 days  
 Start Date: Jan. 1, 2006  
 End Date: Jan. 31, 2006

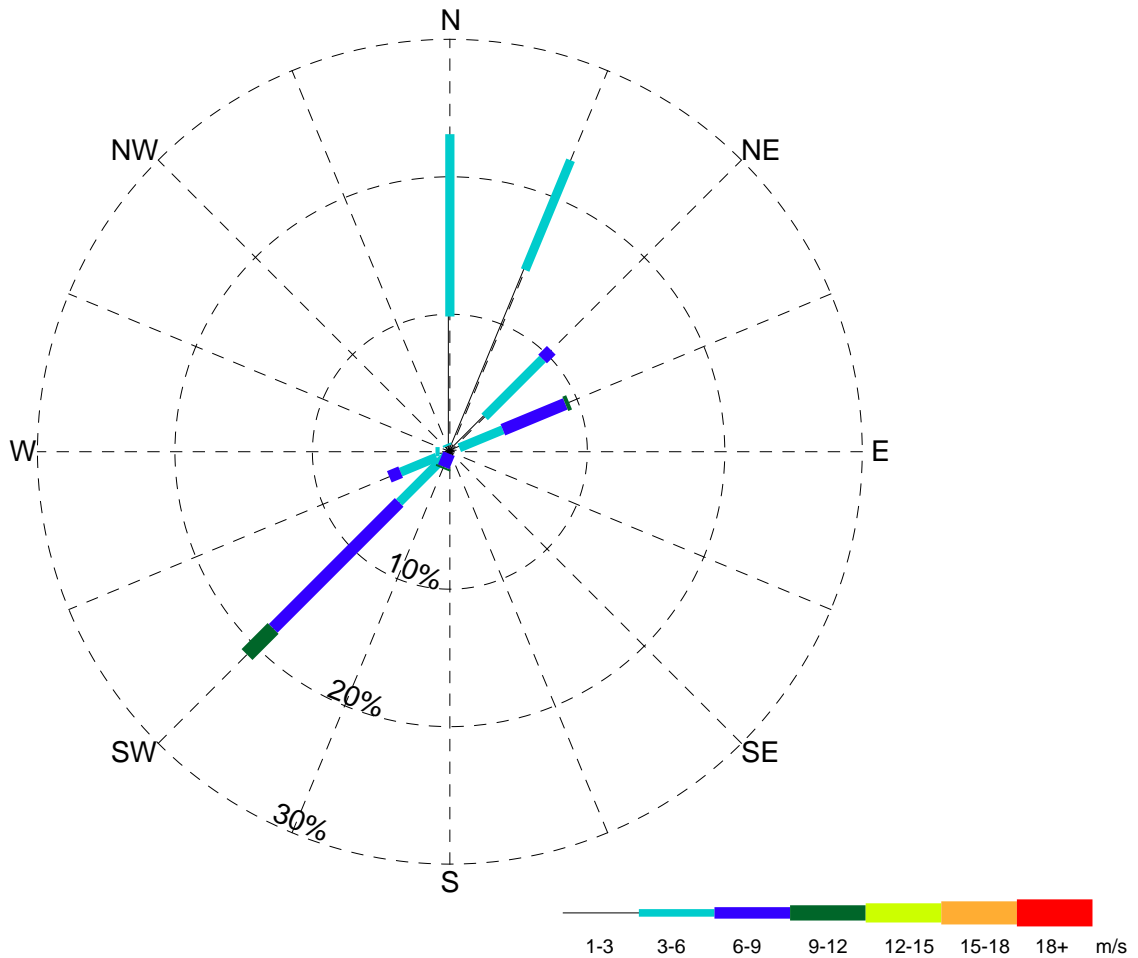
CONTRACTOR:  
 HAY & COMPANY CONSULTANTS  
 PREPARED BY:  


PREPARED FOR:  


**ENBRIDGE NORTHERN GATEWAY PROJECT**

Emilia Rock Wind Rose, January 2006

FIGURE NUMBER: **B-2.05** DATE: 20090727  
 SCALE: AUTHOR: TM APPROVED BY: JAS  
 PROJECTION: DATUM:



**Wind Speed & Direction Frequency Distribution Table**

Direction	Percent Occurrence (%)								Total (%)
	0-1 m/s	1-3 m/s	3-6 m/s	6-9 m/s	9-12 m/s	12-15 m/s	15-18 m/s	18+ m/s	
ENE	-	0.75	3.43	4.92	0.30	-	-	-	9.39
NE	-	3.58	5.96	0.89	-	-	-	-	10.43
NNE	-	14.31	8.64	-	-	-	-	-	22.95
N	-	9.84	13.26	-	-	-	-	-	23.10
NNW	-	0.45	0.15	-	-	-	-	-	0.60
NW	-	0.30	-	-	-	-	-	-	0.30
WNW	-	0.30	-	-	-	-	-	-	0.30
W	-	0.75	0.30	-	-	-	-	-	1.04
WSW	-	1.04	2.83	0.89	-	-	-	-	4.77
SW	-	0.45	4.77	12.97	2.68	-	-	-	20.86
SSW	-	0.15	-	1.04	0.15	-	-	-	1.34
S	-	0.15	-	-	-	-	-	-	0.15
SSE	-	0.30	-	-	-	-	-	-	0.30
SE	-	-	-	-	-	-	-	-	-
ESE	-	0.30	-	-	-	-	-	-	0.30
E	-	0.45	-	-	-	-	-	-	0.45
Calm	3.73	-	-	-	-	-	-	-	3.73
<b>Total (%)</b>	<b>3.73</b>	<b>33.08</b>	<b>39.34</b>	<b>20.72</b>	<b>3.13</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>100.00</b>

Station Name: Emilia Rock  
 NAD 27 Location:  
 N53° 46' 4.5" W128° 57' 24.1"  
 Elev. above SL: 5 m  
 Tower height: 10 m  
 Record length: 28 days  
 Start Date: Feb. 1, 2006  
 End Date: Feb. 28, 2006

CONTRACTOR:  
 HAY & COMPANY CONSULTANTS

PREPARED BY:

PREPARED FOR:

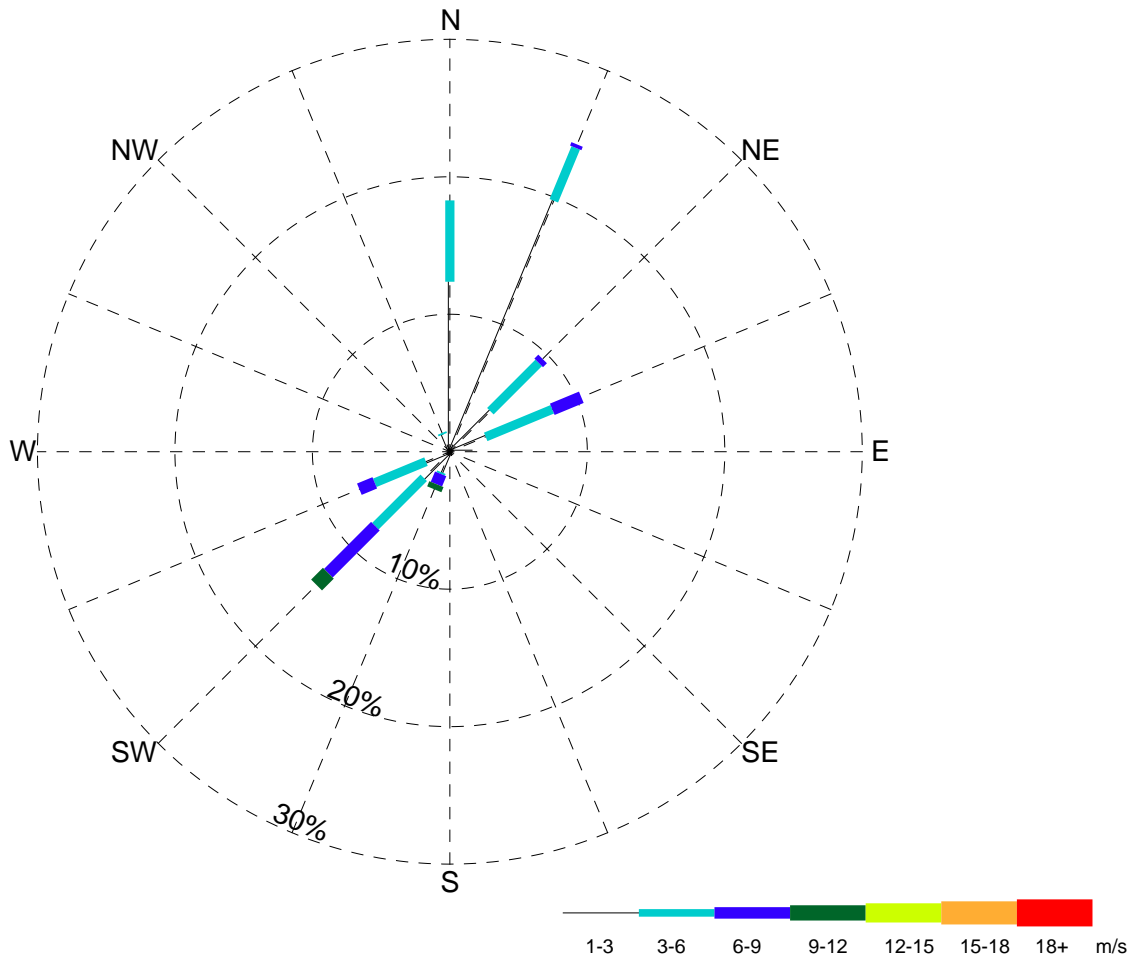
**ENBRIDGE NORTHERN GATEWAY PROJECT**

Emilia Rock Wind Rose, February 2006

FIGURE NUMBER: **B-2.06** DATE: 20090727

SCALE: AUTHOR: TM APPROVED BY: JAS

PROJECTION: DATUM:



**Wind Speed & Direction Frequency Distribution Table**

Direction	Percent Occurrence (%)								Total (%)
	0-1 m/s	1-3 m/s	3-6 m/s	6-9 m/s	9-12 m/s	12-15 m/s	15-18 m/s	18+ m/s	
ENE	-	2.82	5.24	2.29	-	-	-	-	10.35
NE	-	4.17	4.97	0.40	-	-	-	-	9.54
NNE	-	19.76	4.17	0.27	-	-	-	-	24.19
N	-	12.37	5.91	-	-	-	-	-	18.28
NNW	-	1.34	0.13	-	-	-	-	-	1.48
NW	-	-	-	-	-	-	-	-	-
WNW	-	0.13	-	-	-	-	-	-	0.13
W	-	0.27	-	-	-	-	-	-	0.27
WSW	-	1.88	4.03	1.21	-	-	-	-	7.12
SW	-	2.69	4.97	4.84	1.21	-	-	-	13.71
SSW	-	1.61	0.13	0.81	0.40	-	-	-	2.96
S	-	0.27	-	-	-	-	-	-	0.27
SSE	-	0.13	-	-	-	-	-	-	0.13
SE	-	0.13	-	-	-	-	-	-	0.13
ESE	-	0.13	-	-	-	-	-	-	0.13
E	-	1.61	-	-	-	-	-	-	1.61
Calm	9.68	-	-	-	-	-	-	-	9.68
<b>Total (%)</b>	<b>9.68</b>	<b>49.33</b>	<b>29.57</b>	<b>9.81</b>	<b>1.61</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>100.00</b>

Station Name: Emilia Rock  
 NAD 27 Location:  
 N53° 46' 4.5" W128° 57' 24.1"  
 Elev. above SL: 5 m  
 Tower height: 10 m  
 Record length: 31 days  
 Start Date: Mar. 1, 2006  
 End Date: Mar. 31, 2006

CONTRACTOR:  
 HAY & COMPANY CONSULTANTS

PREPARED BY:

PREPARED FOR:

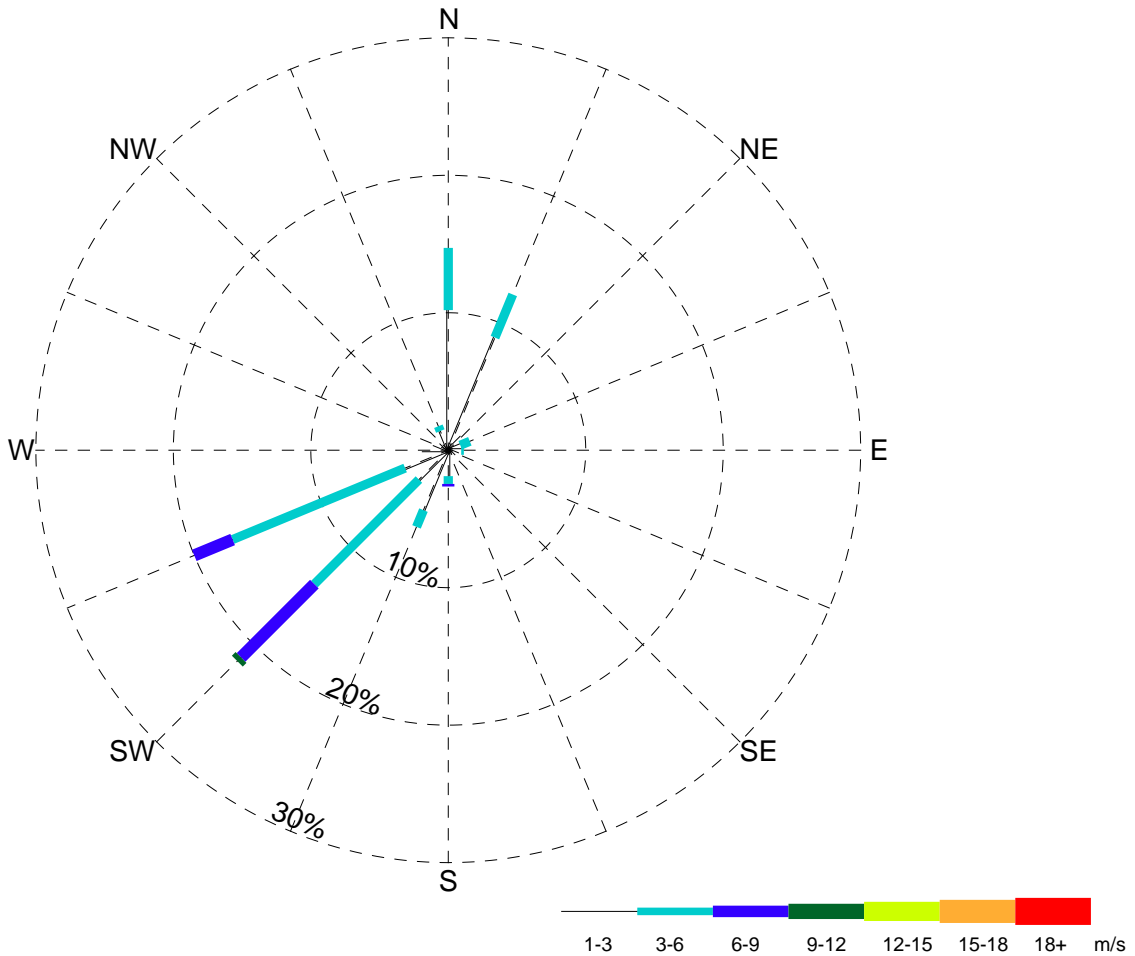
**ENBRIDGE NORTHERN GATEWAY PROJECT**

Emilia Rock Wind Rose, March 2006

FIGURE NUMBER: **B-2.07** DATE: 20090727

SCALE: AUTHOR: TM APPROVED BY: JAS

PROJECTION: DATUM:



**Wind Speed & Direction Frequency Distribution Table**

Direction	Percent Occurrence (%)								Total (%)
	0-1 m/s	1-3 m/s	3-6 m/s	6-9 m/s	9-12 m/s	12-15 m/s	15-18 m/s	18+ m/s	
ENE	-	0.94	0.75	-	-	-	-	-	1.70
NE	-	1.32	-	-	-	-	-	-	1.32
NNE	-	8.87	3.40	-	-	-	-	-	12.26
N	-	10.19	4.53	-	-	-	-	-	14.72
NNW	-	1.51	0.38	-	-	-	-	-	1.89
NW	-	0.75	-	-	-	-	-	-	0.75
WNW	-	1.13	-	-	-	-	-	-	1.13
W	-	1.89	-	-	-	-	-	-	1.89
WSW	-	3.40	13.59	3.02	-	-	-	-	20.00
SW	-	3.02	10.76	7.55	0.38	-	-	-	21.70
SSW	-	4.72	1.32	-	-	-	-	-	6.04
S	-	1.89	0.57	0.19	-	-	-	-	2.64
SSE	-	0.38	-	-	-	-	-	-	0.38
SE	-	0.57	-	-	-	-	-	-	0.57
ESE	-	0.75	-	-	-	-	-	-	0.75
E	-	0.94	0.19	-	-	-	-	-	1.13
Calm	11.13	-	-	-	-	-	-	-	11.13
<b>Total (%)</b>	<b>11.13</b>	<b>42.26</b>	<b>35.47</b>	<b>10.76</b>	<b>0.38</b>	-	-	-	<b>100.00</b>

Station Name: Emilia Rock

NAD 27 Location:

N53° 46' 4.5" W128° 57' 24.1"

Elev. above SL: 5 m

Tower height: 10 m

Record length: \*21 days

Start Date: Apr. 1, 2006

End Date: Apr. 30, 2006

\*(No data Apr. 18 to Apr. 26)

CONTRACTOR:  
HAY & COMPANY CONSULTANTS

PREPARED BY:

PREPARED FOR:

