Stantec

BOW LAKE WIND FARM WATER ASSESSMENT AND WATER BODY REPORT

Appendix B

Field Notes

| | 0-3 0/5 = 0678543 5231574 0-3 0/5 = 0678514 5231574 WIND FARM WATERBODY RAPID ASSESSMENT FORM to Fish |
|------------------|--|
| · | Stantec |
| N P D W | Project Name <u>Bow Lake Wind Farm</u> Vatercourse Name <u>UNKNOWN frib to</u> Mont. Project # <u>1609 60734</u> Photos <u>6 1-6 3</u> Project Name <u>Bow Lake Wind Farm</u> Project Name <u>Bow Lake Wind Farm</u> Project Name <u>Bow Lake Wind Farm</u> Field Staff <u>NB, MF</u> Time <u>13:30</u> Veather conditions in previous 24 hrs <u>ND precip</u> Hot 28°c IPS Coordinates (Zone) <u>16T</u> E <u>N</u> <u>Datum NAD</u> prescriptive Location <u>NKM east of Hump 17 on Dump ed. Crosses over</u> rd. No colvert. |
| iQ W | /ater Quality issolved Oxygen (mg/L) pH Conductivity (µS/cm) (ater Temperature (°C) Air Temperature (°C) ime in situ measurements taken |
| M | Vatercourse Dimensions & Morphology lean Watercourse Width 0.4 (m) Maximum Pool Depth 5.0 (cm) lean Bankfull Width 1,2 (m) Mean Water Depth 3.0 (cm) % Riffle % Pool % Run % I % Notes of eroding banks, Comments on bank stability % Diget 5600 (cm) % Run % I |
| Sı | ubstrate (% cover) Bedrock <u>20</u> Cobble <u>25</u> Sand <u>10</u> Silt Muck <u>10</u> Boulder <u>15</u> Gravel <u>Clay Marl 20</u> Detritu |
| Co | -water Cover |
| Rij Ad | parian Zone parian Cover (% of watercourse shaded, dominant vegetation, mature or early successional) DO% Sugar maple, yellow bien, form sp diacent Land Use forcet, ATV frail (Dump Rd) |
| Cri K Miq | sh Habitat Potential itical Habitat (spawning or nursery areas, groundwater upwellings) <u>base Atomson A Norson Close(to Montreal Aco (d/s)</u> gratory Obstructions (seasonal, permanent) <u>Step gradient</u> , <u>NP colour</u> elemp Rd, dry ote any fish observations <u>MPR</u> . |
| Na | aterbody Notes atural Watercourse Trapezoidal Channel Grassed Swale Buried Tile arficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Dry |
| Ot | her Habitat Notes, Incidental Wildlife Observations, etc. 03 u/s = 0678543 5231574 $0^{-3} \text{ d/s} = 0678514, 5231734$ |
| Field | d Notes Authored by Field Notes QA/QCed by EU |

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| / . | 0-2015= 00 TOTATTI 0-2015= 00 TOTATTI 0-2015= 00 TOTATTI 0-2015= 00 TOTATTI Too shallow to Fish + WQ WIND FARM WATERBODY RAPID ASSESSMENT FORM |
|-------------------------------|--|
| | Stantec |
| * | Station #0-2Project NameBow Lake Wind FarmWatercourse NameUnknownProject NameBow Lake Wind FarmPhotos60.8-610Project # 160.9 60.734DateJuly 12/12Field StaffNB mcDateJuly 12/12Time13:15Weather conditions in previous 24 hrsNb precipHot 28%GPS Coordinates (Zone)16TENDatum NH083Descriptive Location~1.2 kmeast of Huy 176nDump Rd.UnderDump Rd.CrossesImage: Constant of Hug 1712Image: Constant of Hug 17 |
| Too 100 shallow Sarol M | |
| μ. | Watercourse Dimensions & Morphology Mean Watercourse Width 0.4 (m) Maximum Pool Depth 2 (cm) STANG Mean Watercourse Width 0.6 (m) Mean Water Depth 2 (cm) WATER Mean Bankfull Width 0.6 (m) Mean Water Depth (cm) (cm) % Riffle % Pool % Run % Flat Evidence of eroding banks, Comments on bank stability <u>MInor scoor viss aifs. but well</u> Vegided |
| | Substrate (% cover) Bedrock 10 Cobble 30 Sand 20 Silt Muck 10 Boulder 20 Gravel Clay Marl 10 Detritus In-water Cover ' ' ' ' Clay Marl 10 Detritus |
| Ċ | Cover Types Present (circle): Undercut Banks Deep Pool Watercress Aquatic Veg Overhanging Vegetation Woody Debris Boulder Other |
| | Fish Habitat Potential Critical Habitat (spawning or nursery areas, groundwater upwellings) possible spawning closer to Montreal Rui, Mouth. Migratory Obstructions (seasonal, permanent) <u>Sleep gradient</u> , pirched culvert, dry |
| | Note any fish observations |
| | Field Notes Authored by MF Field Notes QA/QCed by ME 1/24 |
| | |

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WIND FARM WATERBODY RAPID ASSESSMENT FORM

| Stantet | · · · · · · · · · · · · · · · · · · · |
|---|---|
| GPS Coordinates (Zone) 16T E 0680 Descriptive Location <u>-1.2 km</u> west Runsunder rd | Project Name <u>Bow Lake Wind Farm</u> to fis: Project # 1609 60734 Field Staff <u>NBIME</u> Time <u>12:45</u> <u>cip. Hot 28°</u> <u>0373 N 523/117 Datum NAO83</u> <u>be Rebecca Rd on Hoss Dam Rd.</u> |
| Water Quality Dissolved Oxygen (mg/L)pH Water Temperature (°C) Time <i>in situ</i> measurements taken | Conductivity (µS/cm) Air Temperature (°C) |
| Watercourse Dimensions & Morphology Mean Watercourse Width 1.0 (m) Mean Bankfull Width 1.2 (m) % Riffle % Po Evidence of eroding banks, Comments on bank st | |
| Substrate (% cover) 40 Cobble Bedrock 40 Cobble Boulder 20 Gravel | <u>30</u> SandSiltMuck ClayMarl/0_Detritus |
| In-water Cover Cover Types Present (circle): Undercut Bar Overhanging Vegetation Woody Debris | nks Deep Pool Watercress Aquatic Veg Boulder Other |
| Riparian Zone Riparian Cover (% of watercourse shaded, domina 30% Jugar maple, yellow birch, fe Adjacent Land Use forest, 14045 Rd. | |
| Fish Habitat Potential Critical Habitat (spawning or nursery areas, ground b 555 by spawh to nut serve areas, ground | dwater upwellings) |
| Migratory Obstructions (seasonal, permanent) <u>Steep g(adicnt</u> <u>drn</u>) <u>ack be c</u> Note any fish observations <u>More</u> | |
| Waterbody Notes Natural Watercourse Trapezoidal Channel Surficial Drainage (i.e. furrows) Dugout Pon Other Habitat Notes, Incidental Wildlife Observa | Dominated by Aquatic Veg Dry |
| | |
| | s QA/QCed by |
| www.sesuricevidiedar.uno.and_reams\aduatic Recources\Field Sheets | Solduleorrorm UZ WIDD Farm Watemody Hapid Accessment Form doo |



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| Dissolved Oxygen (mg/L) $-\frac{7.85}{18.73}$ pH $\frac{7.34}{16.73}$ Conductivity (μ S/cm) $-\frac{5.3}{27^{\circ}c}$ Water Temperature (°C) $-\frac{18.73}{18.73}$ Air Temperature (°C) $-\frac{27^{\circ}c}{27^{\circ}c}$ | Sidniec | |
|--|--|---|
| Watercourse Name_up_log Project # 1609 60734 Photos Seb 56 Sub Jac Weather confiditions in previous 24 hrs. Descriptive Location OPS Coordinates (Zone) Jac Water Cuellity Descriptive Location Descriptive Location Descriptive Location Descriptive Location South * t Water Cuellity Temperature (°C) Descriptive Location Weather course Dimensions & Morphology Mean Water Depth Descriptive Location Mean Bankfull Width Descriptive Location Descriptive Location Descriptive Location Substrate (% cover) | Station # 9B-1 | Project Nama Baralake Wind Forma |
| Photos 565-569 Field Staff <u>N.B. MP</u> Date <u>J.U. J.B.</u> Weather confditions in previous 24 hrs. <u>no. placin</u> , <u>N.S. 279</u> - GPS Coordinates (Zone) <u>167</u> <u>E</u> <u>0682,2538</u> <u>N</u> <u>523371</u> <u>Datum</u> NAOS Descriptive Location <u>J.D.C. M.S.J. 279</u> - Hog S. <u>Dave</u> <u>Rd.</u> Water Comperature (°C) <u>16.73</u> <u>Air Temperature (°C)</u> <u>27°-</u> Time <i>in situ</i> measurements taken <u>14.40</u> Mater Comperature (°C) <u>16.73</u> <u>Air Temperature (°C)</u> <u>27°-</u> Time <i>in situ</i> measurements taken <u>14.40</u> Mean Water Course Utility <u>Air Conductivity</u> (<u>u.S/cm</u>) <u>53</u> Water Comperature (°C) <u>16.73</u> <u>Air Temperature (°C)</u> <u>27°-</u> Time <i>in situ</i> measurements taken <u>14.40</u> Mean Water Course Utility <u>Air Conductivity</u> (<u>u.S/cm</u>) <u>53</u> Water Course Utility <u>1.2.40</u> (cm) Mean Water Course Utility <u>2.0.40</u> (cm) <u>70</u> % Riffle <u>10</u> % Pool <u>4000</u> % Run <u>10.2</u> % FC Evidence of eroding banks, Comments on bank stability <u>M.D.C. Under Court</u> <u>305 of Coulor</u> Substrate (% cover) Bubstrate (% cover) Bedrock <u>30</u> Cobble <u>20</u> Sand <u>Sitt</u> Muck <u>10</u> Boulder <u>32</u> Gravel <u>Clay</u> Mad <u>22</u> Detritu In-water Cover <u>Cover Types</u> Present (circle): <u>Undercut</u> Banks <u>Deep Pool</u> Watercress Aquatic Ve <u>Overhanging</u> Vegetation <u>Woody Debris</u> Boulder Other Riparian Cover, (% of watercourse shaded, dominant vegetation, mature or early successional) <u>80%</u> <u>80</u> <u>Effet Jab</u> <u>20.5 cf</u> (<u>1.3 doc</u> <u>70%</u> <u>70%</u> <u>80</u> <u>16.40</u> <u>55</u> <u>Course</u> <u>Accessional</u>) <u>80%</u> <u>80</u> <u>Effet Habitat</u> Potential Critical Habitat (spawning or nursery areas, groundwater upwellings) <u>550 m</u> <u>10.40</u> <u>550 <u>Cd</u> <u>100</u> <u>Color</u> <u>100</u> <u>Color</u> <u>100</u> </u> | Watercourse Name ILA LAQIND | Project Halle Dow Care Voltra Tarry |
| Date $\int U_1 g_1 _{1/2}$ Time 1430 Weather conditions in previous 24 hrs 0 $p(ccin)$ $y = \lambda$ 29^{2c} GPS Coordinates (Zono) $16T = 0682423$ N 52331 Datum NAOS Descriptive Location 122 m 500 th 15 Gate 12 heading 500 th 35 Water Quality Dissolved Oxygen (mg/L) 7.85 pH 7.34 Conductivity (µS/cm) 53 Water Temperature (°C) 16.73 Air Temperature (°C) 27^{2c} Time <i>in situ</i> measurements taken 14.40 Water course Dimensions & Morphology Mean Watercourse Width 2.5 (m) Mean Water Depth 200 (cm) 10^{2} % Riff 12^{2} % PG Evidence of eroding banks, Comments on bank stability 1000 (2000 $y = 6$ color Substrate (% cover) Bedrock 3^{2} Cobble 20 Sand Silt Muck 12^{2} Boulder 30^{2} Gravel Clay Mart 2^{2} Orthor Watercourses Aquatic Ve Overhanging Vegetation Woody Debins Boulder Other Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional) $37/2$ $y \leq 16^{4}$ ($y \leq 0$ (130^{2} $y \leq 16^{2}$ $y \leq 16^{2$ | Photos Shh & 66 9 | |
| Weather confditions in previous 24 hrs. <u>no pre cip. Not.</u> <u>A 290</u> GPS Coordinates (zone) <u>16</u> <u>E</u> (<u>b82588</u> <u>N</u> <u>52331</u> <u>Datum</u> <u>NH05</u> Gescriptive Location <u>102</u> <u>m</u> <u>500⁴</u> <u>st</u> <u>Gate</u> <u>42</u> <u>Aacdia</u> <u>5004</u> <u>st</u> <u>1050</u> <u>st</u> <u>1050} <u>st</u> <u>1050</u> <u>st</u> <u>1050</u> <u>st</u> <u>1050} <u>st</u> <u>1050</u> <u>st</u> <u>1050</u> <u>st</u> <u>1050} <u>st</u> <u>1050</u> <u>st</u> <u>1050} <u>st</u> <u>1050</u> <u>st</u> <u>1050} <u>st</u> <u>1050</u> <u>st</u> <u>1050} <u>st</u> <u>1050} <u>st</u> <u>1050} <u>st</u> <u>1050} <u>st</u> <u>1050} <u>st</u> <u>1050</u> <u>st</u> <u>1050} <u>st</u> <u>1050} <u>st</u> <u>1050} <u>st</u> <u>1050</u> <u>st</u> <u>1050} <u>st</u> <u>1050} <u>st</u> <u>1050</u> <u>st</u> <u>1050} <u>st</u> <u>1050} <u>st</u> <u>1050} <u>st</u> <u>1050</u> <u>st</u> <u>1050} <u>st</u> <u>1050</u> <u>st</u> <u>1050} <u>st</u> <u>1050</u> <u>st</u> <u>1050</u> <u>st</u> <u>1050} <u>st</u> <u>1050</u> <u>st</u> <u>1050</u></u></u></u></u></u></u></u></u></u></u></u></u></u></u></u></u></u></u></u></u></u></u></u></u></u></u></u></u></u></u></u></u></u> | | |
| GPS Coordinates (Zone) 16T E 06824238 N 523371 Datum NVOS Descriptive Location 120 500% 16242 1200% 500% 160423 100% | | |
| Descriptive Location $100 \text{ m} 500 \text{ m} + 500 \text{ m}$ | | |
| Hog S Dam Rd. Water Quality 7.85 pH 7.34 Conductivity (µS/cm) 5.3 Mater Temperature (°C) 18.73 Air Temperature (°C) 27°c Time in situ measurements taken 14.40 Watercourse Dimensions & Morphology Mean Bankfull Width Mean Bankfull Width 70 % Riffle 70 % Riffle Substrate (% cover) <td< td=""><td></td><td></td></td<> | | |
| Water Quality 7 85 pH_7.34 Conductivity (μ S/cm)53 Water Temperature (°C) 18.73 Air Temperature (°C) 27° Time in situ measurements taken 14 40 Watercourse Dimensions & Morphology Mean Bankfull Width θ .5 (m) Maximum Pool Depth 0.6 (m) Mean Bankfull Width θ .5 (m) Mean Watercourse Width θ .5 (m) Mean Bankfull Width θ .5 (m) Mean Watercourse Width θ .5 (m) Mean Watercourse Width θ .5 (m) Mean Watercourse Width θ .5 (m) Substrate (% cover) Substrate (% cover) Substrate (% cover) Bedrock 2.0 Coble 2.0 Sand Substrate (% cover) Encock Substrate (% cover) Detritu Cover Types Present (circle): < | | - Calcura Marching South St |
| Dissolved Oxygen (mg/L) $\frac{7.85}{16.73}$ pH $\frac{7.34}{7.85}$ conductivity (µS/cm) 53 Water Temperature (°C) $\frac{7.85}{16.73}$ Air Temperature (°C) $\frac{27^{\circ}}{27^{\circ}}$ Water Temperature (°C) $\frac{7.85}{16.73}$ Air Temperature (°C) $\frac{27^{\circ}}{27^{\circ}}$ Watercourse Dimensions & Morphology Watercourse Dimensions & Morphology Mean Watercourse Width $\frac{7.2}{16.73}$ (m) Maximum Pool Depth $\frac{20.6}{20}$ (cm) $\frac{70}{70}$ % Riffle $\frac{70}{70}$ % Rool $\frac{400}{70}$ % Run $\frac{70}{125}$ % Column $\frac{70}{125}$ % Fool $\frac{400}{70}$ % Run $\frac{70}{125}$ % Column $\frac{70}{125}$ % Fool $\frac{400}{70}$ % Run $\frac{70}{125}$ % Column 70 | -1022 0 and 150 | |
| Discrete Group on the state of the sta | Water Quality | A A.I |
| Water Temperature (*C) $13, 32$ Air Temperature (*C) $27^{\circ}c$ Time in situ measurements taken $14, 40$ Watercourse Dimensions & Morphology Mean Watercourse With $1/2$ (m) Maximum Pool Depth 216 (fm) Mean Water Course With $1/2$ (m) Mean Water Depth 20 (cm) 70 % Riffle 12 % Pool 402 % Run $1/2$ % F Evidence of eroding banks, Comments on bank stability N_{100} (0.042 (w) $1/2$ % F Evidence of eroding banks, Comments on bank stability N_{100} (0.042 (w) $1/2$ % Couver Substrate (% cover) Bedrock 20 Cobble 20 Sand Siit Muck 10 Bedrock 30 Cobble 20 Sand Siit Muck 10 Bedrock 30 Cobble 20 Sand Siit Muck 10 Bedrock 30 Cobble 20 Sand Siit Muck 10 Gravel Clay Mart 20 Detritu Detritu In-water Cover Cover Lypes Present (circle): Undercut Banks Deep Pool Watercover Aquatic Ve Over Lypes Pre | | 7.37 Conductivity (μ S/cm) 53 |
| Time <i>in situ</i> measurements taken <u>14</u> 40 Watercourse Dimensions & Morphology Mean Watercourse Width <u>1.2</u> (m) Maximum Pool Depth <u>2.6</u> (m) Mean Bankfull Width <u>8.5</u> (m) Mean Water Depth <u>20</u> (cm) <u>70</u> % Riffle <u>10</u> % Pool <u>40</u> % Run <u>10</u> % F Evidence of eroding banks, Comments on bank stability <u>Minor</u> <u>0.04</u> % Run <u>10</u> % F Evidence of eroding banks, Comments on bank stability <u>Minor</u> <u>0.04</u> % Run <u>10</u> % F Evidence of eroding banks, Comments on bank stability <u>Minor</u> <u>0.04</u> % Run <u>10</u> % F Evidence of eroding banks, Comments on bank stability <u>Minor</u> <u>0.04</u> % Run <u>10</u> % F Evidence of eroding banks, Comments on bank stability <u>Minor</u> <u>0.04</u> % Run <u>10</u> % F Evidence of eroding banks, Comments on bank stability <u>Minor</u> <u>0.04</u> % Run <u>10</u> % F Substrate (% cover) Bedrock <u>30</u> Cobble <u>20</u> Sand <u>Silt</u> <u>Muck</u> <u>10</u> Boulder <u>30</u> Gravel <u>Clay</u> <u>Marl</u> <u>10</u> Detritu In-water Cover <u>Cover. Lypes</u> Present (circle): <u>Undercut Banks</u> <u>Deep Pool</u> Watercress Aquatic Ver <u>Overhanging Vegetation</u> <u>Woody Debris</u> Boulder <u>0.06</u> Marces Aquatic Ver <u>Overhanging Vegetation</u> <u>Voody Debris</u> Boulder <u>0.06</u> Marces Aquatic Ver <u>100 Bounder</u> <u>100 Set</u> <u></u> | Water Temperature (°C) <u>18.73</u> | Air Temperature (°C) $27^{\circ}c$ |
| Mean Watercourse Width $1/2$ (m) Maximum Pool Depth $2/6$ (m) Mean Water Depth 20 (cm) 20 (cm) YD % Riffle 10 % Pool 40^{-46} % Run 10^{-66} (m) Evidence of eroding banks, Comments on bank stability m_{100} $0.04 \times cot$ $3/5$ $c.ot$ Substrate (% cover) Bedrock 3^{-2} Cobble 2^{-2} Sand Silt Muck 1^{-2} Boulder 3^{-2} Gravel Clay Mari 2^{-2} Detritu In-water Cover Cover Lypes Present (circle): Undercut Banks Deep Pool Watercress Aquatic Ver Overhanging Vegetation Woody Debris Boulder Other Aquatic Ver Adjacent Land Use $\sqrt{2^{-66}$ $\sqrt{2^{-66}$ $\sqrt{2^{-66}}$ Aquatic Ver 2^{-66} $\sqrt{2^{-66}}$ $\sqrt{2^{-66}}$ $\sqrt{2^{-66}}$ $\sqrt{2^{-66}}$ Aquatic Ver Adjacent Land Use $\sqrt{2^{-66}}$ $\sqrt{2^{-66}}$ $\sqrt{2^{-66}}$ $\sqrt{2^{-66}}$ $\sqrt{2^{-66}}$ $\sqrt{2^{-66}}$ Rigra | Time in situ measurements taken 14 40 | |
| Mean Watercourse Width $1/2$ (m) Maximum Pool Depth $2/6$ (m) Mean Water Depth 20 (cm) 20 (cm) YD % Riffle 10 % Pool 40^{-46} % Run 10^{-66} (m) Evidence of eroding banks, Comments on bank stability m_{100} $0.04 \times cot$ $3/5$ $c.ot$ Substrate (% cover) Bedrock 3^{-2} Cobble 2^{-2} Sand Silt Muck 1^{-2} Boulder 3^{-2} Gravel Clay Mari 2^{-2} Detritu In-water Cover Cover Lypes Present (circle): Undercut Banks Deep Pool Watercress Aquatic Ver Overhanging Vegetation Woody Debris Boulder Other Aquatic Ver Adjacent Land Use $\sqrt{2^{-66}$ $\sqrt{2^{-66}$ $\sqrt{2^{-66}}$ Aquatic Ver 2^{-66} $\sqrt{2^{-66}}$ $\sqrt{2^{-66}}$ $\sqrt{2^{-66}}$ $\sqrt{2^{-66}}$ Aquatic Ver Adjacent Land Use $\sqrt{2^{-66}}$ $\sqrt{2^{-66}}$ $\sqrt{2^{-66}}$ $\sqrt{2^{-66}}$ $\sqrt{2^{-66}}$ $\sqrt{2^{-66}}$ Rigra | Wataraauraa Dimanajana 9 Marabalaru | |
| Mean Bankfull Width 2.5 (m) Mean Water Depth 20 (cm) 40^{2} % Run 20^{2} % Run | | Maximum Paol Donth Qub (Am) |
| $\frac{90}{10}$ % Riffle 10 % Pool $\frac{90}{100}$ | | |
| Evidence of eroding banks, Comments on bank stability $\underline{M_{ADC}}$ \underline | $\frac{4}{70}$ % Riffle $\frac{1}{70}$ % R | |
| Substrate (% cover) Bedrock 3.0 Cobble 2.0 Sand Silt Muck 1.0 Boulder 3.0 Gravel Clay Marl 1.0 Detritu In-water Cover Cover. Types Present (circle): Undercut Banks Deep Pool Watercress Aquatic Ver Overhanging Vegetation Woody Debris Boulder Other Aquatic Ver Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional) 80% 80% f (a) builder Other Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional) 80% 80% f (a) builder Other Adjacent Land Use builder Curr (a) Super (a) f (a) f (a) Fish Habitat Potential Critical Habitat (spawning or nursery areas, groundwater upwellings) Spawn f (a) f (a) f (a) Spawn Migratory Obstructions (seasonal, permanent) More (a) f (a) | | |
| Bedrock 3 D Cobble 2 O Sand Silt Muck 12 Boulder 30 Gravel Clay Marl 10 Detritu In-water Cover Cover. Types Present (circle): Undercut Banks Deep Pool Watercress Aquatic Ver Overhanging Vegetation Woody Debris Boulder Other Aquatic Ver Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional) \mathcal{W}_{2}^{\prime} \mathcal{W} | | |
| Bedrock 3 D Cobble 2 O Sand Silt Muck 12 Boulder 30 Gravel Clay Marl 10 Detritu In-water Cover Cover. Types Present (circle): Undercut Banks Deep Pool Watercress Aquatic Ver Overhanging Vegetation Woody Debris Boulder Other Aquatic Ver Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional) \mathcal{W}_{2}^{\prime} \mathcal{W} | | |
| $\frac{12}{12} \text{ Boulder} \underline{32} \text{ Gravel} \underline{32} \text{ Gravel}$ | | n |
| In-water Cover Cover Types Present (circle): Undercut Banks Deep Pool Watercress Aquatic Ver Overhanging Vegetation Woody Debris Boulder Other Riparian Zone Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional) 20% But failo be(1, 50, 50, 50, maple, fails Space Maple, fails Space Land Use Hage Dam Rd, Hydro Collidor Fish Habitat Potential Critical Habitat (spawning or nursery areas, groundwater upwellings) Space Notes Space For Space Space House Hous | | |
| Cover Types Present (circle): Undercut Banks Deep Pool Watercress Aquatic Verianging Vegetation Woody Debris Boulder Other | <u> </u> | ClayMari 10 Detritu: |
| Cover Types Present (circle): Undercut Banks Deep Pool Watercress Aquatic Verianging Vegetation Woody Debris Boulder Other | In-water Cover | |
| Overhanging Vegetation Woody Debris Boulder Other Riparian Zone Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional) 80% Butfalo berry Sugar maple Farn sp. Adjacent Land Use Adjacent Land Use Adjacent Land Use Farn sp. Abjacent Land Use Adjacent Land Use Adjacent Land Use Forn sp. Magratic Spawing or nursery areas, groundwater upwellings) Spawing or nursery areas, groundwater upwellings) Spawing or nursery areas, groundwater upwellings) Spawing or Spawing or nursery areas, groundwater upwellings) Spawing or second for the second for | | anks Deen Pool Watercress Aquatic Veo |
| Riparian Zone Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional) 8% But falo berry, Suger maple Fern Sp. Adjacent Land Use Hogg Darm Rd Hydro Collidor Fish Habitat Potential Collidor Critical Habitat (spawning or nursery areas, groundwater upwellings) Spawn Nurser, forage Migratory Obstructions (seasonal, permanent) More observations geh cols of Northurn Redeetly dowee * 2 Risek trout Mote any fish observations geh cols of Northurn Redeetly dowee * 2 Risek trout * 20 m d/s of Hogg Rd Waterbody Notes | Overhanging Vegetation Woody Debris | Boulder Offer |
| Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional) 8% Buffalo berry, Suger maple, Frn Sp. Adjacent Land Use Adjacent Land Use Spewn, Adjacent Adjacent Adjacent Migratory Obstructions (seasonal, permanent) More any fish observations | | |
| 80% Buffalo berry, Suger maple, forn sp. Adjacent Land Use Adjacent Land Use Fish Habitat Potential Protocold Potential Critical Habitat (spawning or nursery areas, groundwater upwellings) Spawn, Nurser, forage Spawn, Nurser, forage Migratory Obstructions (seasonal, permanent) MSPL observations (seasonal, permanent) Most Postulation Mote any fish observations (schools of No14an Redbelly dure + 2 Brook trout Mote any fish observations (schools of No14an Redbelly dure + 2 Brook trout Mote any fish observations (schools of No14an Redbelly dure + 2 Brook trout Mote Specifical Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Dry Sufficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Dry Other Habitat Notes, Incidental Wildlife Observations, etc. No 1/5 + d/5 wuppe.nts Rue non 1/2 (Non 1/24) Rue no 1/2 | | |
| Adjacent Land Use <u>Augacent Land Use</u> <u>Augacent Land Use</u> Fish Habitat Potential Critical Habitat (spawning or nursery areas, groundwater upwellings) <u>Spawn</u> NIGHT, <u>Forage</u> Migratory Obstructions (seasonal, permanent) <u>More any fish observations <u>Schools of Noithurn Redbelly donee</u> + <u>2</u> <u>Brook trout</u> <u>More any fish observations <u>Schools of Noithurn Redbelly donee</u> + <u>2</u> <u>Brook trout</u> <u>More any fish observations <u>Schools of Noithurn Redbelly donee</u> + <u>2</u> <u>Brook trout</u> <u>More any fish observations <u>Schools of Noithurn Redbelly donee</u> + <u>2</u> <u>Brook trout</u> <u>More any fish observations <u>Schools of Noithurn Redbelly donee</u> + <u>2</u> <u>Brook trout</u> <u>More any fish observations <u>Schools of Noithurn Redbelly donee</u> + <u>2</u> <u>Brook trout</u> <u>More and Js of Hoss</u> <u>Rd</u> <u>Materbody Notes</u> Natural Watercourse <u>Trapezoidal Channel</u> <u>Grassed Swale</u> <u>Buried Tile</u> Surficial Drainage (i.e. furrows) <u>Dugout Pond</u> <u>Dominated by Aquatic Veg</u> <u>Dry</u> <u>Other Habitat Notes, Incidental Wildlife Observations, etc. <u>No v/s + d/s wampoints</u> <u>as delineated dicade</u> and <u>contexts to Montral Rui</u> <u>Permanent</u>, <u>Direct</u></u></u></u></u></u></u></u> | Riparian Cover (% of watercourse shaded, domin | ant vegetation, mature or early successional) |
| Adjacent Land Use <u>Augacent Land Use</u> <u>Augacent Land Use</u> Fish Habitat Potential Critical Habitat (spawning or nursery areas, groundwater upwellings) <u>Spawn</u> NIGHT, <u>Forage</u> Migratory Obstructions (seasonal, permanent) <u>More any fish observations <u>Schools of Noithurn Redbelly donee</u> + <u>2</u> <u>Brook trout</u> <u>More any fish observations <u>Schools of Noithurn Redbelly donee</u> + <u>2</u> <u>Brook trout</u> <u>More any fish observations <u>Schools of Noithurn Redbelly donee</u> + <u>2</u> <u>Brook trout</u> <u>More any fish observations <u>Schools of Noithurn Redbelly donee</u> + <u>2</u> <u>Brook trout</u> <u>More any fish observations <u>Schools of Noithurn Redbelly donee</u> + <u>2</u> <u>Brook trout</u> <u>More any fish observations <u>Schools of Noithurn Redbelly donee</u> + <u>2</u> <u>Brook trout</u> <u>More and Js of Hoss</u> <u>Rd</u> <u>Materbody Notes</u> Natural Watercourse <u>Trapezoidal Channel</u> <u>Grassed Swale</u> <u>Buried Tile</u> Surficial Drainage (i.e. furrows) <u>Dugout Pond</u> <u>Dominated by Aquatic Veg</u> <u>Dry</u> <u>Other Habitat Notes, Incidental Wildlife Observations, etc. <u>No v/s + d/s wampoints</u> <u>as delineated dicade</u> and <u>contexts to Montral Rui</u> <u>Permanent</u>, <u>Direct</u></u></u></u></u></u></u></u> | Alignet and the belly sugar maple | , tern sp |
| Fish Habitat Potential Critical Habitat (spawning or nursery areas, groundwater upwellings) Spawn, NIGHT, forage Migratory Obstructions (seasonal, permanent) Nore obstructions (seasonal, permanent) | | |
| Critical Habitat (spawning or nursery areas, groundwater upwellings) Spawn_nursery_forage Migratory Obstructions (seasonal, permanent) <u>Note any fish observations <u>schools of Northun Redbelly dwee + 2 Brook trout</u> <u>Materbody Notes</u> Natural Watercourse Trapezoidal Channel Grassed Swale Buried Tile Sufficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Dry Other Habitat Notes, Incidental Wildlife Observations, etc. <u>No v/s + d/s wurpoints</u> <u>Additional Accade and contexts to Montroal Ry:</u> <u>Permanent</u>, <u>Direct</u></u> | Hogg Damka, Hydro Corridor | |
| Critical Habitat (spawning or nursery areas, groundwater upwellings) Spawn_nursery_forage Migratory Obstructions (seasonal, permanent) <u>Note any fish observations <u>schools of Northun Redbelly dwee + 2 Brook trout</u> <u>Materbody Notes</u> Natural Watercourse Trapezoidal Channel Grassed Swale Buried Tile Sufficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Dry Other Habitat Notes, Incidental Wildlife Observations, etc. <u>No v/s + d/s wurpoints</u> <u>Additional Accade and contexts to Montroal Ry:</u> <u>Permanent</u>, <u>Direct</u></u> | Fich Habitat Potential | |
| Spawn NIGHT for a fe Migratory Obstructions (seasonal, permanent) More observations <u>Gehools of Northern Redbelly defect</u> + 2 Brook trout Mote any fish observations <u>Gehools of Northern Redbelly defect</u> + 2 Brook trout Materbody Notes Waterbody Notes Natural Watercourse Trapezoidal Channel Grassed Swale Buried Tile Surficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Dry Other Habitat Notes, Incidental Wildlife Observations, etc. No U/S + d/S waypoints as delineated already and contexts to Montrial RU, Permanent, Direct 0 | | adwatar upwollinge) |
| Migratory Obstructions (seasonal, permanent) <u>Note any fish observations <u>GCh vols of Northurn Redbelly dweet + 2 Brook trout</u> <u>AO m d/s of Hogs Rd</u> Waterbody Notes Natural Watercourse Trapezoidal Channel Grassed Swale Buried Tile Surficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Dry Other Habitat Notes, Incidental Wildlife Observations, etc. <u>No v/s + d/s wwpo.nts</u> R delineated already and contexts to Montrial RV.</u> | Shawn Autor Faca ca | iuwater upweinings) |
| Note any fish observations <u>Schools of Northern Redbelly devect</u> + 2 <u>Brook trout</u> Mote any fish observations <u>Schools of Northern Redbelly devect</u> + 2 <u>Brook trout</u> Materbody Notes Natural Watercourse Trapezoidal Channel Grassed Swale Buried Tile Surficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Dry Other Habitat Notes, Incidental Wildlife Observations, etc. <u>No V15 + d15 waypoints</u> as delineated <u>Arcady</u> and <u>contexts</u> to <u>Montral</u> RVI | Migratory Obstructions (seasonal permanent) | |
| Note any fish observations <u>Gehools of Northern Redbelly doce + 2 Brook trout</u> <u>A20 m d/s of Hoss Rd</u> Waterbody Notes Natural Watercourse Trapezoidal Channel Grassed Swale Buried Tile Surficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Dry Other Habitat Notes, Incidental Wildlife Observations, etc. <u>No v/s + d/s waypoints</u> Buried Tile Other Habitat Notes, Incidental Wildlife Observations, etc. <u>No v/s + d/s waypoints</u> Buried Tile Buried Tile Description of the test of test of the test of test of the test of | | |
| <u>waterbody Notes</u> <u>Natural Watercourse</u> <u>Trapezoidal Channel</u> <u>Grassed Swale</u> <u>Buried Tile</u> <u>Surficial Drainage (i.e. furrows)</u> <u>Dugout Pond</u> <u>Dominated by Aquatic Veg</u> <u>Dry</u> <u>Dther Habitat Notes, Incidental Wildlife Observations, etc.</u> <u>No v/s + d/s waypoints</u> <u>as delineated already and contexts to Montrial Rvi</u> <u>Permanent</u> , <u>Direct</u> | Note any fish observations ach ools of North | up Redbells dence + 2 Black trout |
| Waterbody Notes Natural Watercourse Trapezoidal Channel Grassed Swale Buried Tile Surficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Dry Other Habitat Notes, Incidental Wildlife Observations, etc. No U/S + d/S waypoints as delineated already and contexts to Montrial RV. Permanents, Direct | | |
| Natural Watercourse Trapezoidal Channel Grassed Swale Buried Tile Surficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Dry Dther Habitat Notes, Incidental Wildlife Observations, etc. No $\frac{15}{445}$ waypoints as delineated already and contexts to Montrial RV. | · · · · · · · · · · · · · · · · · · · | |
| Surficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Dry Other Habitat Notes, Incidental Wildlife Observations, etc. No 0/5 + d/5 waypoints as delineated already and contexts to Montrial RV. Permanent, Direct O | | |
| Other Habitat Notes, Incidental Wildlife Observations, etc. No U/S + d/S waypoints as delineated already and contexts to Montreal RV. Permanent, Direct | | |
| as delineated already and contexts to Montrial RVI | Surficial Drainage (i.e. furrows) Dugout Po | nd Dominated by Aquatic Veg Dry |
| as delineated already and contexts to Montrial RVI | | a standard the |
| Permanent, Directo | Other Habitat Notes, incidental Wildlife Obser | vations, etc. No $\sqrt{3}$ + $d/3$ waypoints |
| | as nerineated alleady and control | 1) to Montrial KVI |
| ield Notes Authored by Field Notes QA/QCed by | rermanent, VIICCTU | |
| Field Notes Authored by Field Notes QA/QCed by | | |
| Teld Notes Authored by/ 11/ | - Mile - mile - mile - mile | MB |
| | Field Notes Authored by <u>Field Note</u> | es UA/QUed by |

| Project Name <u>Sow Lake</u> Project Number <u>1609 6073</u> | . Wind Farm Stati | ion Number 98- | |
|---|--|---|---|
| Project Number 1609 6045 | | s No. (if applicable) | / |
| Photos 566-5 | | e (yyyymmdd): Jul | 4 12 |
| Descriptive Location 100 r | n south of Gate | #2 on Ho | gg Dam Rd |
| headin | South an Acres | Dagar Rdy | V 0 |
| UTM coordinates 0682 | 638 easting <u>5233</u> | <u>371</u> no | rthing zone <u>16T</u> |
| Fishing Method (circle one); | Backpack Boat | Unit ModelMake | |
| Sampling Method (circle one): | even habitat t | transect . sp | ot · |
| Effort (Electrofishing Seconds): | Number of Netters: | Numbe | er of Angeles: |
| Settings | $\overline{\mathcal{T}} \rightarrow \overline{\mathcal{T}}$ | | |
| Frequency (Hz) | offage (volts) Current (Amp | os) Power | (Watts) |
| Station Information | * * | | |
| | raps set@ colucits un | | ing (Hoss) |
| | idth (m): Range <u>1,0,1,4</u> | Average: / | , <u>2</u> 2 2 |
| D | epth (m): Range <u>0.1 - 0.6</u> | Average: | <u>2</u> |
| Water Clarity/Colour: Clear | Water Velocity if I | Measured (m/s): | V/A Time 14:30 |
| Temperature (°C) 18 73 | | luctivity (uS/cm) | 53 |
| pH <u>7.34</u> ; | Dissolved | I Oxygen (mg/L) | 7.85 |
| Catch Data | Number of Fish | | omments (i.e. age, disease, etc): |
| Species Brook trout | $\frac{1111}{1111} \oplus (2''-6')$ | ····· | intento (i.e. aye, disease, etc). |
| White Sucker | $\square O$ | | Traps Set: July 11 2012 |
| Northern Rodbelly D. | 111111111111111111111111111111111111111 | | Ret: July 12, 80120 |
| | | | |
| Finoscala dace | ++++-111 (9) | | 3traps set u/s of |
| | | | culurte 0.3.0.5m |
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| Stantec | WIND FARM W | 1/5= 068251 | sq 523 335 | 1 | Pis |
|---|---------------------------------|----------------|-----------------------|---------------------------------------|---------------------------------------|
| Station # | | , | · · · | | 1 = - |
| Station # | <u>)-0</u> | | | ow Lake Wi | na rarm |
| | me unknown | | Project # <u>1600</u> | | - 117 |
| | 0-572 | | Field Staff NA | | |
| Date July | | | Time <u>14: 5</u> | 0 | |
| | ons in previous 24 hrs | | | | |
| GPS Coordinate | | <u>E /</u> | - <u>N</u> | | Datum NA083 |
| Descriptive Loca | tion <u>~20m se</u> | suth utige | K#2 of | Hogs Rd. | |
| Water Quality | | · · · · · | | | |
| Dissolved Oxyge | n (ma/L) | pH | Conduct | ivity (µS/cm) | |
| Water Temperat | | | Air Temperature | | |
| Time in situ mea | surements taken | | | | |
| | | | | | |
| | mensions & Morph se Width0_3 | | Maximum Pool D | lenth 1 | (cm) |
| | | | | | (CM) |
| Mean Bankfull W | | | Mean Water Dep | th5 | (cm) % Fla |
| | ling banks, Commen | | ility none | /o null | 70 Fla |
| | ing vanns, oonmen | | | | |
| | | 3 = s:1+/muc | k | | |
| Substrate (% cc | | | _ | _ | |
| | | Cobble 40 | Sand | <u>20</u> Silt_ | Muck |
| B(| oulder <u>yo</u> | Gravel | Clay | Marl | LDetritus |
| In-water Cover | | | 1 | | .* |
| Cover Types Pre | | Undercut Banks | B Deep Poo | Watercress | Aquatic Veg |
| | getation Woody | | • | her | Aqualic vey |
| Overhunging ve | jourion (1000) | | | | |
| Riparian Zone | - | | • , · | | · |
| Riparian Cover (| % of watercourse sha | aded, dominant | vegetation, mat | ure or early succe | essional) |
| | tin and weed | vellow bir | ch | · · · · · · · · · · · · · · · · · · · | |
| Adjacent Land U | se | × 1. | | · . | |
| | Hydro Corrido | 07 | | | |
| |) | | • | • | |
| Fish Habitat Pol | | | | | |
| | pawning or nursery a | areas, groundw | ater upwellings) | | |
| possible_ | spawn | | | | <u></u> |
| | ctions (seasonal, per | manent) | | | |
| Note any fish obs | servations none | <u></u> | | | |
| Note any non obt | | | · · · · | | · · · · · · · · · · · · · · · · · · · |
| · · · · · · · · · · · · · · · · · · · | • | | | | |
| Waterbody Note | | | _ | | |
| Natural Watercou | | oidal Channel | | d Swale | Buried Tile |
| Surficial Drainag | e (i.e. furrows) | Dugout Pond_ | Dominate | ed by Aquatic Ve | g Dry |
| | the includent of the | | | | |
| - | otes, Incidental Wild | ante Observati | | | 11, |
| Indirect, int | | US (Seep) | <u> </u> | ninor define | <u> </u> |
| <u> 14 012 2</u> | tanding water | VID (seep) | | · · · · · · · · · · · · · · · · · · · | |
| , | V | | | | |

| Stantec | 98-3 | d 5= 068 | 2584 \$52 | 33357 | · | No. |
|---|---|--|---|--|--|--|
| Station # 9.8- | -3 | | Project Name | Sow Lake V | vind Far | m |
| Watercourse Na Photos らう? | ame unknowr | | Project # <u>160</u> Field Staff | 960734 | | ····· |
| Date July | | | Time $15:2$ | 5 | • | |
| Weather conditi | ions in previous 24 l | | icuip. 28°2 | | | |
| GPS Coordinate | es (Zone) <u>16</u> T ation <u>~ 2 m</u> | E · · | - N Caletta F | | | NHO83 |
| | | | <u> </u> | Hogs Dam | | ······································ |
| Water Quality | ` | | · · · · · · · · · · · · · · · · · · · | | • | |
| Dissolved Oxyg Water Tempera | en (mg/L) | pH | Air Temperature | ctivity (#S/cm) | | |
| | asurements taken_ | ······································ | Air remperature | ······································ | and the second designed and th | |
| Watercourse D | imensions & Morp | pology | | | | |
| Mean Watercou | rse Width #3 | _(m) ⁿ , l' | Maximum Pool | Depth | (cm) | D |
| Vean Bankfull V | | (m) | Mean Water De | | (cm) | |
| | ding banks, Comme | and the second difference in the second differ | the second se | % Run _ | | % Fla |
| | | • • | | ~ | | |
| Substrate (% c | | Oshila | 40 Sand | | 1, | |
| | | Cobble _Gravel | <u>40</u> Sand Clay | <u> </u> | it | _Muck Detritus |
| Riparian Zone | egetation (Wood | AND CONTRACT A CONTRACTOR OF STATE | • | Other | • | atic Veg |
| Riparian Cover (9011 Cover | (% of watercourse s | shaded, domina \sim | ant vegetation, ma | ture or early suc | ccessional) | |
| Adjaćent Land L | Jse | · · · | · · · · · · · · · · · · · · · · · · · | | · · · · · | - |
| ADES Rd, | My dio Conidol | · | | | | ···· |
| ish Habitat Po | otential | | | | | |
| Nutstand III alettest / | spawning or nurser | | |) | · · · | |
| | uctions (seasonal, p | |) | | ··· | |
| Aligratory Obstru | aanutiana u wa i | • | | | | |
| Augustitie States | servations <u>NJW</u> | | | e.' | • | |
| Aligratory Obstru | | | | · · | | |
| Nigratory Obstru Ary Note any fish ob | es / | • • • • • • • • • • • • • • • • • • • | | | • | |
| Aligratory Obstru Aligratory Obstru Note any fish ob Vaterbody Not | es / purse Trape | zoidal Channel | Grass | ed Swale | - Buried 1 | ****** |
| Aligratory Obstru Aligratory Obstru Note any fish ob Vaterbody Not | es / | zoidal Channel | Grass | ed Swale ted by Aquatic V | _ Buried 1 /eg | īle Dry |
| Aigratory Obstru Aigratory Obstru Note any fish ob Vaterbody Not Natural Waterco Surficial Drainag | es Trape purse Trape ge (i.e. furrows) lotes, Incidental W | zoidal Channel Dugout Pon /ildlife Observa | nd Dominat ations, etc | ted by Aquatic V | /eg | |
| Aigratory Obstru Aigratory Obstru Note any fish ob Vaterbody Not Jatural Waterco Surficial Drainag | es Trape ge (i.e. furrows) | zoidal Channel Dugout Pon /ildlife Observa | nd Dominat | ted by Aquatic V | /eg | |
| Aigratory Obstru Aigratory Obstru Note any fish ob Vaterbody Not Jatural Waterco Surficial Drainag | es Trape purse Trape ge (i.e. furrows) lotes, Incidental W | zoidal Channel Dugout Pon /ildlife Observa | nd Dominat ations, etc | ted by Aquatic V | /eg | |





MT set

| Station # 98.4 Project Name Bow Lake Wind Farm |
|---|
| Watercourse Name Boy of Montral Pv. Project # 1609 60734 |
| Photos 578-520 Field Staff NB, MF Date July 11/12 Time 15.20 |
| Weather conditions in previous 24 hrs <u>AU</u> previo 28°c |
| GPS Coordinates (Zone) 16T E 068,2389 N 523371 Datum NAD83 |
| Descriptive Location <u>~ 700 m dis of dam</u> |
| Water Quality |
| Dissolved Oxygen (mg/L) $\frac{8,13}{2}$ pH $\frac{7,41}{2}$ Conductivity (μ S/cm) $\frac{51}{2}$ |
| Water Temperature (°C) 23,44 Air Temperature (°C) 23** Time in situ measurements taken 15*30 |
| Watercourse Dimensions & Morphology Mean Watercourse Width 35 1.35 (m)Maximum Pool Depth 1.0 (cm)Montree Ru. |
| Mean Watercourse Width 35 235 (m)Maximum Pool Depth 1.0 (m)Mean Bankfull Width 40 235 (m) 235 (m)Mean Water Depth 51 0 (m) |
| % Riffle 40 % Pool 60 % Run % Flat |
| Evidence of eroding banks, Comments on bank stability mone - border Salong shore line |
| Substrate (% cover) |
| Bedrock 20 Cobble 20 Sand Silt 10 Muck |
| Boulder Gravel Clay Marl / Detritus |
| In-water Cover |
| Cover Types Present (circle): Undercut Banks Deep Pool Watercress Aquatic Veg |
| Overhanging Vegetation Woody Debris Boulder Other |
| Riparian Zone |
| Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional) 5% water has received awy from riperion veg. (dam) |
| Adjacent Land Use |
| dam forest |
| Fish Habitat Potential |
| Critical Habitat (spawning or nursery areas, groundwater upwellings) |
| Spawn, Wray, Mrsun Migratory Obstructions (seasonal, permanent) |
| Migratory Obstructions (seasonal, permanent) |
| Note any fish observations |
| Waterbody Notes |
| Natural Watercourse Trapezoidal Channel Grassed Swale Buried Tile |
| Surficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Dry |
| Other Habitat Notes, Incidental Wildlife Observations, etc. |
| |
| |
| Field Notes Authored by Field Notes QA/QCed by |
| W:\resource\Internal Info and Teams\Aquatic Resources\Field Sheets\Stantec\Form 02 Wind Farm Waterbody Rapid Assessment Form.doc |
| |

| Project Name | Bow La | ke Wind | Farm | Station Number | 98.4 | |
|--|---------------------|--------------------------------------|--------------------|--------------------------|--|---------------------------------------|
| Project Number | 1609 607 | 34 | | Pass No. (if appli | cable) | Mii |
| Photos | 578- | 580 | | Date (yyyymmdd) | : July 1/1 | 2 11 |
| Descriptive Location | n <u>~700</u> | m d/s o | fdamor | Montreal | <u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u><u></u></u> | · · · · · · · · · · · · · · · · · · · |
| • • • | | ay of M. | | rc. | | |
| UTM coordinates | 068 | 2389 | _easting <u>5</u> | 233371 | northing | zone <u>16</u> T |
| Fishing-Method (cir | cie one): | Backpa | ick Boat | Unit Mod | el/Make | |
| Sampling Method (| circle one): | even | habitat | transect . | spot | - |
| Effort (Electrofishin | g Seconds): | | Number of Netter | s: / | Number of Anodes | |
| Settings | <u> </u> | | | | \setminus / | 2.00 |
| Frequency (Hz) | | Voltage (volts) | Curr | ent (Amps) | Power (Watts) |) TICT |
| Station Information | n | 4 | • | • | Set | 501,11 (015: 3 501,512 (010: |
| Length of Stream S | | Bay = 20m; | | | | juig a Cro. |
| Station Characteris | tics: | Widťh (m): | Range | Average: | | |
| | | Depth (m): | Range <u>0.2</u> - | <u>>), o</u> Average: | 0.5 | 15:30 |
| Water Clarity/Colou | $r = \frac{1}{100}$ | und/ka | Water Ve | elocity if Measured (m. | /s): <u> </u> | Time 18250 |
| • | | | - | Conductivity (uS/c | | |
| Temperature (°C | | <u>44</u> | . , | | | |
| Temperature (°C pł | | <u>44</u> <u>71</u> | | Dissolved Oxygen (mg | | |
| Temperature (°C | | <u>44</u> <u>} </u> Number of | | | /L) <u>B,/3</u> | age, disease, etc): |
| Temperature (°C pł Catch Data | 1 70 | <u>}1</u> | | | (L) <u>B, 13</u> Comments (i.e | age, disease, etc): ∴Ω≶ |
| Temperature (°C pł <u>Catch Data</u> <u>Species</u> <u>No ca-łc</u> | + <u>7</u> | <u>} </u> Number of | Fish | Dissolved Oxygen (mg | /L) <u>B, 13</u> Comments (i.e <u>3 + 1 =</u> | ιpź |
| Temperature (°C pl <u>Catch Data</u> <u>Species</u> <u>No ca-la</u> <u>Water lu</u> | + <u>7</u> | <u>} </u> Number of | Fish | Dissolved Oxygen (mg | (L) <u>B, 13</u> Comments (i.e | ιpź |
| Temperature (°C pł <u>Catch Data</u> <u>Species</u> <u>No ca-łc</u> | + <u>7</u> | <u>} </u> Number of | Fish | Dissolved Oxygen (mg | /L) <u>B, 13</u> Comments (i.e <u>3 + 1 =</u> | ιpź |
| Temperature (°C pl <u>Catch Data</u> <u>Species</u> <u>No ca-la</u> <u>Water lu</u> | + <u>7</u> | <u>} </u> Number of | Fish | Dissolved Oxygen (mg | /L) <u>B, 13</u> Comments (i.e <u>3 + 1 =</u> | ιpź |
| Temperature (°C pl <u>Catch Data</u> <u>Species</u> <u>No ca-la</u> <u>Water lu</u> | + <u>7</u> | <u>} </u> Number of | Fish | Dissolved Oxygen (mg | /L) <u>B, 13</u> Comments (i.e <u>3 + 1 =</u> | ιpź |
| Temperature (°C pl <u>Catch Data</u> <u>Species</u> <u>No ca-la</u> <u>Water lu</u> | + <u>7</u> | <u>} </u> Number of | Fish | Dissolved Oxygen (mg | /L) <u>B, 13</u> Comments (i.e <u>3 + 1 =</u> | ιpź |
| Temperature (°C pl <u>Catch Data</u> <u>Species</u> <u>No ca-la</u> <u>Water lu</u> | + <u>7</u> | <u>} </u> Number of | Fish | Dissolved Oxygen (mg | /L) <u>B, 13</u> Comments (i.e <u>3 + 1 =</u> | ιpź |
| Temperature (°C pl <u>Catch Data</u> <u>Species</u> <u>No ca-la</u> <u>Water lu</u> | + <u>7</u> | <u>} </u> Number of | Fish | Dissolved Oxygen (mg | /L) <u>B, 13</u> Comments (i.e <u>3 + 1 =</u> | ιpź |
| Temperature (°C pl <u>Catch Data</u> <u>Species</u> <u>No ca-la</u> <u>Water lu</u> | + <u>7</u> | <u>} </u> Number of | Fish | Dissolved Oxygen (mg | /L) <u>B, 13</u> Comments (i.e <u>3 + 1 =</u> | ιpź |
| Temperature (°C pl <u>Catch Data</u> <u>Species</u> <u>No ca-la</u> <u>Water lu</u> | + <u>7</u> | <u>} </u> Number of | Fish | Dissolved Oxygen (mg | /L) <u>B, 13</u> Comments (i.e <u>3 + 1 =</u> | ιpź |
| Temperature (°C pl <u>Catch Data</u> <u>Species</u> <u>No ca-la</u> <u>Water lu</u> | + <u>7</u> | <u>} </u> Number of | Fish | Dissolved Oxygen (mg | /L) <u>B, 13</u> Comments (i.e <u>3 + 1 =</u> | ιpź |
| Temperature (°C pl <u>Catch Data</u> <u>Species</u> <u>No ca-la</u> <u>Water lu</u> | + <u>7</u> | <u>} </u> Number of | Fish | Dissolved Oxygen (mg | /L) <u>B, 13</u> Comments (i.e <u>3 + 1 =</u> | ιpź |
| Temperature (°C pl <u>Catch Data</u> <u>Species</u> <u>No ca-la</u> <u>Water lu</u> | + <u>7</u> | <u>} </u> Number of | Fish | Dissolved Oxygen (mg | /L) <u>B, 13</u> Comments (i.e <u>3 + 1 =</u> | ιpź |
| Temperature (°C pl <u>Catch Data</u> <u>Species</u> <u>No ca-la</u> <u>Water lu</u> | + <u>7</u> | <u>} </u> Number of | Fish | Dissolved Oxygen (mg | /L) <u>B, 13</u> Comments (i.e <u>3 + 1 =</u> | ιpź |

9B-5 v/S=0682467 9233064



WIND FARM WATERBODY RAPID ASSESSMENT FORM 973-5 d/5= 0082497 5233236

Tou shallow to fish

| Station $\#$ 9 R - 5 | Project Name Bow Lake Wind Farm |
|---|--|
| Watercourse Name_unknown | Project # $1609 60734$ |
| Photos 581-583 | Field Staff <u>NB.MF</u> |
| Date July // /12 | Time 15.45 |
| Weather conditions in previous 24 hrs no pr | |
| GPS Coordinates (Zone) 161 F | N Datum NH083 |
| Descriptive Location ~ 250 50 1th of | Galetta when deadles south to |
| Hogg Rd. U/S starts south along | Gatetta when deading south on rd side |
| Water Quality | |
| Dissolved Oxygen (mg/L) 7.6.3 pH_ | 737 Conductivity (μ S/cm) $8/$ |
| Water Temperature (°C)21.20 | Air Temperature (°C) 28°c |
| Time in situ measurements taken | 5: 50 |
| Watercourse Dimensions & Morphology Mean Watercourse Width 0,6 (m) Mean Bankfull Width 0,7 (m) % Riffle 000 % Performance | Mean Water Depth(cm) |
| Evidence of eroding banks, Comments on bank s | |
| Substrate (% cover) | 2 |
| Bedrock 25 Cobble Gravel | <u>30</u> Sand Silt Muck |
| <u> </u> | ClayMarl /o_Detritus |
| Cover Types Present (circle): Undercut Ba Overhanging Vegetation Woody Debris Riparian Zone Riparian Cover (% of watercourse shaded, domin | Boulder Other |
| 70% mountain myle, mountain. Adjacent Land Use | <u>asn</u> |
| | |
| Hogg Rd | |
| Fish Habitat Potential Critical Habitat (spawning or nursery areas, grour MSNL・ | ndwater upwellings) |
| Migratory Obstructions (seasonal, permanent) Underground, intermitent, perchod | C50 |
| Note any fish observations | |
| | |
| Watashada Natas | |
| Waterbody Notes | el Grassed Swale Buried Tile |
| | |
| Surficial Drainage (i.e. furrows) Dugout Po | nd Dominated by Aquatic Veg Dry |
| Other Habitat Notes, Incidental Wildlife Observ Water disapears ~ 5 d/s (south) o | vations, etc. <u>Intermitent</u> Indicct. F Hills Rd. |
| 9B-5 U/S = | 0682467 5233064 |
| Field Notes Authored by Field Note | es QA/QCed by |
| | |
| W:\resource\Internal Info and Teams\Aquatic Resources\Field Shee | ts\Stantec\Form 02 Wind Farm Waterbody Rapid Assessment Form.doc |



Mit set.

| • | Station #9B-8Project NameBow Lake Wind FarmWatercourse NameUNKnownProject NameBow Lake Wind FarmPhotos590-592Project # 1609 60734DateJuly 1)/12TimeUse ther conditions in previous 24 hrsNoDrec: p.HotsConditions in previous 24 hrsNoDescriptive Location-1.5 KmNo (th of Reference Rd on Hore Rd. |
|------|---|
| | Water Quality Dissolved Oxygen (mg/L) 7 40 pH 7 0 Conductivity (µS/cm) 31 Water Temperature (°C) 15.14 Air Temperature (°C) 27°c Time in situ measurements taken 17:00 |
| N3:5 | Watercourse Dimensions & Morphology Mean Watercourse Width 0.5 (m) Maximum Pool Depth 7 (cm) Mean Bankfull Width 1.0 (m) >> Mean Water Depth 5 (cm) 4b 416 % Riffle % Pool % Run % Flat Evidence of eroding banks, Comments on bank stability |
| | Substrate (% cover)1/50/50/5Bedrock50Cobble10Sand40Silt27Boulder506GravelClayMarl304 |
| (| In-water Cover Cover Types Present (circle): Undercut Banks Deep Pool Watercress Aquatic Veg Overhanging Vegetation Woody Debris Boulder Other |
| | Riparian Zone Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional) <u>9%, black sproce</u> , poplar <u>sp</u> , white birch Adjacent Land Use House |
| | Fish Habitat Potential Critical Habitat (spawning or nursery areas, groundwater upwellings) |
| | Note any fish observations Note |
| | Waterbody Notes / Natural Watercourse Trapezoidal Channel Grassed Swale Buried Tile Surficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Dry |
| - | Other Habitat Notes, Incidental Wildlife Observations, etc. Direct, Permanent Us area is ponded - 10m wide + + 1.0m deep |
| | Field Notes Authored by Field Notes QA/QCed by |
| | |

| Project Name Sow L | ake Wind Farm | trofishing Record and Catch Results Station Number 9 8 - 8 |
|--|---------------------------------------|--|
| Project Number 1609 60 | | Pass No. (if applicable) |
| | D-592 | Date (yyyymmdd): July 11 12 |
| | | iberca Rd on Horre Rd |
| | | |
| UTM coordinates 065 | 8 2 0 5 3_easting_ | 5232704 northing zone 16T |
| Fishing Method (circle one): | Backpack E | BoatUnit Model/Make |
| Sampling Method (circle one) | even habitat | transect spot |
| Effort (Electrofishing Seconds): | Number of Ne | itters: Number of Angeles: |
| Settings | | |
| Frequency (Hz) | Voltage (volts) | Current (Amps) Power (Watts) |
| Station Information | | |
| Length of Stream Surveyed (m) | 2 | |
| Station Characteristics: | Width (m): Range <u>0.5</u> | Average: |
| | Depth (m): Range >1.0 | $\frac{-10}{-0.10} \text{Average:} \frac{0.1}{-0.10} \frac{0.1}{-0.$ |
| Water Clarity/Colour: | Clear Wate | er Velocity if Measured (m/s): N Time $ 7:0c$ |
| Temperature (°C) | 15:14 | Conductivity (uS/cm) 3) |
| | 704 | Dissolved Oxygen (mg/L) 7,40 |
| Catch Data | | |
| Species | Number of Fish | Comments (i.e. age, disease, etc): |
| No Catch | | |
| د ه ه ه م و ه و و م و و م و و و و و و و و | - 11 | 2 traps |
| , دو هم او | | |
| 1920 | | Set: July 11, 12@1 |
| pa a a co | ***** | Ret: Joy 12 12 @M |
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| | | |
| Fish Measurements on Separate | Sheet? YN | |



Bar

WIND FARM WATERBODY RAPID ASSESSMENT FORM

Stantec

| Station #9B-9 Project Name Bow Lake Wind Farm Watercourse Name Muntual R.m. Project Name Bow Lake Wind Farm Photos595-595 Project # 1609 60734 Date112 Time17:0 Weather conditions in previous 24 hrsNo precip. Hot 28°C Time17:0 GPS Coordinates (Zone) 16T E 0689969 N 5232664 Descriptive LocationTo bay of Montreal RU N 000000000000000000000000000000000000 |
|---|
| Water Quality Dissolved Oxygen (mg/L) |
| Watercourse Dimensions & Morphology Mean Watercourse Width 235 (m) Maximum Pool Depth (cm) Mean Bankfull Width 235 (m) Mean Water Depth (cm) % Riffle % Pool % Run % Flat Evidence of eroding banks, Comments on bank stability % Run % Flat |
| Substrate (% cover) Bedrock 30 Cobble 20 Sand Silt Muck 20 Boulder 30 Gravel Clay Marl Detritus In-water Cover Cover Types Present (circle): Undercut Banks Deep Pool Watercress Aquatic Veg Overhanging Vegetation Woody Debris Boulder Other Other Other |
| Riparian Zone Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional) <u>5% water receded due to dam activities</u> Adjacent Land Use <u>Itogs</u> Rd |
| Fish Habitat Potential Critical Habitat (spawning or nursery areas, groundwater upwellings) <u>Spawn</u> , <u>nurser</u> , <u>for ece</u> Migratory Obstructions (seasonal, permanent) |
| Note any fish observations <u>Schoolo P</u> cyprinidae |
| Waterbody Notes Natural Watercourse Trapezoidal Channel Grassed Swale Buried Tile Surficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Dry Other Habitat Notes, Incidental Wildlife Observations, etc Fed group w w 2 babies. |
| |
| Field Notes Authored by Field Notes QA/QCed by |
| W:\resource\Internal Info and Teams\Aquatic Resources\Field Sheets\Stantec\Form 02 Wind Farm Waterbody Rapid Assessment Form.doc |

| | Minnow | 1 aps | Page / of / |
|---|---|-----------------------------------|---|
| Stantec Sta | antec Consulting Ltd - | Electrofishing Record a | |
| Project Name Box | w Lake Wind Far, | m Station Number | 9B-9 |
| Project Number 1609 | 60734 | Pass No. (if applicable | e) |
| | 593-595 | Date (yyyymmdd): | July 12 |
| Descriptive Location | In bay of Mon | treal RV ~ 1.0Km | horth of |
| · · · · · · | Rebecca Rd. | | · |
| UTM coordinates | 0681969 eastin | g <u>5232664</u> | northing zone <u>16</u> T |
| Fishing Method (circle one): | and the second se | Boat Unit Model/M | |
| Sampling Method (circle on | | abitat transect | spot |
| Effort (Electrofishing Second | ds):/ Numb | er of Netters: | Number of Anodes: |
| Settings | Voltage (volts) | Current (Ampe) | Power (Watts) |
| Frequency (Hz) | | Current (Amps) | |
| Station Information | | | |
| Length of Stream Surveyed | · · · | Avaragai | |
| Station Characteristics: | Width (m): Range | | |
| () * | | - <u>0, 50 - 0, 6</u> Average. | |
| Water Clarity/Colour: | tea / tanind | Water Velocity if Measured (m/s): | N/A Time 17:10 |
| Temperature (°C) | 26.221 | Conductivity (uS/cm) | 51 |
| pH Catch Data | 7.00 | Dissolved Oxygen (mg/L) | 7,79 |
| SHEWI PHIN | | | |
| Species | Number of Fish | · · · · · | Comments (i.e. age, disease, etc): |
| Species No catch | Number of Fish | N | Comments (i.e. age, disease, etc): $3 + c_{0} \wedge 5$ |
| Species No catch | Number of Fish | | 3 traps |
| Nocatch | | | 3 traps Set: July 11, e 17:10 |
| No catch Flocutout | | due to dam | 3 traps |
| Nocatch | | | 3 + raps Set: July 11, e 17:10 |
| No catch Flocutuat | | | 3 traps Set: July 11, e 17:10 |
| No catch Flocutout | | | 3 traps Set: July 11, e 17:10 |
| No catch Flocutuat | | | 3 + raps Set: July 11, e 17:10 |
| No catch Flocutuat | | | 3 + raps Set: July 11, e 17:10 |
| No catch Flocutout | | | 3 + raps Set: July 11, e 17:10 |
| No catch Flocutout | | | 3 traps Set: July 11, e 17:10 |
| No catch Flocutout | | | 3 traps Set: July 11, e 17:10 |
| No catch Flocutout | | | 3 + raps Set: July 11, e 17:10 |
| No catch Flocutout | | | 3 + raps Set: July 11, e 17:10 |
| No catch Flocutuat | | | 3 + raps Set: July 11, e 17:10 |
| No catch Flocutout | | | 3 + raps Set: July 11, e 17:10 |
| No catch Flocutout activitics | ing water levels | | 3 + raps Set: July 11, e 17:10 |
| <u>No catch</u> <u>Flocotout</u> <u>activitics</u> Fish Measurements on Sepa | rg_water_levels | due to dam | <u>3 traps</u> <u>set</u> : July 11, e 17:10 <u>Ret July 12 e 11:00</u> |
| No catch Flocutout activitics | rg_water_levels | | <u>3 + raps</u> <u>set : July 11, e (7: 10</u> <u>Ret July 12 e //:00</u> |
| <u>No catch</u> <u>Flocutout</u> <u>activitics</u> | rg_water_levels | due to dam | <u>3 traps</u> <u>set</u> : July 11, e 17:10 <u>Ret July 12 e 11:00</u> |

N



Trap 3

| Station # 98-10 | Project Name Bow Lake Wind Farm |
|--|---|
| Watercourse Name <u>unknown</u> Photos 597-598 | Project # <u>1609 60734</u> Field Staff NB, MF |
| Date July 12/12 | Time1115 |
| Weather conditions in previous 24 hrs $_N_{\circ}$ | |
| GPS Coordinates (Zone) 16 T E 068 | |
| Descriptive Location <u>On Hogs Dam</u> | Rd - 325m north of Rebecca Rd. |
| Water Quality | |
| Dissolved Oxygen (mg/L) <u>747</u> p | pH_{695} Conductivity (μ S/cm)66 |
| Water Temperature (°C) | Air Temperature (°C) |
| Fime <i>in situ</i> measurements taken | 11:20 |
| Watercourse Dimensions & Morphology Mean Watercourse Width 1,2 (m) | Maximum Pool Depth 1 5. p(cm) |
| Mean Bankfull Width 2.5 (m) | Mean Water Depth (cm) |
| <u> </u> | % Pool <u>30</u> % Run % Flat |
| Evidence of eroding banks, Comments on bar | nk stability <u>minor undurent benks</u> |
| Substrate (% cover) | |
| Bedrock 30 Cobble | <u> </u> |
| BoulderGravel | ClayMarl / Detritus |
| n-water Cover Cover Types Present (circle): Undercut Overhanging Vegetation Woody Debris | t Banks Deep Pool Watercress Aquatic Veg Boulder Other |
| | |
| Riparian Zone | |
| | ominant vegetation, mature or early successional) |
| Adjacent Land Use | -, eastern white crolon. Of area open i not |
| Hors Dam Rd, Hydro Corrido | or forcest. |
| | <u> </u> |
| ish Habitat Potential | |
| Critical Habitat (spawning or nursery areas, gr | roundwater upwellings) |
| Spawn NU (Sen, For ase | |
| Aligratory Obstructions (seasonal, permanent) | |
| Steep gradient on d/S side | |
| | |
| | |
| Vaterbody Notes | |
| latural Watercourse Trapezoidal Cha | annel Grassed Swale Buried Tile |
| | t Pond Dominated by Aquatic Veg Dry |
| Surficial Drainage (i.e. furrows) Dugout | |
| Surficial Drainage (i.e. furrows) Dugout | nometiona ata |
| Surficial Drainage (i.e. furrows) Dugout Other Habitat Notes, Incidental Wildlife Obs | servations, etc |
| Surficial Drainage (i.e. furrows) Dugout Dther Habitat Notes, Incidental Wildlife Obs | |
| Surficial Drainage (i.e. furrows) Dugout Other Habitat Notes, Incidental Wildlife Obs | |
| Surficial Drainage (i.e. furrows) Dugout | |
| Surficial Drainage (i.e. furrows) Dugout | |

| roject Name Sow | Lake Wind Farm | Station Number | 9B-10 |
|--------------------------------|--|----------------------------------|------------------------------------|
| Project Number 1609 60 | | Pass No. (if applicable) | 7 - |
| 47 | - 598 | Date (yyyymmdd): | |
| escriptive Location | Hose Dam Rol - | -325 m north | |
| | osses under Rd. | | |
| · · · · | 689129 easting | 5231791 | _northing zone <u>16T</u> |
| | | | |
| ishing Method (circle one): | Backpack even habitat | Boat Unit Model/Ma | ke |
| ampling Method (circle one): | | lialisecu | Spot |
| fort (Flectrofishing Seconds): | Number of N | Vetters: N | umber of Anodes: |
| ettings | | | $\langle \rangle$ |
| requency (Hz) | Voltage (volts) | Current (Amps) P | ower (Watts) |
| tation Information | | | |
| ength of Stream Surveyed (m) | set @ culuet | | |
| tation Characteristics: | | 1.0-1.5 Average: | 07 / 12 |
| | Depth (m): Range <u>D.</u> | <u>05 - 0.15</u> Average: | 0.8 |
| /ater Clarity/Colour: | dear Wa | ater Velocity if Measured (m/s): | N/A Time 11:15 |
| Temperature (°C) | 10.00 | Conductivity (uS/cm) | 60 |
| pH | 6.95 | Dissolved Oxygen (mg/L) | 7.47 |
| | single for second s | | |
| atch Data | | | |
| | Number of Fish | N | Comments (i.e. age, disease, etc): |
| | Number of Fish | | Comments (i.e. age, disease, etc): |
| pecies | Number of Fish | | 3traps |
| pecies | Number of Fish | | 3+raps Set: July 120 11:1 |
| pecies | Number of Fish | | 3traps |
| pecies | Number of Fish | | 3+raps Set: July 120 11:1 |
| pecies | Number of Fish | | 3+raps Set: July 120 11:1 |
| pecies | Number of Fish | | 3+raps Set: July 120 11:1 |
| pecies | Number of Fish | | 3+raps Set: July 120 11:1 |
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| pecies | Number of Fish | | 3+raps Set: July 120 11:1 |
| pecies | Number of Fish | | 3+raps Set: July 120 11:1 |
| pecies | Number of Fish | | 3+raps Set: July 120 11:1 |
| pecies | Number of Fish | | 3+raps Set: July 120 11:1 |
| Species | Number of Fish | | 3+raps Set: July 120 11:1 |
| Catch Data | Number of Fish | | 3+raps Set: July 120 11:1 |