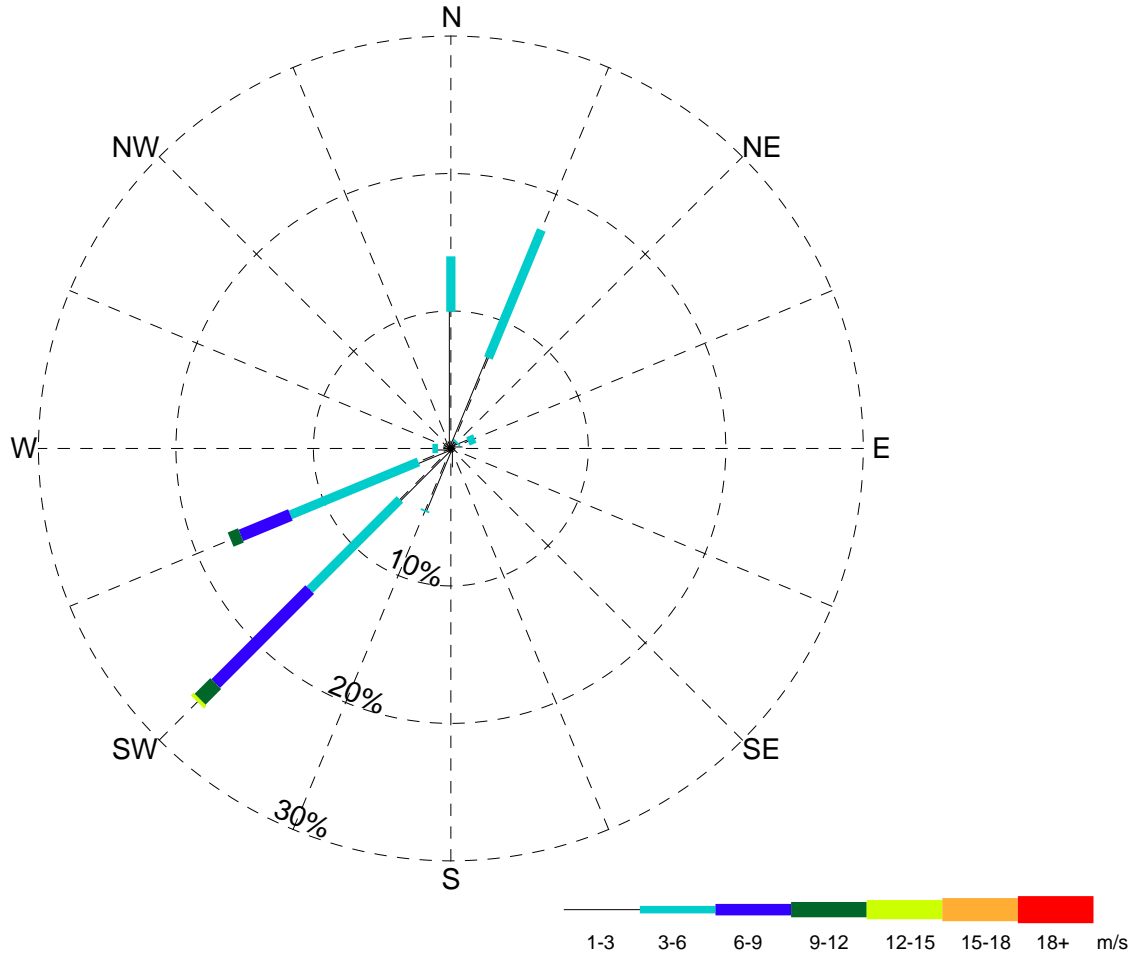
**ENBRIDGE NORTHERN GATEWAY PROJECT**

Emilia Rock Wind Rose, April 2006

FIGURE NUMBER: **B-2.08** DATE: 20090727

SCALE: AUTHOR: TM APPROVED BY: JAS

PROJECTION: DATUM:



Station Name: Emilia Rock  
 NAD 27 Location:  
 N53° 46' 4.5" W128° 57' 24.1"  
 Elev. above SL: 5 m  
 Tower height: 10 m  
 Record length: 31 days  
 Start Date: May 1, 2006  
 End Date: May 31, 2006

**Wind Speed & Direction Frequency Distribution Table**

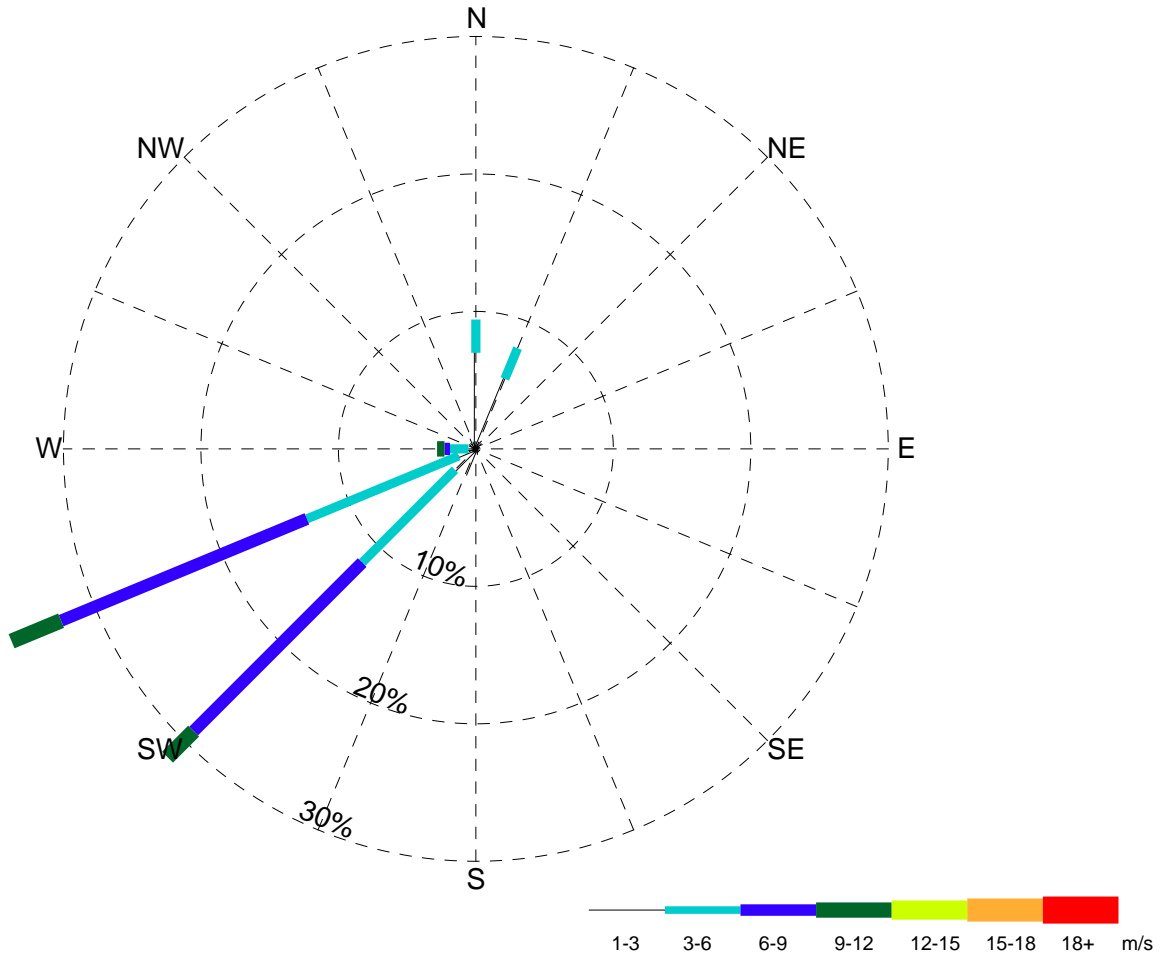
Direction	Percent Occurrence (%)								Total (%)
	0-1 m/s	1-3 m/s	3-6 m/s	6-9 m/s	9-12 m/s	12-15 m/s	15-18 m/s	18+ m/s	
ENE	-	1.34	0.54	-	-	-	-	-	1.88
NE	-	0.54	0.13	-	-	-	-	-	0.67
NNE	-	7.12	10.08	-	-	-	-	-	17.20
N	-	9.95	4.03	-	-	-	-	-	13.98
NNW	-	0.81	-	-	-	-	-	-	0.81
NW	-	0.67	-	-	-	-	-	-	0.67
WNW	-	0.54	-	-	-	-	-	-	0.54
W	-	0.94	0.40	-	-	-	-	-	1.34
WSW	-	2.55	10.08	3.90	0.81	-	-	-	17.34
SW	-	5.24	9.27	9.68	1.61	0.27	-	-	26.08
SSW	-	4.84	0.13	-	-	-	-	-	4.97
S	-	1.34	-	-	-	-	-	-	1.34
SSE	-	0.13	-	-	-	-	-	-	0.13
SE	-	0.54	-	-	-	-	-	-	0.54
ESE	-	0.13	-	-	-	-	-	-	0.13
E	-	0.81	-	-	-	-	-	-	0.81
Calm	11.56	-	-	-	-	-	-	-	11.56
<b>Total (%)</b>	<b>11.56</b>	<b>37.50</b>	<b>34.68</b>	<b>13.57</b>	<b>2.42</b>	<b>0.27</b>	<b>-</b>	<b>-</b>	<b>100.00</b>

CONTRACTOR:  
 HAY & COMPANY CONSULTANTS  
 PREPARED BY:  


**ENBRIDGE NORTHERN GATEWAY PROJECT**  
 Emilia Rock Wind Rose, May 2006

FIGURE NUMBER: **B-2.09** DATE: 20090727  
 SCALE: AUTHOR: TM APPROVED BY: JAS  
 PROJECTION: DATUM:





Station Name: Emilia Rock  
 NAD 27 Location:  
 N53° 46' 4.5" W128° 57' 24.1"  
 Elev. above SL: 5 m  
 Tower height: 10 m  
 Record length: 31 days  
 Start Date: July 1, 2006  
 End Date: July 31, 2006

**Wind Speed & Direction Frequency Distribution Table**

Direction	Percent Occurrence (%)								Total (%)
	0-1 m/s	1-3 m/s	3-6 m/s	6-9 m/s	9-12 m/s	12-15 m/s	15-18 m/s	18+ m/s	
ENE	-	0.54	-	-	-	-	-	-	0.54
NE	-	0.67	-	-	-	-	-	-	0.67
NNE	-	5.51	2.42	-	-	-	-	-	7.93
N	-	6.99	2.42	-	-	-	-	-	9.41
NNW	-	0.81	-	-	-	-	-	-	0.81
NW	-	0.54	-	-	-	-	-	-	0.54
WNW	-	0.27	-	-	-	-	-	-	0.27
W	-	0.54	1.34	0.40	0.54	-	-	-	2.82
WSW	-	1.34	11.96	19.35	3.90	-	-	-	36.56
SW	-	2.15	9.54	17.34	2.69	-	-	-	31.72
SSW	-	2.02	-	-	-	-	-	-	2.02
S	-	0.40	-	-	-	-	-	-	0.40
SSE	-	-	-	-	-	-	-	-	-
SE	-	-	-	-	-	-	-	-	-
ESE	-	0.13	-	-	-	-	-	-	0.13
E	-	0.13	-	-	-	-	-	-	0.13
Calm	6.05	-	-	-	-	-	-	-	6.05
<b>Total (%)</b>	<b>6.05</b>	<b>22.04</b>	<b>27.69</b>	<b>37.10</b>	<b>7.12</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>100.00</b>

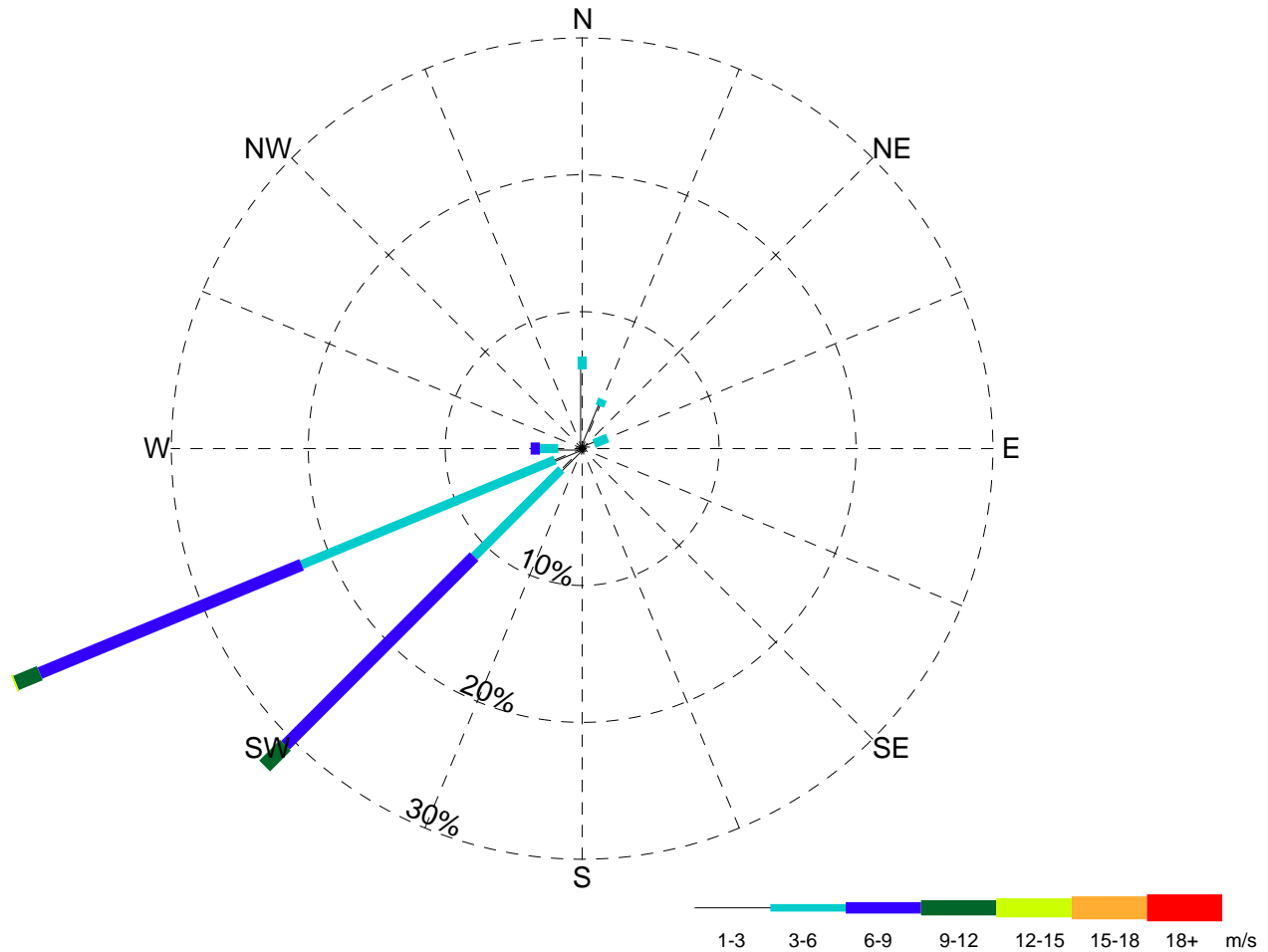
CONTRACTOR:  
 HAY & COMPANY CONSULTANTS  
 PREPARED BY:  


PREPARED FOR:  


**ENBRIDGE NORTHERN GATEWAY PROJECT**

Emilia Rock Wind Rose, July 2006

FIGURE NUMBER: **B-2.11** DATE: 20090727  
 SCALE: AUTHOR: TM APPROVED BY: JAS  
 PROJECT: DATUM:



**Wind Speed & Direction Frequency Distribution Table**

Direction	Percent Occurrence (%)								Total (%)
	0-1 m/s	1-3 m/s	3-6 m/s	6-9 m/s	9-12 m/s	12-15 m/s	15-18 m/s	18+ m/s	
ENE	-	0.94	1.08	-	-	-	-	-	2.02
NE	-	0.27	-	-	-	-	-	-	0.27
NNE	-	3.36	0.54	-	-	-	-	-	3.90
N	-	5.78	0.94	-	-	-	-	-	6.72
NNW	-	0.27	-	-	-	-	-	-	0.27
NW	-	0.27	-	-	-	-	-	-	0.27
WNW	-	0.40	-	-	-	-	-	-	0.40
W	-	1.75	1.34	0.67	-	-	-	-	3.76
WSW	-	2.15	20.03	20.70	1.88	0.13	-	-	44.89
SW	-	2.15	9.01	19.49	2.15	-	-	-	32.80
SSW	-	0.40	-	-	-	-	-	-	0.40
S	-	0.40	-	-	-	-	-	-	0.40
SSE	-	0.13	-	-	-	-	-	-	0.13
SE	-	0.40	-	-	-	-	-	-	0.40
ESE	-	0.13	-	-	-	-	-	-	0.13
E	-	0.54	-	-	-	-	-	-	0.54
Calm	2.69	-	-	-	-	-	-	-	2.69
<b>Total (%)</b>	<b>2.69</b>	<b>19.35</b>	<b>32.93</b>	<b>40.86</b>	<b>4.03</b>	<b>0.13</b>	<b>-</b>	<b>-</b>	<b>100.00</b>

Station Name: Emilia Rock  
 NAD 27 Location:  
 N53° 46' 4.5" W128° 57' 24.1"  
 Elev. above SL: 5 m  
 Tower height: 10 m  
 Record length: 31 days  
 Start Date: August 1, 2006  
 End Date: August 31, 2006

CONTRACTOR:  
HAY & COMPANY CONSULTANTS

PREPARED BY:

PREPARED FOR:

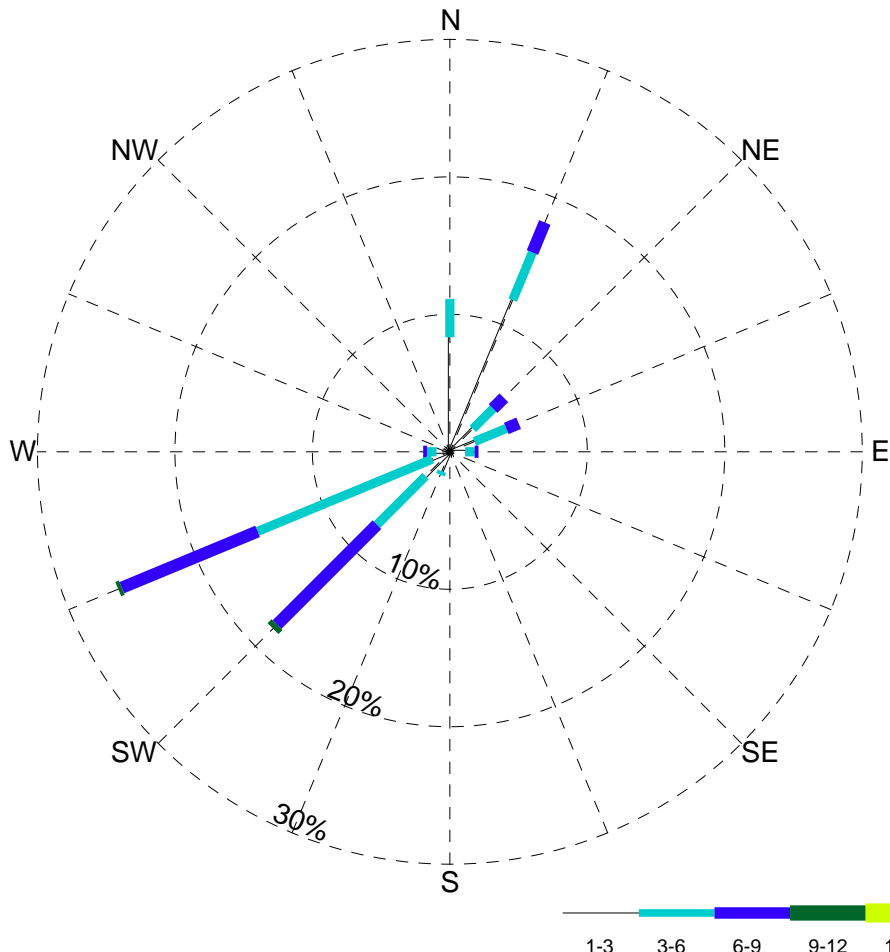
**ENBRIDGE NORTHERN GATEWAY PROJECT**

Emilia Rock Wind Rose, August 2006

FIGURE NUMBER: **B-2.12** DATE: 20090727

SCALE: AUTHOR: TM APPROVED BY: JAS

PROJECTION: DATUM:



**Wind Speed & Direction Frequency Distribution Table**

Direction	Percent Occurrence (%)								Total (%)
	0-1 m/s	1-3 m/s	3-6 m/s	6-9 m/s	9-12 m/s	12-15 m/s	15-18 m/s	18+ m/s	
ENE	-	1.94	2.50	0.97	-	-	-	-	5.42
NE	-	2.36	2.08	1.11	-	-	-	-	5.56
NNE	-	11.94	3.75	2.36	-	-	-	-	18.06
N	-	8.33	2.78	-	-	-	-	-	11.11
NNW	-	0.42	-	-	-	-	-	-	0.42
NW	-	0.42	-	-	-	-	-	-	0.42
WNW	-	0.97	-	-	-	-	-	-	0.97
W	-	0.97	0.69	0.28	-	-	-	-	1.94
WSW	-	1.39	13.75	10.69	0.28	-	-	-	26.11
SW	-	2.50	5.00	10.28	0.42	-	-	-	18.19
SSW	-	1.53	0.28	-	-	-	-	-	1.81
S	-	0.42	-	-	-	-	-	-	0.42
SSE	-	0.42	-	-	-	-	-	-	0.42
SE	-	0.28	-	-	-	-	-	-	0.28
ESE	-	0.14	-	-	-	-	-	-	0.14
E	-	1.11	0.69	0.28	-	-	-	-	2.08
Calm	6.67	-	-	-	-	-	-	-	6.67
<b>Total (%)</b>	<b>6.67</b>	<b>35.14</b>	<b>31.53</b>	<b>25.97</b>	<b>0.69</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>100.00</b>

Station Name: Emilia Rock  
 NAD 27 Location:  
 N53° 46' 4.5" W128° 57' 24.1"  
 Elev. above SL: 5 m  
 Tower height: 10 m  
 Record length: 30 days  
 Start Date: September 1, 2006  
 End Date: September 30, 2006

CONTRACTOR:  
 HAY & COMPANY CONSULTANTS

PREPARED BY:

PREPARED FOR:

**ENBRIDGE NORTHERN GATEWAY PROJECT**

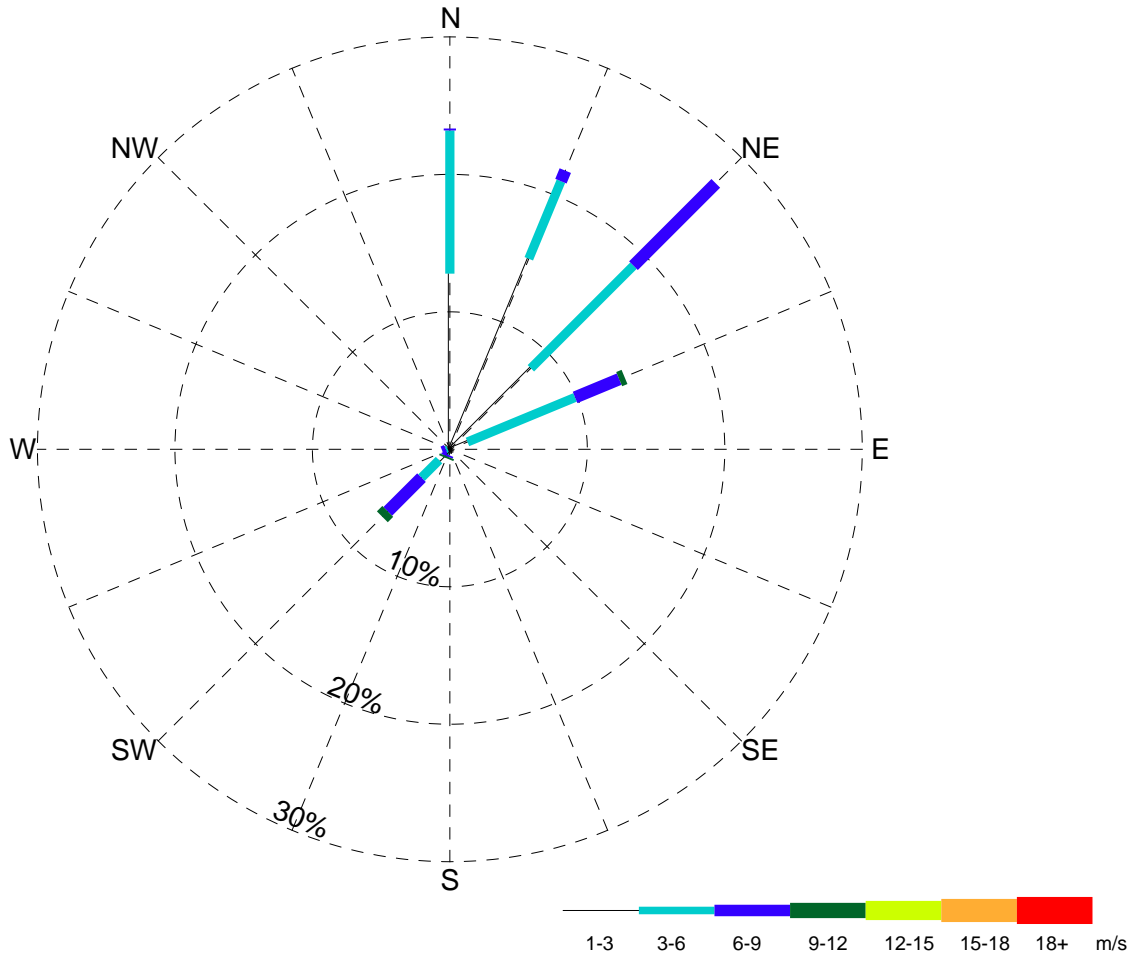
Emilia Rock Wind Rose, September 2006

FIGURE NUMBER: **B-2.13** DATE: 20090727

SCALE: AUTHOR: TM APPROVED BY: JAS

PROJECTION: DATUM:





**Wind Speed & Direction Frequency Distribution Table**

Direction	Percent Occurrence (%)								Total (%)
	0-1 m/s	1-3 m/s	3-6 m/s	6-9 m/s	9-12 m/s	12-15 m/s	15-18 m/s	18+ m/s	
ENE	-	1.39	8.47	3.47	0.42	-	-	-	13.75
NE	-	8.33	10.56	8.47	-	-	-	-	27.36
NNE	-	15.00	6.11	0.83	-	-	-	-	21.94
N	-	12.78	10.42	0.14	-	-	-	-	23.33
NNW	-	-	-	-	-	-	-	-	-
NW	-	0.14	-	-	-	-	-	-	0.14
WNW	-	0.14	-	-	-	-	-	-	0.14
W	-	0.14	-	-	-	-	-	-	0.14
WSW	-	0.14	0.14	0.28	-	-	-	-	0.56
SW	-	1.11	1.81	3.47	0.56	-	-	-	6.94
SSW	-	0.42	-	0.14	0.14	-	-	-	0.69
S	-	0.28	-	-	-	-	-	-	0.28
SSE	-	-	-	-	-	-	-	-	-
SE	-	-	-	-	-	-	-	-	-
ESE	-	-	-	-	-	-	-	-	-
E	-	-	-	-	-	-	-	-	-
Calm	4.72	-	-	-	-	-	-	-	4.72
<b>Total (%)</b>	<b>4.72</b>	<b>39.86</b>	<b>37.50</b>	<b>16.81</b>	<b>1.11</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>100.00</b>

Station Name: Emilia Rock  
 NAD 27 Location:  
 N53° 46' 4.5" W128° 57' 24.1"  
 Elev. above SL: 5 m  
 Tower height: 10 m  
 Record length: 30 days  
 Start Date: November 1, 2006  
 End Date: November 30, 2006

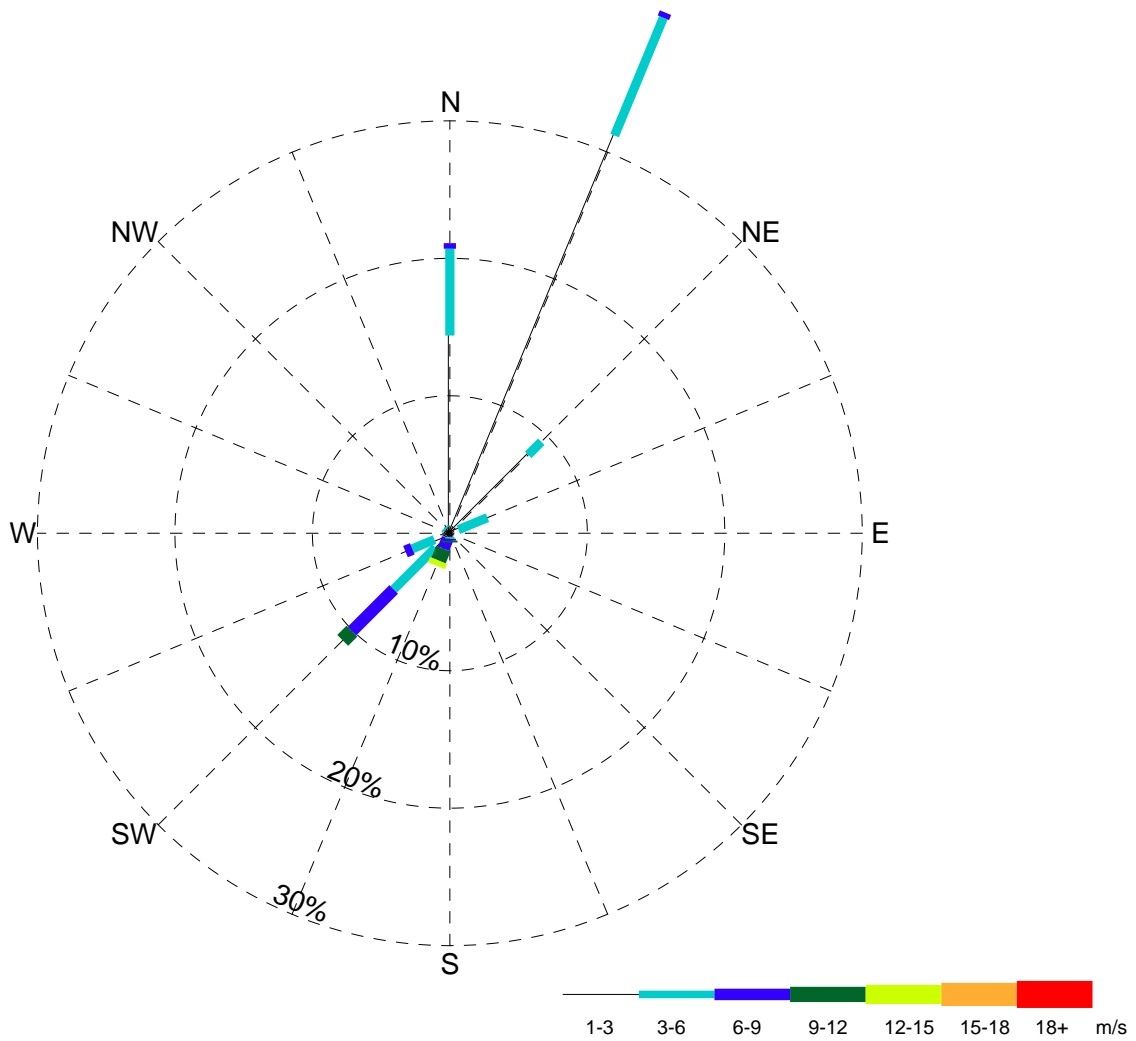
CONTRACTOR:  
 HAY & COMPANY CONSULTANTS  
 PREPARED BY:  


PREPARED FOR:  


**ENBRIDGE NORTHERN GATEWAY PROJECT**

Emilia Rock Wind Rose, November 2006

FIGURE NUMBER: **B-2.15** DATE: 20090727  
 SCALE: AUTHOR: TM APPROVED BY: JAS  
 PROJECT: DATUM:



Station Name: Emilia Rock  
 NAD 27 Location:  
 N53° 46' 4.5" W128° 57' 24.1"  
 Elev. above SL: 5 m  
 Tower height: 10 m  
 Record length: 31 days  
 Start Date: December 1, 2006  
 End Date: December 31, 2006

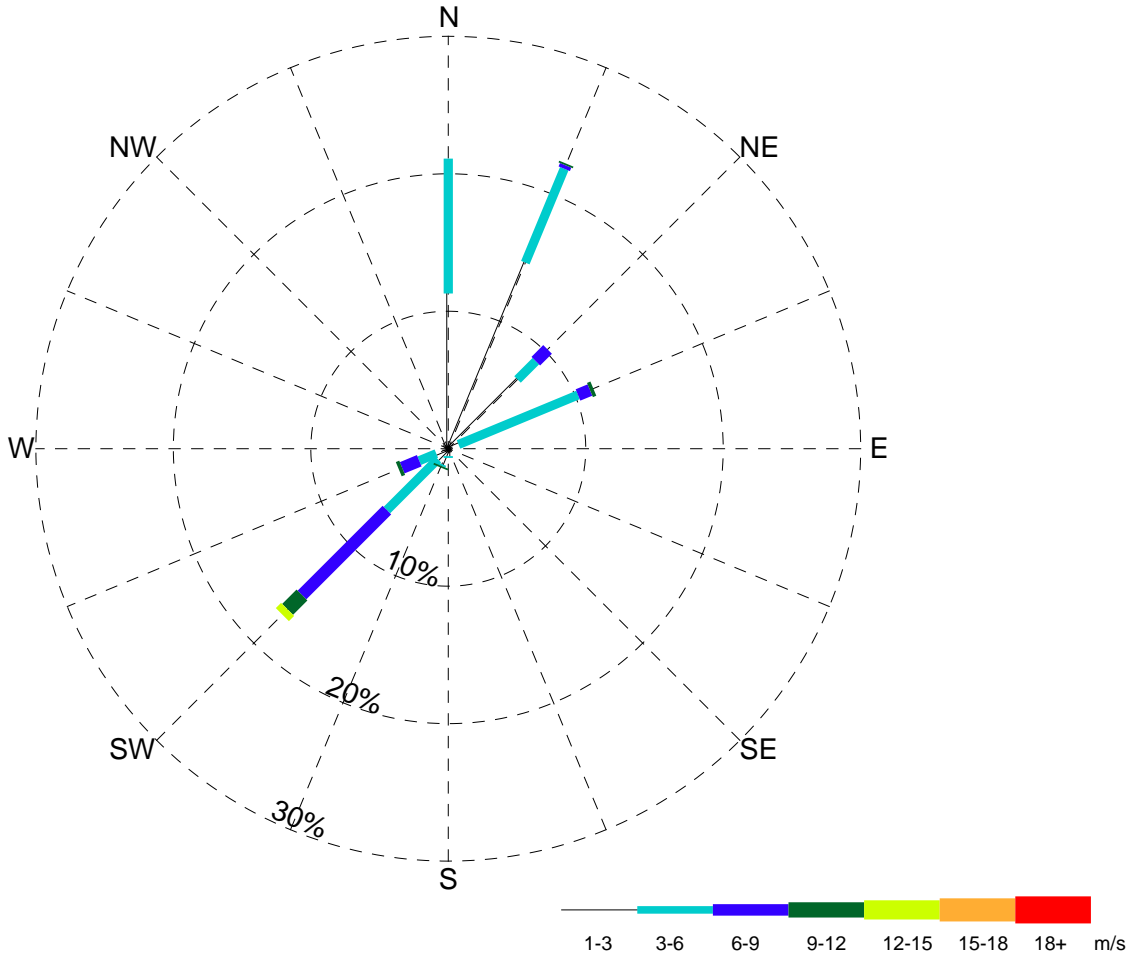
**Wind Speed & Direction Frequency Distribution Table**