Traps Set

| w Lake Wind Farm 1 60734 MF 5.231566 Datum NH083 1 4035 Dam Rd ivity (μS/cm) 49 (°C) 28° c |
|---|
| 1 60734 MF 5.231566 Datum NH083 5.231566 Datum NH083 |
| <u>MF</u> 5.231566 <u>Datum NH083</u> 2 2005 Nam Rd. 1005 Nam Rd. |
| 1. <u>5231566 Datum NAD83</u> τους Dam Rd ivity (μS/cm) <u>49</u> |
| <u>5231566 Datum NAD83</u> <u>τοςς Dam Rd</u> ivity (μS/cm) <u>49</u> |
| 5231565 <u>Datum NAD83</u> - Hogg Dam Rd ivity (μS/cm) _ 49 |
| <u>ν τους Nam Rd</u> ivity (μS/cm) <u>4</u> 9 |
| ivity (µS/cm)4ີ |
| ivity (µS/cm)4ີ |
| ivity (μS/cm) <u>4</u> (°C) <u>28° </u> |
| |
| epth5(cm) th5(cm) % Rµn% Flat |
| observed. Rip Rapon |
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| Silt / Muck |
| Marl /O Detritus |
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| her ure or early successional) (No 5 :- +rimmed + sprces |
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| d Swale Buried Tile |
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|--|-----------------------------|--------------------|---|---|--|---|
| Stantec | | nsulting Ltd - | | | _ | esults |
| | | Wind Farn | n Sta | ation Number | 9B-11 | |
| | 0960734 | | | ss No. (if applicable | | na an a |
| Photos | 599-601 | <u></u> | Dat | te (yyyymmdd): | July 1 | 12 |
| Descriptive Location | | north of | | Kd on I | Hors Da | m Rl. |
| 1 177 8 d | 06818 | under rd. | | 215/1 | | |
| UTM coordinates | | <u>25</u> easting |) | 31566 | northing | zone <u>16</u> T |
| Fishing Method (circle o | one): | Backpack | Boat | Unit Model/N | lake | |
| Sampling Method (circle | e one): | even ha | bitat | transect / | spot | \sim |
| Effort (Electrofishing Se | propade). | Numbe | er of Netters: | | Number of Anode | e |
| Settings | | | | / | | |
| Frequency (Hz) | Vo | Itage (volts) | Current (Arr | nps) | Power (Watts) | |
| Station Information | | / | | | | |
| Length of Stream Surve | eyed (m) | apsil - 20 | m 0/4 Fron | n colvert | - | |
| Station Characteristics: | Wie Wie | oth (m): Range | 0545-52 | S Average: | 0.65 | |
| olution onulululonodoo. | | | | | | · · · · · |
| | | | 0,05.0,0 | | 0,05 | |
| | De | pth (m): Range | 0,05.0,0 | 8 Average: | | _ |
| Water Clarity/Colour: | De | pth (m): Range | 0,05-0,0 Water Velocity i | 8 Average: f Measured (m/s): | 0,05 | Time <u> '45</u> |
| Nater Clarity/Colour: Temperature (°C) | De <u>clear</u> 11.97 | pth (m): Range | 0,05-0,0 Water Velocity i Con | 8 Average: f Measured (m/s): nductivity (uS/cm) | <u>N/A</u> 49 | Time <u>// '45</u> |
| Water Clarity/Colour: Temperature (°C) pH | De | pth (m): Range | 0,05-0,0 Water Velocity i Con | 8 Average: f Measured (m/s): | | Time <u>// '45</u> |
| Water Clarity/Colour: Temperature (°C) pH Catch Data | De <u>clear</u> 11.97 | pth (m): Range | 0,05-0,0 Water Velocity i Con | 8 Average: f Measured (m/s): nductivity (uS/cm) | <u>N/A</u> <u>49</u> 7,39 | Time <u>// ' 4 5</u> .e. age, disease, etc): |
| Water Clarity/Colour: Temperature (°C) pH Catch Data | De <u>clear</u> 11.97 | pth (m): Range | 0,05,0,0 Water Velocity i Cor Dissolve | 8 Average: f Measured (m/s): nductivity (uS/cm) | $\frac{\lambda/A}{49}$ $\frac{7.39}{\text{Comments (i)}}$ | |
| Water Clarity/Colour: Temperature (°C) pH Catch Data Species | De <u>clear</u> 11.97 | pth (m): Range | 0,05,0,0 Water Velocity i Cor Dissolve | 8 Average: f Measured (m/s): nductivity (uS/cm) | $\frac{\nu/A}{49}$ $\frac{7.39}{\text{Comments (i)}}$ | .e. age, disease, etc): -у с-О S |
| Water Clarity/Colour: Temperature (°C) pH Catch Data Species | De <u>clear</u> 11.97 | pth (m): Range | 0,05,0,0 Water Velocity i Cor Dissolve | 8 Average: f Measured (m/s): nductivity (uS/cm) | $\frac{\nu/A}{49}$ $\frac{7.39}{7.39}$ Comments (i) $2 - \frac{1}{5et: 1}$ | e. age, disease, etc): |
| Water Clarity/Colour: Temperature (°C) pH Catch Data Species | De <u>clear</u> 11.97 | pth (m): Range | 0,05,0,0 Water Velocity i Cor Dissolve | 8 Average: f Measured (m/s): nductivity (uS/cm) | $\frac{\nu/A}{49}$ $\frac{7.39}{7.39}$ Comments (i) $2 - \frac{1}{5et: 1}$ | e. age, disease, etc): - ۲ هـ ۲ م م نام 12@ 11.45 |
| Water Clarity/Colour: Temperature (°C) pH Catch Data Species | De <u>clear</u> 11.97 | pth (m): Range | 0,05,0,0 Water Velocity i Cor Dissolve | 8 Average: f Measured (m/s): nductivity (uS/cm) | $\frac{\nu/A}{49}$ $\frac{7.39}{7.39}$ Comments (i) $2 - \frac{1}{5et: 1}$ | e. age, disease, etc): - ۲ هـ ۲ م م نام 12@ 11.45 |
| Water Clarity/Colour: Temperature (°C) pH Catch Data Species | De <u>clear</u> 11.97 | pth (m): Range | 0,05,0,0 Water Velocity i Cor Dissolve | 8 Average: f Measured (m/s): nductivity (uS/cm) | $\frac{\nu/A}{49}$ $\frac{7.39}{7.39}$ Comments (i) $2 - \frac{1}{5et: 1}$ | e. age, disease, etc): - ۲ هـ ۲ م م نام 12@ 11.45 |
| Water Clarity/Colour: Temperature (°C) pH Catch Data Species | De <u>clear</u> 11.97 | pth (m): Range | 0,05,0,0 Water Velocity i Cor Dissolve | 8 Average: f Measured (m/s): nductivity (uS/cm) | $\frac{\nu/A}{49}$ $\frac{7.39}{7.39}$ Comments (i) $2 - \frac{1}{5et: 1}$ | e. age, disease, etc): - ۲ هـ ۲ م م نام 12@ 11.45 |
| Water Clarity/Colour: Temperature (°C) pH Catch Data Species | De <u>clear</u> 11.97 | pth (m): Range | 0,05,0,0 Water Velocity i Cor Dissolve | 8 Average: f Measured (m/s): nductivity (uS/cm) | $\frac{\nu/A}{49}$ $\frac{7.39}{7.39}$ Comments (i) $2 - \frac{1}{5et: 1}$ | e. age, disease, etc): - ۲ هـ ۲ م م نام 12@ 11.45 |
| Water Clarity/Colour: Temperature (°C) pH Catch Data Species | De <u>clear</u> 11.97 | pth (m): Range | 0,05,0,0 Water Velocity i Cor Dissolve | 8 Average: f Measured (m/s): nductivity (uS/cm) | $\frac{\nu/A}{49}$ $\frac{7.39}{7.39}$ Comments (i) $2 - \frac{1}{5et: 1}$ | e. age, disease, etc): - ۲ هـ ۲ م م نام 12@ 11.45 |
| Water Clarity/Colour: Temperature (°C) pH Catch Data Species | De <u>clear</u> 11.97 | pth (m): Range | 0,05,0,0 Water Velocity i Cor Dissolve | 8 Average: f Measured (m/s): nductivity (uS/cm) | $\frac{\nu/A}{49}$ $\frac{7.39}{7.39}$ Comments (i) $2 - \frac{1}{5et: 1}$ | e. age, disease, etc): - ۲ هـ ۲ م م نام 12@ 11.45 |
| Water Clarity/Colour: Temperature (°C) pH Catch Data Species | De <u>clear</u> 11.97 | pth (m): Range | 0,05,0,0 Water Velocity i Cor Dissolve | 8 Average: f Measured (m/s): nductivity (uS/cm) | $\frac{\nu/A}{49}$ $\frac{7.39}{7.39}$ Comments (i) $2 - \frac{1}{5et: 1}$ | e. age, disease, etc): - ۲ هـ ۲ م م نام 12@ 11.45 |
| Water Clarity/Colour: Temperature (°C) pH Catch Data Species | De <u>clear</u> 11.97 | pth (m): Range | 0,05,0,0 Water Velocity i Cor Dissolve | 8 Average: f Measured (m/s): nductivity (uS/cm) | $\frac{\nu/A}{49}$ $\frac{7.39}{7.39}$ Comments (i) $2 - \frac{1}{5et: 1}$ | e. age, disease, etc): - ۲ هـ ۲ م م نام 12@ 11.45 |
| Water Clarity/Colour: Temperature (°C) pH Catch Data Species | De <u>clear</u> 11.97 | pth (m): Range | 0,05,0,0 Water Velocity i Cor Dissolve | 8 Average: f Measured (m/s): nductivity (uS/cm) | $\frac{\nu/A}{49}$ $\frac{7.39}{7.39}$ Comments (i) $2 - \frac{1}{5et: 1}$ | e. age, disease, etc): - ۲ هـ ۲ م م نام 12@ 11.45 |
| Water Clarity/Colour: Temperature (°C) pH Catch Data Species | De <u>clear</u> 11.97 | pth (m): Range | 0,05,0,0 Water Velocity i Cor Dissolve | 8 Average: f Measured (m/s): nductivity (uS/cm) | $\frac{\nu/A}{49}$ $\frac{7.39}{7.39}$ Comments (i) $2 - \frac{1}{5et: 1}$ | e. age, disease, etc): - ۲ هـ ۲ م م نام 12@ 11.45 |
| Water Clarity/Colour: Temperature (°C) pH Catch Data Species | De <u>clear</u> 11.97 | pth (m): Range | 0,05,0,0 Water Velocity i Cor Dissolve | 8 Average: f Measured (m/s): nductivity (uS/cm) | $\frac{\nu/A}{49}$ $\frac{7.39}{7.39}$ Comments (i) $2 - \frac{1}{5et: 1}$ | e. age, disease, etc): - ۲ هـ ۲ م م نام 12@ 11.45 |

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|---|---------|---------|-----|-------|
| 1 | Station | Diagram | nn | Rack) |
| ł | Jallon | Diagram | UI1 | Daury |

2.1



| Station # 9A-1 Project Name Bar Lake |
|--|
| Watercourse Name web-Dom Hundpard - Montrel R. Project # [1096077] Photos 9744-9748 Field Staff Joe Kerr Mitch Ellah |
| Photos 9744-9748 Field Staff Dee Kere Mitch Ellah |
| Date $2012/08/2/$ Time $5:510$ |
| Weather conditions in previous 24 hrs <u>5 othered</u> showers, for in morning GPS Coordinates (Zone) 167 E 683 206, N 5234 S89 Datum NAD83 |
| GPS Coordinates (Zone) 16T E 685206 N 523458 Datum NADES Descriptive Location upsteen & Dan & Montral Kive - Lead Port |
| Descriptive Location uponen i Isan & 1 Lean Pro- |
| Water Quality Dissolved Oxygen (mg/L) 8.69 21.05 pH_6.97 $Air Temperature (°C)$ Conductivity (μ S/cm) 58 $23°C$ Water Temperature (°C) 21.05 Air Temperature (°C) $23°C$ Time in situ measurements taken $5.48 \mu m$ |
| Watercourse Dimensions & Morphology Reserven - Deep |
| Mean Watercourse Width (m) Maximum Pool Depth (cm) |
| Mean Bankfull Width(m) Mean Water Depth(cm) |
| % Riffle% Pool% Run% Flat |
| Evidence of eroding banks, Comments on bank stability 5table - bedrock |
| Cubatrata (% acuar) |
| Substrate (% cover) 70 Bedrock 10 Cobble Sand Silt Muck |
| 2.2 Boulder Gravel Clay Marl Detritus |
| Cover Types Present (circle): Undercut Banks Deep Pool Watercress Aquatic Veg Overhanging Vegetation Woody Debris Boulder Other |
| Riparian Zone Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional) |
| Adjacent Land Use J Dam Natur fors |
| |
| Fish Habitat Potential Critical Habitat (spawning or nursery areas, groundwater upwellings) |
| Migratory Obstructions (seasonal, permanent) |
| Note any fish observations <u>non observed</u> |
| Waterbody Notes |
| Natural Watercourse Trapezoidal Channel Grassed Swale Buried Tile |
| Surficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Dry |
| Other Habitat Notes, Incidental Wildlife Observations, etc. willinge caught on previous visit |
| |
| |
| |
| Field Notes Authored by Jos Free Field Notes QA/QCed by MSUCh |

NKT Set Fishenble



| Station #/D-3/ | Project Name <u>Bow</u> | Lake Wind F | arm |
|---|---|------------------------------|---------------------------------------|
| Natercourse Name Montreal Rv. bay | Project # 1609 6 | 0734 | |
| Photos 530-532 | Field Staff | NF | · · · · · · · · · · · · · · · · · · · |
| Date July 9 /12 | Time <u>14'30</u> | | |
| Date <u>July 7 /12</u> Weather conditions in previous 24 hrs <u>no pre</u> 3PS Coordinates (Zone) 16 T E Dock | ccip. Hot + murca | | |
| GPS Coordinates (Zone) 16 T E OK 8 | 3227 Nº | 52 34576 Dat | UM NAD83 |
| GPS Coordinates (Zone) 16 T E 068 Descriptive Location <u>To small bay</u> | 300 m east of | - dam. on N | ontreal fu |
| Water Quality | | | |
| Dissolved Oxygen (mg/L) <u>8.23</u> pH | 7.09 Conductivity | (µS/cm) 57 | a a tanan gara |
| Water Temperature (°C) 23.23 | Air Temperature (°C) | 2700 | |
| Time in situ measurements taken14.30 | | | |
| Watercourse Dimensions & Morphology | Marine Deal Deal | | Dam he |
| Mean Watercourse Width (m) | Maximum Pool Deptr | 1 <u>25,0</u> | • |
| Mean Banktuli Width(III) | wean water Deptri_ | <u>> 5 の</u> (em % Run | % Flat |
| % Riffle <u>/00</u> % F Evidence of eroding banks, Comments on bank | | | /o 1 lat |
| | | | |
| Substrate (% cover) | | | |
| <u>80</u> Bedrock <u>10</u> Cobble | Sand | | Muck |
| Boulder /D Gravel | Clay | Marl | Detritus |
| | | | |
| | | | |
| In-water Cover | | Matarana | |
| Cover Types Present (circle): Undercut E | Banks Deep Pool | | Aquatic Veg |
| In-water Cover Cover Types Present (circle): Undercut E Overhanging Vegetation Woody Debris | Banks Deep Pool Boulder Other | | Aquatic Veg |
| Cover Types Present (circle): Undercut E Overhanging Vegetation Woody Debris | Banks Deep Pool Boulder Other | | Aquatic Veg |
| Cover Types Present (circle): Undercut E Overhanging Vegetation Woody Debris | Boulder Other | | |
| Cover Types Present (circle): Undercut E Overhanging Vegetation Woody Debris Riparian Zone Riparian Cover (% of watercourse shaded, dom | Boulder Other | or early succession | |
| Cover Types Present (circle): Undercut E Overhanging Vegetation Woody Debris Riparian Zone Riparian Cover (% of watercourse shaded, dom So% old by jam pieces, poplar | Boulder Other | or early succession | |
| Cover Types Present (circle): Undercut E Overhanging Vegetation Woody Debris Riparian Zone Riparian Cover (% of watercourse shaded, dom So% old by jam pieces, poplar | Boulder Other | or early succession | |
| Cover Types Present (circle): Undercut E Overhanging Vegetation Woody Debris Riparian Zone Riparian Cover (% of watercourse shaded, dom | Boulder Other | or early succession | |
| Cover Types Present (circle): Undercut E Overhanging Vegetation Woody Debris Riparian Zone Riparian Cover (% of watercourse shaded, dom <u>So% old log jam picces, poplar</u> Adjacent Land Use <u>McXay</u> rd, dam, Montra | Boulder Other | or early succession | |
| Cover Types Present (circle): Undercut E Overhanging Vegetation Woody Debris Riparian Zone Riparian Cover (% of watercourse shaded, dom <u>So% old by jom picces, peplan</u> Adjacent Land Use <u>McXay rd, dam</u> , Montroe Fish Habitat Potential | Boulder Other inant vegetation, mature (sp., sugar meple. | or early succession | |
| Cover Types Present (circle): Undercut E Overhanging Vegetation Woody Debris Riparian Zone Riparian Cover (% of watercourse shaded, dom Some pieces, poplar Adjacent Land Use McXay rd, dam, Montroe Fish Habitat Potential Critical Habitat (spawning or nursery areas, group) | Boulder Other inant vegetation, mature (sp., sugar meple. | or early succession | |
| Cover Types Present (circle): Undercut E Overhanging Vegetation Woody Debris Riparian Zone Riparian Cover (% of watercourse shaded, dom Some pieces, poplar Adjacent Land Use McXay rd, dam, Montroe Fish Habitat Potential Critical Habitat (spawning or nursery areas, group) | Boulder Other inant vegetation, mature (sp., sugar meple. | or early succession | |
| Cover Types Present (circle): Undercut E Overhanging Vegetation Woody Debris Riparian Zone Riparian Cover (% of watercourse shaded, dom <u>So% old by jom picces, poplar</u> Adjacent Land Use <u>McXay rd</u> , <u>dam</u> , <u>Montra</u> Fish Habitat Potential Critical Habitat (spawning or nursery areas, grou <u>Spawn</u> , <u>Forace</u> , <u>nursery</u> Migratory Obstructions (seasonal, permanent) | Boulder Other inant vegetation, mature (sp., sugar meple. | or early succession | |
| Cover Types Present (circle): Undercut E Overhanging Vegetation Woody Debris Riparian Zone Riparian Cover (% of watercourse shaded, dom <u>So% old by jam picces, peplan</u> Adjacent Land Use <u>McXay rd</u> <u>dam</u> , <u>Montra</u> Fish Habitat Potential Critical Habitat (spawning or nursery areas, group <u>Spawn</u> , <u>Forage</u> , <u>nursery</u> Migratory Obstructions (seasonal, permanent) <u>dam</u> | Boulder Other inant vegetation, mature (sp., sugar meple. | or early succession | |
| Cover Types Present (circle): Undercut E Overhanging Vegetation Woody Debris Riparian Zone Riparian Cover (% of watercourse shaded, dom <u>So% old by jom picces, poplar</u> Adjacent Land Use <u>McXay rd</u> , <u>dam</u> , <u>Montra</u> Fish Habitat Potential Critical Habitat (spawning or nursery areas, grou <u>Spawn</u> , <u>Forace</u> , <u>nursery</u> Migratory Obstructions (seasonal, permanent) | Boulder Other inant vegetation, mature (sp., sugar meple. | or early succession | |
| Cover Types Present (circle): Undercut E Overhanging Vegetation Woody Debris Riparian Zone Riparian Cover (% of watercourse shaded, dom So% old log jam pieces, poplar Adjacent Land Use McXay rd, dam, Montra Fish Habitat Potential Critical Habitat (spawning or nursery areas, grou Spawn, Folage, nursery Migratory Obstructions (seasonal, permanent) dam Note any fish observations <u>resp</u> e | Boulder Other inant vegetation, mature (sp., sugar meple. | or early succession | |
| Cover Types Present (circle): Undercut E Overhanging Vegetation Woody Debris Riparian Zone Riparian Cover (% of watercourse shaded, dom So% old log jam pieces, poplar Adjacent Land Use McXay rd, dam, Montra Fish Habitat Potential Critical Habitat (spawning or nursery areas, grou Spawn, Forage, nursery Migratory Obstructions (seasonal, permanent) dam Note any fish observations rese | Boulder Other inant vegetation, mature (<u>sp., sugar maple</u> , P J undwater upwellings) | or early succession | al) |
| Cover Types Present (circle): Undercut E Overhanging Vegetation Woody Debris Riparian Zone Riparian Cover (% of watercourse shaded, dom So% old by jam picks, peplar Adjacent Land Use McXay rd, dam, Montra Fish Habitat Potential Critical Habitat (spawning or nursery areas, group Spawn, Forage, nursery Migratory Obstructions (seasonal, permanent) dam Note any fish observations for Natural Watercourse_ Trapezoidal Chan | Boulder Other_ inant vegetation, mature (3p, sugar meple. / RU, undwater upwellings) | or early succession | al) ed Tile |
| Cover Types Present (circle): Undercut E Overhanging Vegetation Woody Debris Riparian Zone Riparian Cover (% of watercourse shaded, dom So% old log jam pieces, poplar Adjacent Land Use McXay rd, dam, Montra Fish Habitat Potential Critical Habitat (spawning or nursery areas, grou Spawn, Forage, nursery Migratory Obstructions (seasonal, permanent) dam Note any fish observations rese | Boulder Other_ inant vegetation, mature (3p, sugar meple. / RU, undwater upwellings) | or early succession | al) ed Tile |
| Cover Types Present (circle): Undercut E Overhanging Vegetation Woody Debris Riparian Zone Riparian Cover (% of watercourse shaded, dom So % old by jam pices, poplar Adjacent Land Use Montrae McXay rd dam Fish Habitat Potential Montrae Critical Habitat (spawning or nursery areas, group) Spawn, forage, nursery Migratory Obstructions (seasonal, permanent) dam Mote any fish observations Issue Waterbody Notes Trapezoidal Chan Surficial Drainage (i.e. furrows) Dugout F Dugout F | Boulder Other_ inant vegetation, mature Image: Comple (SP, Sugar meple Image: Comple // PU Image: Comple undwater upwellings) Image: Comple Image: Comple Image: Comple Image: Comple | or early succession | al) ed Tile |
| Cover Types Present (circle): Undercut E Overhanging Vegetation Woody Debris Riparian Zone Riparian Cover (% of watercourse shaded, dom So% old by jam picks, peplar Adjacent Land Use McXay rd, dam, Montra Fish Habitat Potential Critical Habitat (spawning or nursery areas, group Spawn, Forage, nursery Migratory Obstructions (seasonal, permanent) dam Note any fish observations for Natural Watercourse_ Trapezoidal Chan | Boulder Other_ inant vegetation, mature Image: Comple (SP, Sugar meple Image: Comple // PU Image: Comple undwater upwellings) Image: Comple Image: Comple Image: Comple Image: Comple | or early succession | al) ed Tile |
| Cover Types Present (circle): Undercut E Overhanging Vegetation Woody Debris Riparian Zone Riparian Cover (% of watercourse shaded, dom So % old by jam pices, poplar Adjacent Land Use Montrae McXay rd dam Fish Habitat Potential Montrae Critical Habitat (spawning or nursery areas, group) Spawn, forage, nursery Migratory Obstructions (seasonal, permanent) dam Mote any fish observations Issue Waterbody Notes Trapezoidal Chan Surficial Drainage (i.e. furrows) Dugout F Dugout F | Boulder Other_ inant vegetation, mature Image: Comple (SP, Sugar meple Image: Comple // PU Image: Comple undwater upwellings) Image: Comple Image: Comple Image: Comple Image: Comple | or early succession | al) ed Tile |
| Cover Types Present (circle): Undercut E Overhanging Vegetation Woody Debris Riparian Zone Riparian Cover (% of watercourse shaded, dom So % old by jam pices, poplar Adjacent Land Use Montrae McXay rd dam Fish Habitat Potential Montrae Critical Habitat (spawning or nursery areas, group) Spawn, forage, nursery Migratory Obstructions (seasonal, permanent) dam Mote any fish observations Issue Waterbody Notes Trapezoidal Chan Surficial Drainage (i.e. furrows) Dugout F Dugout F | Boulder Other_ inant vegetation, mature Image: Comple (SP, Sugar meple Image: Comple / PU Image: Comple undwater upwellings) Image: Comple Image: Comple Image: Comple Image: Comple< | or early succession | al) ed Tile |

| ject Number $1609 60734$ bitos $530-6$ | Wind Farm Station Number / | 0-31 |
|---|--|--|
| | Pass No. (if applicabl <u>e)</u> ろみ Date (yyyymmdd): ブル | |
| | | f dem + ~ |
| | ast of McKan rd. | |
| | | orthing zone <u>16</u> T |
| ning Method (circle one): | Backpack Boat Unit Model/Make | \frown |
| npling Method (errcle one). | | ot |
| ort (Electrofishing Seconds): | Number of Netters: Numb | er of Anodes: |
| tings | | |
| quenov (Hz) Vol | age (volts) Current (Amps) Power | (Watts) |
| tion Information | | 2 trap 5 set Set: July 9, 2012 Pet: July 10; 201 |
| ngth of Stream Surveyed (m) | Lake bang | Det: July 10; 201 |
| | th (m): Range Average: | V |
| Traps= Del | th (m): Range <u>0.4-0.8</u> Average: <u>0</u> | <u> </u> |
| ter Clarity/Colour: +ea | CO(01) / Water Velocity if Measured (m/s): | N)4 Time 14:30 |
| Temperature (°C) | Conductivity (uS/cm) | <u>67</u> |
| pH 7.09 | Dissolved Oxygen (mg/L) | |
| | | 8.23 |
| ch Daia | | X 23 Domments (i.e. age, disease, etc): |
| | | |
| ich Daia ecies | | |
| ich Daia ecles Heat fro of <u>Cong</u> | | |
| ich Daia ecles Heat fro of <u>Cong</u> | | |
| ich Daia ecies h riok (root) (6 fong) Aol Soch (root) | | |
| ich Daia ecies h riok (root) (6 fong) Aol Soch (root) | | |
| ich Daia ecies h riok (root) (6 foag) Aol Soch (root) | | |
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| ich Daia ecies h riok (root) (6 foag) Aol Soch (root) | | |
| ich Daia ecies h riok (root) (6 foag) Aol Soch (root) | | |
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| ich Daia ecies h riok (root) (6 foag) Aol Soch (root) | | |

NWB



| Station # 9A-2 | Project Name Bur Lala |
|--|--|
| Watercourse Name unnew | Project # 16016077/ |
| Photos war | Field Staff Jor Keen Mortal Ellal |
| Date $\frac{2012}{08/28}$ | Time 6'00 km |
| | om efog inam |
| GPS Coordinates (Zone) <u>lbT</u> , <u>E</u> <u>b</u> <u>8</u> <u>4</u> <u>1</u> <u>4</u> <u>1</u> | N 5234599 Datum NPD 83 |
| Descriptive Location South State of Mickey Pd. | South of 10-22, 1250 - east of dam |
| |) |
| Water Quality | |
| Dissolved Oxygen (mg/L) pH | Conductivity (µS/cm) NM |
| Water Temperature (°C) | Air Temperature (°C) 23°C |
| Time in situ measurements taken | |
| Watercourse Dimensions & Morphology | |
| Mean Watercourse Width(m) | Maximum Pool Depth(cm) |
| Mean Bankfull Width (m) | Mean Water Depth(cm) |
| <u> </u> | ol% Run% Flat |
| Evidence of eroding banks, Comments on bank sta | ability |
| | - leaf litter; soil |
| Substrate (% cover) | |
| BedrockCobble | |
| BoulderGravel | GlayMarlDetritus |
| In-water Cover | |
| | iks Deep Pool Watercress Aquatic Veg |
| Overhanging Vegetation Woody Debris | |
| eventurigitig vogetation 11000 2000 | |
| Riparian Zone | |
| Riparian Cover (% of watercourse shaded, domina Mether Morred fires & - 90% | int vegetation, mature or early successional) |
| | |
| Adjacent Land Use Miley Ad & Netheral Forst | ······ |
| | |
| Fish Habitat Potential | hustor unuallings) |
| Critical Habitat (spawning or nursery areas, ground | iwater upwenings) |
| Migratory Obstructions (seasonal, permanent) | |
| us clarnel | |
| Note any fish observations | |
| | |
| Waterbody Notes | |
| Natural Watercourse Trapezoidal Channel | Grassed Swale Buried Tile |
| Surficial Drainage (i.e. furrows) Dugout Pon | |
| • • • • • • • • • • | |
| Other Habitat Notes, Incidental Wildlife Observer | ations, etc. Nota HDA WB - no clannel |
| not present within zone of mentionation | A the second sec |
| | |
| ∩ 11/ | and cold |
| Field Notes Authored by Field Notes | SQA/QCed by |



| Stantec | |
|---|--|
| Station # 10-22 | Project Name Bow Lake Wind Farm |
| Watercourse Name <u>Ulnamed</u> Pond | Project $# 1609 60734$ |
| Photos 10:44, 1045 | Field Staff M. Johns, M. Ellah |
| Date July 7/12 | Time 15:30 |
| Weather conditions in previous 24 hrs mix Su | in a cloud, light rain last night |
| GPS Coordinates (Zone) 16T E 68412 | 3.3 N.5234664 Datum NAD83 |
| Descriptive Location Small pand on N | orth side of soud, beneath |
| hydo towers/line | |
| | |
| Water Quality | $\leq 2/2$ Conductivity (u.C.(cm)) 19 |
| Dissolved Oxygen (mg/L) 5.58 pH_ | $2.5 \oplus$ Conductivity (µS/cm) (|
| Water Temperature (°C) <u>30.</u> Time <i>in situ</i> measurements taken 15:30 | Air Temperature (°C) ~ 26°C (+5+:matel) > 27.5 measured |
| Time <i>in situ</i> measurements taken15:30 | A 27.5 measured |
| Watercourse Dimensions & Morphology | -POND Max Pond Dopth |
| Mean Watercourse Width (m) | Maximum Pool Depth 0.8 m (cm) |
| Mean Bankfull Width (m) | Mean Water Depth(cm) |
| | Pool% Run% Flat |
| Evidence of eroding banks, Comments on bank | stability |
| 8 | |
| Substrate (% cover) | |
| Bedrock Cobble | Sand Silt Muck |
| Boulder Gravel | Clay Marl 100 Detritus |
| | |
| In-water Cover Nort Applicab | e |
| Cover Types Present (circle): Undercut D | allks Deep Fool Watercress Aqualic vey |
| Overhanging Vegetation Woody Debris | Boulder Other |
| Riparian Zone | |
| Riparian Cover (% of watercourse shaded, domi | nant vegetation, mature or early successional) |
| δ''_{k} | |
| Adjacent Land Use | |
| Hydro costidos, soudway | |
| | |
| Fish Habitat Potential | |
| Critical Habitat (spawning or nursery areas, grou | undwater upwellings) |
| None | |
| Migratory Obstructions (seasonal, permanent) | |
| Not Applicable (soad bloc | KS downstream flow to Uclley |
| Note any fish observations $N_{a} + N_{a}$ | t tish habitat |
| | <u></u> |
| Waterbody Notes -> Small Panl | |
| Natural Watercourse Trapezoidal Chann | nel Grassed Swale Buried Tile |
| Surficial Drainage (i.e. furrows) Dugout P | · · |
| | |
| Other Habitat Notes, Incidental Wildlife Obse | |
| Adult eastern newt, green F. | cosis, drasen Fly symph- |
| Temperatures re-adecked. | Pord is unkimler |
| than air temperature. | |
| | otes QA/QCed by MEUah |
| Field Notes Authored by Mike Jehns Field No | otes QA/QCed by /////////////////////////////////// |

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WIND FARM WATERBODY RAPID ASSESSMENT FORM

| Station # 10 - 14 | Project Name Bow Lake Wind Farm |
|---|--|
| Watercourse Name Un name d | Project # 1609 60734 |
| Photos 0982 - 0985 | Field Staff MELLAL MJOHNS |
| | Time_15:40 |
| Date July 6/12 | |
| Weather conditions in previous 24 hrs sunny, hot | a numia, no precip, haw wind NW |
| GPS Coordinates (Zone) 16T E 684318 | N 5234730 Datum NA083 |
| Descriptive Location <u>northeast</u> of current | t road that runs along Montreal River Hogg Dam Road. |
| | \sim |
| Water Quality | - 20 |
| | 5.39 Conductivity (μ S/cm) 28 |
| Water Temperature (°C) <u>37.93</u> | Air Temperature (°C) <u>25°C</u> |
| Time in situ measurements taken 15:55 | |
| Weterscures Dimensions & Mernhology | |
| Watercourse Dimensions & Morphology | Maximum Pool Depth 200 (cm) |
| Mean Watercourse Width <u>Pon d</u> (m) | |
| | Mean Water Depth 150 (cm) |
| % Riffle% Poc | |
| Evidence of eroding banks, Comments on bank sta | ability |
| Sand section of shoreline erodin. | g into pond - other banks stable |
| | |
| Substrate (% cover) | 30 Sand 20 Silt Muck |
| | |
| BoulderGravel | ClayMarlDetritus |
| | |
| In-weige Cover | |
| Cover Types Present (circle): Undercut Ban | |
| Overhanging Vegetation (Woody Debris) | Boulder Other |
| | |
| Riparian Zone | |
| Riparian Cover (% of watercourse shaded, domina | nt vegetation, mature or early successional) |
| 06 - Sumounding forest m | ixed, white pine, white spruce, red maple |
| Adjacent Land Use | |
| roadside, hydrolines, forest | |
| · · · · · · · · · · · · · · · · · · · | and the first first state of the second |
| Fish Habitat Potential | i i i i i i i i i i i i i i i i i i i |
| Critical Habitat (spawning or nursery areas(ground | lwater upwellings)> |
| possible groundwater source - sta | ined substrate iron colour |
| Migratory Obstructions (seasonal, permanent) | |
| natural dam, road + cutvent | |
| Note any fish observations hone | |
| | |
| | |
| | |
| Waterbody Notes | |
| Waterbody Notes | Grassed Swale Buried Tile |
| Natural Watercourse // Trapezoidal Channel | |
| | |
| Natural Watercourse Trapezoidal Channel Surficial Drainage (i.e. furrows) Dugout Pon | d Dominated by Aquatic Veg Dry |
| Natural Watercourse Trapezoidal Channel Surficial Drainage (i.e. furrows) Dugout Pon Other Habitat Notes, Incidental Wildlife Observa | d Dominated by Aquatic Veg Dry |
| Natural Watercourse Trapezoidal Channel Surficial Drainage (i.e. furrows) Dugout Pon Other Habitat Notes, Incidental Wildlife Observa | d Dominated by Aquatic Veg Dry ations, etc. 1 toad tadpoles are then tadpoles |
| Natural Watercourse Trapezoidal Channel Surficial Drainage (i.e. furrows) Dugout Pon Other Habitat Notes, Incidental Wildlife Observa | d Dominated by Aquatic Veg Dry ations, etc. 1 toad tadpoles are then tadpoles |
| Natural Watercourse Trapezoidal Channel Surficial Drainage (i.e. furrows) Dugout Pon Other Habitat Notes, Incidental Wildlife Observa | d Dominated by Aquatic Veg Dry ations, etc. 1 toad tadpoles are than tadpoles |
| Natural Watercourse Trapezoidal Channel Surficial Drainage (i.e. furrows) Dugout Pon Other Habitat Notes, Incidental Wildlife Observa green from wood from An #D and pond hydrolegically connec | d Dominated by Aquatic Veg Dry ations, etc. 1 foud fact poles areen from tadpoles ted to "pond (10-14") survey to ation |
| Natural Watercourse Trapezoidal Channel Surficial Drainage (i.e. furrows) Dugout Pon Other Habitat Notes, Incidental Wildlife Observa green from wood trop An Bard pond hydrolegically con nee | d Dominated by Aquatic Veg Dry ations, etc. 1 toad tadpoles are then tadpoles |

| Project Name <u>Bow Lake</u> | Wind Farm | Station Number _/ | 0-14 | |
|--|---------------------------------------|--|------------------------------------|---|
| Project Number 1609 60734 | | Pass No. (if applicable | e) | |
| Photos 0982 - 09 | 185 | Date (yyyymmdd): | July | 12 |
| Descriptive Location North 52 | currently used | road which i | 5 along 1 | Montreal R |
| | <u></u> | | | |
| UTM coordinates 684318 Way point 10-14 | easting <u>5</u> | 5234730 | northing | zone 16- |
| Fishing Method (circle one): | 3×5 Backpack Bo | at Unit Model/M | lake | • |
| Sampling Method (circle one): | even habitat | transect | spot | |
| Effort (Electrofishing Seconds): | Number of Nette | ers: | Number of Anode | es: |
| Settings | | | | |
| | tage (volts) Cu | irrent (Amps) | Power (Watts) | |
| Station Information | • • • • • • • • • • • • • • • • • • • | | | |
| Length of Stream Surveyed (m) | 20 | | | |
| | ith (m): Range <u>7</u> - | Average: | pond | |
| Der | oth (m): Range <u>0.5</u> | ´- み Average: ′ | 1.5 | |
| | | | | tonacal |
| Temperature (°C) 25.2 nH 6.32 | | Velocity if Measured (m/s): Conductivity (uS/cm) Dissolved Oxygen (mg/L) | | trapset Time <u>15:</u> trap Lift 9:30 |
| Temperature (°C) <u>25.2</u> pH <u>6.32</u> Catch Data | | Conductivity (uS/cm) | <u> </u> | trap litt 9:30 |
| Temperature (°C) <u>25.2</u> pH <u>6.32</u> Catch Data Species | Number of Fish | Conductivity (uS/cm) | $\frac{14}{7 \cdot 25}$ Comments (| trap lift 9:30 |
| Temperature (°C) <u>25.2</u> nH <u>6.32</u> Catch Data Species giant water beet le | Number of Fish | Conductivity (uS/cm) | <u> </u> | trap lift 9:30 |
| Temperature (°C) <u>25.2</u> pH <u>6.32</u> Catch Data Species green twog(GF) + ad pole | Number of Fish | Conductivity (uS/cm) | $\frac{14}{7 \cdot 25}$ Comments (| trap lift 9:30 |
| Temperature (°C) <u>25.2</u> nH <u>6.32</u> Catch Data Species giant water beet le green trog (GF) + ad pole green frog & GF tadpole, giant work | Number of Fish | Conductivity (uS/cm) | $\frac{14}{7 \cdot 25}$ Comments (| trap lift 9:30 |
| Temperature (°C) <u>25.2</u> pH <u>6.32</u> Catch Data Species giant water beet le green trog(GF) + ad pole green frog & GF + ad pole, giont work n toad fad pole | Number of Fish O O O O | Conductivity (uS/cm) | $\frac{14}{7 \cdot 25}$ Comments (| trap lift 9:30 |
| Temperature (°C) <u>25.2</u> nH <u>6.32</u> Catch Data Species giant water beet le green trog (GF) + ad pole green frog & GF tadpole, giant work | Number of Fish O O O | Conductivity (uS/cm) | $\frac{14}{7 \cdot 25}$ Comments (| trap lift 9:30 |
| Temperature (°C) <u>25.2</u> pH <u>6.32</u> Catch Data Species giant water beet le green trog(GF) + ad pole green frog & GF + ad pole, giont work n toad fad pole | Number of Fish O O O O | Conductivity (uS/cm) | $\frac{14}{7 \cdot 25}$ Comments (| trap lift 9:30 |
| Temperature (°C) <u>25.2</u> pH <u>6.32</u> Catch Data Species giant water beet le green trog(GF) + ad pole green frog & GF + ad pole, giont work n toad fad pole | Number of Fish O O O O | Conductivity (uS/cm) | $\frac{14}{7 \cdot 25}$ Comments (| trap lift 9:30 |
| Temperature (°C) <u>25.2</u> pH <u>6.32</u> Catch Data Species giant water beet le green trog(GF) + ad pole green frog & GF + ad pole, giont work n toad fad pole | Number of Fish O O O O | Conductivity (uS/cm) | $\frac{14}{7 \cdot 25}$ Comments (| trap lift 9:30 |
| Temperature (°C) <u>25.2</u> pH <u>6.32</u> Catch Data Species giant water beet le green trog(GF) + ad pole green frog & GF + ad pole, giont work n toad fad pole | Number of Fish O O O O | Conductivity (uS/cm) | $\frac{14}{7 \cdot 25}$ Comments (| trap lift 9:30 |
| Temperature (°C) <u>25.2</u> pH <u>6.32</u> Catch Data Species giant water beet le green trog(GF) + ad pole green frog & GF + ad pole, giont work n toad fad pole | Number of Fish O O O O | Conductivity (uS/cm) | $\frac{14}{7 \cdot 25}$ Comments (| trap lift 9:30 |
| Temperature (°C) pH <u>6.32</u> Catch Data Species grant water beet le green trog (GF) + ad pole green trog & GF + tadpole, growtwate h. toad fadpole | Number of Fish O O O O | Conductivity (uS/cm) | $\frac{14}{7 \cdot 25}$ Comments (| trap lift 9:30 |
| Temperature (°C) <u>25.2</u> pH <u>6.32</u> Catch Data Species giant water beet le green trog(GF) + ad pole green frog & GF + ad pole, giont work n toad fad pole | Number of Fish O O O O | Conductivity (uS/cm) | $\frac{14}{7 \cdot 25}$ Comments (| trap lift 9:30 |
| Temperature (°C) pH <u>6.32</u> Catch Data Species grant water beet le green trog (GF) + ad pole green trog & GF + tadpole, growtwate h. toad fadpole | Number of Fish O O O O | Conductivity (uS/cm) | $\frac{14}{7 \cdot 25}$ Comments (| trap lift 9:30 |
| Temperature (°C) pH <u>6.32</u> Catch Data Species grant water beet le green trog (GF) + ad pole green trog & GF tadpole, growtwate h. toad fadpole | Number of Fish O O O O | Conductivity (uS/cm) | $\frac{14}{7 \cdot 25}$ Comments (| trap lift 9:30 |
| Temperature (°C) pH <u>6.32</u> Catch Data Species grant water beet le green trog (GF) + ad pole green trog & GF + tadpole, growtwate h. toad fadpole | Number of Fish O O O O | Conductivity (uS/cm) | $\frac{14}{7 \cdot 25}$ Comments (| trap lift 9:30 |

10-27 2/15-0685000 5234750



WIND FARM WATERBODY RAPID ASSESSMENT FORM

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| Stantet |
|--|
| Station # 10-27 Project Name Bow Lake Wind Farm |
| Watercourse Name un Known Project $\# 1609.60734$ |
| Photos 616-520 Field Staff NG, MF |
| Date $July 9/12$ Time 12.10 |
| Weather conditions in previous 24 hrs no precip: Hot+ mukan (28°2) |
| GPS Coordinates (Zone) 16T E Datum NA083 |
| Descriptive Location <u>On McKa</u> rd~ 1.3 Km west of proposed |
| Substation + -170 m north of Montreal KV. |
| JUDJIANUTA TO M NOTAN & INDINICAL MY |
| Water Quality |
| Dissolved Oxygen (mg/L) 3.30 pH 7.27 Conductivity (μ S/cm) 3.3 |
| Water Temperature (°C) 47 / Air Temperature (°C) 27°C |
| Time in situ measurements taken 12:20 |
| |
| Watercourse Dimensions & Morphology |
| Mean Watercourse Width 0.7 (m) Maximum Pool Depth 15 (cm) |
| Mean Bankfull Width 2, 0 (m) Mean Water Depth 2 (cm) |
| <u>30</u> % Riffle <u>10</u> % Pool <u>60</u> % Run% Flat |
| Evidence of eroding banks, Comments on bank stability Minor under Lot banks |
| |
| Substrate (% cover) |
| Bedrock <u>3</u> Cobble <u>30</u> Sand Silt Muck |
| Boulder 30 Gravel Clay Marl 10 Detritus |
| |
| In-water Covar |
| Cover Types Present (circle): Undercut Banks Deep Pool Watercress Aquatic Veg |
| Overhanging Vegetation Woody Debris Boulder Other |
| Riparian Zone |
| Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional) |
| 100% suzar maple, Pern sp, yellow brich |
| Adjacent Land Lice |
| McKun Rd, Hydro Conidor |
| |
| Fish Habitat Potential |
| Critical Habitat (spawning or nursery areas, groundwater upwellings) |
| soawn |
| Migratory Obstructions (seasonal, permanent) |
| perched culvert manbe steep gradient |
| Note any fish observations |
| |
| W-to-the du Mater |
| Waterbody Notes Natural Watercourse Trapezoidal Channel Grassed Swale Buried Tile |
| |
| Surficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Dry |
| Other Habitat Notes, Incidental Wildlife Observations, etc. |
| Direct, formaning $10 - 27 \ 4/s = 0685/93 \ 5234427$ |
| 10-27 d/s = 0685000, 5234750 |
| <u> </u> |
| |
| Field Notes Authored by Field Notes QA/QCed by |
| the second secon |

| 10-04 · 00 = 000 = 010 · 70-01 |
|--|
| 10-29 9/5=0685208 5234667 |
| |
| Stantec WIND FARM WATERBODT RAPID ASSESSMENT FORM 700 1000 to Fish |
| Station # 10-29 Project Name Bow Lake Wind Farm |
| Watercourse Name unknown Project # 1609 60734 |
| Photos <u>524-526</u> Field Staff <u>NB mF</u> |
| Date $\int U y A A$ Time $ 2 : 55$ |
| Weather conditions in previous 24 hrs No Precip. Hot, Muss (28°c) GPS Coordinates (Zone) 16T E No Datum NH083 |
| Descriptive Location <u>Runs along north</u> ditch to Mckg. cd |
| Water Quality |
| Dissolved Oxygen (mg/L) $\frac{9,33}{10.71}$ pH $\frac{7.00}{10.71}$ Conductivity (μ S/cm) $\frac{52}{10.72}$ Water Temperature (°C) $\frac{10.71}{10.71}$ Air Temperature (°C) $\frac{2.72}{2}$ |
| Water Temperature (°C)/0 ? Air Temperature (°C)2? Time in situ measurements taken0: 50 |
| Watercourse Dimensions & Morphology |
| Mean Watercourse Width 0.4 (m) Maximum Pool Depth 5 (cm) |
| Mean Bankfull Width <u>0,5 (m)</u> Mean Water Depth <u>ス (cm)</u> <i>10</i> % Riffle <u>59</u> % Pool <u>% Run 2</u> % Flat |
| Evidence of eroding banks, Comments on bank stability |
| |
| Substrate (% cover) |
| BedrockZoCobbleZoSandSiltMuck |
| Boulder <u>30</u> Gravel Clay <u>Marl 30</u> Detritus |
| In-water Cover |
| Cover Types Present (circle): Undercut Banks Deep Pool Watercress Aquatic Veg |
| Overhanging Vegetation Woody Debris Boulder Other |
| Riparian Zone |
| Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional) |
| 80% sugar maple, fish sp |
| Adjacent Land Use McKan Rol |
| |
| Fish Habitat Potential |
| Critical Habitat (spawning or nursery areas, groundwater upwellings) |
| Migratory Obstructions (seasonal, permanent) |
| Note any fish observations work |
| |
| Waterbody Notes |
| Natural Watercourse V Trapezoidal Channel V Grassed Swale Buried Tile |
| Surficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Dry |
| Other Habitat Notes, Incidental Wildlife Observations, etc. |
| 10-29 U/S = 0685095 5234614 10-29 d/S = 0685208, 5234667 |
| 10 27 412 - 0603 |
| (M) |
| Field Notes Authored by MF Field Notes QA/QCed by B |
| W:\resource\Internal Info and Teams\Aquatic Resources\Field Sheets\Stantec\Form 02 Wind Farm Waterbody Rapid Assessment Form.doc |

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| | WIND FARM W | | | | Too she |
|--|---|--|--|---|--|
| Stantec | | | | | to fis |
| | 10 0 B | - | 0 | 1 K. K.D. I | E |
| Station # | | Pr | oject Name <u>Bow</u> oject # 1609 6 | ARE WIND | rarm |
| Photos5 | Name <u>unknown</u> | | eld Staff <u>NB, M</u> | | |
| Date Julu | 1/12 | Ti | me 12:30 | | |
| Neather cond | itions in previous 24 hrs | s no pricip. 1 | tot and muych (| 28.0) | |
| | | | | | Datum NAD8 |
| Descriptive Lo | cation bn McKa | ing kal ~ lié | km west of | proposed | SUDStatio |
| Water Qualit | | 1 | | | A |
| Dissolved Oxy | rgen (mg/L) <u>9,41</u> | | 4 Conductivity | | <u>Q</u> |
| | rature (°C) <u>11.02</u> | AI | r Temperature (°C) | dfu | |
| nine <i>In Situ</i> IT | easurements taken | | | | |
| Watercourse | Dimensions & Morphe | ology | | | <i>(</i> |
| Mean Waterc | burse Width | (m) M | aximum Pool Depth ean Water Depth | | (cm) (cm) |
| | Width <u>///</u> % Riffle Z | (m) M <i>い</i> % Pool | | %,Run | (cm) % Fl |
| | roding banks, Commen | | | | |
| | | · . | | | |
| Substrate (% | cover) | | | | |
| | | a | | 0.11 | |
| | Bedrock 40 | Cobble3 D | | Silt | Muck |
| 1D | | Gravel | Sand Clay | Sitt Marl | |
| | Boulder | | | | |
| in weiter Cou | Boulder | Gravel | | | 20 Detritu |
| in vote: Cou Cover Types | Boulder Present (circle): | Gravel | Clay | Marl | 20 Detritus |
| in water Cov Cover Types Overhanging | Boulder Present (circle): Vegetation Woody | Gravel | Clay Deep Pool | Marl | |
| in water Cov Cover Types Overhanging Riparian Zon | Boulder Present (circle): Vegetation Woody | Gravel Undercut Banks Debris G | Clay Deep Pool DulderOther_ | Marl Watercress | 20 Detritu: |
| Cover Types Overhanging Riparian Zon Riparian Cove | Boulder Present (circle): Vegetation Woody e er (% of watercourse sha (maple , fan 50 | Gravel Undercut Banks Debris Br aded, dominant v | Clay Deep Pool DulderOther_ | Marl Watercress | 20 Detritu: |
| in water Cov Cover Types Overhanging Riparian Cove ロワグの らいの Adjacent Land | Boulder Present (circle): Vegetation Woody e e r (% of watercourse shi (| Gravel Undercut Banks Debris Br aded, dominant v | Clay Deep Pool oulder Other vegetation, mature of | Marl Watercress | 20 Detritu |
| Cover Types Overhanging Riparian Zon Riparian Cove | Boulder Present (circle): Vegetation Woody e e r (% of watercourse shi (| Gravel Undercut Banks Debris Br aded, dominant v | Clay Deep Pool oulder Other vegetation, mature of | Marl Watercress | 20 Detritu |
| Cover Types Overhanging Riparian Zon Riparian Cove 100% Sunc Adjacent Laho McKan | Boulder Present (circle): Vegetation Woody e er (% of watercourse sha (maple , fan 5p I Use | Gravel Undercut Banks Debris Br aded, dominant v | Clay Deep Pool oulder Other vegetation, mature of | Marl Watercress | 20 Detritu: |
| Cover Types Overhanging Riparian Zon Riparian Cove ID ^O Suga Adjacent Lan McKan Fish Habitat | Boulder Present (circle): Vegetation Woody e er (% of watercourse sha (maple, fan 5p I Use d - Potential | Gravel | Clay Deep Pool oulder Other vegetation, mature of | Marl Watercress | 20 Detritu: |
| Cover Types Overhanging Riparian Cove IDD 6 Suga Adjacent Lan McKan Fish Habitat Critical Habitat | Boulder Present (circle): Vegetation Woody e er (% of watercourse shi (maple, fan 5p I Use d Potential t (spawning or nursery | Gravel | Clay Deep Pool oulder Other_ vegetation, mature of ter upwellings) | Marl Watercress | 20 Detritu: |
| Riparian Cover Overhanging Riparian Cover IDO / O Go go Adjacent Land McKan Fish Habitat Critical Habitat Mone - A Migratory Obs | Boulder Present (circle): Vegetation Woody e er (% of watercourse sha (maple , fan 5p I Use d Potential t (spawning or nursery Samea(5 v notecon) barea(5 | Gravel Undercut Banks Debris Ba aded, dominant w areas, groundwa | Clay Deep Pool oulder Other_ vegetation, mature of ter upwellings) | Marl Watercress | 20 Detritu |
| Riparian Cover Overhanging Riparian Cover IDO / O Go go Adjacent Land McKan Fish Habitat Critical Habitat Mone - A Migratory Obs | Boulder Present (circle): Vegetation Woody e er (% of watercourse sha (maple , fan 5p I Use d Potential t (spawning or nursery Samea(5 v notecon) barea(5 | Gravel Undercut Banks Debris Ba aded, dominant w areas, groundwa | Clay Deep Pool oulder Other_ vegetation, mature of ter upwellings) | Marl Watercress | 20 Detritu |
| Riparian Cover Overhanging Riparian Cover IDO / O Go go Adjacent Land McKan Fish Habitat Critical Habitat None - A Migratory Obs | Boulder Present (circle): Vegetation Woody e er (% of watercourse shi (maple, fan 5p I Use d Potential t (spawning or nursery Sapecies v nder are tructions (seasonal be | Gravel Undercut Banks Debris Ba aded, dominant w areas, groundwa | Clay Deep Pool oulder Other_ vegetation, mature of ter upwellings) | Marl Watercress | 20 Detritu: |
| Riparian Cover Overhanging Riparian Cove IDU/0 Gund Adjacent Land McKan Fish Habitat Critical Habitat Critical Habitat Migratory Obs Under Scout Note any fish | Boulder Present (circle): Vegetation Woody e er (% of watercourse sha (maple, fan 5p I Use d Potential t (spawning or nursery Sapecies vinder or of tructions (seasonal, pe d observations <u>Nan</u> | Gravel Undercut Banks Debris Ba aded, dominant w areas, groundwa | Clay Deep Pool oulder Other_ vegetation, mature of ter upwellings) | Marl Watercress | 20 Detritu |
| Riparian Zon Riparian Zon Riparian Cove IDU/0 Sund Adjacent Lan McKan Fish Habitat Critical Habitat None Q Migratory Obs Undet Sour Note any fish | Boulder Present (circle): Vegetation Woody e er (% of watercourse sha (maple, fan 5p I Use d Potential t (spawning or nursery Sapears vnder are but observations (seasonal, pe d observations Man | Gravel Undercut Banks Debris Br aded, dominant w areas, groundwa www.l. be to y rmanent) | Clay Deep Pool oulder Other_ vegetation, mature of ter upwellings) McVu_fu | Marl Watercress or early success | 20 Detritu: Aquatic Veg ional) |
| Riparian Zon Riparian Zon Riparian Cove IDU/0 Sund Adjacent Lan McKan Fish Habitat Critical Habitat None Q Migratory Obs UNUE (00) Note any fish Waterbody N Natural Wate | Boulder Present (circle): Vegetation Woody e er (% of watercourse sha (maple , fan 5p d Use d Use d Detential t (spawning or nursery Sapta (5 v nd e mar bar bar (5 v nd e mar bar (5 v nd e mar) bar | Gravel Undercut Banks Debris Ba aded, dominant w areas, groundwa www.lockory manent) | Clay Deep Pool Oulder Other_ vegetation, mature of ter upwellings) McKuRd Grassed St | Marl Watercress or early success | 20 Detritus Aquatic Veg ional) Buried Tile |
| Riparian Zon Riparian Zon Riparian Cove IDU/0 Sund Adjacent Lan McKan Fish Habitat Critical Habitat Mone d Migratory Obs Under South Note any fish Waterbody N Natural Wate | Boulder Present (circle): Vegetation Woody e er (% of watercourse sha (maple, fan 5p I Use d Potential t (spawning or nursery Sapears vnder are but observations (seasonal, pe d observations Man | Gravel Undercut Banks Debris Ba aded, dominant w areas, groundwa www.lockory manent) | Clay Deep Pool Oulder Other_ vegetation, mature of ter upwellings) McKuRd Grassed St | Marl Watercress or early success | 20 Detritu: Aquatic Veg ional) Buried Tile |
| Riparian Cov Overhanging Riparian Cove IDU/O Suga Adjacent Lan Mckau Fish Habitat Critical Habitat Critical Habitat Migratory Obs UNUC Scou Note any fish Waterbody N Natural Wate Surficial Drain | Boulder Present (circle): Vegetation Woody e er (% of watercourse sha (maple, fan 5p d Use d Use d Votential t (spawning or nursery Same a sonal, pe d observations <u>Name</u> otes course Trapezo age (i.e. furrows) | Gravel Undercut Banks Debris Br aded, dominant v areas, groundwa www.lockory manent) u bidal Channel Dugout Pond_ dlife Observatio | Clay Deep Pool oulder Other /egetation, mature of ter upwellings) McVuRd Grassed St Grassed St Dominated b | Marl Watercress or early success waleE y Aquatic Veg_ | Aquatic Veg ional) Buried Tile |
| Riparian Cov Over Types Overhanging Riparian Cove IDONO Suga Adjacent Land McKau Fish Habitat Critical Habitat Critical Habitat Migratory Obs UNDE any fish Waterbody N Natural Wate Surficial Drain | Boulder Present (circle): Vegetation Woody e er (% of watercourse sha (maple, fan 59 I Use d Potential t (spawning or nursery Sapears vnder min Sapears vnder min bernotions (seasonal, per observations Nen observations Nen otes course Trapezon age (i.e. furrows) t Notes, Incidental Wil /0 - | Gravel Undercut Banks Debris Ba aded, dominant w areas, groundwa www.l. betory rmanent) w bidal Channel Dugout Pond dlife Observation 28 4/5 = | Clay Deep Pool oulder Other /egetation, mature of ter upwellings) McVuRU Grassed St Dominated b | Marl Watercress or early success wale E y Aquatic Veg | 20 Detritu: Aquatic Veg ional) Buried Tile Dry |
| Riparian Cov Over Types Overhanging Riparian Cove IDONO Suga Adjacent Land McKau Fish Habitat Critical Habitat Critical Habitat Migratory Obs UNDE any fish Waterbody N Natural Wate Surficial Drain | Boulder Present (circle): Vegetation Woody e er (% of watercourse sha (maple, fan 59 I Use d Potential t (spawning or nursery Sapears vnder min Sapears vnder min bernotions (seasonal, per observations Nen observations Nen otes course Trapezon age (i.e. furrows) t Notes, Incidental Wil /0 - | Gravel Undercut Banks Debris Ba aded, dominant w areas, groundwa www.l. Vetory rmanent) w bidal Channel Dugout Pond dlife Observation 28 4/5 = | Clay Deep Pool oulder Other /egetation, mature of ter upwellings) McVuRd Grassed St Grassed St Dominated b | Marl Watercress or early success wale E y Aquatic Veg | 20 Detritu: Aquatic Veg ional) Buried Tile Dry |
| Riparian Zon Riparian Zon Riparian Cove IDU/0 Sumo Adjacent Land McKau Fish Habitat Critical Habitat Mone any fish Waterbody N Note any fish Waterbody N Natural Wate Surficial Drain | Boulder Present (circle): Vegetation Woody e er (% of watercourse sha (maple, fan 59 I Use d Potential t (spawning or nursery Sapears vnder min Sapears vnder min bernotions (seasonal, per observations Nen observations Nen otes course Trapezon age (i.e. furrows) t Notes, Incidental Wil /0 - | Gravel Undercut Banks Debris B_{a} aded, dominant was areas, groundwa areas, groundwa B_{a} areas, groundwa B_{a} areas, groundwa B_{a} B_{a} aded, dominant was B_{a} aded, dominant was B_{a} B_{a} aded, dominant was B_{a} | Clay Deep Pool pulder Other vegetation, mature of ter upwellings) $M_{c}V_{u}$, R^{d} Grassed St Dominated b pns, etc 0685 2.52 52 52 0685 2.52 52 52 | Marl Watercress or early success wale E y Aquatic Veg | 20 Detritu: Aquatic Veg ional) Buried Tile Dry |

| | | | RAPID ASSES | | dis cviv |
|--|--|--|--|--|---------------------------------------|
| Stantec | | | | | Als culu dls Mck |
| Station #/ | 0-25 | | Project Name Bon | s Lake Wind | |
| Watercourse N | ame <u>unknown tr</u> | 6 to Mont. Ru | Project # 1609 | 60734 | |
| Photos 5 Date July | | 1- 5/1 | Field Staff <u>NB,r</u> Time <u>II:ro</u> | <u>η</u> μ | |
| Weather condition | tions in previous 24 | hrs no precip. | Hot, mus 8 2 22 08 N 8 | 5°2 / | >MT tray |
| GPS Coordinat | tes (Zone) 161 | E 06893 | 08 N 6 | 0234772 D | atum NADS: |
| Substation | | y ru (1055) | ng - 300m | west st p | i o posoa |
| Water Quality | | | | | |
| Dissolved Oxy | gen (ma/L) 9,79 | pH 7 | r,13 Conductivi Air Temperature (°C | ty (μS/cm) <u>54</u> | · · · · · · · · · · · · · · · · · · · |
| Water Tempera | ature (°C) <u>12</u> . | 20 | Air Temperature (°C | C) _ 28°2 | |
| l ime <i>in situ</i> me | easurements taken_ | <u> </u> | | | |
| Watercourse I | Dimensions & Mor | phology | Maximum Pool Dep | th 60 (c | m) |
| viean vvaterco Mean Bankfull | urse Width 2,5 Width 4,5 | (m) | Mean Water Depth | | m) m) |
| 40 | % Riffle | _/D% Poo | 40 | % Run | <u>ن ۲</u> % F |
| Evidence of ero | oding banks, Comm | ients on bank sta | bility <u>Now</u> | Mod un | ndut |
| Substrate (% | | | 0_ | | |
| and the second sec | Bedrock <u>30</u> Boulder 30 | Cobble Gravel | Sand Clay | Silt Marl | Muck Detritu |
| 11.3 | | | | | |
| | | | Olay | | Botinta |
| n-water Cove | r | | | | |
| n-water Cove Cover Types P | r resent (circle): | Undercut Banl | Clay Boulder Other | > Watercress | |
| in-water Cove Cover Types P Overhanging V | r resent (circle): egetation Woo | Undercut Banl | S Deep Pool | > Watercress | |
| Cover Types P Overhanging V Riparian Zone Biparian Cover | r resent (circle): egetation Woo | Undercut Banl dy Debris | Boulder Othe | > Watercress | Aquatic Vec |
| Cover Types P Overhanging V Riparian Zone Riparian Cover | r egetation Woo (% of watercourse | Undercut Banl dy Debris shaded, dominar | Boulder Other Boulder Other Deep Pool | > Watercress | Aquatic Vec |
| Cover Types P Overhanging V Overhanging V Riparian Zone Riparian Cover | r egetation Woo (% of watercourse | Undercut Banl dy Debris shaded, dominar | Boulder Other Boulder Other Deep Pool | > Watercress | Aquatic Veç |
| Cover Types P Overhanging V Riparian Zone Riparian Cover 80% Moun Adjacent Land McKay K | r resent (circle): egetation Woo (% of watercourse <u>Hain Maple,</u> Use 2d, <u>Hydro co</u> | Undercut Banl dy Debris shaded, dominar | Boulder Other Boulder Other Deep Pool | > Watercress | Aquatic Vec |
| Cover Types P Overhanging V Riparian Zone Riparian Cover 80% Moun Adjacent Land McKay K Fish Habitat P | r resent (circle): egetation Woo (% of watercourse <u>Hain Maple,</u> Use Jed <u>Hydro co</u> potential | Undercut Banl dy Debris shaded, dominar ycllo w bich | Boulder Other Boulder Other Atreal Ru | > Watercress | Aquatic Vec |
| Riparian Cover Riparian Zone Riparian Cover 80% Moun Adjacent Land McLay K Fish Habitat P Critical Habitat | r resent (circle): egetation Woo (% of watercourse Han Maple, Use 2d Nydro co otential (spawning or nurse Wrsey, for a co | Undercut Banl dy Debris shaded, dominar ycllo w bich orridor, Mon | Boulder Other Boulder Other Atreal Ru | > Watercress er | Aquatic Vec |
| Riparian Cover Sover Types P Overhanging V Riparian Cover 80% Moun Adjacent Land McLay F Fish Habitat F Critical Habitat Spawn, M Migratory Obst | r resent (circle): egetation Woo (% of watercourse tan maple, Use 2d 19 dro co otential (spawning or nurse wrse, for acc ructions (seasonal, | Undercut Ban dy Debris shaded, dominar ycllo w bich orridor, Mon ery areas, ground permanent) | Boulder Other Boulder Other Atreal Ru | > Watercress er | Aquatic Vec |
| Riparian Zone Riparian Zone Riparian Cover 80% Moun Adjacent Land McKay K Fish Habitat P Critical Habitat Spawn Migratory Obst Perched Co | r resent (circle): regetation $Wood (% of watercourse \frac{1}{2}, Maple,Use\frac{1}{2}, Maple,Use\frac{1}{2}, Maple,\frac{1}{2}, \frac{1}{2}, $ | Undercut Banl dy Debris shaded, dominar ycllo w bich orrictor, Mon ery areas, ground permanent) | Boulder Other Boulder Other Atreal Ru | > Watercress er | Aquatic Vec |
| Riparian Zone Riparian Zone Riparian Cover 80% Moun Adjacent Land McKay K Fish Habitat P Critical Habitat Spawn Migratory Obst Perched Co | r resent (circle): egetation Woo (% of watercourse tan maple, Use 2d 19 dro co otential (spawning or nurse wrse, for acc ructions (seasonal, | Undercut Banl dy Debris shaded, dominar ycllo w bich orrictor, Mon ery areas, ground permanent) | Boulder Other Boulder Other Atreal Ru | > Watercress er | Aquatic Vec |
| Riparian Zone Riparian Zone Riparian Cover 80% Moun Adjacent Land McLay F Fish Habitat F Critical Habitat Spawn, M Migratory Obst Perched Co Note any fish o | r resent (circle): egetation Woo (% of watercourse han maple, Use 2d 19 dro co otential (spawning or nurse wrse, for acc ructions (seasonal, blocr + 5 @ df observations Nor | Undercut Ban dy Debris shaded, dominar ycllo w bich orriclor, Mon ery areas, ground permanent) | Atreal Ru. | > Watercress or e or early successio | Aquatic Veo |
| Riparian Zone Riparian Zone Riparian Cover 80% Moun Adjacent Land McKcy K Fish Habitat F Critical Habitat Sfawn, A Migratory Obst Perched Co Note any fish o Natural Watero | r resent (circle): regetation Woo (% of watercourse has maple, Use 2d 19 dro co rotential (spawning or nurse wrs. for acc ructions (seasonal, bservations Mon bservations Mon tes course Trap | Undercut Ban dy Debris shaded, dominar ycllo w bich arry areas, ground permanent) cend | The peop Pool Boulder Othe Atreal Ru water upwellings) | > Watercress or e or early successio Swale Bu | Aquatic Veo mal) |
| Riparian Zone Riparian Zone Riparian Cover 80% Moun Adjacent Land McKcy K Fish Habitat F Critical Habitat Sfawn, A Migratory Obst Perched Co Note any fish o Natural Watero | r resent (circle): regetation Woo (% of watercourse has maple, Use 2d 19 dro co rotential (spawning or nurse wrs. for acc ructions (seasonal, bservations Mon bservations Mon tes course Trap | Undercut Ban dy Debris shaded, dominar ycllo w bich arry areas, ground permanent) cend | Atreal Ru. | > Watercress or e or early successio Swale Bu | Aquatic Veo mal) |
| Riparian Zone Riparian Zone Riparian Cover 80% Move Adjacent Land McKay k Fish Habitat F Critical Habitat Spawn, M Migratory Obst Perched Co Note any fish of Waterbody No Natural Watero Surficial Draina Other Habitat | r resent (circle): regetation Woo (% of watercourse Ha: Maple, Use Use 19000 otential (spawning or nurse Wrs., for acc ructions (seasonal, Docr 15 @ df boservations Notes course | <u>Undercut Ban</u> dy Debris shaded, dominar <u>ycllo w bich</u> orry areas, ground permanent) <u>c end</u> ezoidal Channel Dugout Pono Wildlife Observa | <u> Boulder</u> Deep Pool Boulder Othe Othe Othe | > Watercress er e or early successio Swale Bu by Aquatic Veg | Aquatic Veo mal) |
| Riparian Zone Riparian Zone Riparian Cover 80% Move Adjacent Land McKay k Fish Habitat F Critical Habitat Spawn, M Migratory Obst Perched Co Note any fish of Waterbody No Natural Watero Surficial Draina Other Habitat | r resent (circle): regetation Woo (% of watercourse Ha: Maple, Use Use 19000 otential (spawning or nurse Wrs., for acc ructions (seasonal, Docr 15 @ df boservations Notes course | <u>Undercut Ban</u> dy Debris shaded, dominar <u>ycllo w bich</u> orry areas, ground permanent) <u>c end</u> ezoidal Channel Dugout Pono Wildlife Observa | $\frac{\text{Deep Pool}}{\text{Boulder}}$ $\frac{\text{Boulder}}{\text{Other}}$ $\frac{\text{Other}}{\text{Other}}$ $\frac{\text{Other}}{\text{Constant Ruter}}$ $\frac{\text{Constant Ruter}}{\text{Constant Ruter}}$ $\frac{\text{Constant Ruter}}{\text{Constant Ruter}}$ | Watercress e or early successio Swale Bu by Aquatic Veg F, 5234553 | Aquatic Veo mal) |