Direction	Percent Occurrence (%)							Total (%)	
	0-1 m/s	1-3 m/s	3-6 m/s	6-9 m/s	9-12 m/s	12-15 m/s	15-18 m/s		18+ m/s
ENE	-	0.67	2.29	-	-	-	-	-	2.96
NE	-	8.06	1.34	-	-	-	-	-	9.41
NNE	-	31.32	9.27	0.40	-	-	-	-	40.99
N	-	14.38	6.32	0.40	-	-	-	-	21.10
NNW	-	0.67	-	-	-	-	-	-	0.67
NW	-	0.40	0.13	-	-	-	-	-	0.54
WNW	-	0.40	-	-	-	-	-	-	0.40
W	-	0.67	-	-	-	-	-	-	0.67
WSW	-	1.21	1.75	0.54	-	-	-	-	3.49
SW	-	1.48	4.30	4.30	0.94	-	-	-	11.02
SSW	-	0.40	-	0.81	0.94	0.40	-	-	2.55
S	-	0.27	0.13	0.13	0.13	-	-	-	0.67
SSE	-	0.13	-	-	-	-	-	-	0.13
SE	-	-	-	-	-	-	-	-	-
ESE	-	-	-	-	-	-	-	-	-
E	-	-	-	-	-	-	-	-	-
Calm	5.38	-	-	-	-	-	-	-	5.38
<b>Total (%)</b>	5.38	60.08	25.54	6.59	2.02	0.40	-	-	100.00

CONTRACTOR:  
 HAY & COMPANY CONSULTANTS  
 PREPARED BY:  


**ENBRIDGE NORTHERN GATEWAY PROJECT**  
 Emilia Rock Wind Rose, December 2006

FIGURE NUMBER: **B-2.16**      DATE: 20090727  
 SCALE:      AUTHOR: TM      APPROVED BY: JAS  
 PROJECTION:      DATUM:



Station Name: Emilia Rock  
 NAD 27 Location:  
 N53° 46' 4.5" W128° 57' 24.1"  
 Elev. above SL: 5 m  
 Tower height: 10 m  
 Record length: 31 days  
 Start Date: January 1, 2007  
 End Date: January 31, 2007

**Wind Speed & Direction Frequency Distribution Table**

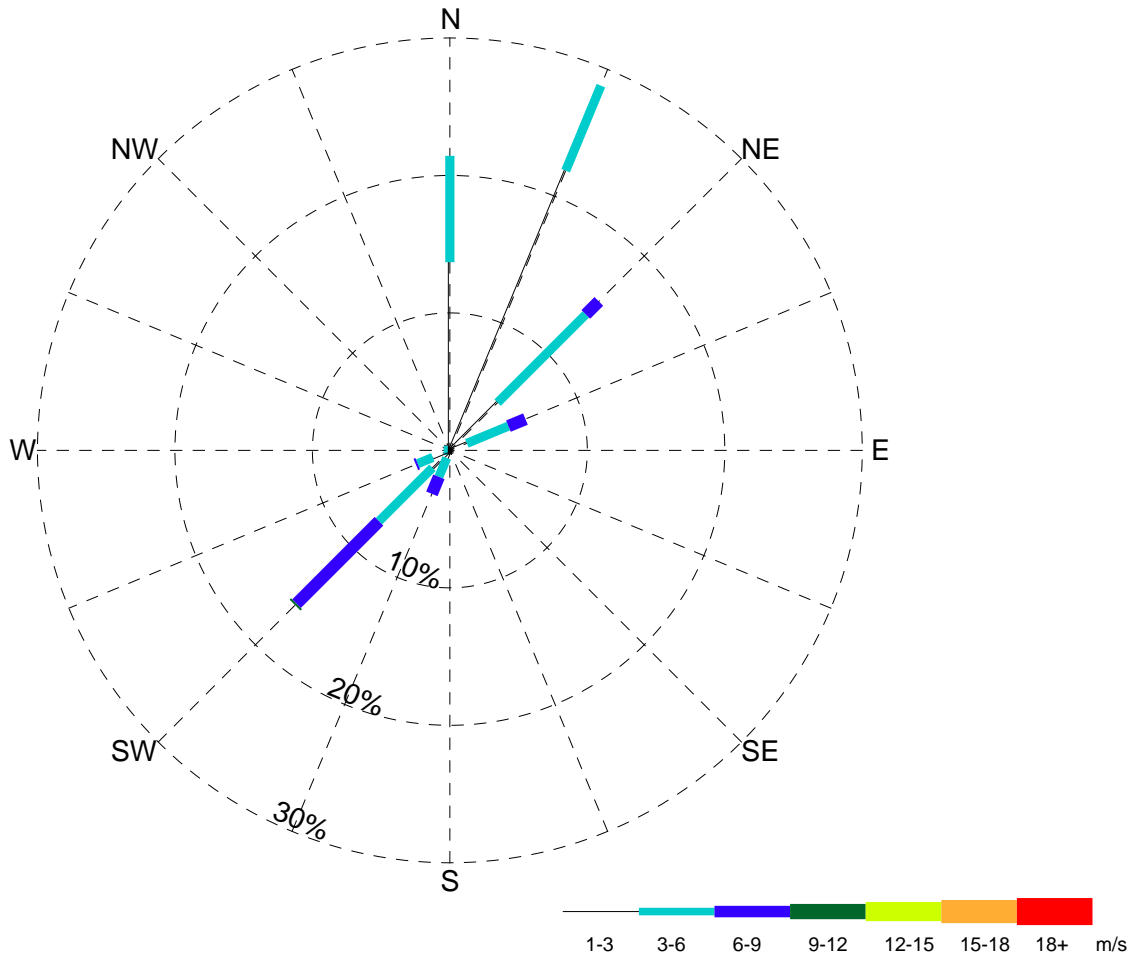
Direction	Percent Occurrence (%)								Total (%)
	0-1 m/s	1-3 m/s	3-6 m/s	6-9 m/s	9-12 m/s	12-15 m/s	15-18 m/s	18+ m/s	
ENE	-	0.81	9.41	0.94	0.27	-	-	-	11.43
NE	-	7.12	1.88	1.21	-	-	-	-	10.22
NNE	-	14.65	7.39	0.27	0.13	-	-	-	22.45
N	-	11.29	9.81	-	-	-	-	-	21.10
NNW	-	0.94	-	-	-	-	-	-	0.94
NW	-	0.40	-	-	-	-	-	-	0.40
WNW	-	-	-	-	-	-	-	-	-
W	-	0.40	-	-	-	-	-	-	0.40
WSW	-	0.94	1.34	1.34	0.27	-	-	-	3.90
SW	-	1.08	5.24	8.74	1.48	0.54	-	-	17.07
SSW	-	1.21	0.13	-	0.13	-	-	-	1.48
S	-	0.54	0.13	-	-	-	-	-	0.67
SSE	-	0.27	-	-	-	-	-	-	0.27
SE	-	0.27	-	-	-	-	-	-	0.27
ESE	-	0.13	-	-	-	-	-	-	0.13
E	-	-	-	-	-	-	-	-	-
Calm	9.27	-	-	-	-	-	-	-	9.27
<b>Total (%)</b>	9.27	40.05	35.35	12.50	2.29	0.54	-	-	100.00

CONTRACTOR:  
 HAY & COMPANY CONSULTANTS  
 PREPARED BY:   
 PREPARED FOR: 

**ENBRIDGE NORTHERN GATEWAY PROJECT**

Emilia Rock Wind Rose, January 2007

FIGURE NUMBER: **B-2.17** DATE: 20090727  
 SCALE: AUTHOR: TM APPROVED BY: JAS  
 PROJECT: DATUM:



**Wind Speed & Direction Frequency Distribution Table**

Direction	Percent Occurrence (%)								Total (%)
	0-1 m/s	1-3 m/s	3-6 m/s	6-9 m/s	9-12 m/s	12-15 m/s	15-18 m/s	18+ m/s	
ENE	-	1.34	3.27	1.34	-	-	-	-	5.95
NE	-	4.91	9.08	1.34	-	-	-	-	15.33
NNE	-	22.02	6.70	-	-	-	-	-	28.72
N	-	13.69	7.74	-	-	-	-	-	21.43
NNW	-	0.45	-	-	-	-	-	-	0.45
NW	-	0.15	-	-	-	-	-	-	0.15
WNW	-	0.15	-	-	-	-	-	-	0.15
W	-	0.15	0.30	-	-	-	-	-	0.45
WSW	-	1.34	1.19	0.15	-	-	-	-	2.68
SW	-	1.79	5.51	8.48	0.15	-	-	-	15.92
SSW	-	0.60	1.49	1.34	-	-	-	-	3.42
S	-	0.30	-	-	-	-	-	-	0.30
SSE	-	-	-	-	-	-	-	-	-
SE	-	-	-	-	-	-	-	-	-
ESE	-	-	-	-	-	-	-	-	-
E	-	0.30	-	-	-	-	-	-	0.30
Calm	4.76	-	-	-	-	-	-	-	4.76
<b>Total (%)</b>	4.76	47.17	35.27	12.65	0.15	-	-	-	100.00

Station

NAD 27 Location:

N53° 46' 4.5" W128° 57' 24.1"

Elev. above SL: 5 m

Tower height: 10 m

Record length: 28 days

Start Date: February 1, 2007

End Date: February 28, 2007

CONTRACTOR:  
HAY & COMPANY CONSULTANTS

PREPARED BY:  


PREPARED FOR:  

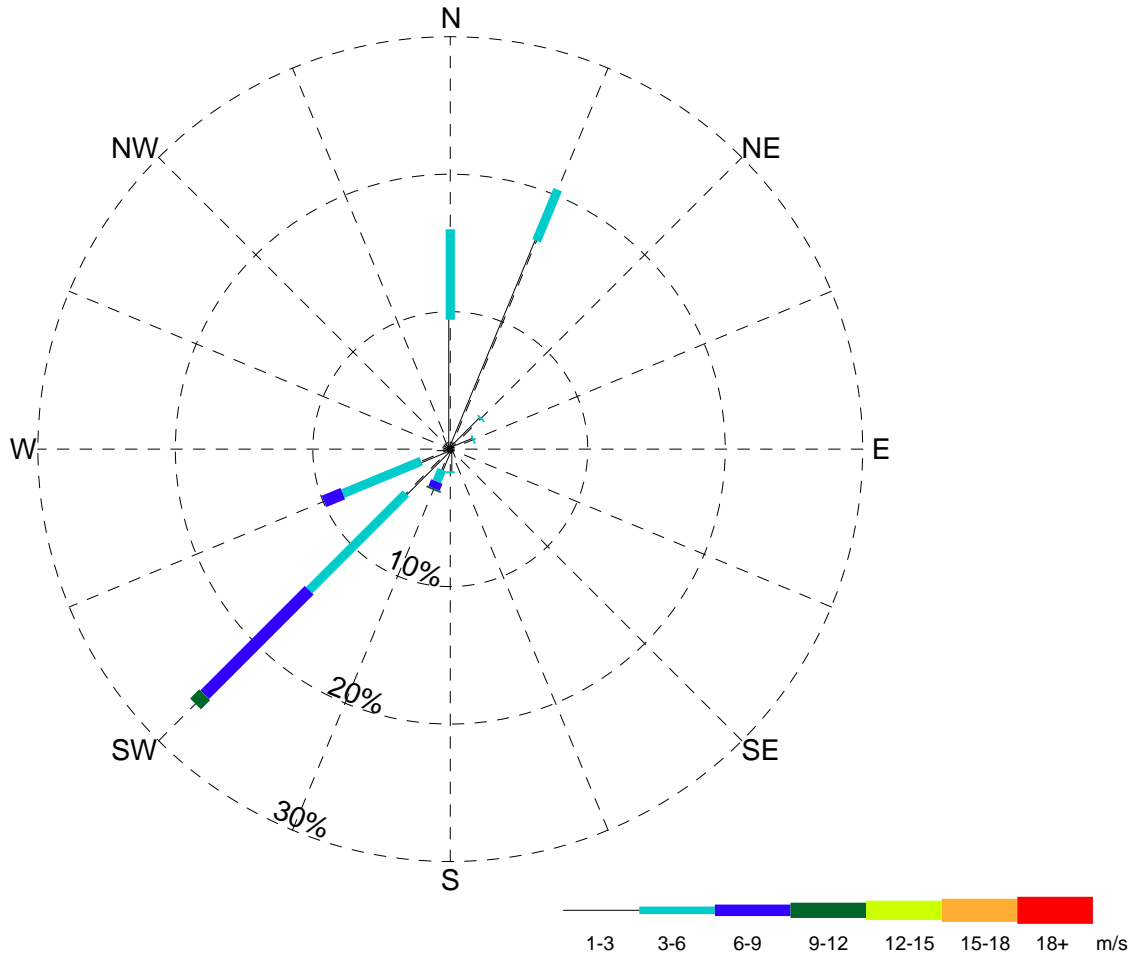

**ENBRIDGE NORTHERN GATEWAY PROJECT**

Emilia Rock Wind Rose, February 2007

FIGURE NUMBER: **B-2.18** DATE: 20090727

SCALE: AUTHOR: TM APPROVED BY: JAS

PROJECTION: DATUM:



**Wind Speed & Direction Frequency Distribution Table**

Direction	Percent Occurrence (%)								Total (%)
	0-1 m/s	1-3 m/s	3-6 m/s	6-9 m/s	9-12 m/s	12-15 m/s	15-18 m/s	18+ m/s	
ENE	-	1.75	0.13	-	-	-	-	-	1.88
NE	-	3.09	0.13	-	-	-	-	-	3.23
NNE	-	16.40	4.03	-	-	-	-	-	20.43
N	-	9.41	6.59	-	-	-	-	-	15.99
NNW	-	1.08	-	-	-	-	-	-	1.08
NW	-	0.54	-	-	-	-	-	-	0.54
WNW	-	0.54	-	-	-	-	-	-	0.54
W	-	0.94	-	-	-	-	-	-	0.94
WSW	-	2.29	6.18	1.48	-	-	-	-	9.95
SW	-	4.57	9.95	10.75	0.94	-	-	-	26.21
SSW	-	1.61	0.94	0.54	0.13	-	-	-	3.23
S	-	1.61	0.13	-	-	-	-	-	1.75
SSE	-	0.67	-	-	-	-	-	-	0.67
SE	-	0.27	-	-	-	-	-	-	0.27
ESE	-	-	-	-	-	-	-	-	-
E	-	0.27	-	-	-	-	-	-	0.27
Calm	13.04	-	-	-	-	-	-	-	13.04
<b>Total (%)</b>	<b>13.04</b>	<b>45.03</b>	<b>28.09</b>	<b>12.77</b>	<b>1.08</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>100.00</b>

Station Name: Emilia Rock  
 NAD 27 Location:  
 N53° 46' 4.5" W128° 57' 24.1"  
 Elev. above SL: 5 m  
 Tower height: 10 m  
 Record length: 31 days  
 Start Date: March 1, 2007  
 End Date: March 31, 2007

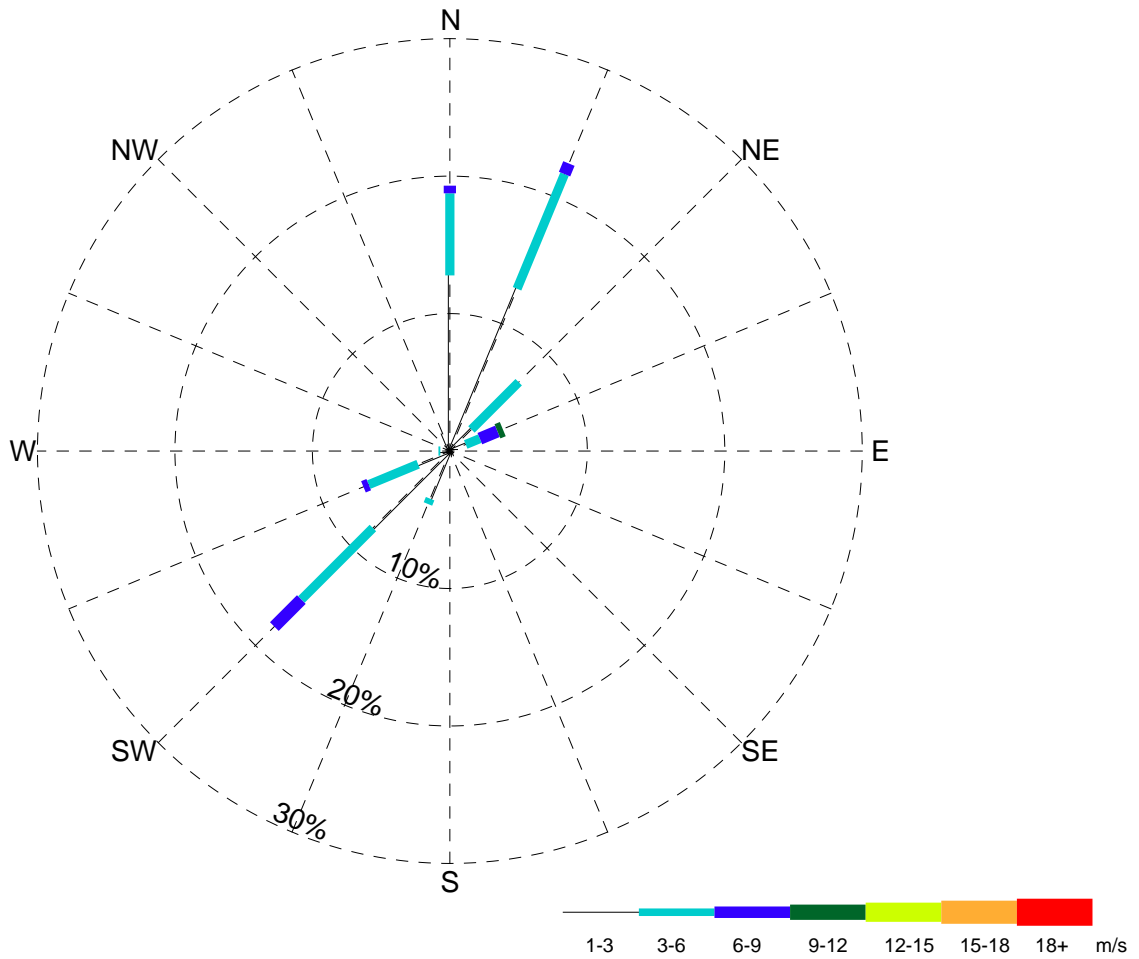
CONTRACTOR:  
 HAY & COMPANY CONSULTANTS  
 PREPARED BY:  


PREPARED FOR:  


**ENBRIDGE NORTHERN GATEWAY PROJECT**

Emilia Rock Wind Rose, March 2007

FIGURE NUMBER: **B-2.19**  
 DATE: 20090727  
 SCALE:  
 AUTHORITY: TM  
 APPROVED BY: JAS  
 PROJECTION:  
 DATUM:



**Wind Speed & Direction Frequency Distribution Table**

Direction	Percent Occurrence (%)								Total (%)
	0-1 m/s	1-3 m/s	3-6 m/s	6-9 m/s	9-12 m/s	12-15 m/s	15-18 m/s	18+ m/s	
ENE	-	1.25	1.11	1.39	0.42	-	-	-	4.17
NE	-	2.22	4.86	-	-	-	-	-	7.08
NNE	-	12.78	9.03	0.83	-	-	-	-	22.64
N	-	12.78	5.97	0.56	-	-	-	-	19.31
NNW	-	1.39	-	-	-	-	-	-	1.39
NW	-	0.28	-	-	-	-	-	-	0.28
WNW	-	0.28	-	-	-	-	-	-	0.28
W	-	0.69	0.14	-	-	-	-	-	0.83
WSW	-	2.50	3.89	0.42	-	-	-	-	6.81
SW	-	7.92	7.36	2.78	-	-	-	-	18.06
SSW	-	3.75	0.42	-	-	-	-	-	4.17
S	-	0.42	-	-	-	-	-	-	0.42
SSE	-	0.42	-	-	-	-	-	-	0.42
SE	-	0.28	-	-	-	-	-	-	0.28
ESE	-	-	-	-	-	-	-	-	-
E	-	0.56	-	-	-	-	-	-	0.56
Calm	13.33	-	-	-	-	-	-	-	13.33
<b>Total (%)</b>	<b>13.33</b>	<b>47.50</b>	<b>32.78</b>	<b>5.97</b>	<b>0.42</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>100.00</b>

Station Name: Emilia Rock  
 NAD 27 Location:  
 N53° 46' 4.5" W128° 57' 24.1"  
 Elev. above SL: 5 m  
 Tower height: 10 m  
 Record length: 30 days  
 Start Date: April 1, 2007  
 End Date: April 30, 2007

CONTRACTOR:  
HAY & COMPANY CONSULTANTS

PREPARED BY: 

PREPARED FOR: 

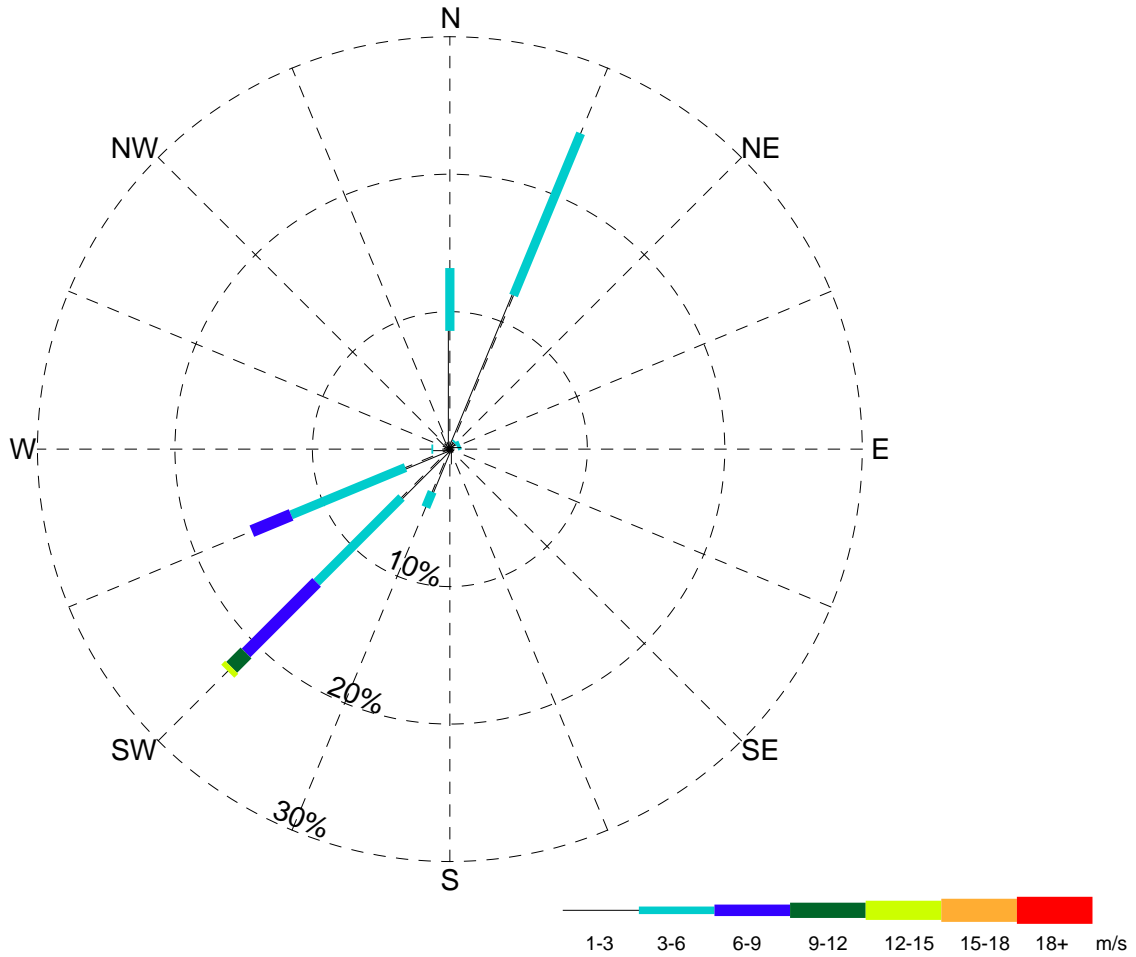
**ENBRIDGE NORTHERN GATEWAY PROJECT**

Emilia Rock Wind Rose, April 2007

FIGURE NUMBER: **B-2.20** DATE: 20090727

SCALE: AUTHOR: TM APPROVED BY: JAS

PROJECTION: DATUM:



**Wind Speed & Direction Frequency Distribution Table**

Direction	Percent Occurrence (%)								Total (%)
	0-1 m/s	1-3 m/s	3-6 m/s	6-9 m/s	9-12 m/s	12-15 m/s	15-18 m/s	18+ m/s	
ENE	-	0.54	0.27	-	-	-	-	-	0.81
NE	-	0.54	0.13	-	-	-	-	-	0.67
NNE	-	12.10	12.77	-	-	-	-	-	24.87
N	-	8.60	4.57	-	-	-	-	-	13.17
NNW	-	1.34	-	-	-	-	-	-	1.34
NW	-	1.21	-	-	-	-	-	-	1.21
WNW	-	0.40	-	-	-	-	-	-	0.40
W	-	1.21	0.13	-	-	-	-	-	1.34
WSW	-	3.49	9.01	3.09	-	-	-	-	15.59
SW	-	4.97	8.74	7.26	1.48	0.40	-	-	22.85
SSW	-	3.36	1.21	-	-	-	-	-	4.57
S	-	1.08	-	-	-	-	-	-	1.08
SSE	-	0.27	-	-	-	-	-	-	0.27
SE	-	0.27	-	-	-	-	-	-	0.27
ESE	-	0.13	-	-	-	-	-	-	0.13
E	-	0.81	-	-	-	-	-	-	0.81
Calm	10.62	-	-	-	-	-	-	-	10.62
<b>Total (%)</b>	<b>10.62</b>	<b>40.32</b>	<b>36.83</b>	<b>10.35</b>	<b>1.48</b>	<b>0.40</b>	<b>-</b>	<b>-</b>	<b>100.00</b>

Station Name: Emilia Rock  
 NAD 27 Location:  
 N53° 46' 4.5" W128° 57' 24.1"  
 Elev. above SL: 5 m  
 Tower height: 10 m  
 Record length: 31 days  
 Start Date: May 1, 2007  
 End Date: May 31, 2007

CONTRACTOR:  
 HAY & COMPANY CONSULTANTS

PREPARED BY:  


PREPARED FOR:  

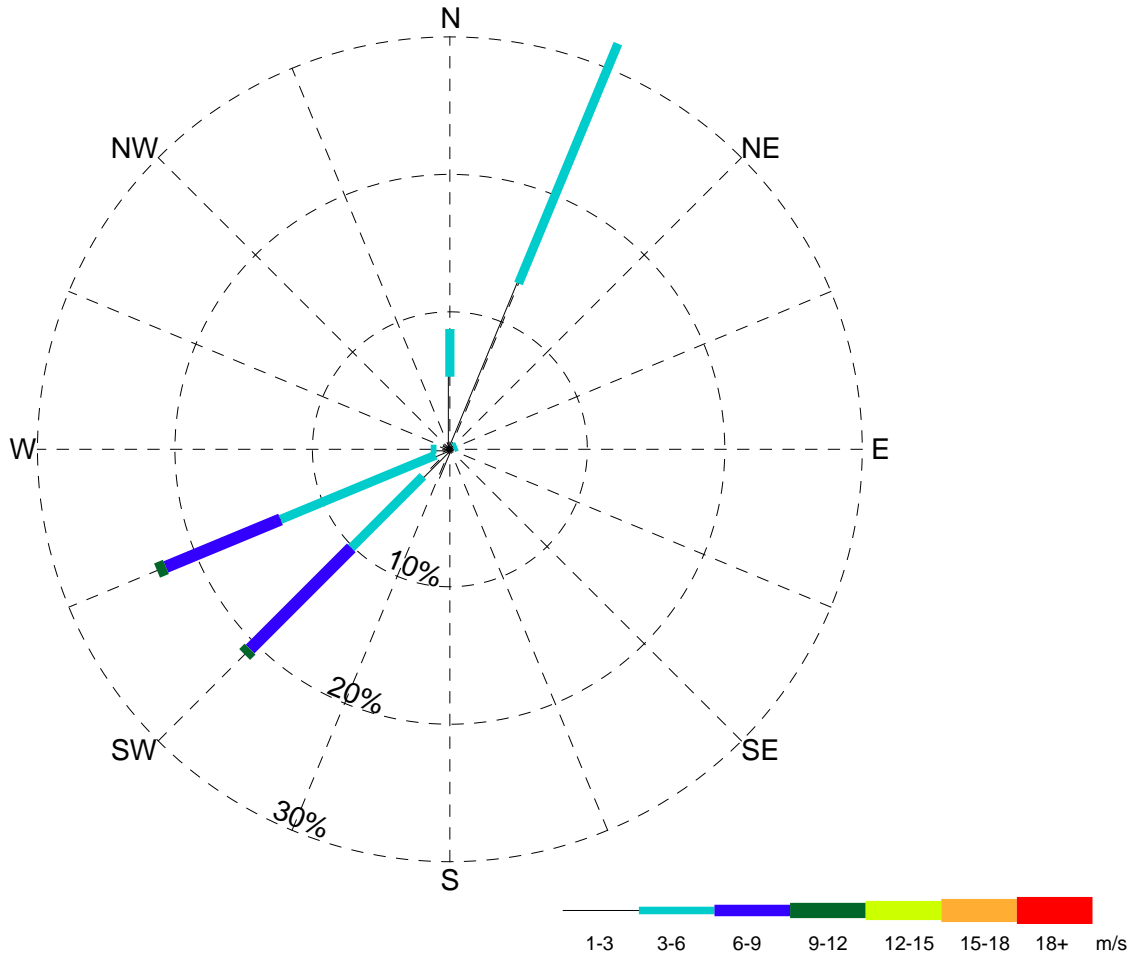

**ENBRIDGE NORTHERN GATEWAY PROJECT**

Emilia Rock Wind Rose, May 2007

FIGURE NUMBER: **B-2.21** DATE: 20090727

SCALE: AUTHOR: TM APPROVED BY: JAS

PROJECTION: DATUM:



Station Name: Emilia Rock  
 NAD 27 Location:  
 N53° 46' 4.5" W128° 57' 24.1"  
 Elev. above SL: 5 m  
 Tower height: 10 m  
 Record length: 30 days  
 Start Date: June 1, 2007  
 End Date: June 30, 2007

**Wind Speed & Direction Frequency Distribution Table**

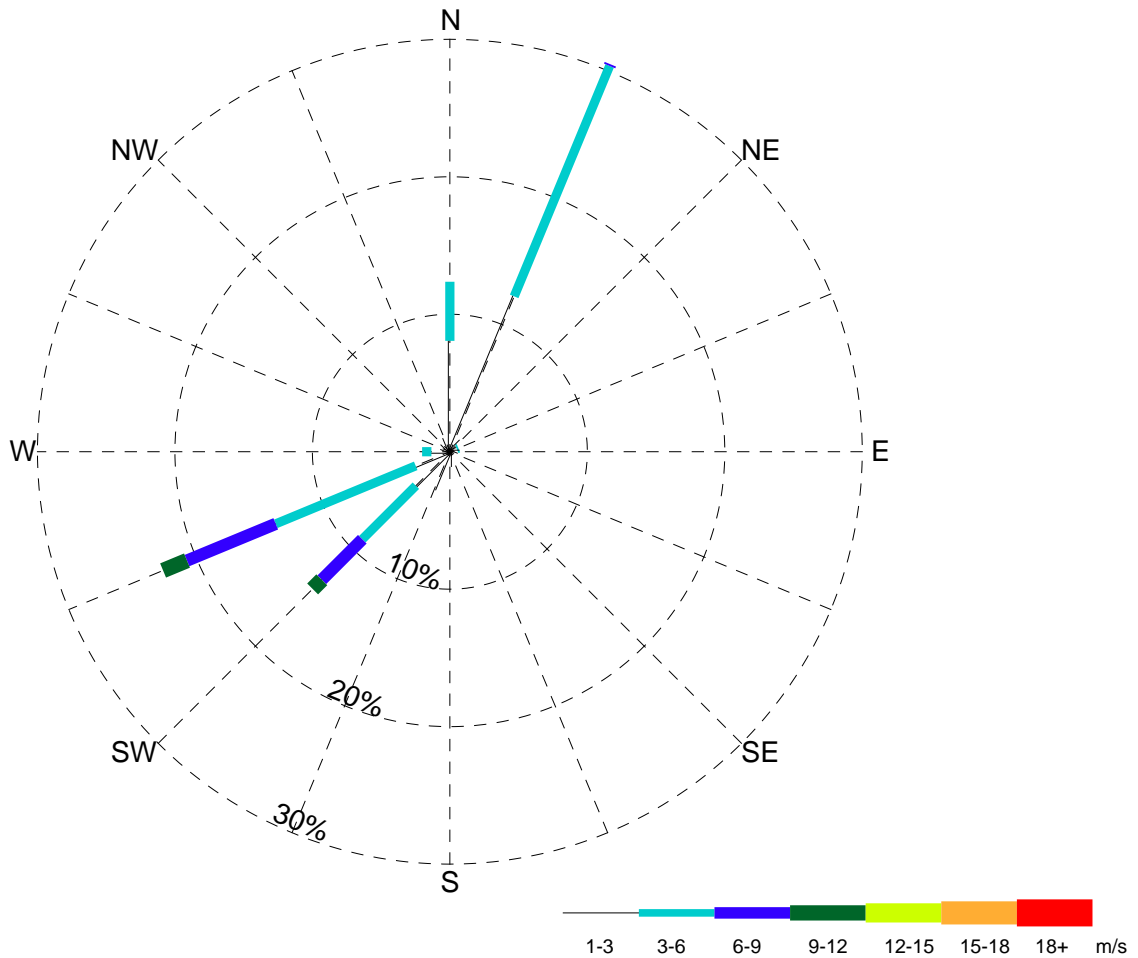
Direction	Percent Occurrence (%)								Total (%)
	0-1 m/s	1-3 m/s	3-6 m/s	6-9 m/s	9-12 m/s	12-15 m/s	15-18 m/s	18+ m/s	
ENE	-	0.28	0.28	-	-	-	-	-	0.56
NE	-	0.14	-	-	-	-	-	-	0.14
NNE	-	13.06	18.89	-	-	-	-	-	31.94
N	-	5.28	3.47	-	-	-	-	-	8.75
NNW	-	0.28	-	-	-	-	-	-	0.28
NW	-	0.56	-	-	-	-	-	-	0.56
WNW	-	0.69	-	-	-	-	-	-	0.69
W	-	0.97	0.42	-	-	-	-	-	1.39
WSW	-	1.11	12.22	9.03	0.69	-	-	-	23.06
SW	-	2.78	7.36	10.42	0.56	-	-	-	21.11
SSW	-	2.22	-	-	-	-	-	-	2.22
S	-	0.14	-	-	-	-	-	-	0.14
SSE	-	-	-	-	-	-	-	-	-
SE	-	-	-	-	-	-	-	-	-
ESE	-	0.14	-	-	-	-	-	-	0.14
E	-	0.14	-	-	-	-	-	-	0.14
Calm	8.89	-	-	-	-	-	-	-	8.89
<b>Total (%)</b>	<b>8.89</b>	<b>27.78</b>	<b>42.64</b>	<b>19.44</b>	<b>1.25</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>100.00</b>