Minnow Traps

| Project Name Bow Lake | wind Farm | Station Number | 10-25 |
|---|---|--|----------------------------|
| Project Number 1609 6073 | the second se | Pass No. (if applicable) | NIA |
| Photos 505-50 | 28 + 509-511 | _ Date (yyyymmdd): | July 9 112 |
| | Rd crossing ~ 3 | and the second | |
| Substa | K, • | 0011 00010 | 510 00 00 |
| UTM coordinates 068530 | | 5234772 | _northing zone <u>16</u> T |
| Fishing Method (circle one): | Backpack Bo | | |
| Sampling Method (circle one): | even babitat | transect | spor |
| Effort (Electrofishing Seconds): | Number of Nette | ers: Nu | umber of Anodes: |
| Settings | | | |
| Frequency (Hz) | /oltage (volts) Cu | rrent (Amps) Po | ower (Watts) |
| Station Information | n · . | | 2+1ap |
| | 2 pools @ 2,5x3m | | Set: July, |
| | Vidth (m): Range 🧹 | Average: | Ret: July, |
| , Γ | Depth (m): Range <u>0,3</u> | - 0.6 Average: | 0,4 |
| | | | |
| Water Clarity/Colour | Water | Velocity if Measured (m/s): | N/A Time 10:15 |
| | | Velocity if Measured (m/s): Conductivity (uS/cm) | <u> </u> |
| Temperature (°C) | <u>) </u> | Conductivity (uS/cm) | _54 |
| Temperature (°C) 12.20 pH 7.13 | <u>) </u> | • | |
| Temperature (°C) 12 2 0 pH _7.13 Catch Data | <u>) </u> | Conductivity (uS/cm) | _54 |
| Temperature (°C) 12.20 pH 7.13 Catch Data | | Conductivity (uS/cm) | <u>-54</u> <u>9.99</u> |
| Temperature (°C) 12.20 pH 7.13 Catch Data Species | Number of Fish | Conductivity (uS/cm) | <u>-54</u> <u>9.99</u> |
| Temperature (°C) 12.20 pH 7.13 Catch DataSpeciesBlock Hout $(6.8'')$ | Number of Fish | Conductivity (uS/cm) | <u>-54</u> <u>9.99</u> |
| Temperature (°C) 12.20 pH 7.13 Catch Data Species Bios K-fiout (6-8') | Number of Fish | Conductivity (uS/cm) | <u>-54</u> <u>9.99</u> |
| Temperature (°C) 12.20 pH 7.13 Catch Data Species Bios K-fiout (6-8') | Number of Fish | Conductivity (uS/cm) | <u>-54</u> <u>9.99</u> |
| Temperature (°C) 12.20 pH 7.13 Catch DataSpeciesBlock Hout $(6.8'')$ | Number of Fish | Conductivity (uS/cm) | <u>-54</u> <u>9.99</u> |
| Temperature (°C) 12.20 pH 7.13 Catch DataSpeciesBlock Hout $(6.8'')$ | Number of Fish | Conductivity (uS/cm) | <u>-54</u> <u>9.99</u> |
| Temperature (°C) 12.20 pH 7.13 Catch DataSpeciesBlock Hout $(6.8'')$ | Number of Fish | Conductivity (uS/cm) | <u>-54</u> <u>9.99</u> |
| Temperature (°C) 12.20 pH 7.13 Catch DataSpeciesBlock Hout $(6.8'')$ | Number of Fish | Conductivity (uS/cm) | <u>-54</u> <u>9.99</u> |
| Temperature (°C) 12.20 pH 7.13 Catch DataSpeciesBlock Hout $(6.8'')$ | Number of Fish | Conductivity (uS/cm) | <u>-54</u> <u>9.99</u> |
| Temperature (°C) 12.20 pH 7.13 Catch DataSpeciesBlock Hout $(6.8'')$ | Number of Fish | Conductivity (uS/cm) | <u>-54</u> <u>9.99</u> |
| Temperature (°C) 12.20 pH 7.13 Catch DataSpeciesBlock Hout $(6.8'')$ | Number of Fish | Conductivity (uS/cm) | <u>-54</u> <u>9.99</u> |
| Temperature (°C) 12.20 pH 7.13 Catch DataSpeciesBlock Hout $(6.8'')$ | Number of Fish | Conductivity (uS/cm) | <u>-54</u> <u>9.99</u> |
| Temperature (°C) 12.20 pH 7.13 Catch DataSpeciesBlock Hout $(6.8'')$ | Number of Fish | Conductivity (uS/cm) | <u>-54</u> <u>9.99</u> |
| Temperature (°C) 12.20 pH 7.13 Catch Data Species Bios K-fiout (6-8') | Number of Fish | Conductivity (uS/cm) | <u>-54</u> <u>9.99</u> |
| Temperature (°C) 12.20 pH 7.13 Catch Data Species Bios K-fiout (6-8') | Number of Fish | Conductivity (uS/cm) | <u>-54</u> <u>9.99</u> |

10-06 11 - 000 - ---

) D- 26 d/s= 0685479 5234603 WIND FARM WATERBODY RAPID ASSESSMENT FORM

| 110 | fishi | nj. |
|-----|-------|-----|
| N٣ | • · | |

Stantec

| | Distant Name Day 1 Ke Julia 1 Ercan |
|--|---|
| Station #26 | Project Name Bow Lake Wind Farm |
| Watercourse Name_Unknown | $\frac{1609 \ 60734}{1609 \ 60734}$ |
| Photos 512-515 | Field Staff <u>Nら, MF</u> Time 川 [,] 40 |
| Date July 9 /12 | |
| Weather conditions in previous 24 hrs no proof GPS Coordinates (Zone) 16 T E Descriptive Location ~ 250 South of M | N Datum NH083 |
| GPS Coordinates (Zone) 161 E | V Datum Nices |
| Descriptive Location ~ 250 South of M | char ka + ~ 275 m west of |
| proposed substation | |
| Water Quality | |
| Discolved Overan (mail) 8,68 pH | 7,09 Conductivity (uS/cm) 30 |
| Dissolved Oxygen (mg/L) 8.68 pH Water Temperature (°C)/1.62 | $\Delta ir Temperature (°C) \qquad 27°_{}$ |
| Time <i>in situ</i> measurements taken <i>1:56</i> | |
| | |
| Watercourse Dimensions & Morphology | |
| Mean Watercourse Width (m) | Maximum Pool Depth(cm) DRY |
| Mean Bankfull Width | Mean water Deptn(cm) |
| % Riffle% Pc | ool% Run% Flat |
| Evidence of eroding banks, Comments on bank s | tability Minor undereut Banks |
| · · · · · · · · · · · · · · · · · · · | |
| | |
| Substrate (% cover) | 30SandSiltMuck |
| Bedrock 25 Cobble 20 Boulder 25 Gravel | <u>Clay Marl</u> Detritus |
| <u>20</u> Boulder <u>25</u> Gravel | |
| In water Cover | |
| | nks Deep Pool Watercress Aquatic Veg |
| Overhanging Vegetation Woody Debris | Boulder Other |
| | |
| Riparian Zone | · · · |
| Riparian Cover (% of watercourse shaded, domin | ant vegetation, mature or early successional) |
| 150% yellow birch, sugar maple | , tan sp. |
| Adjacent Land Use | |
| torest | |
| Et de Hadebad Datautial | |
| Fish Habitat Potential | adwatar upwallinga) |
| Critical Habitat (spawning or nursery areas, grour | iuwater upweinings) |
| <u>Gpa wn</u> Migratory Obstructions (seasonal, permanent) | |
| | |
| Arg Note any fish observations <u>none-dy</u> | |
| Note any lish observations | |
| | |
| Waterbody Notes | |
| Natural Watercourse Trapezoidal Channel | |
| Surficial Drainage (i.e. furrows) Dugout Po | nd Dominated by Aquatic Veg Dry |
| | |
| Other Habitat Notes, Incidențal Wildlife Obser | vations, etc |
| Intermitent, Indirect. | |
| 10-0 | |
| /0-2 | 6 d15 = 0685479; 5234603 |
| A . 4 | D ^a |
| Field Notes Authored by MF Field Not | es QA/QCed by |
| | |



| Stantec |
|--|
| Station # 10-13 Project Name Bow Lake Wind Farm |
| Watercourse NameUnnamedProject # 1609 60734PhotosD978, -0981Field StaffM: Ke Johns, M: tch Ellah |
| |
| Date July 6 /12 Time 15:00 |
| Weather conditions in previous 24 hrs Hot, no rain light westerly winds GPS Coordinates (Zone) 16T E 684 945 N 5234182 Datum NHOR |
| |
| Descriptive Location 240 m downstream of large beaver pond/small leke |
| |
| Water Quality Dissolved Oxygen (mg/L) 1.26 pH 5.48 Conductivity (µS/cm) 16 |
| Dissolved Oxygen (ing/L) $\frac{1}{\sqrt{2}}$ $p_{\Pi} = \frac{2}{\sqrt{2}}$ Conductivity (µ5/cm) $\frac{1}{\sqrt{2}}$ |
| Water Temperature (°C)7.1 Air Temperature (°C)24°C Time in situ measurements taken5.00 Air Temperature (°C)24°C |
| Watercourse Dimensions & Morphology Mean Watercourse Width 0. (cm) Maximum Pool Depth 40 (cm) |
| Mean Bankfull Width(m) Mean Water Depth(cm) |
| % Riffle% Pool% Run% Fla |
| under int backs |
| |
| Substrate (% cover) Bedrock 40 Cobble 20 Sand Silt Muck |
| Bedrock <u>40</u> Cobble_ <u>2</u> ⊘SandSiltMuck 5 Boulder_ <u>30 ⊋⊊_</u> GravelClay <u>Marl_5</u> _Detritus |
| in-wate: Cover |
| Cover Types Present (circle): Undercut Banks Deep Pool Watercress Aquatic Veg |
| Overhanging Vegetation Woody Debris Boulder Other |
| Riparian Zone |
| Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional), |
| 100 % Muture Hardwoods prevalent, but generally stable |
| Fores f |
| Fish Habitat Potential |
| Critical Habitat (spawnjng or nursery areas, groundwater upwellings) |
| No Contract Habitat Migratory Obstructions (seasonal, permanent) |
| None observed Low water love to |
| Note any fish observations none observed |
| |
| Waterbody Notes Waterbody Notes Image: Comparison of the compa |
| |
| Surficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Dry |
| Other Habitat Notes, Incidental Wildlife Observations, etc. Good habitat the and |
| morphology except for 1:mited discharge. Fish are |
| Black Throated Blue warbler, Swainson's Thrush, even bicd |
| |
| Field Notes Authored by <u>17. Jehn</u> Field Notes QA/QCed by <u>MELLe</u> |



| | 0 1 4 | | 4 |
|---|--|---------------------------------------|---------------------------------------|
| Station #_10-16 | Project Name Bow Lak | e Wind Fo | im |
| Watercourse Name_unnamed | Project # 1609 607 | <u><u> </u></u> | |
| Photos $\frac{\#/619 - 1021}{1021} + 1022$ | Field Staff MEllah, M | Johns | · · · |
| Date July 7/12 | Time <u>10:45 am</u> | • | |
| Weather conditions in previous 24 hrs Mix Sun | a cloud, light rain | | |
| GPS Coordinates (Zone) 16T E 6857 63 | <u>N 52341</u> | <u>63 Datu</u> | IM NAD83 |
| Descriptive Location 386m to turbine 1 | 2, NW to TIZ | | 15 |
| | | | |
| Water Quality | | | en" of |
| Dissolved Oxygen (mg/L) <u>7.56</u> pH_6 | 6.46 Conductivity (µS/ | cm) 21 | all |
| ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,, | Air Temperature (°C) | | (0 |
| | | | |
| Time in situ measurements taken_10.56 am | | | |
| Watercourse Dimensions & Morphology | | | |
| Mean Watercourse Width 0.70 (m) | Maximum Pool Depth | 15 (cm) | |
| Mean Bankfull Width(m) | Mean Water Depth | 10 (cm) | |
| % Riffle% Poo | 50 % F | | |
| Evidence of eroding banks, Comments on bank sta | ability stable banks - | - low gradie | |
| vegetation + organic debris stabilitiv | na banks | | |
| Tegerman Oliger - Corriger | <u></u> | | |
| Substrate (% cover) | | 2 7 | |
| BedrockCobble | Sand | Silt | Muck |
| BoulderGravel | Clay | Marl 100 |)Detritus |
| Overhanging Vegetation Woody Debris Riparian Zone | | | |
| Riparian Cover (% of watercourse shaded, domina | int vegetation, mature or ea | riy successiona | 9 |
| 100% - early succession. | · · · · · · · · · · · · · · · · · · · | | |
| Adjacent Land Use | | | |
| | ······································ | | · · · · · · · · · · · · · · · · · · · |
| Fish Habitat Potential Critical Habitat (spawning or nursery areas, ground | dwater upwellings) | | |
| none-indirect -> pr source headw | ates | · · · · · · · · · · · · · · · · · · · | |
| Migratory Obstructions (seasonal permanent) | | | |
| low tlows | | | |
| Note any fish observations <u>none</u> | | | ······ |
| | | · · · · · · · · · · · · · · · · · · · | |
| Waterbody Notes | | | |
| Natural Watercourse / Trapezoidal Channel | Grassed Swale | Burie | ed Tile |
| Surficial Drainage (i.e. furrows) Dugout Pon | | uatic Veg | Dry |
| ······································ | | | |
| Other Habitat Notes, Incidental Wildlife Observ | ations, etc | · | |
| RUTH represents downstream of 10-16 | - influence of 10- | 16 4 10 - 17 | · |
| | books due to higher s | oil ridge - | water |
| seeps through vidge to form new | channel | | |
| | s QA/QCed by M Johns | - | |
| | | | ut Paun das |
| W:\resource\Internal Info and Teams\Aquatic Resources\Field Sheets | s\Stantec\Form 02 Wind Farm Waterb | ody Hapid Assessme | ent Form.doc |





ID.

| JUNITEE | | | | |
|---|-----------------------------|---|------------------|-----------|
| Station # 10-17 | F | Project Name <u>Bow L</u> | ake Wind Fa | im |
| Watercourse Name Unnamed | | Project # 1609 60 | | |
| Photos # 1023 - 1027 | | Field Staff M. Johns | | |
| Data Julu 7/12 | | ime 10:14 | / | |
| Weather conditions in previous 2 GPS Coordinates (Zone) 16 T | 4 hrs Very licht | Sain for brief De | sinds mostly | bot and C |
| GPS Coordinates (Zone) 16T | F 49 < 264 | N S | 774 107 Datu | IM NAO83 |
| Descriptive Location 320 m | All & Are Absen | turking 17 1 | act: 00 | |
| | | | <u> </u> | |
| Water Quality | | | | |
| Dissolved Oxygen (mg/L) 5.3 | 3 pH 6. | 24 Conductivity (L | 1S/cm) 15 2 | 9 |
| Water Temperature (°C) | ·C 14.16 1 | Air Temperature (°C) | 18 | |
| Time <i>in situ</i> measurements taker | | | | |
| | | | | |
| Watercourse Dimensions & Mo | orphology | | 5 () | |
| Mean Watercourse Width 0.20 | (m) I | viaximum Pool Depth_ | <u> </u> | |
| Mean Bankfull Width5/ | <u>>(m) sa sa s</u> r | viean water Deptn | (cm) | |
| % Riffle | | | % Run | % Fla |
| Evidence of eroding banks, Com | ments on bank stab | llity <u>None</u> | | |
| | | | | |
| Substrate (% cover) | Cabbla | Sand | C;I+ | Muck |
| | Cobble | | 311 Marl 1/00 | |
| Boulder | Gravel | Clay | Wan 900 | Detnius |
| Overhanging Vegetation Wo | body Debris | Boulder Other | <u> </u> | |
| Riparian Zone | المرم فيليم المراجع المراجع | | | N |
| Riparian Cover (% of watercours | e snaded, dominani | vegetation, mature of | | 9 |
| 100 swyrMaple yello | w Diron with | Jam White spin | and the | |
| Adjacent Land Use | | • · · · · · · · · · · · · · · · · · · · | • • | |
| Forest | | | | |
| Fish Habitat Potential | | | | |
| Critical Habitat (spawning or nur | eony areae aroundu | ater unwellinge) | | |
| Nane - Mar | sery areas, groundw | ator upwoningoj | | |
| Migratory Obstructions (seasona | l nermanent) | | | |
| low Flow | n, permanenty | | | |
| Note any fish observations | and al d | iect habitat | | |
| THOLE arry non observations | vie no di | | | |
| | | | | |
| Waterbody Notes / | | | | |
| Natural Watercourse_/ Tra | apezoidal Channel _ | Grassed Swa | ale Burie | d Tile |
| Surficial Drainage (i.e. furrows) | Dugout Pond | Dominated by | Aquatic Veg | Dry |
| | | | about Inm & | iameter. |
| Other Habitat Notes, Incidenta | I Wildlife Observat | ions, etc. $\underline{-}$ | | |
| Way point coordinates above | | ep at the or a | | |
| Wide Slat " channel " o | r Salgason a | sea dominates | | |
| macrophtes includin | y Jewelweed | and sodges, by | + 10 Aquatic | or macion |
| | 1 | · · · · | 1 | |
| Field Notes Authored by Mike John | 5 Field Notes C | A/QCed by MEllch | | |



| $\sim 10 - 10$ | Distant Name Devil Karling Land |
|---|--|
| Station $\# \frac{10 - 18}{1000}$ | Project Name Bow Lake Wind Farm |
| Watercourse Name_unnamed | Project $\# 1609 60734$ |
| Photos $102\% - 1036$ | Field Staff <u>ME/Ich</u> , MJohns |
| Date July 7/12 | Time <u>19:45 am</u> |
| Weather conditions in previous 24 hrs mix sun 4 | clond, hold raw all high |
| GPS Coordinates (Zone) 16 T E 6852749 | N 5233952 Datum NH083 |
| Descriptive Location <u>280m NW & propos</u> <u>/0-18d/s 06851</u> | ed turbine 12 location US 10-18 |
| Water Quality | |
| Dissolved Oxygen (mg/L) <u>8.26</u> pH | <u>6.46</u> Conductivity (μ S/cm) <u>26</u> |
| Water Temperature (°C) /4.64 | Air Temperature (°C) / 8 |
| Dissolved Oxygen (mg/L) <u>8.26</u> pH Water Temperature (°C) <u>14.64</u> Time <i>in situ</i> measurements taken <u>10.45</u> | <u>~</u> |
| Watercourse Dimensions & Morphology | |
| Mean Watercourse Width 0.30 (m) | Maximum Pool Depth / 0 (cm) |
| Mean Bankfull Width 0.60 (m) | Mean Water Depth(cm) |
| 50 % Riffle <u>30</u> % Poo | |
| Evidence of eroding banks, Comments on bank sta | ability stable banks - supported by |
| reactation & substrate | |
| Substrate (% cover) | |
| BedrockCobble | 2 Sand Silt Muck |
| <u>3 Boulder 60 Gravel</u> | Clay Marl 7 Detritus |
| | |
| In-water Cover | |
| Cover Types Present (circle): Undercut Ban | ks Deep Pool Watercress Aquatic Veg |
| Overhanging Vegetation Woody Debris | |
| | |
| Riparian Zone | |
| Riparian Cover (% of watercourse shaded, domina | In vegetation, mature of early successionally |
| 100 To - Unity SUTTESSIONAL a | oninant with sugar maple + yellow birch |
| Aujacent Lanu Use | |
| torest | |
| Fish Habitat Potential | |
| Critical Habitat (spawning or nursery areas, ground | lwater upwellings) |
| Ione-Lead waters | |
| | |
| high elevetions, steen stores | |
| Migratory Obstructions (seasonal, permanent) high effections, steep stopes Note any fish observations <u>None</u> <u>No</u> | licert fish habitat |
| | |
| Weterhady Natao | |
| Waterbody Notes | Grassed Swale Buried Tile |
| Natural Watercourse Trapezoidal Channel Surficial Drainage (i.e. furrows) Dugout Pon | |
| Sumicial Drainage (i.e. funows) Dugour Pon | u Dominated by Aquatic Veg Dry |
| Other Habitat Notes, Incidental Wildlife Observations, etc. Swainsons Thrush Cast Flycatcher, Black throated Green Warbler, overbird | |
| Cast flycatcher, Black throated Green Workler, Dienbird | |
| | |
| | |
| Field Notes Authored by MEUAL Field Notes | QA/QCed by Man |
| Tield Notes Authored by <u>The Contract</u> Theid Notes | and a set the set of t |



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3

| Station #9 | Project Name Bow Lake Wind Farm |
|---|--|
| Watercourse Name Unnamed | Project # 1609 60734 |
| Photos 1031 - 1035 | Field Staff Mike Johns, Mitch Ellah |
| Date July 7/12 | Time 11:40 |
| Weather conditions in previous 24 hrs $\sim l_{\mu}$ | non rain, light w. winds, mostly clear and ho |
| GPS Coordinates (Zone) 16T E 62 | N 5237 431 Datum NAD83 |
| Descriptive Location ~280 m west | |
| | |
| Water Quality Dissolved Oxygen (mg/L) <u>6.65</u> Water Temperature (°C) <u>14.21</u> Time <i>in situ</i> measurements taken <u>11:5</u> | pH_ <u>6,20</u> Conductivity (μS/cm) <u>23</u> Air Temperature (°C) <u>~ 20°C</u> 73 |
| Watercourse Dimensions & Morphology | |
| Mean Watercourse Width(m) | Maximum Pool Depth 20 (cm) |
| Mean Bankfull Width (m) | Mean Water Depth <u>9</u> (cm) |
| <u>10</u> % Riffle <u>30</u> | _% Pool% Run% Flat |
| Evidence of eroding banks, Comments on I | pank stability under cuts in some acces but |
| generally stuble due to bou | ders and soot mass |
| Cubatrata (% acyar) | |
| Substrate (% cover) Bedrock 15 Cobbl | eSandSiltMuck |
| BedlockGrave | |
| | |
| In water Cover Cover Types Present (circle): Under Overhanging Vegetation Woody Debris | cut Banks Deep Pool Watercress Aquatic Veg s Boulder Other |
| Riparian Zone | |
| Binarian Cover (% of watercourse shaded | dominant vegetation, mature or early successional) |
| Adjacent Land Use | |
| forest | |
| | |
| Fish Habitat Potential Critical Habitat (spawning or nursery areas Neal | , groundwater upwellings) |
| Migratory Obstructions (seasonal, permane | ent) |
| High gradient, limite | 1 Flow |
| Note any fish observations None - A | o direct Fish habitat |
| | |
| Waterbody Notes Natural Watercourse Trapezoidal C Surficial Drainage (i.e. furrows) Dug | |
| Other Habitat Notes. Incidental Wildlife | Observations, etc. <u>Spring neenels</u> , Green frog. |
| Fairly bich gradient stre | an through middlile of wide Valley |
| featlace) | |
| spep at uls end. | |
| -11 | |
| Field Notes Authored by Mike Johns | Field Notes QA/QCed by MELLAL |

| - Ø | 97 | | . | |
|------|----|-----|------------|--|
| 12 | 1. | Œ۲. | | |
| . 20 | | 8/ | <u>a</u>) | |
| | | | J. | |
| | | Ø., | y | |

| | Station # 10-20 Project Name Bow Lake Wind Farm |
|---------------|--|
| | Watercourse Name unnamed Project # 1609 60734 |
| •••• | Photos 1036-1039 Field Staff MEMah MJohns Date July 7/12 Time 12:10 |
| | Date $July 7/12$ Time 12.10 |
| | Weather conditions in previous 24 hrs Sunny cloudy mix, haht rain last right |
| 0-20US- | GPS Coordinates (Zone) 161 E 685043 N 5232484 Datum NA083 |
| rig'ter | Descriptive Location 235m IN of turbine 10 - survey location - UTM is u/s at sound |
| | · · · · · · · · · · · · · · · · · · · |
| feature | Water Quality |
| | Dissolved Oxygen (mg/L) 5.50 pH 6.13 Conductivity (µS/cm) /6 |
| • | |
| | Water Temperature (°C)/ 6.50 Air Temperature (°C)/ 9 Time in situ measurements taken 2.15 |
| | Time in situ measurements taken <u>7 a 15</u> |
| · · · | Watercourse Dimensions & Morphology |
| | Mean Watercourse Width 0.40 (m) Maximum Pool Depth / 0 (cm) |
| | Mean Bankfull Width 1.2 (m) Mean Water Depth 5 (cm) |
| | / p % Riffle / 0 % Pool% Run <u>& b</u> % Flat |
| | Evidence of eroding banks, Comments on bank stability stable banks due to |
| | undistribed reactation & substrate along bank. |
| | O |
| | Substrate (% cover) |
| | Bedrock 50 Cobble / O Sand Silt Muck Boulder / O Gravel Clay Marl 30 Detritus |
| | Boulder / O Gravel Clay Marl 30 Detritus |
| $\{ (a,b) \}$ | In water Cover |
| | Cover Types Present (circle): Undercut Banks Deep Pool Watercress Aquatic Veg |
| | Overhanging Vegetation Woody Debris Boulder Other |
| | |
| | Riparian Zone |
| | Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional) |
| | 100% - early successional dominant sugar maple |
| 1 m | Adjacent Land Use |
| | torest |
| | |
| | Fish Habitat Potential |
| - 1 | Critical Habitat (spawning or nursery areas, groundwater upwellings) |
| • | |
| | Migratory Obstructions (seasonal, permanent) |
| · | high gradient, steep stopes |
| • • • • • • | Note any fish observations |
| • | None - ap direct Fish habitat |
| | Waterbody Notes / |
| | Natural Watercourse Trapezoidal Channel Grassed Swale Buried Tile |
| | Surficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Dry |
| • | |
| | Other Habitat Notes, Incidental Wildlife Observations, etc. |
| | stonefly's Black throated Green Warbler |
| | |
| | |
| | |
| | Field Notes Authored by MEllah, Field Notes QA/QCed by M. Johns |
| . • | |
| | W:\resource\Internal Info and Teams\Aquatic Resources\Field Sheets\Stantec\Form 02 Wind Farm Waterbody Rapid Assessment Form.doc |



| Station # | Project Name Bow Lake Wind Farm |
|--|---|
| Watercourse Name unnamed | Project # 1609 60734 |
| Photos <u>0953 - 0955</u> | Field Staff MEILAH, MJohns |
| Date <u>July 6 / 12</u> | Time <u>10:30 am</u> |
| Weather conditions in previous 24 hrs sunn | H, hot - O precipitation, light winds |
| GPS Coordinates (Zone) 16T E 684 | |
| Descriptive Location beaven pond SE | of proposed access rd into turbine 1. |
| Water Quality Dissolved Oxygen (mg/L) <u>チュン</u> Water Temperature (°C) <u>ユラ・スト</u> Time <i>in situ</i> measurements taken <u>10 5</u> | Air Temperature (°C) <u>20°C</u> |
| Watercourse Dimensions & Morphology Mean Watercourse Width(m) Mean Bankfull Width(m) % Riffle Evidence of eroding banks, Comments on bar | Mean Water Depth <u>1, 0</u> (cm)(m) % Pool% Run% Flat |
| Substrate (% source) | |
| Substrate (% cover) Bedrock Cobble | Sand Silt Muck |
| Boulder Gravel | |
| Overhanging Vegetation Woody Debris Riparian Zone Riparian Cover (% of watercourse shaded, d <u>O'lo shaded</u> , <u>Sunounding</u> Adjacent Land Use | ut Banks Deep Pool Watercress Aquatic Veg Boulder Other ominant vegetation, mature or early successional) forest mixed while pine, sugar maple, while sp |
| Forest Fish Habitat Potential Critical Habitat (spawning or nursery areas, g watch Lepth over Winter Pos | ential to survival of cyprinads |
| Migratory Obstructions (seasonal, permanen | |
| Note any fish observations <u>Cyprinids</u> | observed - see fish collection report |
| Waterbody Notes Natural Watercourse Trapezoidal Ch Surficial Drainage (i.e. furrows) Dugou | nannel Grassed Swale Buried Tile ut Pond Dominated by Aquatic Veg Dry |
| -dracontlys | bservations, etc. <u>ruby throated humingbirds</u> <u>Lpair</u> imated 2.0m |
| Field Notes Authored by MENAL | old Notes QA/QCed by Te Jako |
| W:\resource\Internal Info and Teams\Aquatic Resources\Field | d Sheets\Stantec\Form 02 Wind Farm Waterbody Rapid Assessment Form.doc |

| Project Name Bow I | Lake Wind Fi | arm | Station Number | 10-8 | |
|---|---|--------------------------------|---|--|---|
| Project Number 1609 60 | | | - Pass No. (if applic | cable) | |
| Photos 0975 | | | Date (yyyymmdd): | | 112 |
| Descriptive Location <u>350</u> | M NE of propo | osed turbine | e 1, east of | proposed a | iccess road. |
| UTM coordinates 6 GPS way point 10-8 | . <u>84826</u> e | easting $5\hat{a}$ | 233972 | northing | zone <u>16</u> 7 |
| Fishing Method (circle one): | raps)5 Backpack | Boat | Unit Mode transect | el/Make spot | |
| | | | | | |
| Effort (Electrofishing Seconds): | N | lumber of Netters: | | Number of Anod | les: |
| Settings Frequency (Hz) | Voltage (volts) | Curren | t (Amps) | Power (Watts) | |
| Station Information | r | | | | |
| Length of Stream Surveyed (m) | 100 | 1.0 | and | • | |
| Station Characteristics: | | Range beaver | | · · · · · · · · · · · · · · · · · · · | |
| | Depth (m): R | Range 0.5-2 | J. ≤ Average: | 1.5 | _ |
| | | <u> </u> | <u> </u> | | Incocat |
| Water Clarity/Colour: | tea colown_ | | city if Measured (m/ | · · · · | trapset Time_10:15 |
| | | | | /s): | trapset Time 10:15 trap |
| Temperature (°C) | tea coloun | Water Velo | ocity if Measured (m/ | /s): :m) <u>/4</u> | trapset Time 10:15 trap lift time s |
| Temperature (°C) pH Catch Data | <u>fea coloun</u> 25.2 6.32 | Water Velo | ocity if Measured (m/ Conductivity (uS/c | /s): :m) <u>/4</u> /L) <u>7.25</u> | - lift time à |
| Temperature (°C) pH Catch Data Species | <u>fea</u> colown 25.2 6.32 Number of Fig | Water Velo | ocity if Measured (m/ Conductivity (uS/c | /s): :m) <u>14</u> /L) <u>7.25</u> Comments | - liff time of |
| Temperature (°C) pH Catch Data Species Aorthern redbelly do | <u>fea</u> colown 25,2 6.32 Number of Fis | Water Velo | ocity if Measured (m/ Conductivity (uS/c | /s): :m) <u>14</u> :/L) <u>7.25</u> Comments Trap at | - liff time of (i.e. age, disease, etc): 40cm depth |
| Temperature (°C) pH Catch Data Species Northern redbelly do northern redbelly d | $\frac{fea \ colour}{25.2}$ $\frac{100}{6.32}$ Number of Fisher Colour C | Water Velo | ocity if Measured (m/ Conductivity (uS/c | /s): :m) <u>14</u> /L) <u>7.25</u> Comments Trap at trap at | - liff time of (i.e. age, disease, etc): 40cm depth Im depth |
| Temperature (°C) pH Catch Data Species Northern redbelly do northern redbelly d | $\frac{fea \ colour}{25.2}$ $\frac{100}{6.32}$ Number of Fisher Colour C | Water Velo Dis sh | ocity if Measured (m/ Conductivity (uS/c | /s): :m) <u>14</u> /L) <u>7.25</u> Comments Trpp at trap at trap at | - liff time ó (i.e. age, disease, etc): 40cm depth Im depth Im depth |
| Temperature (°C) pH Catch Data Species Northern redbelly do northern redbelly d northern redbelly d | $\frac{fea \ colour}{25.2}$ Number of Fisher Colour Co | Water Velo Dis sh | ocity if Measured (m/ Conductivity (uS/c | /s): :m) <u>14</u> /L) <u>7.25</u> Comments trap at trap at trap at trap at | - liff time of (i.e. age, disease, etc): 40cm depth Im depth Im depth 30cm depth |
| Temperature (°C) pH Catch Data Species Northern redbelly do northern redbelly d northern redbelly d | $\frac{fea}{25.2}$ Number of Figure ~ 100 ace ~ 50 $ace \sim 20$ | Water Velo Dis sh | ocity if Measured (m/ Conductivity (uS/c | /s): :m) <u>14</u> /L) <u>7.25</u> Comments trap at trap at trap at trap at | - liff time ó (i.e. age, disease, etc): 40cm depth Im depth Im depth |
| Temperature (°C) pH Catch Data Species Aorthern redbelly do | $\frac{fea \ colour}{25.2}$ Number of Fisher Colour Co | Water Velo Dis sh | ocity if Measured (m/ Conductivity (uS/c | /s): :m) <u>14</u> /L) <u>7.25</u> Comments trap at trap at trap at trap at | - liff time of (i.e. age, disease, etc): 40cm depth Im depth Im depth 30cm depth |
| Temperature (°C) pH Catch Data Species Northern redbelly do northern redbelly d northern redbelly d | $\frac{fea \ colour}{25.2}$ Number of Fisher Colour Co | Water Velo Dis sh | ocity if Measured (m/ Conductivity (uS/c | /s): :m) <u>14</u> /L) <u>7.25</u> Comments trap at trap at trap at trap at | - liff time of (i.e. age, disease, etc): 40cm depth Im depth Im depth 30cm depth |
| Temperature (°C) pH Catch Data Species Northern redbelly do northern redbelly d northern redbelly d | $\frac{fea \ colour}{25.2}$ Number of Fisher Colour Co | Water Velo Dis sh | ocity if Measured (m/ Conductivity (uS/c | /s): :m) <u>14</u> /L) <u>7.25</u> Comments trap at trap at trap at trap at | - liff time of (i.e. age, disease, etc): 40cm depth Im depth Im depth 30cm depth |
| Temperature (°C) pH Catch Data Species Northern redbelly do northern redbelly d northern redbelly d | $\frac{fea \ colour}{25.2}$ Number of Fisher Colour Co | Water Velo Dis sh | ocity if Measured (m/ Conductivity (uS/c | /s): :m) <u>14</u> /L) <u>7.25</u> Comments trap at trap at trap at trap at | - liff time of (i.e. age, disease, etc): 40cm depth Im depth Im depth 30cm depth |
| Temperature (°C) pH Catch Data Species Northern redbelly do northern redbelly d northern redbelly d | $\frac{fea \ colour}{25.2}$ Number of Fisher Colour Co | Water Velo Dis sh | ocity if Measured (m/ Conductivity (uS/c | /s): :m) <u>14</u> /L) <u>7.25</u> Comments trap at trap at trap at trap at | - liff time of (i.e. age, disease, etc): 40cm depth Im depth Im depth 30cm depth |
| Temperature (°C) pH Catch Data Species Northern redbelly do northern redbelly d northern redbelly d | $\frac{fea \ colour}{25.2}$ Number of Fisher Colour Co | Water Velo Dis sh | ocity if Measured (m/ Conductivity (uS/c | /s): :m) <u>14</u> /L) <u>7.25</u> Comments trap at trap at trap at trap at | - liff time of (i.e. age, disease, etc): 40cm depth Im depth Im depth 30cm depth |
| Temperature (°C) pH Catch Data Species Northern redbelly do northern redbelly d northern redbelly d | $\frac{fea \ colour}{25.2}$ Number of Fisher Colour Co | Water Velo Dis sh | ocity if Measured (m/ Conductivity (uS/c | /s): :m) <u>14</u> /L) <u>7.25</u> Comments trap at trap at trap at trap at | - liff time of (i.e. age, disease, etc): 40cm depth Im depth Im depth 30cm depth |
| Temperature (°C) pH Catch Data Species Northern redbelly do northern redbelly d northern redbelly d | $\frac{fea \ colour}{25.2}$ Number of Fisher Colour Co | Water Velo Dis sh | ocity if Measured (m/ Conductivity (uS/c | /s): :m) <u>14</u> /L) <u>7.25</u> Comments trap at trap at trap at trap at | - liff time of (i.e. age, disease, etc): 40cm depth Im depth Im depth 30cm depth |
| Temperature (°C) pH Catch Data Species Northern redbelly do northern redbelly d northern redbelly d | $\frac{fea \ colour}{25.2}$ Number of Fisher Colour Co | Water Velo Dis sh | ocity if Measured (m/ Conductivity (uS/c | /s): :m) <u>14</u> /L) <u>7.25</u> Comments trap at trap at trap at trap at | - liff time of (i.e. age, disease, etc): 40cm depth Im depth Im depth 30cm depth |

(Station Diagram on Back)

MJohns



| Station # 10-12 Project Name Bow Lake Wind Farm |
|--|
| Watercourse Name <u>unnamed</u> Project # 1609 60734 |
| Photos 0972-0974 Field Staff MElloh, MJohns |
| Date July 6 /12 Time 13:19 |
| Weather conditions in previous 24 hrs sunny, but humid no precipitation habt wind |
| GPS Coordinates (Zone) 16T E 684590 N 5233463 Datum NAD83 |
| Descriptive Location 10-12US E 684537, N 5233605 DS of 10-12-GPS. Lowtheast of turbine 1-rlose to proposed access rd to S of turbine 1 and 10- |
| Water QualityDissolved Oxygen (mg/L) 5.62 pH 5.85 Conductivity (μ S/cm) 23 Water Temperature (°C) 16.60 Air Temperature (°C) $34°C$ Time in situ measurements taken $13:20$ |
| Watercourse Dimensions & MorphologyMean Watercourse Width0.30(m)Maximum Pool Depth8Mean Bankfull Width1.0(m)Mean Water Depth4(cm)% Riffle70% Pool% Run30% Flat |
| Evidence of eroding banks, Comments on bank stability Stable banks - substrate & regulation providing bank stabilitation |
| , , , , |
| Substrate (% cover) Bedrock 80 Cobble () Sand Silt Muck |
| 5 Boulder Gravel Clay Marl 5 Detritus |
| |
| Cover Types Present (circle): Undercut Banks Deep Pool Watercress Aquatic Veg Overhanging Vegetation Woody Debris Boulder Other Riparian Zone Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional) Image: Cover |
| Overhanging Vegetation Woody Debris Boulder Other Riparian Zone Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional) |
| Overhanging Vegetation Woody Debris Boulder Other |

| Stantec | |
|---|--|
| Station # 10 - 11 | Project Name Bow Lake Wind Farm |
| Watercourse Name_unamed | Project $# 1609 60734$ |
| Photos $\frac{\#}{2964} - 0966$ | Field Staff M. Johns, M. Ellah |
| Date July 6/12 | Time $12:36$ |
| Weather conditions in previous 24 hrs <u>(lear</u> | |
| $_{-7}$ GPS Coordinates (Zone) <u>16</u> T <u>E 684</u> | 350 N 5233554 Datum NAD83 |
| A GPS Coordinates (Zone) 161 E 637 | |
| Descriptive Location ~ 130 m South of | |
| ts: butary to water course 10 | 0-9 |
| Water Quality | |
| Dissolved Oxygen (mg/L) <u>6.7</u> ≥ pH | + 6.68 Conductivity (uS/cm) 22 |
| Water Temperature (°C) 16.2 | Air Temperature (°C) 24 |
| Time <i>in situ</i> measurements taken //:58 | |
| | |
| Watercourse Dimensions & Morphology | |
| Mean Watercourse Width o. 6 (m) | Maximum Pool Depth / ٥ (cm) |
| Mean Bankfull Width 1.0 (m) | Mean Water Depth(cm) |
| | Pool <u>36</u> % Run <u>/</u>) % Fla |
| Evidence of eroding banks, Comments on ban | kstability Some under cuts but |
| banks generally slable due | to root mass 1 |
| | |
| Substrate (% cover) | |
| Bedrock2oCobble | |
| Boulder <u>3D</u> Gravel | ClayMarl /ÔDetritus |
| in-water Cover | |
| | Banks Deep Pool Watercress Aquatic Veg |
| | Boulder Other |
| Overhanging Vegetation Woody Debris | |
| Riparian Zone | |
| Biparian Cover (% of watercourse shaded, dor | ninant vegetation, mature or early successional) |
| 100%, Easty Matase Decidu | ou S |
| Adjacent Land Use | <u> </u> |
| forest | |
| | |
| Fish Habitat Potential | |
| Critical Habitat (spawning or nursery areas, gro | oundwater upwellings) |
| NONO | |
| Migratory Obstructions (seasonal, permanent) | |
| Steep Gradient | |
| Note any fish observations Noner - no | s direct fish hubitat |
| | |
| | |
| Waterbody Notes | and Owned Owels Deviad Tile |
| Natural Watercourse_/_ Trapezoidal Chai | |
| Surficial Drainage (i.e. furrows) Dugout | Pond Dominated by Aquatic Veg Dry |
| | |
| Other Habitat Notes, incidental Wildlife Obs | servations, etc. originates from wetlan |
| area at coordinates above | · |
| | |
| | |
| - Malle The - | Notes QA/QCed by Malla |
| Field Notes Authored by Mike Julas Field | Notes QA/QCed by |
| | |



| Station # $10 - 7$ | Project Name Bow Lake Wind Farm |
|--|--|
| Watercourse Name unnamed | Project # 1609 60734 |
| Photos 0956 - 0960 | Field Staff MELLAL MJOHNS |
| Date July 6/12 | Time 11 40 |
| Weather conditions in previous 24 hrs Sunny la | ot + humid, no precipitation, BW 1 |
| GPS Coordinates (Zone) 16T E 068445 | 3 N 5233481 Datum NAD83 |
| Descriptive Location 200 m south of turk | ine 1 rear proposed access road. |
| | |
| Water QualityDissolved Oxygen (mg/L) | <u>6,39</u> Conductivity (µS/cm) <u>20</u> Air Temperature (°C) <u>24°C</u> M |
| Watercourse Dimensions & Morphology | |
| Mean Watercourse Width (. 0 (m) | Maximum Pool Depth5(cm) |
| Mean Bankfull Width (m) | Mean Water Depth (cm) |
| 30 % Riffle 40 % Po | |
| | ability some bank erosion - banks no stly |
| stable organic debris vegetation * | substrate stabiliting banks |
| | J |
| Substrate (% cover) | |
| BedrockCobble | <u>Sand</u> <u>Silt</u> <u>Muck</u> |
| <u> </u> | ClayMarl 0Detritus |
| In-wate: Covor | |
| | nks Deep Pool Watercress (Aquatic Veg) |
| Overhanging Vegetation (Woody Debris) | Boulder Other |
| Overhaliging vegetation woody bebis | |
| Riparian Zone | |
| Riparian Cover (% of watercourse shaded, domin | ant vegetation, mature or early successional) |
| 90% - white birch, sugar m | aple, mature / early succession |
| Adjacent Land Use | \mathcal{I} , \mathcal |
| torest | |
| | |
| Fish Habitat Potential | |
| Critical Habitat (spawning or nursery areas, groun | |
| indirect fich habitat - water | source for beaver ponds |
| Migratory Obstructions (seasonal, permanent) | |
| high gradients | |
| Note any fish observations <u>hone - no e</u> | isoct f.sh habitat |
| | |
| Waterbody Notes / | |
| Natural Watercourse / Trapezoidal Channe | Grassed Swale Buried Tile |
| Surficial Drainage (i.e. furrows) Dugout Po | |
| | \wedge |
| Other Habitat Notes, Incidental Wildlife Observ | rations, etc. least flycatchen |
| chipmunk, red backed salama | nder |
| 10-9 DS(down stream) uTM: 68 | 54590 5233463 |
| / | 1 |
| | man Alexander |
| Field Notes Authored by MEN L Field Note | es QA/QCed by M (Mar |
| | |



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| $\begin{array}{c} Wether conditions in previous 24 hrs clear, hat, ac psecipitation, licht W. wind GPS Coordinates (Zone) lot E 634 343 transform, MS 233 466 Datum NM083 Descriptive Location ~200 south of Turbine #1, upstrean west branch of water course cleavise flowing int 10-9 Water Quality Dissolved Oxygen (mg/L) 6,82 pH 6.04 Conductivity (µS/cm) 16 Water Temperature (°C) 16,30 Air Temperature (°C) 24°C Time in situ measurements taken 11:55 Watercourse Dimensions & Morphology Mean Watercourse Width 0.2 (m) Maximum Pool Depth 15 (cm) Mean Bankfull Width 1.2 (m) Mean Water Depth 6.04 (cm) So % Riffle 20 % Pool 30 % Run 20 % Flat Evidence of eroding banks, Comments on bank stability under curt banks, but typickly stable due ts root structure Substrate (% cover) Bedrock 20 Cobble 30 Sand Silt Muck 10 Boulder 30 Gravel Clay Mart 10 Detritus Intwicts: Covist Cover Types Present (circle): Undercut Banks Deep Pool Watercress Aquatic Veg Overhanging Vegetation Woody Debris Boulder Other Riparian Zone Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional) 100 150 150 Mater Ceciduous$ | | Station # 10-10 Watercourse Name Unnamed Photos 0961, 0962, 0963 Date July 6 12 Project Name Bow Lake Wind Farm Project # 1609 60734 Field Staff M. Johns, M. Ellah Time 12:07 |
|--|-------------------|---|
| Dissolved Oxygen (mg/L) 6.83 pH 6.04 Conductivity (μ S/cm) 16 Water Temperature (°C) 16.30 Air Temperature (°C) 24° C Time <i>in situ</i> measurements taken $1/55$ Watercourse Dimensions & Morphology Mean Watercourse Width 0.2 (m) Maximum Pool Depth 15 (cm) Mean Bankfull Width 1.2 (m) Mean Water Depth $9-2$ (cm) 30 % Riffle 20 % Pool 30 % Run 20 % Flat Evidence of eroding banks, Comments on bank stability $under cont banks, but typickly$ stable due the root structure Substrate (% cover) 10 Boulder 30 Gravel Clay Mari 10 Detritus intwater Cover Cover Types Present (circle): Undercut Banks Deep Pool Watercress Aquatic Veg Overhanging Vegetation Woody Debits Boulder Other Riparian Zone Riparian Zone Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional) 1057. 564.04 (124.04) 124.04 (124.04) 124.04) Adjacent Land Use | upstream end c | Descriptive Location ~ 200m south of Tusbine #1, upstream west branch |
| Mean Watercourse Width 0.2 (m) Maximum Pool Depth 15 (cm) Mean Bankfull Width 1.2 (m) Mean Water Depth 0 0 0 30 % Riffle 20 % Pool 30 % Run 20 % Flat Evidence of eroding banks, Comments on bank stability under out 0 % Flat under out 0 % Flat Substrate (% cover) Bedrock 20 Cobble 30 Sand Silt Muck 10 Boulder 30 Gravel Clay Mari 10 Detritus In-water Cover In-water Cover Voody Debis Boulder Other Other Overhanging Vegetation Woody Debis Boulder Other Other Nature or early successional) 100 7. Shaded, Mature Oec i duous Adjacent Land Use Mature or early successional) Adjacent Land Use | | Dissolved Oxygen (mg/L) 6.83 pH 6.04 Conductivity (μ S/cm) 16 |
| Stable due to of Structure Substrate (% cover) Bedrock 20 Cobble 30 Sand Silt Muck | | Mean Watercourse Width $O.D$ (m)Maximum Pool Depth15 (cm)Mean Bankfull Width $I.2$ (m)Mean Water Depth $a \rightarrow 2$ (cm) 30 % Riffle 20 % Pool 30 % Run 20 % Flat |
| Bedrock 20 Cobble 30 Sand Silt Muck 10 Boulder 30 Gravel Clay Marl 10 Detritus In-water Cover Cover Types Present (circle): Undercut Banks Deep Pool Watercress Aquatic Veg Overhanging Vegetation Woody Debits Boulder Other | | |
| Cover Types Present (circle): Undercut Banks Deep Pool Watercress Aquatic Veg Overhanging Vegetation Woody Debris Boulder Other Riparian Zone Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional) <u>bb 1. Shaded, Mature Deciduous</u> Adjacent Land Use | | BedrockCobbleSandSiltMuck |
| Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional) <u> bb "I. Shaded, Mature Deciduous</u> Adjacent Land Use | | Cover Types Present (circle): Undercut Banks Deep Pool Watercress Aquatic Veg |
| Adjacent Land Use | | Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional) |
| Torest | | |
| Fish Habitat Potential Critical Habitat (spawning or nursery areas, groundwater upwellings) None | | Fish Habitat Potential Critical Habitat (spawning or nursery areas, groundwater upwellings) |
| Migratory Obstructions (seasonal, permanent) High GINdient | | Migratory Obstructions (seasonal, permanent) |
| Note any fish observations None - no direct fish habit at | | Note any fish observations None - no direct fish habitat |
| Waterbody Notes Natural Watercourse Trapezoidal Channel Grassed Swale Buried Tile Surficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Dry | | Natural Watercourse Trapezoidal Channel Grassed Swale Buried Tile |
| water cousse prising one at coordingtes above, the second at 4TM 167 | | Black Throated Green Washles, suffed grause, Two sceps combine to form water cousse prising one at coordinates above, the second at 4TM 16T |
| 684 393E, 5 233 443 NI (NAD 33) and sajed on GP52 as "10-10 A". | | 684 393E, 5233 443 NI (NAD 33) and saved on GP52 as "10-10 A". |
| Field Notes Authored by <u>Mike Jahns</u> Field Notes QA/QCed by <u>Mulul</u> W:\resource\Internal Info and Teams\Aquatic Resources\Field Sheets\Stantec\Form 02 Wind Farm Waterbody Rapid Assessment Form.doc | • | |

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OB3 GPS WIND FARM WATERBODY RAPID ASSESSMENT FORM

| Station # 10-6 | Project Name Bow Lake Wind Farm |
|--|--|
| Watercourse Name unnamed | Project $# 1609 60734$ |
| Photos 9375 - 9377 | Field Staff MEllah N Burnett |
| Date July 5/12 | Time $ \mathcal{T} /6$ |
| Weather conditions in previous 24 hrs, Manny , M | |
| | |
| GPS Coordinates (Zone) 16T E 68448 | |
| Descriptive Location <u>horth east a turk</u> | pine 3 - close to 10-4+10-5 |
| · · · · · · · · · · · · · · · · · · · | · · · · · · · · · · · · · · · · · · · |
| | |
| Water Quality | ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~ |
| Dissolved Oxygen (mg/L) <u>6.54</u> pH_ | <u>6.80</u> Conductivity (μ S/cm) <u>23</u> |
| Water Temperature (°C) /6.29 | Air Temperature (°C) $\supseteq \mathcal{F} \subset$ |
| Time in situ measurements taken 17.40 | |
| ······································ | |
| Watercourse Dimensions & Morphology | |
| Mean Watercourse Width 0.40 (m) | Maximum Pool Depth / (cm) |
| ······································ | Mean Water Depth 5 (cm) |
| 0 % Riffle 50 % Po | · · · · · · · · · · · · · · · · · · · |
| | |
| Evidence of eroding banks, Comments on bank st | |
| some bank enosion, regetation a | earth stabiliting banks |
| Substrata (% aquar) | \mathbf{O} |
| Substrate (% cover) | |
| <u> </u> | SandSilt_ <u>5</u> _Muck |
| 5 Boulder <u>3</u> 0 Gravel | ClayMarl <u>20</u> Detritus |
| | |
| in-wate: Cover | |
| | nks Deep Pool Watercress Aquatic Veg |
| Overhanging Vegetation Woody Debris | (Boulder) Other |
| | |
| Riparian Zone | |
| Riparian Cover (% of watercourse shaded, domination | ant vegetation, mature or early successional) |
| 60 %. Sugar maple, while birc | h - early succession |
| Adjacent Land Use | 0 |
| forest | |
| | |
| Fish Habitat Potential | |
| | dwator upwellings) |
| Critical Habitat (spawning or nursery areas, groun hone, indirect habitat wat | evalue upwellings |
| | |
| Migratory Obstructions (seasonal, permanent) | |
| Note any fish observations None - not 0 | |
| Note any fish observations <u>none</u> not 0 | lirect tish habitat |
| | |
| / | and the second |
| Waterbody Notes / | |
| Natural Watercourse Trapezoidal Channe | I Grassed Swale Buried Tile |
| Surficial Drainage (i.e. furrows) Dugout Por | |
| | |
| Other Habitat Notes, Incidental Wildlife Observ | vations atc |
| Other Habitat Hotes, merdentar windine observ | |
| | <u>~</u> |
| | - · · · · · · · · · · · · · · · · · · · |
| | |
| | |
| Field Notes Authored by A LLL Field Note | es QA/QCed by MF |
| | |
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| | • | |
|---|---|-------------------------|
| Station # / 0 - 5 | Project Name Bow Lake W | ind Farm |
| Watercourse Name unnamed | Project # 1609 60734 | |
| Photos 9367 - 9371 | Field Staff MEllah MJoh | ins |
| Date July 5/12 | Time <u>15:20</u> | |
| Weather conditions in previous 24 hrs sunny h | st dry | |
| GPS Coordinates (Zone) 16T E 68.4629 | N 5233143 | Datum NA083 |
| Descriptive Location <u>200m</u> NE & furl | | ther notes Br Arther VT |
| Water QualityDissolved Oxygen (mg/L) 72 72 Water Temperature (°C) 16.34 Time in situ measurements taken 15.30 | <u>6.69</u> Conductivity (µS/cm) Air Temperature (°C)28° C | |
| Watercourse Dimensions & Morphology | | |
| Mean Watercourse Width 0.40 (m) | Maximum Pool Depth 10 | (cm) |
| Mean Bankfull Width (m) | Mean Water Depth 5 | (cm) |
| <u>90</u> % Riffle <u>/0</u> % Poo | | % Flat |
| Evidence of eroding banks, Comments on bank sta | ability | <u> </u> |
| minimal erosion, stable banks | -veg a cobble supported | <u> </u> |
| | | |
| Substrate (% cover) Bedrock 6° Cobble | Sand Sil | t Muck |
| Boulder 30 Gravel | OanuO | |
| | OldyM | |
| In-water Cover //one Cover Types Present (circle): Undercut Ban Overhanging Vegetation Woody Debris | ks Deep Pool Watercres Boulder Other | ss Aquatic Veg |
| Riparian Zone Riparian Cover (% of watercourse shaded, domina <u>90%, sugar maple</u> yollow bir | nt vegetation, mature or early suc | cessional) |
| Adjacent Land Use | | |
| forest | | |
| | | |
| Fish Habitat Potential | | |
| Critical Habitat (spawning or nursery areas, ground | lwater upwellings) | |
| indirect fish habitat | | |
| Migratory Obstructions (seasonal permanent) | | |
| steep slopes | | |
| Note any fish observations None | | |
| · | | |
| Waterbody Notes | | |
| Natural Watercourse / Trapezoidal Channel | Grassed Swale | _ Buried Tile |
| Surficial Drainage (i.e. furrows) Dugout Pon | | |
| GPS1 W4 stat 10-5 sidebranch Z UTM: 0684518, | 52331.40 headwaters & 10- | sidebranch GISIUPT 3 |
| Other Habitat Notes, Incidental Wildlife Observa | | 484664,523 3149 |
| utm origin of channel : left chann | el (UIS) 16T 0684637 | 5233046 - 001- |
| night chan | | 5233056 16151002 |
| WPT 8 (GPS2) · Seep - 684631, 523317. | 3 #10-seep-684622, | 5233242-GPS2 Wayp. |
| WPT9 (GPS2) : confluence of multiple wate | n features - vini: 684623, 5233 | 206 GPS |
| | QA/QCed by | label |

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| | See July fieldsheets (10-7) |
|---|---|
| WIND FARM WATER | BODY RAPID ASSESSMENT FORM |
| Stantec also 10-7 | |
| | Roy Lake Sharoll |
| Station # <u>13 pref UAJO8</u> | Project Name BOIN Lake Phase |
| Watercourse Name Photos $3212 \rightarrow 3215$ | Project # Field Staff KEasterIng + M. PowerC |
| Date $May = 2019$ | Time 1030 |
| Weather conditions in previous 24 hrs | |
| GPS Coordinates (Zone) <u>LOT</u> E <u>68</u> | ЧЧЛЧ N 5233042 Datum |
| Descriptive Location | |
| | |
| Water Quality | |
| | pH Conductivity (µS/cm) |
| Water Temperature (°C) | Air Temperature (°C) |
| Time in situ measurements taken | |
| Watercourse Dimensions & Morphology | |
| Mean Watercourse Width 0,3 (m) | |
| Mean Bankfull Width | Mean Water Depth (cm) |
| % Riffle50 Evidence of eroding banks, Comments on ba | % Pool% Run% Fla |
| Sp 10 Falls | |
| Cubetrate (9/ equar) | |
| Substrate (% cover) Bedrock Cobble | Sand Silt C |
| BoulderO Gravel | |
| | |
| In-water Cover Cover Types Pre <u>sent</u> (circle): <u>Un</u> dercu | ut Banks Deep Pool Watercress Aquatic Veg |
| Overhanging Vegetation Woody Debris | Boulder Other |
| | |
| Riparian Zone Biparian Cover (% of watercourse shaded, do | ominant vegetation, mature or early successional) |
| 4.0% | oninant vogotation, mataro or oany outboolonaly |
| Adjacent Land Use | . 1 |
| crown land ho | West. |
| Fish Habitat Potential | |
| Critical Habitat (spawning or nursery areas, g | aroundwater upwellings) |
| no | |
| Migratory Obstructions (seasonal, permanent | t) |
| Note any fish observations | |
| | •••••••••••••••••••••••••••••••••••••• |
| | |
| Waterbody Notes | Crossed Swale Buried Tile |
| Natural Watercourse_/ Trapezoidal Ch Surficial Drainage (i.e. furrows) Dugou | |
| Sumicial Dramage (i.e. Turrows) Dugou | It Pond Dominated by Aquatic Veg Dry |
| Other Habitat Notes, Incidental Wildlife Ot | oservations, etc |
| Beulder Ind chappel | on slope WB |
| | ta WBI |
| channel red Flow dis | through flat area NB |
| Field Notes Authored by Fiel | Id Notes QA/QCed by |
| | |

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| | RBODY RAPID ASSESSMENT FORM |
|---|--|
| Stantec ye T3-fret-WI | MOUT RAPID ASSESSMENT FORM |
| Station #7 Watercourse Name_unnamed | Project Name <u>Bow Lake Wind Farm</u> Project # 1609 60734 |
| Photos $9378 - 9380$ Date $July 5 / 12$ Weather conditions in previous 24 hrs $\underline{5}$ GPS Coordinates (Zone) $16T$ E pc Descriptive Location <u>NE of turbine</u> | Field Staff <u>MELLCH</u> , NBurnett Time <u>17:20</u> MNY, hot thumid, NO perfects 684504 <u>N 5233053</u> Datum NAD83 4, in close proximity to 10-4, 10-5+10-6 |
| Water Quality Dissolved Oxygen (mg/L) <u>4./4</u> Water Temperature (°C) <u>/5.55</u> Time <i>in situ</i> measurements taken <u>/</u> 7 | pH <u>6.26</u> Conductivity (μS/cm) <u>/6</u> Air Temperature (°C) <u>27°C</u> |
| Watercourse Dimensions & MorphologyMean Watercourse Width0.40(m)Mean Bankfull Width0.60(m)0% Riffle60Evidence of eroding banks, Comments onNoerosion, stableNoerosion, stable60 | Maximum Pool Depth <u>/5</u> (cm) Mean Water Depth <u>5</u> (cm) % Pool <u>40</u> % Run <u>0</u> % Fla bank stability |
| | ole <u>20</u> SandSilt <u>5</u> Muck elClayMarl <i>60</i> Detritus |
| In-water Cover Cover Types Present (circle): Under Overhanging Vegetation Woody Debr | ercut Banks Deep Pool Watercress Aquatic Veg |
| Adjacent Land Use | , dominant vegetation, mature or early successional) |
| Fish Habitat Potential Critical Habitat (spawning or nursery areas indirect habitat - water | s, groundwater upwellings) |
| Migratory Obstructions (seasonal, perman جامعیہ کا موجعہ Note any fish observations | |
| | Channel Grassed Swale Buried Tile gout Pond Dominated by Aquatic Veg Dry |
| Other Habitat Notes, Incidental Wildlife | Observations, etc. |
| | |
| Field Notes Authored by MELL | Field Notes QA/QCed by |

6p51



| Station #3 Watercourse Name_unKnown | Project Name <u>Bow Lake L</u> Project # <u>1609 60734</u> | Nind Farm |
|--|---|---|
| Photos $9360 - 9362$ Date July $\leq /12$ | Field Staff <u>mellah</u> m Joh Time <u>1:40 om</u> | N.S |
| Weather conditions in previous 24 hrs <u>sunny</u> GPS Coordinates (Zone) 16 T <u>E 68447</u> Descriptive Location <u>~266m</u> <u>South</u> <u>B</u> | hot N 5232815 | Datum NA083 |
| Water QualityDissolved Oxygen (mg/L) <u>4.55</u> PH_Water Temperature (°C) <u>20.40</u> Time in situ measurements taken <u>1:45 pm</u> | <u>6.98</u> Conductivity (µS/cm)_ Air Temperature (°C) 22 | 19 #= 28°C |
| Watercourse Dimensions & MorphologyMean Watercourse WidthØ. 60 (m)Mean Bankfull Width/.5 (m)% Riffle50 % Pool | Mean Water Depth 5 | (cm) (cm) % Flat |
| Evidence of eroding banks, Comments on bank sta section of bank w low erosion | ability n - mostly vegetated b | anks |
| Substrate (% cover) Bedrock 5 Cobble Boulder Gravel in-water Cover Cover Types Present (circle): Undercut Bar Overhanging Vegetation Woody Debris | S Sand S S Clay M Nks Oeep PooP Watercre | ilt <u>5</u> Muck <u>Iarl 8</u> ø_Detritus |
| Riparian Zone Riparian Cover (% of watercourse shaded, domina 90% - ferns, jewelweed, w bir | int vegetation, mature or early su | iccessional) |
| Adjacent Land Use | , | |
| Fish Habitat Potential Critical Habitat (spawning or nursery areas, ground ก๖ท๔ | dwater upwellings) | |
| Migratory Obstructions (seasonal permanent) <u>organic</u> debris sleep slop Note any fish observations <u>none</u> | e, high gradient | |
| | | |
| Waterbody Notes Natural Watercourse Trapezoidal Channel Surficial Drainage (i.e. furrows) Dugout Pon | Grassed Swale d Dominated by Aquatic | Buried Tile Veg Dry |
| Other Habitat Notes, Incidental Wildlife Observa | ations, etc | |
| -indifect fish habitat -not direct fish habitat | | |
| Field Notes Authored by Mith GUL Field Notes | QA/QCed by MF | |

| Stantec |
|--|
| Station # 10-34 WA-112 Project Name Bro- Labe |
| Station # 10-39 WA-112 Project Name Watercourse Name Image: Manual |
| Photos 759 2760 - Frenz use W Field Staff M& INCE |
| Date Awrit 4, 2012 Time |
| Weather conditions in previous 24 hrs con |
| GPS Coordinates (Zone) 167 E N Datum NAV8 |
| Descriptive Location 85 m northast of Turber 2 original plasition. |
| |
| Water Quality |
| Dissolved Oxygen (mg/L) pH Conductivity (µS/cm) |
| Water Temperature (°C) |
| Time in situ measurements taken |
| |
| Watercourse Dimensions & Morphology Moan Watercourse Width 0.5 (m) Maximum Pool Depth 30 (cm) |
| Mean Watercourse Width_0-3 (in) Maximum Foor Depth(cm) |
| Mean Bankfull Width2.0(m)Mean Water Depth15(cm)So% Riffle% Pool30% Run% Fla |
| Evidence of eroding banks, Comments on bank stability |
| Evidence of eroding banks, comments on bank stability |
| |
| Substrate (% cover) Bedrock 10 Cobble 20 Sand 10 Silt Muck |
| Bedrock IV Cobble ZO Sand IV Silt Muck 20 Boulder 10 Gravel Clay Marl 3> Detritus |
| |
| in-wate: Dover |
| Cover Types Present (circle): Undercut Banks (Deep Pool Watercress Aquatic Veg |
| Overhanging Vegetation (Woody Debris) Boulder Other |
| |
| Riparian Zone |
| Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional) |
| Adjacent Land Use |
| Fact |
| <u> </u> |
| Fish Habitat Potential |
| Critical Habitat (spawning or nursery areas, groundwater upwellings) |
| |
| Migratory Obstructions (seasonal, permanent) |
| Sdeep grade Internitint j dry at times, |
| Note any fish observations with |
| |
| Waterbody Notes |
| Natural Watercourse Trapezoidal Channel Grassed Swale Buried Tile |
| Surficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Dry |
| |
| Other Habitat Notes, Incidental Wildlife Observations, etc. |
| |
| |
| |
| Field Notes Authored by Field Notes QA/QCed by |
| |

| Stantec Station #_10-33 -2P-F-4 | Project Nama Bow Lake |
|---|--|
| Watercourse Name | Project # $\frac{1}{69}60771$ |
| Photos $3209, 3211, 3208, 3207, 3210$ Date $April 30, 2012$ | Field Staff Mak Rown, Kadre Rastering |
| Weather conditions in previous 24 hrs | Leston N Datum NAD2 Liston (original) |
| Water Quality | |
| Dissolved Oxygen (mg/L)pH Water Temperature (°C) Time <i>in situ</i> measurements taken | Conductivity (µS/cm) Air Temperature (°C)ره ۹ C |
| Watercourse Dimensions & Morphology Mean Watercourse Width 0.30 (m) Mean Bankfull Width 0.5 (m) % Riffle % Riffle % Riffle % Riffle % Riffle % Riffle | Maximum Pool Depth <u>20</u> (cm) Mean Water Depth <u>10</u> (cm) Pool <u>50</u> % Run % Fl stability - Influ evidual (Levos Jon |
| Substrate (% cover) Bedrock Cobble 20 Boulder (o Gravel | <u> とう Sand 2つ Silt Muck</u> Clay Marl 30 Detritus |
| m-water Cover Cover Types Present (circle): Undercut E Overhanging Vegetation Woody Debys | |
| Riparian Zone Riparian Cover (% of watercourse shaded, dom \$0 70 yether birch balso | inant vegetation, mature or early successional) -4^{1} , -6^{1} |
| Adjacent Land Use | |
| Fish Habitat Potential Critical Habitat (spawning or nursery areas, grou | undwater upwellings) |
| Migratory Obstructions (seasonal, permanent) Internet - day at thes high | a valent. |
| Note any fish observations where 1 | |
| Waterbody Notes Natural Watercourse Trapezoidal Chan Surficial Drainage (i.e. furrows) Dugout P | nel Grassed Swale Buried Tile Pond Dominated by Aquatic Veg Dry |
| | |
| | ervations, etc |

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| Stanter | -) | | | |
|---|--|--|--|---------------------------------------|
| Station # 7-20 Cisolated s | eep 2) | Project Name Bow | Lake Wind | |
| Watercourse Name_un-named | | Project # 1600 60 | 721 | |
| Photos 9808 - 9809 | | Project # 1609 60771 Field Staff Mitch Ellah, Joe Keene | | |
| Date 2012/08/28 | · . | Time 3: $50 \rho m$ | | <u>.</u> |
| | bro 0.7200 / | | | |
| Weather conditions in previous 24 | $\frac{115}{5} \frac{10}{220} \frac{10}{10}$ | ight wind, no preci | 0 toggy | |
| GPS Coordinates (Zone) 16T | | | 34604 Da | tum NAD&3 |
| Descriptive Location <u>~ 110 m</u> | 2 apt 35 10-2 | - 5 | | |
| Water Quality | NIA -low | water levels | ······································ | |
| Dissolved Oxygen (mg/L) | рH | Conductivity (| uS/cm) | , |
| Water Temperature (°C) | P*; | Air Temperature (°C) | , | <u></u> |
| Time <i>in situ</i> measurements taken | | | | |
| Watercourse Dimensions & Mor | phology 15 | OLATED SEEP -S | see below fo | r size |
| Mean Watercourse Width Mean Bankfull Width | (m) | Maximum Pool Depth | (cn | n) |
| Mean Bankfull Width | (m) | Mean Water Depth | (cn | |
| % Riffle | () % Po | | % Run | , |
| Evidence of eroding banks, Comm | | | /o mun | /o T iat |
| | | | | |
| Substrate (% cover) | | | | |
| Bedrock | Cobble | Sand | Silt | Muck |
| Boulder | Gravel | Clay | Om Marl | Detritus |
| | | | | 0 oundo |
| In-water Cover | ۰. | | | |
| Cover Types Present (circle): | Undercut Ba | nks Deep Pool | Watercress | Aquatic Veg |
| Overhanging Vegetation Woo | | | | |
| | | | | |
| Riparian Zone | | | | |
| Riparian Cover (% of watercourse | shaded, domina | ant vegetation, mature o | r early succession | al) |
| 100% - mixed forest - m | ature | · · | | • |
| Adjacent Land Use | | | | |
| torest | | · · · · · | · · · · · · · · · · · · · · · · · · · | |
| Fish Habitat Potential | | | 5 | |
| Critical Habitat (spawning or nurse | ry areas, groun | dwater upwellings) | | |
| nohe | | | | |
| Migratory Obstructions (seasonal, | permanent) | | | |
| isolated seep Note any fish observation's | | | | |
| Note any fish observations | | | | |
| none | | | | |
| | | | | |
| Waterbody Notes 15eep | / | , | | |
| Natural Watercourse I rap | ezoidal Channe | Grassed Sw | alé Buri | ed Tile |
| Natural Watercourse Trap Surficial Drainage (i.e. furrows) | Dugøut Por | nd Dominated by | Aquatic Veg | _/ Dry |
| • | | | | |
| Other Habitat Notes, Incidental V | Vildlife Observ | ations, etc | | |
| seep dimensiono - 11 | JMX 5m | ~ | | |
| · · · · · · · · · · · · · · · · · · · | | · | | • <u>•••</u> |
| | | | | · · · · · · · · · · · · · · · · · · · |
| Field Notes Authored by MGllah | _ Field Note | es QA/QCed by M.P. | | |
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| Stantec | | | | |
|---|---------------------------------------|--|---------------------------------------|--|
| Station # 7-19 (isolated seep 1) Watercourse Name un-named | | | | 1 |
| Station # $\frac{1}{1}$ | Project | Name <u>Bo</u> | N Lake Win | i d |
| | Project | #609_6 | 0771 | keene |
| Photos <u>9805 - 9807</u> | | | | , keene |
| Date 2012/08/28 | l ime | 3:4000 | | |
| Weather conditions in previous 24 hrs~22° GPS Coordinates (Zone) 16t E 685 | C light wir | a no pre | cip toggy | |
| GPS Coordinates (Zone) 167 E 685 | 602 | <u>N 52</u> | 34606 | Datum NAD 83 |
| Descriptive Location ~130m east 0 | , 10-25 | · · · · · · · · · · · · · · · · · · · | <u> </u> | |
| Water Quality Dissolved Oxygen (mg/L)N A - Water Temperature (°C) | low water | 1 levels | | |
| Dissolved Oxygon (mg/l) | лЦ | Conductivity | (u S / om) | |
| Motor Torporoture (°C) | | | (μο/cm) | · · · · · · · · · · · · · · · · · · · |
| Time to situ massuremente takan | Air Ten | iperature (°C |) | |
| Time In situ measurements taken | ISAL ATT | D CEED- | see below | Pa size, |
| Watercourse Dimensions & Morphology | | | | , |
| Mean Watercourse Width(m) | Maximu | um Pool Dept | h | _(cm) |
| Mean Watercourse Width(m) Mean Bankfull Width(m) % Riffle | Mean V | Vater Depth_ | | _(cm) |
| % Riffle | % Pool | | _% Run | % Fla |
| Evidence of eroding banks, Comments on ba | ink stability | | | |
| Substrate (9/ action) | | · | | |
| Substrate (% cover) | | Sand | Cilt | Muck |
| Bedrock Cobble | | Clay | Silt Marl | |
| BoulderGravel | | Clay | iviari | Detritus |
| In-water Cover | | | • | |
| Cover Types Present (circle): Underci | ut Banks | Deep Pool | Watercress | Aquatic Veg |
| Overhanging Vegetation Woody Debris | | | | , quant rog |
| | | | | |
| Riparian Zone | | | | |
| Riparian Cover (% of watercourse shaded, d | ominant vegeta | ation, mature | or early succes | ssional) |
| 100% - mixed torest mature | | | | · · · · |
| Adjacent Land Use | | | | |
| torest | | | | |
| Fish Habitat Potential | | | | <i>4.</i> |
| Critical Habitat (spawning or nursery areas, g | groundwater up | owellings) | | |
| none | · · · · · · · · · · · · · · · · · · · | | | |
| Migratory Obstructions (seasonal, permanen | · . | | | |
| Note any fish observations | | · · · · · · · · · · · · · · · · · · · | | ····· |
| ักธก <i>ย</i> | | | | ······································ |
| Jseep | · · · · · · · · · · · · · · · · · · · | ······································ | · · · · | |
| | · | _ | 1. | |
| Natural Watercourse Trapezoidal Ch | iannel | Grassed S | wale | Buried Tile |
| Natural Watercourse Trapezoidal Ch Surficial Drainage (i.e. furrows) Dugou | ut Pond | Dominated | by Aquatic Veg | / Dry |
| · · · · · | | | | |
| Other Habitat Notes, Incidental Wildlife Ol seep dimensions -> 10 m × | | | | · . |
| | | | | |
| | | | | · · · · · · · · · · · · · · · · · · · |
| | | P | · · · · · · · · · · · · · · · · · · · | <u> </u> |
| Field Notes Authored by Maula Fie | ld Notes QA/QCed h | m.P. | | |

| Stantec | | • |
|--|--|---------------------------------------|
| α_{1} | Project Name Bow Lake | |
| Station # Watercourse Name Unnard Wb | Project # 16046077 | |
| Photos 9810 - 9814 | Field Staff Joe Kan, Malah | <u> </u> |
| Date 2012/08/28 | Time 4:08 pm | |
| Weather conditions in previous 24 hrs Janny were | | · |
| GPS Coordinates (Zone) 167 E see bot | tom N Datum | NAD 83 |
| Descriptive location 05 of Confluer with sile of | chaniel ally - (or SW corner of Trast | one Statio |
| to upstream ready south of Laydown over to the son | steash | |
| Water Quality Dissolved Oxygen (mg/L) 12.48 pH Water Temperature (°C) 12.48 Time <i>in situ</i> measurements taken 4.09 pm | 6.83 Conductivity (μ S/cm) 59 Air Temperature (°C) 23° C | ******************************* |
| Watercourse Dimensions & Morphology Mean Watercourse Width 2.5m (m) Mean Bankfull Width 4.60m (m) 50 % Riffle 30 % Pool Evidence of eroding banks, Comments on bank state 8.40m % Pool | | % Flat |
| Substrate (% cover) Bedrock 30 Cobble 20 | D Sand 10 Silt | Muck |
| 20 Boulder 20 Gravel | Clay Marl | Detritus |
| | | _Doundo |
| In-water Cover | | |
| Cover Types Present (circle): Undersut Bar | | atic Veg |
| Overhanging Vegetation Woody Debris | Boulder Other | <u></u> |
| Riparian Zone Riparian Cover (% of watercourse shaded, domina 8072. Mixed Fresh - Mature | nt vegetation, mature or early successional) | * |
| Adjacent Land Use | | |
| | | |
| Fish Habitat Potential | | |
| Critical Habitat (spawning or nursery areas, ground Ues - Brock Trout observed | • • • • | |
| Note any fish observations Brook Trout observations | ~ ussed ~ 1 | · · · · · · · · · · · · · · · · · · · |
| Note any fish observations Brook Trant observ | ed | |
| | | |
| | | |
| Waterbody Notes | | |
| Natural Watercourse Trapezoidal Channel | | |
| Surficial Drainage (i.e. furrows) Dugout Pon | | |
| Other Habitat Notes, Incidental Wildlife Observer | ations, etc. 500d flow - deep cut chann | nel |
| DS on confluence channel not and - 685418 E, 5 | 234664 N | |
| | | |
| Field Notes Authored by Doc here Field Notes | QA/QCed by MGClcl | |
| | | |

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7-17

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| WIND FARM WATERBODY RAPID ASSESSMENT FO | RM |
|--|--|
| Stantec | |
| Station # $7-16$ Natercourse Name u hund wb Photos $980 - 9804$ Date $2801 - 9804$ Date $2012/08/28$ Neather conditions in previous 24 hrs $50000 - 3000$ GPS Coordinates (Zone) 167 E see below Descriptive Location 167 C Sw cd of 1005 form | Ellah Datum /V408 |
| Water Quality 12.18 pH_6.91Conductivity (μ S/cm)Dissolved Oxygen (mg/L) $7.05°$ Air Temperature (°C) $2.3°$ Water Temperature (°C) $7.05°$ Air Temperature (°C) $2.3°$ Time in situ measurements taken $3:31$ pm | <u>49</u> |
| Watercourse Dimensions & MorphologyMean Watercourse Width1.2 m (m)Maximum Pool Depth20 cmMean Bankfull Width3.0 m (m)Mean Water Depth0.0 m 5060% Riffle30% Pool2020% Riffle30% Pool2020% Run0.0 m (m)0.0 m (m)Evidence of eroding banks, Comments on bank stability0.0 m (m)0.0 m (m) | (cm) <u>cm (cm)</u> % Fl <u>Sab surfae</u> Flow |
| Substrate (% cover) Bedrock Cobble 50 Sand 30 Silt | Muck |
| Boulder Gravel Clay Ma | production of the second s |
| Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early such and the state of the state | |
| Adiacent Land Use | |
| Natural Forest Fish Habitat Potential Critical Habitat (spawning or nursery areas, groundwater upwellings) Scondard (spawning or nursery areas, groundwater upwellings) | |
| Migratory Obstructions (seasonal, permanent) grade & us and - schember flow | |
| Note any fish observations _ how | |
| | |
| Waterbody Notes Natural Watercourse Trapezoidal Channel Grassed Swale Surficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic V | _ Buried Tile eg Dry |
| Natural Watercourse/ Trapezoidal Channel Grassed Swale Surficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic V | eg Dry |
| Natural Watercourse/ Trapezoidal Channel Grassed Swale | eg Dry |

% Flat Flow

Field Notes Authored by Doe Ken

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Field Notes QA/QCed by MELLAM

| Stantec | | |
|---|---|--|
| Station #5 | Project Name Bow Lake | |
| Watercourse Name an und wB | Project #_1609 60 771 | |
| Photos <u>9797 - 978 9800</u> Date <u>2012/08 /28</u> Field Staff <u>Joe Kene mild Flub</u> Time <u>3100 m</u> | | |
| | | |
| GPS Coordinates (Zone) 16 E | See Indow N Datum NAU87 | |
| Descriptive Location west of 7-14 | on South high stole of transformer station | |
| Water Quality 0.97 | 1 07 11 | |
| Dissolved Oxygen (mg/L) 9.97 | pH6.82 Conductivity (μ S/cm)1 | |
| water Temperature (°C) | Air Temperature (°C) 23°< | |
| Time in situ measurements taken 3.0 | 03 pm | |
| Watercourse Dimensions & Morpholo | ду | |
| Mean Watercourse Width 0.3 (m) | | |
| Mean Bankfull Width <u>4.0</u> (m) | | |
| <u> </u> | % Pool% Fla | |
| Evidence of eroding banks, Comments o | n bank stability <u>5115th call and</u> | |
| | 3 | |
| Substrate (% cover) | oble $\frac{60}{30}$ Sand $\frac{30}{30}$ Silt Muck | |
| | ivel <u>Clay Marl 20</u> Detritus | |
| | | |
| a-water Cover | | |
| | dercut Banks Deep Pool Watercress Aquatic Veg | |
| Overhanging Vegetation Woody Del | Boulder Other | |
| Riparian Zone Ferns | | |
| Riparian Cover (% of watercourse shade | d, dominant vegetation, mature or early successional) | |
| Adjacent Land Use Natural Forst | | |
| Fish Ushint Detential | | |
| Fish Habitat Potential Critical Habitat (spawning or nursery are | as aroundwater unwellings) | |
| Citical Habitat (spawning of hursery are | | |
| Migratory Obstructions (seasonal, perma | inent) | |
| grade - undergrand sections | | |
| Note any fish observations | | |
| | | |
| Waterbody Notes | | |
| | al Channel Grassed Swale Buried Tile | |
| Surficial Drainage (i.e. furrows) D | | |
| Other Habitat Notes, Incidental Wildlif - US 7-15 - Sup - 685904 E - 523453 | e Observations, etc. d5 end 3025 underground 7N 7-15-US-Serv #2 685907 E 5234597 N | |
| 05-7-15 685666 E 5234 778 N | / 1-12 00 200 PL 00090/ 1= 52573-1/ 1V | |
| 12 dual 7-15 685776 E 5234692 N | | |
| | | |
| Field Notes Authored by Joe kee | Field Notes QA/QCed by Mclah | |
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| E Co |
| |

| Station # 7-14 | Project Name Bow Lake |
|--|---|
| Watercourse Name Gunned WB | Project # |
| Photos 9791-9796 | Field Staff Toe Ken mitch Ellah |
| Date 2012/08/28 | Time _ 2:30 pm |
| Weather conditions in previous 24 hrs warn 5 | anny fogingun |
| GPS Coordinates (Zone) 1/1 F See 1 | selow in otherNustes Datum NJADB3 |
| Descriptive Location wesh of 7-13 along 50 | with edge of transformer station. |
| | |
| Water Quality | Λ |
| Dissolved Oxygen (mg/L) | Conductivity (uS/cm) |
| Water Temperature (°C) | Air Temperature (°C) |
| Time in situ measurements taken | |
| Watercourse Dimensions & Morphology | Maximum Pool Depth Dog (cm) |
| Mean Watercourse Width And AD (m) | Maximum Pool Depth U7210 (cm) |
| Mean Watercourse Width <u>チェー (AD</u> (m) Mean Bankfull Width <u>4.0</u> (m) | Mean Water Depth $D_{17} < 5_(cm)$ D_{17} |
| Mean Bankfull Width 40 (m) 60 % Riffle 30 % | Pool% Run% Flat |
| Evidence of eroding banks, Comments on bank | |
| Slight underasting around vosts | |
| Substrate (% cover) | |
| Bedrock Cobble | <u>50</u> Sand <u>30</u> SiltMuck |
| BoulderGravel | Clay Marl 20 Detritus |
| Vin water Cover Cover Types Present (circle): Undercut I Overhanging Vegetation Woody Debris | Banks Deep Pool Watercress Aquatic Veg Boulder Other |
| Riparian Zone Riparian Cover (% of watercourse shaded, dom 80% wived Great - matter | inant vegetation, mature or early successional) |
| Adjacent Land Use | ······································ |
| Natural Forst | |
| | |
| Fish Habitat Potential Critical Habitat (spawning or nursery areas, gro | undwater upwellings) |
| Migratory Obstructions (seasonal, permanent) | |
| Note any fish observations were | mt - isolatea |
| Note any fish observations | |
| | |
| Waterbody Notes | |
| | nel Grassed Swale Buried Tile |
| Surficial Drainage (i.e. furrows) Dugout F | Pond Dominated by Aquatic Veg Dry V |
| Other Habitat Notes, Incidental Wildlife Obse | ervations, etc. Jevelvent in Us sections, |
| 7-14-45 GPS 500- 685932 E 5234632 N | |
| 7-14 ind clamel 685 910 E , 5234698 N | |
| | <u></u> |
| | |
| Field Notes Authored by Joe Kone Field N | lotes QA/QCed by MGULL |
| | |

| Stantec | |
|--|---|
| Station # 7-13 | Project Name Biw Lake |
| | , , , , , , , , , , , , , , , , , , , |
| Watercourse Name und UB Photos 9785 - 9790 | Project # 160960771 Field Staff Jac Kare Mitch Ellah |
| Date 2012/08/28 | Time 2.00μ |
| Weather conditions in previous 24 hrs warm san | |
| GPS Coordinates (Zone) <u>See belew -othe</u> | n hotes N Datum AMD&7 |
| Descriptive Location best of 7-12 on south s | Hole OL + roug former Stadion |
| | |
| | |
| Water Quality | 6.74 Conductivity (uS/cm) 40 |
| Dissolved Oxygen (mg/L) 12.27 pH | |
| Water Temperature (°C) 7.13 | Air Temperature (°C) <u>22°C</u> |
| Time in situ measurements taken 2 . 02 pm | • |
| Watercourse Dimensions & Morphology | |
| | Maximum Pool Depth 20 (cm) |
| Mean Bankfull Width 2.5 (m) | Mean Water Depth 5 (cm) |
| 50 % Riffle <u>30</u> % Po | |
| Evidence of eroding banks, Comments on bank st | ability which of vyper end 55 underground |
| | 1 |
| Substrate (% sover) | |
| Substrate (% cover) Bedrock Cobble | 30 Sand 30 Silt Set Muck |
| Boulder Gravel | Clay Marl 20 Detritus |
| | |
| in-water Covor | \mathbf{X} . The second se |
| Cover Types Present (circle): Undercut Bar | |
| Overhanging Vegetation Woody Debris | Boulder Other |
| Riparian Zone | |
| Riparian Cover (% of watercourse shaded, domina | ant vegetation, mature or early successional) |
| 90% used forest | |
| Adjacent Land Use | |
| Natural Forest | |
| | |
| Fish Habitat Potential | |
| Critical Habitat (spawning or nursery areas, ground | dwater upwellings) |
| coldnater source | |
| Migratory Obstructions (seasonal, permanent) | |
| | |
| Note any fish observations | |
| | · · · · · · · · · · · · · · · · · · · |
| Waterbody Notes | |
| Natural Watercourse Trapezoidal Channe | Grassed Swale Buried Tile |
| Surficial Drainage (i.e. furrows) Dugout Por | |
| | |
| Other Habitat Notes, Incidental Wildlife Observ & fracts upday from the lope with addit | ations, etc. sprin originates from side of vidge. |
| | |
| | squirrels |
| 6PS DS 085 847 E - 5234846 N | |
| | source 685887 € 52347 64 N |
| Field Notes Authored by UR KUM Field Note | s QA/QCed by MEllah |



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| June | |
|--|---|
| Station # 7-12 | Project Name Bon Lake |
| Watercourse Name Unnerd sprojed WB | Project # 160960771 |
| Photos 9717 | Field Staff Tolken Mrtch Ellah |
| Date $\frac{2012/08/18}{2012/08/18}$ | Time 1:27 /~ |
| Weather conditions in previous 24 hrs <u>Survey</u> v | |
| GPS Coordinates (Zone) 16T E / Fee | below N Datum N4083 |
| Descriptive Location Vert 1 - 7-11 Caper | of vidge porting North |
| | |
| Water QualityDissolved Oxygen (mg/L) (2.17) Water Temperature (°C) 6.60° Time in situ measurements taken $1'.30 \rho$ m | 6.8 Conductivity (μ S/cm) <u>15</u> Air Temperature (°C) <u>22°</u> |
| Watercourse Dimensions & Morphology | |
| Mean Watercourse Width 1 m (m) | Maximum Pool Depth_ <u>2,2 m</u> (cm) |
| Mean Bankfull Width 1.5 m (m) | Mean Water Depth(cm) |
| <u><u><u>60</u></u>% Riffle <u>30</u>% Po</u> | |
| Evidence of eroding banks, Comments on bank st | |
| | |
| Substrate (% cover) | |
| Bedrock Cobble | 1050 Sand ³⁰ Silt Muck |
| BoulderGravel | Clay Marl ^{Lo} Detritus |
| | OutyDoundo |
| in-water Cover Cover Types Present (circle): Undercut Bar Overhanging Vegetation Woody Debris | nks Deep Pool Watercress Aquatic Veg Boulder Other |
| Disavian Zana | |
| Riparian Zone Riparian Cover (% of watercourse shaded, domina &Dozo com - maked forst | ant vegetation, mature or early successional) |
| | |
| Adjacent Land Use Natural Forest | |
| | |
| Fish Habitat Potential | |
| Critical Habitat (spawning or nursery areas, groun | dwater upwellings) |
| Migratory Obstructions (seasonal, permanent) | |
| | |
| Note any fish observations | |
| | |
| Waterbody Notes | |
| Natural Watercourse Trapezoidal Channe | I Grassed Swale Buried Tile |
| Surficial Drainage (i.e. furrows) Dugout Por | |
| | |
| Other Habitat Notes, Incidental Wildlife Observ | rations, etc. sies undergrand a lat - or younds from |
| rody det vodage - nodeste flow. springlad- 51 | |
| | US seep /spins 685987 E-5234881 N |
| | 15 7-12 685865 E 5234867 N |
| | 57-12 Side brade 0685885E-5234858 N |
| Field Notes Authored by Tre Kers Field Note | s QA/QCed by Mglld |

| Matereouroo Nomo Jala | | | | - Lake | | |
|--|---|---|---|-------------|--------------------|--|
| Watercourse Name_hhr | 1 | Proje | ct # 160960 | 7/1 | <u>n i</u> | |
| Photos 9772-977 | 6 | Field | Staff Joe Kene | - 11.00 E | Mah | |
| Date 1012/08/28 | 0.11 (1) | lime | 1:07pm | | | |
| Weather conditions in pre | | | | ····· | Data | 1 4 |
| GPS Coordinates (Zone) | 101 E See | notes belo | W N 10/7-9 | | Datum | <u>n /0</u> |
| Descriptive Location _ | 51-51 1-10 ,10 | 3. 1- | 10/7-1 | | ···. | |
| Water Quality | | | | | Dry | |
| Dissolved Oxygen (mg/L) | a | H | Conductivity (| uS/cm) | 1417 | |
| Water Temperature (°C) _ | | | emperature (°C) | | <i>!</i> | |
| Time in situ measurement | | | | | | |
| Watercourse Dimension | | | | | | |
| Mean Watercourse Width | <u>(m)</u> | | num Pool Depth_ | Dry | _(cm) | 1997 - 1997 - 1997 1997 - 1997 |
| Mean Bankfull Width 2 | | | Water Depth | D'M | _(cm) | |
| % Riffle | | 6 Pool | | % Run | • | % |
| Evidence of eroding bank | s, Comments on bai | nk stability | Slight under | attry | | |
| Substrate (% cover) | | • | | | 1 | |
| Bedrock | Cobble | 10 | Sand 65 | Silt | • | Muc |
| Boulder | | · · · · · · · · · · · · · · · · · · · | Clay | Marl | 25 | Det |
| | | | | | | |
| Cover Types Present (circ Overhanging Vegetation | ele): Undercu Woody Debris | t Banks Bould | | Watercress | Aqu | uatic \ |
| Overhanging Vegetation Ferrs Riparian Zone | Woody Debris | Bould | ler Other | <u></u> | | |
| Overhanging Vegetation | Woody Debris ercourse shaded, do | Bould | ler Other | <u></u> | | |
| Overhanging Vegetation From From S Riparian Zone Riparian Cover (% of wate 90% us ned forst | Woody Debris ercourse shaded, do | Bould | ler Other | <u></u> | | |
| Overhanging Vegetation Ferros Riparian Zone Riparian Cover (% of wate | Woody Debris ercourse shaded, do | Bould | ler Other | <u></u> | | |
| Overhanging Vegetation Riparian Zone Riparian Cover (% of wate <u>9070</u> ms red forst Adjacent Land Use Natural Forst | Woody Debris ercourse shaded, do | Bould | ler Other | <u></u> | | |
| Overhanging Vegetation Riparian Zone Riparian Cover (% of wate <u>907</u> , us well forst Adjacent Land Use | Woody Debrus | Bould | ler Other | <u></u> | | |
| Overhanging Vegetation Riparian Zone Riparian Cover (% of wate <u>90% used</u> forst Adjacent Land Use <u>Natural Forst</u> Fish Habitat Potential Critical Habitat (spawning P_{27} | woody Debris ercourse shaded, do or nursery areas, g | Bould ominant vege roundwater | ler Other | <u></u> | | |
| Overhanging Vegetation Riparian Zone Riparian Cover (% of water 90% maxed forst Adjacent Land Use Marcol Forst Fish Habitat Potential Critical Habitat (spawning 9% Migratory Obstructions (se | ercourse shaded, do or nursery areas, g | Bould ominant vege roundwater | ler Other | <u></u> | | |
| Overhanging Vegetation Riparian Zone Riparian Cover (% of wate <u>90% used</u> forst Adjacent Land Use <u>Natural Forst</u> Fish Habitat Potential Critical Habitat (spawning P_{27} | ercourse shaded, do or nursery areas, g easonal, permanent Migh gradic | Bould ominant vege roundwater | ler Other | <u></u> | | |
| Overhanging Vegetation Riparian Zone Riparian Cover (% of wate 90% us well forest Adjacent Land Use Marcol Forest Fish Habitat Potential Critical Habitat (spawning Migratory Obstructions (see Mm - Inder meter Note any fish observations | ercourse shaded, do or nursery areas, g easonal, permanent Migh gradic | Bould ominant vege roundwater | ler Other | <u></u> | | |
| Overhanging Vegetation Riparian Zone Riparian Cover (% of water 90% maxed forst Adjacent Land Use Market Forst Fish Habitat Potential Critical Habitat (spawning 9% Migratory Obstructions (sec 0% - Inder milest Note any fish observations Waterbody Notes | ercourse shaded, do or nursery areas, g easonal, permanent bigh gradic | Bould ominant vege roundwater | ler Other | early succe | ssional) | |
| Overhanging Vegetation Riparian Zone Riparian Cover (% of water 90% waved forst Adjacent Land Use Natural Forst Fish Habitat Potential Critical Habitat (spawning 9% Migratory Obstructions (sec 0% - Transfer Note any fish observations Waterbody Notes Natural Watercourse | ercourse shaded, do or nursery areas, g easonal, permanent <u>high gradie</u> Trapezoidal Cha | Bould ominant vege roundwater) ent | ler Other etation, mature or upwellings) Grassed Sw | early succe | ssional) | Tile |
| Overhanging Vegetation Riparian Zone Riparian Cover (% of water 90% maxed forst Adjacent Land Use Materbody Notes Waterbody Notes | ercourse shaded, do or nursery areas, g easonal, permanent <u>high gradie</u> Trapezoidal Cha | Bould ominant vege roundwater) ent | ler Other etation, mature or upwellings) Grassed Sw | early succe | ssional) | Tile |
| Overhanging Vegetation Riparian Zone Riparian Cover (% of water 90% with forest Adjacent Land Use Matural Forest Fish Habitat Potential Critical Habitat (spawning Migratory Obstructions (sec 0m - Inder milest Note any fish observations Waterbody Notes Natural Watercourse Surficial Drainage (i.e. fur Other Habitat Notes, Inc | ercourse shaded, do or nursery areas, g easonal, permanent | Bould ominant vege roundwater) 2t annel t Pond | ler Other etation, mature or upwellings) Grassed Swa Dominated by | early succe | ssional) | Tile_ Dry |
| Overhanging Vegetation Riparian Zone Riparian Cover (% of wate 90% ms red forst Adjacent Land Use Marcol Forst Fish Habitat Potential Critical Habitat (spawning Migratory Obstructions (sec 10m - Inder meter Note any fish observations Waterbody Notes Natural Watercourse Surficial Drainage (i.e. fur Other Habitat Notes, Inc 15 Sup 686090 E, | ercourse shaded, do or nursery areas, g easonal, permanent | Bould ominant vege roundwater) 2t annel t Pond | ler Other etation, mature or upwellings) Grassed Sw Dominated by | early succe | ssional) Buried | Tile_ Dry |
| Overhanging Vegetation Riparian Zone Riparian Cover (% of wate 90% ms red forst Adjacent Land Use Marcol Forst Fish Habitat Potential Critical Habitat (spawning 9% Migratory Obstructions (se 10% - Two-mfeet Note any fish observations Waterbody Notes Natural Watercourse Surficial Drainage (i.e. fur Other Habitat Notes, Inc 45 Sup 686090 E, | ercourse shaded, do or nursery areas, g easonal, permanent | Bould ominant vege roundwater) 2t annel t Pond | ler Other etation, mature or upwellings) Grassed Sw Dominated by | early succe | ssional) Buried | Tile_ Dry |



| Stantec | | | • |
|--|--|--|---------------------------------------|
| Station # 7-10 | Project Name | Bow Lake | |
| Station # Watercourse Name Unnash naturbody | | 960771 | · · · · · · · · · · · · · · · · · · · |
| Photos 976 9771 | Field Staff | | |
| Date $1012/02/28$ | Time <u>12:47 p</u> ~ | | 1 |
| Monther conditions in provious 24 hrs. 5 | French M | · · · · · · · · · · · · · · · · · · · | |
| Weather conditions in previous 24 hrs <u>54 mm</u> GPS Coordinates (Zone) <u>b</u> <u>E</u> <u>Se beb</u> | N N | · · · · · · · · · · · · · · · · · · · | Datum UNAD8 |
| Descriptive Location Visitor 7-9 @ 5E al | of tractorier stad | 400 | Datum 10110 |
| | i wastern Ser | | |
| Water Quality | | | Dus |
| Dissolved Oxygen (mg/L) pH_ | Conduc | ivity (µS/cm) | |
| Water Temperature (°C) | Air Temperature | | |
| Time in situ measurements taken | | (0) | |
| Watercourse Dimensions & Morphology | | | |
| Mean Watercourse Width $\underline{D\gamma}$ (m) | Maximum Pool D | Pepth Dm | (cm) |
| Mean Bankfull Width 25m (m) | Mean Water Dep | • • • • • • • • • • • • • • • • • • • | _(cm) _(cm) |
| Mean Bankfull Width <u>2.5</u> (m) % Riffle % P | • | % Run | _(cm) % Flat |
| Evidence of eroding banks, Comments on bank | | | 70 Mat |
| Evidence of eroding banks, comments of bank | Stability <u>straw o</u> | row (in the second seco | |
| Substrate (% cover) | |) • | |
| Bedrock Cobble | Sand | 70 Silt | Muck |
| Boulder Gravel | | Marl | <i>30</i> Detritus |
| | Olay | Iviali | <u> </u> |
| In-water Criver Cover Types Present (circle): Overhanging Vegetation Forms & Tachard Woody Debris | anks Deep Poo Boulder O | ol Watercress | Aquatic Veg |
| | | | · · · · · · · · · · · · · · · · · · · |
| Riparian Zone | | | -• - n |
| Riparian Cover (% of watercourse shaded, domi 8002 cover - mount weed forest | nant vegetation, mat | ure or early succes | sional) |
| Adjacent Land Use | • | | · · · · · |
| Natural Forst | | | |
| | | | |
| Fish Habitat Potential | n an | | |
| Critical Habitat (spawning or nursery areas, grou | Indwater upwellings) | | |
| Migratory Obstructions (seasonal, permanent) | · · · · · · · · · · · · · · · · · · · | | ina |
| Migratory Obstructions (seasonal, permanent) | | | and the states of the |
| | | | |
| | | | |
| | | | · |
| Waterbody Notes / | · · | | |
| | nel Grasse | | Buried Tile |
| Surficial Drainage (i.e. furrows) Dugout P | ond Dominat | ed by Aquatic Veg_ | Dry |
| Other Habitat Notes, Incidental Wildlife Obse | rvations, etc | | · · · · |
| US 7-10 \$5000-1 - 696-146E 5234746N | 2 .1 | | |
| 05 Confluerce 7-W27-9-686090 E, 523484 | 2 14 6 | | |
| Sey-2-7-10 - 686140 E ,5234754 N | | | |
| Field Notes Authored by Jor Keene Field Not | otes QA/QCed byMU | lah | |
| Heid Notes Authored by Field No | | | . · |



| Stantec | |
|---|---|
| Station # 7-9 | Project Name Bow Lake |
| Watercourse Name Unmid | Project # 16096077) |
| | Field Staff Joe Kee, Middle Rah |
| Photos 7963 4766 | |
| Date 1012/08/28 | Time 12:17 pm |
| Weather conditions in previous 24 hrs warn 15w | |
| GPS Coordinates (Zone) 6T E See belo | |
| Descriptive Location Jouth of Mondred Kien South of | - I vistore statime - Start |
| | <u>і</u> О. |
| Water Quality | Un Un |
| Dissolved Oxygen (mg/L) pH | |
| Water Temperature (°C) | Air Temperature (°C) |
| Time in situ measurements taken | |
| Watercourse Dimensions & Morphology | () |
| ······································ | Maximum Pool Depth(cm) |
| Mean Bankfull Width 2.5m (m) | Mean Water Depth <u>Dra</u> (cm) |
| % Riffle% Po | |
| Evidence of eroding banks, Comments on bank st | ability Slight underatility |
| · · · · · · · · · · · · · · · · · · · | |
| Substrate (% cover) | Sand 60 Silt Muck |
| BedrockCobble | |
| BoulderGravel | ClayMarl 40 Detritus |
| | |
| In when Cover | Deep Deel - Materiana - Anualia Van |
| | nks Deep Pool Watercress Aquatic Veg |
| Overhanging Vegetation Woody Debhs | Boulder Other |
| Riparian Zone | |
| Riparian Cover (% of watercourse shaded, domina | ant vegetation mature or early successional) |
| >80% rused Forst coopy | and regetation, matale of ourly eucoectionary |
| Adjacent Land Use | |
| Noten Grest | |
| Postand to a | |
| Fish Habitat Potential | |
| Critical Habitat (spawning or nursery areas, ground | dwater upwellings) |
| | |
| Migratory Obstructions (seasonal, permanent) | |
| Dry - Intermittant | |
| Note any fish observations | |
| | |
| Waterbody Notes | |
| Waterbody Notes Natural Watercourse Trapezoidal Channe | Grassed Swale Buried Tile |
| | |
| Surficial Drainage (i.e. furrows) Dugout Por | nd Dominated by Aquatic Veg Dry |
| Other Habitat Notes, Incidental Wildlife Observ | |
| Lots of woody debrs, Luther logs relatively & | key grade |
| 05 GPS = 660 039 E '5234917 N' | |
| US 6PS = 686 202 E, 5234759 N | |
| Field Notes Authored by Field Note | as QA/QCed by Mgllah |
| | a arvadou by <u>II LEALAN</u> |



| Station # $7 = 10$ | Project Name Bow Lake |
|---|---|
| Station # 7-18 Watercourse Name Un med Wb | Project # 1609.60771 |
| Photos 9816-9819 | Field Staff The Keene Mitch Ellah |
| Date 2012/08/26 | Time $5:45 \text{ pm}$ |
| Weather conditions in previous 24 hrs | Course - Las bed |
| GPS Coordinates (Zone) 16 T E Set | N Datum N/AU83 |
| | cess Road East of Transformer Aven |
| | |
| Water Quality | ved to get when quality pH Conductivity (µS/cm) |
| Water Temperature (°C) | Air Temperature (°C) 23°C |
| Time in situ measurements taken | |
| Watercourse Dimensions & MorphologyMean Watercourse Width(m)Mean Bankfull Width(m) $\& 0$ % Riffle $\& 0$ % RiffleEvidence of eroding banks, Comments on bar | Maximum Pool Depth Maximum Pool Depth Mean Water Depth % Pool % Run % stability |
| Evidence of eroding banks, Comments on ba | |
| Substrate (% cover) | |
| Bedrock Cobble | So Sand 30 Silt Muck |
| Boulder Gravel | Clay Marl 20 Detritus |
| Cover Types Present (circle): /Underci | ut Banks Deep Pool Watercress Aquatic Veg |
| Overhanging Vegetation Woody Debris | |
| Overhanging Vegetation Woody Debris Riparian Zone Riparian Cover (% of watercourse shaded, d 802, notice mixed fires | |
| Overhanging Vegetation Woody Debris- Riparian Zone Riparian Cover (% of watercourse shaded, d | > Boulder Other |
| Overhanging Vegetation Woody Debris Riparian Zone Faris Riparian Cover (% of watercourse shaded, d 8023 mixed fares Adjacent Land Use | Soulder Other ominant vegetation, mature or early successional) |
| Overhanging Vegetation Woody Debris Riparian Zone Formation Riparian Cover (% of watercourse shaded, d 80% model Model Adjacent Land Use Forest (access void) Fish Habitat Potential | Boulder Other ominant vegetation, mature or early successional) |
| Overhanging Vegetation Woody Debris Riparian Zone Fish Habitat Potential Riparian Cover (% of watercourse shaded, d 8020 model for est Adjacent Land Use Fish Habitat Potential Critical Habitat (spawning or nursery areas, g Migratory Obstructions (seasonal, permanen) | Boulder Other ominant vegetation, mature or early successional) |
| Overhanging Vegetation Woody Debris Riparian Zone Forman State Provided Forman Riparian Cover (% of watercourse shaded, d 8020 model for the mixed formation Adjacent Land Use Forch (access Vord) Fish Habitat Potential Critical Habitat (spawning or nursery areas, g Migratory Obstructions (seasonal, permanen Starp of radius | Boulder Other ominant vegetation, mature or early successional) groundwater upwellings) t) mannel Grassed Swale Buried Tile |
| Overhanging Vegetation Woody Debris Riparian Zone Riparian Cover (% of watercourse shaded, d Riparian Cover (% of watercourse shaded, d 80% of watercourse shaded, d 80% of watercourse shaded, d 80% of watercourse shaded, d 80% of watercourse shaded, d 80% of watercourse shaded, d 80% of watercourse shaded, d 80% of watercourse shaded, d 80% of watercourse for the water shaded, d 80% of watercourse shaded, d Adjacent Land Use, forcet (access void) Fish Habitat Potential Critical Habitat Potential Critical Habitat (spawning or nursery areas, g Migratory Obstructions (seasonal, permanen shaded, d Shade of the watercourse shaded, d Note any fish observations Note Natural Watercourse Trapezoidal Ch Surficial Drainage (i.e. furrows) Dugot Other Habitat Notes, Incidental Wildlife Ol Shade of the water shade | Boulder Other |
| Overhanging Vegetation Woody Debris Riparian Zone Riparian Cover (% of watercourse shaded, d Riparian Cover (% of watercourse shaded, d 80% 80% mixed fact Adjacent Land Use Forst (% of watercourse shaded, d Fish Habitat Potential Critical Habitat (spawning or nursery areas, g Migratory Obstructions (seasonal, permanen Star grade Note any fish observations mixed Natural Watercourse Trapezoidal Ch Surficial Drainage (i.e. furrows) Dugou | Boulder Other |



E-Fisheabh



| Station # 7-5 | Project Name <u>Bow Lake Wind Farm</u> Project # 1609 60734 |
|--|--|
| Watercourse Name_UALNown | Field Staff _NB, MF |
| Date July 8/12 | |
| Weather conditions in previous 24 hrs <u>No</u> | 86748 N 5234691 Datum NA083 |
| GPS Coordinates (Zone) 16T E 068 Descriptive Location ~ 620 m South co | |
| rd from Mackay Rd | |
| Water Quality Dissolved Oxygen (mg/i) 10.26 pl | 4.02 |
| | H <u>6·27</u> Conductivity (µS/cm) <u>55</u> Air Temperature (°C) <u>27°c</u> |
| Water Temperature (°C) <u>14</u> そる Time <i>in situ</i> measurements taken <u>16</u> | |
| Watercourse Dimensions & Morphology | |
| Mean Watercourse Width <u>70</u> (m) Mean Bankfull Width <u>20</u> (m) | Maximum Pool Depth <u>30</u> (cm) Mean Water Depth <u>ノン</u> (cm) |
| | 6 Pool <u>60</u> % Run% Fla |
| Evidence of eroding banks, Comments on bar | nk stability moderate underent banks. |
| Substrate (% cover) | |
| Bedrock 20 Cobble | 35 Sand Silt Muck |
| 6_Boulder35Gravel | Clay <u>Marl</u> Detritus |
| in-water Cover | |
| Cover Types Present (circle): Undercut | Banks Deep Pool Watercress Aquatic Veg |
| Overhanging Vegetation Woody Debris | Boulder Other |
| Riparian Zone | |
| Riparian Cover (% of watercourse shaded, do | ellow birch |
| Adjacent Land Use ATV trail proposed access rd | |
| | |
| Fish Habitat Potential Critical Habitat (spawning or nursery areas, gr | roundwater unwellings) |
| Shawn, Miller for for Call | |
| <u>Spawn</u> , <u>wrsc</u> , forace Migratory Obstructions (seasonal, permanent) <u>None</u> | 이 이 방법에 가장 수 있는 것 같아요. 이 것 같아요. 이 가지 않는 것 같아요. 이 가지 않는 것 같아요. 이 가지 않는 것 같아요. |
| Note any fish observations | |
| Waterbody Notes | |
| Natural Watercourse Trapezoidal Cha | annel Grassed Swale Buried Tile |
| Surficial Drainage (i.e. furrows) Dugout | t Pond Dominated by Aquatic Veg Dry |
| Other Habitat Notes, Incidental Wildlife Ob | |
| | <u></u> |
| | |
| | |
| Field Notes Authored by Field | d Notes QA/QCed by MELLah |

| Project Name <u>Bow Lake 1</u> Project Number 1609 60734 | wind Farm | Station Number | 7-5 |
|---|---|---|---|
| Project Number 1/ 10 10124 | | | 7-5 |
| | ····· | Pass No. (if applicable) | |
| Photos 491-49 | | Date (yyyymmdd): | July 12/12 |
| Descriptive Location ~ 620m | | Jone ATV ti | rail/Access ra |
| from Mc | Kung Rd | 0 | 1 |
| UTM coordinates 06867 | <u>48</u> easting | 5234691 | _northing zone 16 |
| Fishing Method (circle one): | Backpack Boat | Unit Model/Ma | ke LR-12 |
| Sampling Method (circle one): e | even habitat | transect . (| spot |
| Effort (Electrofishing Seconds): | Number of Netters: | / N | umber of Anodes:/ |
| Settings | · · · | | |
| Frequency (Hz) 20 Voltag | ge (volts) <u>/000</u> Currei | nt (Amps) Po | ower (Watts) |
| Station Information | | | |
| Length of Stream Surveyed (m) | 100 | | |
| Station Characteristics: Width | | | 0.65 |
| Depth | n (m): Range <u>0.05-</u> | 0,25 Average: | 0.15 |
| Water Clarity/Colour: | | ocity if Measured (m/s): | <u>N/A</u> Time <u>09:3</u> 63 |
| Temperature (°C) 13.36 | | Conductivity (uS/cm) | The second se |
| pH <u>7,10</u> | Di | ssolved Oxygen (mg/L) | 7.41 |
| Catch Data Species N | lumber of Fish | | Comments (i.e. age, disease, etc) |
| | | · · · · · · · · · · · · · · · · · · · | Commento (i.e. aye, disease, etc) |
| Central Mudminnow | 111 (3) | | |
| | | | |
| | | والعالمين المالية الم | |
| | e#==== | | |
| | 프 # # # = = # # # # # # # # # # # # # # | 츠츠에 가 의 위 개의 가 한 호텔 및 가 가 의 가 의 가 의 가 의 가 가 가 가 가 가 가 가 가 가 | 츠· = 바위에 약정 강철원 바뀌 수 날 바 수 드는 수의 너희 방송 등 을 해 주 수 있 및 및 |
| | 역 프 또 낮 또 문 의 것 같 이 이 이 이 이 이 이 이 이 이 이 이 이 이 이 이 이 이 | ###################################### | ###################################### |
| | ********* | | ******* |
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| Mary Fros Sp. | 323 W WY | · | , , , , , , , , , , , , , , , , , , , |
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| | | ㅋㅋㅋ · · · · · · · · · · · · · · · · · · | # * * * # # # <u>* * * * * * * * * * * * *</u> |
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| | | | · · · · · · · · · · · · · · · · · · · |
| ╶ ╶╶╶╶╶╶╧╖ ┑┲ ╕╕╕╕╕╕╕╡╡ ╇ <u>╡</u> ╕┇ ┍ ┲╕╡╕╉╺┸╛╺╼┙┱┿╸╒╺╽╸┷ · | | | |
| | | | |
| Fish Measurements on Separate Sheet? Y | $\overline{\mathcal{V}}$ | | |

| × | $\frac{7 \cdot 0}{7 \cdot 0} \frac{1}{3} = \frac{1}{3} $ |
|-----------------------------|--|
| 1 | Stantec . |
| Wate Phot Date Wea | $\begin{array}{cccccccccccccccccccccccccccccccccccc$ |
| Desc | Coordinates (Zone) 167 E N Datum NAD83 riptive Location <u>Connected</u> to 7-3 downstream 300 m po Ah of Stream (W8) B south end |
| Disso Wate | r Quality ved Oxygen (mg/L)pHConductivity (μS/cm) Temperature (°C)Air Temperature (°C) in situ measurements taken |
| Mear | rcourse Dimensions & Morphology Watercourse Width (m) Maximum Pool Depth (cm) % Fla % Riffle % Pool % Run % Fla % Fla |
| Evide | nce of eroding banks, Comments on bank stability Miner undercut |
| In-wa | trate (% cover) Bedrock Cobble 30 Sand 20 Silt 10 Muck Boulder Gravel Clay Marl 40 Detritus Iter Cover Mark Mark Muck Mark Muck Types Present (circle): Undercut Banks Deep Pool Watercress Aquatic Veg manging Vegetation Woody Debris Boulder Other |
| Ripar 10 | ian Zone ian Cover (% of watercourse shaded, dominant vegetation, mature or early successional) יא לכוח בף, בעקבר אייקרע |
| | ent Land Use |
| Fish Critic | Habitat Potential al Habitat (spawning or nursery areas, groundwater upwellings) N2 |
| <u>Ār</u> | tory Obstructions (seasonal, permanent) ムーーーーーーーーーーーーーーーーーーーーーーーーーーーーーーーーーーーー |
| Wate | rbody Notes al Watercourse Trapezoidal Channel Grassed Swale Buried Tile/ |
| | ial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Dry 🗸 |
| Surfic | Habitat Notes, Incidental Wildlife Observations, etc. NOC 7 - 8 us = 0.686821, $52340867 - 8 ds = 0.686820$, 5234074 |



| Station # 7-1 | Project Name Bow Lake Wind Farm |
|---|---|
| Watercourse Name un known | Project $# 1609 60734$ |
| Photos 401-405 | Field Staff NB, MF |
| Date July 06/12 | Time /10:00 |
| Weather conditions in previous 24 hrs29°C, m | |
| GPS Coordinates (Zone) 16T E 0687 | 314 N 5233928 Datum NA083 |
| | -19 on proposed access rd/Arv trail |
| Water Quality Dissolved Oxygen (mg/L) <u>6.27</u> pH_6 Water Temperature (°C) <u>16.38</u> Time <i>in situ</i> measurements taken <u>16.15</u> | し. 구3 Conductivity (µS/cm)/ ピー Air Temperature (°C) |
| Watercourse Dimensions & Morphology | · · · · · · · · · · · · · · · · · · · |
| Mean Watercourse Width(m) | Maximum Pool Depth ¹⁰⁻¹⁵ (cm) - Po •1 |
| Mean Bankfull Width 6,75 (m) | Mean Water Depth <u>*/74</u> (cm) |
| % Riffle% Pc | |
| Evidence of eroding banks, Comments on bank s | tability WARE |
| Substrate (% cover) Bedrock 40 Cobble 40 Boulder 10 Gravel | SandSiltMuck ClayMarl/ODetritus |
| | |
| In-water Cover Cover Types Present (circle): Undercut Ba Overhanging Vegetation Woody Debris | Aquatic Veg Boulder Other |
| Riparian Zone Riparian Cover (% of watercourse shaded, domin | ant vegetation, mature or early successional) |
| Adjacent Land Use forest moved | |
| Fish Habitat Potential Critical Habitat (spawning or nursery areas, grour | ndwater upwellings) |
| Migratory Obstructions (seasonal, permanent) $\mathcal{M}_{\mathcal{M}}$ | |
| Note any ish observations | |
| | |
| | |
| Waterbody Notes | - A Crossed Curels Buried Tile |
| Natural Watercourse V Trapezoidal Channe | |
| Surficial Drainage (i.e. furrows) Dugout Po | nd Dominated by Aquatic Veg Dry |
| Other Habitat Notes, Incidental Wildlife Obser | vations, etc |
| Intermitent indicers | |
| | |
| Field Notes Authored by Field Not | es QA/QCed by MEllah |



| Station # 7-1 | Project Name Bow Lake Wind Farm |
|--|--|
| Watercourse Name uniknown | Project # $1609 60734$ |
| | Field Staff NB, MF, Jk, NF 2012/08/29 |
| | Time $10:00$ |
| Date July 06/12 | |
| Weather conditions in previous 24 hrs $29°c$ γ | 73/4 N 5233928 Datum NH083 |
| GPS Coordinates (Zone) 16T E 068 | |
| Descriptive Location | F-19 on proposed acress rd/Arv trait |
| Water Quality Dissolved Oxygen (mg/L) <u>6.27</u> pH_ Water Temperature (°C) <u>16.38</u> Time <i>in situ</i> measurements taken <u>16.15</u> | $\frac{6.73}{\text{Air Temperature (°C)}} \frac{18}{23^{\circ}}$ |
| Watercourse Dimensions & Morphology | |
| Mean Watercourse Width 0.5 (m) | Maximum Pool Depth |
| Mean Bankfull Width $\sqrt[6,75]{}$ (m) | Mean Water Depth <u>N / A</u> (cm) |
| % Riffle /// % P | |
| Evidence of eroding banks, Comments on banks | |
| | |
| Substrate (% cover) | |
| Bedrock 40 Cobble | SandSiltMuck |
| <u> </u> | ClayMarl /ODetritus |
| In-water Cover | |
| Cover Types Present (circle): Undercut Ba | anks Deep Pool Watercress Aquatic Veg |
| Overhanging Vegetation Woody Debris | Boulder Other |
| (Overhainging Vegetation) | |
| Riparian Zone | |
| Riparian Cover (% of watercourse shaded, domin | nant vegetation, mature or early successional) |
| 100% | |
| Adjacent Land Use | |
| forest | · |
| | |
| Fish Habitat Potential | |
| Critical Habitat (spawning or nursery areas, grou | ndwater upwellings) |
| none | |
| Migratory Obstructions (seasonal, permanent) | |
| Note any ish observations | |
| | |
| | |
| Waterbody Notes / | |
| Natural Watercourse_V Trapezoidal Chann | el Grassed Swale Buried Tile |
| Surficial Drainage (i.e. furrows) Dugout Po | ond Dominated by Aquatic Veg Dry |
| Other Habitat Notes, Incidental Wildlife Obser | vations, etc |
| 6P31-WP15-6B-USCO | URSS VOR 687314 E5233928N |
| Intermitent indicert - 6PS Putton 7 | -1 clahul 687238 F 5233915N |
| 7-1. dannel @ artectbourday 687191F 5233890N - | 7-1 DS-loss definition 687129 E 5233849 N |
| El ennel la cor | definition in a vibillat form witlad |
| Field Notes Authored by Field Not | tes QA/QCed by MEllah |
| | |



LAKE

| Station # | Project Name Bow Lake Wind Farm |
|--|--|
| Watercourse Name unknown Lake | Project # 1609 60734 |
| Photos 381-383 | Field Staff <u>NB, MF</u> |
| Date July 06/12 | Time <u>12:10</u> |
| Weather conditions in previous 24 hrs8° | |
| GPS Coordinates (Zone) 16T E 0686 | |
| Descriptive Location <u>~ 360 m west</u> lake (wa3) | of T-13 @ most southern tip of |
| Water Quality | A 7 8 |
| Dissolved Oxygen (mg/L) <u>903</u> pH | |
| Water Temperature (°C) 26 3 3 | Air Temperature (°C) 27°2 |
| Time in situ measurements taken12.25 | |
| Watercourse Dimensions & Morphology | |
| Mean Watercourse Width -250 (m) | Maximum Pool Depth/ A(cm) |
| Mean Bankfull Width V/A (m) | Mean Water Depth(cm) |
| % Riffle <u>100</u> % I | Pool% Run% Flat |
| Evidence of eroding banks, Comments on bank | stability <u>None</u> . |
| | |
| Substrate (% cover) | |
| BedrockCobble | SandSilt_/2_Muck |
| <u></u> | Clay Marl 7 Oetritus |
| Riparian Zone Riparian Cover (% of watercourse shaded, dom | inant vegetation, mature or early successional) |
| Adjacent Land Use 66654 | |
| | |
| Fish Habitat Potential Critical Habitat (spawning or nursery areas, gro | |
| Spawn Forage, nurserg. Migratory Obstructions (seasonal, permanent) | |
| | |
| Note any fish observations | |
| | |
| Waterbody Notes | |
| Natural Watercourse / Trapezoidal Chan Surficial Drainage (i.e. furrows) Dugout F | Inel Grassed Swale Buried Tile Pond Dominated by Aquatic Veg Dry |
| Other Habitat Notes, Incidental Wildlife Obse 3XMT Set @ 12:15 /10-300 | ervations, etc. |
| | |
| WPID, GPS I Fished. | |
| | |
| · · · · · · · · · · · · · · · · · · · | Notes QA/QCed by Mallah |
| M//recourse/Internal Info and Teams/Aquatic Resources/Field Sh | neets\Stantec\Form 02 Wind Farm Waterbody Rapid Assessment Form.doc |

| stantec Stante | · · · · · · · · · · · · · · · · · · · | | Ctation Number | 1-1 (WP-10) | |
|--|---|---------------------------------------|--|--|---------|
| | | ind Farm | Station Number Pass No. (if applicable | | |
| Project Number <u>1609 60</u> Photos 38 | 1-383 | | Date (yyyymmdd): | | |
| Descriptive Location ~~ | 360 m | west of | | hern tip of lake. | |
| | | | | ······································ | |
| UTM coordinates | 86639 | easting | 5233216 | northing zone 16T | - |
| Fishing Method (circle one): | 1. t. t. | Backpack Bo | oat Unit Model/A | Nake | |
| Sampling Method (circle one): | eve | n habitat | transect | spot | |
| Effort (Electrofishing Seconds): | | Number of Net | ters: | Number of Anodes: | |
| Settings | - | | | | |
| Frequency (Hz) | A Woltage | (volts) C | urrent (Amps) | Power (Watts) | |
| Station Information | - | Zan da setta | | (Time set: 12:15 Time Ret: 10:10 | - (Juli |
| Length of Stream Surveyed (m) | | AKQ. | <u> </u> | (Time Ret: 10:00 | CJU |
| | | | | | |
| Station Characteristics: | Width (n | n): Range | Average: | | |
| Station Characteristics: | Width (n Depth (r | · · · · · · · · · · · · · · · · · · · | Average: Average: | | |
| | Depth (r | m): Range | Average: | | |
| Water Clarity/Colour: | Depth (r tanind | m): Range | Average: r Velocity if Measured (m/s): | <u>NA</u> Time 12:10 | |
| Water Clarity/Colour: Temperature (°C) | Depth (r | m): Range | Average: | <u>NA</u> Time 12:10 | |
| Water Clarity/Colour: Temperature (°C) pH | Depth (r <u>+anind</u> 26-33 | m): Range | Average: Velocity if Measured (m/s): Conductivity (uS/cm) | <u></u> | |
| Water Clarity/Colour: Temperature (°C) pH Catch Data Species | Depth (r <u>+anind</u> 26.33 8.78 | m): Range | Average: Velocity if Measured (m/s): Conductivity (uS/cm) | <u></u> | |
| Water Clarity/Colour: Temperature (°C) pH Catch Data | Depth (r <u>+anind</u> 26.33 8.78 Nur | m): Range Water | Average: Y Velocity if Measured (m/s): Conductivity (uS/cm) Dissolved Oxygen (mg/L) | $\frac{\sqrt{A}}{19} \text{Time} 12:10$ $\frac{19}{9:03}$ Comments (i.e. age, disease, etc): | |
| Water Clarity/Colour: Temperature (°C) pH Catch Data Species | Depth (r <u>+anind</u> 26.33 8.78 Nur | m): Range Water | Average: Velocity if Measured (m/s): Conductivity (uS/cm) | $\frac{\sqrt{A}}{19} \text{Time} 12:10$ $\frac{19}{9:03}$ Comments (i.e. age, disease, etc): | |
| pH Catch Data Species | Depth (r <u>+anind</u> 26.33 8.78 Nur | m): Range Water | Average: Y Velocity if Measured (m/s): Conductivity (uS/cm) Dissolved Oxygen (mg/L) | $\frac{\sqrt{A}}{19} \text{Time} 12:10$ $\frac{19}{9:03}$ Comments (i.e. age, disease, etc): | |
| Water Clarity/Colour: Temperature (°C) pH Catch Data Species | Depth (r <u>+anind</u> 26.33 8.78 Nur | m): Range Water | Average: Y Velocity if Measured (m/s): Conductivity (uS/cm) Dissolved Oxygen (mg/L) | $\frac{\sqrt{A}}{19} \text{Time} 12:10$ $\frac{19}{9:03}$ Comments (i.e. age, disease, etc): | |
| Water Clarity/Colour: Temperature (°C) pH Catch Data Species | Depth (r <u>+anind</u> 26.33 8.78 Nur | m): Range Water | Average: Y Velocity if Measured (m/s): Conductivity (uS/cm) Dissolved Oxygen (mg/L) | $\frac{\sqrt{A}}{19} \text{Time} 12:10$ $\frac{19}{9:03}$ Comments (i.e. age, disease, etc): | |
| Water Clarity/Colour: Temperature (°C) pH Catch Data Species | Depth (r <u>+anind</u> 26.33 8.78 Nur | m): Range Water | Average: Y Velocity if Measured (m/s): Conductivity (uS/cm) Dissolved Oxygen (mg/L) | $\frac{\sqrt{A}}{19} \text{Time} 12:10$ $\frac{19}{9:03}$ Comments (i.e. age, disease, etc): | |
| Water Clarity/Colour: Temperature (°C) pH Catch Data Species | Depth (r <u>+anind</u> 26.33 8.78 Nur | m): Range Water | Average: Y Velocity if Measured (m/s): Conductivity (uS/cm) Dissolved Oxygen (mg/L) | $\frac{\sqrt{A}}{19} \text{Time} 12:10$ $\frac{19}{9:03}$ Comments (i.e. age, disease, etc): | |
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| Water Clarity/Colour: Temperature (°C) pH Catch Data Species | Depth (r <u>+anind</u> 26.33 8.78 Nur | m): Range Water | Average: Y Velocity if Measured (m/s): Conductivity (uS/cm) Dissolved Oxygen (mg/L) | $\frac{\sqrt{A}}{19} \text{Time} 12:10$ $\frac{19}{9:03}$ Comments (i.e. age, disease, etc): | |
| Water Clarity/Colour: Temperature (°C) pH Catch Data Species | Depth (r <u>+anind</u> 26.33 8.78 Nur | m): Range Water | Average: Y Velocity if Measured (m/s): Conductivity (uS/cm) Dissolved Oxygen (mg/L) | $\frac{\sqrt{A}}{19} \text{Time} 12:10$ $\frac{19}{9:03}$ Comments (i.e. age, disease, etc): | |
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| Water Clarity/Colour: Temperature (°C) pH Catch Data Species | Depth (r <u>+anind</u> 26.33 8.78 Nur | m): Range Water | Average: Y Velocity if Measured (m/s): Conductivity (uS/cm) Dissolved Oxygen (mg/L) | $\frac{\sqrt{A}}{19} \text{Time} 12:10$ $\frac{19}{9:03}$ Comments (i.e. age, disease, etc): | |

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| Stantec | 1-5015 Bott- 14T 668687- 5233342 |
| tation # <u>/- 5</u> | Project Name Bow Lake Wind Farm |
| Vatercourse Nam | e UNKnown Project Name Bow Lake Wind Farm Project # 1609 60734 |
| hotos 420- | 422 Field Staff <u>NB, MF</u> |
| Date July 07 | <u>/12</u> Time <u>/0 30</u> |
| Veather condition | /12 s in previous 24 hrs <u>2-4 mm rain Overnight</u> (Zone) 16T E N <u>Datum NAD83</u> |
| | (Zone) 16T E - NO - Datum NAD83 on ~ 600 m east of T-13 + ~ 200 m northwest of str 1-4 |
| | In <u>- boom custor is to acom permoto of sint p</u> |
| | |
| Water Quality | (mo/L) pH Conductivity (\s/cm) |
| Dissolved Oxygen | |
| Nater Temperatur Time <i>in situ</i> measi | |
| | |
| Watercourse Dim | width 0.40 (m) Maximum Pool Depth 2 (cm) STAND |
| Mean Watercourse | and the maximum root Dopina |
| | Ith <u>0.65(</u> m) Mean Water Depth(cm) Riffle <u>/00</u> % Pool% Run% Flat |
| | ig banks, Comments on bank stability <u>minor undercut banks</u> |
| | |
| | |
| Substrate (% cov | |
| Dee | krack 3/2 Cabble 1/2 Sand Silt Muck |
| | Irock <u>30</u> Cobble <u>10</u> Sand Silt Muck |
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W:\resource\Internal Info

| VVIND | | UDI NAPID ASSI | ESSMENT FORM | -100 sh to f13 |
|---|-----------------------------------|-------------------------------------|------------------------|-------------------|
| Stantec | | | | 10 |
| Station # | | | Sow Lake Wind | Farm |
| Watercourse Name 97 Photos 449-450 | Knowr | Project # <u>160</u> Field Staff | | |
| Data July 7 /12 | | Time 15 | 35' | <u> </u> |
| Weather conditions in pre- | vious 24 hrs | Imm rain over | night | |
| GPS Coordinates (Zone)_ | $\frac{161}{160} = \frac{1}{160}$ | | ond + ~ 400mn | Datum NA |
| Descriptive Location | 15011 4/5 | or beaut p | | <u>Or more st</u> |
| Water Quality | | 400 | lottle wat to sample | L. |
| Dissolved Oxygen (mg/L). | pł | | stivity (µS/cm) | |
| Water Temperature (°C)_ | | Air Temperature | | |
| Time in situ measurement | s taken | | | |
| Watercourse Dimension | s & Morphology | | - | |
| Mean Watercourse Width | <u> </u> | Maximum Pool Mean Water De | Depth 7 | (cm) (cm) |
| % Riffle | <u> </u> | Pool / | D % Run | 9 |
| Evidence of eroding bank | s, Comments on ban | k stability | r under cut ban | KS. |
| | J. J. | | <u></u> | · · · · |
| Substrate (% cover) Bedrock | 49 Cobble | Sand | Silt | Muc |
| 40 Boulder | Gravel | | | Z-D Det |
| | | | | |
| In-water Course Cover Types Present (circ | | Banks Deep Po | Noi Watercress | Aquatic ' |
| Overhanging Vegetation | | | other | |
| Riparian Zone | | | | |
| Riparian Cover (% of wate | ercourse shaded, do | ninant vegetation, ma | ature or early success | ional) |
| 100% Sugar may | | | | |
| Adjacent Land Use | | | | • • |
| forest | | χ. | | |
| Fish Habitat Potential | | | | |
| Critical Habitat (spawning | or nursery areas, gr | oundwater upwellings | ;) | |
| Migratory Obstructions (se | easonal permanent) | | | |
| sleep gradient | Now water 10 | vels | | |
| Note any fish observation | <u>s None</u> | | | <u>i</u> |
| | / | | | |
| Waterbody Notes | / | | |), ut a d ""!! - |
| Natural Watercourse Surficial Drainage (i.e. fur | _ Trapezoidal Cha | | sed Swale E | |
| Sumicial Drainage (i.e. fur | | | ited by Aqualic vey | Diy |
| Other Habitat Notes, Inc | idental Wildlife Ob | servations, etc. | 2000 | |
| Avenbild | 1-12 US = | | 3702 33739 | |
| | 1-12 ds = | INY FACT CT | | |

| Chamb | WIND FARM WATERBODY RAPID ASSESSMENT FORM |
|---|---|
| Stante | |
| Station # | |
| Photos | se Name_ <u>unknown</u> Project # <u>1609 60734</u> 454-459 Field Staff_ <u>NB, mF</u> |
| Date Ju | Time15:50 |
| Weather co | dinates (Zone) 16 T E N Datum NAOS |
| GPS COOR | dinates (Zone) 16T E — N — Datum NADE = Location — 70m dls from 1-12 + 1-13 confluence |
| | |
| Water Qua | ality |
| | Oxygen (mg/L) $\underline{-9.72}$ pH $\underline{-6.92}$ Conductivity (μ S/cm) $\underline{-14}$ |
| | $\frac{18.72}{18.72}$ Air Temperature (°C) <u>28°</u> |
| | u measurements taken6.00 |
| Watercour | rse Dimensions & Morphology |
| | ercourse Width 0.75 (m) Kfull Width 1.0 (m) Mean Water Depth 20.0 (cm) |
| | Null Width 7.0 (iii) Mean Water Depth 20 (iii) % Riffle 40 % Pool 20 % Run 20 % F |
| Evidence c | of eroding banks, Comments on bank stability |
| minor | undercut banks |
| Substrate | |
| | Bedrock 40 Cobble 10 Sand Silt Muck |
| | Boulder Gravel Clay Marl Zo Detritute es Present (circle): Undercut Banks Deep Pool Watercress Aquatic Ve ng Vegetation Woody Debris Boulder Other |
| in-water C Cover Type Overhangi Riparian Z Riparian C 80% | es Present (circle): Undercut Banks Deep Pool Watercress Aquatic Ve ng Vegetation Woody Debris Boulder Other Cone over (% of watercourse shaded, dominant vegetation, mature or early successional) |
| In-water C Cover Type Overhangi Riparian C <u>SD%</u> Adjacent L | es Present (circle): Undercut Banks Deep Pool Watercress Aquatic Ve ng Vegetation Woody Debris Boulder Other Cone over (% of watercourse shaded, dominant vegetation, mature or early successional) SUSA MPLE, Yellow Butch and Use |
| In-water C Cover Type Overhangin Riparian C $\frac{80\%}{2}$ Adjacent L $\frac{1}{10}$ (\sim 5 $\frac{1}{2}$ | es Present (circle): Undercut Banks Deep Pool Watercress Aquatic Ve ng Vegetation Woody Debris Boulder Other Cone over (% of watercourse shaded, dominant vegetation, mature or early successional) <u>SULA MARE, Jellow Burch</u> and Use |
| In-water C Cover Typ Overhangin Riparian Z Riparian C <u>80%</u> Adjacent L Co (+ s A Fish Habit | es Present (circle): Undercut Banks Deep Pool Watercress Aquatic Ve ng Vegetation Woody Debris Boulder Other Cone over (% of watercourse shaded, dominant vegetation, mature or early successional) SULA MPE, Yellow Butch and Use |
| In-water C Cover Type Overhangi Riparian Z Riparian C <u>80%</u> Adjacent L Co (+ 5 A Fish Habit Critical Hal | es Present (circle): Undercut Banks Deep Pool Watercress Aquatic Ve ng Vegetation Woody Debris Boulder Other Cone over (% of watercourse shaded, dominant vegetation, mature or early successional) <u>SULA MARE, Jellow Burch</u> and Use |
| Riparian C Riparian Z Riparian C $\frac{80\%}{2}$ Adjacent L $\frac{66054}{66054}$ Fish Habit Critical Hall <u>Spaw</u> Migratory (| Aquatic Veres es Present (circle): Undercut Banks Deep Pool Watercress Aquatic Veres ing Vegetation Woody Debris Boulder Other Other Aquatic Veres Cone Over (% of watercourse shaded, dominant vegetation, mature or early successional) Output Output Aquatic Veres Susa Mathematical Mathmatematical Mathematical Mathmatematical Mathm |
| In-valor C Cover Type Overhangin Riparian Z Riparian C $\frac{80\%}{2}$ Adjacent L $\frac{6}{5}(25)^{2}$ Fish Habit Critical Hal $\frac{5}{2}04$ Wr Migratory C 5.045 | Aquatic Veres Present (circle): Undercut Banks Deep Pool Watercress Aquatic Vereng Vegetation Woody Debris Boulder Other None over (% of watercourse shaded, dominant vegetation, mature or early successional) <u>SUSA mple, Yellow Durch</u> and Use tat Potential bitat (spawning or nursery areas, groundwater upwellings) <u>Cone</u> <u>Nursen</u> Dbstructions (seasonal, permanent) <u>Les is m5</u> |
| In-water C Cover Type Overhangin Riparian Z Riparian C $\frac{80\%}{2}$ Adjacent L $\frac{6}{10}$ Fish Habit Critical Hal $\frac{5pawn}{2}$ Migratory C -5,parsc | Aquatic Veres es Present (circle): Undercut Banks Deep Pool Watercress Aquatic Veres ing Vegetation Woody Debris Boulder Other Other Aquatic Veres Cone Over (% of watercourse shaded, dominant vegetation, mature or early successional) Output Output Aquatic Veres Susa Mathematical Mathmatematical Mathematical Mathmatematical Mathm |
| Riparian Z Riparian Z Riparian C $\frac{80\%}{2}$ Adjacent L $\frac{50\%}{2}$ Fish Habit Critical Hal <u>Spar wr</u> Migratory C <u>Spar Sc</u> Note any fi | aver Undercut Banks Deep Pool Watercress Aquatic Ver ing Vegetation Woody Debris Boulder Other |
| Riparian Z Riparian Z Riparian C $\frac{80\%}{2}$ Adjacent L $\frac{66654}{2}$ Fish Habit Critical Hal <u>Sparsc</u> Note any fi | Advance Deep Pool Watercress Aquatic Vering Veries Ing Vegetation Woody Debris Boulder Other Aquatic Vering Veries Ing Vegetation Woody Debris Boulder Other Aquatic Vering Veries Ing Vegetation Woody Debris Boulder Other Aquatic Vering Veries Ing Vegetation Woody Debris Boulder Other Aquatic Vering Veries Ing Vegetation Woody Debris Boulder Other Aquatic Vering Veries Ing Vegetation Woody Debris Boulder Other Aquatic Vering Veries Ing Vegetation Woody Debris Boulder Other Aquatic Vering Veries Ing Veries Ing Veries Ing Veries Ing Veries Ing Veries Ing Veries Ing Veries Ing Veries Ing Veries Ing Veries Ing Veries Buried Tile |
| Riparian Z Riparian Z Riparian C $\frac{80\%}{2}$ Adjacent L $\frac{80\%}{2}$ Fish Habit Critical Hal <u>Sparw</u> Migratory C <u>Spars</u> Note any fi Waterbod Natural Wa | aver es Present (circle): Indercut Banks Boulder Other Cone over (% of watercourse shaded, dominant vegetation, mature or early successional) SUSA maple, Yellow Butch and Use tat Potential bitat (spawning or nursery areas, groundwater upwellings) $f_{1} \in G_{e, nursery}$ Dbstructions (seasonal, permanent) $I_{es} = m^{5}$ ish observations y Notes |
| In-water C Cover Type Overhangin Riparian Z Riparian C <u>80%</u> Adjacent L Cover S Adjacent L Cover S Adjacent L Cover S Migratory C Sparse Note any fi Waterbod Natural Wa Surficial Di | Aquatic Veres Aquatic Veres |
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| 1-10 als 0687130 5233736 |
| WIND FARM WATERBODY RAPID ASSESSMENT FORM Non Fisherble |
| Stantec |
| Station #1-10Project NameBow Lake Wind FarmWatercourse NameUnknownProject # 1609 60734Photos442-444Field StaffNB, MF |
| $\begin{array}{c} \text{Photos} \underline{-442} \\ \text{Date} \underline{-5444} \\ \text{Date} \underline{-5444} \\ \text{Time} \underline{-1435} \\ Tim$ |
| Weather conditions in previous 24 hrs 2-4 mm over night. |
| GPS Coordinates (Zone) 16T E N Datum NAD83 |
| Descriptive Location <u>~225m west of T-18</u> . Trib to Lake (w21) |
| Water Quality pH Conductivity (µS/em) to some to s |
| Watercourse Dimensions & Morphology Maximum Pool Depth N / A (cm) Mean Watercourse Width 0.6 (m) Maximum Pool Depth N/A (cm) Mean Bankfull Width 0.6 (m) Mean Water Depth N/A (cm) Mean Bankfull Width 0.6 (m) Mean Water Depth N/A (cm) Mean Bankfull Width 0.6 (m) Mean Water Depth N/A (cm) Mean Bankfull Width 0.6 (m) Mean Water Depth N/A (cm) Mean Bankfull Width 0.6 0.6 (m) Mean Water Depth N/A (cm) Mean Water Depth 0.6 0.6 % % % % Mean Water Depth 0.6 % % % % % % Mean Water Depth 0.6 % |
| Substrate (% cover) Cobble Sand D Silt D Muck 20 Boulder Gravel BD Clay Marl Detritus In-water Cover Cover Types Present (circle): Undercut Banks Deep Pool Watercress Aquatic Veg |
| Overhanging Vegetation Woody Debris Boulder Other |
| Riparian Zone Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional) <u>20% mature sugar maple</u> , eastern white cedar |
| Adjacent Land Use Forest, take |
| Fish Habitat Potential Critical Habitat (spawning or nursery areas, groundwater upwellings) |
| Migratory Obstructions (seasonal, permanent) |
| Note any fish observations |
| Waterbody Notes Matural Watercourse Trapezoidal Channel Grassed Swale Buried Tile Surficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Dry |
| Other Habitat Notes, Incidental Wildlife Observations, etc. |
| $\frac{1-10 \text{ u/s}}{1-10 \text{ d/s}} = 0.687138, 5233768$ 1-10 d/s = 0.687130, 5233736 |
| $1 - 10 d_{15} = 0.687130, 5233736$ |
| Field Notes Authored by MF Field Notes QA/QCed by MG Clab |

W:\resource\Internal Info and Teams\Aquatic Resources\Field Sheets\Stantec\Form 02 Wind Farm Waterbody Rapid Assessment Form.doc

| G | tantec | ARM WATERBOD | T NAFID AGOLC | | Traps Se |
|---|--|--|--|--|--|
| | | | 0 | 1 10 1.10 | 1 5 . |
| Statior | n # | | Project Name Bo | WLake Wind | d tarm |
| Water | course Name <u>v nkn</u> s 445 + 446 | own | Project # <u>1609</u> Field Staff NB | | |
| Photos | July 7/12 | <u> </u> | Time 14:50 | <u>11</u>)/* | |
| Weath | er conditions in previo | ous 24 hrs <u>2-4 mm</u> | 1 overnight | | |
| GPS C | Coordinates (Zone) | 61 E 0687 | 107 N | | |
| Descri | ptive Location <u>~30</u> | oom west of | T-18 C North | end of lake | (w21) |
| Water | Quality | | | | |
| Dissol | ved Oxygen (mg/L) | <u>9.43 </u> | | /ity (μS/cm)/ | + |
| | Temperature (°C) | | Air Temperature (| °C) <u>28°</u> | |
| Time i | <i>in situ</i> measurements | taken <u>13:10</u> | | | |
| Water | course Dimensions | & Morphology | | | and the state of the |
| | | (m) | Maximum Pool De | | |
| Mean | Bankfull Width | (m) | Mean Water Dept | | _ (••m) |
| | % Riffle | <u>)00</u> %Po | | | % I |
| Evider | nce of eroding banks, | Comments on bank st | | iono. | |
| Subst | rate (% cover) | | | 11. | |
| | Bedrock | Cobble | | <u>40</u> Silt | Zo Muck |
| | <u>/</u> bBoulder | Gravel | Clay | Marl | <u>30</u> Detrit |
| - In-wai | ien Cove: | ¢ | <i>#</i> . | | |
| Cover | Types Present (circle | e): Undercut Ba | nks (Deep Pool | Watercress | Aquatic Ve |
| Overh | anging Vegetation> | Woody Debris | Boulder Oth | ner | |
| Ripar | ian Zone | · · · · · · · · · · · · · · · · · · · | ~ 1 | n an an an Arran an Arra. Taonachta | |
| Ripari | an Cover (% of water | course shaded, domina | ant vegetation, matu | re or early succes | sional) |
| 20 | 10 castern white | cedar, balsam hi | <u>۲.</u> | | |
| Adjace | ent Land Use | | | | |
| ko | prest | | | | |
| Fich I | labitat Potential | | | | |
| | | r nursery areas, groun | idwater upwellings) | | |
| | a rabiat (oparing o | | | | |
| Critica | wh huisen ruig | sonal permanent) | • | | |
| Critica <u>عومہ</u> Migrat | tory Obstructions (sea | coondi, pormanony | and the second | ing faan in teelen state of the | 1. 1. 1. 1 . 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. |
| Critica <u>عومہ</u> Migrat | tory Obstructions (sea | nd of lake | | | |
| Critica \$po Migrat | tory Obstructions (sea vc dam @ NW e any fish observations | nd of lake | | | · · · · |
| Critica \$po Migrat | any fish observations | nd of lake | | | |
| Critica <u>9</u> 00 Migrat <u>Beo</u> Note a | any fish observations | nd of lake none | | | 2 |
| Critica Migrat <u>Bea</u> Note a Water Natura | rbody Notes | nd st lake none *** Trapezoidal Channe | el Grassed | d Swale | Buried Tile |
| Critica Migrat <u>Bea</u> Note a Water Natura | rbody Notes | nd of lake none | el Grassed | d Swale d by Aquatic Veg_ | Buried Tile Dry |
| Critica <u>Sec</u> Migrat <u>Bec</u> Note a Water Natura Surfic | rbody Notes al Watercourse ial Drainage (i.e. furro | nd st lake none *** Trapezoidal Channe | el Grassed nd Dominate | d by Aquatic Veg | Dry |
| Critica <u>Sec</u> Migrat <u>Bec</u> Note a Water Natura Surfic | rbody Notes al Watercourse ial Drainage (i.e. furro | nd of lake none Trapezoidal Channe ws) Dugout Poi dental Wildlife Observ | el Grassed nd Dominate | d by Aquatic Veg | Dry |
| Critica <u>Sec</u> Migrat <u>Bec</u> Note a Water Natura Surfic | rbody Notes al Watercourse ial Drainage (i.e. furro | nd st lake none rvi Trapezoidal Channe ows) Dugout Poi | el Grassed nd Dominate | d by Aquatic Veg | Dry |

| Stantec Stanted | Consulting Ltd - Ele | ctrofishing Record a | Page <u>/</u> of / nd Catch Results |
|--|--|---|---|
| Project Name <u>Bow Lo</u> | ike Wind Farm | Station Number | /-11 |
| Project Number 1609 60 | | Pass No. (if applicable | |
| Photos <u>445+4</u> | | Date (yyyymmdd): | |
| Descriptive Location <u>-300</u> | om west of T-1 | 8 @north end | of Jaki (W21) |
| UTM coordinates | easting | 5233702 | northing zone 16T |
| Fishing Method (circle one): | Backpack | Boat Unit Model/Ma | ike |
| Sampling Method (circle one): | even habitat | transect | spot |
| Effort (Electrofishing Seconds): | Number of I | Netters: | lumber of Anodes: |
| Settings | | | |
| Frequency (Hz) | Voltage (volts) | | Power (Watts) |
| Station Information | | 3+10-25 | Set: 13:00 Ju pet: 10:05 J |
| Length of Stream Surveyed (m) | LAKE | | |
| Station Characteristics: | Width (m): Range | Average: | |
| | Depth (m): Range | 10-40cm Average: | 30 |
| Temperature (°C) | Wa 7.60 D7; | ater Velocity if Measured (m/s): Conductivity (uS/cm) Dissolved Oxygen (mg/L) | <u> ルノチ</u> Time <u>ノち らい</u> <u> ノテ</u> <u> 9,43</u> |
| Temperature (°C) 2 pH 7 Catch Data | 760 | Conductivity (uS/cm) | <u></u> |
| Temperature (°C) 2 pH 7 Catch Data | 760 D7; | Conductivity (uS/cm) Dissolved Oxygen (mg/L) | <u>_17</u> _ <u>9,43</u> |
| Temperature (°C) | 760 D7; | Conductivity (uS/cm) Dissolved Oxygen (mg/L) | <u>_17</u> _ <u>9,43</u> |
| Temperature (°C) 2 pH 7 Catch Data Species | 760 D7; | Conductivity (uS/cm) Dissolved Oxygen (mg/L) | <u>_17</u> _ <u>9,43</u> |
| Temperature (°C) 2 pH 7 Catch Data Species | 760 D7; | Conductivity (uS/cm) Dissolved Oxygen (mg/L) | <u>_17</u> _ <u>9,43</u> |
| Temperature (°C) 2 pH 7 Catch Data Species | 760 D7; | Conductivity (uS/cm) Dissolved Oxygen (mg/L) | <u>_17</u> _ <u>9,43</u> |
| Temperature (°C) 2 pH 7 Catch Data Species | 760 D7; | Conductivity (uS/cm) Dissolved Oxygen (mg/L) | <u>_17</u> _ <u>9,43</u> |
| Temperature (°C) 2 pH 7 Catch Data Species <u>No catch</u> | 7 60 D 7; Number of Fish | Conductivity (uS/cm) Dissolved Oxygen (mg/L) | <u>_17</u> _ <u>9,43</u> |
| Temperature (°C) 2 pH 7 Catch Data Species <u>No catch</u> | 760 D7; | Conductivity (uS/cm) Dissolved Oxygen (mg/L) | <u>_17</u> _ <u>9,43</u> |
| Temperature (°C) 2 pH 7 Catch Data Species <u>No catch</u> | 7 60 D 7; Number of Fish | Conductivity (uS/cm) Dissolved Oxygen (mg/L) | <u>_17</u> _ <u>9,43</u> |
| Temperature (°C) 2 pH 7 Catch Data Species <u>No catch</u> | 7 60 D 7; Number of Fish | Conductivity (uS/cm) Dissolved Oxygen (mg/L) | <u>_17</u> _ <u>9,43</u> |
| Temperature (°C) 2 pH 7 Catch Data Species <u>No catch</u> | 7 60 D 7; Number of Fish | Conductivity (uS/cm) Dissolved Oxygen (mg/L) | <u>_17</u> _ <u>9,43</u> |
| Temperature (°C) 2 pH 7 Catch Data Species <u>No catch</u> | 7 60 D 7; Number of Fish | Conductivity (uS/cm) Dissolved Oxygen (mg/L) | <u>_17</u> _ <u>9,43</u> |
| Temperature (°C) 2 pH 7 Catch Data Species <u>No catch</u> | 7 60 D 7; Number of Fish | Conductivity (uS/cm) Dissolved Oxygen (mg/L) | <u>_17</u> _ <u>9,43</u> |
| Temperature (°C) 2 pH 7 Catch Data Species <u>No catch</u> | 7 60 D 7; Number of Fish | Conductivity (uS/cm) Dissolved Oxygen (mg/L) | <u>_17</u> _9,43 |
| Temperature (°C) 2 pH 7 Catch Data Species <u>No catch</u> | 7 60 D 7; Number of Fish | Conductivity (uS/cm) Dissolved Oxygen (mg/L) | <u>_17</u> _9,43 |
| Temperature (°C) 2 pH 7 Catch Data Species <u>No catch</u> | 7 60 D 7; Number of Fish | Conductivity (uS/cm) Dissolved Oxygen (mg/L) | <u>_17</u> _9,43 |

LAKE. Judipout

| Stantec |
|---------|
| |
| |

| | Natercourse Name unknown lake Project # 1609 60734 |
|---------------|---|
| | Photos $478 - 482$ Field Staff <u>NB, mF</u> |
| 1 | $\begin{array}{c ccccccccccccccccccccccccccccccccccc$ |
| 1 | Nother conditions in previous 24 hrs on accio, het much |
| - 1 | Weather conditions in previous 24 hrs <u>no precipenter</u> , <u>museu</u> GPS Coordinates (Zone) 6T E 098 8922 N 5233652 Datum NAD83 |
| | Descriptive Location TS m directly north of access rd of T-21 + T-23. ~ Mid |
| , , | point between T-21 + T-23. Sw end of lake |
| . 1 | Water Quality |
| | Dissolved Oxygen (mg/L) 8.74 pH <u>5.64</u> Conductivity (µS/cm) // Water Temperature (°C) <u>26.84</u> Air Temperature (°C) <u>28° 2</u> |
| 1 | Water Temperature (°C) 26.84 Air Temperature (°C) 28° 2 |
| | Time in situ measurements taken 13.40 |
| | Watercourse Dimensions & Morphology |
| | Mean Watercourse Width (m) Maximum Pool Depth (cm) |
| | Mean Bankfull Width(m) Mean Water Depth(cm) |
| | % Riffle% Pool% Run% Run% Run |
| . | Evidence of eroding banks, Comments on bank stability <u>none observed</u> |
| | Substrate (% cover) |
| | Bedrock CobbleSand /O Silt ZO Muck |
| | 20 Boulder 10 Gravel Clay Marl 40 Detritus |
| 199 11 - 1 | slender Anicae |
| | |
| | Cover Types Present (circle): Undercut Banks Deep Pool Watercress Aquatic Veg |
| | |
| 1 | Overhanging Vegetation Woody Debris Boulder Other |
| | Overhanging Vegetation Woody Debris Boulder Other Riparian Zone Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional) <u>60%</u> Buffalo berry, eastern white ceder, sugar maple balsam fir Adjacent Land Use forest |
| | Riparian Zone Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional) 60% Buffalo berry, eastern white add sugar maple baltam fr Adjacent Land Use Forest |
| | Riparian Zone Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional) <u>60% Buffale berry, eastern white coder sugar maple balsam fri</u> Adjacent Land Use Forest Fish Habitat Potential |
| | Riparian Zone Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional) <u>60% Buffale berry</u> eastern white ceder sugar maple balan fr Adjacent Land Use forest Fish Habitat Potential Critical Habitat (spawning or nursery areas, groundwater upwellings) |
| | Riparian Zone Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional) <u>60%</u> Buffalo berry, eastern white coder, sugar maple baltam fr Adjacent Land Use Forest Fish Habitat Potential Critical Habitat (spawning or nursery areas, groundwater upwellings) Possible = seguen, nursery forege. May not due to ph levels |
| | Riparian Zone Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional) <u>60% Buffale berry</u> eastern white ceder sugar maple balan fr Adjacent Land Use forest Fish Habitat Potential Critical Habitat (spawning or nursery areas, groundwater upwellings) |
| | Riparian Zone Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional) <u>60%</u> Buffalo berry, eastern white coder, sugar muple baltam fir Adjacent Land Use forest Fish Habitat Potential Critical Habitat (spawning or nursery areas, groundwater upwellings) <u>Possible = spawn, nursery, forage. May not due to pH levels</u> Migratory Obstructions (seasonal, permanent) |
| | Riparian Zone Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional) <u>60%</u> Buffalo berry, ecstern white coder, sugar maple balan for Adjacent Land Use forest Fish Habitat Potential Critical Habitat (spawning or nursery areas, groundwater upwellings) <u>Possible = spawn</u> , nursey, forage. May not due to ph levels Migratory Obstructions (seasonal, permanent) Note any fish observations Walked 60-70 along shore with drp not. No |
| | Riparian Zone Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional) <u>60%</u> Buffalo berry, ecstern white coder, sugar maple balan for Adjacent Land Use forest Fish Habitat Potential Critical Habitat (spawning or nursery areas, groundwater upwellings) <u>Possible = spawn</u> , nursey, forage. May not due to ph levels Migratory Obstructions (seasonal, permanent) Note any fish observations Walked 60-70 along shore with drp not. No |
| | Riparian Zone Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional) 60% Buffalo berry, eastern white add sugar maple balan fri Adjacent Land Use forest Fish Habitat Potential Critical Habitat (spawning or nursery areas, groundwater upwellings) Possible = spawn, nursey, forase. May not due to pH levels Migratory Obstructions (seasonal, permanent) Note any fish observations Walked 60-70 along shore with dip not. No fish observations Walked 60-70 along shore with dip not. No fish observations Walked 60-70 along shore with dip not. No Migratory Notes |
| | Riparian Zone Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional) 60% Buffalo berry, ecstern white ceder, sugar muple balantly Adjacent Land Use forest Fish Habitat Potential Critical Habitat (spawning or nursery areas, groundwater upwellings) Possible = spawn, nursey, forage. May not due to ph levels Migratory Obstructions (seasonal, permanent) Note any fish observations Waterbody Notes Natural Watercourse Trapezoidal Channel Grassed Swale Buried Tile |
| | Riparian Zone Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional) 60% Buffalo berry, eastern white add sugar maple balan fri Adjacent Land Use forest Fish Habitat Potential Critical Habitat (spawning or nursery areas, groundwater upwellings) Possible = spawn, nursey, forase. May not due to pH levels Migratory Obstructions (seasonal, permanent) Note any fish observations Walked 60-70 along shore with dip not. No fish observations Walked 60-70 along shore with dip not. No fish observations Walked 60-70 along shore with dip not. No Migratory Notes |
| | Riparian Zone Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional) 60% Buffalo berry, eastern white coder, sugar maple baltam fri Adjacent Land Use forest forest forest Fish Habitat Potential Critical Habitat (spawning or nursery areas, groundwater upwellings) Possible = spawn, nursery, forage. May not due to ph levels Migratory Obstructions (seasonal, permanent) Note any fish observations Walked 60-70 along shore with drp not. No Migratory Obstructions (seasonal, permanent) Of comptored Note any fish observations Walked 60-70 along shore with drp not. No Matural Watercourse Trapezoidal Channel Grassed Swale Buried Tile Surficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Dry |
| | Riparian Zone Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional) 60% Buffalo berry, ecstern white ceder, sugar muple balantly Adjacent Land Use forest Fish Habitat Potential Critical Habitat (spawning or nursery areas, groundwater upwellings) Possible = spawn, nursey, forage. May not due to ph levels Migratory Obstructions (seasonal, permanent) Note any fish observations Waterbody Notes Natural Watercourse Trapezoidal Channel Grassed Swale Buried Tile |
| | Riparian Zone Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional) 60% Buffalo berry, eastern white coder, sugar maple baltam fri Adjacent Land Use forest forest forest Fish Habitat Potential Critical Habitat (spawning or nursery areas, groundwater upwellings) Possible = spawn, nursery, forage. May not due to ph levels Migratory Obstructions (seasonal, permanent) Note any fish observations Walked 60-70 along shore with drp not. No Migratory Obstructions (seasonal, permanent) Of comptored Note any fish observations Walked 60-70 along shore with drp not. No Matural Watercourse Trapezoidal Channel Grassed Swale Buried Tile Surficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Dry |
| | Riparian Zone Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional) 60% Buffalo berry, eastern white coder, sugar maple baltam fri Adjacent Land Use forest forest forest Fish Habitat Potential Critical Habitat (spawning or nursery areas, groundwater upwellings) Possible = spawn, nursery, forage. May not due to ph levels Migratory Obstructions (seasonal, permanent) Note any fish observations Walked 60-70 along shore with drp not. No Migratory Obstructions (seasonal, permanent) Of comptored Note any fish observations Walked 60-70 along shore with drp not. No Matural Watercourse Trapezoidal Channel Grassed Swale Buried Tile Surficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Dry |
| | Riparian Zone Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional) 60% Buffalo berry, eastern white coder, sugar maple baltam fri Adjacent Land Use forest forest forest Fish Habitat Potential Critical Habitat (spawning or nursery areas, groundwater upwellings) Possible = spawn, nursery, forage. May not due to ph levels Migratory Obstructions (seasonal, permanent) Note any fish observations Walked 60-70 along shore with drp not. No Migratory Obstructions (seasonal, permanent) Of comptored Note any fish observations Walked 60-70 along shore with drp not. No Matural Watercourse Trapezoidal Channel Grassed Swale Buried Tile Surficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Dry |



| Stantec | |
|---|--|
| Station #3 - 4 | Project Name Bow Lake Wind Farm |
| Watercourse Name_4onamed | Project # 1609.60734 |
| Photos 1075 -1080 | Field Staff Mike Johns, Mitch Ellah |
| Date July 9/12 | Time |
| Weather conditions in previous 24 hrs | 689 678 E. 5233 861 N |
| GPS Coordinates (Zone) 6T F | N Datum NAO83 |
| Descriptive Location 299 ESE | of proposed turking # 22 location |
| | |
| Water Quality | |
| Dissolved Oxygen (mg/l) 10.28 | pH_ <u>6.17</u> Conductivity (μS/cm) <u>14</u> |
| Water Temperature (°C) | Air Temperature (°C) ~ 22 |
| Time in situ measurements taken 12: | <u>5</u> 5 |
| | |
| Watercourse Dimensions & Morphology | |
| Mean Watercourse Width (m) | Maximum Pool Depth 20 (cm) |
| Mean Bankfull Width <u>1.0</u> (m) | Mean Water Depth 2 (cm) |
| <u> </u> | _% Pool% Run% Flat |
| Evidence of eroding banks, Comments on | bank stability <u>some under cuts</u> , but |
| roots and boulders maintain | n pank Stability |
| Substrate (% cover) | |
| ⊘ Bedrock 1⊘ Cobbl | le <u>/ø</u> SandSilt <u>26</u> Muck |
| 15 Boulder 15 Grave | |
| | |
| In-water Cover | |
| Cover Types Present (circle): | rcut Banks Deep Pool Watercress Aquatic Veg |
| Overhanging Vegetation Woody Debri | s ² Boulder Other |
| Riparian Zone | |
| Piperion Cover (% of watercourse shaded | dominant vegetation, mature or early successional) |
| 100% Shaded, notuse | mante stand |
| Adjacent Land Use | |
| Forested | |
| | |
| Fish Habitat Potential | |
| Critical Habitat (spawning or nursery areas | , groundwater upwellings) |
| None | |
| Migratory Obstructions (seasonal, permane | ent) |
| low Flow | |
| Note any fish observations None - | not direct Fish habitat |
| | |
| | |
| Waterbody Notes | Channel Grassed Swale Buried Tile |
| Natural Watercourse / Trapezoidal (| |
| Surficial Drainage (i.e. furrows) Dug | jout Pond Dominated by Aquatic Veg Dry |
| Other Habitat Notes, Incidental Wildlife | Observations. etc. Ravens, Aquatic inverteblates |
| ponded reas, No Flow, only | |
| to lake pord downstree | cam of project area drains |
| 12 10 10 10 pora aunsilie | |
| · · · · · · · · · · · · · · · · · · · | |
| Field Notes Authored by M; Ke Juhns | Field Notes QA/QCed by MEIL |
| I ION HOUS AUTOROUNY I A COMPANY | a construction of the second sec |



| | A |
|---|---|
| Station # $3-5$ | Project Name Bow Lake Wind Farm |
| Watercourse Name Unnamed | Project # 1609 60734 |
| Photos 1081 - 1084 | Field Staff Mike Johns, Mitch Ellah |
| Date <u>July 9 /12</u> | Time <u>15;50 14:50 '</u> |
| Weather conditions in previous 24 hrs Mostly | |
| GPS Coordinates (Zone) 16T E 690 | |
| Descriptive Location 470 NW of prop | osed Turbine # 25 location |
| Water QualityDissolved Oxygen (mg/L) | 5.93 Conductivity (μ S/cm)7 Air Temperature (°C)~ 2.3 |
| Watercourse Dimensions & Morphology | |
| Mean Watercourse Width 0.5 (m) | Maximum Pool Depth 20 (cm) |
| Mean Bankfull Width // (m) | Mean Water Depth 5 (cm) |
| <u> </u> | ol% Run% Flat |
| Evidence of eroding banks, Comments on bank st stablized by root structure | tability <u>Some undercents but</u> |
| | |
| Substrate (% cover) | |
| Bedrock <u>/</u> 5Cobble | <u>10 Sand 5 Silt 20 Muck</u> |
| 5Boulder6ravel | ClayMarl <u>35</u> Detritus |
| in-water Cover | |
| Cover Types Present (circle): Undercut Ba | nks Deep Pool Watercress Aquatic Veg |
| Overhanging Vegetation Woody Debris | Boulder Other |
| Cvenianging vegetation | |
| Riparian Zone | |
| Riparian Cover (% of watercourse shaded, domination | |
| | deciduous |
| Adjacent Land Use | |
| Forest | |
| Etab Habitat Datastial | |
| Fish Habitat Potential | duistor unuollingo) |
| Critical Habitat (spawning or nursery areas, groun | uwater upwennigs) |
| Migratory Obstructions (seasonal, permanent) | |
| Wigratory Obstructions (seasonal, permanent) | lows stream, low Flow |
| High gradient Further Note any fish observations None - No di | ect fish hab tat |
| Note any new observations $\frac{-\sqrt{-2}}{2}$ | |
| | ······································ |
| Waterbody Notes | |
| Natural Watercourse Trapezoidal Channe | |
| Surficial Drainage (i.e. furrows) Dugout Poi | nd Dominated by Aquatic Veg Dry |
| Other Habitat Notes, Incidental Wildlife Observ | rations, etc. flow barely decornable |
| | Northern Painta, Winter Wrens (6 together) |
| | E. 5233487 at were to 1 |
| batters converge. | 1 |
| | |
| Field Notes Authored by Mike John Field Notes | es QA/QCed by |
| | |



Too shallow for MT.



| Station #3-1Project Name Bow Lake Wind FarmWatercourse Name UNKNOW PProject Name Bow Lake Wind FarmPhotos483 - 487Photos483 - 487DateJuly 08 / 12Weather conditions in previous 24 hrs0 pacipMeather conditions in previous 24 hrs0 pacipGPS Coordinates (Zone) 16TE0689207Descriptive Location250mNE of T-23@Meather conducts porthern Lake to southern Lake (3-1)SE end of Lake in channel |
|--|
| Water QualityDissolved Oxygen (mg/L) 5.81 pH 5.56 Conductivity (μ S/cm)14Water Temperature (°C)19.86Air Temperature (°C) $26°c$ Time in situ measurements taken14.15 |
| Watercourse Dimensions & Morphology Mean Watercourse Width 0.4 (m) Maximum Pool Depth 0 (cm) Mean Bankfull Width 0.76 (m) Mean Water Depth 8 (cm) % Riffle % Pool % Run % Flat Evidence of eroding banks, Comments on bank stability % Run % Flat |
| Substrate (% cover) Bedrock Cobble 2 b Sand Silt 1 o Muck 30 Boulder 2 o Gravel Clay Marl 2 b Detritus If -v |
| Riparian Zone Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional) <u>Sern op</u> , <u>yellow 10, rch</u> , <u>balsam for</u> , <u>sugar maple</u> Adjacent Land Use <u>forest</u> |
| Fish Habitat Potential Critical Habitat (spawning or nursery areas, groundwater upwellings) <u>Spawn</u> , <u>Folare</u> , <u>NV(Sun</u> Migratory Obstructions (seasonal, permanent) <u>Ibw Icv(IS of water, 10 your (bear dam) @ outled to lake</u> . Note any fish observations |
| Waterbody Notes Natural Watercourse Trapezoidal Channel Grassed Swale Buried Tile Surficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Dry |
| Other Habitat Notes, Incidental Wildlife Observations, etc. |



| Station # W-37 9C-2 Project Name Bow Laba |
|--|
| Watercourse Name Unmed Loke W-37 Project # 1609 (0771 |
| Photos # 9752 - 9756 Field Staff Jackore Mitch Ellah |
| Date $\frac{1012/08/18}{1012/08/18}$ Time $\frac{10.48}{10.48}$ |
| Weather conditions in previous 24 hrs for Sanny, Forge mony, worm |
| GPS Coordinates (Zone) 167 E 682611 N S230605 Datum NA083 |
| Descriptive Location West and of Project Aven _water extraction location |
| |
| Water Quality Dissolved Oxygen (mg/L) \P ,01 21.82 pH_7.11 PH_Conductivity (μ S/cm)23 23 Water Temperature (°C) 21.82 21.82 Air Temperature (°C) $22^{\circ}C$ Time in situ measurements taken 10.49 a 10.49 a |
| Watercourse Dimensions & Morphology Lace |
| Mean Watercourse Width (m) Maximum Pool Depth (cm) |
| Mean Bankfull Width (m) Mean Water Depth (cm) |
| % Riffle% Pool% Run% Flat |
| Evidence of eroding banks, Comments on bank stability _ Stable banks - grovel kobble with grosses. |
| |
| Substrate (% cover) |
| Bedrock 20 Cobble 20 Sand 20 Silt 4 Muck |
| Bouider <u>30</u> GravelClay <u>Marl 0</u> Detritus |
| |
| in water Cover |
| Cover Types Present (circle): Undercut Banks (Deep Pool) Watercress (Aquatic Ved |
| Overhanging Vegetation (Woody Debris Boulder Other |
| Riparian Zone |
| Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional) 45% shock of these |
| Adjacent Land Use |
| Alous road ~ An forst |
| |
| Fish Habitat Potential |
| Critical Habitat (spawning or nursery areas, groundwater upwellings) |
| |
| Migratory Obstructions (seasonal, permanent) |
| |
| Note any fish observations Dend Creek Club on shareline |
| |
| Waterbody Notes Labe |
| Natural Watercourse Trapezoidal Channel Grassed Swale Buried Tile |
| Surficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg_ Dry |
| |
| Other Habitat Notes, Incidental Wildlife Observations, etc. <u>ducks</u> easter shore have |
| shallow - could not use manow trays, |
| |
| |
| Field Notes Authored by Jse boe Field Notes QA/QCed by MSULA |
| Field Notes Authored by Use boe Field Notes QA/QCed by M SUA |

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| Station # 9C-3 | Project Name Bow Lake |
|---|--|
| Watercourse Name_unned by6. | Project #_ [609.6077] |
| Photos <u>#9757 -9762</u> | Field Staff Dre keen Mitch Ellah |
| Date 2012/08/28 | Time_11'00 an |
| | |
| GPS Coordinates (Zone) 16T E | See below-other notes Datum NAU83 |
| Descriptive Location Creek hed east, | F 9(-7 Lahe, |
| | |
| Water Quality | <pre>//pH Conductivity (μS/cm) Air Temperature (°C)</pre> |
| Dissolved Oxygen (mg/L) U | pH Conductivity (μS/cm) |
| Water Temperature (°C) | Air Temperature (°C) |
| Time <i>in situ</i> measurements taken | |
| Watercourse Dimensions & Morphology | |
| Mean Watercourse Width Ury (m) | Maximum Pool Depth(cm) |
| Mean Watercourse Width (m) Mean Bankfull Width 215 k (m) | Mean Water Depth(cm) |
| % Riffle | % Pool% Run% Fla |
| Evidence of eroding banks, Comments on | bank stability |
| | |
| Substrate (% cover) | In 20 Cond 30 City Musle |
| BedrockCobb | le <u>20</u> Sand <u>30</u> Silt <u>Muck</u> elClay <u>Marl</u> 50_Detritus |
| BoulderGrave | elClay <u>Marl 50</u> Detritus |
| In-water Cover | Lef Lite- |
| | rcut Banks Deep Pool Watercress Aquatic Veg |
| Overhanging Vegetation Woody Debri | |
| | |
| Riparian Zone | deminent vegetation, motive as early every |
| Hiparian Cover (% of watercourse shaded, 100 % - Fryt | dominant vegetation, mature or early successional) |
| Adjacent Land Use | Cont J Beary. |
| Network Forest + Accelss Roral, | |
| | |
| Fish Habitat Potential | |
| Critical Habitat (spawning or nursery areas | aroundwater upwellings) |
| Children (openning of hereory area | , g |
| Migratory Obstructions (seasonal, permane | ent) |
| Migratory Obstructions (seasonal, permane | |
| Note any fish observations | |
| | |
| Waterbody Notes | |
| | Channel Grassed Swale Buried Tile |
| | pout Pond Dominated by Aquatic Veg Dry |
| | |
| | Observations, etc |
| DS GPS-06826086 5230 591 N | |
| 46 6P5-0682713 E, 5230573 N | ······································ |
| | |
| Field Notos Authored by | Field Notes QA/QCed by MSUah |
| Field Notes Authored by | |

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963 963

| Evidence of eroding banks, Comments on bank stability Substrate (% cover) BedrockCobbleSandSiltMuck | Opreviously assessed by | Mark Pomeroy |
|---|---|---|
| Station # _ / 2 - 2 Watercourse Name unknown Project Name <u>boo</u> <u>Late</u> <u>y</u> Protos <u>935</u> - 9359 Date <u>July</u> _ / 12 Time <u>Job</u> <u>Late</u> <u>y</u> Field Staff <u>MEILaL</u> <u>M</u> <u>Johns</u> Time <u>Job</u> <u>Late</u> <u>N</u> <u>So</u> <u>32</u> <u>75</u> <u>B</u> <u>Datum</u> <u>N#083</u> Descriptive Location <u>NE</u> <u>3</u> <u>hurboine</u> <u>4</u> <u>within</u> <u>forest</u> <u>Water Coulity</u> Dissolved Oxygen (mg/L) _ pH _ Conductivity (<u>uS/cm</u>) | WIND FARM WATERBOD | Y RAPID ASSESSMENT FORM |
| Station # / 0 - 2 Watercourse Name which are the second state of | Stantec Q WA 109 - T4 (013) | |
| Dissolved Oxygen (mg/L) pH Conductivity (µS/cm) Water Temperature (°C) Air Temperature (°C) Time <i>in situ</i> measurements taken Watercourse Dimensions & Morphology Mean Watercourse Width (m) Maximum Pool Depth (cm) Mean Bankfull Width (m) Mean Water Depth (cm) % Riffle % Pool % Run % Fla Evidence of eroding banks, Comments on bank stability Substrate (% cover) Bedrock Cobble Sand Silt Muck Boulder Gravel Clay Marl Detritus In-water Cover Cover Types Present (circle): Undercut Banks Deep Pool Watercress Aquatic Veg Overhanging Vegetation Woody Debris Boulder Other Riparian Zone Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional) Adjacent Land Use Fish Habitat Potential Critical Habitat (spawning or nursery areas, groundwater upwellings) Migratory Obstructions (seasonal, permanent) Note any fish observations Waterbody Notes Natural Watercourse Trapezoidal Channel Grassed Swale Buried Tile | Station # <u>/6-2</u> Watercourse Name <u>unknown</u> Photos <u>9357 - 9359</u> Date <u>July</u> <u>/Ja</u> Weather conditions in previous 24 hrs <u>sunn</u> GPS Coordinates (Zone) 16T E 66.46 | Project # $1609 60734$ Field Staff <u>MERch</u> M Johns Time <u>1 20 pm</u> y We t 2 9 N 52 32 70 8 Datum NH083 |
| Mean Watercourse Width(m) Maximum Pool Depth(cm) Mean Bankfull Width(m) Mean Water Depth(cm) % Riffle % Pool % Riffle % Pool % Run % Fla Evidence of eroding banks, Comments on bank stability Substrate (% cover) | Dissolved Oxygen (mg/L) pH Water Temperature (°C) | Conductivity (μS/cm) Air Temperature (°C) |
| Bedrock Cobble Sand Silt Muck Boulder Gravel Clay Marl Detritus In-water Cove: Cover Types Present (circle): Undercut Banks Deep Pool Watercress Aquatic Veg Overhanging Vegetation Woody Debris Boulder Other | Mean Watercourse Width(m) Mean Bankfull Width(m) % Riffle% Po | ool% Run% Flat |
| Cover Types Present (circle): Undercut Banks Deep Pool Watercress Aquatic Veg Overhanging Vegetation Woody Debris Boulder Other Riparian Zone Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional) Adjacent Land Use | BedrockCobble_/ | SandSiltMuck ClayMarlDetritus |
| Fish Habitat Potential Critical Habitat (spawning or nursery areas, groundwater upwellings) Migratory Obstructions (seasonal, permanent) Note any fish observations Waterbody Notes Natural Watercourse Trapezoidal Channel | Cover Types Present (circle): Undercut Ba Overhanging Vegetation Woody Debris Riparian Zone | Boulder Other |
| Critical Habitat (spawning or nursery areas, groundwater upwellings) Migratory Obstructions (seasonal, permanent) Note any fish observations Waterbody Notes Natural WatercourseTrapezoidal ChannelGrassed SwaleBuried Tile | Adjacent Land Use | |
| Note any fish observations | | idwater upwellings) |
| Waterbody Notes Natural Watercourse Trapezoidal Channel Grassed Swale Buried Tile | Migratory Obstructions (seasonal, permanent) | |
| Natural Watercourse Trapezoidal Channel Grassed Swale Buried Tile | Note any fish observations | |
| Other Habitat Notes, Incidental Wildlife Observations, etc. | Natural Watercourse Trapezoidal Channe Surficial Drainage (i.e. furrows) Dugout Por Other Habitat Notes, Incidental Wildlife Observ | nd Dominated by Aquatic Veg Dry |
| | | |
| Field Notes Authored by Field Notes QA/QCed by | Field Notes Authored by Field Note | es QA/QCed by |

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| WIND FARM WATERBOI | | | |
|---|--|---------------------------------------|-------------|
| Stantec 9-10-2 | dt kapid Ajjejj | | |
| Station #WA 109? T4 (orige) Watercourse Name | Project Name <u>Bo</u> | ullako Phas | . 1 |
| Watercourse Name | Project # | | |
| Photos | Project # Field Staff <u>M. Pon</u> | Neroy + K. East | ferling |
| Date Anc.30 2012 | lime: 12/4 Salar | 1 | 0 |
| Weather conditions in previous 24 hrs rain, 5 | now, wind | | 1110-0 |
| GPS Coordinates (Zone) 167 E | <u> </u> | | Datum NAD8- |
| GPS Coordinates (Zone) 167 E Descriptive Location approx 160 m NE o | + 14 preserved 0 | nghal | |
| Water Quality | | | |
| Dissolved Oxygen (mg/L) pH_ Water Temperature (°C) | Conductivit | y (µS/cm) | |
| Water Temperature (°C) | Air Temperature (°C | | |
| Time in situ measurements taken | · · · · · · · · · · · · · · · · · · · | · · · · · · · · · · · · · · · · · · · | |
| Watercourse Dimensions & Morphology | | | · |
| Mean Watercourse Width <u>p.3</u> (m) | Maximum Pool Dept | th <u> </u> | ém) |
| Mean Bankfull Width 0.5 (m) | Mean Water Depth | 0.15 (| em) |
| % Riffle% P | | | % Flat |
| Evidence of eroding banks, Comments on banks | stability | | |
| Substrate (% cover) | | | |
| BedrockCobble | Sand | Silt | Muck |
| Gravel | Clay | Mari | 20 Detritus |
| In-water Cover Cover Types Present (circle): Undercut Ba Overhanging Vegetation Woody Debris | | | |
| Riparian Zone Riparian Cover (% of watercourse shaded, domin 200%, trees, mature | nant vegetation, mature | or early succession | onal) |
| Adjacent Land Use forest, wetland | | · · · · · · · · · · · · · · · · · · · | |
| | · · · · · · · · · · · · · · · · · · · | | |
| Fish Habitat Potential Critical Habitat (spawning or nursery areas, ground a round water Seepare. | ndwater upwellings) | | 2 |
| Migratory Obstructions (seasonal, permanent) Falls (several) aug. 30cm | | | |
| Note any fish observations <u>none</u> | ······ | ······ | |
| Waterbody Notes Natural Watercourse // Trapezoidal Channe | el Grassed S | Swale Bi | uried Tile |
| Surficial Drainage (i.e. furrows) Dugout Po | ond Dominated I | by Aquatic Veg | Dry |
| Other Habitat Notes, Incidental Wildlife Obser | | | |
| -wB, but outside 81 m. | | | ····· |
| Field Notes Authored by <u>H. Pomulou</u> Field Not | tes QA/QCed by | | |



10

| Station # 10-1 Project Name Bow Lake Wind Farm | | | |
|---|--|--|--|
| Watercourse Name unknown Project # 1609 60734 | | | |
| Photos 353 - 355 Field Staff MEllah, N Burnett | | | |
| Date July 5/12 Time 11:20am | | | |
| Weather conditions in previous 24 hrs h + a h umid | | | |
| CPS Coordinates (Zone) 16 T F (28/1251-5800 N 5232380-Seef Datum NAD | | | |
| Descriptive Location east of turbine 5, seeping from bedrock, flowing along | | | |
| Descriptive Location cast of this section sectores, Flotting away | | | |
| proposed access road | | | |
| Water Quality | | | |
| Dissolved Oxygen (mg/L) 9.79 pH 7.2° Conductivity (μ S/cm) 35 | | | |
| Water Temperature (°C) 16.0 Air Temperature (°C) $28^{\circ}C$ | | | |
| Time in situ measurements taken 11.25 a ~ | | | |
| Time in situ measurements taken a ~~ | | | |
| Watercourse Dimensions & Morphology | | | |
| Maan Watercourse Width 0.50 (m) Maximum Pool Denth 10 (cm) | | | |
| Mean Bankfull Width (m) Mean Water Depth 5 (cm) | | | |
| And the second | | | |
| | | | |
| Evidence of eroding banks, Comments on bank stability banks stable | | | |
| | | | |
| Substrate (% cover) | | | |
| <u>5</u> Bedrock <u>30</u> Cobble <u>10</u> Sand <u>5</u> Silt Muck | | | |
| <u>5</u> Boulder <u>40</u> Gravel <u>Clay</u> <u>Marl 5</u> Detritus | | | |
| | | | |
| In-water Cover | | | |
| Cover Types Present (circle): Undercut Banks Deep Pool Watercress Aquatic Veg | | | |
| Overhanging Vegetation Woody Debrits Boulder Other | | | |
| | | | |
| Riparian Zone | | | |
| Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional) | | | |
| 5%, raspberry, elderberry, shrubs | | | |
| Adjacent Land Use | | | |
| torest road | | | |
| | | | |
| Fish Habitat Potential | | | |
| Critical Habitat (spawning or nursery areas, groundwater upwellings) | | | |
| Onicar habitat (spawning of hursely areas, <u>ground tator upot and s</u> e) | | | |
| Migratory Obstructions (seasonal, permanent) | | | |
| step slope, developing water feature | | | |
| | | | |
| Note any fish observations | | | |
| | | | |
| Waterbody Notes | | | |
| | | | |
| | | | |
| Surficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Dry / | | | |
| Other Habitat Notes Incidental Wildlife Observations, etc. | | | |
| Other habitat hotoo, moraontal hindune obeen ratione, etc. | | | |
| 45-8 seep origin 47M: 684357, 5232346 (WPT 001) | | | |
| Dewelweedy insh, sedar, torget me not "Isaved waypoint | | | |
| | | | |
| | | | |
| Field Notes Authored by Math alla Field Notes QA/QCed by Mark Contra | | | |

| Project Name <u>Bow Lo</u> | ake Wind Farm | Station Number | 10 - 1 | |
|--|------------------|---|--|-----------------|
| Project Number 1609 60 | 134 | Pass No. (if applica | ble) NIA | |
| | 9356 | Date (yyyymmdd): | | |
| Descriptive Location 148 | n NE of proposed | | | |
| Lat | | west side. | | |
| UTM coordinates <u>684</u> | a | 5232403 | northing zone 16T | - |
| | MASKS 1 | Boat Unit Model | | |
| Sampling Method (circle one): | even habitat | transect | spot | |
| Effort (Electrofishing Seconds): | Number of N | etters: | Number of Anodes: | |
| Settings | | | | |
| Frequency (Hz) | Voltage (volts) | Current (Amps) | Power (Watts) | |
| Station Information | | | | |
| Length of Stream Surveyed (m) | | | | |
| Station Characteristics: | Width (m): Range | 3-5 Average: | 4 | |
| · · · · · · · · · · · · · · · · · · · | Depth (m): Range | <u>30-60</u> Average: | 0,40 | |
| Water Clarity/Colour: | lean Wat | er Velocity if Measured (m/s) | · Cottino 12 ···· | 1. 5.1 |
| Temperature (°C) | 20 Via | Conductivity (uS/cm |) 39 Lift time: | $\frac{10}{10}$ |
| pH 6. | 17: | Dissolved Oxygen (mg/L | | LJuly 1 |
| Catch Data | | | · · · · · · · · · · · · · · · · · · · | _ 0 |
| Species | Number of Fish | · · · · · · · · · · · · · · · · · · · | Comments (i.e. age, disease, etc): | _ |
| NO CATCH | | | | |
| • * | | | • | |
| | | ، ها خان ها الله به با به | - | |
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| Tish Measurements on Separate Shufield Staff: $M \in II \ M \cap I \ M \cap I \ M \cap I \ M \cap II \ M \cap I \ M \cap I$ | <u> </u> | Notes By: | $M \in H_{cl}$ (Station Diagram on Back | |

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| | | Project Name Bow Lake Wind | d Farm |
|-------------------|---|--|---|
| | | Project # 1609 60734 Field Staff MEUNL, M Joh | ····· |
| · | | | nj |
| | | ime 13:45 cloud, light rain last n | Nalit |
| - 145 | Weather conditions in previous 24 hrs <u>mix sun +</u> GPS Coordinates (Zone) 16T E 685389 | N 5233343 | Datum NAD83 |
| | GPS Coordinates (Zone) 16T E 685389 Descriptive Location 342 m 5E D proposed | | se to |
| CPS Naypoint | | 15 ms 9, 10, 11 a 12 | |
| | | <u>04</u> Conductivity (μS/cm) Air Temperature (°C)22 | 19 |
| | Watercourse Dimensions & Morphology | n sean an tha an | |
| | Mean Watercourse Width <u>0.40</u> (m) | Maximum Pool Depth /0 | (cm) |
| | Mean Bankfull Width / · 0 (m) | Mean Water Depth5 | _(cm) |
| 4 • | % Riffle <u>40</u> % Pool | % Run | <u>60</u> % Flat |
| | Evidence of eroding banks, Comments on bank stab banks stuble-venetation, organic data | is & substate stabilition | bank |
| • | Substrate (% cover) Bedrock 50 Cobble | b SandSilt | Muck |
| | Bedrock 50 Cobble/ | OlayMarl | <u>lo</u> Detritus |
| | In-water Cover | | |
| | Cover Types Present (circle): Undercut Banks | Deep Pool Watercress | Aquatic Veg |
| | Overhanging Vegetation Woody Debris | Boulder Other | |
| | Riparian Zone | | |
| | Riparian Cover (% of watercourse shaded, dominant 100% - early [mahre, Sugar maple | t vegetation, mature or early succes | ssional) |
| | Adjacent Land Use | | |
| | forest | | |
| | | | in a statistica de la companya de la |
| | Fish Habitat Potential | rator upwollings) | |
| | Critical Habitat (spawning or nursery areas, groundw | | |
| | Migratory Obstructions (seasonal, cermanent) | | |
| · · · · · · · · · | Note any fish observations none - not a | First Sich habitat | |
| | | | |
| | Waterbody Notes / | | |
| • | Natural Watercourse Trapezoidal Channel _ | Grassed Swale | Buried Tile |
| | Surficial Drainage (i.e. furrows) Dugout Pond | | Dry / sections d/s are |
| | Other Habitat Notes, Incidental Wildlife Observat mayflys arvae observed in standin | jons, etc. 9 water within channe | dry |
| | | malal | |
| | Field Notes Authored by MEIIAL Field Notes C | DA/QCed by Ma als | |



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WIND FARM WATERBODY RAPID ASSESSMENT FORM

| - (-(| Station # <u>II-4</u> Watercourse Name <u>unramed</u> Photos <u>1095-1100</u> , <u>II01-1102</u> Date <u>July II /12</u> Weather conditions in previous 24 hrs <u>sunny</u> no precip light winds GPS Coordinates (Zone) <u>I6T</u> E <u>6849439</u> Descriptive Location <u>560 m WSW of proposed</u> turbine <u>b</u> location |
|-----------|--|
| | Water QualityDissolved Oxygen (mg/L) 9.10 pH 6.02 Conductivity (μ S/cm) 30 Water Temperature (°C) 9.85 Air Temperature (°C) 2.30 |
| | Watercourse Dimensions & MorphologyMean Watercourse Width1.2(m)Maximum Pool Depth40(cm)Mean Bankfull Width1.8(m)Mean Water Depth15(cm)35% Riffle35% Pool% Run30% FlatEvidence of eroding banks, Comments on bank stabilitystablebankssupportedby vegetationImagesabstrate & organicdebris |
| | Substrate (% cover)Bedrock55Cobble30Sand/ 0SiltMuckBoulderGravelClayMarl5Detritus |
| \langle | In-water Cover Cover Types Present (circle): Undercut Banks Deep Pool Watercress Aquatic Veg Overhanging Vegetation Woody Debris Boulder Other |
| | Riparian Zone Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional) <u>50°/6 - dominant vegetation mixed forest, Wappice, Smaple, WCedan</u> Adjacent Land Use <u>noad</u> forest torestry practices |
| | Fish Habitat Potential Critical Habitat (spawning or nursery areas, groundwater upwellings) Cold water contributions to potential cold water habitats downstream Migratory Obstructions (seasonal, permanent) perched sections in stream develop with low water levels in summer Note any fish observations Lo impassable barrier in stream - water fall |
| | Note any fish observations <u>La impassable barrier in stream - water fall</u> <u>None - no direct</u> <u>January NTR FLL (184380, 5231487</u>) <u>fish habitat</u> <u>La stream doubled in size at this location</u> Waterbody Notes <u>Natural Watercourse</u> <u>Trapezoidal Channel</u> <u>Grassed Swale</u> <u>Buried Tile</u> |
| | Other Habitat Notes, Incidental Wildlife Observations, etc. Burie of the section |
| | Brigan an toke assessment includes 150m fore of Threat antion - sections of stream flow through open comopy meadow like habitats - 0% inparion co Oclose to roadside 2 groundwater seeps flow into stream -iron stained of Odls, outside of project area, stream, disipates considerably, questionable fish habit Field Notes Authored by MEIIah Field Notes QA/QCed by Ma auto |

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| | BODY RAPID ASSESSMENT FORM |
|---|---|
| Stantec | |
| Station # Watercourse Name <u>Unnamed</u> Photos 1060 - 1063 + 1044 - 1066 | Project Name <u>Bow Lake Wind Farm</u> Project # 1609 60734 Field Staff <u>Mike Johns Mitch Ellah</u> |
| Date <u>July 8 /12</u> Weather conditions in previous 24 hrs <u>very</u> GRS Coordinates (Zone) 16 T E 6/85 | Time 16:00 light rain (41mm, but mostly clear, high of ~2 5483 N 5 233'093' Datum NH083 |
| Descriptive Location ~ 300 m North of | F the proposed turbine 9 location |
| Water Quality Dissolved Oxygen (mg/L), 7.47 p Water Temperature (°C) <u>16.66</u> Time <i>in situ</i> measurements taken <u>16;10</u> | H <u>G,S3</u> Conductivity (μS/cm) <u>24</u> Air Temperature (°C) <u>25</u> |
| Evidence of eroding banks, Comments on bar | nk stability Under cut banks common |
| put poulders and roots st. | abilize panks |
| Substrate (% cover) | |
| BedrockCobble_ | <u> </u> |
| Bedrock Cobble_ <u> Cobble</u> Boulder <u> SD</u> Gravel h-water Cover | <u>15 Sand 20 Silt</u> <u>Muck</u> Clay <u>Marl 5</u> Detritus <u>It Banks</u> Deep Pool Watercress Aquatic Veg Boulder Other |
| Bedrock Cobble Boulder SD Gravel Over Types Present (circle): Undercu Overhanging Vegetation Woody Debris Riparian Zone Riparian Cover (% of watercourse shaded, do | t Banks Deep Poop Watercress Aquatic Veg Boulder Other |
| Bedrock Cobble Boulder SD Gravel Mover Types Present (circle): Undercu Overhanging Vegetation Woody Debris Riparian Zone Riparian Cover (% of watercourse shaded, do DD % Mature Dec: do Adiacent Land Use | t Banks Deep Pool Watercress Aquatic Veg Boulder Other |
| Bedrock Cobble Boulder SD Gravel Mover Types Present (circle): Undercu Overhanging Vegetation Woody Debris Riparian Zone Riparian Gover (% of watercourse shaded, do DO % Mature Decided Adjacent Land Use Forested | Clay |
| Bedrock Cobble Boulder SD Gravel Mover Types Present (circle): Undercu Overhanging Vegetation Woody Debris Riparian Zone Riparian Gover (% of watercourse shaded, do DO % Mature Decided Adjacent Land Use Forested | Clay |
| Bedrock Cobble Boulder SD Gravel Mover Types Present (circle): Undercu Overhanging Vegetation Woody Debris Riparian Zone Riparian Gover (% of watercourse shaded, do DO % Mature Decided Adjacent Land Use Forested | Clay |
| Bedrock Cobble Boulder SD Gravel Mover Types Present (circle): Undercu Overhanging Vegetation Woody Debris Riparian Zone Riparian Gover (% of watercourse shaded, do DO % Mature Decided Adjacent Land Use Forested | Clay |
| BedrockCobbleIDBoulderSDGravelIn-water CoverGraverGravelCover Types Present (circle):IndercuOverhanging VegetationWoody DebrisRiparian ZoneRiparian Cover (% of watercourse shaded, doRiparian Cover (% of watercourse shaded, doIDD %Mathie Dec:doAdjacent Land UseForestedFish Habitat PotentialCritical Habitat (spawning or nursery areas, g $e \times cellent = substrate and the mMigratory Obstructions (seasonal, permanentlogs = and = boulders = present = carNote any fish observationsNote any fish observationsMaterbody Notes$ | roundwater upwellings) <u>al propertion</u> for brook trout spawning <u>Sonal bassiers of consent water level</u> |
| BedrockCobbleIDBoulderSDGravelIn-water CoverGraverGravelCover Types Present (circle):IndercuOverhanging VegetationWoody DebrisRiparian ZoneNoody DebrisRiparian Cover (% of watercourse shaded, do $DD \%$ MatureMatureDec:doAdjacent Land UseForestedFish Habitat PotentialCritical Habitat (spawning or nursery areas, g $e \times cellent$ SubstrateIngs andbouldersIngs andbouldersNote any fish observationsNoneWaterbody NotesTrapezoidal Charles | t Banks Deep Poop Watercress Aquatic Veg Boulder Other |
| Bedrock Cobble_ ID Boulder SD Gravel In-water Cover Cover Types Present (circle): Undercu Overhanging Vegetation Woody Debris Riparian Zone Riparian Cover (% of watercourse shaded, do Riparian Cover (% of watercourse shaded, do Image: Cover Land Use Image: Cover Land Use Forested Fish Habitat Potential Critical Habitat (spawning or nursery areas, g excellent substrate and their Migratory Obstructions (seasonal, permanent log5 and boulders present 5 cm Note any fish observations None Waterbody Notes Natural Watercourse_ Trapezoidal Chas Surficial Drainage (i.e. furrows) Dugou | Clay Man S Definition th Banks Deep Poel Watercress Aquatic Veg Boulder Other |
| Bedrock Cobble_ I/O Boulder SD Gravel In-water Cover Cover Types Present (circle): Undercu Overhanging Vegetation Woody Debris Riparian Zone Riparian Cover (% of watercourse shaded, do Riparian Cover (% of watercourse shaded, do Image: Cover Land Use Image: Cover Land Use Forested Fish Habitat Potential Critical Habitat (spawning or nursery areas, g excellent substrate and their Migratory Obstructions (seasonal, permanent IogS and boulders pressed Sca Note any fish observations None Waterbody Notes Natural Watercourse_ Trapezoidal Chas Surficial Drainage (i.e. furrows) Dugou | |

¥.



| Station # 1/-3 | Project Name Bow Lake Wind Farm |
|--|--|
| Watercourse Name Un named | Project # 1609 60734 |
| Photos 1052 - 1059 | Field Staff Mike Jahns, Mitch Ellah |
| Date July 8 /12 | Time 14:40 |
| | in but may they clear high of ~27 |
| GPS Coordinates (Zone) 16T E 76853 | N/5232494 Datum NA083 |
| Descriptive Location ~ 150 m dawn str | cam of large fer between |
| proposed turbine locations | 8 and 9 |
| | |
| Water Quality | 1 28 Dandwette the (1) Clam) 35 |
| Dissolved Oxygen (mg/L) <u>6.60</u> pH | 6.28 Conductivity (μ S/cm) 35 Air Temperature (°C) -23 |
| | Air Temperature (°C) |
| Time <i>in situ</i> measurements taken 14:43 | |
| Watercourse Dimensions & Morphology | |
| Mean Watercourse Width <u>1.2</u> (m) | Maximum Pool Depth 20 (cm) |
| Mean Bankfull Width 1,4 (m) | |
| 20 % Riffle 25 % Poo | |
| Evidence of eroding banks, Comments on bank sta | ability stable banks, typically |
| lined with boulders | |
| | |
| Substrate (% cover) Bedrock 25 Cobble | Sand / Silt Muck |
| | Clay Marl 20 Detritus |
| Boulder Gravel | |
| in-water Cover | |
| | No Deep Pool Watercress Aquatic Veg |
| Overhanging Vegetation Woody Debris | Boulder Other |
| | |
| Riparian Zone | |
| Riparian Cover (% of watercourse shaded, domina | int vegetation, mature or early successional) |
| 100 | |
| Adjacent Land Use | |
| Forest - mixed | |
| Fish Habitat Potential | |
| Critical Habitat (spawning or nursery areas, ground | twater unwellings) |
| None | water upwennigs) |
| Migratory Obstructions (seasonal, permanent) | |
| None observed | |
| Note any fish observations No Fish observations | erved. Not direct fish habitat |
| due to limited over wintering pools. 1: | |
| and the manifest of the second | Downstream |
| Waterbody Notes | |
| Natural Watercourse_/ Trapezoidal Channel | |
| Surficial Drainage (i.e. furrows) Dugout Por | |
| | Pictures |
| Other Habitat Notes, Incidental Wildlife Observ | |
| Water course, indicating flow is | likely permanent: Chironomids |
| observed, Watercourse / origina | tes / in fen upstream of |
| project location | <u> </u> |
| N.V. T/ . | Mr11.1 |
| Field Notes Authored by <u>Mike Johns</u> Field Notes | sQA/QCed by MEILah |



| | Our Hand Halle | Project Name Bow Lake Wind Farm |
|------------------|---|--|
| | Station # Watercourse Name_unnamed | Project # $1609 60734$ |
| | Photos 1046 - 1048 | Field Staff MEllah, MJohns |
| | Date July 8/12 | |
| | Weather conditions in previous 24 hrs <u>sunny</u> , 1 | hot, no precipitation, light winds |
| | GPS Coordinates (Zone) 16 T E 685260 | |
| ~S-0 | Descriptive Location 291m NE of propose | |
| er S | proposed access road | |
| | Propuser vois vois | |
| | Water Quality | |
| н. Т | Dissolved Oxygen (mg/L) V | Conductivity (µS/cm) |
| | Water Temperature (°C) | Air Temperature (°C) <u>22</u> |
| | Time in situ measurements taken | : |
| | | and the first state of the second state of the |
| | Watercourse Dimensions & Morphology | Maning Deal Death (am) |
| | Mean Watercourse Width(m) | Maximum Pool Depth(cm) |
| | Mean Bankfull Width / 0 (m) | Mean Water Depth (cm) |
| | % Rfffle% Poo | |
| | Evidence of eroding banks, Comments on bank sta | Le stabiliting bonks |
| | regetation, organic debris a substa. | Le Stabiliting Borces |
| 1 / 1 | Substrate (% cover) | |
| | Bedrock 60 Cobble | 3 Sand Silt 20 Muck |
| 11 | Boulder Gravel | Clay Marl \5 Detritus |
| | | |
| | In-water Cozer | |
| | Cover Types Present (circle): Undercut Bar | |
| | Overhanging Vegetation Woody Debris | Boulder Other |
| | Director Zone | |
| | Riparian Zone Riparian Cover (% of watercourse shaded, domina | ant vegetation mature or early successional) |
| | nipanai Cover (18 of watercourse shaded, domina | minant sugar maple while cedar, balsa |
| | Adjacent Land Use | The state st |
| (| | à |
| -tor | estry road, to restry legging activ | 0 |
| | | |
| | Fich Habitat Potential | |
| | Fish Habitat Potential | dwater upwellings) |
| | Critical Habitat (spawning or nursery areas, ground | dwater upwellings) |
| | Critical Habitat (spawning or nursery areas, ground | dwater upwellings) |
| | Critical Habitat (spawning or nursery areas, ground <u>None</u> Migratory Obstructions (seasonal, permanent) | |
| | Critical Habitat (spawning or nursery areas, ground None Migratory Obstructions (seasonal, permanent) Ow How Mah aradients | |
| | Critical Habitat (spawning or nursery areas, ground <u>None</u> Migratory Obstructions (seasonal, permanent) | |
| | Critical Habitat (spawning or nursery areas, ground <u>None</u> Migratory Obstructions (seasonal, permanent) <u>low How Man aradients</u> Note any fish observations | |
| | Critical Habitat (spawning or nursery areas, ground <u>None</u> Migratory Obstructions (seasonal, permanent) <u>low flow hat aradients</u> Note any fish observations <u>None</u> Waterbody Notes | |
| | Critical Habitat (spawning or nursery areas, ground <u>None</u> Migratory Obstructions (seasonal, permanent) <u>Note any fish observations</u> <u>Note any fish observations</u> <u>None</u> Waterbody Notes Natural Watercourse Trapezoidal Channel | I Grassed Swale Buried Tile |
| | Critical Habitat (spawning or nursery areas, ground <u>None</u> Migratory Obstructions (seasonal, permanent) <u>low flow hat aradients</u> Note any fish observations <u>None</u> Waterbody Notes | I Grassed Swale Buried Tile |
| | Critical Habitat (spawning or nursery areas, ground <u>None</u> Migratory Obstructions (seasonal, permanent) <u>OW</u> <u>How</u> <u>Make</u> <u>Aradients</u> Note any fish observations <u>None</u> Waterbody Notes Natural Watercourse <u>Trapezoidal Channel</u> Surficial Drainage (i.e. furrows) <u>Dugout Por</u> | I Grassed Swale Buried Tile nd Dominated by Aquatic Veg Dry |
| | Critical Habitat (spawning or nursery areas, ground <u>None</u> Migratory Obstructions (seasonal, permanent) <u>OW</u> <u>How</u> <u>Man</u> <u>aradients</u> Note any fish observations <u></u> Note any fish observations <u></u> <u>Note any fish observations</u> <u></u> <u></u> | I Grassed Swale Buried Tile nd Dominated by Aquatic Veg Dry |
| | Critical Habitat (spawning or nursery areas, ground <u>None</u> Migratory Obstructions (seasonal, permanent) <u>Note any fish observations</u> <u>Note any fish observations</u> <u>None</u> Waterbody Notes Natural Watercourse Trapezoidal Channel | I Grassed Swale Buried Tile nd Dominated by Aquatic Veg Dry |
| | Critical Habitat (spawning or nursery areas, ground <u>None</u> Migratory Obstructions (seasonal, permanent) <u>OW</u> <u>How</u> <u>Man</u> <u>aradients</u> Note any fish observations <u>None</u> Waterbody Notes Natural Watercourse <u>Trapezoidal Channel</u> Surficial Drainage (i.e. furrows) <u>Dugout Por</u> Other Habitat Notes, Incidental Wildlife Observ | I Grassed Swale Buried Tile nd Dominated by Aquatic Veg Dry |
| | Critical Habitat (spawning or nursery areas, ground <u>None</u> Migratory Obstructions (seasonal, permanent) <u>OW</u> <u>How</u> <u>Man</u> <u>aradients</u> Note any fish observations <u>None</u> Waterbody Notes Natural Watercourse <u>Trapezoidal Channel</u> Surficial Drainage (i.e. furrows) <u>Dugout Por</u> Other Habitat Notes, Incidental Wildlife Observ | I Grassed Swale Buried Tile nd Dominated by Aquatic Veg Dry |



| | Station # 11-2 Project Na | ame Bow Lake Wind Farm | $\frac{1}{2} \left(\frac{1}{2} + \frac{1}{2} \right) = \frac{1}{2} \left(\frac{1}{2} + \frac{1}{2} + \frac{1}{2} \right) \left(\frac{1}{2} + \frac{1}{2} + \frac{1}{2} \right)$ |
|---|---|---------------------------------------|--|
| · . | | 1609 60734 | the second |
| · · | | f MElloh, MJohns | |
| | Date July 8/12 Time /a | 2:25 | |
| | Weather conditions in previous 24 hrs Sunny hot | no precip light winds | |
| 1-245- | S-GPS Coordinates (Zone) 6 E 685/40 | <u>'N 52'32 0 3'3 Datum N</u> | H083 |
| ingin of | Descriptive Location 259m NE of proposed turbin | K 6 location, south of | |
| reach | proposed access road. | - ·· tam | |
| | | | |
| | Water Quality | Danductivity (u.S. (cm) 41 | |
| | , , , , <u> </u> | Conductivity (μ S/cm) <u>4</u> | |
| | | erature (°C) <u>22</u> | |
| | Time in situ measurements taken 12:25 | | |
| | Watercourse Dimensions & Morphology | | |
| | Mean Watercourse Width 0,50 (m) Maximum | Pool Depth <u>40</u> (cm) | |
| | | ter Depth 20 (cm) | |
| | 5 % Riffle <u>60</u> % Pool | % Run 35 | % Flat |
| · | Evidence of eroding banks, Comments on bank stability | table banks - stabilited b | <u>у</u> |
| | vegetation, organic debus, substrate | | 0 |
| | | 2 | |
| | Substrate (% cover) | O ¹ | |
| | Bedrock5_Cobble6Sa | | luck |
| | GravelCl | ay <u>Marl 20</u> D | etritus |
| | In-water Cover | | |
| a de la companya de l | | eep PooP Watercress Aquati | c Vea |
| | Overhanging Vegetation Woody Debris Boulder | | •••9 |
| | Overhanging vegetation head bears | • • • • • • • • • • • • • • • • • • • | |
| | Riparian Zone | | |
| | Riparian Cover (% of watercourse shaded, dominant vegetati | on, mature or early successional) | 11 / A . 1. |
| | 80% - early successional forest w | dominant sugarmaple + 4 | pellowbirch |
| | Adjacent Land Use Vlagar A | | |
| to | forestry road forestry practices | | · · · · · · · · · · · · · · · · · · · |
| | | | · · · |
| | Fish Habitat Potential | | |
| | Critical Habitat (spawning or nursery areas, groundwater upw | (ellings) | |
| | thermal regime critical for potential cold | watch species downship with | <u> </u> |
| | Migratory Obstructions (seasonal, permanent) | tran | |
| light i ghte | high gradient organic debus, perched se | (A GWJ | |
| No. ta | Note any fish observations | acainst aca | • <u> </u> |
| | Note any fish observations None - not direct fish halitet within p | Dicjeur area | |
| | Waterbody Notes / | | |
| • | Natural Watercourse Trapezoidal Channel | Grassed Swale Buried Til | e |
| | Surficial Drainage (i.e. furrows) Dugout Pond D | Dominated by Aquatic Veg D | ry |
| | | | |
| | Other Habitat Notes, Incidental Wildlife Observations, etc | | |
| | -potential to contribute to cold water habit | <u>rts</u> | |
| | | | · · · |
| ÷ | | | • |
| | M-1 1 | n n n n - n n | |
| | Field Notes Authored by MENAL Field Notes QA/QCed by | 11) 4/m | |



| | Juliec | |
|----|--|--|
| | Station #1-3 | Project Name Bow Lake Wind Farm |
| | Watercourse Name_ Unknown | Project # 1600 60734 |
| | Photos 398-400 9820-9823 | Field Staff NB, MF & JK + ME (2012/08/29) |
| | Date July 06/12 | Time 14:45 |
| | Weather conditions in previous 24 hrs hat m | νζε μ |
| | Weather conditions in previous 24 hrs <u>het</u> GPS Coordinates (Zone) <u>16</u> T <u>E</u> 0686 | 7987 N 5232855 Datum NA083 |
| | Descriptive Location | OFT-15 |
| | | |
| | Water Temperature (°C) 17.71 [4.16 | $\frac{7.09}{8}^{8.09}$ Conductivity (µS/cm) 18/43 Air Temperature (°C) 27°2/22°C |
| | Watercourse Dimensions & Morphology | |
| | Mean Watercourse Width 0.7 (m) | Maximum Pool Depth/ O(cm) |
| | Mean Bankfull Width 1.2 (m) | Mean Water Depth <u>S</u> (cm) |
| | 10 % Riffle Q1) is land % Po | ol% Run% Flat |
| | Evidence of eroding banks, Comments on bank st | ability moderate undereut banks |
| | | |
| | Substrate (% cover) | |
| | Bedrock 4D Cobble | |
| | <u> </u> | Clay Marl <u>S</u> Detritus |
| | In-water Cover | |
| ų. | | nks Deep Pool Watercress Aquatic Veg |
| ,, | Overhanging Vegetation Woody Debris | Boulder Other |
| ¢, | Overhanging vegetation (Vood Donie) | |
| | Riparian Zone | |
| | Riparian Cover (% of watercourse shaded, domina 70% | ant vegetation, mature of early successional) |
| | Adjacent Land Use | |
| | 10/26- | |
| | 0165-1 | |
| | Fish Habitat Potential | |
| | Critical Habitat (spawning or nursery areas, groun | dwater upwellings) |
| | work. | |
| | Migratory Obstructions (seasonal, permanent) | |
| | Steep gradient: | |
| | Note any fish observations <u>none</u> | |
| | | ······································ |
| | Waterbody Notes / | |
| | Natural Watercourse / Trapezoidal Channe | |
| | Surficial Drainage (i.e. furrows) Dugout Por | nd Dominated by Aquatic Veg Dry |
| | Other Unkitet Neteo Incidental Wildlife Oheen | rations at (1) (1) (1) (1) |
| | Other Habitat Notes, Incidental Wildlife Observ | Lover end Ferns |
| | 11direct, 1Atumit PS 1-345@ wetch Source - 686768 E, 5237 | |
| | | |
| 0 | 13 1-305 clanues flors out at project barding | John log, 15 north. |
| | Field Notes Authored by Field Note | es QA/QCed by M Gllah |
| | Field Notes Authored by Field Note | is varued by <u>NIALLAN</u> |

W:\resource\Internal Info and Teams\Aquatic Resources\Field Sheets\Stantec\Form 02 Wind Farm Waterbody Rapid Assessment Form.doc

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|---|---|
| Station # | Project Name Bow Lake Wind Farm |
| Vatercourse Name <u> שמאראסשר</u> Photos <u>398-400</u> | Project # <u>1609 60734</u> Field Staff_ <u>NB, mF</u> |
| notos <u>s 18 400</u> | Time 14.45 |
| Date July 06/12 | |
| Weather conditions in previous 24 hrs h_0+ GPS Coordinates (Zone)16 TEObs | 86798 N 5232855 Datum NA |
| Descriptive Location <u>~ 400 ~ nother</u> | <u>вена</u> го FT-15 |
| | |
| Nater Quality | |
| Dissolved Oxygen (mg/L) <u>834</u> p | $H_7.09$ Conductivity (μ S/cm) 18 |
| Nater Temperature (°C) 17.71 | Air Temperature (°C) 27°2 |
| Fime in situ measurements taken | <u>></u> |
| Watercourse Dimensions & Morphology | |
| Mean Watercourse Width 0.7 (m) | Maximum Pool Depth <u>/</u> C(cm) |
| Viean Banktuli Width(m) | |
| % Riffle% | % Pool% Run% |
| Evidence of eroding banks, Comments on bar | nk stability moderate undercut banks |
| | |
| Substrate (% cover) Bedrock 4D Cobble | Sand Silt Muc |
| | <u> </u> |
| <u>40</u> Boulder <u>15</u> Gravel_ | |
| 医病性治療 (病理) (特別) しょうしょう アイ・ション アイ・ション・ション | |
| n-water Cover | |
| n-water Cover Cover Types Present (circle): | t Banks (Deep Pool) Watercress Aquatic |
| Cover Types Present (circle): | |
| Cover Types Present (circle): Undercu Diverhanging Vegetation Woody Debris | |
| Cover Types Present (circle): Undercu Overhanging Vegetation Woody Debris | Boulder Other |
| Cover Types Present (circle): Undercu Dverhanging Vegetation Woody Debris Riparian Zone Riparian Cover (% of watercourse shaded, do | |
| Cover Types Present (circle): Undercu Dverhanging Vegetation Woody Debris Riparian Zone Riparian Cover (% of watercourse shaded, do 70% | Boulder Other |
| Cover Types Present (circle): Undercu Diverhanging Vegetation Woody Debris Riparian Zone Riparian Cover (% of watercourse shaded, do 70% Adjacent Land Use | Boulder Other |
| Cover Types Present (circle): Undercu Dverhanging Vegetation Woody Debris Riparian Zone Riparian Cover (% of watercourse shaded, do 70% | Boulder Other |
| Cover Types Present (circle): Undercu Diverhanging Vegetation Woody Debris Riparian Zone Riparian Cover (% of watercourse shaded, do 70% Adjacent Land Use | Boulder Other |
| Cover Types Present (circle): Undercu Dverhanging Vegetation Woody Debris Riparian Zone Riparian Cover (% of watercourse shaded, do 70% Adjacent Land Use Cores- Fish Habitat Potential | Boulder Other |
| Cover Types Present (circle): Undercu Dverhanging Vegetation Woody Debris Riparian Zone Riparian Cover (% of watercourse shaded, do 70% Adjacent Land Use Correct | Boulder Other |
| Cover Types Present (circle): Undercu Dverhanging Vegetation Woody Debris Riparian Zone Riparian Cover (% of watercourse shaded, do 70% Adjacent Land Use Vest Fish Habitat Potential Critical Habitat (spawning or nursery areas, g Vor Migratory Obstructions (seasonal, permanent | Boulder Other ominant vegetation, mature or early successional) roundwater upwellings) |
| Cover Types Present (circle): Undercu Dverhanging Vegetation Woody Debris Riparian Zone Riparian Cover (% of watercourse shaded, do 70% Adjacent Land Use Vest Fish Habitat Potential Critical Habitat (spawning or nursery areas, g Vor Migratory Obstructions (seasonal, permanent | Boulder Other ominant vegetation, mature or early successional) roundwater upwellings) |
| Cover Types Present (circle): Undercu Dverhanging Vegetation Woody Debris Riparian Zone Riparian Cover (% of watercourse shaded, do 70% Adjacent Land Use Correct Construction Fish Habitat Potential Critical Habitat (spawning or nursery areas, g | Boulder Other ominant vegetation, mature or early successional) roundwater upwellings) |
| Cover Types Present (circle): Undercu Diverhanging Vegetation Woody Debris Riparian Zone Riparian Cover (% of watercourse shaded, do 70% Adjacent Land Use Circles Fish Habitat Potential Critical Habitat (spawning or nursery areas, g Mone Vigratory Obstructions (seasonal, permanent Sheep gradient Note any fish observations None | Boulder Other ominant vegetation, mature or early successional) roundwater upwellings) |
| Cover Types Present (circle): Undercu Diverhanging Vegetation Woody Debris Riparian Zone Riparian Cover (% of watercourse shaded, do 70% Adjacent Land Use Circled Habitat Potential Critical Habitat Potential Critical Habitat (spawning or nursery areas, g More Wigratory Obstructions (seasonal, permanent Step madi unt Note any fish observations Nore Waterbody Notes |) Boulder Other ominant vegetation, mature or early successional) roundwater upwellings) |
| Cover Types Present (circle): Undercu Dverhanging Vegetation Woody Debris Riparian Zone Riparian Cover (% of watercourse shaded, do 70% Adjacent Land Use Circles- Fish Habitat Potential Critical Habitat (spawning or nursery areas, g More Migratory Obstructions (seasonal, permanent Shep medium Note any fish observations <u>Nore</u> Waterbody Notes Natural Watercourse Trapezoidal Cha | Boulder Other |
| Cover Types Present (circle): Undercu Diverhanging Vegetation Woody Debris Riparian Zone Riparian Cover (% of watercourse shaded, do 70% Adjacent Land Use Circled Habitat Potential Critical Habitat Potential Critical Habitat (spawning or nursery areas, g More Wigratory Obstructions (seasonal, permanent Step madi unt Note any fish observations Nore Waterbody Notes | Boulder Other |
| Cover Types Present (circle): Undercu Dverhanging Vegetation Woody Debris Riparian Zone Riparian Cover (% of watercourse shaded, do 70% Adjacent Land Use Citical Habitat Potential Critical Habitat (spawning or nursery areas, g More Migratory Obstructions (seasonal, permanent Step gradient Note any fish observations <u>none</u> Waterbody Notes Natural Watercourse Trapezoidal Cha Surficial Drainage (i.e. furrows) Dugou Other Habitat Notes, Incidental Wildlife Ob | Boulder Other |
| Cover Types Present (circle): Undercu Dverhanging Vegetation Woody Debris Riparian Zone Riparian Cover (% of watercourse shaded, do 70% Adiacent Land Use Circle Habitat Potential Critical Habitat Potential Critical Habitat (spawning or nursery areas, g Work Migratory Obstructions (seasonal, permanent Sheff Areadi und Note any fish observations <u>None</u> Waterbody Notes Natural Watercourse Trapezoidal Cha Surficial Drainage (i.e. furrows) Dugou Other Habitat Notes, Incidental Wildlife Ob | Boulder Other |
| Cover Types Present (circle): Undercu Dverhanging Vegetation Woody Debris Riparian Zone Riparian Cover (% of watercourse shaded, do 70% Adjacent Land Use Citical Habitat Potential Critical Habitat (spawning or nursery areas, g More Migratory Obstructions (seasonal, permanent Step gradient Note any fish observations <u>none</u> Waterbody Notes Natural Watercourse Trapezoidal Cha Surficial Drainage (i.e. furrows) Dugou Other Habitat Notes, Incidental Wildlife Ob | Boulder Other ominant vegetation, mature or early successional) roundwater upwellings)) annel Grassed Swale Buried Tile_ t Pond Dominated by Aquatic Veg Dry oservations, etcPI4 (GP5 2) |
| Cover Types Present (circle): Undercu Dverhanging Vegetation Woody Debris Riparian Zone Riparian Cover (% of watercourse shaded, do 70% Adjacent Land Use Citical Habitat Potential Critical Habitat (spawning or nursery areas, g More Migratory Obstructions (seasonal, permanent Step gradient Note any fish observations <u>none</u> Waterbody Notes Natural Watercourse Trapezoidal Cha Surficial Drainage (i.e. furrows) Dugou Other Habitat Notes, Incidental Wildlife Ob | Boulder Other |



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WIND FARM WATERBODY RAPID ASSESSMENT FORM

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| Stantec | Fished |
|--|--|
| Station #4 Watercourse Name_unknown Lake | Project Name <u>Bow Lake Wind Farm</u> Project # 1609 60734 |
| Photos 416-419 Date July 07/12 | Field Staff <u>NB MF</u> Time 0130 |
| Weather conditions in previous 24 hrs <u>2-4m</u> GPS Coordinates (Zone) <u>16T</u> <u>E 068</u> Descriptive Location <u>~ 700 m east of</u> 70m South of unevaluated wetland | m ofrain overnight 7046 N 5233247 Datum NAD83 T-13 @ northwest end of rate ~ |
| Water QualityDissolved Oxygen (mg/L) | $\frac{6.75}{\text{Air Temperature (°C)}} \frac{16}{24^{\circ}c}$ |
| Watercourse Dimensions & Morphology Mean Watercourse Width | vool% Run% Flat |
| Substrate (% cover) Bedrock 40 Cobble /0 BoulderGravel | <u> </u> |
| In-water Cover Cover Types Present (circle): Undercut B Overhanging Vegetation Woody Debris | anks Deep Pool Watercress Aquatic Veg Boulder Other |
| Riparian Zone Riparian Cover (% of watercourse shaded, domi 50%, balsam fir, Ewcedar | nant vegetation, mature or early successional) |
| Adjacent Land Use | |
| Fish Habitat Potential Critical Habitat (spawning or nursery areas, grou NUGERA, SDAWN, furage | Indwater upwellings) |
| Migratory Obstructions (seasonal, permanent) | |
| Note any fish observations None observe | 1 along 60m minnow trap spacing |
| Waterbody Notes Natural Watercourse Trapezoidal Chanr Surficial Drainage (i.e. furrows) Dugout P | nel Grassed Swale Buried Tile ond Dominated by Aquatic Veg Dry |
| Other Habitat Notes, Incidental Wildlife Obse | |
| WP 18, GPS 2 Permanent, Direct | |
| Field Notes Authored by Field Notes | otes QA/QCed by M Llal_ |

| | | | ofishing Re | | atch Res | sults |
|---|----------------------------|-----------------|---|----------------------------------|--|---|
| | te Wind | Farm | Station Num | | '-4 | |
| Project Number 1609 607 | | | Pass No. (if | | | |
| Photos <u>416-4</u> | | <u> </u> | | mdd): Jul | | |
| | | <u> </u> | @ no(thu | | er of | kile ~ |
| · · · · · · · · · · · · · · · · · · · | 7046 | easting | 523324 | | rthing | zone 16T |
| | + 0 70 | easung | 523521 | <u>₹</u> 110 | runang | zone <u>16</u> T |
| Fishing Method (circle one): | Backpa | N | at / Unit | Model/Make | \sim | \ |
| Sampling Method (circle one): | even | habitat | /transect | sp | ot / | |
| Effort (Electrofishing Seconds): | | Number of Nette | ers: / | Numbe | r of Anodes: | |
| Settings | | \mathbf{X} | | | | |
| Frequency (Hz) | Voltage (volts) | Cu | rrent (Amps) | Power | and the second | |
| Station Information | | | | (3+1 | aps | Set: 09:4 Ret: 09: |
| Length of Stream Surveyed (m) | | | _ | | | Ret: 09: |
| Station Characteristics: | Width (m): Depth (m): | Range | | rage: | | LAKE |
| | | | an indian Ave | rage: c | 1-50 | |
| Temperature (°C) | nind. 3.89 | | Velocity if Measure Conductivity | ed (m/s): (uS/cm) | <u>N)A</u> T 16 | īme <u>0954</u> |
| Temperature (°C) | nind. <u>3.89</u> 75 | Water | Velocity if Measure | ed (m/s): (uS/cm) n (mg/L) | N/A 16 8:18 | |
| Temperature (°C) | nind. 3.89 | Water | Velocity if Measure Conductivity Dissolved Oxygei | ed (m/s): (uS/cm) n (mg/L) | N/A 16 8:18 | Time <u>0954</u> nge, disease, etc): |
| Temperature (°C) 2 pH 6 Catch Data Species | nind. <u>3.89</u> 75 | Water | Velocity if Measure Conductivity Dissolved Oxygei | ed (m/s): (uS/cm) n (mg/L) | N/A 16 8:18 | |
| Temperature (°C) 2 pH 65 Catch Data Species Eastan Newt | nind. <u>3.89</u> 75 | Water | Velocity if Measure Conductivity Dissolved Oxygei | ed (m/s): (uS/cm) n (mg/L) | N/A 16 8:18 | |
| Temperature (°C) 2 pH 6 Catch Data Species | nind. <u>3.89</u> 75 | Water | Velocity if Measure Conductivity Dissolved Oxygei | ed (m/s): (uS/cm) n (mg/L) | N/A 16 8:18 | |
| Temperature (°C) 2 pH 6 Catch Data Species Eastern Newt Drayon Fly | nind. <u>3.89</u> 75 | Water | Velocity if Measure Conductivity Dissolved Oxygei | ed (m/s): (uS/cm) n (mg/L) | N/A 16 8:18 | |
| Temperature (°C) 2 pH 6 Catch Data Species Eastern Newt Drayon Fly | nind. <u>3.89</u> 75 | Water | Velocity if Measure Conductivity Dissolved Oxygei | ed (m/s): (uS/cm) n (mg/L) | N/A 16 8:18 | |
| Temperature (°C) 2 pH 6 Catch Data Species Eastern Newt Drayon Fly | nind. <u>3.89</u> 75 | Water | Velocity if Measure Conductivity Dissolved Oxygei | ed (m/s): (uS/cm) n (mg/L) | N/A 16 8:18 | |
| Temperature (°C) 2 pH 6 Catch Data Species Eastern Newt Drayon Fly Tadpoh | nind. <u>3.89</u> 75 | Water | Velocity if Measure Conductivity Dissolved Oxygei | ed (m/s): (uS/cm) n (mg/L) | N/A 16 8:18 | |
| Temperature (°C) 2 pH 6 Catch Data Species Eastern Newt Drayon Fly Tadpoh | nind. <u>3.89</u> 75 | Water | Velocity if Measure Conductivity Dissolved Oxygei | ed (m/s): (uS/cm) n (mg/L) | N/A 16 8:18 | |
| Temperature (°C) 2 pH 6 Catch Data Species Eastern Newt Drayon Fly Tadpoh | nind. <u>3.89</u> 75 | Water | Velocity if Measure Conductivity Dissolved Oxygei | ed (m/s): (uS/cm) n (mg/L) | N/A 16 8:18 | |
| Temperature (°C) 2 pH 6 Catch Data Species Eastern Newt Drayon Fly Tadpoh | nind. <u>3.89</u> 75 | Water | Velocity if Measure Conductivity Dissolved Oxygei | ed (m/s): (uS/cm) n (mg/L) | N/A 16 8:18 | |
| Temperature (°C) 2 pH 6 Catch Data Species Eastern Newt Drayon Fly Tadpoh | nind. <u>3.89</u> 75 | Water | Velocity if Measure Conductivity Dissolved Oxygei | ed (m/s): (uS/cm) n (mg/L) | N/A 16 8:18 | |
| Temperature (°C) 2 pH 6 Catch Data Species Eastern Newt Drayon Fly Tadpoh | nind. <u>3.89</u> 75 | Water | Velocity if Measure Conductivity Dissolved Oxygei | ed (m/s): (uS/cm) n (mg/L) | N/A 16 8:18 | |
| Temperature (°C) 2 pH 6 Catch Data Species Eastern Newt Drayon Fly Tadpoh | nind. <u>3.89</u> 75 | Water | Velocity if Measure Conductivity Dissolved Oxygei | ed (m/s): (uS/cm) n (mg/L) | N/A 16 8:18 | |

1-9 d/s 0687639 5233233 1-9 d/s 0687580 5233235



WIND FARM WATERBODY RAPID ASSESSMENT FORM

| Station # 1-9 | Project Name Bow Lake Wind Farm |
|---|---|
| Watercourse Name unknown | Project # 1609 60734 |
| Photos <u>428-441</u> | Field Staff NB. mF |
| Date $July 7 / 2$ | Time 13:25 |
| Weather conditions in previous 24 hrs _ 2.4 mm | |
| GPS Coordinates (Zone) $16T$ E | N Datum NAD83 |
| | -IA |
| Descriptive Location <u>~400 M NE 17-</u> | <u> </u> |
| Water Quality | 29'' |
| | 7.00 Conductivity (µS/cm) 3.7 |
| Water Temperature (°C) 10.63 | Air Temperature (°C) 28°c |
| Time in situ measurements taken 13.30 | |
| Watercourse Dimensions & Morphology | |
| Mean Watercourse Width(m) | Maximum Pool Depth 10 (cm) |
| Mean Bankfull Width/ 0(m) | Mean Water Depth(cm) |
| | |
| Evidence of eroding banks, Comments on bank st | |
| Evidence of eroding banks, comments of bank si | $\frac{1}{\sqrt{1+10}} = \frac{1}{\sqrt{1+10}}$ |
| | |
| Substrate (% cover) Bedrock 40 Cobble | Sand Silt Muck |
| | |
| <u> </u> | ClayDetritus |
| Insulter Cover | |
| Cover Types Present (circle): Undercut Ba | nks (Deep Pool) Watercress Aquatic Veg |
| Overhanging Vegetation Woody Debris | Boulder Other |
| evention grantiens | |
| Riparian Zone | |
| Riparian Cover (% of watercourse shaded, domination | ant vegetation, mature or early successional) |
| funge, sugar maple | |
| Adjacent Land Use | |
| forest | |
| | |
| Fish Habitat Potential | |
| Critical Habitat (spawning or nursery areas, groun | dwater upwellings) |
| rush, steep gradient | |
| Migratory Obstructions (seasonal, permanent) | |
| steep anadient | |
| Note any fish observations | |
| | |
| Waterbady Notos | |
| Waterbody Notes | el Grassed Swale Buried Tile |
| Natural Watercourse_V Trapezoidal Channe | |
| Surficial Drainage (i.e. furrows) Dugout Po | nd Dominated by Aquatic Veg Dry |
| Other Habitat Notes, Incidental Wildlife Observ | vations, etc. |
| $1 - 9 \ u/s = 0.68$ | 1580, 5233255 |
| | 37639, 5233233 |
| | |
| | A 1 |
| Field Notes Authored by Field Note | es QA/QCed by Mallah |
| ······································ | • |

| Stantec | ND FARM WA)- ४)- ४ | a/s. 06 | 88103 | 523887 | -3 | : |
|--|---|---|---|--|--|---|
| Station # 1-8 | | 1 | Project N | ame Bowl | ake Wind | d Farm |
| Watercourse Name U | InKnown | | Project # | 1609 60 | 734 | |
| | | · | | I <u>NB,M</u> | F | I |
| Date <u>July 07</u> / Weather conditions in | D previous 24 hrs | 2.4 | Time | 11:45 coint | · | |
| GPS Coordinates (Zo | one) $16T$ | | 101 000 | о N | | Datum N |
| Descriptive Location | ~350 m | NEOF | T-17. | | <u>.</u> | |
| Water Quality | | | | | | Ð |
| Dissolved Oxygen (m | | pH | $\frac{\mathcal{F}_{i}}{\Lambda_{in}}$ | Conductivity (| μS/cm) <u>3</u> | 6 |
| Water Temperature (Time <i>in situ</i> measure | | 11:50 | Air remp | erature (°C) _ | 600 | |
| | | | | | | |
| Watercourse Dimen Mean Watercourse W | | | Maximum | Pool Depth | 10 | (cm) |
| Mean Bankfull Width | 1.0 (| m) | Mean Wa | ter Depth | 7 | _(cm) |
| % Riff | le 80 | <u>)</u> % Po | | | % Run | |
| Evidence of eroding l | oanks, Comment | s on bank st | ability <u>M</u> | oderate u | ndescot | |
| | | | | | · · · · | |
| Substrate (% cover) | ~ ~ | · | | • | 0.11 | |
| Bedro | | Cobble | | and ay | Silt Marl | Mi 🛃 🖸 De |
| 20 Boulde | <u>اا</u> اد | Gravel | 0 | ay | man | <u></u> De |
| In-water Cover | | | | | | |
| Cover Types Present | (circle): | Indercut Bar | | | Watercress | Aquatic |
| Overhanging Vegetat | | | Boulder | Other_ | | |
| | | | | .* | | |
| Riparian Zone | l l | | | | | |
| Riparian Cover (% of | watercourse sha | ided, domina | ant vegetati | on, mature o | r early succes | ssional) |
| Riparian Cover (% of | watercourse sha real, Vellow | aded, domina | ant vegetati Suger V | on, mature of <u>represented</u> | r early succes <u>∿ ∽p</u> | ssional) |
| Riparian Cover (% of <u>12/ار کرد س</u> ط Adjacent Land Use | watercourse sha <u>seed</u> , <u>Vellow</u> | ided, domina | ant vegetati Suयू <i>er V</i> | on, mature of <u>raple fer</u> | r early succes <u>ົ</u> ່ວ <u>ເ</u> | ssional) |
| Riparian Cover (% of | watercourse sha <u>red</u> , Villow | aded, domina | ant vegetati <u>Sບູ</u> ⁄ | on, mature of <u>raple</u> fer | r early succes ♪ ∽∽ | sional) |
| Riparian Cover (% of <u>912/10 icwel u</u> Adjacent Land Use {orcs} Fish Habitat Potenti | ial | , birch | Sugar N | naple, ter | r early succes <u>ົ</u> ວρ | sional) |
| Riparian Cover (% of <u>90% icwel u</u> Adjacent Land Use <u>40(164</u> Fish Habitat Potenti Critical Habitat (spaw | ial | , bi (ch, | Sugar N | naple, ter | r early succes <u>ົ</u> ວຼ | sional) |
| Riparian Cover (% of <u>90% icwel u</u> Adjacent Land Use <u>40(164</u> Fish Habitat Potenti Critical Habitat (spaw | ial | , bi (ch, | Sugar N | naple, ter | r early succes <u>∽</u> ວົρ | sional) |
| Riparian Cover (% of <u>919/1 icwel</u> u Adjacent Land Use <u>40(15</u>) Fish Habitat Potenti Critical Habitat (spaw <u>Spawn</u> for Migratory Obstruction | ial سing or nursery a من من احمد من | <u>, bi (ch</u> areas, groun manent) | <u>Suyar</u> గ dwater upw | ellings) | <u>^</u> | |
| Riparian Cover (% of <u>919/1 icwel</u> u Adjacent Land Use <u>40(15</u>) Fish Habitat Potenti Critical Habitat (spaw <u>Spawn</u> for Migratory Obstruction | ial سing or nursery a من من احمد من | <u>, bi (ch</u> areas, groun manent) | <u>Suyar</u> గ dwater upw | ellings) | <u>^</u> | |
| Riparian Cover (% of <u>90% icwel u</u> Adjacent Land Use <u>40(164</u> Fish Habitat Potenti Critical Habitat (spaw | ial سing or nursery a من من احمد من | <u>, bi (ch</u> areas, groun manent) | <u>Suyar</u> గ dwater upw | ellings) | <u>^</u> | |
| Riparian Cover (% of <u>9129111 Scwel u</u> Adjacent Land Use <u>40(157</u> Fish Habitat Potenti Critical Habitat (spaw <u>Spawn</u> for Migratory Obstruction <u>Spawn</u> for Note any fish observa | ial سing or nursery a من من احمد من | <u>, bi (ch</u> areas, groun manent) | <u>Suyar</u> గ dwater upw | ellings) | <u>^</u> | |
| Riparian Cover (% of <u>9129/1 icwel u</u> Adjacent Land Use <u>40(165</u>] Fish Habitat Potenti Critical Habitat (spaw <u>50000</u> for Migratory Obstruction <u>50000</u> for Migratory Obstruction <u>50000</u> for Migratory Obstruction <u>50000</u> for Migratory Obstruction | ial vning or nursery a در من (یومی) ns (seasonal, per ations | areas, groun manent) RTR ob | Sપ <i>yer V</i> dwater upw ક્રમ્ <i>(</i> પટd | ellings) | <u>^ >p</u> ~) (26 8 ≈ | (1-& 79 89 53 |
| Riparian Cover (% of <u>9129111 Scwel u</u> Adjacent Land Use <u>40(157</u> Fish Habitat Potenti Critical Habitat (spaw <u>Spawn</u> for Migratory Obstruction <u>Spawn</u> for Note any fish observa | ial vning or nursery a من من (جوم) ns (seasonal, per ations <u>عبر 19</u> | <u>ו bi (ch</u> areas, groun manent) RTR סוסי pidal Channe | <u>Suyer</u> dwater upw <u>Served</u> | ellings) | <u>~ >p</u> | (<i> </i> { }78/<u>5</u>2 Buried Tile |
| Riparian Cover (% of <u>919/1</u> <u>icwel</u> u Adjacent Land Use <u>40res</u> Fish Habitat Potenti Critical Habitat (spaw <u>Spawn</u> for Migratory Obstruction <u>Spawn</u> for Migratory Obstruction <u>Spawn</u> for Migratory Obstruction <u>Spawn</u> for Migratory Obstruction <u>Spawn</u> for Migratory Obstruction <u>Spawn</u> for <u>Spawn</u> f | ial vning or nursery a <u>ev</u> , <u>nulsen</u> ns (seasonal, per ations <u>3X Bi</u> <u>Trapezo</u> e. furrows) | <u>ון שו (ch</u> areas, groun manent) <u>RTR סוט</u> pidal Channe Dugout Por | <u>ระ(บะ</u> d | <u>ممرم الحر</u> ellings) <u>(ع- با امنا</u> Grassed Sw Dominated by | <u>م جې</u> <u>م) (۲۵ ۲ ج</u> ale Aquatic Veg | (<i> </i> { }78/<u>5</u>2 Buried Tile |
| Riparian Cover (% of <u>912911</u> <u>icwel</u> u Adjacent Land Use <u>40(165</u>] Fish Habitat Potenti Critical Habitat (spaw <u>50000</u> <u>fo(a</u>) Migratory Obstruction <u>50000</u> <u>fo(a</u>) <u>50000</u> <u>fo(a)</u> <u>50000</u> <u>fo(a)</u> <u>500000</u> <u>fo(a)</u> <u>5000000000000000000000000000000000000</u> | ial vning or nursery a <u>ev</u> , <u>nulsen</u> ns (seasonal, per ations <u>3X Bi</u> <u>Trapezo</u> e. furrows) | <u>ון שו (ch</u> areas, groun manent) <u>RTR סוט</u> pidal Channe Dugout Por | <u>ระ(บะ</u> d | <u>ممرم الحر</u> ellings) <u>(ع- با امنا</u> Grassed Sw Dominated by | <u>م جې</u> <u>م) (۲۵ ۲ ج</u> ale Aquatic Veg | (<i> </i> { }78/<u>5</u>2 Buried Tile |
| Riparian Cover (% of <u>91291</u> <u>icwel</u> u Adjacent Land Use <u>40(15</u>] Fish Habitat Potenti Critical Habitat (spaw <u>50000</u> <u>fo(a</u> Migratory Obstruction <u>50000</u> <u>fo(a</u> <u>50000</u> <u>fo(a)</u> <u>fo(</u> | ial vning or nursery a <u>ev</u> , <u>nulsen</u> ns (seasonal, per ations <u>3X Bi</u> <u>Trapezo</u> e. furrows) | <u>ון שו (ch</u> areas, groun manent) <u>RTR סוט</u> pidal Channe Dugout Por | <u>ระ(บะ</u> d | <u>ممرم الحر</u> ellings) <u>(ع- با امنا</u> Grassed Sw Dominated by | <u>م جې</u> <u>م) (۲۵ ۲ ج</u> ale Aquatic Veg | (<i> </i> { }78/<u>5</u>2 Buried Tile |

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| and the second se | 1-77 JS 16T C | $\begin{array}{c} \textbf{DY RAPID ASSESSME} \\ 687633 & 5233029 \\ 687796 & 523098 \\ 0687632 & 523098 \\ 0687632 & 523098 \\ \textbf{Project Name Bow La} \end{array}$ | |
|---|---|--|--|
| Stantec | 1-# als 16T 8 | 1687796 523098 | |
| | 1-Fra (sido chance | 0687632 523305 | 4 |
| Station # 1-47 | | Project Name Bow La | ke Wind Farm |
| Watercourse Name_ Photos +23 - 42 | UNKNOWN | Project # <u>1609_60</u> Field Staff <u>NB, mF</u> | 59 |
| | 12 | Time 11^{20} | |
| Weather conditions in | previous 24 hrs <u>2-4 m</u> | | |
| GPS Coordinates (Zo | one) <u> 6T E —</u> | - <u>N</u> | - Datum NAD83 |
| Descriptive Location | m 300 m NEUFT | <u>F-17</u> | |
| | | | ~ |
| Water Quality | | | S/cm) STAND |
| Dissolved Oxygen (m | g/L pH_ | Conductivity (μS | S/cm) |
| Water Temperature (| °C) | Air Temperature (°C) | |
| Time in situ measure | ments taken | | |
| Watercourse Dimen | sions & Morphology | | |
| | /idth(m) | Maximum Pool Depth | <u> </u> |
| Mean Bankfull Width_ | | Mean Water Depth | (cm) |
| % Riffl | | | Run% Fl |
| Evidence of eroding t | banks, Comments on bank | stability <u>meno o nourc</u> | it, well defined |
| | | | |
| Substrate (% cover) | | ZD Sand | Silt Muck |
| Bedroo 30 Boulde | | Sand Clay | Marl / D Detritus |
| | | Oldy | |
| for the second | | | and the second |
| Mewaler Cover | | | |
| Cover Types Present | | anks Deep Pool W | atercress Aquatic Veg |
| | | anks Deep Pool W Boulder Other | atercress Aquatic Veg |
| Cover Types Present Overhanging Vegetat Riparian Zone | tion Woody Debris | Boulder Other | |
| Cover Types Present Overhanging Vegetat Riparian Zone Riparian Cover (% of | watercourse shaded, domi | | |
| Cover Types Present Overhanging Vegetat Riparian Zone Riparian Cover (% of | watercourse shaded, domi | Boulder Other | |
| Cover Types Present Overhanging Vegetat Riparian Zone Riparian Cover (% of <u>100%</u> fc/n Adjacent Land Use | watercourse shaded, domi | Boulder Other | |
| Cover Types Present Overhanging Vegetat Riparian Zone Riparian Cover (% of | watercourse shaded, domi | Boulder Other | |
| Cover Types Present Overhanging Vegetat Riparian Zone Riparian Cover (% of <u>100%</u> fc/n Adjacent Land Use | watercourse shaded, domi | Boulder Other | |
| Cover Types Present Overhanging Vegetat Riparian Zone Riparian Cover (% of <u>100%</u> fc/n Adjacent Land Use forest Fish Habitat Potenti | tion Woody Debris watercourse shaded, domi | Boulder Other | |
| Cover Types Present Overhanging Vegetat Riparian Zone Riparian Cover (% of <u>100%</u> fc10 Adjacent Land Use Bish Habitat Potenti Critical Habitat (spaw | watercourse shaded, domi <u>SP, Sugar maple</u> i al <i>i</i> ning or nursery areas, grou | Boulder Other | |
| Cover Types Present Overhanging Vegetat Riparian Zone Riparian Cover (% of <u>100%</u> fc10 Adjacent Land Use forest Fish Habitat Potenti Critical Habitat (spaw <u>No Ne</u> Migratory Obstruction | watercourse shaded, domi <i>SP, Sugar maple</i> ial <i>I</i> ning or nursery areas, grou (seasonal, permanent) | Boulder Other | |
| Cover Types Present Overhanging Vegetat Riparian Zone Riparian Cover (% of <u>100%</u> fc10 Adjacent Land Use forest Fish Habitat Potenti Critical Habitat (spaw <u>No Ne</u> Migratory Obstruction | watercourse shaded, domi <i>SP, Sugar maple</i> ial <i>I</i> ning or nursery areas, grou (seasonal, permanent) | Boulder Other | |
| Cover Types Present Overhanging Vegetat Riparian Zone Riparian Cover (% of <u>100%</u> fc10 Adjacent Land Use forest Fish Habitat Potenti Critical Habitat (spaw <u>No Ne</u> Migratory Obstruction | watercourse shaded, domi <u>SP, Sugar maple</u> i al <i>i</i> ning or nursery areas, grou | Boulder Other | |
| Cover Types Present Overhanging Vegetat Riparian Zone Riparian Cover (% of <u>100%</u> fc/n Adjacent Land Use forest Fish Habitat Potenti Critical Habitat (spaw <u>No Ne</u> Migratory Obstruction | watercourse shaded, domi <i>SP, Sugar maple</i> ial <i>I</i> ning or nursery areas, grou (seasonal, permanent) | Boulder Other | |
| Cover Types Present Overhanging Vegetat Riparian Zone Riparian Cover (% of <u>100% fc/n</u> Adjacent Land Use Adjacent Land Use Adjacent Land Use Fish Habitat Potenti Critical Habitat (spaw <u>Nb Ne</u> Migratory Obstruction Sterp gradicen Note any fish observa | ion Woody Debris watercourse shaded, domi <i>SP, Sugar maple</i> ial ming or nursery areas, grou s (seasonal, permanent) ations <u>Nove</u> | Boulder Other | early successional) |
| Cover Types Present Overhanging Vegetat Riparian Zone Riparian Cover (% of <u>100%</u> fc/n Adjacent Land Use forest Fish Habitat Potenti Critical Habitat (spaw <u>Nove</u> Migratory Obstruction Stap gradicen Note any fish observa Waterbody Notes Natural Watercourse | tion Woody Debris watercourse shaded, domi <i>SP, Sugar maple</i> ial ming or nursery areas, grou s (seasonal, permanent) ations <u>Nor</u> | Boulder Other nant vegetation, mature or e indwater upwellings) nel Grassed Swal | e Buried Tile |
| Cover Types Present Overhanging Vegetat Riparian Zone Riparian Cover (% of <u>100%</u> fc/n Adjacent Land Use forest Fish Habitat Potenti Critical Habitat (spaw <u>Nove</u> Migratory Obstruction Stap gradicen Note any fish observa Waterbody Notes Natural Watercourse | tion Woody Debris watercourse shaded, domi <i>SP, Sugar maple</i> ial ming or nursery areas, grou s (seasonal, permanent) ations <u>Nor</u> | Boulder Other | e Buried Tile |
| Cover Types Present Overhanging Vegetat Riparian Zone Riparian Cover (% of <u>100%</u> fc/n Adjacent Land Use Adjacent Adjacent Adjacent Adjacent Adjacent Adjacent Adjacent Adjace | ial watercourse shaded, domi <i>SP, Sugar modu</i> ial ming or nursery areas, grou (seasonal, permanent) ations <u>Nove</u> Trapezoidal Chanr e. furrows) Dugout P | Boulder Other nant vegetation, mature or e undwater upwellings) nel Grassed Swal ond Dominated by A | e Buried Tile quatic Veg Dry |
| Cover Types Present Overhanging Vegetat Riparian Zone Riparian Cover (% of <u>100%</u> fc/n Adjacent Land Use Fish Habitat Potenti Critical Habitat (spaw <u>No Ne</u> Migratory Obstruction Sterp gradice Note any fish observa Waterbody Notes Natural Watercourse Surficial Drainage (i.e Other Habitat Notes | watercourse shaded, domi <i>SP, Sugar maple</i> ial ming or nursery areas, ground (seasonal, permanent) ations <u>Nore</u> Trapezoidal Channe e. furrows) Dugout P S, Incidental Wildlife Obse | Boulder Other nant vegetation, mature or e indwater upwellings) nel Grassed Swal | e Buried Tile quatic Veg Dry |
| Cover Types Present Overhanging Vegetat Riparian Zone Riparian Cover (% of <u>100%</u> fc/n Adjacent Land Use Adjacent Adjacent Adjacent Adjacent Adjacent Adjacent Adjacent Adjace | watercourse shaded, domi <i>SP, Sugar maple</i> ial ming or nursery areas, ground (seasonal, permanent) ations <u>Nore</u> Trapezoidal Channe e. furrows) Dugout P S, Incidental Wildlife Obse | Boulder Other nant vegetation, mature or e undwater upwellings) nel Grassed Swal ond Dominated by A | e Buried Tile quatic Veg Dry |

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| 1-6 d/s 06881+1 20201700 1-6 d/s not taken. 2000 obset 100 14ing swamp. KEA RUNS FOR THE ENTIRETY OF STUDY BOUNDARY, 6PS CO-ORDS FOR OUT SURVEY ONLY. |
|---|
| WIND FARM WATERBODY RAPID ASSESSMENT FORM |
| Stantec |
| Station # 1-6 Project Name Bow Lake Wind Farm Watercourse Name unknown Project Name Bow Lake Wind Farm Photos 435-437 Project # 1609 60734 Date July 7/12 Time 12:45 Weather conditions in previous 24 hrs 2-4 mm overnight GPS Coordinates (Zone) 16T E N — Descriptive Location - 600m east of for 17 + 40m east of low lying Swamp |
| Water Quality Dissolved Oxygen (mg/L) 10 0 8 pH_7.00 Conductivity (µS/cm) 39 Water Temperature (°C) 18.75 Air Temperature (°C) 28° Time in situ measurements taken 12:50 |
| Watercourse Dimensions & Morphology Mean Watercourse Width 1.4 (m) Maximum Pool Depth 40 (cm) Mean Bankfull Width 3.5 (m) Mean Water Depth 15 (cm) 20 % Riffle 30 % Pool 46 % Run 10 % Flat Evidence of eroding banks, Comments on bank stability Med Indercot banks Image: Constant Stability |
| Substrate (% cover)Bedrock10Cobble10SandSiltMuck40Boulder20GravelClayMarl20Detritus |
| Cover Types Present (circle): Undercut Banks Deep Pool Watercress Aquatic Veg |
| Riparian Zone Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional) |
| Adjacent Land Use Forest |
| Fish Habitat Potential Critical Habitat (spawning or nursery areas, groundwater upwellings) <u>Spawn</u> , <u>nursen</u> , <u>forage</u> Migratory Obstructions (seasonal, permanent) <u>possible</u> fish <u>harriag</u> (<u>logians</u> , <u>houders</u>) Note any fish observations <u>urs</u> |
| Waterbody Notes Natural Watercourse Trapezoidal Channel Grassed Swale Buried Tile Surficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Dry |
| Other Habitat Notes, Incidental Wildlife Observations, etc |
| <u>1-6 dis - 068 8 171 5232798</u> |

Field Notes Authored by _____

Field Notes QA/QCed by ______ Malla



Could not set traps of stip n Water receeded off the study boundry.

| 0 | |
|--|---|
| Station $\# 2 - 2$ | Project Name Bow Lake Wind Farm |
| Watercourse Name <u>unknown Lake</u> Photos 471-473 | Project # 1609 60734 |
| | Field Staff <u>NB MF</u> |
| Date July 8 /12 | Time <u>12:46</u> |
| Weather conditions in previous 24 hrs <u>no prec</u> | <u>ip. 28°C, hat</u> |
| GPS Coordinates (Zone) 16T E 0688 | |
| Jake Very low water levels. 1 | west of 1-dl @ North end of |
| Nater Quality | |
| Dissolved Oxygen (mg/L)pH | Conductivity (µS/cm) |
| Vater Temperature (⁴ C) | Air Temperature (°C) |
| Time in situ measurements taken | |
| Watercourse Dimensions & Morphology | |
| Mean Watercourse Width(m) | Maximum Pool Depth(cm) |
| Mean Bankfull Width(m) | Mean Water Depth(cm) |
| % Riffle % Poo | |
| Evidence of eroding banks, Comments on bank sta | ability |
| Substrate (% aguar) | |
| Substrate (% cover) Bedrock /O Cobble | Cond in Cill 20 Musle |
| Bedrock/CobbleBoulderGravel | Sand 10 Silt 30 Muck |
| | ClayMarl 40 Detritus |
| mwater Cover | |
| Cover Types Present (circle): Undercut Bar | nks Deep Pool Watercress Aquatic Veg |
| Overhanging Vegetation (Woody Debris) | |
| | |
| Riparian Zone | |
| Riparian Cover (% of watercourse shaded, domina | ant vegetation, mature or early successional) |
| grasses. | |
| djacent Land Use | |
| Forest | |
| Tab Habitat Datastal | |
| Fish Habitat Potential | |
| Critical Habitat (spawning or nursery areas, ground | Jwater upweilings) |
| dry within study boundry, Water Alignatory Obstructions (seasonal, permanent) | outsian of study boundury |
| dry Obstructions (seasonal, permanent) | |
| lote any fish observations | |
| | |
| None-dry. | |
| /aterbody Notes | |
| atural Watercourse 🗸 Trapezoidal Channel | Grassed Swale Buried Tile |
| urficial Drainage (i.e. furrows) Dugout Pon | d Dominated by Aquatic Veg Dry |
| | |
| ther Habitat Notes, Incidental Wildlife Observa | ations, etc |
| · · · · · · · · · · · · · · · · · · · | |
| | |
| | |
| · · · · · · · · · · · · · · · · · · · | · 1 |
| ield Notes Authored by Field Notes | SQA/QCed by Mallal |
| | , |
| vresource/Internal Info and Teams/Aquatic Resources/Field Sheets | S\Stantec\Form 02 Wind Farm Waterbody Rapid Assessment Form.doc |

| | WIND FARM WATER | BODY RAPID ASS | SESSMENT FORM | ۶-A ر در |
|---|--|--|-------------------------------------|---------------------------------------|
| Stantec | | | | 60 |
| . | 2 | Dreiget Nome | Palaka Julia | l Farm |
| Station # | ime unknown | Project #_160 | Bow Lake Wind | |
| | - 477 | Field Staff | | · · · · · · · · · · · · · · · · · · · |
| Date July | | Time 13:05 | | |
| Weather condit | ons in previous 24 hrs <u>no</u> e | | | · · · · · |
| GPS Coordinat | es (Zone) 16 T E | , | N | Datum NA |
| | | -T-21 | | |
| | <u> </u> | | | |
| Water Quality | en (mg/L) <u>4,51</u> | pH_6.55 Condu | uctivity (uS/cm) | 8 |
| Water Temper: | ture (°C) <u>13.63</u> | | re (°C) | |
| Time <i>in situ</i> me | asurements taken 13:10 | | - (- / | |
| · · · · | • | | | |
| | imensions & Morphology rse Width | Maximum Poo | Denth 150 | (cm) |
| Mean Watercol Mean Bankfull | | Mean Water D | | _(cm) |
| | | _% Pool | % Run | _(011) |
| | ding banks, Comments on ba | | Iders along Dani | |
| | | | 0 | |
| Substrate (% d | | | | |
| | Bedrock <u> </u> | | Silt | Mu |
| 30 | Boulder 26 Gravel | Clay | Marl | <u>10</u> De |
| in-water Cove | l. | 1 | presenting | |
| Cover Types P | | cut Banks Deep F | Pool Watercress | Aquatic |
| | getation Woody Debris | | Other | |
| | | •••••••••••••••••••••••••••••••••••••• | | |
| Riparian Zone | (% of watercourse shaded, d | Iominant vegetation in | nature or early succes | sional) |
| fun sp, su | | iominant vegetation, n | atore or carry succes | Sionary |
| Adjacent Land | | · · · · · · · · · · · · · · · · · · · | <u> </u> | |
| forest | | · · · · · · · · · · · · · · · · · · · | | · · · · · · · · · · · · · · · · · · · |
| | | | | |
| Fish Habitat P | | | | |
| | (spawning or nursery areas, | groundwater upweiling | j 5) | |
| Migratory Obst | uctions (seasonal, permaner | nt) | | <u> </u> |
| | | '' | | |
| | oservations none | | | |
| steep ara | | · · · · · · · · · · · · · · · · · · · | • | • |
| steep ara | | | | |
| Steep gra Note any fish c | | | | |
| <u>جلودہ جرم</u> Note any fish c Waterbody No | t es | hannel Gras | sed Swale | Buried Tile |
| Steep gra Note any fish o Waterbody No Natural Watero | ourse Trapezoidal Cl | hannel Gras out Pond Domir | | |
| <u>جلود جرم</u> Note any fish c Waterbody No Natural Watero | tes / ourse Trapezoidal Cl ge (i.e. furrows) Dugo | | ssed Swale nated by Aquatic Veg_ | |
| Steep gra Note any fish o Waterbody No Natural Watero Surficial Draina Other Habitat | ourse Trapezoidal Cl ge (i.e. furrows) Dugo Notes, Incidental Wildlife O | out Pond Domir Deservations, etc | nated by Aquatic Veg_ | Dr |
| Steep gra Note any fish o Waterbody No Natural Watero Surficial Draina Other Habitat | Durse Trapezoidal Cl ge (i.e. furrows) Dugo Notes, Incidental Wildlife O | out Pond Domir Deservations, etc 2-3 עג =068 | 8712 523364 | Dr |
| Steep gra Note any fish o Waterbody No Natural Watero Surficial Draina Other Habitat | Durse Trapezoidal Cl ge (i.e. furrows) Dugo Notes, Incidental Wildlife O | out Pond Domir Deservations, etc | 8712 523364 | Dr |



| Stantec | |
|---|--|
| Station # <u>3 - 3</u> | Project Name Bow Lake Wind Farm |
| Watercourse Name Unnamed | Project $# 1609 60734$ |
| Photos $1072 - 1674$ | Field Staff Mike Johns, Mitch Ellah |
| Date July 9 /12 | Time //: 40 |
| Weather conditions in previous 24 hrs $n_{o,s} \frac{1}{2}$ | |
| GPS Coordinates (Zone) 16T E 68 | 94221' N 15233363 Datum NH083 |
| Descriptive Location _~ 230 NNE of | proposed turbine # 24 location |
| / | |
| | |
| Water Quality | |
| | $\underline{6.03}$ Conductivity (μ S/cm) $\underline{15}$ |
| Water Temperature (°C) <u>14.29</u> | Air Temperature (°C) ~ 20°C |
| Time in situ measurements taken 11:45 | |
| Watercourse Dimensions & Morphology | |
| Mean Watercourse Width D.6 (m) | Maximum Pool Depth 20 (cm) |
| Mean Bankfull Width <u>D.S.O</u> (m) | Mean Water Depth 4 (cm) |
| | Pool <u>Ø</u> % Run% Flat |
| | (stability, Borks stable from so of massos |
| and also, stream has low gra | died Welonity - this reach |
| and also, siscam reas low gra | |
| Substrate (% cover) | |
| <u> </u> | ////////////////////////////////////// |
| <u> </u> | ClayMarl <u>40</u> _Detritus |
| | |
| in-water Cover | Danka Materoroan Aquetia Vog |
| | Banks Deep PooP Watercress Aquatic Veg |
| Overhanging Vegetation Woody Debris | Boulder Other |
| Riparian Zone | |
| Riparian Cover (% of watercourse shaded don | ninant vegetation, mature or early successional) |
| 100 - early mature mixed fore | st dominant balson fir white spruce |
| Adjacent Land Use | |
| Forest mixed | |
| | |
| Fish Habitat Potential | |
| Critical Habitat (spawning or nursery areas, gro | oundwater upwellings) |
| None | |
| Migratory Obstructions (seasonal, permanent) | |
| Low Flow | |
| Note any fish observations | |
| None - Not Direct Fish b | nab: tat |
| Watashady Notas | |
| Waterbody Notes Natural Watercourse_// Trapezoidal Char | nnel Grassed Swale Buried Tile |
| Surficial Drainage (i.e. furrows) Dugout | Pond Dominated by Aquatic Veg Dry |
| Sumolal Dialitage (i.e. luitows) Dugout | |
| Other Habitat Notes Incidental Wildlife Obs | ervations, etc. upstseam end of seach at |
| 689 563 F 5233400 NI. AL. | dent sphagnum moss in valley |
| Floor, adjacent to stream | |
| -standing pool, mo Flowing water | |
| | |
| Field Notes Authored by M: ke Johns Field I | Notes QA/QCed by MEUch |
| | |



| Statilet | |
|---|---|
| Station # <u>3-6</u> | Project Name Bow Lake Wind Farm |
| Watercourse Name Unamed | Project # $1609 60734$ |
| | Field Staff Mike Johns, Mitch Ellah |
| Photos 1085 - 1087 Date July 9 /12 | Time /6:00 |
| Weather conditions in previous 24 hrs Mostly | |
| GPS Coordinates (Zone) $16T$ E $639/97$ | |
| | |
| Descriptive Location 450 m Sw of prope | 55eg 10161118 - 23 10Calion |
| | |
| Water Quality | |
| Dissolved Oxygen (mg/L) <u>8.04</u> pH | 5.99 Conductivity (μ S/cm) /8 |
| Water Temperature (°C) <u>14.95</u> | Air Temperature (°C) ~22°C |
| Time <i>in situ</i> measurements taken/6:05 | · · · · · · · · · · · · · · · · · · · |
| | |
| Watercourse Dimensions & Morphology | |
| Mean Watercourse Width <u>1-3</u> (m) | Maximum Pool Depth <u> くさ</u> (cm) |
| Mean Bankfull Width 3.2 (m) | Mean Water Depth/O(cm) |
| <u>/0</u> % Riffle <u>/0</u> % Po | ol <u>/</u> ^ % Run <u>/</u> / <u>/</u> % Flat |
| Evidence of eroding banks, Comments on bank st | ability |
| | |
| Cubetrate (9/ cover) | |
| Substrate (% cover) | 20 Cond () Silt 15 Music |
| | $2\circ$ Sand \bigcirc Silt / S . Muck \circ Clay \bigcirc Marl / S Detritus |
| <u> </u> | Clay <u>Marl IS</u> Detritus |
| In-water Cover | |
| Cover Types Present (circle): Undercut Ba | nks Deep Pool Watercress Aquatic Veg |
| | Boulder Other |
| Overhanging Vegetation Woody Debris | Doulder Other |
| Riparian Zone | |
| Riparian Cover (% of watercourse shaded, domination | ant vegetation, mature or early successional) |
| 100% Shaded by mature de | |
| Adjacent Land Use | |
| Forest | |
| | |
| Fish Habitat Potential | |
| Critical Habitat (spawning or nursery areas, groun | dwater upwellings) |
| None | |
| Migratory Obstructions (seasonal, permanent) | low flow and. |
| steep reach Starting just de | winstream of may paint above. |
| Note any fish observations Non 24 | nat likely Aliect fish |
| habitat, Long section of stream | walked and no Fish observed |
| | |
| Waterbody Notes | |
| Natural Watercourse // Trapezoidal Channe | |
| Surficial Drainage (i.e. furrows) Dugout Pol | nd Dominated by Aquatic Veg Dry |
| | |
| Other Habitat Notes, Incidental Wildlife Observ | vations, etc. Braided Channel. |
| Very little Flow. Jone Jections | dry at Surface. |
| / | <u> </u> |
| | |
| | 1-1-1 |
| Field Notes Authored by Mike Johns Field Note | as QA/QCed by MEUal |
| | |



| Stantec | |
|--|--|
| Station #3-7 | Project Name Bow Lake Wind Farm |
| Watercourse Name Unnamed | Project $\# 1609 60734$ |
| Photos 1088 - 1090 | Field Staff Mike Johns, Mitch Ellah |
| Date July 9/12 | Time 16'35 |
| Weather conditions in previous 24 hrs \$ Mas-11. | 55 N 5233182 Datum NAD83 |
| GPS Coordinates (Zone) 16T E 6897 | 55 N 5233182 Datum NAD83 |
| Descriptive Location 207 m + Past o | F proposed Turbine +24 location |
| | |
| Watar Ouslity | |
| Water Quality Dissolved Oxygen (mg/L) <u>5,64</u> pH | 5 89 Conductivity (uS/cm) 29 |
| Dissolved Oxygen ($(IIg/L) = \frac{16}{20}$ ph_{-2} | Air Temperature (°C) ~ 22 |
| Water Temperature (°C) <u>15-90</u> Time <i>in situ</i> measurements taken <u>16:40</u> | All reinperature (C) $\frac{2}{2}$ |
| Time <i>In situ</i> measurements taken6.70 | |
| Watercourse Dimensions & Morphology | |
| Mean Watercourse Width 0.25 (m) | Maximum Pool Depth/ <u>5</u> (cm) |
| Mean Bankfull Width (m) | |
| % Riffle% Poo | ol <u>0</u> % Run <u>70</u> % Flat |
| Evidence of eroding banks, Comments on bank sta | ability stable banks - boulder lined |
| | |
| Substrate (% cover) | |
| /2 Bedrock 25 Cobble | <u>/5</u> SandSiltMuck |
| <u> </u> | Clay Marl /O Detritus |
| | |
| in-water Cover | 이 가지는 것 같아요. 그 생활에 가운 바람이 있는 것 |
| Cover Types Present (circle): Undercut Ban | ks Deep Pool Watercress Aquatic Veg |
| Overhanging Vegetation Woody Debris | Boulder Other |
| Riparian Zone | |
| Riparian Cover (% of watercourse shaded, domina | nt vegetation, mature or early successional) |
| 95 Mature hardwood | |
| Adjacent Land Use, | |
| Forest | |
| | |
| Fish Habitat Potential | |
| Critical Habitat (spawning or nursery areas, ground | lwater upwellings) |
| None | |
| Migratory Obstructions (seasonal, permanent) | |
| Very Steep gradiest, in | 1 pussable to tish at lower end |
| Note any fish observations' | ect Fish hobitat |
| None - 10 dit | ect tish habitat |
| Waterbody Notes | |
| | Grassed Swale Buried Tile |
| Surficial Drainage (i.e. furrows) Dugout Pon | d Dominated by Aquatic Veg Dry |
| | <u> </u> |
| Other Habitat Notes, Incidental Wildlife Observa | ations, etc |
| | |
| | |
| | <u> </u> |
| $n_0, \leq l_{-1}$ | |
| Field Notes Authored by <u>Mike Johns</u> Field Notes | QA/QCed by MEUch |
| | |

| WIND FARM WATERBODY RAPID ASSESSMENT FORM |
|--|
| Stantec Station # 3-8 Watercourse Name Untrol Project Name Bow Lake Wind Farm Watercourse Name Untrol Project # 1609 60734 Photos 11 16 180 Date Sector 9/12 Amost Time 11:00 Weather conditions in previous 24 hrs Clept. NO prof. GPS Coordinates (Zone) 16T E No prof. GPS Coordinates (Zone) 16T E No prof. Descriptive Location No future Advance Food (proposed) previous lyunchecked |
| Water Quality MDF endlyftp mbstvR Dissolved Oxygen (mg/L) pH Water Temperature (°C) Air Temperature (°C) Time in situ measurements taken |
| Watercourse Dimensions & Morphology Mean Watercourse Width 0.0 Mean Bankfull Width 0.0 |
| Substrate (% cover) Sand Silt Muck Bedrock Sedrock Sedrock Sedrock Muck Boulder Boulder Sedrock Clay Marl Detritus In-water Cover Cover Types Present (circle): Undercut Banks Deep Pool Watercress Aquatic Veg Overhanging Vegetation Woody Debris Boulder Other Seven Lyced Application |
| Riparian Zone Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional) |
| Fish Habitat Potential Critical Habitat (spawning or nursery areas, groundwater upwellings) |
| Migratory Obstructions (seasonal, permanent) intermetent Note any fish observations <u>NOCE (only Small people 1857)</u> |
| Waterbody Notes Natural Watercourse Trapezoidal Channel Grassed Swale Buried Tile Surficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Dry |
| Other Habitat Notes, Incidental Wildlife Observations, etc. 3-8 $45 = 0689990$, $52332573-8$ $ds = 0689644$, 5233416 |
| Field Notes Authored by |

.

Nofishing= Togo She Kou

4-1-0/5=0689274 5232204 4-1-1/5=0689274 5232204 WIND FARM WATERBODY RAPID ASSESSMENT FORM

Stantec

| Station # <u>4-/</u> Pr | oject Name <u>Bow Lak</u> oject # <u>1609 607</u> | |
|--|---|---------------------------------------|
| | eld Staff <u>NB, MF</u> | 2.1 |
| Date $\underline{July} \underline{\mu} / \underline{\lambda}$ Ti | me | , , , , , , , , , , , , , , , , , , , |
| Weather conditions in previous 24 hrs <u>No piccip</u> | | 4 = 2-3 mm |
| GPS Coordinates (Zone) 16 1 E | - IN | Datum NAD83 |
| Descriptive Location ~ 130 m South of T | 28 | |
| | | |
| Water Quality | | |
| Dissolved Oxygen (mg/l) - 6.56 pH 6.1 | Conductivity (uS/ | cm) 24 |
| Water Temperature (°C) 15.48 Ai | r Temperature (°C) | 28% |
| Water GuantyDissolved Oxygen (mg/L) 6.56 $pH_6.6$ Water Temperature (°C) 15.48 AiTime in situ measurements taken 11.45 | · · · · · · · · · · · · · · · · · · · | |
| | | |
| Watercourse Dimensions & MorphologyMean Watercourse WidthYacore (m)Matercourse Width | aximum Pool Depth | 10 (cm) Pools |
| Mean Bankfull Width // 5 (m) M | ean Water Depth | (cm) |
| % Riffle% Pool | % R | . , |
| Evidence of eroding banks, Comments on bank stabili | | / |
| | | |
| Substrate (% cover) | | |
| Bedrock <u>40</u> Cobble 20 | Sand | Silt Muck |
| 20 Boulder 10 Gravel | Clay | Marl D Detritus |
| | | |
| in-weige Cover | | |
| Cover Types Present (circle): Undercut Banks | Deep Pool Wat | ercress Aquatic Veg |
| Overhanging Vegetation Woody Debris Bo | oulder Other | |
| Riparian Zone | • | |
| Riparian Cover (% of watercourse shaded, dominant v | regetation, mature or ear | rly successional) |
| 100% sozar maple, Firn sp, yellow | buch | |
| Adjacent Land Use | | |
| forst | | |
| | | |
| Fish Habitat Potential | to | |
| Critical Habitat (spawning or nursery areas, groundwa | ter upweilings) | |
| Migratory Obstructions (seasonal, permanent) | | |
| Dry - low star last | | |
| Note any fish observations <u>None</u> | | Real Andreas |
| | | |
| | - · · · · · · · · · · · · · · · · · · · | |
| Waterbody Notes | | |
| Waterbody Notes | Grassed Swale | Buried Tile |
| Natural Watercourse Trapezoidal Channel | Grassed Swale_ Dominated by Ag | |
| | Grassed Swale_ Dominated by Aqu | |
| Natural Watercourse Trapezoidal Channel Surficial Drainage (i.e. furrows) Dugout Pond Other Habitat Notes, Incidental Wildlife Observation | Dominated by Aqu | uatic Veg Dry |
| Natural Watercourse Trapezoidal Channel Surficial Drainage (i.e. furrows) Dugout Pond Other Habitat Notes, Incidental Wildlife Observation Tradified Trake minut 4-1 Use | Dominated by Aqu ons, etc. = 6689616, 5- | uatic Veg Dry |
| Natural Watercourse Trapezoidal Channel Surficial Drainage (i.e. furrows) Dugout Pond Other Habitat Notes, Incidental Wildlife Observation Tradified Trake minut 4-1 Use | Dominated by Aqu ons, etc. = 06896/6,5= | uatic Veg Dry |
| Natural Watercourse Trapezoidal Channel Surficial Drainage (i.e. furrows) Dugout Pond Other Habitat Notes, Incidental Wildlife Observation Tradified Trake minut 4-1 Use | Dominated by Aqu ons, etc. = 6689616, 5- | uatic Veg Dry |

| NO | olsor dls | co-ords | as already | delineated |
|----|-----------|---------|------------|------------|
|----|-----------|---------|------------|------------|

Too shallow to fish



WIND FARM WATERBODY RAPID ASSESSMENT FORM

| Station #4-2 | Project Name Bow Lake Wind Farm |
|--|--|
| Natercourse Name unknown | Project # 1609 60734 |
| Photos 638-640 | Field Staff NB. mF |
| Date July 4 12 14,2017 | Time $12:25$ |
| Weather conditions in previous 24 hrs _ N | brain overnight. Today - 2mm durin survey |
| GPS Coordinates (Zone) 16T E 0 | 689561 N 5232535 Datum NH083 |
| Descriptive Location _~ 300 m east a | ST-28 |
| | |
| Water Quality | |
| Dissolved Oxygen (mg/L) 7.00 | pH_6.12 Conductivity (μ S/cm)_4/ |
| Water Temperature (°C)/5 75 | Air Temperature (°C) 2 8 °c |
| | |
| Time in situ measurements taken | Maximum Pool Depth 10 (cm) Stunding |
| Watercourse Dimensions & Morpholog | Main Ida |
| Mean Watercourse Width 6.6.(m) | Maximum Pool Depth 10 (cm) 544 |
| Mean Bankfull Width /· 3 (m) | |
| % Riffle <u>15</u> | % Pool % Run 5 % Flat |
| | bank stability monor undercut banks Cobble |
| hunks & well verited | |
| WANTES - WAI VAYION | |
| Substrate (% cover) | |
| | ble 15 Sand Silt Muck |
| <u> </u> | |
| | |
| water Cover | |
| Cover Types Present (circle): | ercut Banks Deep Pool Watercress Aquatic Veg |
| | |
| | |
| Overhanging Vegetation Woody Deb | |
| Overhanging Vegetation Woody Deb | ris Boulder Other |
| Overhanging Vegetation Woody Debi Riparian Zone Riparian Cover (% of watercourse shaded | t, dominant vegetation, mature or early successional) |
| Noody Debi Riparian Zone Riparian Cover (% of watercourse shaded 00% from sp. yellow bwch, | t, dominant vegetation, mature or early successional) |
| Overhanging Vegetation Woody Debi Riparian Zone Riparian Cover (% of watercourse shaded <u>00%</u> for sp. yellow bwch Adjacent Land Use | t, dominant vegetation, mature or early successional) |
| Noody Debi Riparian Zone Riparian Cover (% of watercourse shaded 00% from sp. yellow bwch, | t, dominant vegetation, mature or early successional) |
| Overhanging Vegetation Woody Debi Riparian Zone Riparian Cover (% of watercourse shaded <u>00%</u> for sp. yellow bwch Adjacent Land Use | t, dominant vegetation, mature or early successional) |
| Overhanging Vegetation Woody Debi Riparian Zone Riparian Cover (% of watercourse shaded <u>00%</u> for sp. yellow bwch Adjacent Land Use | t, dominant vegetation, mature or early successional) |
| Overhanging Vegetation Woody Debi Riparian Zone Riparian Cover (% of watercourse shaded Oo % find se for se fo | ns Boulder Other d, dominant vegetation, mature or early successional) gugar maple |
| Overhanging Vegetation Woody Debi Riparian Zone Riparian Cover (% of watercourse shaded OO % find service Adjacent Land Use Iso Notest Forest Fish Habitat Potential Critical Habitat (spawning or nursery area | Boulder Other d, dominant vegetation, mature or early successional) $gv \leq v \qquad Ma \int \mathcal{U}$ as, groundwater upwellings) |
| Overhanging Vegetation Woody Debi Riparian Zone Riparian Cover (% of watercourse shaded OO % find service Adjacent Land Use Iso Notest Forest Fish Habitat Potential Critical Habitat (spawning or nursery area | Boulder Other d, dominant vegetation, mature or early successional) $gv \leq v \qquad Ma \int \mathcal{U}$ as, groundwater upwellings) |
| Overhanging Vegetation Woody Debi Riparian Zone Riparian Cover (% of watercourse shaded 00%, for $< p$, yellow by ch Adjacent Land Use For $< f$ Fish Habitat Potential Critical Habitat (spawning or nursery area forsible spawn + nursery Migratory Obstructions (seasonal, permar | Boulder Other d, dominant vegetation, mature or early successional) gvsw maple s, groundwater upwellings) |
| Overhanging Vegetation Woody Debi Riparian Zone Riparian Cover (% of watercourse shaded 00%, for $< p$, yellow by ch Adjacent Land Use For $< f$ Fish Habitat Potential Critical Habitat (spawning or nursery area forsible spawn + nursery Migratory Obstructions (seasonal, permar | Boulder Other d, dominant vegetation, mature or early successional) gvsw maple s, groundwater upwellings) |
| Overhanging Vegetation Woody Debi Riparian Zone Riparian Cover (% of watercourse shaded OO % find service Adjacent Land Use Iso Notest Forest Fish Habitat Potential Critical Habitat (spawning or nursery area | Boulder Other d, dominant vegetation, mature or early successional) gvsw maple s, groundwater upwellings) |
| Overhanging Vegetation Woody Debi Riparian Zone Riparian Cover (% of watercourse shaded 00%, for $< p$, yellow by ch Adjacent Land Use For $< f$ Fish Habitat Potential Critical Habitat (spawning or nursery area forsible spawn + nursery Migratory Obstructions (seasonal, permar | Boulder Other d, dominant vegetation, mature or early successional) gvsw maple s, groundwater upwellings) |
| Overhanging Vegetation Woody Debi Riparian Zone Riparian Cover (% of watercourse shaded 00% for $ for fo$ | Boulder Other d, dominant vegetation, mature or early successional) gvsw maple s, groundwater upwellings) |
| Overhanging VegetationWoody DebiRiparian ZoneRiparian Cover (% of watercourse shaded 00% , for $< p$, yellow by chAdjacent Land Use $fore St$ Fish Habitat PotentialCritical Habitat (spawning or nursery area $posible _5pawn \neq nursery$ Migratory Obstructions (seasonal, permar $dr_C + ms$ Note any fish observationsWaterbody Notes | Boulder Other d, dominant vegetation, mature or early successional) gvsw gvsw neft |
| Overhanging VegetationWoody DebiRiparian ZoneRiparian Cover (% of watercourse shaded 00% from cp vellow bwchAdjacent Land UseFish Habitat PotentialCritical Habitat (spawning or nursery areaPossible $5Pawn + nursery$ Migratory Obstructions (seasonal, permar $dra@ from S$ Note any fish observationsMaterbody NotesNatural WatercourseTrapezoidal | Boulder Other d, dominant vegetation, mature or early successional) gvsw s, groundwater upwellings) hent) Channel Grassed Swale Buried Tile |
| Overhanging VegetationWoody DebiRiparian ZoneRiparian Cover (% of watercourse shaded 00% from cp vellow bwchAdjacent Land UseFish Habitat PotentialCritical Habitat (spawning or nursery areaPossible $5Pawn + nursery$ Migratory Obstructions (seasonal, permar $dra@ from S$ Note any fish observationsMaterbody NotesNatural WatercourseTrapezoidal | Boulder Other d, dominant vegetation, mature or early successional) gvsw gvsw neft |
| Overhanging Vegetation Woody Debi Riparian Zone Riparian Cover (% of watercourse shaded Riparian Cover (% of watercourse shaded 00% , from $, we have been been been been been been been be$ | Boulder Other 1, dominant vegetation, mature or early successional) 2v2 maple as, groundwater upwellings) nent) Channel Grassed Swale Buried Tile Igout Pond Dominated by Aquatic Veg |
| Overhanging Vegetation Woody Debi Riparian Zone Riparian Cover (% of watercourse shaded Riparian Cover (% of watercourse shaded 00% , from $, we have been been been been been been been be$ | Boulder Other d, dominant vegetation, mature or early successional) gvsw s, groundwater upwellings) hent) Channel Grassed Swale Buried Tile |
| Overhanging Vegetation Woody Debi Riparian Zone Riparian Cover (% of watercourse shaded Riparian Cover (% of watercourse shaded 00% , from $, we have been been been been been been been be$ | Boulder Other 1, dominant vegetation, mature or early successional) 2v2 maple as, groundwater upwellings) nent) Channel Grassed Swale Buried Tile Igout Pond Dominated by Aquatic Veg |
| Overhanging Vegetation Woody Debi Riparian Zone Riparian Cover (% of watercourse shaded Riparian Cover (% of watercourse shaded 00% , from $, we have been been been been been been been be$ | Boulder Other 1, dominant vegetation, mature or early successional) 2v2 maple as, groundwater upwellings) nent) Channel Grassed Swale Buried Tile Igout Pond Dominated by Aquatic Veg |
| Overhanging Vegetation Woody Debi Riparian Zone Riparian Cover (% of watercourse shaded Riparian Cover (% of watercourse shaded 00% , from $, we have been been been been been been been be$ | Boulder Other 1, dominant vegetation, mature or early successional) 2v2 maple as, groundwater upwellings) nent) Channel Grassed Swale ugout Pond Dominated by Aquatic Veg |
| Overhanging Vegetation Woody Debi Riparian Zone Riparian Cover (% of watercourse shaded Riparian Cover (% of watercourse shaded 00% , $fern < \rho$, $ge = 00\%$, $fern < 00\%$ | Boulder Other d, dominant vegetation, mature or early successional) gvg or maple us, groundwater upwellings) nent) Quert Grassed Swale Buried Tile Ingout Pond Dominated by Aquatic Veg Dry e Observations, etc. |
| Overhanging Vegetation Woody Debi Riparian Zone Riparian Cover (% of watercourse shaded Riparian Cover (% of watercourse shaded 00% , $fcrn < \rho$, $ge = 00\%$, $bw ch$, Adjacent Land Use Adjacent Land Use $fore S + 00\%$ Fish Habitat Potential Critical Habitat (spawning or nursery area Critical Habitat (spawning or nursery area $fore S + 00\%$, f | Boulder Other 1, dominant vegetation, mature or early successional) 2v2 maple as, groundwater upwellings) nent) Channel Grassed Swale ugout Pond Dominated by Aquatic Veg |

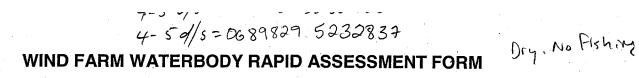
4-4.4/5=0687813 5032837 4-4d/5=0689829 5032837



WIND FARM WATERBODY RAPID ASSESSMENT FORM

Dry No Fishin

| Station # | | Lake Wind Far | m |
|---|---|--|--------------|
| Watercourse Name Unknown | Project # <u>1609_6</u> | | |
| Photos <u>644-648</u> | Field Staff NB | MF | `\ |
| Date July 14/12 | Time <u>13:00</u> | | |
| Weather conditions in previous 24 hrs 4-54 | | | |
| GPS Coordinates (Zone) 16 T E | <u> </u> | Datur | h NADS |
| Descriptive Location N oF- | 7-26 | | |
| Water Quality | | | |
| | pH Conductivity | (uS/cm) | |
| Water Temperature (°C) | Air Temperature (°C) | | |
| Time in situ measurements taken | | | |
| Watercourse Dimensions & Morphology | 2 | | ~ |
| Mean Watercourse Width (m) | • | | Ľ |
| Mean Bankfull Width <u>20</u> (m) | Mean Water Depth | (cm) | . |
| | % Pool | _% Run | % FI |
| Evidence of eroding banks, Comments on banks, $\frac{\sqrt{e_1}}{\sqrt{2}}$ | ank stability <u>where the</u> | urent bunks, | Well |
| Substrate (% cover) | ~ | | · · · · |
| Bedrock2DCobble_ | | Silt | _Muck |
| BoulderGravel_ | Clay | Marl 20 | _Detritu |
| | ut Banks Deep Pool | Watercress Aqu | uatic Veg |
| Cover Types Present (circle): Undercu Overhanging Vegetation Woody Debris Riparian Zone Riparian Cover (% of watercourse shaded, do | S Boulder Other_ | | |
| Overhanging Vegetation Woody Debris Riparian Zone Woody Debris Riparian Cover (% of watercourse shaded, do 000% (%) (%) (%) (%) (%) (%) (%) (%) (%) (% | Boulder Other_ ominant vegetation, mature of the sector | | |
| Overhanging Vegetation Woody Debris Riparian Zone Riparian Cover (% of watercourse shaded, do 100% reflect burch, as 2, 50 | Boulder Other_ ominant vegetation, mature of the sector | | |
| Overhanging Vegetation Woody Debris Riparian Zone Riparian Cover (% of watercourse shaded, do 100% yellow hurch, here shaded, here s | Boulder Other_ ominant vegetation, mature of the sector | | |
| Overhanging Vegetation Woody Debris Riparian Zone Riparian Cover (% of watercourse shaded, do 100% yellow hurch, here shaded, do Adjacent Land Use Vorest | Soulder Other_ ominant vegetation, mature of the second se | | |
| Overhanging VegetationWoody DebrisRiparian ZoneRiparian Cover (% of watercourse shaded, do 100% yellow huch, $450 = 0.50$ Adjacent Land Use 100% yellow 10 | Soulder Other_ ominant vegetation, mature of the second se | | |
| Overhanging Vegetation Woody Debris Riparian Zone Riparian Cover (% of watercourse shaded, do 100% yellow hurch, here 50 Adjacent Land Use Yorest Fish Habitat Potential Critical Habitat (spawning or nursery areas, g Nonl | Soulder Other_ ominant vegetation, mature of the second maple | | |
| Overhanging VegetationWoody DebrisRiparian ZoneRiparian Cover (% of watercourse shaded, do100% (ellow hurch, lash ep soAdjacent Land UseVorestFish Habitat PotentialCritical Habitat (spawning or nursery areas, gNoneMigratory Obstructions (seasonal, permanent) | Soulder Other_ ominant vegetation, mature of the second maple | | |
| Overhanging Vegetation Woody Debris Riparian Zone Riparian Cover (% of watercourse shaded, do 100% rellow hurch, here 50 Adjacent Land Use Yores 4 Fish Habitat Potential Critical Habitat (spawning or nursery areas, g None Migratory Obstructions (seasonal, permanent Arg | Soulder Other_ ominant vegetation, mature of the second maple | | |
| Overhanging Vegetation Woody Debris Riparian Zone Riparian Cover (% of watercourse shaded, do 100% yellow hurch, here 50 Adjacent Land Use Yores 4 Fish Habitat Potential Critical Habitat (spawning or nursery areas, g None Migratory Obstructions (seasonal, permanent) | Soulder Other_ ominant vegetation, mature of the second maple | | |
| Overhanging Vegetation Woody Debris Riparian Zone Riparian Cover (% of watercourse shaded, do 100% yellow huch, won p so Adjacent Land Use 100% 100% Migratory Obstructions (seasonal, permanent 100% | Soulder Other_ ominant vegetation, mature of the second maple | | |
| Overhanging Vegetation Woody Debris Riparian Zone Riparian Cover (% of watercourse shaded, do 100% rellow hurch, here 50 Adjacent Land Use Yores 4 Fish Habitat Potential Critical Habitat (spawning or nursery areas, g None Migratory Obstructions (seasonal, permanent Arg | Soulder Other_ ominant vegetation, mature of the Maple groundwater upwellings) | or early successional) | |
| Overhanging Vegetation Woody Debris Riparian Zone Riparian Cover (% of watercourse shaded, do Note any fish observations Note Note any fish observations Note Waterbody Notes Note | Soulder Other_ ominant vegetation, mature o مصر الاسوارة groundwater upwellings) t) annel Grassed Sv | or early successional) | |
| Overhanging Vegetation Woody Debris Riparian Zone Riparian Cover (% of watercourse shaded, do Riparian Cover (% of watercourse shaded, do 100% (100% huch, here 50%) Adjacent Land Use 100% (100% huch, here 50%) Fish Habitat Potential Critical Habitat (spawning or nursery areas, g None Migratory Obstructions (seasonal, permanent 40%) Note any fish observations None Waterbody Notes Trapezoidal Chi Surficial Drainage (i.e. furrows) Dugou | Soulder Other_ ominant vegetation, mature o مرس א مواه groundwater upwellings) t) t) annel Grassed Sw ut Pond Dominated by | vale Buried | Tile |
| Overhanging Vegetation Woody Debris Riparian Zone Riparian Cover (% of watercourse shaded, do Note any fish observations Adjacent Land Use Note any fish observations Nove Waterbody Notes Natural Watercourse Natural Watercourse Trapezoidal Chi Surficial Drainage (i.e. furrows) Dugou Other Habitat Notes, Incidental Wildlife Ob | Soulder Other_ ominant vegetation, mature o مرس א مواه groundwater upwellings) t) t) annel Grassed Sw ut Pond Dominated by | vale Buried | Tile |
| Overhanging Vegetation Woody Debris Riparian Zone Riparian Cover (% of watercourse shaded, do Riparian Cover (% of watercourse shaded, do 100% (100\% (100\% (100\% (100\% (100\% (100\% (100\% (100\% (| Soulder Other_ ominant vegetation, mature o مرس א مواه groundwater upwellings) t) t) annel Grassed Sw ut Pond Dominated by | valeBuried | Tile |
| Overhanging Vegetation Woody Debris Riparian Zone Riparian Cover (% of watercourse shaded, do Riparian Cover (% of watercourse shaded, do 100% (flow hurch, here 50, 50) Adjacent Land Use 4000000000000000000000000000000000000 | Boulder Other_ ominant vegetation, mature of begin Maple groundwater upwellings) t) t) annel Grassed Sv ut Pond Dominated by oservations, etc | valeBuried / Aquatic Veg & for the standard for | Tile |
| Overhanging Vegetation Woody Debris Riparian Zone Riparian Cover (% of watercourse shaded, do Riparian Cover (% of watercourse shaded, do 100% (flow hurch, here 50, 50) Adjacent Land Use 4000000000000000000000000000000000000 | Boulder Other_ ominant vegetation, mature of your Maplo groundwater upwellings) t) t) annel Grassed Sv ut Pond Dominated by pservations, etc | valeBuried / Aquatic Veg & for the standard for | Tile |



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| Juanver | |
|---|---|
| Station # $4-5$ | Project Name Bow Lake Wind Farm |
| Watercourse Name | Project $\# 1609 60734$ |
| Photos 649-653 | Field Staff NB, MF |
| Date July 14/12 | Time 13.25 |
| Weather conditions in previous 24 hrs verd | |
| | |
| GPS Coordinates (Zone) 161 E Descriptive Location <u>~ 200 m No/theast</u> | Datum NAD83 |
| | 0/\1-0-6 |
| Water Quality | |
| Dissolved Øxygen (mg/L) pH_ | Conductivity (nS/em) |
| Water Temperature (°C) | |
| Time in situ measurements taken | Air Temperature (°C) |
| Time in situ measurements taken | |
| Watercourse Dimensions & Morphology | |
| Mean Watercourse Width (m) | Maximum Pool Depth(cm) |
| Mean Bankfull Width (m) | Mean Water Depth(cm) |
| ✓ % Riffle % Po | |
| Evidence of eroding banks, Comments on banks | |
| bon KS. | |
| | 5011= 30 |
| Substrate (% cover) | |
| BedrockCobble | 25 Sand 30 Silt Silt Muck |
| Boulder 25 Gravel | Clay Marl 20 Detritus |
| | |
| In-water Cove. | |
| Cover Types Present (circle): Undercut Ba | anks Deep Pool Watercress Aquatic Veg |
| Overhanging Vegetation Woody Debris | Boulder Other |
| Dinerien Zene | |
| Riparian Zone | · · · · · · · · · · · · · · · · · · · |
| Riparian Cover (% of watercourse shaded, domin | ant vegetation, mature or early successional) |
| 100% sugar maple fern sp. 14 | allow burch |
| Adjacent Land Use | |
| torest | |
| | |
| Fish Habitat Potential | |
| Critical Habitat (spawning or nursery areas, grour | ndwater upwellings) |
| None | |
| Migratory Obstructions (seasonal, permanent) | |
| dry. | |
| Note any fish observations work | |
| | |
| | |
| Waterbody Notes | |
| Natural Watercourse Trapezoidal Channe | el Grassed Swale Buried Tile/ |
| Surficial Drainage (i.e. furrows) Dugout Po | |
| | |
| Other Habitat Notes, Incidental Wildlife Observ | vations, etc. Traisect Takimitrat |
| Lots of leaf litter in channel | - Allacet Jolen and |
| Broadwinged Hawk W babies | 4-545=0689988,5232725 |
| | 4-5ds = 0689829, 5232837 |
| | |
| Field Notes Authored by MT | es QA/QCed by _M Ellah |
| Field Notes Authored by Field Note | es un/uced by <u>IVI (iciun</u> |

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Velimented on map. No u/sor 9/5 co-ords



WIND FARM WATERBODY RAPID ASSESSMENT FORM

Fish observed

| Station #O-9 Watercourse NameNKnowh | Project Name <u>Bow Lake Wind Farm</u> |
|---|---|
| Photos 631-633 | Project $# 1609 60734$ |
| Date $July 3/12$ | Field Staff <u>NB, MF</u> |
| | Time <u>13:13</u> |
| | |
| | |
| Descriptive Location <u>~ 1.6km NNE of</u> | Bowlake or proposed collector |
| Water Quality | |
| | 6.65 Conductivity (μ S/cm) _ 24 |
| Water Temperature (°C) | Air Temperature (°C) $27^{\circ}c$ |
| Time in situ measurements taken 13 15 | |
| Watercourse Dimensions & Morphology | |
| Mean Watercourse Width 2.0 (m) | Maximum Pool Depth 2 o (cm) |
| Mean Bankfull Width <u>30</u> (m) | Mean Water Depth /// (cm) |
| <u>30</u> % Riffle <u>30</u> % Pc | 30 % Run / 30 % Flat |
| Evidence of eroding banks, Comments on bank s | tability minor undercut bank Well |
| Ver 1'd | · · · · · · · · · · · · · · · · · · · |
| Substrate (% cover) | |
| | 3 U Sand Silt Muck |
| Boulder 50 Gravel | |
| | ClayDetritus |
| In-water Cover | |
| Cover Types Present (circle): Undercut Ba | nks Deep Pool Watercress Aquatic Veg |
| Overhanging Vegetation Woody Debris | (Boulder) Other |
| Riparian Zone | |
| | ont vo potetien making an and, and a set to the |
| Riparian Cover (% of watercourse shaded, domina 90% for sp, yellow birth sugar | ant vegetation, mature or early successional) |
| Adjacent Land Use | maple. |
| forest | |
| | |
| Fish Habitat Potential | |
| Critical Habitat (spawning or nursery areas, groun | dwater unwellings) |
| | |
| Migratory Obstructions (seasonal, permanent) | |
| | |
| Note any fish observations Fish = observ | led (Zindividuals) |
| | <u> </u> |
| | |
| Waterbody Notes | |
| Natural Watercourse Trapezoidal Channe | I Grassed Swale Buried Tile |
| Surficial Drainage (i.e. furrows) Dugout Por | nd Dominated by Aquatic Veg Dry |
| | |
| Other Habitat Notes, Incidental Wildlife Observ | ations, etc. <u>Permanent</u> Direct. |
| | |
| | |
| | |
| | SMM |
| Field Notes Authored by Field Notes | s QA/QCed by <u>'IIU</u> |
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Stantec

| Station #0-7 | Project Name Bow Lake Wind Farm |
|---|---|
| Watercourse Name_UNKnown | Project $# 1609 60734$ |
| Photos 624-626 | Field Staff <u>NB, MF</u> |
| Date July 13/12 | Time 1215 |
| Weather conditions in previous 24 hrs <u>No pr</u> GPS Coordinates (Zone) 16 T E | |
| Descriptive Location Km NNE of | Bow Lk on proposed collector Lin |
| | <u></u> |
| Water Quality | |
| | <u>6,44</u> Conductivity (µS/cm) <u>38</u> |
| water Temperature (°C) <u>16.64</u> | Air Temperature (°C) |
| Time in situ measurements taken 12 20 | |
| Watercourse Dimensions & Morphology | |
| Mean Watercourse Width 0.5 (m) | Maximum Pool Depth <u>30</u> (cm) |
| Mean Bankfull Width <u>1, 2</u> (m) <u>60</u> % Riffle <u>40</u> % Po | Mean Water Depth(cm) |
| Evidence of eroding banks, Comments on bank s | |
| | |
| Substrate (% cover) | |
| BedrockCobble | <u>20</u> Sand <u>20</u> Silt <u>40</u> Muck |
| BoulderGravel | ClayMarl 2 Detritus |
| In-water Cover | |
| Cover Types Present (circle): Undercut Ba | |
| Overhanging Vegetation Woody Debris | Boulder Other |
| Riparian Zone | |
| Riparian Cover (% of watercourse shaded, domin | ant vegetation, mature or early successional) |
| Adjacent Land Use | <u>D</u> |
| forest | |
| Fish Ushitat Patantial | |
| Fish Habitat Potential Critical Habitat (spawning or nursery areas, groun | dwater (Inwellinge) |
| POSSIBLE Spawn closes in dis alla | . Folgy + nully grawn in pooled are u/s |
| Migratory Obstructions (seasonal, permanent) | |
| Note any fish observations NONE | ea, lack of water. |
| | |
| Waterbady Natas | |
| Waterbody Notes Natural Watercourse Trapezoidal Channe | I Grassed Swale Buried Tile_ |
| Surficial Drainage (i.e. furrows) Dugout Por | I Grassed Swale Buried Tile nd Dominated by Aquatic Veg Dry |
| | |
| Other Habitat Notes, Incidental Wildlife Observ | ations, etc. Intermitent (dependent on |
| pond levels on up Side) 0-7 ul | $\frac{5 - 0688781}{5 - 0688638}, 5232376$ |
| | |
| | Noc. |
| Field Notes Authored by Field Notes | |
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| | |

0-4 0/5 - 00 89777 5231981 0-4 0/5 = 0688977 5231932 WIND FARM WATERBODY RAPID ASSESSMENT FORM

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| | THEC. |

| WIND FARM WATERBODY RAPID ASSESSMENT FORM |
|---|
| Stantor Observed in |
| Station #0-4 40cm pool- Station #0-4 Project Name Bow Lake Wind Farm Watercourse Name_unknown Project Name Bow Lake Wind Farm Photos014-616 Project #_1609 60734 Date13/12 Time05 Weather conditions in previous 24 hrsNo precip. Hot, 27% Time05 GPS Coordinates (Zone)16T EN Descriptive Location400 m NNE-oF Bow Lake on the proposed |
| Water QualityDissolved Oxygen (mg/L) _ 5.96PH 7.27 Conductivity (μ S/cm) _ 26Water Temperature (°C) _ 14.53Air Temperature (°C) _ 27°Time in situ measurements taken _ 11.17. |
| Watercourse Dimensions & Morphology Mean Watercourse Width 0;7 (m) Maximum Pool Depth Mean Bankfull Width 1.5 (m) Mean Water Depth % Riffle 40 % Riffle 40 % Riffle 40 % Run% Run |
| Substrate (% cover)15Cobble50SandSiltMuck20Boulder5GravelClayMarl10Detritus |
| In-water Cover Cover Types Present (circle): Undercut Banks Deep Pool Watercress Aquatic Veg Overhanging Vegetation Woody Debris Boulder Other |
| Riparian Zone Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional) <u>100% Sugar maple (fern Sp. balsam Ar.</u> Adjacent Land Use forest |
| Fish Habitat Potential Critical Habitat (spawning or nursery areas, groundwater upwellings) <u></u> |
| Note any fish observations Brook Lout observed (4: dividuals) |
| Waterbody Notes Natural Watercourse Trapezoidal Channel Grassed Swale Buried Tile Surficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Dry |
| Other Habitat Notes, Incidental Wildlife Observations, etc. \underline{Dirct} , $\underline{Tatermitent}$ 0-4 $u/s = 0.689231$, $52319810-4$ $d/s = 0.688972$, 5231932 |
| Field Notes Authored by Field Notes QA/QCed by |
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Fished

| Station # 0-10 Project Name Bow Lake Wind Farm Watercourse Name NegectLake Project Name Bow Lake Wind Farm Photos 655-670 Project # 1609 60734 Date July 14/12 Field Staff NB, MF Weather conditions in previous 24 hrs Mesterday = Hot 28°c Todg - 2mm rain, 27°c GPS Coordinates (Zone) 16T E 06892 33 Descriptive Location @ Beaver dam Q west end of Negick. |
|---|
| Water QualityDissolved Oxygen (mg/L) $9 \cdot 11$ pH 6.32 Conductivity (μ S/cm) 19 Water Temperature (°C) 26.66 Air Temperature (°C) 28° Time in situ measurements taken 15.7° |
| Watercourse Dimensions & Morphology Mean Watercourse Width 25.0 (m) Mean Bankfull Width 30.0 (m) Mean Bankfull Width 30.0 (m) Mean Water Depth 71.2 (cm) Mean Bankfull Width 30.0 (m) Mean Water Depth 71.2 (cm) Mean Water Depth 71 |
| Substrate (% cover) 30 Sand Silt /o Muck Bedrock 30 Gravel Clay Marl 30 Detritus Boulder 30 Gravel Clay Marl 30 Detritus In-water Cover Cover Types Present (circle): Undercut Banks Deep Pool Watercress Aquatic Veg Overhanging Vegetation Woody Debris Boulder Other Other Other |
| Riparian Zone Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional) <u>10% Duffalo berry hily pads</u> , algae mats Adjacent Land Use boat launch beaver dam ATV trails |
| Fish Habitat Potential Critical Habitat (spawning or nursery areas, groundwater upwellings) <u>Spawn</u> , Folace, Nolace, Migratory Obstructions (seasonal, permanent) <u>Nore - Beaver dam Ocstroynd</u> Note any fish observations <u>Schools of Nolthern Redbille dace</u> , <u>creek chob + 14/8"</u> <u>Note in file bosined</u> |
| Waterbody Notes Natural Watercourse Trapezoidal Channel Grassed Swale Buried Tile Surficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Dry |
| Other Habitat Notes, Incidental Wildlife Observations, etc. |

| | Min | NOW T | ranf | 5 5 | |
|-----|-----|-------|------|-----|-----|
| • | 141 | | | | |
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| - 4 | | | | | Day |

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| Stantec Co | nsulting Ltd - Electr | ofishing Record a | and Catch F | Results |
|--|---|---|--|-------------------------------------|
| Project Name <u>Bow Lake</u> | . Wind Farm | Station Number | 0-10 | |
| Project Number 1609 6073 | ł | _ Pass No. (if applicable | e) | |
| Photos 655-670 | | Date (yyyymmdd): | July 14 | (2 |
| Descriptive Location @ Beauer | - dam @ west e | | U | |
| | | v | | |
| JTM coordinates 06897 | 2 <u>33</u> easting | 5231378 | northing | zone <u>16</u> T |
| ishing Method (circle one): | Backpack Bo | | <u> </u> | |
| Sampling Method (circle one): | even habitat | transect | spot | |
| Effort (Electrofishing Seconds): | Number of Nette | ers: | Number of Anode | s: |
| Settings Trequency (Hz) Vo | bitage (volts) Cu | Irrent (Amps) | Power (Watts) | 3+re Set: July 14 Ret July 14 |
| Station Information | | | • | Set: July 14 |
| ength of Stream Surveyed (m) | Bay of Negick | | | Ret July 14 |
| · · · · · · · · · · · · · · · · · · · | idth (m): Range | Average: | | V |
| | epth (m): Range 0.4 | - ひ, し Average: | 0.5 | |
| | | Velocity if Measured (m/s): Conductivity (uS/cm) | $\frac{N}{19}$ | Time <u>15:10</u> |
| Temperature (°C) <u>26.66</u> pH <u>6.3.2</u> Catch Data | | • • • • | <u> 14</u> <u> 9 11 </u> | |
| Temperature (°C) 26.66 pH 6.3.2 Catch Data Species | | Conductivity (uS/cm) | <u> 14</u> <u> 9 11 </u> | .e. age, disease, etc): |
| Temperature (°C) <u>26.66</u> pH <u>6.3.2</u> Catch Data | | Conductivity (uS/cm) | <u> 14</u> <u> 9 11 </u> | |
| Temperature (°C) <u>26.66</u> pH <u>6.3.2</u> Catch Data | | Conductivity (uS/cm) | <u> 14</u> <u> 9 11 </u> | |
| Temperature (°C) <u>26.66</u> pH <u>6.32</u> Catch Data Species <u>CrK ch Ub</u> | Number of Fish | Conductivity (uS/cm) Dissolved Oxygen (mg/L) | 9_ Comments (| |
| Temperature (°C) <u>26.66</u> pH <u>6.3.2</u> Catch Data Species <u>CrK chub</u> | Number of Fish | Conductivity (uS/cm) Dissolved Oxygen (mg/L) | 9_ Comments (| |
| Temperature (°C) <u>26.66</u> pH <u>6.3.2</u> Catch Data | Number of Fish | Conductivity (uS/cm) Dissolved Oxygen (mg/L) | 9_ Comments (| |
| Temperature (°C) pH <u>632</u> Catch Data Species C(K ch Ub | Number of Fish | Conductivity (uS/cm) Dissolved Oxygen (mg/L) | 9_ Comments (| |
| Temperature (°C) <u>26.66</u> pH <u>6.3.2</u> Catch Data Species | Number of Fish | Conductivity (uS/cm) Dissolved Oxygen (mg/L) | 9_ Comments (| |
| Temperature (°C) <u>26.66</u> pH <u>6.3.2</u> catch Data pecies <u>Crk chub</u> | Number of Fish | Conductivity (uS/cm) Dissolved Oxygen (mg/L) | 9_ Comments (| |
| Temperature (°C) <u>26.66</u> pH <u>6.3.2</u> catch Data pecies <u>Crk chub</u> | Number of Fish | Conductivity (uS/cm) Dissolved Oxygen (mg/L) | 9_ Comments (| |
| Temperature (°C) <u>26.66</u> pH <u>6.3.2</u> Catch Data Species | Number of Fish | Conductivity (uS/cm) Dissolved Oxygen (mg/L) | 9_ Comments (| |
| Temperature (°C) <u>26.66</u> pH <u>6.3.2</u> Catch Data Species | Number of Fish | Conductivity (uS/cm) Dissolved Oxygen (mg/L) | 9_ Comments (| |
| Temperature (°C) <u>26.66</u> pH <u>6.3.2</u> Catch Data Species <u>CrK chub</u> | Number of Fish | Conductivity (uS/cm) Dissolved Oxygen (mg/L) | 9_ Comments (| |
| Temperature (°C) <u>26.66</u> pH <u>6.3.2</u> Catch Data Species <u>CrK chub</u> | Number of Fish | Conductivity (uS/cm) Dissolved Oxygen (mg/L) | 9_ Comments (| |
| Temperature (°C) <u>26.66</u> pH <u>6.3.2</u> Catch Data Species <u>CrK chub</u> | Number of Fish | Conductivity (uS/cm) Dissolved Oxygen (mg/L) | 9_ Comments (| |
| Temperature (°C) <u>26.66</u> pH <u>6.32</u> Catch Data Species <u>CrK ch Ub</u> | Number of Fish) $()$ Creek chub, Nuc Carcasses near | Conductivity (uS/cm) Dissolved Oxygen (mg/L) | 9_ Comments (| |

(Station Diagram on Back)



Minnou Traps Set

| Juanuez | |
|---|--|
| Station # 0-1\ | Project Name Bow Lake Wind Farm |
| Watercourse Name trib of Negick+ Bowha | 4 Project # 1609 60734 |
| | Field Staff NB, MF |
| | Time |
| Date July 14 /12 | |
| Weather conditions in previous 24 hrs <u>Vestuda</u> GPS Coordinates (Zone) 16 T E | - 28° hot Toda - Ann rain hot 27°c |
| GPS Coordinates (Zone) 16T E 069 | 89089' N 5231337 Datum NAD83 |
| Descriptive Location /5 | west of wester Abgick Lake in stram |
| 60 South side of ATIV trail | |
| NU | |
| Water Quality | 6 DA a Line (a) ha |
| Dissolved Oxygen (mg/L) <u>7.62</u> pH_ | |
| Water Temperature (°C) _ <u> </u> | Air Temperature (°C) 28°c |
| Time in situ measurements taken 13.30 | |
| Weters Dimensions & Mernholomy | |
| Watercourse Dimensions & Morphology | Maximum Deal Death |
| Mean Watercourse Width / D. D (m) | Maximum Pool Depth <u>60</u> (cm) |
| Mean Bankfull Width <u>200</u> (m) | Mean Water Depth <u>30</u> (cm) |
| | Pool% Run% Fla |
| Evidence of eroding banks, Comments on bank | stability No crosion observed |
| | |
| Substrate (% cover) | |
| Bedrock Cobble | 2° Sand 1° Silt 3° Muck |
| Boulder // Gravel | Clay Marl 30 Detritus |
| | |
| Retator Cover | |
| Cover Types Present (circle): Undercut E | Banks (Deep Pool) Watercress (Aquatic Veg |
| Overhanging Vegetation (Woody Debris) | Boulder Other |
| | |
| Riparian Zone | |
| Riparian Cover (% of watercourse shaded, domi | |
| 10% emergent aquatic Von, yellow but | 1ch |
| Adjacent Land Use 0 | |
| ATV trails | |
| | |
| Fish Habitat Potential | |
| Critical Habitat (spawning or nursery areas, grou | undwater upwellings) |
| Spown, Nulsen, Forace | |
| Migratory Obstructions (seasonal, permanent) | |
| Snawn, Foracy, Nurser, None Obs | ruved |
| Note any fish observations Nov Cyprinidae | |
| Note any non-observations <u>104 equilibrium</u> | |
| | |
| Waterbody Notes / | |
| Natural Watercourse / Trapezoidal Chani | nel Grassed Swale Buried Tile |
| Surficial Drainage (i.e. furrows) Dugout P | |
| | |
| Other Habitat Notes, Incidental Wildlife Obse | rvations, etc. |
| | |
| | |
| | |
| | ANTA |
| Field Notes Authored by Field Notes | otes QA/QCed by |
| | eets\Stantec\Form 02 Wind Farm Waterbody Bapid Assessment Form.doc |
| | |

| stantec Stantec Co | | · · · · · · · · · · · · · · · · · · · | | |
|--|------------------|---|---|---|
| | . Wind Farm | ** | <u>D-11</u> | |
| Project Number 1609 6073 | 1 | Pass No. (if applic | · · · · · · · · · · · · · · · · · · · | |
| Photos <u>661-66</u> | | | | 12 |
| Descriptive Location ~/00m | | vestend of Ne | SICK Lake | <u></u> |
| UTM coordinates 06890 | | <u> </u> | northing | 7000 1/5 |
| | <u>87</u> easing | | | zone <u>16</u> T |
| Fishing Method (circle one): | Backpack | Boat Unit Mod | el/Make | |
| Sampling Method (circle one): | even hat | pitat transect | spot | |
| Effort (Electrofishing Seconds): | Numbe | r of Netters: | Number of Anode | es: |
| Settings | | | | |
| Frequency (Hz) | oltage (volts) | Current (Amps) | Power (Watts) | |
| Station Information | ан салаан • | | | |
| Length of Stream Surveyed (m) | | 10.0-20.0 | 15.0 | |
| Obation Obamatation 1 | (dth (m)) Dange | Average: | 260 | |
| | /idth (m): Range | | | - 1 I)) (I) (0.00 |
| | epth (m): Range | Average: | | 87-July14/12:10:30 |
| D Water Clarity/Colour: <u>+ea ta</u> | epth (m): Range | $\frac{1}{2}$ Average: 0 - 3 - 0 - 6 Water Velocity if Measured (m. | <u>0.5</u> /s): <u>N/+</u> | Rt-July 14/12-1090 retrived Time_15:30-July 14/ |
| D Water Clarity/Colour: <u>+ra ta</u> Temperature (°C) <u>26.06</u> | epth (m): Range | Average: 0.3-0.6 Water Velocity if Measured (m. Conductivity (uS/c | /s): <u>~~/+</u> .m) <u>~~</u> 1 | |
| D Water Clarity/Colour: <u>+ea ta</u> | epth (m): Range | $\frac{1}{2}$ Average: 0 - 3 - 0 - 6 Water Velocity if Measured (m. | <u>0.5</u> /s): <u>∧/⊁</u> .m) <u>2</u> ¶ | |
| D Water Clarity/Colour: $\frac{1}{26}$ $\frac{1}{26}$ Temperature (°C) $\frac{26.06}{0.29}$ | epth (m): Range | Average: 0.3-0.6 Water Velocity if Measured (m. Conductivity (uS/c | <u>0.5</u> /s): <u>N/⊁</u> ;m) <u>2</u> ¶ µ/L) <u>7.62</u> | |
| D Water Clarity/Colour: <u>+ra ta</u> Temperature (°C) <u>26.06</u> pH <u>6.29</u> | epth (m): Range | Average: 0.3-0.6 Water Velocity if Measured (m. Conductivity (uS/c | <u>0.5</u> /s): <u>N/⊁</u> ;m) <u>2</u> ¶ µ/L) <u>7.62</u> | retrived Time_15:30-July14/ |
| Di Water Clarity/Colour: <u>+ra ta</u> Temperature (°C) <u>26.06</u> pH <u>6.29</u> ; Catch Data Species | epth (m): Range | Average: 0.3-0.6 Water Velocity if Measured (m. Conductivity (uS/c Dissolved Oxygen (mg | <u>0.5</u> /s): <u>N/⊁</u> ;m) <u>2</u> ¶ µ/L) <u>7.62</u> | retrived Time_15:30-July14/ |
| Di Water Clarity/Colour: Temperature (°C) pH <u>6.29</u> ; Catch Data Species <u>Creek</u> <u>chub</u> | epth (m): Range | Average: 0.3-0.6 Water Velocity if Measured (m. Conductivity (uS/c Dissolved Oxygen (mg | <u>0.5</u> /s): <u>N/⊁</u> ;m) <u>2</u> ¶ µ/L) <u>7.62</u> | retrived Time_15:30-July14/ |
| Di Water Clarity/Colour: Temperature (°C) pH <u>6.29</u> ; Catch Data Species <u>Creek</u> <u>chub</u> | epth (m): Range | Average: 0.3-0.6 Water Velocity if Measured (m. Conductivity (uS/c Dissolved Oxygen (mg | <u>0.5</u> /s): <u>N/⊁</u> ;m) <u>2</u> ¶ µ/L) <u>7.62</u> | retrived Time_15:30-July14/ |
| Di Water Clarity/Colour: Temperature (°C) pH <u>6.29</u> ; Catch Data Species <u>Creek</u> <u>hub</u> | epth (m): Range | Average: 0.3-0.6 Water Velocity if Measured (m. Conductivity (uS/c Dissolved Oxygen (mg | <u>0.5</u> /s): <u>N/⊁</u> ;m) <u>2</u> ¶ µ/L) <u>7.62</u> | retrived Time_15:30-July14/ |
| Di Water Clarity/Colour: <u>+ra ta</u> Temperature (°C) <u>26.06</u> pH <u>6.29</u> ; Catch Data Species | epth (m): Range | Average: 0.3-0.6 Water Velocity if Measured (m. Conductivity (uS/c Dissolved Oxygen (mg | <u>0.5</u> /s): <u>N/⊁</u> ;m) <u>2</u> ¶ µ/L) <u>7.62</u> | retrived Time_15:30-July14/ |
| Di Water Clarity/Colour: $\frac{4r_{c}}{2b \cdot OC}$ pH $\frac{2b \cdot OC}{6 \cdot 29}$ Catch Data Species Creek chub | epth (m): Range | Average: 0.3-0.6 Water Velocity if Measured (m. Conductivity (uS/c Dissolved Oxygen (mg | <u>0.5</u> /s): <u>N/⊁</u> ;m) <u>2</u> ¶ µ/L) <u>7.62</u> | retrived Time_15:30-July14/ |
| Di Water Clarity/Colour: $\frac{4r_{c}}{2b \cdot OC}$ pH $\frac{2b \cdot OC}{6 \cdot 29}$ Catch Data Species Creek chub | epth (m): Range | Average: 0.3-0.6 Water Velocity if Measured (m. Conductivity (uS/c Dissolved Oxygen (mg | <u>0.5</u> /s): <u>N/⊁</u> ;m) <u>2</u> ¶ µ/L) <u>7.62</u> | retrived Time_15:30-July14/ |
| Di Water Clarity/Colour: $\frac{4r_{c}}{2b \cdot OC}$ pH $\frac{2b \cdot OC}{6 \cdot 29}$ Catch Data Species Creek chub | epth (m): Range | Average: 0.3-0.6 Water Velocity if Measured (m. Conductivity (uS/c Dissolved Oxygen (mg | <u>0.5</u> /s): <u>N/⊁</u> ;m) <u>2</u> ¶ µ/L) <u>7.62</u> | retrived Time_15:30-July14/ |
| Di Water Clarity/Colour: $\frac{4r_{c}}{2b \cdot OC}$ pH $\frac{2b \cdot OC}{6 \cdot 29}$ Catch Data Species Creek chub | epth (m): Range | Average: 0.3-0.6 Water Velocity if Measured (m. Conductivity (uS/c Dissolved Oxygen (mg | <u>0.5</u> /s): <u>N/⊁</u> ;m) <u>2</u> ¶ µ/L) <u>7.62</u> | retrived Time_15:30-July14/ |
| Di Water Clarity/Colour: $\frac{4r_{c}}{2b \cdot OC}$ pH $\frac{2b \cdot OC}{6 \cdot 29}$ Catch Data Species Creek chub | epth (m): Range | Average: 0.3-0.6 Water Velocity if Measured (m. Conductivity (uS/c Dissolved Oxygen (mg | <u>0.5</u> /s): <u>N/⊁</u> ;m) <u>2</u> ¶ µ/L) <u>7.62</u> | retrived Time_15:30-July14/ |
| Di Water Clarity/Colour: $\frac{4r_{c}}{2b \cdot OC}$ pH $\frac{2b \cdot OC}{6 \cdot 29}$ Catch Data Species Creek chub | epth (m): Range | Average: 0.3-0.6 Water Velocity if Measured (m. Conductivity (uS/c Dissolved Oxygen (mg | <u>0.5</u> /s): <u>N/⊁</u> ;m) <u>2</u> ¶ µ/L) <u>7.62</u> | retrived Time_15:30-July14/ |
| Di Water Clarity/Colour: $\frac{4r_{c}}{2b \cdot OC}$ pH $\frac{2b \cdot OC}{6 \cdot 29}$ Catch Data Species Creek chub | epth (m): Range | Average: 0.3-0.6 Water Velocity if Measured (m. Conductivity (uS/c Dissolved Oxygen (mg | <u>0.5</u> /s): <u>N/⊁</u> ;m) <u>2</u> ¶ µ/L) <u>7.62</u> | retrived Time_15:30-July14/ |
| Di Water Clarity/Colour: Temperature (°C) pH <u>6.29</u> ; Catch Data Species <u>Creek</u> <u>hub</u> | epth (m): Range | Average: 0.3-0.6 Water Velocity if Measured (m. Conductivity (uS/c Dissolved Oxygen (mg | <u>0.5</u> /s): <u>N/⊁</u> ;m) <u>2</u> ¶ µ/L) <u>7.62</u> | retrived Time_15:30-July14/ |
| Di Water Clarity/Colour: Temperature (°C) pH <u>6.29</u> ; Catch Data Species <u>Creek</u> <u>hub</u> | epth (m): Range | Average: 0.3-0.6 Water Velocity if Measured (m. Conductivity (uS/c Dissolved Oxygen (mg | <u>0.5</u> /s): <u>N/⊁</u> ;m) <u>2</u> ¶ µ/L) <u>7.62</u> | retrived Time_15:30-July14/ |

(Station Diagram on Back)

Stantor

WIND FARM WATERBODY RAPID ASSESSMENT FORM

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| Station # $O = 12 (P_1 e^{p_1 e^$ | Starter ST-1) | |
|---|---|---|
| Flortos 1152-1160 Field Staff | Station # 0-12 (previous) | Project Name Royal Ke Wind Former |
| Flortos 1152-1160 Field Staff | Watercourse Name Uppamed | |
| Date July 14/14 Time 13700 Weather conditions in previous 24 hrs Instructions in previous 24 hrs N 5.230 12.5 Datum MA033 Descriptive Location MIL/ at proposed tables N 5.230 12.5 Datum MA033 Descriptive Location MIL/ at proposed tables N 5.230 12.5 Datum MA033 Descriptive Location MIL/ at proposed tables N 5.230 12.5 Datum MA033 Water Quality Dissolved Oxygen (mg/L) Dry pH Dry Conductivity (uS/cm) Dry Water Temperature (*C) Dry pH Dry Conductivity (uS/cm) Dry Water Temperature (*C) Dry pH Dry Conductivity (uS/cm) Dry Water Temperature (*C) Dry MAXimum Pool Depth Q (cm) Mean Watercourse Width Dry Maximum Pool Depth Q (cm) Mean Watercourse Width Dry (m) Maximum Pool Depth Q (cm) % Riffle % Comments on bank stability Seace usets/seace (cm) % Riffle Substrate (% cover) Bedro | | |
| absolutions precipies and precipies of the start o | | |
| GPS Coordinates (Zone) bT E 689/493 N 5.230 185 Datum \$4033 Descriptive Location MML at proposed factors 7.5 (acation \$50 mm) Alar at proposed factors 5.0 mm) Mater Quality Dissolved Oxygen (mg/L) Dry proposed factors Proposed factors Water Course Width Dry proposed factors Air temperature (°C) prove factors Water course Width Dory Maximum Pool Depth C (cm) Mean Watercourse Width Dory (m) Maximum Pool Depth C (cm) Mean Watercourse Width Dory (m) Maximum Pool Depth C (cm) Mean Watercourse Width Dory (m) Maximum Pool Depth C (cm) Mean Watercourse Width Dory (m) Maximum Pool Depth C (cm) Mean Bankfull Widtif Qord (m) Maximum Pool Depth C (cm) Mean Bankfull Widtif Qord (m) Maximum Pool Depth C (cm) Substrate (% cover) Maximum Pool Depth Q (cm) (cm) Set black Substrate (% cover) Edition Gravel Cola Mard <td></td> <td></td> | | |
| Descriptive Location MM/W st. response to the bine. #35.1 scatter S50m. Atom proported TAP bine! (Seatth of Mile (S. Road and Bory Lake) Water Quality Dissolved Oxygen (mg/L) Dry pH Dry Conductivity (µS/cm) Dry Water Causity Dissolved Oxygen (mg/L) Dry Air Temperature (*C) m23*C Time in situ measurements takeh Not recorded Main Temperature (*C) m23*C Water Course Dimensions & Morphology Mean Water Depth C (cm) Mean Bankfull Width 2.07 (m) Mean Water Depth C (cm) % Riffle % Pool % Run % Flat Evidence of eroding banks, Comments on bank stability Scare worky debrid Substrate (% cover) Bedrock 10 Gravel Clay Maint 50 Detritus In-water Cover Curr Extle Banks / Deep Pool Watercores Aquatic Veg Overtranging Vegetation Woody Debris Boulder Other Elected Riparian Zone Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional) Moid Moid Main 50 Detritus Marca Mai | | |
| AlarsPrepaiedTap birdTap bird(Seeth of Mile lo? Road and Brow Lake)Water QualityDissolved Oxygen (mg/L) Dry pH Drg Conductivity (uS/cm) Drg Water Temperature (°C) Drg Air Temperature (°C) $n 23° C$ Time in situ measurements taken Met $Telegraded$ Watercourse Dimensions & MorphologyMean Bankfull Width 2.01 (m)Maximum Pool Depth C (cm)Mean Bankfull Width 2.01 (m)Mean Water Depth Q (cm) $Mean Bankfull Width2.01 (m)Mean Water DepthQ (cm)Matercourse WidthDrg (m)Meximum Pool DepthQ (cm)Mean Watercourse Width2.01 (m)Mean Water DepthQ (cm)Mean Watercourse Width2.01 (m)Mean Water DepthQ (cm)Mean Watercourse Width2.02 (m)\sqrt{9} Run\sqrt{9} FlatEvidence of eroding banks, Comments on bank stabilityServe under casts band\sqrt{9} RunSubstrate (% cover)SeandSitt10Boulder10GravelClayMad50DetritusIn-water CoverCurrently RryRryCover Types Present (circle):Undercut Banks / Deep PoolWatercressAquatic VegOverhanging VegetationWoody DebrisBoulderOtherReach And And And And And And And And And And$ | | |
| Water Quality Dissolved Oxygen (mg/L) Dry pH Dry Conductivity (µS/cm) Dry Water Temperature (°C) Dry Air Temperature (°C) ~23°C Time in situ measurements taken Not Cecorded Watercourse Dimensions & Morphology Mean Watercourse Width Ory (m) Mean Water Depth C (cm) Mean Bankfull Width 2.0 (m) Mean Water Depth C (cm) % Band State The data taken % Pool % Run % Flat Evidence of eroding banks, Comments on bank stability Sence work of the data taken % Pool Substrate (% cover) Gravel 10 Sand Sait 10 Muck I/2 Boulder 10 Gravel Carr of the for the data taken Mail 50 Detritus In-water Cover Carr of the for the data taken Watercress Aquatic Veg Overtage Overt Types Present (circle): Undercut Banks / Deep Pool Watercress Aquatic Veg Overt Types Present (so of watercourse shaded, dominant vegetation, mature or early successional) InD % InD % <td></td> <td></td> | | |
| Dissolved Oxygen (mg/L) Dry pH Dry Conductivity (µS/cm) Dry Water Temperature (°C) Dry Air Temperature (°C) $\sim 23.°C$ Time in situ measurements taken M_{eff} (°C $Cecded$ Watercourse Dimensions & Morphology Mean Watercourse Width Dry (m) Maximum Pool Depth Q (cm) Mean Bankfull Width 2.0 (m) Mean Water Depth Q (cm) 96 Riffle 96 Pool 96 Run 2.0 (m) 96 Riffle 2.0 (m) Mean Water Depth Q (cm) 96 Riffle 3.0 (m) 96 Riffle 2.0 (m) 96 Rin 3.0 (m) 96 Rin 3 | Many proposed AP Line (>) | onth of Mill () Road and Bow Lake) |
| Dissolved Oxygen (mg/L) Dry pH Dry Conductivity (µS/cm) Dry Water Temperature (°C) Dry Air Temperature (°C) $\sim 23.°C$ Time in situ measurements taken M_{eff} (°C $Cecded$ Watercourse Dimensions & Morphology Mean Watercourse Width Dry (m) Maximum Pool Depth Q (cm) Mean Bankfull Width 2.0 (m) Mean Water Depth Q (cm) 96 Riffle 96 Pool 96 Run 2.0 (m) 96 Riffle 2.0 (m) Mean Water Depth Q (cm) 96 Riffle 3.0 (m) 96 Riffle 2.0 (m) 96 Rin 3.0 (m) 96 Rin 3 | Water Quality | |
| Water Temperature (°C) Dr4 Air Temperature (°C) ~23°C Time in situ measurements takeh Met Tellerded Watercourse Dimensions & Morphology Mean Watercourse Width Ory (m) Mean Water Depth Q (cm) Mean Bankfull Width 2.01 (m) Mean Water Depth Q (cm) % Piol % Riffle % Pool % Riffle Q (cm) % Biffle 10 Stable 4.4 5.4 5.4 5.4 Substrate (% cover) Bedrock 10 Sand Silt 10 Muck I.e Boulder 10 Gravel Clay Marit 5.0 Detritus In-water Cover Bedrock 10 Gravel Clay Marit 5.0 Detritus In-water Cover Circle/: Undercut Banks / Deep Pool Watercress Aquatic Veg Over Types Present (circle): Undercut Banks / Deep Pool Watercress Aquatic Veg Over thanging Vegetation Woody Debris Boulder Other Other Maritus Adjacent Land Use | • | Prove Conductivity (uS/cm) N-1 |
| Time in situ measurements taken Not felorided Watercourse Dimensions & Morphology Mean Watercourse Witth Ory (m) Mean Bankfull Witth 2.0 (m) Mean Water Course Witth Ory (m) Mean Bankfull Witth 2.0 (m) Mean Water Depth (cm) % Riffle % Pool % Rode % Pool | | |
| Watercourse Dimensions & Morphology Mean Watercourse Width Ory (m) Maximum Pool Depth Q (cm) Mean Bankfull Width 2.01 (m) Mean Water Depth Q (cm) % Riffle % Pool % Run % Flat Substrate (% cover) Sense use dus dus to the flat Sense use dus dus to the flat Bedrock 10 Gravel Clay Marl So Detritus In-water Cover Bedrock 10 Gravel Clay Marl SO Detritus In-water Cover Cover Types Present (circle): Undercut Banks Deep Pool Watercress Aquatic Veg Overhanging Vegetation Woody Debris Boulder Other Marl SO Detritus In-water Cover Current/9 Pry Cover Types Present (circle): Undercut Banks Deep Pool Watercress Aquatic Veg Overhanging Vegetation Woody Debris Boulder Other Marl SO Detritus Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional) In/0 % Marl Marl So So | | All remperature (C) <u>$25C$</u> |
| Mean Watercourse Width 0 | | · condea |
| Mean Watercourse Width 0 | Watercourse Dimensions & Morphology | |
| Mean Bankfull Width 2.01 (m) Mean Water Depth 0 (cm) % Riffle % Pool % Run | | Maximum Pool Depth (2 (cm) |
| % Riffle % Pool % Run % Run % Run % Flat Evidence of eroding banks, Comments on bank stability Serve we der cants bank bank fatter fatter <td< td=""><td></td><td></td></td<> | | |
| Evidence of eroding banks, Comments on bank stability $\underline{Serve ucdit out to but}$ Stable due to sect mass, boulder and barse wooky debrist Substrate (% cover) Bedrock 10 Cobble 10 Sand Silt 10 Muck 10 Boulder 10 Gravel Clay Marl 50 Detritus In-water Cover Cover Types Present (circle): Undercut Banks / Deep Pool Watercress Aquatic Veg Overhanging Vegetation Woody Debris Boulder Other Riparian Zone Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional) $MD $ M_{other} M_{other} M_{other} M_{other} M_{other} Adjacent Land Use forcest Fish Habitat Potential Critical Habitat (spawning or nursery areas, groundwater upwellings) M_{ore} Migratory Obstructions (seasonal, permanent) Sections with high grad cont. Low flow Note any fish observations M_{ooe} M_{oth} D_{irect} for M_{oth} M_{oth} M_{ooe} M_{oth} D_{irect} for M_{oth} M_{ooe} M_{ooe} M_{oth} M_{ooe} | · · · · · · · · · · · · · · · · · · · | |
| Stable due to sort mass, boulder and barge wooly debris Substrate (% cover) Bedrock 10 Cobble 10 Sand Silt 10 Muck 10 Boulder 10 Gravel Clay Marl \$0 Detritus In-water Cover Currently Bry Cover Types Present (circle): Undercut Banks / Deep Pool Watercress Aquatic Veg Overhanging Vegetation Woody Debris Boulder Other Aquatic Veg Priparian Zone Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional) 100 % Shaded by Mature wrap for \$000 % Shaded by Mature wrap for \$100 % Shaded by \$100 % Sh | | · · · · · · · · · · · · · · · · · · · |
| Substrate (% cover) Bedrock 10 Cobble 10 Sand Silt 10 Muck 10 Boulder 10 Gravel Clay Marl 50 Detritus In-water Cover Carrently Dry Clay Marl 50 Detritus In-water Cover Carrently Dry Cover Types Present (circle): Undercut Banks Deep Pool Watercress Aquatic Veg Overhanging Vegetation Woody Debris Boulder Other Aquatic Veg Overhanging Vegetation Woody Debris Boulder Other Aquatic Veg Priparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional) Intro Intro Aquatic Veg Marc Marc Mature Mature Forest Adjacent Land Use Forest Fish Habitat Potential Critical Habitat (spawning or nursery areas, groundwater upwellings) Marc Marc Marc Marc Marc Marc Marc Migratory Obstructions (seasonal, permanent) Sections Marc Sections Mature Note any fish observations Marc Marc <td>Stuble due to sort mass, bouldes</td> <td>and bares woods debris</td> | Stuble due to sort mass, bouldes | and bares woods debris |
| Bedrock 10 Cobble 10 Sand Silt 10 Muck 12 Boulder 10 Gravel Clay Marl SO Detritus In-water Cover Currently Dry Deep Pool Watercress Aquatic Veg Overhanging Vegetation Woody Debris Boulder Other Other Riparian Zone Riparian Zone Riparian Zone Martare Martare Martare Aquatic Veg No Sheded by Matare mapple Forest Adjacent Land Use Image: Fare Martare Martare Martare Martare Martare No Sheded by Matare Martare Martare Martare Migratory Obstructions (seasonal, permanent) State of the forest State of the forest State of the forest Note any fish observations Mare Mare Martare Flow Note any fish observations Mare Martare Stread Buried Tile Sufficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Dry Dry <tr< td=""><td></td><td></td></tr<> | | |
| ID Boulder ID Gravel Clay Marl SO Detritus In-water Cover Currently Dry Cover Types Present (circle): Undercut Banks Deep Pool Watercress Aquatic Veg Overhanging Vegetation Woody Debris Boulder Other Aquatic Veg Riparian Zone Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional) ID Note Aquatic Veg Ind % Martine Martine Martine Aquatic Veg Adjacent Land Use Martine Martine Martine Martine Martine Migratory Obstructions (seasonal, permanent), Sections with high or adigent. Low flow Mart Sinth Apple Note any fish observations Mare Mart Direct Sinth Apple Buried Tile Vaterbody Notes Natural Watercourse Trapezoidal Channel Grassed Swale Buried Tile Surficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Dry Other Habitat Notes, Incidental Wildlife Observations, etc. Intermittent or Epicemical Stream Stream Stream Stream Art stream Stream< | | |
| In-water Cover Carrently pry Cover Types Present (circle): Undercut Banks Deep Pool Watercress Aquatic Veg Overhanging Vegetation Woody Debris Boulder Other | | |
| Cover Types Present (circle): Undercuit Banks // Deep Pool Watercress Aquatic Veg Overhanging Vegetation Woody Debris Boulder Other | <u> </u> | Clay Marl 50 Detritus |
| Forest Fish Habitat Potential Critical Habitat (spawning or nursery areas, groundwater upwellings) Mone Migratory Obstructions (seasonal, permanent), Sections with high gradient. Low Flow Note any fish observations Mane Waterbody Notes Natural Watercourse Value Other Habitat Notes, Incidental Wildlife Observations, etc. Induction Stream Feam Stream Stream Note any fish observations Mane Matural Watercourse Trapezoidal Channel Grassed Swale Buried Tile Surficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Dry Other Habitat Notes, Incidental Wildlife Observations, etc. End Stream Few Pactets Standing Waterts Pactets Observations, etc. End Stream Stream Stream Stream Amonel Degist | Overhanging Vegetation Woody Debris Riparian Zone Riparian Cover (% of watercourse shaded, domin 100 % Shuded by Mature m | Boulder Other |
| Fish Habitat Potential Critical Habitat (spawning or nursery areas, groundwater upwellings) None Migratory Obstructions (seasonal, permanent), Sections w: the high gradient. Low Flow Note any fish observations Mone Waterbody Notes Natural Watercourse Trapezoidal Channel Grassed Swale Buried Tile Surficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Dry Other Habitat Notes, Incidental Wildlife Observations, etc There mitheat are Explored at upstream end lot the reach arsessed, at the coardinates where is a provel. | | |
| Critical Habitat (spawning or nursery areas, groundwater upwellings) <u>None</u> Migratory Obstructions (seasonal, permanent), <u>Sections with high gradient</u> <u>Low Flow</u> Note any fish observations <u>None</u> <u>Not</u> <u>Direct fish habitat</u> Waterbody Notes Natural Watercourse <u>Trapezoidal Channel</u> Grassed Swale <u>Buried Tile</u> Surficial Drainage (i.e. furrows) <u>Dugout Pond</u> <u>Dominated by Aquatic Veg</u> <u>Dry</u> Other Habitat Notes, Incidental Wildlife Observations, etc. <u>Intermittent or Exploremental</u> <u>Stream</u> . Few <u>packets of Standing</u> <u>water</u> . <u>Defined</u> <u>Annel begint</u> <u>at upstream</u> <u>end</u> <u>Jef the Fearch assessed</u> , at <u>the coordinates</u> <u>hove</u> . | Forest | |
| Critical Habitat (spawning or nursery areas, groundwater upwellings) <u>None</u> Migratory Obstructions (seasonal, permanent) <u>Sections with high gradient</u> <u>Low Flow</u> Note any fish observations <u>None</u> <u>Not</u> <u>Direct fish habitat</u> Waterbody Notes Natural Watercourse <u>Trapezoidal Channel</u> Grassed Swale <u>Buried Tile</u> Surficial Drainage (i.e. furrows) <u>Dugout Pond</u> <u>Dominated by Aquatic Veg</u> <u>Dry</u> Other Habitat Notes, Incidental Wildlife Observations, etc. <u>Intermittent or Exphemetal</u> <u>Stream</u> . Few <u>pockets of Standing</u> <u>water</u> . <u>Defined</u> <u>Annel begint</u> <u>at upstream</u> <u>end</u> <u>Jet the Fearch assessed</u> , at <u>the coordinates</u> <u>hove</u> . | | |
| Migratory Obstructions (seasonal, permanent), Sections with high gradient. Low Flow Note any fish observations <u>None</u> Not <u>Direct</u> fish habitat Waterbody Notes Natural Watercourse <u>Trapezoidal Channel</u> Grassed Swale <u>Buried Tile</u> Surficial Drainage (i.e. furrows) <u>Dugout Pond</u> Dominated by Aquatic Veg <u>Dry</u> Other Habitat Notes, Incidental Wildlife Observations, etc. <u>Intermittent or Exploremental</u> Stream. few portets of Standing water. Defined <u>Channel begins</u> at upstream end lot the reach assessed, at the coordinates hove. | | |
| Migratory Obstructions (seasonal, permanent), Sections with high gradient. Low Flow Note any fish observations <u>None</u> <u>Not</u> <u>Direct</u> <u>fish habitat</u> Waterbody Notes Natural Watercourse <u>Trapezoidal Channel</u> <u>Grassed Swale</u> <u>Buried Tile</u> Surficial Drainage (i.e. furrows) <u>Dugout Pond</u> <u>Dominated by Aquatic Veg</u> <u>Dry</u> Other Habitat Notes, Incidental Wildlife Observations, etc. <u>Intermittent or Explemental</u> <u>Stream</u> . <u>Few</u> <u>Pockets</u> <u>of</u> <u>Standing</u> <u>water</u> . <u>Defined</u> <u>Channel</u> <u>beginst</u> <u>at unstream</u> <u>end</u> <u>Jot</u> <u>the</u> <u>Feach</u> <u>assessed</u> , <u>at</u> | | ndwater upwellings) |
| Sections with high gradient. Low Flow Note any fish observations <u>None</u> <u>Not</u> <u>Direct</u> <u>fish habitat</u> Waterbody Notes Natural Watercourse <u>I</u> Trapezoidal Channel <u>Grassed Swale</u> <u>Buried Tile</u> Surficial Drainage (i.e. furrows) <u>Dugout Pond</u> <u>Dominated by Aquatic Veg</u> <u>Dry</u> Other Habitat Notes, Incidental Wildlife Observations, etc. <u>Intermittent or Exploremental</u> Stream few <u>packets</u> of <u>Standing</u> <u>water</u> . <u>Defined</u> <u>channel beginst at upstream</u> <u>end</u> <u>Defined</u> <u>assessed</u> , at <u>the coordinates</u> <u>Abovel</u> . | | |
| Note any fish observations <u>None</u> <u>Not</u> <u>Direct fish habitat</u> Waterbody Notes Natural Watercourse <u>I</u> Trapezoidal Channel <u>Grassed Swale</u> <u>Buried Tile</u> Surficial Drainage (i.e. furrows) <u>Dugout Pond</u> <u>Dominated by Aquatic Veg</u> <u>Dry</u> Other Habitat Notes, Incidental Wildlife Observations, etc. <u>Intermittent of Explorence</u> Stream few <u>Packets of Standing worker</u> . <u>Defined</u> <u>Stream few Packets of Standing worker</u> . <u>Defined</u> <u>Stream few Packets of Standing worker</u> . <u>Defined</u> <u>Standel begins</u> <u>at upstream end Def the Feach assessed, at</u> <u>The coordinates above</u> . | Migratory Obstructions (seasonal, permanent) | |
| Waterbody Notes Natural Watercourse Trapezoidal Channel Grassed Swale Buried Tile Surficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Dry Other Habitat Notes, Incidental Wildlife Observations, etc. Intermittent or Explorence Stream: Few packets of Standing water. Defined Stream: Few packets of Standing water. Defined Channel beginst at upstream end lot the Feach assessed, at the coordinates above. | Sections with high gradient. | |
| Natural Watercourse Trapezoidal Channel Grassed Swale Buried Tile Surficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Dry Other Habitat Notes, Incidental Wildlife Observations, etc. Intermittent of Fubernetal Stream Few packets of Standing water. Defined Stream Few packets of Standing water. Defined Channel beginst at upstream end lot the Feach assessed, at the coordinates above. | Note any fish observations $\frac{1}{N_{one}}$ | at Direct fish habitat |
| Natural Watercourse Trapezoidal Channel Grassed Swale Buried Tile Surficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Dry Other Habitat Notes, Incidental Wildlife Observations, etc. Intermittent of Fubernetal Stream Few packets of Standing water. Defined Stream Few packets of Standing water. Defined Channel beginst at upstream end lot the Feach assessed, at the coordinates above. | - | |
| Natural Watercourse Trapezoidal Channel Grassed Swale Buried Tile Surficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Dry Other Habitat Notes, Incidental Wildlife Observations, etc. Intermittent of Fubernetal Stream Few packets of Standing water. Defined Stream Few packets of Standing water. Defined Channel beginst at upstream end lot the Feach assessed, at the coordinates above. | Waterbedy Natao | |
| Surficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Dry Other Habitat Notes, Incidental Wildlife Observations, etc. Intermittent of Explained Stream. Few packets of Standing water. Defined channel begins of upstream and lot the reach assessed, at the coordinates above. | | |
| Other Habitat Notes, Incidental Wildlife Observations, etc. Intermittent of Faberneial Stream. Few packets of Standing water. Defined Channel beains at unstream and lot the reach assessed, at the coordinates above. | | |
| Stream. Few partets of Standing water. Defined channel beains at unstream and lot the reach assessed, at the coordinates above. | Sumular Drainage (i.e. lurrows) Dugout PC | Dry Dominated by Aquatic Veg Dry |
| Stream. Few partets of Standing water. Defined channel beains at unstream and lot the reach assessed, at the coordinates above. | Other Hebitet Notes Insidental Wildlife Ober | nations at = + - 11 1 - 1 |
| channel beains at unstream and lot the reach assessed, at the coordinates above, | Strange F to the total Wildlife Obser | |
| the coordinates above. | | |
| | | and lot the reach assessed, at |
| | INC (DOIDINAVE) ADOVE, | |
| Field Notes Authored by M: ke John 5 Field Notes QA/QCed by MEMarch | 101 51 - | tes QA/QCed by MEUal |

Stantec

WIND FARM WATERBODY RAPID ASSESSMENT FORM

Station #_____ (previously ST-2 Project Name Bow Lake Wind Farm Photos 116/ - 1/63 Photos 116/ - 1/63 Apstream Date July 14/12 Weather 5 0 Watercourse Name Unna Project # 1609 60734 (5ee Field Staff M:Ke 12:35 Time Weather conditions in previous 24 hrs <u>Mostly clear</u>, hot, light GPS Coordinates (Zone) 16丁 E 689282 230 Datum NAO8 Descriptive Location ~845 South of beaver lam betwiee Bow Lake, TAP ine. propose Water Quality Dissolved Oxygen (mg/L) 3.21 5.98 Conductivity (µS/cm) pН 14.00 Water Temperature (°C) Air Temperature (°C) Time in situ measurements taken Watercourse Dimensions & Morphology Mean Watercourse Width 0.3 Maximum Pool Depth (m) 20 (cm) 1.4 Mean Bankfull Width Mean Water Depth (m) (cm) % Riffle % Pool 30 \mathcal{O} 20 % Run % Flat Evidence of eroding banks, Comments on bank stability undercuit due to boulder wood and sopt mass Substrate (% cover) 10 **Bedrock** Cobble Sand Silt Muck 15 Boulder Gravel 40 Clav Marl Detritus 20 In-water Cover Cover Types Present (circle): Undercut Banks Deep Pool Watercress Aquatic Veg **Overhanging Vegetation** Woody Debris Boulder/ Other_ **Riparian Zone** Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional) 100% Shaded, Mixed Forest, maple Adjacent Land Use forest **Fish Habitat Potential** Critical Habitat (spawning or nursery areas, groundwater upwellings) None Migratory Obstructions (seasonal, permanent) Sections with steep asadic Note any fish observations Waterbody Notes Natural Watercourse_// Trapezoidal Channel_ Grassed Swale Buried Tile Surficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Drv Other Habitat Notes, Incidental Wildlife Observations, etc. 09/9 c Standing Water Field Notes Authored by Mike Johns Field Notes QA/QCed by MG



| Station # $5-2$ | Project Name Bow Lake Wind Farm |
|---|--|
| Watercourse Name un named | Project $\#_{1609}$ 60734 |
| Photos 1/5/ - 1/54 | Field Staff Mike Johns Mikeh Ellah |
| Date $July 13/12$ | Time $13:40$ |
| | |
| | 11/1 Clear |
| | 161 <u>N 5.229 472 Datum NAD83</u> |
| Descriptive Location $\frac{169}{200}$ ENE of | proposed turbine # 34 Location |
| Watercourse Dimensions & Morphology Mean Watercourse Width(m) Mean Bankfull Width(m) % Riffle% Po Evidence of eroding banks, Comments on bank s | stability under cuts common but |
| Stabilized by boulder and | CONT in ass |
| Substrate (% cover) | · · · · |
| Bedrock / Cobble | <u>30</u> Sand Silt Muck |
| 10 Boulder 30 Gravel | SanuSintMuck |
| | |
| In-water Cover Cover Types Present (circle): Undercut Ba Overhanging Vegetation Woody Debris | anks Deep Pool Watercress Aquatic Veg Boulder Other |
| Riparian Zone Riparian Cover (% of watercourse shaded, domin 100 1. Shaded, mature dec: | |
| Adjacent Land Use | pr IX OU ~ |
| Forested | |
| 10105700 | |
| Fish Habitat Potential | |
| Critical Habitat (spawning or nursery areas, grour | ndwater unwellings) |
| None - Dry - not direc | |
| Migratory Obstructions (seasonal, permanent) | |
| Low Flow, fairly high 9 | sadie t |
| Note any fish observations | |
| | ish habitat |
| Waterbody Notes Natural Watercourse Trapezoidal Channe Surficial Drainage (i.e. furrows) Dugout Po | el Grassed Swale Buried Tile/ |
| Sumolal Diamage (i.e. Iunows) Dugout Po | hu Duminated by Aqualic Vey Dry |
| Other Habitat Notes, Incidental Wildlife Observ <u>Custortly</u> <u>Pry</u> intermittent or <u>e</u> und perfort vale | vations, etc pord article |
| | |
| Field Notes Authored by Mike John 5 Field Notes | es QA/QCed by |



| Sta | |
|--------------------------|---|
| | ation # <u>5-3</u> Project Name <u>Bow Lake Wind Farm</u> |
| | rotos 1/57 Project # 1609 60734 Field Staff Mike Johns, Mitch EllaG |
| Pn | notos <u>1/55 - 1/57</u> ate July 14 / 12 Time <u>11:14</u> Field Staff <u>Mike Johns</u> , <u>Mitch EllaG</u> |
| Jr Con Da | |
| | |
| | PS Coordinates (Zone) 16T E 689542 N 5229534 Datum NAD8 escriptive Location 200 m west of proposed Turbine #35 location |
| K h De | escriptive Location wester provide turbine poor i on |
| Dis Wa | Vater Quality pH_6.05 Conductivity (µS/cr.:) 25 Vater Temperature (°C) 14.78 Air Temperature (°C) 23°C me in situ measurements taken 1115 |
| Me Me | Vatercourse Dimensions & Morphology ean Watercourse Width 0.50 (m)Maximum Pool Depth 206 (cm)ean Bankfull Width 1.3 (m)Mean Water Depth 4 (cm)0 % Riffle25 % Pool% Run 25 % F |
| Ev | vidence of eroding banks, Comments on bank stability <u>stable banks</u> |
| | ubstrate (% cover) |
| | Bedrock /O Cobble 20 Sand Silt 20 Muck |
| | 10 Boulder 20 Gravel Clay Marl 20 Detritu |
| | -water Cover over Types Present (circle): Undercut Banks @eep Pool> Watercress Aquatic Veg |
| | verhanging Vegetation (Woody Debris) Boulder Other |
| | iparian Zone |
| | iparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional) 95% Mature Manle, for grand cours |
| Ac | djacent Land Use |
| | []][]]] |
| يسو | ab Habitat Datantial |
| | ish Habitat Potential ritical Habitat (spawning or nursery areas, groundwater upwellings) |
| U CI | Nical Habitat (spawning of horsely areas, groundwatch upwennigs) |
| Mi | ligratory Obstructions (seasonal, permanent) |
| | |
| | low Flow |
| | ote any fish observations No Fish observed, not direct fish |
| Ŋc | ote any fish observations No Fish observed, not direct fish abitat |
| No | ote any fish observations No Fish observed, not direct fish abit at |
| | ote any fish observations No Fish observed, not direct fish abitat |
| Nc <u>h</u> W | ote any fish observations <u>No Fish observed</u> and direct fish abit at /aterbody Notes atural Watercourse / Trapezoidal Channel Grassed Swale Buried Tile |
| No 5 W Na Su | ote any fish observations No Fish observed, not direct fish abitat Addited fish Addited fish abitat Addited fish Addited fish /aterbody Notes Addited fish Addited fish atural Watercourse Image Trapezoidal Channel Grassed Swale Buried Tile urficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Dry_ |
| No 5 W Na Su | ote any fish observations No Fish observed, not direct fish abitat Addited fish Addited fish abitat Addited fish Addited fish /aterbody Notes Addited fish Addited fish atural Watercourse Image Trapezoidal Channel Grassed Swale Buried Tile urficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Dry_ |
| No 5 W Na Su | ote any fish observations <u>No Fish observed</u> and direct fish abit at /aterbody Notes atural Watercourse / Trapezoidal Channel Grassed Swale Buried Tile |
| No 5 W Na Su | ote any fish observations No Fish observed, not direct fish ab:tat /aterbody Notes atural Watercourse Trapezoidal Channel Grassed Swale Buried Tile urficial Drainage (i.e. furrows) Dugout Pond |
| No 5 W Na Su | ote any fish observations No Fish observed, not direct fish ab:tat /aterbody Notes atural Watercourse Trapezoidal Channel Grassed Swale Buried Tile urficial Drainage (i.e. furrows) Dugout Pond |

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| Station # | Project Name Bow Lake Wind Farm |
|---|---|
| Watercourse Name Ungmed | Project # 1609 60734 |
| Photos 1/33 - 1/36 | Field Staff M: Ke Johns, Mitch Ellah |
| Date $July 12/12$ | Time/3:05 |
| Weather conditions in previous 24 hrs Shnn y | |
| GPS Coordinates (Zone) 16T E 688 | 956 N 5.228 4/4 Datum NAD83 |
| Descriptive Location 187 m East. 51:0 | htly south of proposed turbine |
| #36 location | |
| Water Quality | |
| Dissolved Outrop (mg/l) 495 | 577 Conductivity (Olan) |
| Dissolved Oxygen (mg/L) <u>4,95</u> pH_ | |
| Water Temperature (°C) <u>15-23</u> Time <i>in situ</i> measurements taken <u>13:70</u> | Air Temperature (°C) <u>~25</u> |
| Time <i>in situ</i> measurements taken13:10 | |
| Watercourse Dimensions & Morphology | |
| Mean Watercourse Width O. 8 (m) | Maximum Pool Depth 15 (cm) |
| Mean Bankfull Width 1.2 (m) | Mean Water Depth 5 (cm) |
| <u> </u> | bol <u>0</u> % Run <u>ら</u> 0 % Flat |
| Evidence of eroding banks, Comments on bank s | |
| rock and root mass | |
| Substrate (% cover) | |
| O Bedrock 20 Cobble | <u>) Sand</u> Silt JO Muck |
| 20 Boulder 15 Gravel | ClayMarl _25 Detritus |
| | |
| In-water Cover | |
| Cover Types Present (circle): Undercut Ba | anks Deep Pool Watercress Aquatic Veg |
| Overhanging Vegetation Woody Debris | Boulder Other |
| | |
| Riparian Zone | |
| Riparian Cover (% of watercourse shaded, domin | ant vegetation, mature or early successional) |
| 90% Shaded, mixed Forest | |
| Adjacent Land Use | |
| forest (maple, cedar, bir | ch] |
| | |
| Fish Habitat Potential | |
| Critical Habitat (spawning or nursery areas, grour | idwater upwellings) |
| None | |
| Migratory Obstructions (seasonal, permanent) | |
| low +low | |
| Note any fish observations | |
| None - no disert Fish h. | abitat |
| Waterbody Notes | |
| Natural Watercourse Trapezoidal Channe | Crossed Surels Buried Tile |
| Surficial Drainage (i.e. furrowa) | el Grassed Swale Buried Tile |
| Surficial Drainage (i.e. furrows) Dugout Po | nd Dominated by Aquatic Veg Dry |
| Other Habitat Notes Incidental Wildlife Obeen | vations ate 6 cars Free C |
| Other Habitat Notes, Incidental Wildlife Obser Bho observable flow Pockets Black throated Green Warbler | Alloris, elc. <u>GIEEN Trags</u> |
| Black Harristed Grand Islandland | of standing water |
| prove for partice of a blef | Inster Glourse |
| | |
| Field Notes Authored by Mike Johns Field Note | MELL |
| Field Notes Authored by <u>Field Note</u> Field Note | es QA/QCed by MX11 c C |
| W/\resource\Internal Info and Teams\Aquatic Resources\Field Shoo | ts Stantas Form 02 Wind Farm Waterbody Panid Accomment Form dee |



| Station # $9F-10$ Pr | oject Name Bon Lake |
|---|---|
| Watercourse Name w 47 Lake - linnand Pr | oject # 1.09 60 771 |
| Photos 9730 - 9733 Fie | eld Staff Tre Koen Mitch Ellah |
| | me_11.20 pm |
| Weather conditions in previous 24 hrs Scattered Show | -S- For in Marin |
| GPS Coordinates (Zone) 16T E 68607 | N 522 7591 Datum NAN 83 |
| Descriptive Location Lake W47 @ South bounde | y of prostect Area, hestor W49 |
| | |
| | Conductivity (μS/cm) <u>16</u> Temperature (°C) <u>26°</u> C |
| Watercourse Dimensions & Morphology | $^{\prime}$ $^{\perp}$ |
| Mean Watercourse Width(m) Ma | aximum Pool Depth $2m^+$ (cm) |
| Mean Bankfull Width (m) Me | ean Water Depth(cm) |
| % Riffle% Pool | % Run% Flat |
| Evidence of eroding banks, Comments on bank stability | iy Coloble/grand banks - stable |
| | |
| Substrate (% cover) | |
| Bedrock 30 Cobble 20 | Sand ^{(D} Silt Muck |
| Boulder 40 Gravel | Clay Marl Detritus |
| | / |
| In-water Cover Cover Types Present (circle): Undercut Banks Overhanging Vegetation Woody Debris Bo | Deep Pool Watercress Aquatic Veg |
| Riparian Zone Riparian Cover (% of watercourse shaded, dominant v | egetation, mature or early successional) |
| Adjacent Land Use Forst-Natural - Acass road, cottand, | |
| | |
| Fish Habitat Potential Critical Habitat (spawning or nursery areas, groundwat | er upwellings) |
| Migratory Obstructions (seasonal, permanent) Bearer Activity - lodge on North Store. | |
| Note any fish observations observed | |
| | ······································ |
| Waterbody Notes Natural Watercourse Trapezoidal Channel Surficial Drainage (i.e. furrows) Dugout Pond | |
| Other Habitat Notes, Incidental Wildlife Observatio | ns, etc |
| | |
| Field Notes Authored by Toc Love Field Notes QAM | aced by MGOLA |
| | |

| Stantec | - 11 | 0960771 | · · | | Station Number | 9 F-10 |
|--|---|---|--|---|---------------------------------------|---|
| Project Numbe | | 1 Labe | | | Lift / Haul / Pass No. | |
| Project Name: | | 47- unn | med lake | ······································ | | 2017/08/27 |
| Vaterbody Na Field Staff: | | one e Mit | | | Date (yyyymmod). | 2012/08/27 |
| ishing Metho | · · · · | nd Gear Specs: | · · · · | | of Panels:Mesh | Sizes: |
| | • | | | Trap Net | | |
| | | | · . | Hoop Net | | |
| | | | 20 | _ Minnow Trap | | |
| | | | | Other (specify) | · · · · · · · · · · · · · · · · · · · | |
| Descriptive Lo | ation of Station | Laberry- | 7 on : | south east sho | -elne beside colla | 12, |
| | | | | | | |
| JTM Coordina | tes: | Zone 16 T | Eastir | ng 688607 | Northing <u></u> らと | 27591 |
| | | | | 2011/08128 | T | approx.) 21 hrs |
| SET: Date: | 2012/08 | 127 | LIFT: Date | 20(400)20 | I otal Netting Hours (a | approx.) 2 (|
| | | | | 2012/08/28 10:20 am | I otal Netting Hours (| approx.) |
| Time: | 1:36 pr | <u>~</u> | Time | : 10:20 am | I otal Netting Hours (| approx.) <u>200</u> |
| Time: Station Depth | <u>]:36 pr</u> (m): | <u>~</u> | Time 7 | : <u>10:20 an</u> Min: <u>0.6</u> | | approx.) <u>200</u> |
| Time: Station Depth Supporting M | (m): easurements (Temp. (°C) | Max: 0,7 recorded at tim D.O. (mg/L) | Time 7 e of net set) pH | : 10:20 an Min: 0.6 Cond. (µS/cm) | Time <u>1.33</u> | approx.) <u>2</u> |
| Time: Station Depth Supporting M Depth (m) | (m): easurements (| Max: <u>0,7</u> | Time 7 e of net set) | : <u>10:20 an</u> Min: <u>0.6</u> | Time 1:33 | |
| Time: Station Depth Supporting M Depth (m) | (m): easurements (Temp. (°C) | Max: 0,7 recorded at tim D.O. (mg/L) | Time 7 e of net set) pH | : 10:20 an Min: 0.6 Cond. (µS/cm) | Time 1:33 Additional Cate | - ch Data on Separate Sheet?: Y/N |
| Time: Station Depth Supporting M Depth (m) | (m): easurements (Temp. (°C) | Max: 0,7 recorded at tim D.O. (mg/L) | Time 7 e of net set) pH | : 10:20 an Min: 0.6 Cond. (µS/cm) | Time 1:33 Additional Cate | |
| Time: Station Depth Supporting M Depth (m) | (m): easurements (Temp. (°C) | Max: 0,7 recorded at tim D.O. (mg/L) | Time 7 e of net set) pH | : 10:20 an Min: 0.6 Cond. (µS/cm) | Time 1:33 Additional Cate | - ch Data on Separate Sheet?: Y/N |
| Time: Station Depth Supporting M Depth (m) 0,4 - 0.8 | (m): easurements (Temp. (°C) | Max: 0,7 recorded at tim D.O. (mg/L) | Time 7 e of net set) pH | : 10:20 an Min: 0.6 Cond. (µS/cm) | Time 1:33 Additional Cate | - ch Data on Separate Sheet?: Y/N |
| Time: Station Depth Supporting M Depth (m) 0, 4 - 0.8 Catch Data | (m): easurements (Temp. (°C) | Max: 0,7 recorded at tim D.O. (mg/L) | Time 7 e of net set) pH | : 10:20 an Min: 0.6 Cond. (µS/cm) | Time 1:33 Additional Cate | - ch Data on Separate Sheet?: Y/N |
| Time: Station Depth Supporting M Depth (m) 0, 4 - 0.8 Catch Data Mesh Size $\sim \psi + 1$ | (m): easurements (Temp. (°C) 23.74 Species | Max: <u>0,7</u> recorded at tim D.O. (mg/L) 8.51 | Time 7 e of net set) pH & 86 | : 10:20 an Min: 0.6 Cond. (µS/cm) | Time 1:33 Additional Cate | - ch Data on Separate Sheet?: Y/N Measurements on Separate Sheet? Y/N |
| Time: Station Depth Supporting M Depth (m) 0, 4 - 0.8 Catch Data | (m): easurements (Temp. (°C) 2.3.74 | Max: <u>0,7</u> recorded at tim D.O. (mg/L) 8.51 | Time 7 e of net set) pH & 86 | : 10:20 an Min: 0.6 Cond. (µS/cm) | Time 1:33 Additional Cate | - ch Data on Separate Sheet?: Y/N Measurements on Separate Sheet? Y/N |
| Time: Station Depth Supporting M Depth (m) 0, 4 - 0.8 Catch Data Mesh Size $\sim \psi + 1$ | (m): easurements (Temp. (°C) 23.74 Species | Max: <u>0,7</u> recorded at tim D.O. (mg/L) 8.51 | Time 7 e of net set) pH & 86 | : 10:20 an Min: 0.6 Cond. (µS/cm) | Time 1:33 Additional Cate | - ch Data on Separate Sheet?: Y/N Measurements on Separate Sheet? Y/N |
| Time: Station Depth Supporting M Depth (m) 0, 4 - 0.8 Catch Data Alesh Size $\sim \psi + 1$ | (m): easurements (Temp. (°C) 23.74 Species | Max: <u>0,7</u> recorded at tim D.O. (mg/L) 8.51 | Time 7 e of net set) pH & 86 | : 10:20 an Min: 0.6 Cond. (µS/cm) | Time 1:33 Additional Cate | - ch Data on Separate Sheet?: Y/N Measurements on Separate Sheet? Y/N |
| Time: Station Depth Supporting M Depth (m) 0, 4 - 0.8 Catch Data Alesh Size $\sim \psi + 1$ | (m): easurements (Temp. (°C) 23.74 Species | Max: <u>0,7</u> recorded at tim D.O. (mg/L) 8.51 | Time 7 e of net set) pH & 86 | : 10:20 an Min: 0.6 Cond. (µS/cm) | Time 1:33 Additional Cate | - ch Data on Separate Sheet?: Y/N Measurements on Separate Sheet? Y/N |
| Time: Station Depth Supporting M Depth (m) 2, 4 - 0.8 Catch Data Alesh Size $\sim y + 1$ | (m): easurements (Temp. (°C) 23.74 Species | Max: <u>0,7</u> recorded at tim D.O. (mg/L) 8.51 | Time 7 e of net set) pH & 86 | : 10:20 an Min: 0.6 Cond. (µS/cm) | Time 1:33 Additional Cate | - ch Data on Separate Sheet?: Y/N Measurements on Separate Sheet? Y/N |
| Time: Station Depth Supporting M Depth (m) 0, 4 - 0.8 Catch Data Alesh Size $\sim \psi + 1$ | (m): easurements (Temp. (°C) 23.74 Species | Max: <u>0,7</u> recorded at tim D.O. (mg/L) 8.51 | Time 7 e of net set) pH & 86 | : 10:20 an Min: 0.6 Cond. (µS/cm) | Time 1:33 Additional Cate | - ch Data on Separate Sheet?: Y/N Measurements on Separate Sheet? Y/N |
| Time: Station Depth Supporting M Depth (m) 0, 4 - 0.8 Catch Data Mesh Size $\sim \psi + 1$ | (m): easurements (Temp. (°C) 23.74 Species | Max: <u>0,7</u> recorded at tim D.O. (mg/L) 8.51 | Time 7 e of net set) pH & 86 | : 10:20 an Min: 0.6 Cond. (µS/cm) | Time 1:33 Additional Cate | - ch Data on Separate Sheet?: Y/N Measurements on Separate Sheet? Y/N |
| Time: Station Depth Supporting M Depth (m) 2.4 - 0.8 Catch Data Mesh Size $a \neq 1$ | (m): easurements (Temp. (°C) 23.74 Species | Max: <u>0,7</u> recorded at tim D.O. (mg/L) 8 -51 | Time 7 e of net set) pH & 86 | : 10:20 an Min: 0.6 Cond. (µS/cm) | Time 1:33 Additional Cate | - ch Data on Separate Sheet?: Y/N Measurements on Separate Sheet? Y/N |

| Ć | 1 | ¢7 | | |
|---|---|----|----|----|
| S | 1 | 1 | | |
| M | | 1A | 1 | |
| | | | | |
| | S | Ma | mí | ec |

Creek Creek

| Station # 9F-9 Project Name Osw Lake |
|---|
| Watercourse Name $V - 48 / 17$ Project Name $V - 48 / 17$ Project # [109.6077] |
| Photos 9723 9729 Field Staff Joe Love Mitch Ellen |
| Date 2012/08/27 Time 12:37 pm |
| Weather conditions in previous 24 hrs Saturd Slovers, Fog n North GPS Coordinates (Zone) 16 T E 688850 N S227497 Datum NAD83 |
| GPS Coordinates (Zone) 16T E 688850 N S227497 Datum NAD83 Descriptive Location Creek & 12-Inc und before W47 Lake W49 Lake |
| Descriptive Location |
| Water Quality Dissolved Oxygen (mg/L) 8.25 pH_7.35 Conductivity (µS/cm) 15 |
| Water Temperature (°C) <u>24,46</u> Time <i>in situ</i> measurements taken <u>12,48 pm</u> |
| Watercourse Dimensions & Morphology |
| Mean Watercourse WidthImage: Argent and the second sec |
| Evidence of eroding banks, Comments on bank stability |
| Substrate (% cover) |
| Bedrock_ <u>3</u> Cobble_ <u>20</u> Sand_ <u>20</u> Silt_ Muck |
| Boulder 30 Gravel Clay Marl Detritus |
| Cover Types Present (circle): Undercut Banks Deep Pool Watercress Aquatic Veg Overhanging Vegetation Woody Debrie Boulder Other |
| Riparian Zone |
| Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional) |
| Adjacent Land Use Waturd Forest |
| Fish Habitat Potential |
| Critical Habitat (spawning or nursery areas, groundwater upwellings) |
| Migratory Obstructions (seasonal, permanent) Dry week-bed us eds of port, bewe dams alog week |
| Note any fish observations <u>Cyperists</u> in pord, |
| Waterbody Notes |
| Natural Watercourse Trapezoidal Channel Grassed Swale Buried Tile Surficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Dry |
| Other Habitat Notes, Incidental Wildlife Observations, etc. |
| Green Frogs |
| Field Notes Authored by <u>Toc Kon</u> Field Notes QA/QCed by <u>MSMc</u> |

| | | Fishing R | ecord and | Catch Results (| passive collection | n methods) Page of |
|--------------------------------------|---|----------------|---------------------------------------|------------------------------|--|-------------------------------------|
| Stantec Project Numb | er 160 | 09607 | 71 | | Station Number | 9F-9 |
| Project Name | | r Lahe | | | Lift / Haul / Pass No. | 9F-9 1 |
| Waterbody Na | | | ned | | Date (www.mmdd) | 2012/08/27 |
| | ame. <u>v</u> | one Mit | ned rch Ellah | | Date (yyymmou). | |
| Field Staff: | <u> </u> | | | | | <u> </u> |
| Fishing Metho | od (check one) ar | nd Gear Specs: | | _Gillnet No. o | f Panels: Mesh | Sizes: |
| | • | | • | Trap Net | | |
| | | | | _Hoop Net | · · · · · · · · · · · · · · · · · · · | |
| | | | 2X | _Minnow Trap | | |
| | · . · . · . · . · . | Δ | <u>_</u> | _Other (specify) | | |
| Descriptive Lo | ocation of Station | Pord (| ~ W48 | | | |
| | an taon 1997. An taon 1997 - An taon 1997. An taon 1997 - An taon 1997. | | · · | · | | |
| UTM Coordina | ates: | zone 6T | Easting | 688850 | Northing 52 | 227497 |
| SET: Date: | 2012/04 | 3127 | LIFT: Date | 2012/08/28 | Total Netting Hours (| approx.) 21 lug. |
| Time. | 1213600 | | Time [.] | 10:00 mm | 、 | |
| 7 1110. | | | | | | |
| Station Depth Supporting N Depth (m) | leasurements (r Temp. (°C) | | 4 | Min: , 2 ν | Time t21.56a | ~ |
| 0,20 | 24.46 | 8,25 | 7,35 | 115 | (2.13 | |
| | | | | | Additional Cat | ch Data on Separate Sheet?: Y/N |
| | | | | | ۹. | Measurements on Separate Sheet? Y/N |
| | | · · · | | | | |
| Catch Data | | | 1 | | | |
| Mesh Size | Species | | Number | | | Comments (i.e. age, disease, etc.) |
| 2pt+1 | Fatled Mm | | AABA | | | |
| 47 | Northan Red Faitlend MI | | X X X X X X X X X X X X X X X X X X X | | ····· | - |
| NO L | | 4 | | | | |
| | N. Sharles | lellis Dace | | r (36) | | |
| | Northraked | Kelly Dace | NNN | F. (36) | | |
| | Northraked | Itely Dace | | Г. <u>(36)</u> | · · · · · · · · · · · · · · · · · · · | |
| | No Alva Red | Itely Dace | | <u>. (36)</u> | ······································ | |
| | Nothinked | (belly Dace | | [<u>3</u> 6] | · · · · · · · · · · · · · · · · · · · | |
| | Northmed | Ibely Dace | | [<u>3</u> 6] | · · · · · · · · · · · · · · · · · · · | |
| | Nothinked | Ibelly Dace | | [<u>3</u> 6] | · · · · · · · · · · · · · · · · · · · | |
| | Nothinked | Ibelly Dace | | <u>.</u> <u>3</u> <u>b</u> . | · · · · · · · · · · · · · · · · · · · | |

W: Versource Internal Info and Teams VAquatic Resources IField Sheets Stantec Form 05 Net Set Record and Catch Results Updated 2012.xlsx





| a |
|--|
| Station # 9F-8 Project Name Bow Lake |
| Watercourse Name W. 49. When Unknown Project # 1609 6077 |
| Photos 9717 - 9722 Field Staff Joe Kune Mitch Ellah |
| Date $2012/08/27$ Time 12^{10} m |
| Weather conditions in previous 24 hrs sattend Shores, Furth warning |
| GPS Coordinates (Zone) $16T$ E 68909 N 6727433 Datum $NAD3$ |
| Descriptive Location Later W49 C Stead of Project Area west dE W53 e W55 |
| |
| Water Quality 7,27 pH_7,18 Conductivity (µS/cm)_30 Dissolved Oxygen (mg/L)_7,27 pH_7,18 Conductivity (µS/cm)_30 Water Temperature (°C)_24 52°C Air Temperature (°C)_25°C Time in situ measurements taken12',12 ym |
| Watercourse Dimensions & Morphology Mean Watercourse Width(m) Maximum Pool Depth2 ~ +(cm) Mean Bankfull Width(m) Mean Water Depth(5.5 - 1 ~ est (cm)) % Riffle % Pool% Run% Flat Evidence of eroding banks, Comments on bank stability |
| |
| Substrate (% cover) |
| Bedrock ¹⁰ Cobble ¹⁰ Sand Silt ¹⁰ Muck |
| Boulder 20 Gravel Clay Marl 20 Detritus |
| |
| In-water Cover |
| Cover Types Present (circle):Undercut Banks (Deep Pool Watercress Aquatic Veg/ |
| Overhanging Vegetation (Woody Debris) Boulder Other |
| Riparian Zone Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional) <u>ZG70</u> Adjacent Land Use Natural Prest, mixed |
| Netrici Porse, univers |
| Fish Habitat Potential Critical Habitat (spawning or nursery areas, groundwater upwellings) |
| Migratory Obstructions (seasonal, permanent) |
| Note any fish observations Cypenth's same, Pike observed more visit! |
| |
| Waterbody Notes |
| Natural Watercourse Trapezoidal Channel Grassed Swale Buried Tile |
| Surficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg / Dry |
| Other Habitat Notes, Incidental Wildlife Observations, etc. publes of Nuglar & Potaniguen - |
| nymohaea |
| |
| |
| Field Notes Authored by Field Notes QA/QCed by MENal |
| |

| Stantec Project Numb | ber 16 | 0960771 | | | Station Number | 97-8 |
|--|--|---|-------------------------------|-----------------|------------------------|---|
| Project Name | e: Disu | · Lahe | and the second | | Lift / Haul / Pass No. | |
| | . 11 | | | | | 2012/08/27 |
| Waterbody Name: $V49 - Unburn Labe Date (yyymmdd): 2012/08/27 Field Staff: \bigcirc ve keve Nibe Ellabe Oile Ellabe Date (yyymmdd): 2012/08/27 Fishing Method (check one) and Gear Specs: Gillnet No. of Panels: Mesh Sizes: $ | | | | | | |
| Waterbody Name: $V49 - Unlum Ldu Date (yyyymmdd): 2012/08/27 Field Staff: Oue low low Nith Ellah No. of Panels: Mesh Sizes: Fishing Method (check one) and Gear Specs: Gillnet No. of Panels: Mesh Sizes: Trap Net Hoop Net 2x Minnow Trap Other (specify) Other (specify) Descriptive Location of Station UTM Coordinates: Zone I6T Easting L89 611 Northing Size7 433 SET: Date: 2012/08/27 LIFT: Date 2012/09/27 Total Netting Hours (approx.) 21.5 Lm3 Station Depth (m): Max: I.4 m Min: 0.30 Supporting Measurements (recorded at time of net set) Depth (m) Temp. (°C) D.0. (mgl/) pH Cond. (µS/cm) Time 12!17 pm $ | | | | | | |
| Fishing Method (check one) and Gear Specs: Gillnet No. of Panels: Mesh Sizes: Trap Net Hoop Net $2 \times$ Minnow Trap Other (specify) Other (specify) Descriptive Location of Station Image: Specify Specify UTM Coordinates: Zone 16T Easting 287.611 Northing 5727.433 SET: Date: $2012/08/27$ LIFT: Date $2012/08/27$ Total Netting Hours (approx.) 21.5 Lu.s. Station Depth (m): Max: 1.4 m Min: 0.30 Supporting Measurements (recorded at time of net set) Time: 0.30 Time $12!17$ pm | | | | | | |
| • | an di sa di sa | an a | | Hoop Net | | in the second |
| | | · · · · | 2x | Minnow Trap | | |
| | | | | Other (specify) | | |
| Descriptive L | agation of Station | | | | | |
| Descriptive L | ocation of Station | l | | | | |
| UTM Coordin | nates: | zone 16T | Eastin | g 689091 | Northing 52 | 27433 |
| SET: Date: | 2012/08, | 127 | LIFT: Date | 2012/08/27 | Total Netting Hours (| approx.) 21.5 hz. |
| | | | | | | |
| | | | | | | |
| | | 1 | | 6 | | |
| - 1. 14 1 1 | | 1 | 4n | _Min: 0.30 |) | |
| - 1. 14 1 1 | | 1 | 4n | _Min: | <u>)</u> | |
| Station Depth | h (m): | Max: | 2 | _Min: | | |
| Station Depth | h (m): Measurements (| Max: | ne of net set) | Cond. (µS/cm) |) | |
| Station Depth Supporting I Depth (m) | h (m): Measurements (Temp. (°C) | Max: | ne of net set) pH | Cond. (µS/cm) |) | |
| Station Depth Supporting I Depth (m) | h (m): Measurements (Temp. (°C) | Max: | ne of net set) pH | Cond. (µS/cm) | Time 12:17 per- | |
| Station Depth Supporting I Depth (m) | h (m): Measurements (Temp. (°C) | Max: | ne of net set) pH | Cond. (µS/cm) | Time 12:17 per- | - ch Data on Separate Sheet?: Y/N |
| Station Depth Supporting I Depth (m) | h (m): Measurements (Temp. (°C) | Max: | ne of net set) pH | Cond. (µS/cm) | Time 12:17 per- | - ch Data on Separate Sheet?: Y/N |
| Station Depth Supporting I Depth (m) D.20 | h (m): Measurements (Temp. (°C) | Max: | ne of net set) pH | Cond. (µS/cm) | Time 12:17 per- | - ch Data on Separate Sheet?: Y/N |
| Station Depth Supporting I Depth (m) O, 2 O Catch Data | h (m): <u>Measurements (</u> <u>Temp. (°C)</u> <u>2.५.รา</u> | Max: | pH 7,18 | Cond. (µS/cm) | Time 12:17 per- | - ch Data on Separate Sheet?: Y/N Measurements on Separate Sheet? Y/N |
| Station Depth Supporting I Depth (m) D.20 Catch Data Mesh Size | h (m): Measurements (Temp. (°C) | Max: recorded at tin D.O. (mg/L) 7.27 | ne of net set) pH 7, 18 | Cond. (µS/cm) | Time 12:17 per- | - ch Data on Separate Sheet?: Y/N |
| Station Depth Supporting I Depth (m) O.20 Catch Data Mesh Size | h (m): Measurements (Temp. (°C) 24.52 Species Create Char | Max: recorded at tin D.O. (mg/L) 7.27 | ne of net set) pH 7, 18 | Cond. (µS/cm) | Time 12:17 per- | - ch Data on Separate Sheet?: Y/N Measurements on Separate Sheet? Y/N |
| Station Depth Supporting I Depth (m) D.20 Catch Data Mesh Size | h (m): Measurements (Temp. (°C) 24.52 Species Create Char | Max: recorded at tin D.O. (mg/L) 7.27 | Number | Cond. (µS/cm) | Time 12:17 per- | ch Data on Separate Sheet?: Y/N Measurements on Separate Sheet? Y/N Comments (i.e. age, disease, etc.) |
| Station Depth Supporting I Depth (m) D.20 Catch Data Mesh Size | h (m): Measurements (Temp. (°C) 24.52 Species Creak Chu North Pull Falbert MI Creak Chu | Max: recorded at tin D.O. (mg/L) 7.27 Ab Setty Decc N v bvv | Number | Cond. (µS/cm) | Time 12:17 per- | - ch Data on Separate Sheet?: Y/N Measurements on Separate Sheet? Y/N |
| Station Depth Supporting I Depth (m) $\overline{D.20}$ Catch Data Mesh Size $2^{\circ}p \pm 1$ | h (m): Measurements (Temp. (°C) 24.52 Species Crcch Chu No No Dal | Max: recorded at tin D.O. (mg/L) 7.27 Ab Setty Decc N v bvv | Number | Cond. (µS/cm) | Time 12:17 per- | ch Data on Separate Sheet?: Y/N Measurements on Separate Sheet? Y/N Comments (i.e. age, disease, etc.) |
| Station Depth Supporting I Depth (m) $\overline{D.20}$ Catch Data Mesh Size $2^{\circ}p \pm 1$ | h (m): Measurements (Temp. (°C) 24.52 Species Creak Chu North Pull Falbert MI Creak Chu | Max: recorded at tin D.O. (mg/L) 7.27 Ab Setty Decc N v bvv | Number | Cond. (µS/cm) | Time 12:17 per- | ch Data on Separate Sheet?: Y/N Measurements on Separate Sheet? Y/N Comments (i.e. age, disease, etc.) |
| Station Depth Supporting I Depth (m) $\overline{O.20}$ Catch Data Mesh Size $^{2}P \pm 1$ | h (m): Measurements (Temp. (°C) 24.52 Species Creak Chu North Pull Falbert MI Creak Chu | Max: recorded at tin D.O. (mg/L) 7.27 Ab Setty Decc N v bvv | Number | Cond. (µS/cm) | Time 12:17 per- | ch Data on Separate Sheet?: Y/N Measurements on Separate Sheet? Y/N Comments (i.e. age, disease, etc.) |
| Station Depth Supporting I Depth (m) $\overline{O, 20}$ Catch Data Mesh Size $2 p \pm 1$ | h (m): Measurements (Temp. (°C) 24.52 Species Creak Chu North Pull Falbert MI Creak Chu | Max: recorded at tin D.O. (mg/L) 7.27 Ab Setty Decc N v bvv | Number | Cond. (µS/cm) | Time 12:17 per- | ch Data on Separate Sheet?: Y/N Measurements on Separate Sheet? Y/N Comments (i.e. age, disease, etc.) |
| Station Depth Supporting I Depth (m) $\overline{D.20}$ Catch Data Mesh Size $2^{\circ}p \pm 1$ | h (m): Measurements (Temp. (°C) 24.52 Species Creak Chu North Pull Falbert MI Creak Chu | Max: recorded at tin D.O. (mg/L) 7.27 Ab Setty Decc N v bvv | Number | Cond. (µS/cm) | Time 12:17 per- | ch Data on Separate Sheet?: Y/N Measurements on Separate Sheet? Y/N Comments (i.e. age, disease, etc.) |
| Station Depth Supporting I Depth (m) $\overline{O.20}$ Catch Data Mesh Size $2^{\circ}p \pm 1$ | h (m): Measurements (Temp. (°C) 24.52 Species Creak Chu North Pull Falbert MI Creak Chu | Max: recorded at tin D.O. (mg/L) 7.27 Ab Setty Decc N v bvv | Number | Cond. (µS/cm) | Time 12:17 per- | ch Data on Separate Sheet?: Y/N Measurements on Separate Sheet? Y/N Comments (i.e. age, disease, etc.) |

W: vesource Internal Info and Teams Aquatic Resources I Field Sheets Stantec I Form 05 Net Set Record and Catch Results Updated 2012 xlsx

| WIND FARM WATERBODY RAPID ASSESSMENT FORM |
|---|
| Stantec |
| Station # <u>9F-1</u> Watercourse Name <u>unnamed</u> Photos <u>//06 - ///04</u> Date <u>July // J2</u> Weather conditions in previous 24 hrs <u>Hot</u> , <u>mastly clear</u> , <u>no rain</u> GPS Coordinates (Zone) <u>16T</u> <u>E</u> 629 307 Descriptive Location <u>~ 60m JE of inter section</u> <u>of nite 67 Road</u> |
| Water Quality |
| Dissolved Oxygen (mg/L) $\frac{9.64}{17,20}$ pH $\frac{6.2}{17}$ Conductivity (μ S/cm) 20 Water Temperature (°C) $\frac{17,20}{15:25}$ Air Temperature (°C) $\frac{~24'C}{~24'C}$ Time <i>in situ</i> measurements taken $\frac{15:25}{15:25}$ |
| Watercourse Dimensions & Morphology |
| Mean Watercourse Width2m (m)Maximum Pool Depth~ 3D (cm)Mean Bankfull Width5m (m)Mean Water Depth~ 5 (cm)50% Riffle10% Pool20% Run2050% Riffle10% Pool20% Run20% FlatEvidence of eroding banks, Comments on bank stabilitySome under |
| |
| Substrate (% cover) Bedrock <u>30</u> Cobble <u>20</u> Sand Silt Muck <u>20</u> Boulder <u>25</u> Gravel <u>Clay Marl 5</u> Detritus |
| In-water Cover Cover Types Present (circle): Undercut Banks Deep Pool Watercress Aquatic Veg Overhanging Vegetation Woody Debris Boulder Other |
| Riparian Zone Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional) 100 % Shaded Mature Deciduous |
| Adjacent Land Use Natural - Forest, lake |
| Fish Habitat Potential Possible Brook Trout spowning habitat in lower seach near Critical Habitat (spawning or nursery areas, groundwater upwellings) Home but May support downstieum ther mal rogimes Migratory Obstructions (seasonal, permanent) |
| Migratory Obstructions (seasonal, permanent) |
| Tow Flow, steep gradient Note any fish observations <u>Some Small Fish observed</u> , microue traps set |
| Waterbody Notes Natural Watercourse Trapezoidal Channel Grassed Swale Buried Tile Surficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Dry |
| Other Habitat Notes, Incidental Wildlife Observations, etc. Direction of the spawning survey here. Cray First present. |
| Field Notes Authored by Mike Johns Field Notes QA/QCed by MEUL |

1

| | ce Wind Farm | Station Number | <u>9F-1</u> | |
|--|---|--|--|------------|
| Project Number 1609 607 | 34 | Pass No. (if applicable | e) <i>NA</i> | |
| Photos 1106 -1 | | Date (yyyymmdd): | July 11/12 | |
| Descriptive Location Trim | Lake Road at | 4TV Bridge | ~ | |
| | | | | |
| UTM coordinates 689 | $\frac{50}{50}$ easting $\underline{5}$ | 227 552 | northing zone | T |
| Fishing Method (circle one): | Backpack Ba | | ake Minnew Trap | X |
| Sampling Method (circle one): | even habitat | transect . | spet | (on |
| Effort (Electrofishing Seconds): | Number of Nette | ers: | Number of Anodes: | - br |
| Settings | • | | | - 1 |
| Frequency (Hz) | Voltage (volts) Cu | | Power (Watts) | - 10 |
| Station Information | * * | · · · · · · · · · · · · · · · · · · · | et July 11, 2012 (Fil: July 12, 2012 @ | = 13 09 |
| Length of Stream Surveyed (m) | ~ 100 m | • • | | |
| Station Characteristics: Chanc / | Width (m): Range $3 - \zeta_{1}$ | | <u>5 m</u> | |
| | Depth (m): Range $O - C$ | Average: | 5 | |
| Water Clarity/Colour: <u>Clean</u> | 1, colous less Water | /elocity if Measured (m/s): | 0-0.9 Time 15: | 20 |
| Temperature (°C) <u>17.</u> | | Conductivity (uS/cm) | <u>20</u> 8.9/ | |
| pH <u>6.2</u> Catch Data | <u> </u> | Dissolved Oxygen (mg/L) | 8.7/ | |
| Species | Number of Fish | | Comments (i.e. age, disease, e | tc); |
| Brook Trout | 11/1 | (4) | one of which is YO | 54 |
| Creek Chub | Htt # ++ | (16) | | |
| Fathead minnow | ++++- 1 | 0 | | |
| White Sucker | | \bigcirc | | |
| Northern Redbelly Do | ce ++++ 1 | 6 | | - |
| Blacknose Dace | | ₩₩₩₩ (4 | 7/ | |
| د همه ه همه و هم و هم و ما و ما و ما و ما | | | | |
| | •==== | | | |
| | | , , , , , , , , , , , , , , , , , , , | | |
| | · . | | | |
| 미석 비 비 위 위상 비 위 두 가 가 이 것 같이 이 것 이 이 이 이 이 이 ~ 우리 두 주 만 느 두 두 | | - | | |
| و مع من حد من | | | | |
| | | ، چو چې و خون که د و وې ی ی و چو و م چو و کو و و و | • | |
| و مع بالنام مع بالله الله بالم مع بالله الله من مع مع الله الله الله مع مع الله الله مع الله مع الله م | | ند وه ی مالد و من د م زر و به محکله با از گلال نی ب | | · |
| · · · · · | | | | |
| Crayfish | | | | |
| / | | | | |

• 22.5



| Station # <u>9-F-7</u> Project Name Bow Loke |
|--|
| Watercourse Name Unknown W33 Project # 16966771 |
| Photos 9713 - 1716 Field Staff Dallen Motol Ellah |
| Date 2012/05/27 Time 11:45-1- |
| Weather conditions in previous 24 hrs safferd Shruers - fog , morning |
| GPS Coordinates (Zone) 16^{1} E 689.456 N 522.7803 Datum $NH053$ |
| Descriptive Location WG3 whe day -only weleven and - hest of WSS, Such of acquired |
| @ Ske and of project prin |
| Water Quality $pH_7.49$ Conductivity (μ S/cm) 29 Dissolved Oxygen (mg/L) 6.9 $pH_7.49$ Conductivity (μ S/cm) 29 Water Temperature (°C) 20.39 Air Temperature (°C) $25°C$ Time in situ measurements taken 114446 |
| Watercourse Dimensions & Morphology Mean Watercourse Width 1.2-1.5 (m) Maximum Pool Depth 0.5 m (cm) Mean Bankfull Width Flow plan - Index (m) 0.5 Mean Water Depth 0.3 m (cm) 257. % Riffle 257. % Pool 500 % Run (cm) Evidence of eroding banks, Comments on bank stability Mean stability |
| Substrate (% cover) |
| Bedrock Cobble 10 Sand 10 20 Silt Muck |
| 2672 Boulder Gravel 20 30 Clay Marl 35 Detritus |
| |
| In-water Cover |
| Cover Types Present (circle): Undercut Banks Deep Pool Watercress (Aquatic Veg) |
| Overhanging Vegetation Woody Debris Boulder Other |
| Riparian Zone Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional) <u>6070 - viparise veg</u> (32 V <u>72 Week</u> grasses Adjacent Land Use (Mu ud, forest |
| |
| Fish Habitat Potential Critical Habitat (spawning or nursery areas, groundwater upwellings) |
| Migratory Obstructions (seasonal, permanent) |
| Note any fish observations Cyprords pools |
| Waterbody Notes Natural Watercourse Trapezoidal Channel Grassed Swale Buried Tile Surficial Drainage (i.e. furrows) Dugout Pond |
| Other Habitat Notes, Incidental Wildlife Observations, etc. |
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| Field Notes Authored by Field Notes QA/QCed by MS.Mal |
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| STA. | | | | | | | | | | |
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| Stantec Project Numb | ber 160 | 596077 | · · | | Station Numb | ber and a | 9F | -7 | | |
| Project Name | | w Labe | | · · · · · · | Lift / Haul / Pa | | - | · . | | · |
| • | ~ | 3. Unker | | | Date (yyyymn | | 2012/0 | 00/27 | <u></u> | |
| Vaterbody N | | ve ch | | 1 | Date (yyyyiiii) | nuu). | | | | |
| Field Staff: | Vor her | he cr | LIDON EN | avi | | | | | · · · · · | ····· |
| ishing Meth | od (check one) a | nd Gear Specs: | <u></u> | _Gillnet No | o. of Panels: | _Mesh S | Sizes: | · | | |
| • | | | | Trap Net | | | · · · · · · · · · · · · · · · · · · · | <u></u> | | <u> </u> |
| | | | - | Hoop Net | | | · . | | | |
| | | | 2X | _Minnow Trap | · · · · · · · · · · · · · · · · · · · | | | • | | <u>. </u> |
| · · · | | | | _Other (specify) | | | | | ù | |
| Descriptive L | ocation of Statior | pestol | W-55L | ale OSOFF | Bear Vate. (0 | لمار | e WE | 3 | | |
| | | · | | | ~ | | | - | | |
| JTM Coordin | nates: | Zone 167 | Easting | 689 456 | Northin | <u>g </u> 572 | 7803 | > | | |
| SET: Date: | 2012/69 | 3/27 | LIFT: Date | 2012/08/2 | 8 Total Netting | g Hours (a | approx.) | 22 | | . · |
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| | 1 | <u> </u> | Time: | <u>9:30 a</u> Min: <u>0.3</u> | • | | • • • | | | |
| Station Depth | n (m): Measurements (| Max:, | Time: 5 | <u> </u> | <u> </u> | 44az | | | | |
| Station Depth Supporting I Depth (m) | n (m): Measurements (Temp. (°C) | Max: <u>D</u> , | Time: 5 ne of net set) pH | 9:30 am | <u> </u> | 44a- | | | | |
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Wiresource\Internal Info and Teams\Aquatic Resources\Field Sheets\Stantec\Form 05 Net Set Record and Catch Results Updated 2012.xlsx



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| Dissolved Oxygen (mg/L) <u>6.90</u> pH <u>5.22</u> Conductivity (μ S/cm) <u>19</u> Water Temperature (°C) <u>20°C</u> Air Temperature (°C) <u>20°C</u> Watercourse Dimensions & Morphology Mean Watercourse Width <u>1.7</u> (m) Maximum Pool Depth <u>70</u> (cm) Mean Bankfull Width <u>2.0</u> (m) Mean Water Depth <u>10</u> (cm) <u>J0</u> % Riffle <u>10</u> % Pool <u>10</u> % Run <u>70</u> % Fla Evidence of eroding banks, Comments on bank stability <u>Na erodim backs</u> . <u>Stable backfina worfland Area</u> Substrate (% cover) <u>Bedrock 5</u> Cobble <u>30</u> Sand <u>5</u> Silt Muck Boulder <u>30</u> Gravel <u>Clay</u> <u>Marl 30</u> Detritus In water Cover Cover Types Present (circle): <u>Undercut Banks</u> <u>Deep Pool</u> Watercress <u>Quatic Veg</u> Overhanging Vegetation <u>Woody Debris</u> Boulder Other Riparian Zone Riparian Zone Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional) <u>10⁷ 6 Gott Riparian Cove</u> <u>Adjacent Land Use</u> <u>Adjacent Land Kersol</u> <u>and gravel Faad</u> Fish Habitat Potential Critical Habitat (spayming or nursery areas, groundwater upwellings) <u>Browides Publicat For all Life Stages of Fas. Jent Fish / Cyption: 45</u> Migratory Obstructions (seasonal, permanent) Note any fish observations <u>Northern Ledbrilly</u> Place observed, see Fish <i>Collection Ferm</i> Waterbody Notes | | A |
|--|--|--|
| Photos IIII -III4 Field Staff <u>Nike Johns, Mike Elleh</u> Date JULy IZ Time <u>Nike Johns, Mike Elleh</u> Date JULy IZ Date <u>Nike Johns, Mike Elleh</u> Date JULy IZ Date <u>Nike Johns, Mike Elleh</u> Date <u>Nike Johns, Mike Johns, Mike Elleh</u> Date <u>Nike Elleh</u> GPS Coordinates (Zone) <u>IE</u> <u>AB</u> <u>15</u> N S228 Q21 Date Date Descriptive Location <u>Nike Staff</u> N S228 Q21 Date Date <u>Nike Staff</u> <u>Nike Staff</u> Water Cuality <u>Inkess</u> <u>SE Forgossed</u> <u>Inkise</u> <u>Nike Staff</u> <u>Nike Staff</u> <u>Nike Staff</u> Water Cuality <u>Disobved</u> Oxygen (mg/L) <u>6.90</u> <u>PH</u> <u>5.82</u> Conductivity (µS/cm) <u>19</u> Water Temperature (°C) <u>2.02</u> <u>Nike Staff</u> <u>Nike Staff</u> <u>Nike Staff</u> <u>Nike Staff</u> Water Temperature (°C) <u>2.02</u> <u>Nike Staff</u> | Station # $9F-2$ | |
| Date July | | |
| Weather conditions in previous 24 hrs Summy no precipitation in the sum in | | Field Staff Mike Johns Mitch Ellah |
| GPS Coordinates (Zone) 16T E C221/21 Datum NH083 Descriptive Location Mct and a concern from from from from from one destriction for the second state of the second st | | |
| Descriptive Location $\frac{\sqrt{t+1}}{\sqrt{t+1}} \frac{\sqrt{t+1}}{\sqrt{t+1}} \sqrt{t+1$ | Weather conditions in previous 24 hrs <u>Sun</u> | |
| Small Jake 5, ~ 560 m. SSE of proposed Turbing "37 location on east side of provided Oxygen (mg/L) 6.90 Pissolved Oxygen (mg/L) 6.90 pH 5.8.2 Conductivity (µS/cm) 19 Water Temperature (°C) 20° C Air Temperature (°C) 20° C Time in situ measurements taken 07:50 Jaky 12, 2012 Watercourse Dimensions & Morphology Mean Watercourse Width 1, 7 (m) Maximum Pool Depth 70 (cm) Maximum Pool Depth 70 (cm) Mean Watercourse Width 1, 7 (m) Mean Watercourse Width 1, 7 (m) Mean Watercourse Width 1, 7 (m) Mean Water Depth 70 (cm) Mean Watercourse Width 1, 7 (m) Mean Water Depth 70 (cm) Mean Water Depth 70 (cm) Mean Water Course (cm) Substrate (% cover) % Pool 10 % Riff 1 Boulder 30 Gravel Clay Mart 3.0 Detritus Invester Cover Cover Types Present (circle): Undercut Banks Deep Pool Watercress Quatic Veg Riparian Zone Riparian Zone Riparian Zone Subulder Guate Cover Gravel | GPS Coordinates (Zone) 61 E | |
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| Dissolved Oxygen (mg/L) <u>6.90</u> pH <u>5.22</u> Conductivity (µS/cm) <u>19</u> Water Temperature (°C) <u>20°C</u> Air Temperature (°C) <u>20°C</u> Watercourse Dimensions & Morphology Wean Watercourse Width <u>1.7</u> (m) Maximum Pool Depth <u>70</u> (cm) Mean Bankfull Width <u>2.0</u> (m) Mean Water Depth <u>10</u> (cm) <u>10</u> % Riffle <u>10</u> % Pool <u>10</u> % Run <u>70</u> % Fla Evidence of eroding banks, Comments on bank stability <u>No erosting banks</u> . <u>574 ble bankfing width</u> <u>2.0</u> (m) Mean Water Depth <u>10</u> (cm) <u>574 ble bankfing width</u> <u>2.0</u> (m) Mean Water Depth <u>10</u> (cm) <u>574 ble bankfing width</u> <u>2.0</u> (m) Mean Water Depth <u>10</u> % Run <u>70</u> % Fla Evidence of eroding banks, Comments on bank stability <u>No erosting banks</u> . <u>574 ble bankfing width</u> <u>2.0</u> (m) Mean Water Depth <u>10</u> (cm) <u>574 ble bankfing width</u> <u>2.0</u> (m) Mean Water Depth <u>10</u> (cm) <u>574 ble bankfing width</u> <u>2.0</u> (m) <u>80000</u> <u>9001</u> <u>10000</u> % Run <u>70</u> % Fla Evidence of eroding banks, Comments on bank stability <u>No erosting banks</u> . <u>574 ble bankfing width</u> <u>2.0</u> (m) <u>80000</u> <u>9001</u> <u>1000</u> % Run <u>7000</u> % Fla Evidence of eroding banks, Comments on bank stability <u>No erosting banks</u> . <u>574 ble bankfing width</u> <u>2.0</u> Gravel <u>Clay</u> <u>Marl 30</u> Detritus Inwater Cover Substrate (% cover) <u>Bedrock 5</u> Cobble <u>30</u> Sand <u>5</u> Silt <u>Muck</u> <u>Boulder 30</u> Gravel <u>Clay</u> <u>Marl 30</u> Detritus <u>1006 6000F</u> & <u>6000F</u> | Small lakes, ~560 m SSE of | proposed Turbing & St location, on east side of re |
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| Cover Types Present (circle): Undercut Banks Deep Pool Watercress Quatic Veg Overhanging Vegetation Woody Debris Boulder Other | Boulder <u>SO</u> Gravel | ClayDetritus |
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| Fish Habitat Potential Critical Habitat (spawning or nursery areas, groundwater upwellings) Brow des habitat for all life stages of rest dent fish print for all life stages of the stages of rest dent fish print for all life stages of the stages of th | Aujacent Land Use | al acapt soul |
| Critical Habitat (spawning or nursery areas, groundwater upwellings) Browides habit at for all life stages of resident fish / cyprinids Migratory Obstructions (seasonal, permanent) Note any fish observations Northern Redbelly Dace observed, see fish collection form Waterbody Notes Natural Watercourse Trapezoidal Channel Grassed Swale Buried Tile Surficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Dry Other Habitat Notes, Incidental Wildlife Observations, etc. Bull head Lillies | - Portar (we range , 2019) 0 | (Ng Clase) IVaa |
| Critical Habitat (spawning or nursery areas, groundwater upwellings) Browides habit at for all life stages of resident fish / cyprinids Migratory Obstructions (seasonal, permanent) Note any fish observations Northern Redbelly Dace observed, see fish collection form Waterbody Notes Natural Watercourse Trapezoidal Channel Grassed Swale Buried Tile Surficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Dry Other Habitat Notes, Incidental Wildlife Observations, etc. Bull head Lillies | Fich Habitat Potential | |
| Brow des habit at for all life stages of resident tish / cyprinids Migratory Obstructions (seasonal, permanent) Note any fish observations Nother Red belly Dace observed, see fish collection Form Waterbody Notes Trapezoidal Channel Grassed Swale Buried Tile Surficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Dry Other Habitat Notes, Incidental Wildlife Observations, etc. Buil head Lillies | | aroundwater upwellings) |
| Migratory Obstructions (seasonal, permanent) Note any fish observations <u>Northern Redbelly Dace observed</u> , <u>see Fish</u> <u>collection</u> Form Waterbody Notes Natural Watercourse Trapezoidal Channel Grassed Swale Buried Tile Surficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Dry Other Habitat Notes, Incidental Wildlife Observations, etc. <u>Bull head Lillies</u> | Provides pubil of For all life | staces of fest dent fish (cyprinids |
| Note any fish observations <u>Northern Red belly Dace observed</u> , <u>see Fish</u> <u>collection</u> Form Waterbody Notes Natural Watercourse Trapezoidal Channel Grassed Swale Buried Tile Surficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Dry Other Habitat Notes, Incidental Wildlife Observations, etc. <u>Bull head Lillies</u> | | |
| Collection Form Waterbody Notes | | |
| Collection Form Waterbody Notes Natural Watercourse Trapezoidal Channel Grassed Swale Buried Tile Surficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg Dry Other Habitat Notes, Incidental Wildlife Observations, etc | Note any fish observations Nosthern Red | belly Dace observed see fish |
| Waterbody Notes | | |
| Natural Watercourse \checkmark Trapezoidal Channel Grassed Swale Buried Tile Surficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg \checkmark Dry Other Habitat Notes, Incidental Wildlife Observations, etc. $\beta_{all}h_{ead}L:ll;es$ | | |
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| | | |
| Field Notes Authored by <u>Mike John 5</u> Field Notes QA/QCed by MEILL | Field Notes Authored by Plike John 5 Fie | Id Notes QA/QCed by |

| | e Wind Farm | Station Number | =-2 |
|---|-------------------------------|--|---|
| Project Number 1609 60 73 | | Pass No. (if applicable) | NA |
| Photos - | 114 | Date (yyyymmdd): | July 12/12 |
| Descriptive Location $400 $ | NE of Trim Lake | | |
| | | | • [] |
| JTM coordinates 6895 | <u>19</u> easting <u>5</u> | 228021 | |
| Fishing Method (circle one): Sampling Method (circle one): | Backpack Boat even habitat | Unit Model/Mal transect | spot spot |
| Effort (Electrofishing Seconds): | Number of Netter | s: Ni | umber of Anodes: |
| Settings | | | |
| requency (Hz) | Voltage (volts) Curr | ent (Amps) Po | ower (Watts) |
| Station Information | | 1 martine and the | |
| ength of Stream Surveyed (m) | 30m | | |
| Station Characteristics: | Width (m): Range / - 3 | Average: | 1.5 |
| | Depth (m): Range 0./0 | 0.60 Average: | 0.20 |
| | | | set time |
| Vater Clarity/Colour: | ean Water V | elocity if Measured (m/s): Conductivity (uS/cm) | Time <u>10:10</u> lift tim |
| pH S. | <u> </u> | Dissolved Oxygen (mg/L) | 6.90 10:25a |
| Catch Data | | | |
| Species | Number of Fish | | Comments (i.e. age, disease, etc): |
| | | | the second se |
| Creek Chub | | | A second sec second second sec |
| Creek Chub Northean Pearl Da | ce 11++ 111 | | a few fish in visible |
| Northern Pearl Da | | | a few fish in visible |
| | | | a few fish w visible |
| Northern Pearl Da | | | a few fish w visitle |
| Northern Pearl Da | | | <u>a few fish to visitle</u> |
| Northern Pearl Da | | | <u>a few fish w visitle</u> |
| Northern Pearl Da | | | <u>a few fish w visitle</u> |
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| Northern Pearl Da | | | <u>a few fish w visite</u> |
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Stantec

| Ar / |
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| Station # 9F-6 Project Name Bow Lahe |
| Watercourse Name Unlum Lalu WSS Project # 1609 60771 |
| Photos 9708-9712 Field Staff Toe Kone Mitch Ellan |
| Date 2012108/27 Time 11,10 cm |
| Weather conditions in previous 24 hrs sattered Slovers normy For |
| GPS Coordinates (Zone) 16T E 689656 N 5228076 Datum NAU 83 |
| Descriptive Location Pong WEG on South gode of access Road @ SE end of Inpet Location |
| Water Quality Dissolved Oxygen (mg/L) 8.80 pH 8.57 Conductivity (µS/cm) 16 Water Temperature (°C) 23.4 Air Temperature (°C) 24.0 Time in situ measurements taken 11,174 |
| Watercourse Dimensions & Morphology Mean Watercourse Width Lale (m) Maximum Pool Depth (cm) Mean Bankfull Width Lale (m) Mean Water Depth (cm) % Riffle % Pool % Run % Flat Evidence of eroding banks, Comments on bank stability % Style % Style |
| |
| Substrate (% cover) |
| Bedrock Cobble 20 Sand Silt 0 Muck Boulder 40 Gravel Clay Marl 10 Detritus |
| |
| In-water Cover |
| Cover Types Present (circle): Undercut Banks (Deep Pool) Watercress (Aquatic Veg) |
| Overhanging Vegetation Woody Debris Boulder Other |
| Riparian Zone Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional) <u><67. along Standard Material</u> Adjacent Land Use Nature Starts |
| |
| Fish Habitat Potential |
| Critical Habitat (spawning or nursery areas, groundwater upwellings) |
| Migratory Obstructions (seasonal, permanent) |
| Note any fish observations several Cyprists in shallors |
| |
| Waterbody Notes / Ldue |
| Natural Watercourse Trapezoidal Channel Grassed Swale Buried Tile |
| Surficial Drainage (i.e. furrows) Dugout Pond Dominated by Aquatic Veg / Dry |
| Other Habitat Notes, Incidental Wildlife Observations, etc. schools, Leyponds & redds, |
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| Field Notes Authored by Field Notes QA/QCed by |

| | | Fishing R | , • . | an a la companya da serie da s | · | | | - | |
|---|---|---|---|---|----------------|--|---|--|-------------|
| Stantec Project Numbe | er 160 | 96077 | | | Station 1 | lumber | 9F-6 | | |
| Project Name: | 0 | n Late | | | – Lift/Hau | ıl / Pass No. | The second second | ······································ | |
| Waterbody Na | | 55 - WI | kurn Lak | ف | . | yymmdd): | 2012/08 | 127 | |
| Field Staff: | FT or Ver | n. Mit | LEllah | · · · · | | ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,, | | | |
| | d (check one) and | | • | Gillnet | No. of Panels: | Mesh S | Bizes: | | · . |
| · ······ | | • | | – Trap Net | - | | · · · · · · · · · · · · · · · · · · · | · · | |
| | | | · | – Hoop Net | | - Standard - Stan | | | <u> </u> |
| | | | 2× | - Minnow Trap | | | · · · · · · · · · · · · · · · · · · · | · · · | · . |
| | | | | Other (specify) |) | | | | |
| Descriptive Lo | cation of Station | Nweid | lottake v | - | alless by | furn - | around | | |
| an the second | A., . | | | | | | | | |
| UTM Coordina | ites: | Zone 16T | Easting | g 68956 6 | 89656 No | orthing 52 | 28076 | | |
| | , Alexandre de la companya de la com | | | | | | · · · | | •. • _ • |
| | | | | | Total N | etting Hours (a | ipprox.) 22 h | -S. | |
| Time: | 11:15am | | Time: | 9:07 | 1 | | | • • • • | |
| | | | | | · | | | | |
| ~ | <u></u> | • • • • • • • • | | | 30 | | | | |
| Station Depth | <u></u> | Max: D | | | ,30 | | | | • • |
| | (m): | Max: <u>D</u> | ,65 | | ,30 | | | | • • |
| Supporting M | (m): leasurements (re | Max: | ,65 ne of net set) | _Min:O | | 11170 | | | • |
| Supporting M Depth (m) | (m): leasurements (re Temp. (°C) | Max: <u>()</u> ecorded at tin D.O. (mg/L) | ,65 ne of net set) pH | Min: D | | ',17an | ▲ ▲ | | |
| Supporting M | (m): leasurements (re | Max: | ,65 ne of net set) | _Min:O | - Time | | | | |
| Supporting M Depth (m) | (m): leasurements (re Temp. (°C) | Max: <u>()</u> ecorded at tin D.O. (mg/L) | ,65 ne of net set) pH | Min: D | - Time _ | Additional Cate | h Data on Separat | | |
| Supporting M Depth (m) | (m): leasurements (re Temp. (°C) | Max: <u>()</u> ecorded at tin D.O. (mg/L) | ,65 ne of net set) pH | Min: D | - Time _ | Additional Cate | | | Y/N |
| Supporting M Depth (m) | (m): leasurements (re Temp. (°C) | Max: <u>()</u> ecorded at tin D.O. (mg/L) | ,65 ne of net set) pH | Min: D | - Time _ | Additional Cate | h Data on Separat | | Y/N |
| Supporting M Depth (m) | (m): leasurements (re Temp. (°C) | Max: <u>()</u> ecorded at tin D.O. (mg/L) | ,65 ne of net set) pH | Min: D | - Time _ | Additional Cate | h Data on Separat | | Y/N |
| Supporting M Depth (m) Doctorial Depth Doctorial Depth (m) Doctorial Depth (m) Catch Data | (m): leasurements (re Temp. (°C) | Max: <u>()</u> ecorded at tin D.O. (mg/L) | ,65 ne of net set) pH | Min: D | - Time - | Additional Cate | h Data on Separat | eparate Sheet? | Y/N |
| Supporting M Depth (m) O I O Catch Data Mesh Size | (m): easurements (re Temp. (°C) 23:4 23:4 Species | Max: <u>()</u> ecorded at tin D.O. (mg/L) 7,80 | ,65 ne of net set) pH 8,57 Number | _Min: | - Time _ | Additional Cate | h Data on Separati leasurements on S | eparate Sheet? | Y/N |
| Supporting M Depth (m) D I D Catch Data Mesh Size | (m): easurements (re Temp. (°C) 23, 4 23, 4 Species | Max: <u>()</u> ecorded at tin D.O. (mg/L) 7,80 7,80 | ,65 pH 8,57 Number | _Min: | - Time - | Additional Cate | h Data on Separati leasurements on S | eparate Sheet? | Y/N |
| Supporting M Depth (m) ② . I Ø Catch Data Mesh Size ≫y dt= | (m): easurements (re Temp. (°C) 23:4 23:4 Species | Max: <u>()</u> ecorded at tin D.O. (mg/L) 7,80 7,80 | ,65 ne of net set) pH 8,57 Number | _Min: | - Time - | Additional Cate | h Data on Separati leasurements on S | eparate Sheet? | Y/N |
| Supporting M Depth (m) ② .1 ② Catch Data Mesh Size | (m): easurements (re Temp. (°C) 23, 4 23, 4 Species | Max: <u>()</u> ecorded at tin D.O. (mg/L) 7,80 7,80 | ,65 ne of net set) pH 8,57 Number | _Min: | - Time - | Additional Cate | h Data on Separati leasurements on S | eparate Sheet? | Y/N |
| Supporting M Depth (m) ② . I Ø Catch Data Mesh Size | (m): easurements (re Temp. (°C) 23, 4 23, 4 Species | Max: <u>()</u> ecorded at tin D.O. (mg/L) 7,80 7,80 | ,65 ne of net set) pH 8,57 Number | _Min: | - Time - | Additional Cate | h Data on Separati leasurements on S | eparate Sheet? | Y/N |
| Supporting M Depth (m) ② . I Ø Catch Data Mesh Size | (m): easurements (re Temp. (°C) 23, 4 23, 4 Species | Max: <u>()</u> ecorded at tin D.O. (mg/L) 7,80 7,80 | ,65 ne of net set) pH 8,57 Number | _Min: | - Time - | Additional Cate | h Data on Separati leasurements on S | eparate Sheet? | Y/N |
| Supporting M Depth (m) ② . I Ø Catch Data Mesh Size ≫y dt= | (m): easurements (re Temp. (°C) 23, 4 23, 4 Species | Max: <u>()</u> ecorded at tin D.O. (mg/L) 7,80 7,80 | ,65 ne of net set) pH 8,57 Number | _Min: | - Time - | Additional Cate | h Data on Separati leasurements on S | eparate Sheet? | Y/N |
| Supporting M Depth (m) ② . I Ø Catch Data Mesh Size ≫y dt= | (m): easurements (re Temp. (°C) 23, 4 23, 4 Species | Max: <u>()</u> ecorded at tin D.O. (mg/L) 7,80 7,80 | ,65 ne of net set) pH 8,57 Number | _Min: | - Time - | Additional Cate | h Data on Separati leasurements on S | eparate Sheet? | Y/N |
| Depth (m) D. I D <u>Catch Data</u> Mesh Size Put d= | (m): easurements (re Temp. (°C) 23, 4 23, 4 Species | Max: <u>()</u> ecorded at tin D.O. (mg/L) 7,80 7,80 | ,65 ne of net set) pH 8,57 Number | _Min: | - Time - | Additional Cate | h Data on Separati leasurements on S | eparate Sheet? | Y/N |
| Supporting M Depth (m) Depth (m) D I D D Catch Data Mesh Size | (m): easurements (re Temp. (°C) 23, 4 23, 4 Species | Max: <u>()</u> ecorded at tin D.O. (mg/L) 7,80 7,80 | ,65 ne of net set) pH 8,57 Number | _Min: | - Time - | Additional Cate | h Data on Separati leasurements on S | eparate Sheet? | Y/N |

W/resource/Internal Info and Teams/Aquatic Resources/Field Sheets/Stantec/Form 05 Net Set Record and Catch Results Updated 2012.xisx

QARC : Manah



X

| Station # <u>9F-3</u> Watercourse Name <u>Unnomed</u> Photos <u>1120 = 1129</u> Date <u>July 12/12</u> Weather conditions in previous 24 hrs <u>sunny</u> GPS Coordinates (Zone) <u>16T</u> <u>E 68977</u> Descriptive Location <u>820 m NE of inters</u> <u>mile</u> 67 Road | Project Name <u>Bow Lake Wind Farm</u> Project # <u>1609 60734</u> Field Staff <u>Mike Johns</u> <u>Mitch Elloh</u> Time <u>10:30</u> MD precip, light winds 9 <u>9</u> <u>N 5 228 233 Datum NH083</u> ection of Trim Lake Road and |
|--|---|
| Water Quality Dissolved Oxygen (mg/L) <u>8.47</u> pH_C Water Temperature (°C) <u>14.75</u> Time in situ measurements taken <u>10:30 AM</u> | Air Temperature (°C) ~ 2.4 |
| Watercourse Dimensions & Morphology Mean Watercourse Width 1.2 (m) Mean Bankfull Width 1.6 (m) 10 % Riffle 40 % Pool Evidence of eroding banks, Comments on bank state by boulders ord mass | Mean Water Depth <u>10</u> (cm) 1 <u>5</u> % Run <u>45</u> % Flat bility <u>Under curt</u> but stabilized |
| Substrate (% cover) Bedrock 30 Cobble 2 10 Boulder 25 Gravel | |
| In-water Cover Cover Types Present (circle): Undercut Ban Overhanging Vegetation Woody Debris | |
| Riparian Zone Riparian Cover (% of watercourse shaded, dominan <u>100 % (except For very shirt se</u> Adjacent Land Use Forest, Forest access For | nt vegetation, mature or early successional) action where shannel crosses (oud) |
| Fish Habitat Potential Critical Habitat (spawning or pursery areas, ground | |
| Note any fish observations Yoy Brook Tro by dip not No Further fis | hing conducted. |
| Waterbody Notes Natural Watercourse Trapezoidal Channel Surficial Drainage (i.e. furrows) Dugout Ponc | Grassed Swale Buried Tile Dominated by Aquatic Veg Dry |
| Other Habitat Notes, Incidental Wildlife Observa V-ry lov Flan July 12, 2012 and at present time and Flan rate, Wented Flaw over road, | 1 water flows sub-surface |
| Field Notes Authored by <u>Mike Johns</u> Field Notes | QA/QCed by MEILah |



A

WIND FARM WATERBODY RAPID ASSESSMENT FORM

Stantec

| a | |
|---|--|
| Station #77-57 | Project Name Bow Lake Wind Farm |
| Watercourse Name Unn am col | Project # 1609 60734 |
| Photos 1130 - 1132 (see ph, to log) | Field Staff Mike Johns, Mitch Ellah |
| Date July 12/12 | Time <u>11:05 AM</u> |
| Weather conditions in previous 24 hrs <u>clear</u> | |
| GPS Coordinates (Zone) 16T E 6898. | |
| Descriptive Location ~520 m east of | proposed Turbine 39 location |
| Tributory to 9F-3 | <i>, , , , , , , , , ,</i> |
| Water Quality | |
| Dissolved Oxygen (mg/L) pH | (D9 Conductivity (uS/cm) 20 |
| Water Temperature (°C)/ | Air Temperature (°C) ~ 24 |
| Time in situ measurements taken <u>11:15</u> A | All Temperature ($^{\circ}$) $^{\circ}$ $^{\circ}$ $^{\circ}$ $^{\circ}$ |
| Time in situ measurements taken <u>11,15 Ar</u> | 1 July 12, 2012 |
| Watercourse Dimensions & Morphology | |
| | Maximum Pool Depth 25 (cm) |
| Mean Bankfull Width 3.5 (m) | Mean Water Depth 5 (cm) |
| 5 % Riffle 40 % Po | |
| Evidence of eroding banks, Comments on bank st | |
| . |) = |
| Cubetyste (0/ enver) | |
| Substrate (% cover) | |
| | / SandSiltMuck |
| Boulder Gravel | ClayMarl /0Detritus |
| In-water Cover | |
| Cover Types Present (circle): Undercut Bar | hks Deep Pool Watercress Aquatic Veg |
| | Boulder Other |
| "Withware effective and | |
| Riparian Zone | |
| Riparian Cover (% of watercourse shaded, domina | ant vegetation, mature or early successional) |
| 100% Fiberian Shading, mat | ure maple stand |
| Aujacent Lanu USe | ¢. |
| Forest | |
| Fish Habitat Detential | |
| Fish Habitat Potential | n |
| Critical Habitat (spawning or nursery areas, ground | |
| <u>Potential</u> <u>Brook</u> <u>Trail</u> <u>spewn</u> Migratory Obstructions (seasonal, permanent) | · My |
| Low Flow _ isolated pools | |
| Note any fish observations <u>Brock</u> Trout obse | used is isolated pools. |
| Note any non-observations <u>state</u> (rant observations | Ved is ISOTATEM PUBIS. |
| · · · · · · · · · · · · · · · · · · · | |
| Waterbody Notes | |
| Natural Watercourse_// Trapezoidal Channel | Grassed Swale Buried Tile |
| Surficial Drainage (i.e. furrows) Dugout Pon | |
| | |
| Other Habitat Notes, Incidental Wildlife Observ | ations, etc. upstream of 9.F-4 starts at |
| 6×1/55E, >228363N. (9F4-45) | |
| | · Proport near surface prevents |
| | ations, etc. <u>potream</u> of 9.F-4 start: at Bidrock near surface prevents el is very wide for a first |
| deep channel crossion and chann. order stream. | el is yery wide for a first |
| order stream. | |
| order stream. | Alaced by MEllah |



| JUINEL | |
|---|---|
| Station # 9-F-5 | Project Name Bow Labe |
| Watercourse Name_nnnamed | Project # $(62\%0771)$ |
| Photos | Field Staff $\mathcal{T} \not\models \mathcal{M} \not\models$ |
| Date $\frac{2012}{000}$ 127 | Time _ 10:40 Am |
| Weather conditions in previous 24 hrs <u>frag</u> | |
| GPS Coordinates (Zone) 6T E 690 | |
| Descriptive Location Stand of Project Loc | |
| Descriptive Location <u>Product</u> Project OF | |
| Water Quality Dissolved Oxygen (mg/L) 6,62 pl | H <u>8,46</u> Conductivity (µS/cm) <u>22</u> |
| Water Temperature (°C) 21.68 °C | Air Temperature (°C) 22°C |
| Time in situ measurements taken [D{40 a | |
| Watercourse Dimensions & Morphology Mean Watercourse Width(m) { Mean Bankfull Width(m) % Riffle100 % Evidence of eroding banks, Comments on bar | Mean Water Depth(cm) 6 Pool% Run% Flat |
| Substrate (% cover) | |
| Bedrock Cobble | Sand ⁴⁰ Silt Muck |
| Boulder Gravel | Clay Marl 60 Detritus |
| | |
| In-water Cover Cover Types Present (circle): Undercut Overhanging Vegetation Woody Debris | t Banks Deep Pool Watercress Aquatic Veg Boulder Other |
| Riparian Zone | |
| | minant vegetation, mature or early successional) |
| Adjacent Land Use | |
| Fish Habitat Potential | |
| Critical Habitat (spawning or nursery areas, gr | oundwater upwellings) |
| Migratory Obstructions (seasonal, permanent) | |
| Note any fish observations _ none observed | |
| | |
| Waterbody Notes Natural Watercourse Trapezoidal Cha Surficial Drainage (i.e. furrows) Dugout | Innel Grassed Swale Buried Tile Pond Dominated by Aquatic Veg Dry |
| Other Habitat Notes, Incidental Wildlife Obs | servations, etc. <u>Stallow</u> wetlad poud, lofs, fr gran frigs - somealgas |
| | |
| Field Notes Authored by Doc keen Field | Notes QA/QCed by mith Elld |

| Stantec | 11 | na107- | 71 | | | 9F-5 |
|---|---|----------------------|------------------------------|------------------|---|--|
| Project Numb | ber te | 109607- | /1 | | Station Number | |
| Project Name | e: 1000 | " Lake burden Per | | | Lift / Haul / Pass No. | |
| Waterbody N | | | -1 | | Date (yyyymmdd): | 2012/08/27 |
| ield Staff: | JKM | E | | | | |
| -ishing Meth | od (check one) ar | nd Gear Specs: | | _Gillnet | No. of Panels: Mesh | Sizes: |
| | | | | Trap Net | | |
| | | | · · · · | Hoop Net | en e | |
| | · · · · · · · · · · · · · · · · · · · | | 23 | < Minnow Trap | | an a |
| | | | · · · · · · · · | _Other (specify) | | an a |
| Descriptive L | ocation of Station | Beaver P | and for | IL East End | | |
| | | | | | | |
| UTM Coordin | nates: | Zone 16T | Eastin | g 690105 | Northing 5 | 229060 |
| | | | | | 1 A A A A A A A A A A A A A A A A A A A | (approx.) 22 Ls. |
| SET: Date: | 12012/001 | | LIFT: Date | | I otal Netting Hours (| (approx.) 22 h/s. |
| | 10.00 | | | A | | |
| Station Depth | | Max: | .5 n | | | |
| Station Depth | | Max: | .5 n | | | |
| Station Depth | n (m): Measurements (| Max: Dr | .5 m ne of net set) | _Min: | <u>130</u> | |
| Station Depth Supporting Depth (m) | n (m): Measurements (Temp. (°C) | Max: | ,5 n ne of net set) pH | Min: D | 130 Time <u>10440</u> | |
| Station Depth Supporting Depth (m) | n (m): Measurements (Temp. (°C) | Max: D, | ,5 n ne of net set) pH | Min: D | ィ <u>3</u> の Time <u>し</u> ん代の Additional Cat | |
| Station Depth Supporting Depth (m) | n (m): Measurements (Temp. (°C) | Max: | ,5 n ne of net set) pH | Min: D | ィ <u>3</u> の Time <u>し</u> ん代の Additional Cat | and the second |
| Station Depth Supporting Depth (m) | n (m): Measurements (Temp. (°C) | Max: D, | ,5 n ne of net set) pH | Min: D | ィ <u>3</u> の Time <u>し</u> ん代の Additional Cat | and the second |
| Station Depth Supporting Depth (m) Depth (m) Depth (m) Catch Data | n (m): Measurements (Temp. (°C) | Max: D, | ,5 n ne of net set) pH | Min: D | ィ <u>3</u> の Time <u>し</u> ん代の Additional Cat | and the second |
| Station Depth Supporting Depth (m) D, (D) Catch Data Mesh Size | n (m): Measurements (Temp. (°C) Q1,68 | Max: D, | F n pH B.46 Number | Min: D | ィ <u>3</u> の Time <u>し</u> ん代の Additional Cat | Measurements on Separate Sheet? Y/f |
| Station Depth Supporting Depth (m) | n (m): Measurements (Temp. (°C) QL,6% | Max: D, | ,5 m pH B.46 | Min: D | ィ <u>3</u> の Time <u>し</u> ん代の Additional Cat | Measurements on Separate Sheet? Y/f |
| Station Depth Supporting Depth (m) Depth (m) Depth (m) Catch Data Mesh Size | n (m): Measurements (Temp. (°C) Q1,68 | Max: D, | F n pH B.46 Number | Min: D | ィ <u>3</u> の Time <u>し</u> ん代の Additional Cat | Measurements on Separate Sheet? Y/f |
| Station Depth Supporting Depth (m) D, (D) Catch Data Mesh Size Y H 1 Y H 2 | n (m): Measurements (Temp. (°C) Q1,68 | Max: D, | F n pH B.46 Number | Min: D | ィ <u>3</u> の Time <u>し</u> ん代の Additional Cat | Measurements on Separate Sheet? Y/f |
| Station Depth Supporting Depth (m) D , (D Catch Data Mesh Size | n (m): Measurements (Temp. (°C) Q1,68 | Max: D, | F n pH B.46 Number | Min: D | ィ <u>3</u> の Time <u>し</u> ん代の Additional Cat | Measurements on Separate Sheet? Y/f |
| Station Depth Supporting Depth (m) D, (D Catch Data Mesh Size V H L V H Z | n (m): Measurements (Temp. (°C) Q1,68 | Max: D, | F n pH B.46 Number | Min: D | ィ <u>3</u> の Time <u>し</u> ん代の Additional Cat | Measurements on Separate Sheet? Y/f |
| Station Depth Supporting Depth (m) D, (D) Catch Data Mesh Size Mesh Size Mesh Size | n (m): Measurements (Temp. (°C) Q1,68 | Max: D, | F n pH B.46 Number | Min: D | ィ <u>3</u> の Time <u>し</u> ん代の Additional Cat | Measurements on Separate Sheet? Y/f |
| Station Depth Supporting Depth (m) D, (D) Catch Data Mesh Size Mesh Size Mesh Size | n (m): Measurements (Temp. (°C) Q1,68 | Max: D, | F n pH B.46 Number | Min: D | ィ <u>3</u> の Time <u>し</u> ん代の Additional Cat | Measurements on Separate Sheet? Y/f |
| Station Depth Supporting Depth (m) O, (D) Catch Data Mesh Size Y H 1 Y H 2 | n (m): Measurements (Temp. (°C) Q1,68 | Max: D, | F n pH B.46 Number | Min: D | ィ <u>3</u> の Time <u>し</u> ん代の Additional Cat | Measurements on Separate Sheet? Y/f |

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RAQC: MallaL