CONTRACTOR:  
 HAY & COMPANY CONSULTANTS  
 PREPARED BY:  


PREPARED FOR:  


**ENBRIDGE NORTHERN GATEWAY PROJECT**  
 Emilia Rock Wind Rose, June 2007

FIGURE NUMBER: **B-2.22**  
 SCALE:  
 PROJECTION:  
 DATE: 20090727  
 AUTHOR: TM  
 APPROVED BY: JAS  
 DATUM:



**Wind Speed & Direction Frequency Distribution Table**

Direction	Percent Occurrence (%)								Total (%)
	0-1 m/s	1-3 m/s	3-6 m/s	6-9 m/s	9-12 m/s	12-15 m/s	15-18 m/s	18+ m/s	
ENE	-	0.54	0.13	-	-	-	-	-	0.67
NE	-	1.08	-	-	-	-	-	-	1.08
NNE	-	12.23	18.15	0.13	-	-	-	-	30.51
N	-	8.06	4.30	-	-	-	-	-	12.37
NNW	-	1.08	-	-	-	-	-	-	1.08
NW	-	0.81	-	-	-	-	-	-	0.81
WNW	-	0.67	-	-	-	-	-	-	0.67
W	-	1.34	0.67	-	-	-	-	-	2.02
WSW	-	2.69	11.02	6.99	1.88	-	-	-	22.58
SW	-	3.49	5.51	4.17	0.94	-	-	-	14.11
SSW	-	2.96	-	-	-	-	-	-	2.96
S	-	1.08	-	-	-	-	-	-	1.08
SSE	-	0.13	-	-	-	-	-	-	0.13
SE	-	0.13	-	-	-	-	-	-	0.13
ESE	-	0.54	-	-	-	-	-	-	0.54
E	-	0.67	-	-	-	-	-	-	0.67
Calm	8.60	-	-	-	-	-	-	-	8.60
<b>Total (%)</b>	<b>8.60</b>	<b>37.50</b>	<b>39.78</b>	<b>11.29</b>	<b>2.82</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>100.00</b>

Station Name: Emilia Rock  
 NAD 27 Location:  
 N53° 46' 4.5" W128° 57' 24.1"  
 Elev. above SL: 5 m  
 Tower height: 10 m  
 Record length: 31 days  
 Start Date: July 1, 2007  
 End Date: July 31, 2007

CONTRACTOR:  
 HAY & COMPANY CONSULTANTS

PREPARED BY:  


PREPARED FOR:  

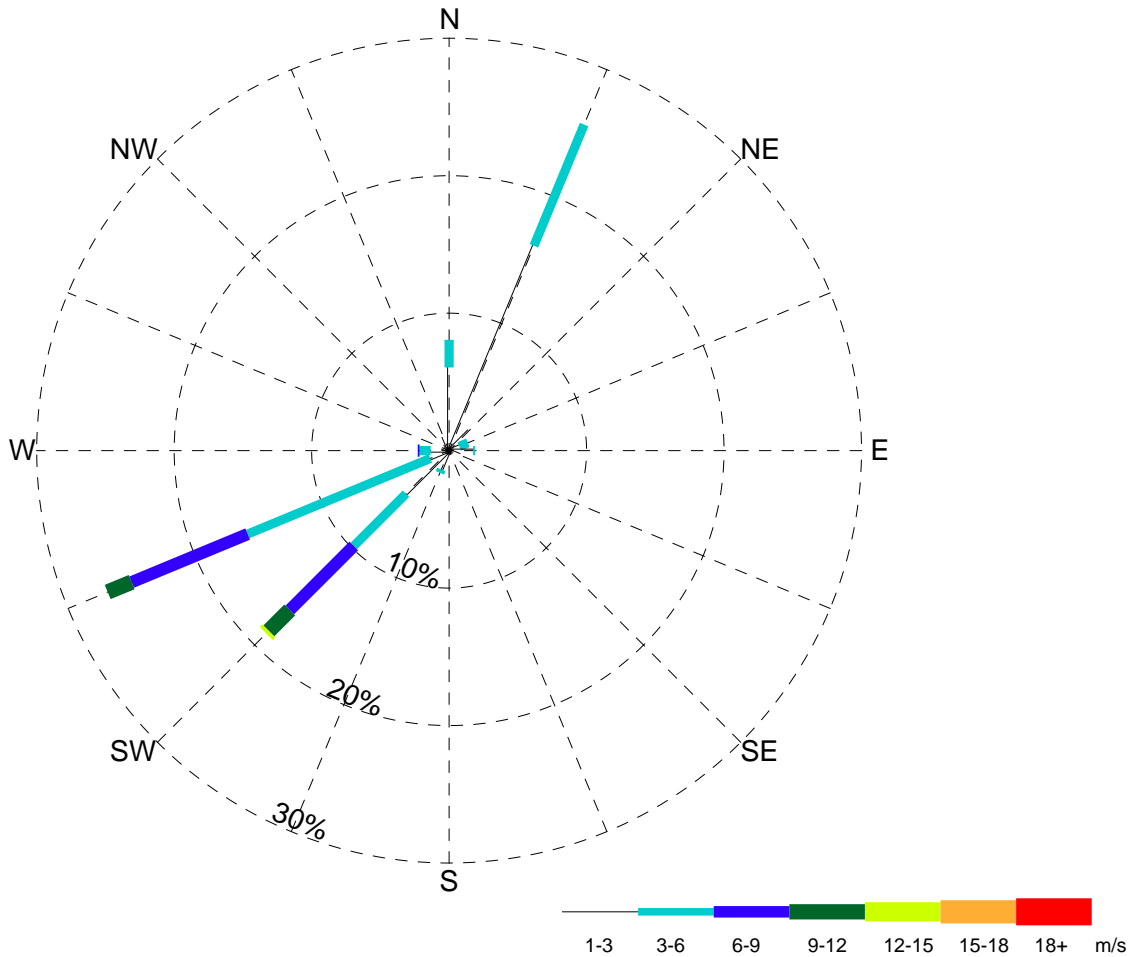

**ENBRIDGE NORTHERN GATEWAY PROJECT**

Emilia Rock Wind Rose, July 2007

FIGURE NUMBER: **B-2.23** DATE: 20090727

SCALE: AUTHOR: TM APPROVED BY: JAS

PROJECTION: DATUM:



Station Name: Emilia Rock  
 NAD 27 Location:  
 N53° 46' 4.5" W128° 57' 24.1"  
 Elev. above SL: 5 m  
 Tower height: 10 m  
 Record length: 31 days  
 Start Date: August 1, 2007  
 End Date: August 31, 2007

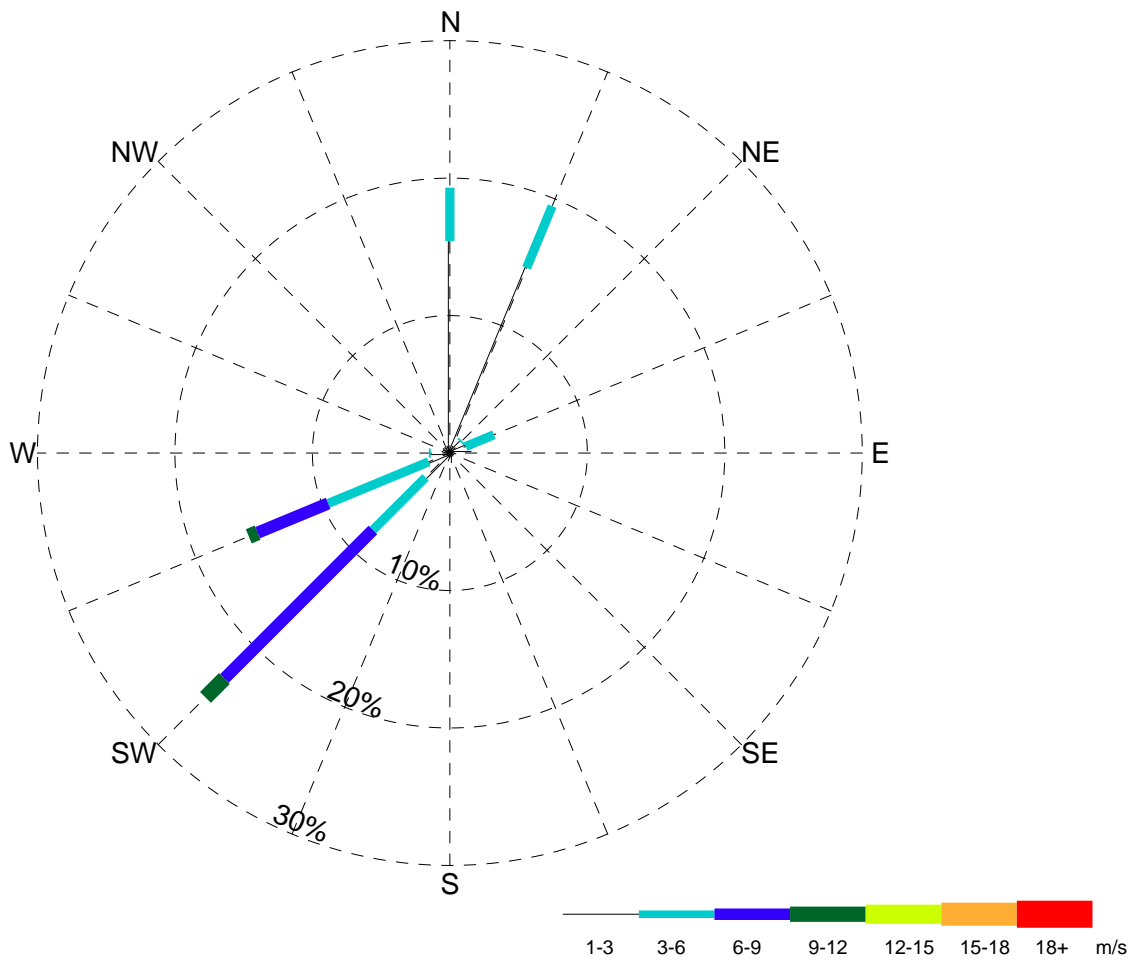
**Wind Speed & Direction Frequency Distribution Table**

Direction	Percent Occurrence (%)								Total (%)
	0-1 m/s	1-3 m/s	3-6 m/s	6-9 m/s	9-12 m/s	12-15 m/s	15-18 m/s	18+ m/s	
ENE	-	0.81	0.67	-	-	-	-	-	1.48
NE	-	2.02	-	-	-	-	-	-	2.02
NNE	-	16.13	9.54	-	-	-	-	-	25.67
N	-	6.05	2.02	-	-	-	-	-	8.06
NNW	-	1.08	-	-	-	-	-	-	1.08
NW	-	0.40	-	-	-	-	-	-	0.40
WNW	-	0.54	-	-	-	-	-	-	0.54
W	-	1.34	0.81	0.13	-	-	-	-	2.29
WSW	-	1.48	14.38	9.14	1.88	-	-	-	26.88
SW	-	4.43	5.38	6.59	2.15	0.27	-	-	18.82
SSW	-	1.48	0.27	-	-	-	-	-	1.75
S	-	0.27	-	-	-	-	-	-	0.27
SSE	-	-	-	-	-	-	-	-	-
SE	-	0.13	-	-	-	-	-	-	0.13
ESE	-	0.81	-	-	-	-	-	-	0.81
E	-	1.75	0.13	-	-	-	-	-	1.88
Calm	7.93	-	-	-	-	-	-	-	7.93
<b>Total (%)</b>	<b>7.93</b>	<b>38.71</b>	<b>33.20</b>	<b>15.86</b>	<b>4.03</b>	<b>0.27</b>	<b>-</b>	<b>-</b>	<b>100.00</b>

CONTRACTOR:  
 HAY & COMPANY CONSULTANTS  
 PREPARED BY:  


**ENBRIDGE NORTHERN GATEWAY PROJECT**  
 Emilia Rock Wind Rose, August 2007

FIGURE NUMBER: **B-2.24** DATE: 20090727  
 SCALE: AUTHOR: TM APPROVED BY: JAS  
 PROJECT: DATUM:



**Wind Speed & Direction Frequency Distribution Table**

Direction	Percent Occurrence (%)								Total (%)
	0-1 m/s	1-3 m/s	3-6 m/s	6-9 m/s	9-12 m/s	12-15 m/s	15-18 m/s	18+ m/s	
ENE	-	1.25	2.22	-	-	-	-	-	3.47
NE	-	1.11	0.14	-	-	-	-	-	1.25
NNE	-	14.58	4.86	-	-	-	-	-	19.44
N	-	15.42	3.89	-	-	-	-	-	19.31
NNW	-	0.97	-	-	-	-	-	-	0.97
NW	-	0.56	-	-	-	-	-	-	0.56
WNW	-	0.56	-	-	-	-	-	-	0.56
W	-	1.39	0.14	-	-	-	-	-	1.53
WSW	-	1.67	7.92	5.56	0.69	-	-	-	15.83
SW	-	2.50	5.42	15.28	1.94	-	-	-	25.14
SSW	-	0.56	-	-	-	-	-	-	0.56
S	-	0.69	-	-	-	-	-	-	0.69
SSE	-	0.14	-	-	-	-	-	-	0.14
SE	-	0.14	-	-	-	-	-	-	0.14
ESE	-	0.42	-	-	-	-	-	-	0.42
E	-	1.53	-	-	-	-	-	-	1.53
Calm	8.47	-	-	-	-	-	-	-	8.47
<b>Total (%)</b>	<b>8.47</b>	<b>43.47</b>	<b>24.58</b>	<b>20.83</b>	<b>2.64</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>100.00</b>

Station Name: Emilia Rock  
 NAD 27 Location:  
 N53° 46' 4.5" W128° 57' 24.1"  
 Elev. above SL: 5 m  
 Tower height: 10 m  
 Record length: 30 days  
 Start Date: Sep. 1, 2007  
 End Date: Sep. 30, 2007

CONTRACTOR:  
HAY & COMPANY CONSULTANTS

PREPARED BY:

PREPARED FOR:

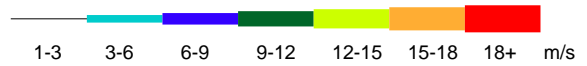
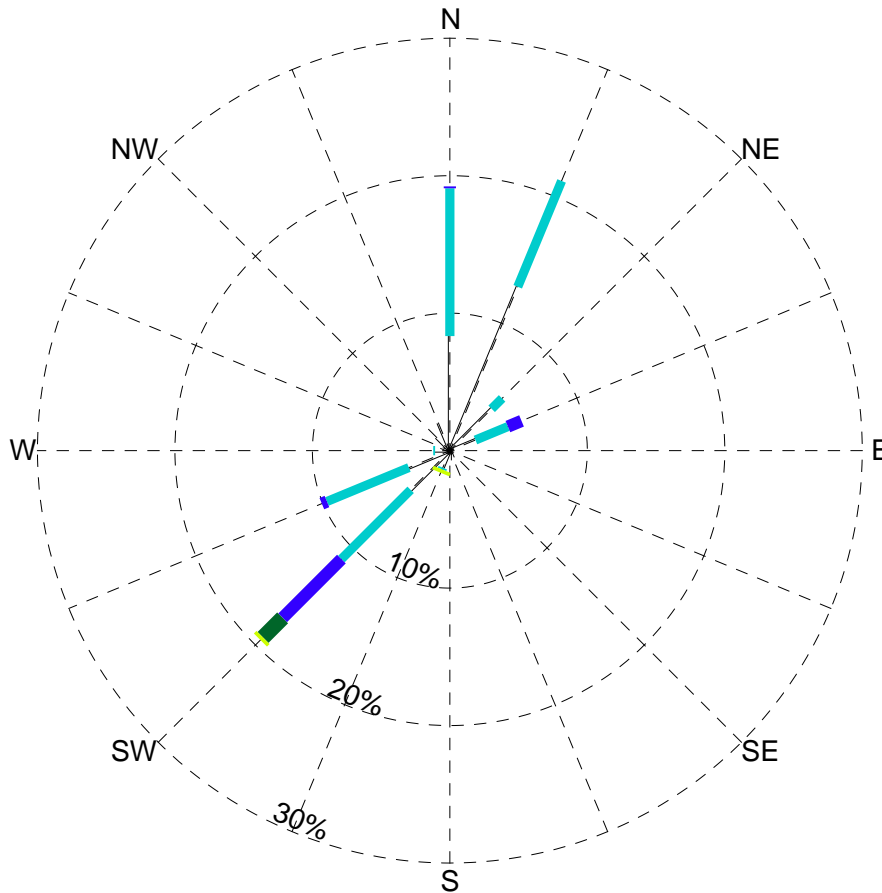
**ENBRIDGE NORTHERN GATEWAY PROJECT**

Emilia Rock Wind Rose, September 2007

FIGURE NUMBER: **B-2.25** DATE: 20090727

SCALE: AUTHOR: TM APPROVED BY: JAS

PROJECTION: DATUM:



**Wind Speed & Direction Frequency Distribution Table**

Direction	Percent Occurrence (%)							Total (%)	
	0-1 m/s	1-3 m/s	3-6 m/s	6-9 m/s	9-12 m/s	12-15 m/s	15-18 m/s		18+ m/s
ENE	-	2.02	2.55	1.08	-	-	-	-	5.64
NE	-	4.30	1.08	-	-	-	-	-	5.38
NNE	-	12.90	8.33	-	-	-	-	-	21.24
N	-	8.33	10.75	0.13	-	-	-	-	19.22
NNW	-	2.15	-	-	-	-	-	-	2.15
NW	-	1.34	-	-	-	-	-	-	1.34
WNW	-	0.67	-	-	-	-	-	-	0.67
W	-	1.08	0.13	-	-	-	-	-	1.21
WSW	-	3.23	6.45	0.40	-	-	-	-	10.08
SW	-	4.03	7.12	6.05	2.02	0.27	-	-	19.49
SSW	-	1.34	0.13	-	-	0.27	-	-	1.75
S	-	0.67	-	-	-	-	-	-	0.67
SSE	-	0.54	-	-	-	-	-	-	0.54
SE	-	0.13	-	-	-	-	-	-	0.13
ESE	-	-	-	-	-	-	-	-	-
E	-	0.27	-	-	-	-	-	-	0.27
Calm	10.22	-	-	-	-	-	-	-	10.22
<b>Total (%)</b>	<b>10.22</b>	<b>43.01</b>	<b>36.56</b>	<b>7.66</b>	<b>2.02</b>	<b>0.54</b>	<b>-</b>	<b>-</b>	<b>100.00</b>

Station Name: Emilia Rock

NAD 27 Location:

N53° 46' 4.5" W128° 57' 24.1"

Elev. above SL: 5 m

Tower height: 10 m

Record length: 31 days

Start Date: Oct. 1, 2007

End Date: Oct. 31, 2007

CONTRACTOR:  
HAY & COMPANY CONSULTANTS

PREPARED BY:

PREPARED FOR:

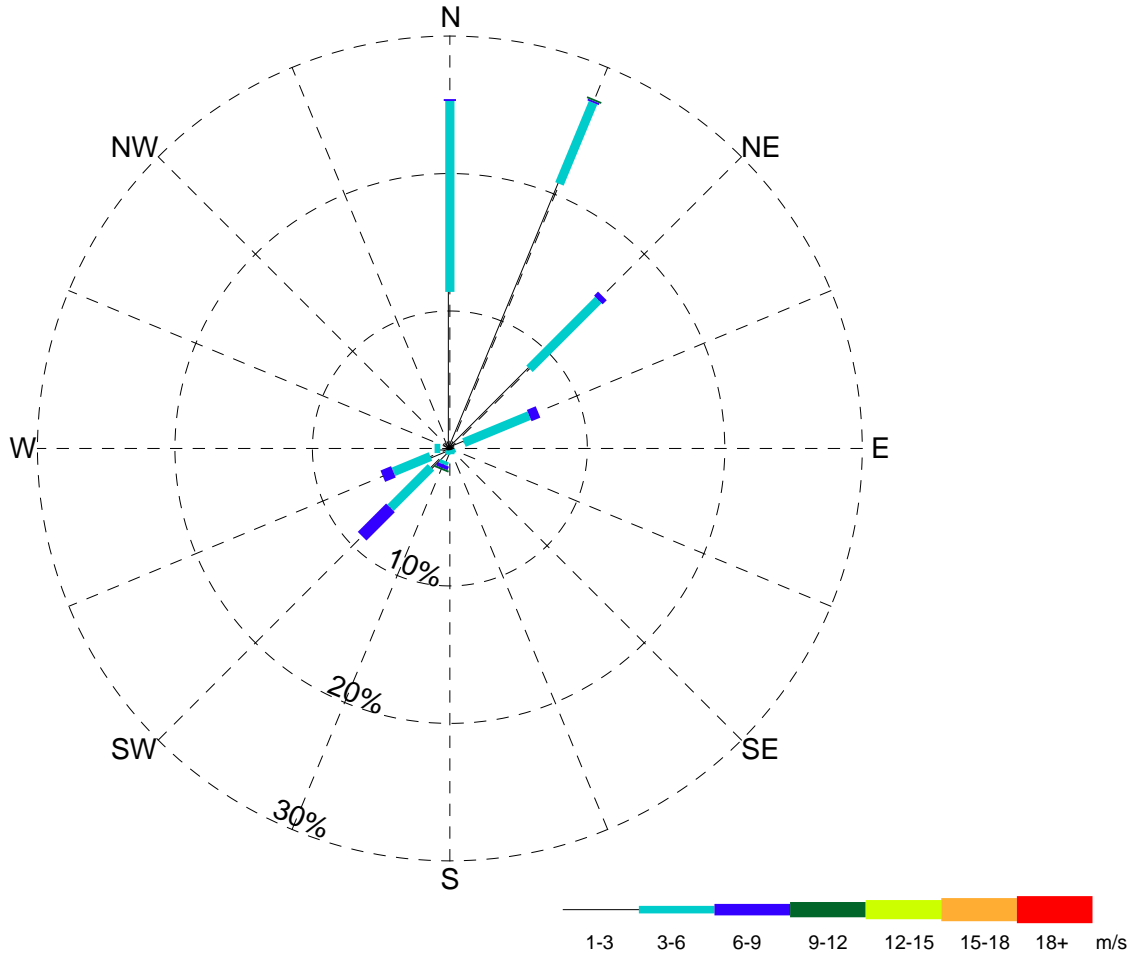
**ENBRIDGE NORTHERN GATEWAY PROJECT**

Emilia Rock Wind Rose, October 2007

FIGURE NUMBER: **B-2.26** DATE: 20090727

SCALE: AUTHOR: TM APPROVED BY: JAS

PROJECTION: DATUM:



Station Name: Emilia Rock  
 NAD 27 Location:  
 N53° 46' 4.5" W128° 57' 24.1"  
 Elev. above SL: 5 m  
 Tower height: 10 m  
 Record length: 30 days  
 Start Date: Nov. 1, 2007  
 End Date: Nov. 30, 2007

**Wind Speed & Direction Frequency Distribution Table**

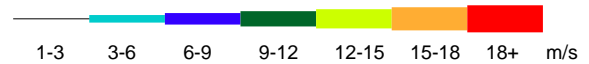
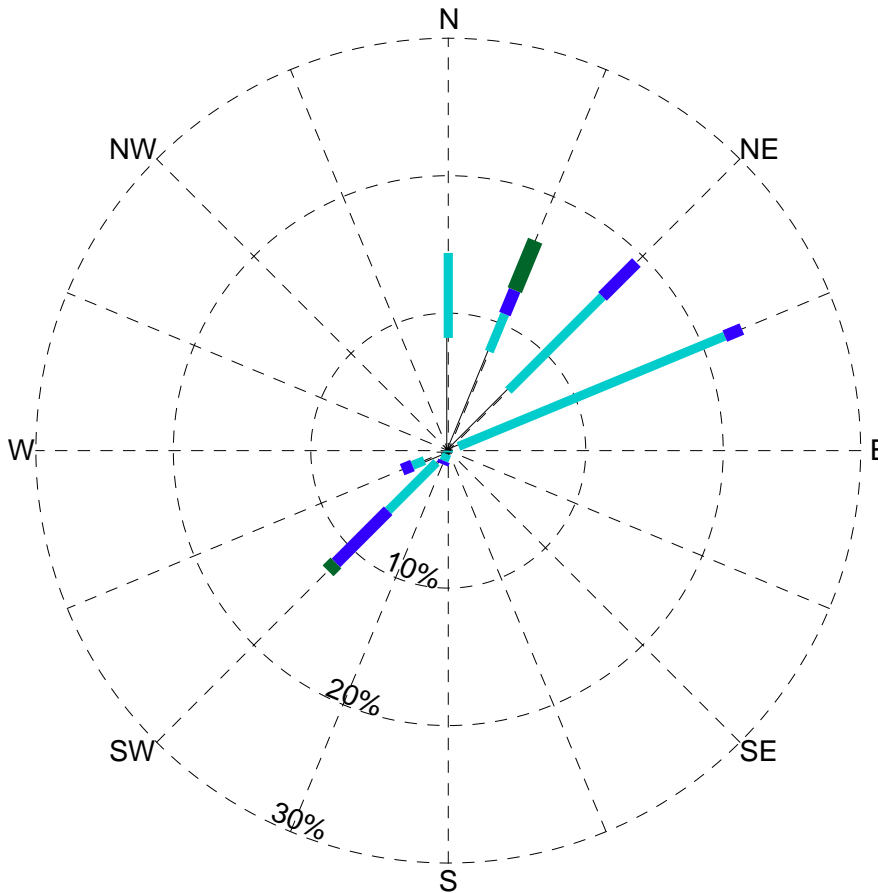
Direction	Percent Occurrence (%)								Total (%)
	0-1 m/s	1-3 m/s	3-6 m/s	6-9 m/s	9-12 m/s	12-15 m/s	15-18 m/s	18+ m/s	
ENE	-	1.11	5.14	0.69	-	-	-	-	6.94
NE	-	8.19	7.08	0.42	-	-	-	-	15.69
NNE	-	20.83	6.39	0.14	0.14	-	-	-	27.50
N	-	11.39	13.89	0.14	-	-	-	-	25.42
NNW	-	0.83	-	-	-	-	-	-	0.83
NW	-	0.56	-	-	-	-	-	-	0.56
WNW	-	0.28	-	-	-	-	-	-	0.28
W	-	0.69	0.42	-	-	-	-	-	1.11
WSW	-	1.53	2.92	0.83	-	-	-	-	5.28
SW	-	1.94	4.17	2.92	-	-	-	-	9.03
SSW	-	0.97	0.28	0.28	0.14	-	-	-	1.67
S	-	0.14	0.28	-	-	-	-	-	0.42
SSE	-	0.14	0.28	-	-	-	-	-	0.42
SE	-	-	-	-	-	-	-	-	-
ESE	-	-	-	-	-	-	-	-	-
E	-	0.28	-	-	-	-	-	-	0.28
Calm	4.58	-	-	-	-	-	-	-	4.58
<b>Total (%)</b>	4.58	48.89	40.83	5.42	0.28	-	-	-	100.00

CONTRACTOR:  
 HAY & COMPANY CONSULTANTS  
 PREPARED BY:  


**ENBRIDGE NORTHERN GATEWAY PROJECT**  
 Emilia Rock Wind Rose, November 2007

FIGURE NUMBER: **B-2.27** DATE: 20090727  
 SCALE: AUTHOR: TM APPROVED BY: JAS  
 PROJECT: DATUM:

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**Wind Speed & Direction Frequency Distribution Table**

Direction	Percent Occurrence (%)							Total (%)	
	0-1 m/s	1-3 m/s	3-6 m/s	6-9 m/s	9-12 m/s	12-15 m/s	15-18 m/s		18+ m/s
ENE	-	0.81	20.97	1.34	-	-	-	-	23.12
NE	-	6.18	9.68	3.49	-	-	-	-	19.35
NNE	-	7.80	2.96	1.88	3.90	-	-	-	16.53
N	-	8.20	6.18	-	-	-	-	-	14.38
NNW	-	0.40	-	-	-	-	-	-	0.40
NW	-	-	-	-	-	-	-	-	-
WNW	-	-	-	-	-	-	-	-	-
W	-	0.81	-	-	-	-	-	-	0.81
WSW	-	1.88	0.94	0.81	-	-	-	-	3.63
SW	-	1.21	4.97	5.38	0.81	-	-	-	12.37
SSW	-	0.27	0.54	0.27	-	-	-	-	1.08
S	-	-	0.13	-	-	-	-	-	0.13
SSE	-	-	-	-	-	-	-	-	-
SE	-	-	-	-	-	-	-	-	-
ESE	-	-	-	-	-	-	-	-	-
E	-	-	-	-	-	-	-	-	-
Calm	8.20	-	-	-	-	-	-	-	8.20
<b>Total (%)</b>	8.20	27.55	46.37	13.17	4.70	-	-	-	100.00

Station Name: Emilia Rock  
 NAD 27 Location:  
 N53° 46' 4.5" W128° 57' 24.1"  
 Elev. above SL: 5 m  
 Tower height: 10 m  
 Record length: 31 days  
 Start Date: Dec. 1, 2007  
 End Date: Dec. 31, 2007

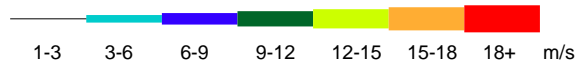
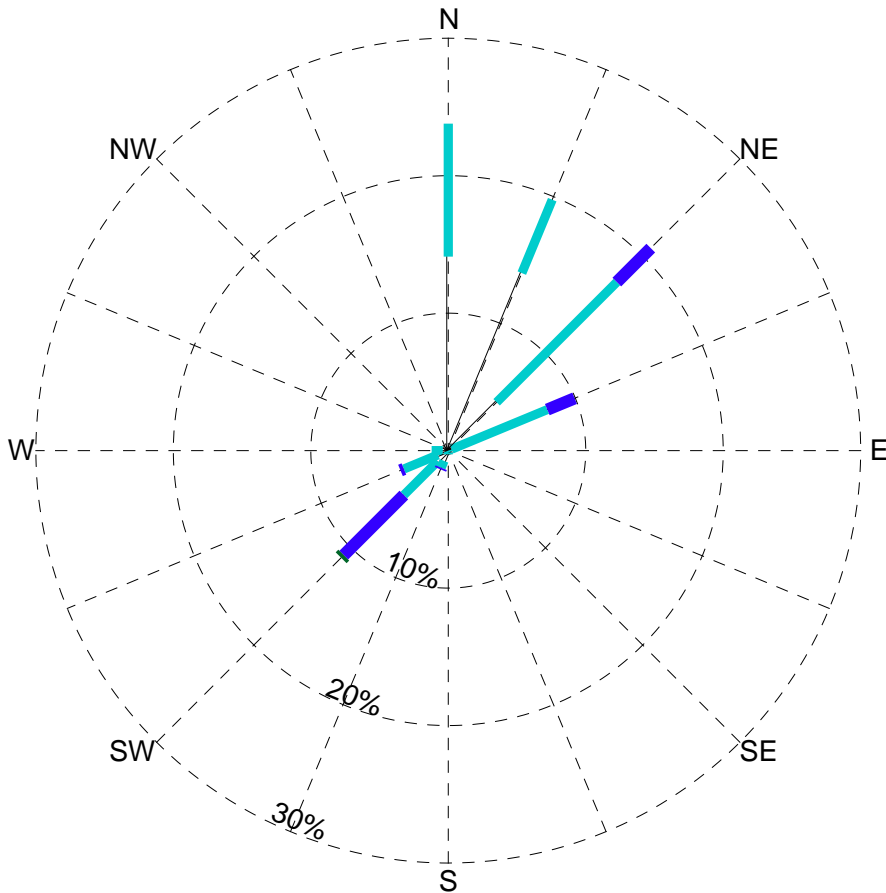
CONTRACTOR:  
 HAY & COMPANY CONSULTANTS  
 PREPARED BY:  


PREPARED FOR:  


**ENBRIDGE NORTHERN GATEWAY PROJECT**

Emilia Rock Wind Rose, December 2007

FIGURE NUMBER: **B-2.28**  
 DATE: 20090727  
 SCALE:  
 AUTHOR: TM  
 APPROVED BY: JAS  
 PROJECTION:  
 DATUM:



**Wind Speed & Direction Frequency Distribution Table**

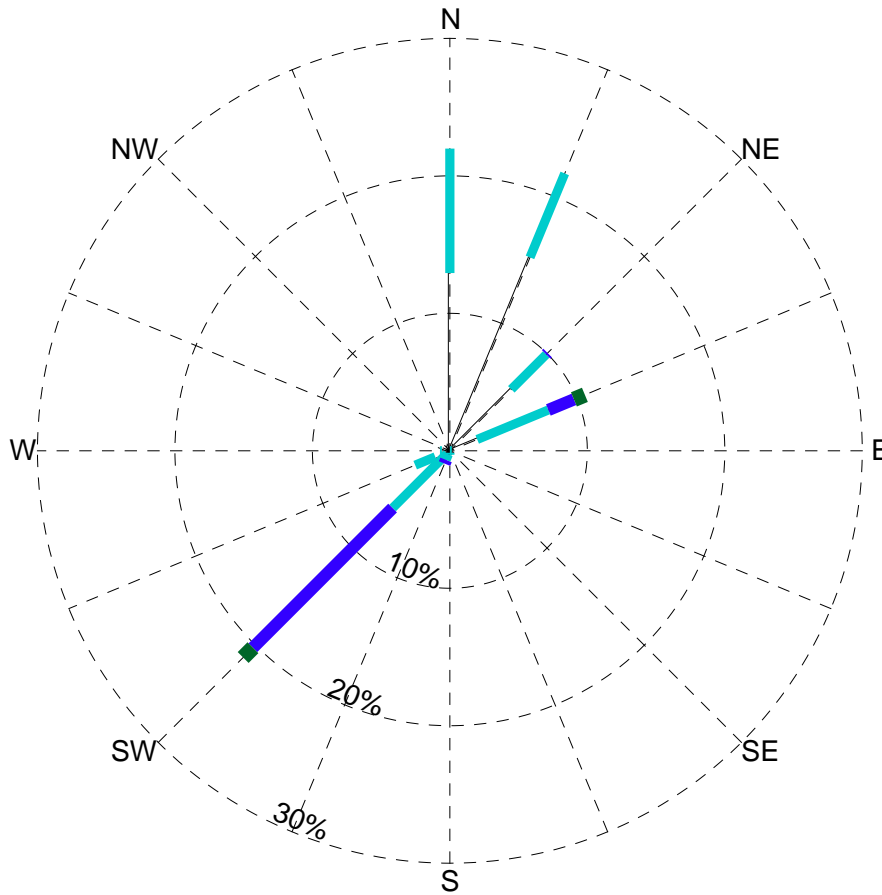
Direction	Percent Occurrence (%)								Total (%)
	0-1 m/s	1-3 m/s	3-6 m/s	6-9 m/s	9-12 m/s	12-15 m/s	15-18 m/s	18+ m/s	
ENE	-	0.27	7.53	2.15	-	-	-	-	9.95
NE	-	4.97	12.37	3.49	-	-	-	-	20.83
NNE	-	13.98	5.78	-	-	-	-	-	19.76
N	-	14.11	9.68	-	-	-	-	-	23.79
NNW	-	0.81	-	-	-	-	-	-	0.81
NW	-	0.40	-	-	-	-	-	-	0.40
WNW	-	0.13	-	-	-	-	-	-	0.13
W	-	0.40	0.81	-	-	-	-	-	1.21
WSW	-	0.81	2.69	0.27	-	-	-	-	3.76
SW	-	1.08	3.49	6.18	0.27	-	-	-	11.02
SSW	-	0.81	0.54	0.13	-	-	-	-	1.48
S	-	0.13	0.13	-	-	-	-	-	0.27
SSE	-	-	0.13	-	-	-	-	-	0.13
SE	-	-	-	-	-	-	-	-	-
ESE	-	-	-	-	-	-	-	-	-
E	-	-	-	-	-	-	-	-	-
Calm	6.45	-	-	-	-	-	-	-	6.45
<b>Total (%)</b>	<b>6.45</b>	<b>37.90</b>	<b>43.15</b>	<b>12.23</b>	<b>0.27</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>100.00</b>

Station Name: Emilia Rock  
 NAD 27 Location:  
 N53° 46' 4.5" W128° 57' 24.1"  
 Elev. above SL: 5 m  
 Tower height: 10 m  
 Record length: 31 days  
 Start Date: Jan. 1, 2008  
 End Date: Jan. 31, 2008

CONTRACTOR:  
 HAY & COMPANY CONSULTANTS  
 PREPARED BY:   
 PREPARED FOR: 

**ENBRIDGE NORTHERN GATEWAY PROJECT**  
 Emilia Rock Wind Rose, January 2008

FIGURE NUMBER: **B-2.29** DATE: 20090727  
 SCALE: AUTHOR: TM APPROVED BY: JAS  
 PROJECTION: DATUM:



**Wind Speed & Direction Frequency Distribution Table**

Direction	Percent Occurrence (%)								Total (%)
	0-1 m/s	1-3 m/s	3-6 m/s	6-9 m/s	9-12 m/s	12-15 m/s	15-18 m/s	18+ m/s	
ENE	-	2.15	5.60	2.01	0.86	-	-	-	10.63
NE	-	6.32	3.59	0.14	-	-	-	-	10.06
NNE	-	15.23	6.61	-	-	-	-	-	21.84
N	-	12.93	9.05	-	-	-	-	-	21.98
NNW	-	0.43	-	-	-	-	-	-	0.43
NW	-	0.29	-	-	-	-	-	-	0.29
WNW	-	0.86	-	-	-	-	-	-	0.86
W	-	0.57	0.14	-	-	-	-	-	0.72
WSW	-	1.15	1.58	-	-	-	-	-	2.73
SW	-	0.29	5.60	14.37	1.01	-	-	-	21.26
SSW	-	0.29	0.43	0.29	-	-	-	-	1.01
S	-	0.14	0.14	-	-	-	-	-	0.29
SSE	-	0.14	-	-	-	-	-	-	0.14
SE	-	-	-	-	-	-	-	-	-
ESE	-	-	-	-	-	-	-	-	-
E	-	-	0.14	-	-	-	-	-	0.14
Calm	7.61	-	-	-	-	-	-	-	7.61
<b>Total (%)</b>	<b>7.61</b>	<b>40.81</b>	<b>32.90</b>	<b>16.81</b>	<b>1.87</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>100.00</b>

Station Name: Emilia Rock  
 NAD 27 Location:  
 N53° 46' 4.5" W128° 57' 24.1"  
 Elev. above SL: 5 m  
 Tower height: 10 m  
 Record length: 29 days  
 Start Date: Feb. 1, 2008  
 End Date: Feb. 29, 2008

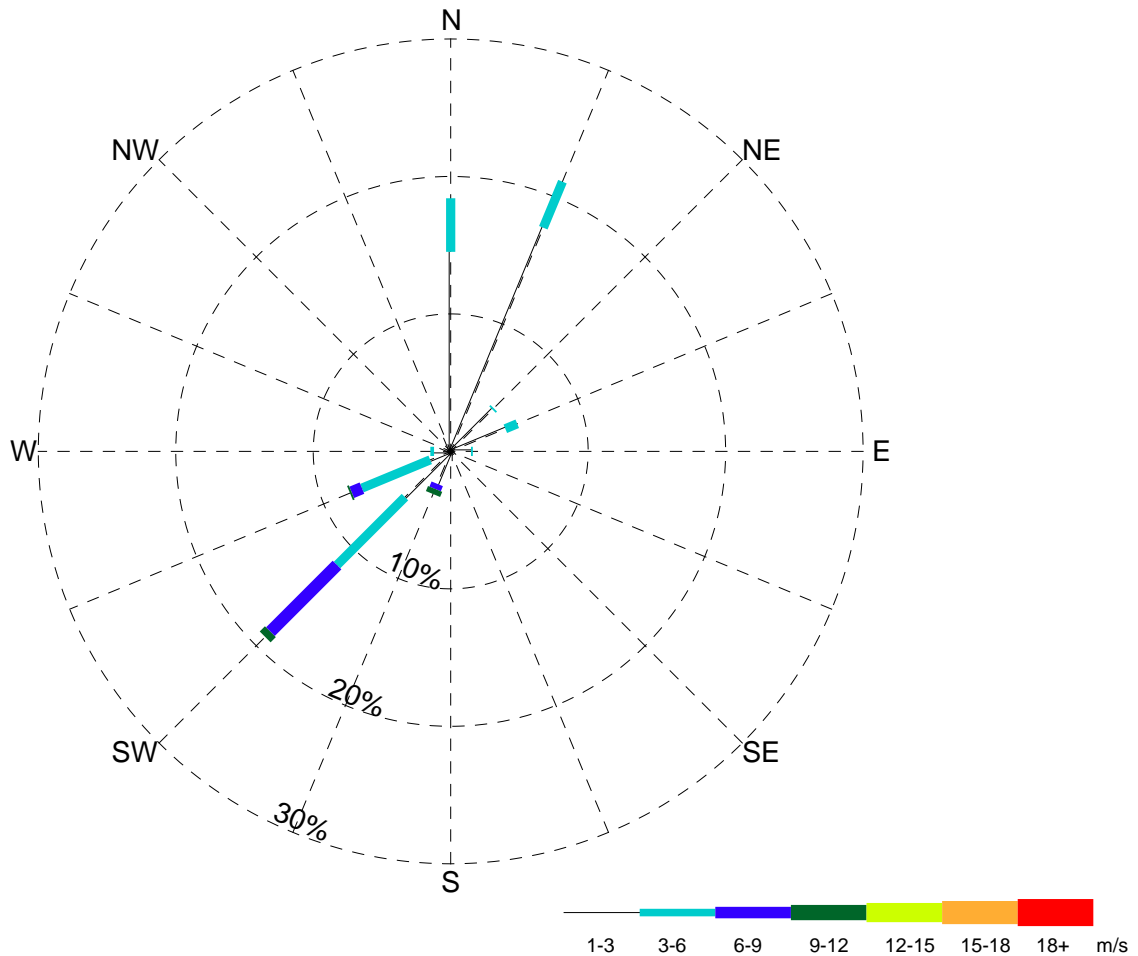
CONTRACTOR:  
 HAY & COMPANY CONSULTANTS  
 PREPARED BY:  


PREPARED FOR:  


**ENBRIDGE NORTHERN GATEWAY PROJECT**

Emilia Rock Wind Rose, February 2008

FIGURE NUMBER: **B-2.30** DATE: 20090727  
 SCALE: AUTHOR: TM APPROVED BY: JAS  
 PROJECTION: DATUM:



Station Name: Emilia Rock  
 NAD 27 Location:  
 N53° 46' 4.5" W128° 57' 24.1"  
 Elev. above SL: 5 m  
 Tower height: 10 m  
 Record length: 31 days  
 Start Date: Mar. 1, 2008  
 End Date: Mar. 31, 2008

**Wind Speed & Direction Frequency Distribution Table**

Direction	Percent Occurrence (%)								Total (%)
	0-1 m/s	1-3 m/s	3-6 m/s	6-9 m/s	9-12 m/s	12-15 m/s	15-18 m/s	18+ m/s	
ENE	-	4.30	0.94	-	-	-	-	-	5.24
NE	-	4.30	0.13	-	-	-	-	-	4.43
NNE	-	17.61	3.63	-	-	-	-	-	21.24
N	-	14.52	3.90	-	-	-	-	-	18.41
NNW	-	1.08	-	-	-	-	-	-	1.08
NW	-	0.27	-	-	-	-	-	-	0.27
WNW	-	0.81	-	-	-	-	-	-	0.81
W	-	1.21	0.27	-	-	-	-	-	1.48
WSW	-	1.61	5.38	0.81	0.13	-	-	-	7.93
SW	-	4.70	6.99	6.86	0.54	-	-	-	19.09
SSW	-	2.55	-	0.40	0.40	-	-	-	3.36
S	-	0.67	-	-	-	-	-	-	0.67
SSE	-	-	-	-	-	-	-	-	-
SE	-	0.40	-	-	-	-	-	-	0.40
ESE	-	0.13	-	-	-	-	-	-	0.13
E	-	1.48	0.13	-	-	-	-	-	1.61
Calm	13.84	-	-	-	-	-	-	-	13.84
<b>Total (%)</b>	<b>13.84</b>	<b>55.65</b>	<b>21.37</b>	<b>8.06</b>	<b>1.08</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>100.00</b>

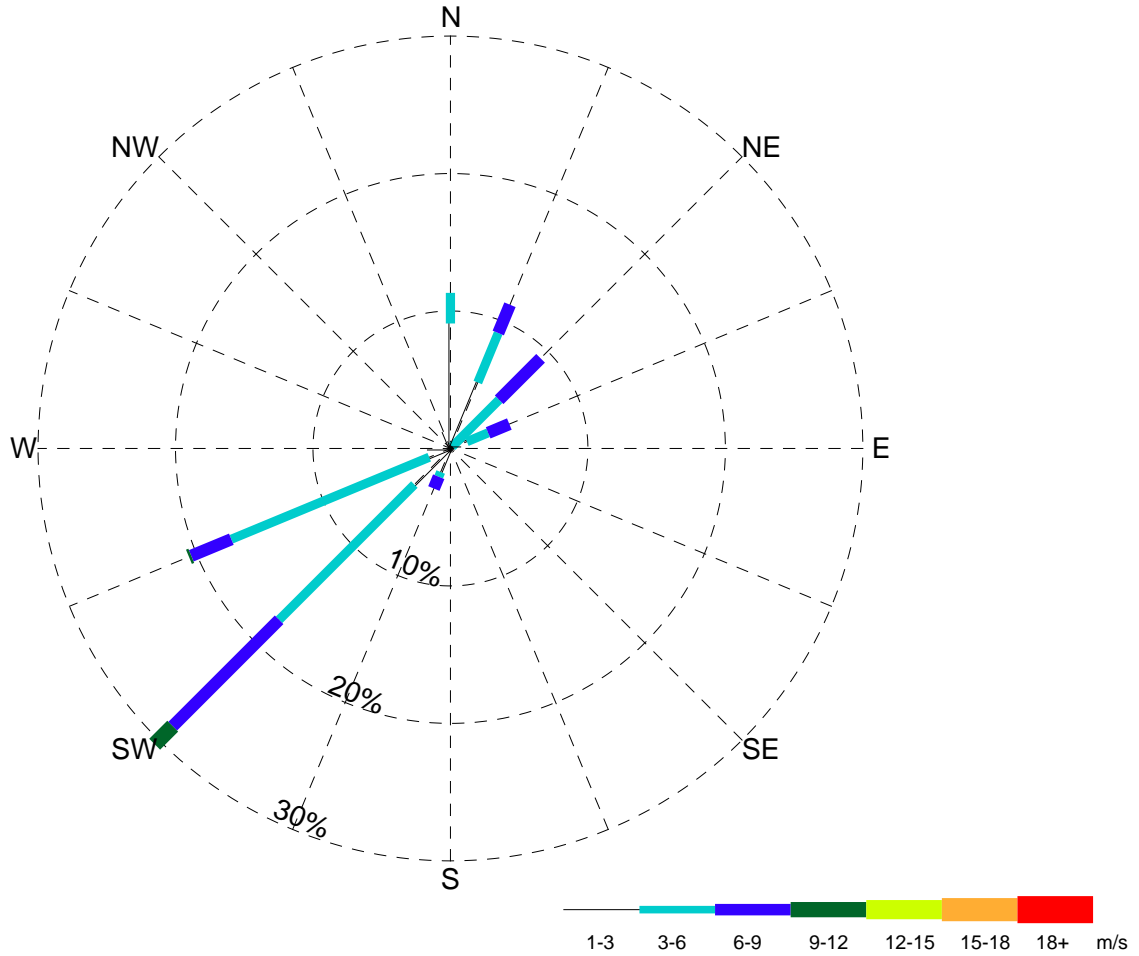
CONTRACTOR:  
 HAY & COMPANY CONSULTANTS  
 PREPARED BY:  


PREPARED FOR:  


**ENBRIDGE NORTHERN GATEWAY PROJECT**

Emilia Rock Wind Rose, March 2008

FIGURE NUMBER: **B-2.31**  
 DATE: 20090727  
 SCALE:  
 AUTHOR: TM  
 APPROVED BY: JAS  
 PROJECTION:  
 DATUM:



**Wind Speed & Direction Frequency Distribution Table**

Direction	Percent Occurrence (%)								Total (%)
	0-1 m/s	1-3 m/s	3-6 m/s	6-9 m/s	9-12 m/s	12-15 m/s	15-18 m/s	18+ m/s	
ENE	-	1.30	1.67	1.67	-	-	-	-	4.64
NE	-	0.19	4.82	4.27	-	-	-	-	9.28
NNE	-	5.20	3.90	2.23	-	-	-	-	11.32
N	-	9.09	2.23	-	-	-	-	-	11.32
NNW	-	1.30	-	-	-	-	-	-	1.30
NW	-	-	-	-	-	-	-	-	-
WNW	-	-	-	-	-	-	-	-	-
W	-	1.67	-	-	-	-	-	-	1.67
WSW	-	1.67	15.58	3.15	0.19	-	-	-	20.59
SW	-	3.71	13.91	10.95	1.86	-	-	-	30.43
SSW	-	1.86	0.37	0.93	-	-	-	-	3.15
S	-	-	-	-	-	-	-	-	-
SSE	-	-	-	-	-	-	-	-	-
SE	-	-	-	-	-	-	-	-	-
ESE	-	-	-	-	-	-	-	-	-
E	-	0.74	-	-	-	-	-	-	0.74
Calm	5.57	-	-	-	-	-	-	-	5.57
<b>Total (%)</b>	<b>5.57</b>	<b>26.72</b>	<b>42.49</b>	<b>23.19</b>	<b>2.04</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>100.00</b>

Station Name: Emilia Rock  
 NAD 27 Location:  
 N53° 46' 4.5" W128° 57' 24.1"  
 Elev. above SL: 5 m  
 Tower height: 10 m  
 Record length: 23 days  
 Start Date: Apr. 1, 2008  
 End Date: Apr. 23, 2008

CONTRACTOR:  
HAY & COMPANY CONSULTANTS

PREPARED BY: 

PREPARED FOR: 

**ENBRIDGE NORTHERN GATEWAY PROJECT**

Emilia Rock Wind Rose, April 2008

FIGURE NUMBER: **B-2.32** DATE: 20090727

SCALE: AUTHOR: TM APPROVED BY: JAS

PROJECTION: DATUM: