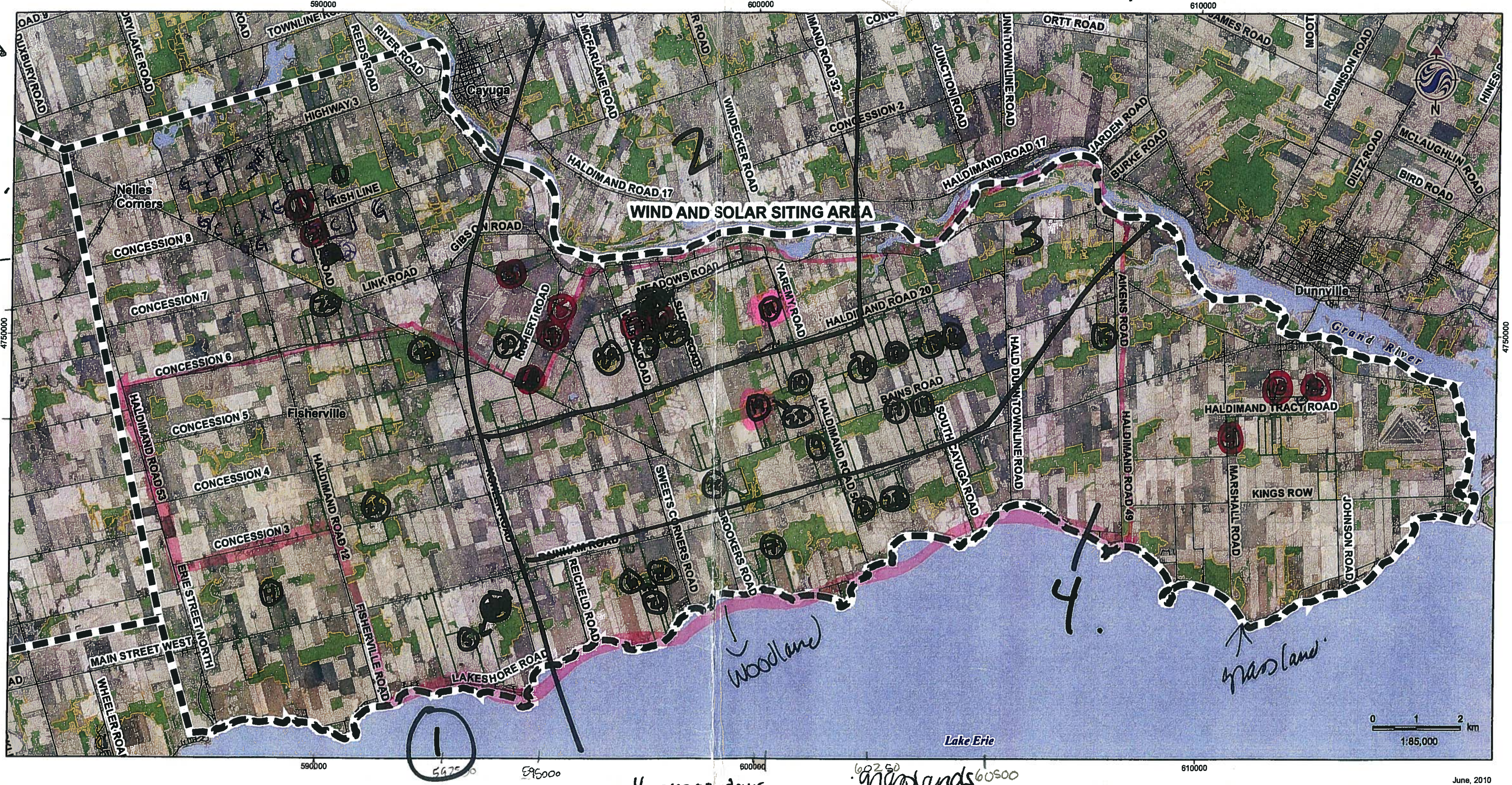

WIND AND SOLAR SITING AREA
Cayuga
Nelles Corners
Fisherville
Dunnville
Grand River
Lake Erie
HIGHWAY 3
TOWNLINE ROAD
RIVER ROAD
REEDS ROAD
IRISH LINE
GIBSON ROAD
LINK ROAD
CONCESSION 8
CONCESSION 7
CONCESSION 6
CONCESSION 5
CONCESSION 4
CONCESSION 3
CONCESSION 2
HALDIMAND ROAD 17
HALDIMAND ROAD 20
HALDIMAND ROAD 53
HALDIMAND ROAD 12
HALDIMAND ROAD 49
MCFARLANE ROAD
WINDECKER ROAD
JUNCTION ROAD
ORTT ROAD
JAMES ROAD
ROBINSON ROAD
MCLAUGHLIN ROAD
BIRD ROAD
DILTZ ROAD
JARDEN ROAD
BURKE ROAD
MEADOWS ROAD
YAREMY ROAD
BAINS ROAD
SOUTH CAYUGA ROAD
AIKENS ROAD
HALDIMAND TRACT ROAD
KINGS ROW
MARSHALL ROAD
JOHNSON ROAD
SWEETS CORNERS ROAD
BROOKERS ROAD
REICHELD ROAD
LAKESHORE ROAD
FISHERVILLE ROAD
ERIE STREET NORTH
MAIN STREET WEST
WHEELER ROAD
DUXBURY ROAD
590000
600000
610000
4750000
0 1 2 km
1:85,000
2
3
4.
1
grassland
woodland
grassland
grassland?
4 moon days
grasslands
59500
592500
602250
60500

W:\active\60960577\drawing\GIS\MXD\OptionedLands\60960577_Fig1-0_OptionedLands_Ortho_20100614_CEW.mxd - 6/14/2010 @ 3:55:38 PM

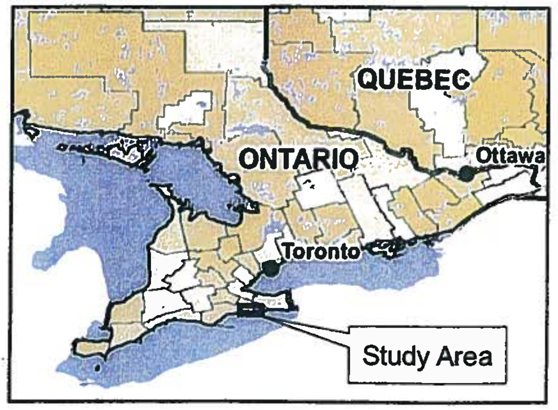
June, 2010
160960577

Legend

- Project Location
- Elexco_acquired_agreements Drawing
- Woodlot > 10ha
- Wooded Area
- Road
- Waterbody (OBM)

G = grassland
C = crop
P = pasture

please points
(1) → 10 grasslands
(1) → 30 woodland



Notes

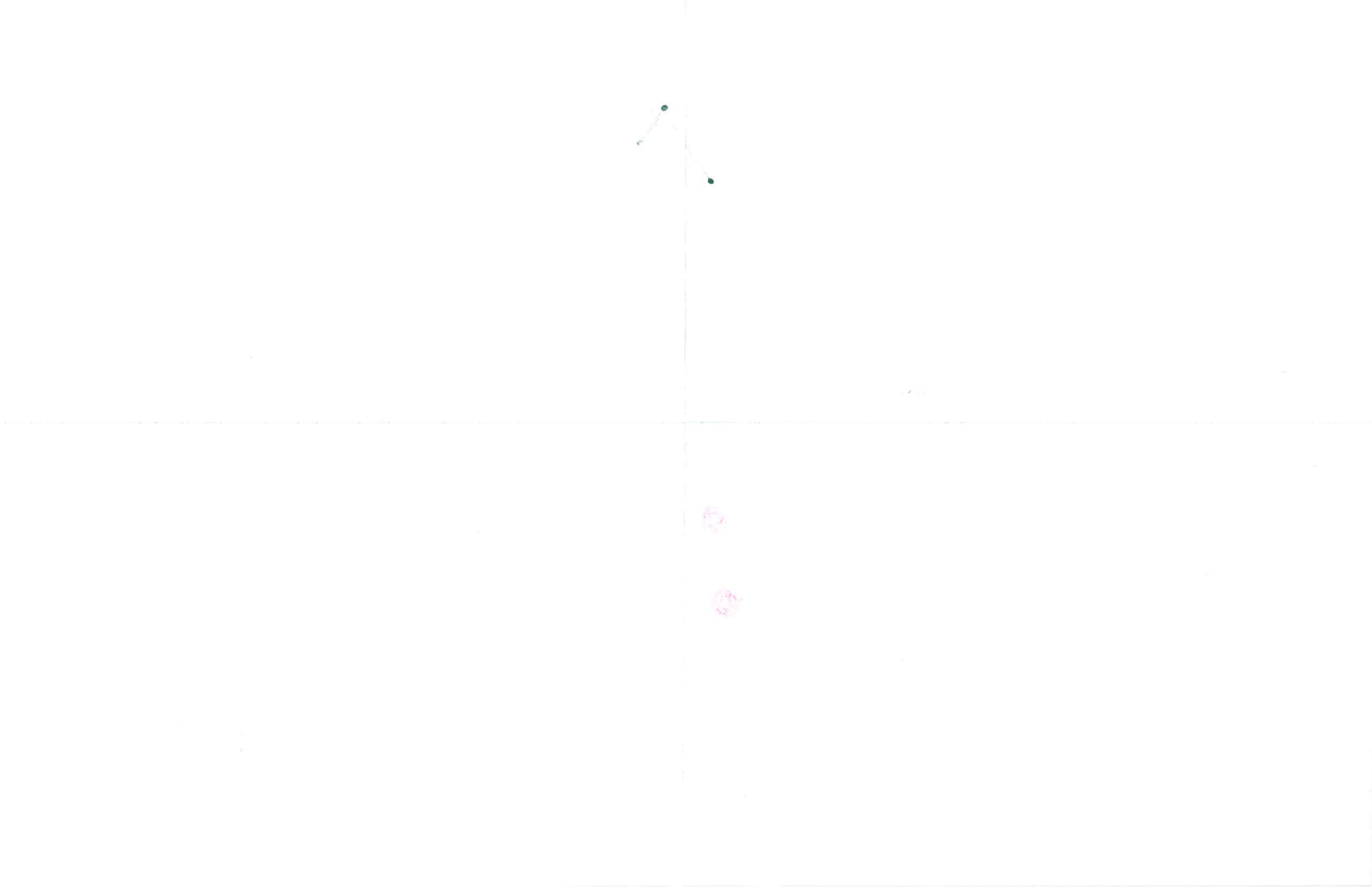
1. Coordinate System: UTM NAD 83 - Zone 17 (N).
2. Data Sources: Ontario Ministry of Natural Resources © Queens Printer Ontario, 2009; © GREP, 2010; © Samsung, 2010.
3. Image Sources: © FirstBase Solutions, WMS 2010.

Client/Project
SAMSUNG C&T
GRAND RENEWABLE ENERGY PARK

Figure No.
1.0

Title
OPTIONED LANDS - ORTHOS
2010-06-03

Stantec



Stantec Consulting Ltd.
70-1 Southgate Drive
Guelph, Ontario, Canada
N1G 4P5
Tel: (519) 836-6050
Fax: (519) 836-2493

Breeding Bird Survey Observation Form

Project Number 161010624.210.100.102 Project Name: SAMSUNG – PART 1

Date / Time: 17 JUNE/10 VISIT 1 Field Personnel: J. HOSKOP

Weather Conditions:	Temp: 14°C	Wind: 1	Cloud: 30%	PPT: 0	PPT in last 24 hrs:

Start Time: 5:20 End Time: 10:30

Habitat #	ELC Code(s) or Habitat Description
G	grassland @ G1+G2
W	woodland @ W1, W2, W4, W5, W23-25

Quality Control: This form is complete (✓) & legible (✓).

Signature: _____ (Field Personnel)

Signature: _____ (Project Manager)

REV:Apr.08 FORM 031

Record location of all significant species on site map

** Endangered, Threatened or Special Concern
† Partners In Flight
‡ Area Sensitive Species

Species	Habitats	BE*	Species	Habitats	BE*	Species	Habitats	BE*
Canada Goose			Red-headed Wo** †		H	Blue-wing. Wa. †		
Wood Duck			Red-bellied Wo.	W	H	Gold-wing. Wa** †		
Am. Black Duck			Yell-bellied Sap. ‡			Nashville Wa.		
Mallard	G	X	Downy Wo.			Yellow Wa.	W	A
Ring-neck. Pheasant			Hairy Wo.			Chestnut-sided Wa.		
Ruffed Grouse ‡			Northern Flicker †	W	H	Magnolia Wa. ‡		
Wild Turkey	W	SM	Pileated Wo. ‡			Bl-thr Blue Wa. ‡		
Common Loon ‡			Ea. Wood-Pewee †	W	SM	Yel-rumped Wa. ‡		
Pied-billed Grebe			Alder Fly.			Bl-thr Gr. Wa. ‡		
D. C. Cormorant ‡			Willow Fly. †	G	SM	Blackburnian Wa. ‡		
American Bittern			Least Fly.			Pine Wa. ‡		
Least Bittern** ‡			Eastern Phoebe	G	SM	Cerulean Wa** †‡		
Great Blue Heron			Great Crested Fly.	W	SM	Bl-and-wh Wa. ‡		
Great Egret			Eastern Kingbird †			Am. Redstart ‡		
Green Heron			Yellow-thr. Vireo ‡			Ovenbird ‡	W	SM
Turkey Vulture			Blue-headed Vireo ‡			No. Waterthrush ‡		
Osprey			Warbling Vireo	W	SM	Mourning Wa. ‡		
Northern Harrier †‡			Red-eyed Vireo	W	SM	Co. Yellowthroat	W	SM
Sharp-shin. Hawk ‡			Blue Jay	W	A	Hooded Wa** †‡		
Coopers Hawk ‡	W	H	American Crow	W	A	Canada Wa. †‡		
Red-shou. Hawk †‡			Common Raven			Scarlet Tanager ‡		
Red-tailed Hawk	W	A	Horned Lark			Eastern Towhee †		
Am. Kestrel †			Purple Mart.			Chipping Sp.		
Virginia Rail			Tree Swallow	G	H	Clay-colored Sp.		
Sora			No. R. W. Swallow			Field Sp. †	G	SM
Sandhill Crane			Bank Swallow †			Vesper Sp. †		
Killdeer	G	H	Cliff Swallow	G	X	Savannah Sp. †		
Spotted Sandpiper			Barn Swallow	G	H	Grasshopper Sp. †		
Upland Sandpiper ‡			Bl-capped Chickadee	W	A	Song Sp.	W	SM
Wilson's Snipe			Tufted Titmouse			Swamp Sp.		
American Woodcock			Red-br. Nuthatch			Wh-throated Sp. ‡		
Ring-billed Gull			Wh-br. Nuthatch	W	SM	Northern Cardinal		
Herring Gull			Br. Creeper ‡			Rose-br. Grosbeak †		
Caspian Tern			Carolina Wren.			Indigo Bunting		
Black Tern** ‡			House Wren	W	A	Bobolink †		
Common Tern			Winter Wren ‡			Red-winged Bl.		A
Rock Dove			Sedge Wren			Ea. Meadowlark †		
Mourning Dove	W	SM	Marsh Wren			Common Grackle		
Yellow-bill. Cuckoo			Golded-cr. Kinglet ‡			Br-headed Cowbird		
Black-bill. Cuckoo †			B. G. Gnatcatcher ‡			Orchard Oriole		
Eastern Screech Owl			Eastern Bluebird			Baltimore Oriole †		
Great Horned Owl			Veery			Purple Finch		
Barred Owl ‡			Hermit Thrush ‡			House Finch		
Long-eared Owl			Wood Thrush †	W	SM	Pine Siskin		
N. Saw-whet Owl			American Robin	W	CF	Am. Goldfinch		
Co. Nighthawk**			Gray Catbird	W	SM	House Sparrow	G	H
Whip-poor-will †‡			No. Mockingbird			Other Species …		
Chimney Swift** †			Brown Thrasher †					
Ruby-thr. Humming.			European Starling	W	H	/		
Belted Kingfisher †			Cedar Waxwing					

*Record highest Breeding Evidence (BE) observed over all habitat. Use codes as in Breeding Bird Atlas of Ontario

Quality Control: This form is complete (✓) & legible (___).

Signature: _____ (Field Personnel)

Signature: _____ (Project Manager)

REV:Apr.08 FORM 031

Stantec Consulting Ltd.
361 Southgate Drive
Guelph, Ontario, Canada
N1G 3M5
Tel: (519) 836-6050
Fax: (519) 836-2493

Birding Point Counts Survey Observation Form

Project Number 161010624-210-100-102 Project Name: SAMSUNG

Date 16 JUNE/10 Field Personnel: J-HESLOP

Weather Conditions:	Temp: 14°C	Wind: 1	Cloud: 30%	PPT: 0	PPT in last 24 hrs:

GPS #: T___

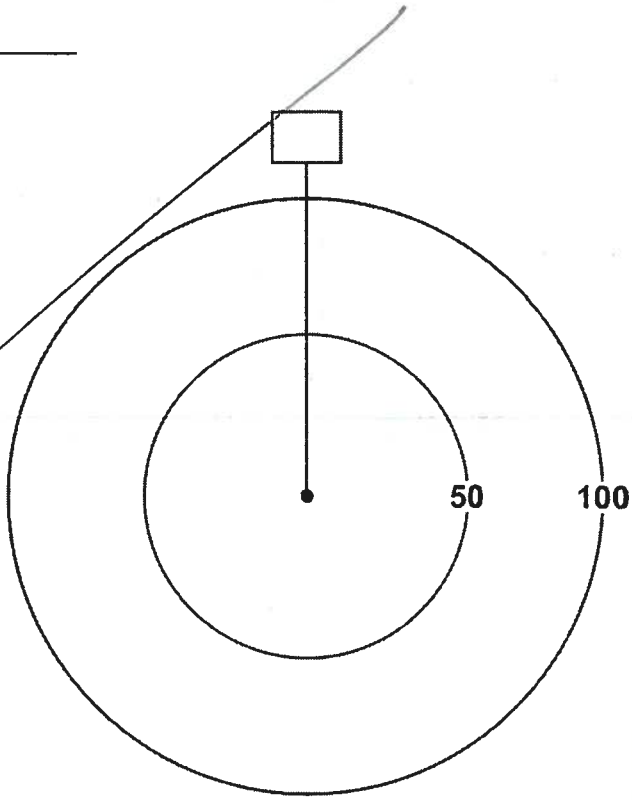
Station: ___

Habitat: ☐Forest ☐Swamp ☐Marsh ☐Hay ☐Pasture ☐Crop _____

UTM: _____

Start Time: _____

Species	<50 m	50-100 m	> 100m	Flyovers	Height*



*Height of blade sweep will vary from project to project, Check with Project Manager
O – On ground; **A** – Below height of blade sweep; **B** – At height of blade sweep;
C – Above height of blade sweep; **D** – Well Above the height of blade sweep

see next page.

Quality Control: This form is complete (✓) & legible (✓).

Signature: _____ (Field Personnel) Signature: _____ (Project Manager)

REV: May, 07 Form 020

Date entered as

W1

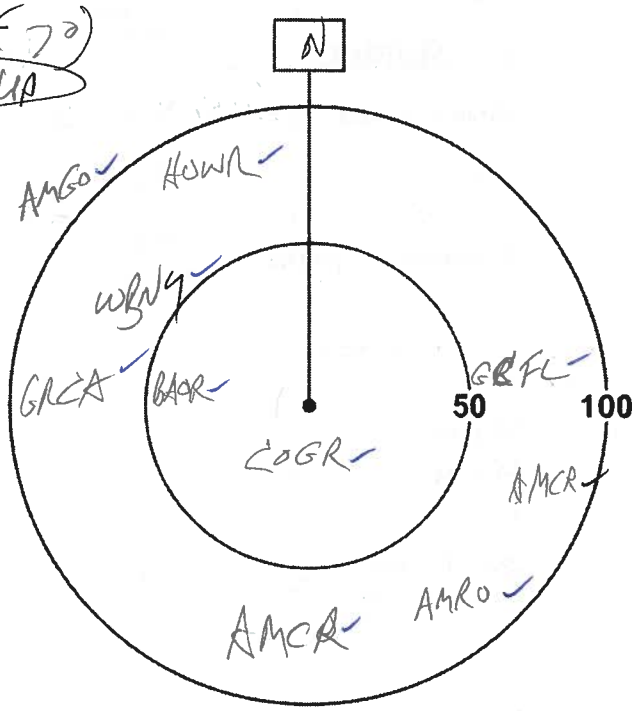
Station: W5

Habitat: ☑Forest ☐Swamp ☐Marsh ☐Hay ☐Pasture ☐Crop _____ (7°)

UTM: 17 593451E 4743266N

Start Time: 10:00 (Wind picked up)

Species	<50 m	50-100 m	> 100m	Flyovers	Height*
AMGO			✓ 1	✓	A
COGR	✓ 1			✓	A
BAOR	✓ 1				A
HOWR		✓ 1			A
WBNU		✓ 1			A
GRCA		✓ 1			A
AMCR		✓ 2			A
AMRO		✓ 1			A
GCFL		✓ 1			A



*Height of blade sweep will vary from project to project; Check with Project Manager
O – On ground; **A** – Below height of blade sweep; **B** – At height of blade sweep;
C – Above height of blade sweep; **D** – Well Above the height of blade sweep

10

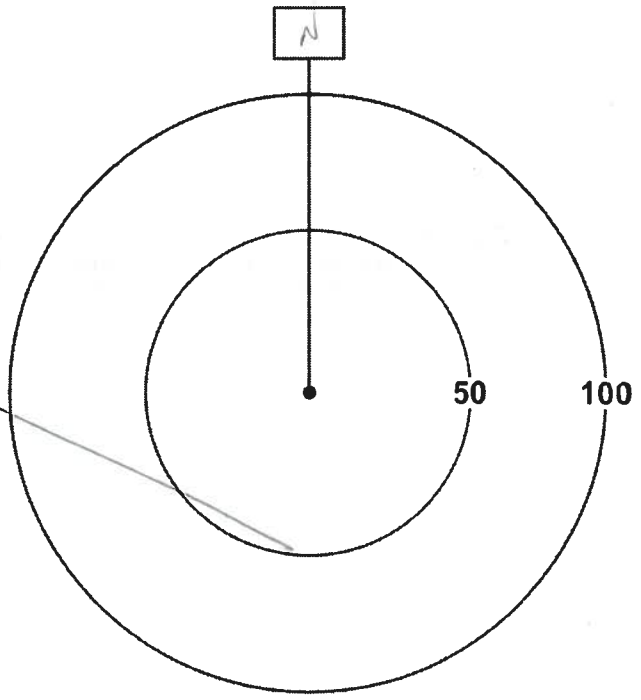
Station: _____

Habitat: ☐Forest ☐Swamp ☐Marsh ☐Hay ☐Pasture ☐Crop _____

UTM: _____

Start Time: _____

Species	<50 m	50-100 m	> 100m	Flyovers	Height*



*Height of blade sweep will vary from project to project; Check with Project Manager
O – On ground; **A** – Below height of blade sweep; **B** – At height of blade sweep;
C – Above height of blade sweep; **D** – Well Above the height of blade sweep

Quality Control: This form is complete (✓) & legible (✓).

Signature: _____ (Field Personnel)

Signature: _____ (Project Manager)

Station: W1

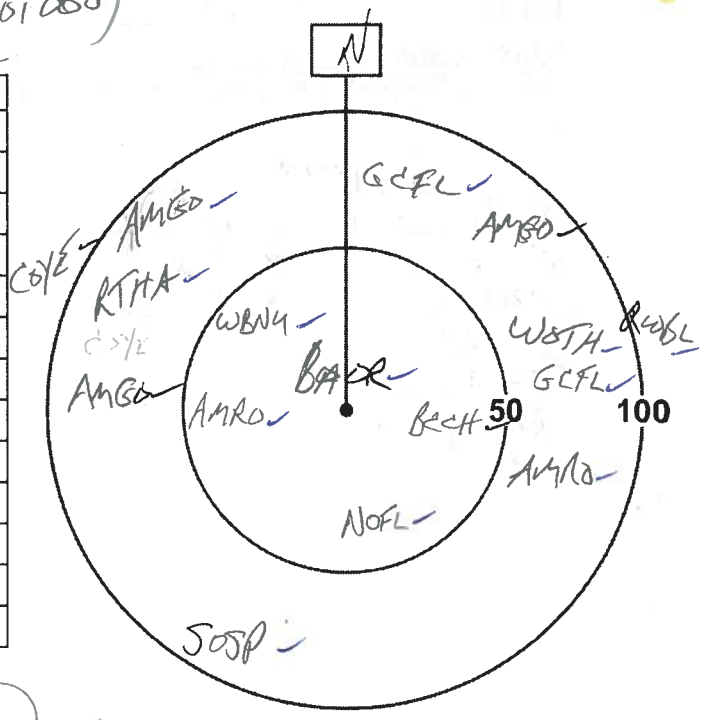
Habitat: ☑Forest ☐Swamp ☐Marsh ☐Hay ☐Pasture ☐Crop

UTM: 17 590504E 4753305N (Pol 060)

Start Time: 5:21

W2 ✓

Species	<50 m	50-100 m	> 100m	Flyovers	Height*
WBNU	✓ 1				A
AMRO	✓ 1	1			A
BAOR	✓ 1				A
BCCH	✓ 1				A
NOFL	✓ 1				A
GCFL		✓ 2			A
AMGO		✓ 3			A
WOTH		✓ 1			A
RTHA		✓ 1			A
SOSP		✓ 1			A
COYE			✓ 1		A
RWBL			✓ 1		A



*Height of blade sweep will vary from project to project; Check with Project Manager
O – On ground; **A** – Below height of blade sweep; **B** – At height of blade sweep;
C – Above height of blade sweep; **D** – Well Above the height of blade sweep

16

G1 ✓

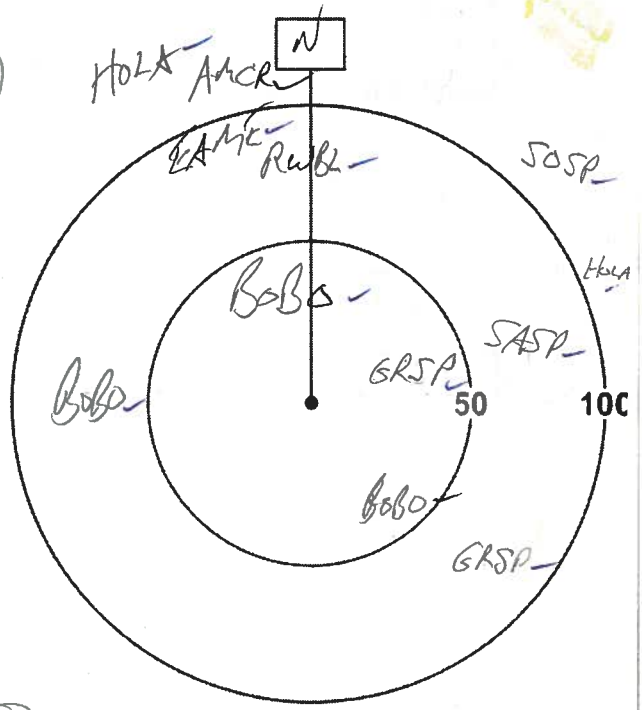
Station: G1

Habitat: ☐Forest ☐Swamp ☐Marsh ☑Hay ☐Pasture ☐Crop

UTM: 5:48

Start Time: 17 589576E 4752730N (Pol 061)

Species	<50 m	50-100 m	> 100m	Flyovers	Height*
COGR				✓	A
BOBO	✓ 2	✓ 1			A
GRSP	✓ 1	✓ 1			A
SASP		✓ 1			A
EAME		✓ 1			A
RWBL		✓ 1			A
HOLA			✓ 2		A
AMCR			✓ 1		A
SOSP			✓ 1		A



*Height of blade sweep will vary from project to project; Check with Project Manager
O – On ground; **A** – Below height of blade sweep; **B** – At height of blade sweep;
C – Above height of blade sweep; **D** – Well Above the height of blade sweep

12

Quality Control: This form is complete (✓) & legible (✓).

Signature: _____ (Field Personnel)

Signature: _____ (Project Manager)

G2

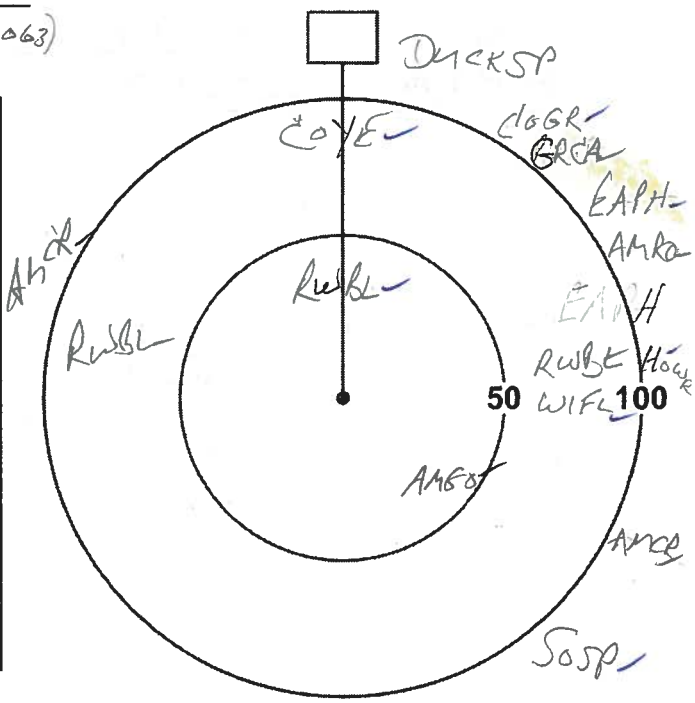
Station: G2

Habitat: ☐Forest ☐Swamp ☐Marsh ☑Hay ☐Pasture ☐Crop _____

UTM: 17 589789E 4752199N (P01063)

Start Time: 6:10

Species	<50 m	50-100 m	> 100m	Flyovers	Height*
DUCKSP			✓	✓	B
AMGO	✓ 1			✓	A
RWBL	✓ 1	✓ 2			A
COYE		✓ 1			A
WIFL		✓ 1			A
COGR			✓ 1		A
GRCA			✓ 1		A
EAPH			✓ 1		A
AMRO			✓ 1		A
AMCR			✓ 2		A
HOWR			✓ 1		A
SOSP			✓ 1		A



*Height of blade sweep will vary from project to project; Check with Project Manager
O – On ground; **A** – Below height of blade sweep; **B** – At height of blade sweep;
C – Above height of blade sweep; **D** – Well Above the height of blade sweep

(14)

W3

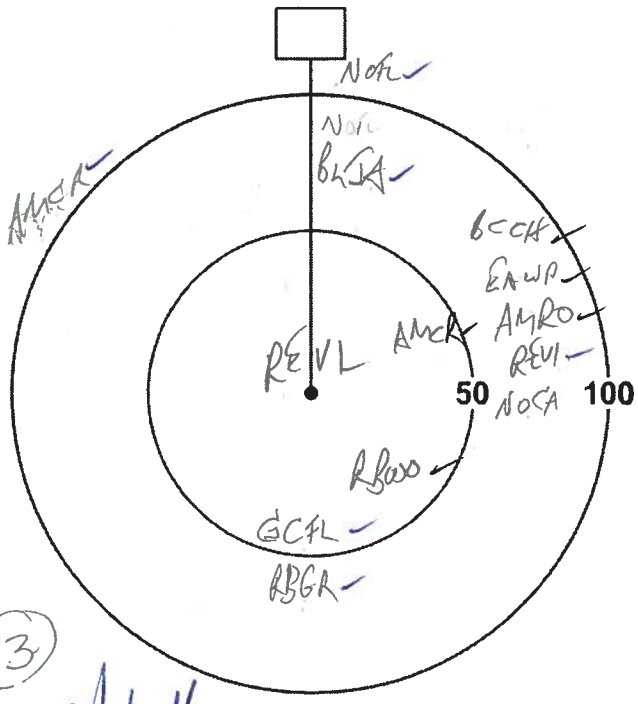
Station: W2

Habitat: ☑Forest ☐Swamp ☐Marsh ☐Hay ☐Pasture ☐Crop _____

UTM: 17 590014E 4751764N

Start Time: 6:29

Species	<50 m	50-100 m	> 100m	Flyovers	Height*
AMCR	1		1	✓	A
NOFL			✓ 1		A
BLSA		✓ 1			A
BCCH		✓ 1			A
EAWP		✓ 1			A
AMRO		✓ 1			A
REVI	✓ 1	✓ 1			A
RBWO	✓ 1				A
GCFL	✓ 1				A
RBGR		✓ 1			A
NOCA		1			



*Height of blade sweep will vary from project to project; Check with Project Manager
O – On ground; **A** – Below height of blade sweep; **B** – At height of blade sweep;
C – Above height of blade sweep; **D** – Well Above the height of blade sweep.

(13)

Quality Control: This form is complete (✓) & legible (✓).

Signature: _____ (Field Personnel)

Signature: _____ (Project Manager)

Station: WA5

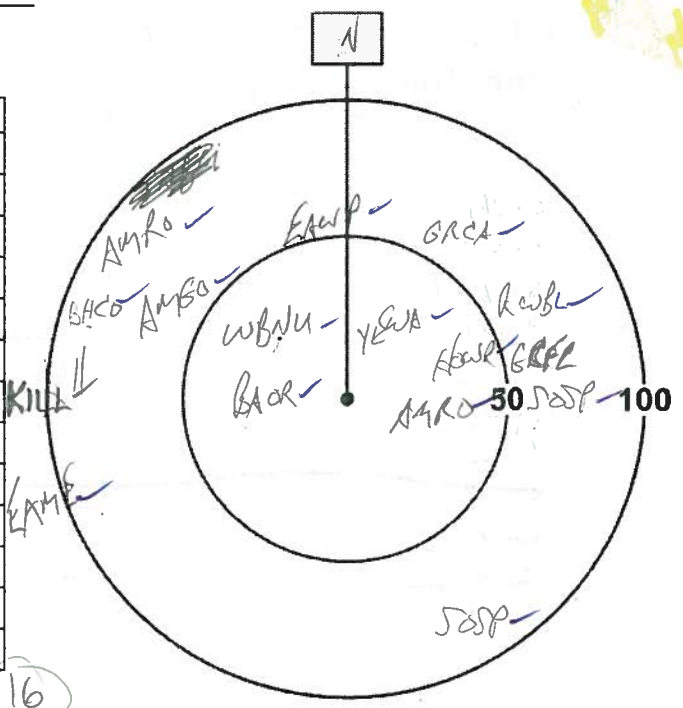
Habitat: ☑Forest ☐Swamp ☐Marsh ☐Hay ☐Pasture ☐Crop _____

UTM: 17 591325E 4746020N (POLES)

Start Time: 8:01

Species	<50 m	50-100 m	> 100m	Flyovers	Height*
WBNU	✓1				A
YEWA	✓1				A
BAOR	✓1				A
AMRO	✓1	✓1			A
HOWR	✓1				A
AMGO		✓1			A
SOSP		✓2			A
EAWP		✓1			A
GRCA		✓1			A
RWBL		✓1			A
BACO		✓1			A
EAME			✓1		A
~~Kill~~			✓1		?

W4



*Height of blade sweep will vary from project to project; Check with Project Manager
O – On ground; **A** – Below height of blade sweep; **B** – At height of blade sweep;
C – Above height of blade sweep; **D** – Well Above the height of blade sweep

16

Station: WA4

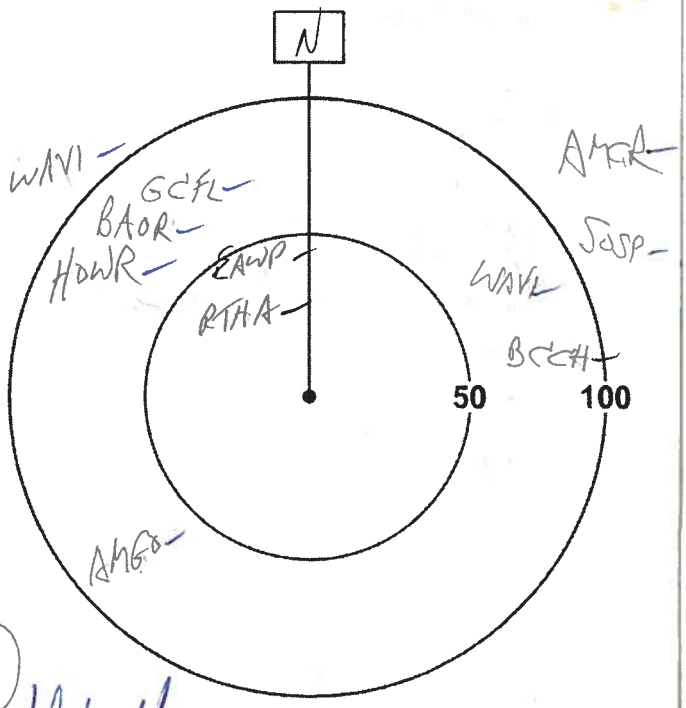
Habitat: ☑Forest ☐Swamp ☐Marsh ☐Hay ☐Pasture ☐Crop _____

UTM: 17 588188E 4744055N POLES

Start Time: 8:50

Species	<50 m	50-100 m	> 100m	Flyovers	Height*
AMCR			✓1		?
AMGO		✓1		✓	A
EAWP	✓1				A
RTHA	✓1				A
WAVI		✓1	1		A
BCCH		✓1			A
~~AMCR~~			✓		?
SOSP			✓1		A
GCFL		✓1			A
BAOR		✓1			A
HOWR		✓1			A

W5



*Height of blade sweep will vary from project to project; Check with Project Manager
O – On ground; **A** – Below height of blade sweep; **B** – At height of blade sweep;
C – Above height of blade sweep; **D** – Well Above the height of blade sweep.

11

Quality Control: This form is complete (✓) & legible (✓).

Signature: _____ (Field Personnel)

Signature: _____ (Project Manager)

REV: May, 07 Form 020

W6

Station: W23

Habitat: ☑Forest ☐Swamp ☐Marsh ☐Hay ☐Pasture ☐Crop _____

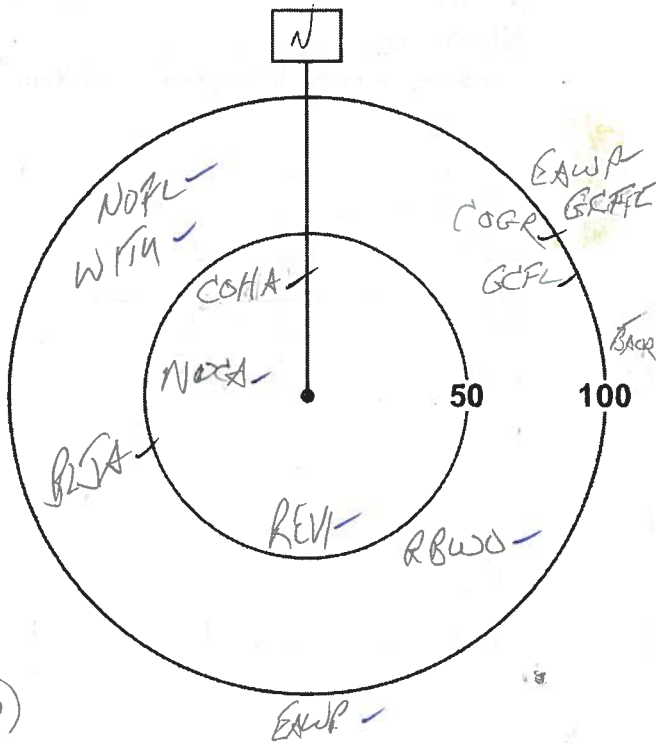
UTM: 17 590313 E 4750826N (101 065)

Start Time: 6:54

Species	<50 m	50-100 m	> 100m	Flyovers	Height*
COGR		✓ 1		✓	A
COHA	✓ 1				A
NOCA	✓ 1				A
REVI	✓ 1				A
BLJA		✓ 1			A
RBWO		✓ 1			A
WITU		✓ 1			A
NOFL		✓ 1			A
~~DOOR~~		✓ 1			A
GCFL		✓ 1	✓ 1		A
EAWP			✓ 2		A
BAOR			✓ 1		A

*Height of blade sweep will vary from project to project; Check with Project Manager
O – On ground; A – Below height of blade sweep; B – At height of blade sweep;
C – Above height of blade sweep; D – Well Above the height of blade sweep

(13)



W7

Station: W24

Habitat: ☑Forest ☐Swamp ☐Marsh ☐Hay ☐Pasture ☐Crop _____

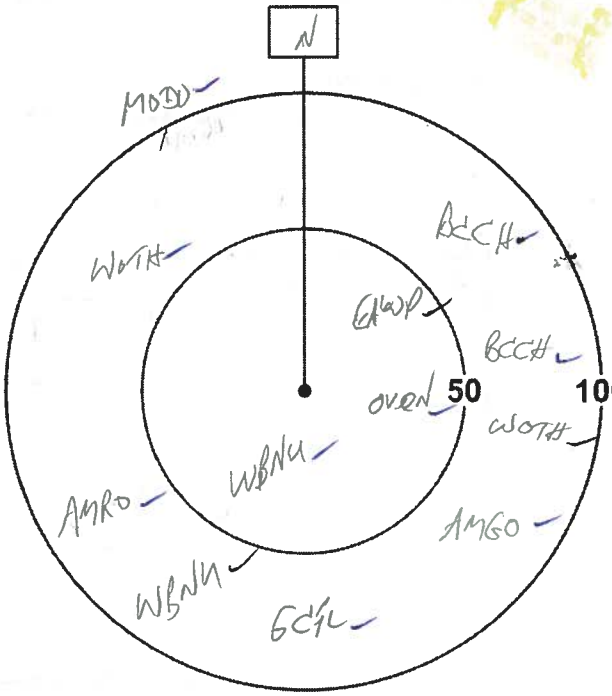
UTM: 17 592378E 4749790N

Start Time: 7:21

Species	<50 m	50-100 m	> 100m	Flyovers	Height*
COGR				✓ 1	A
MODO			✓ 1		A
WOTH		✓ 2			A
BCCH		✓ 2			A
AMGO		✓ 1			A
GCFL		✓ 1			A
WBNU	✓ 1	✓ 1			A
AMRO		✓ 1			A
EAWP	✓ 1				A
OVEN	✓ 1				A

*Height of blade sweep will vary from project to project; Check with Project Manager
O – On ground; A – Below height of blade sweep; B – At height of blade sweep;
C – Above height of blade sweep; D – Well Above the height of blade sweep

(12)



Quality Control: This form is complete (✓) & legible (✓).

Signature: _____ (Field Personnel)

Signature: _____ (Project Manager)

REV: May, 07 Form 020

Stantec Consulting Ltd.
70-1 Southgate Drive
Guelph, Ontario, Canada
N1G 4P5
Tel: (519) 836-6050
Fax: (519) 836-2493

Breeding Bird Survey Observation Form

Project Number 161010624.210.100.100 Project Name: SAMSUNG - PT. 1

Date / Time: 29 June/10 VISIT 2 Field Personnel: J. HESLOP

Weather Conditions:	Temp:	Wind:	Cloud:	PPT:	PPT in last 24 hrs:
	15°C	4/5	35%	0	3

Start Time: 5:20 End Time: 10:30

Habitat #	ELC Code(s) or Habitat Description
G	grassland @ G1+G2
W	woodland @ W1, W2, W4, W5, W23-25.

Quality Control: This form is complete (✓) & legible (✓).

Signature: _____ (Field Personnel) Signature: _____ (Project Manager)

Record location of all significant species on site map

** Endangered, Threatened or Special Concern
† Partners In Flight
‡ Area Sensitive Species

Species	Habitats	BE*	Species	Habitats	BE*	Species	Habitats	BE*
Canada Goose			Red-headed Wo** †			Blue-wing. Wa. †		
Wood Duck			Red-bellied Wo.	W	H	Gold-wing. Wa** †		
Am. Black Duck			Yell-bellied Sap. ‡			Nashville Wa.		
Mallard			Downy Wo.	W	H	Yellow Wa.	W	A
Ring-neck. Pheasant			Hairy Wo.			Chestnut-sided Wa.		
Ruffed Grouse ‡			Northern Flicker †	W	H	Magnolia Wa. ‡		
Wild Turkey	W	SM	Pileated Wo. ‡			Bl-thr Blue Wa. ‡		
Common Loon ‡			Ea. Wood-Pewee †	W	SM	Yel-rumped Wa. ‡		
Pied-billed Grebe			Alder Fly.			Bl-thr Gr. Wa. ‡		
D. C. Cormorant ‡			Willow Fly. †			Blackburnian Wa. ‡		
American Bittern			Least Fly.			Pine Wa. ‡		
Least Bittern** ‡			Eastern Phoebe			Cerulean Wa** †‡		
Great Blue Heron	G	X	Great Crested Fly.	W	SM	Bl-and-wh Wa. ‡		
Great Egret			Eastern Kingbird †			Am. Redstart ‡		
Green Heron			Yellow-thr. Vireo ‡			Ovenbird ‡	W	SM
Turkey Vulture	G/W	H	Blue-headed Vireo ‡			No. Waterthrush ‡		
Osprey			Warbling Vireo	W	SM	Mourning Wa. ‡		
Northern Harrier †‡			Red-eyed Vireo	W	A	Co. Yellowthroat	W	SM
Sharp-shin. Hawk ‡			Blue Jay	W	A	Hooded Wa** †‡		
Coopers Hawk ‡			American Crow	W	H	Canada Wa. †‡		
Red-shou. Hawk †‡			Common Raven			Scarlet Tanager ‡		
Red-tailed Hawk	G/W	A	Horned Lark	G	SM	Eastern Towhee †		
Am. Kestrel †			Purple Mart.			Chipping Sp.		
Virginia Rail			Tree Swallow			Clay-colored Sp.		
Sora			No. R. W. Swallow			Field Sp. †	G	SM
Sandhill Crane			Bank Swallow †			Vesper Sp. †	G/W	SM
Killdeer	G	A	Cliff Swallow			Savannah Sp. †	G	SM
Spotted Sandpiper			Barn Swallow	G	H	Grasshopper Sp. †	G	SM
Upland Sandpiper ‡	G	SM	Bl-capped Chickadee	W	SM	Song Sp.	G/W	SM
Wilson's Snipe			Tufted Titmouse	W	SM	Swamp Sp.		
American Woodcock			Red-br. Nuthatch			Wh-throated Sp. ‡		
Ring-billed Gull			Wh-br. Nuthatch	W	SM	Northern Cardinal	W	A
Herring Gull			Br. Creeper ‡			Rose-br. Grosbeak †	W	SM
Caspian Tern			Carolina Wren.			Indigo Bunting	W	SM
Black Tern** ‡			House Wren	W	SM	Bobolink †	W	D
Common Tern			Winter Wren ‡			Red-winged Bl.	G/W	A
Rock Dove			Sedge Wren			Ea. Meadowlark †	G	SM
Mourning Dove	G/W	H	Marsh Wren			Common Grackle	G/W	H
Yellow-bill. Cuckoo			Golded-cr. Kinglet ‡			Br-headed Cowbird	W	SM
Black-bill. Cuckoo †			B. G. Gnatcatcher ‡	W	A	Orchard Oriole		
Eastern Screech Owl			Eastern Bluebird			Baltimore Oriole †	W	H
Great Horned Owl			Veery			Purple Finch		
Barred Owl ‡			Hermit Thrush ‡			House Finch		
Long-eared Owl			Wood Thrush †	W	SM	Pine Siskin		
N. Saw-whet Owl			American Robin	W	SM	Am. Goldfinch	G/W	SM
Co. Nighthawk**			Gray Catbird	W	A	House Sparrow		
Whip-poor-will †‡			No. Mockingbird			Other Species …		
Chimney Swift** †			Brown Thrasher †					
Ruby-thr. Humming.			European Starling	G/W	FY	/		
Belted Kingfisher †			Cedar Waxwing					

*Record highest Breeding Evidence (BE) observed over all habitat. Use codes as in Breeding Bird Atlas of Ontario

Quality Control: This form is complete (✓) & legible (✓).

Signature: _____ (Field Personnel)

Signature: _____ (Project Manager)

REV:Apr.08 FORM 031

Stantec Consulting Ltd.
361 Southgate Drive
Guelph, Ontario, Canada
N1G 3M5
Tel: (519) 836-6050
Fax: (519) 836-2493

Birding Point Counts Survey Observation Form

Project Number 161010624.210.100.102 Project Name: SAMSUNG - PORT-1

Date 29 JUNE/10 Field Personnel: J. HESLOP

Weather Conditions:	Temp: 15°C	Wind: 4/5	Cloud: 35%	PPT: 0	PPT in last 24 hrs: 3

GPS #: T 60

N2

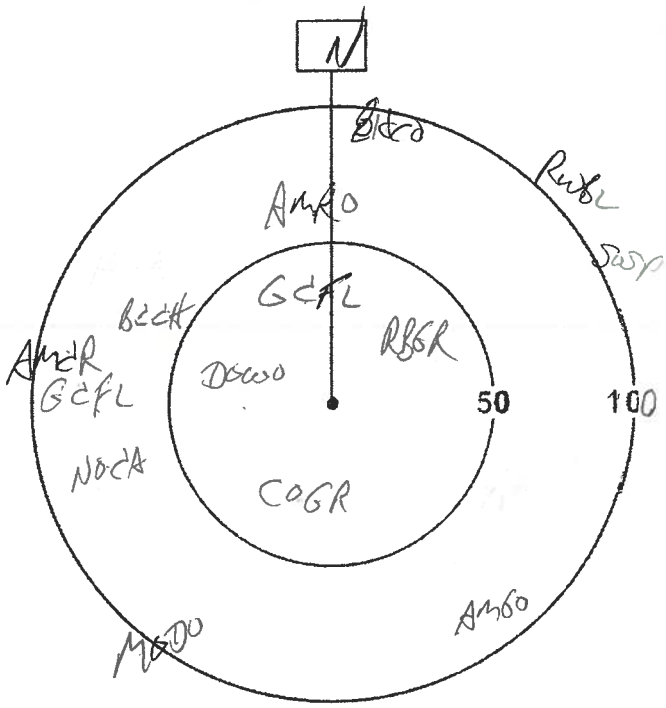
Station: W1

Habitat: ✓Forest Swamp Marsh Hay Pasture Crop _____

UTM: 17 590504E 4753305N

Start Time: 5:40

Species	<50 m	50-100 m	>100m	Flyovers	Height*
COGR	✓ |			✓	A
GCFL	✓ |	✓ |			A
RBGR	✓ |				A
DOWO	✓ |				A
MODO		✓ |			A
NOCA		✓ |			A
AMKR		✓ |			A
BCCH		✓ |			A
AMRO		✓ |			A
BHCO		✓ |			A
AMGO		✓ |			A
RWBL			✓ |		A
SOSP			✓ |		A



*Height of blade sweep will vary from project to project; Check with Project Manager
O – On ground; A – Below height of blade sweep; B – At height of blade sweep;
C – Above height of blade sweep; D – Well Above the height of blade sweep

14

Quality Control: This form is complete (✓) & legible (✓).

Signature: _____ (Field Personnel) Signature: _____ (Project Manager)

Page 1 of 5

REV: May, 07 Form 020

G1

Station: G1

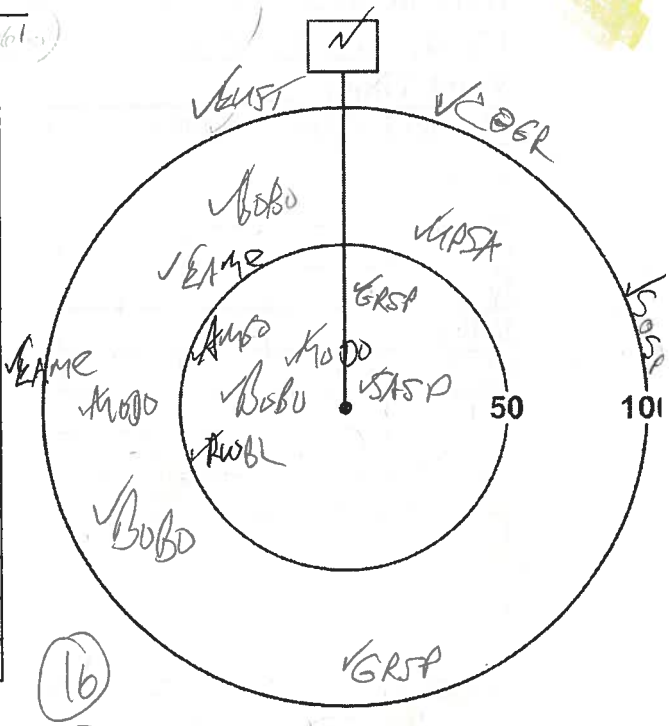
Habitat: Forest Swamp Marsh ✓Hay Pasture Crop

UTM: 17 589576E 4752730N (Pol 061)

Start Time: 6:09

Species	<50 m	50-100 m	> 100m	Flyovers	Height*
MODO	✓ 1	✓ 1		✓	A
RWBL	✓ 1			✓	A
AMGO	✓ 1			✓	A
COGR			✓ 1	✓	B
EUST			✓ 1		A
SOSP			✓ 1		A
BOBO	✓ 1	✓ 2			A
UPSA		✓ 1			A
EAME		✓ 1	✓ 1		A
GRSP	✓ 1	✓ 1			A
SASP	✓ 1				A

*Height of blade sweep will vary from project to project; Check with Project Manager
O – On ground; A – Below height of blade sweep; B – At height of blade sweep;
C – Above height of blade sweep; D – Well Above the height of blade sweep



16

SASP = SAVS

W1

Station: W5

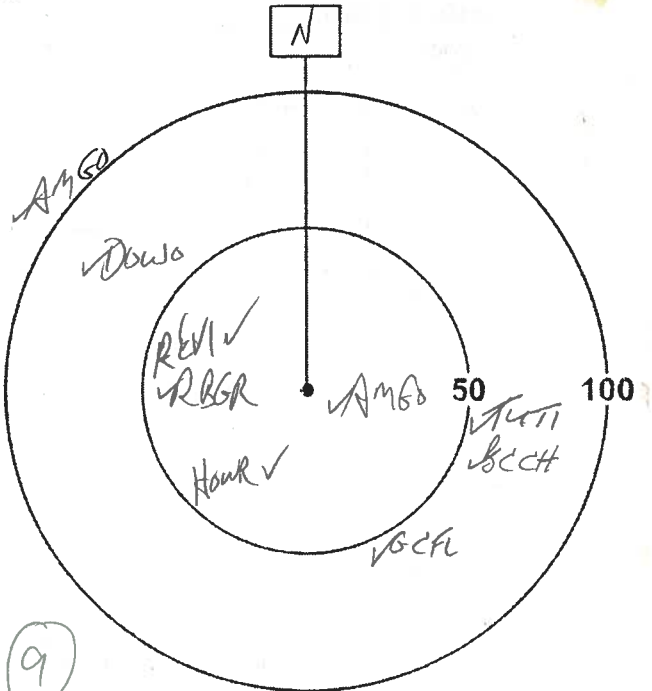
Habitat: ✓Forest Swamp Marsh ✓Hay Pasture Crop

UTM: 17 593458E 4743266N (Pol 070)

Start Time: 9:44

Species	<50 m	50-100 m	> 100m	Flyovers	Height*
AMGO	✓				A
RBGR	✓ 1				A
REVI	✓ 1				A
HOWR	✓ 1				A
AMGO	✓ 1		✓ 1		A
TUTI		✓ 1			A
GCFL		✓ 1			A
BCCH		✓ 1			A
DOWO		✓ 1			A

*Height of blade sweep will vary from project to project; Check with Project Manager
O – On ground; A – Below height of blade sweep; B – At height of blade sweep;
C – Above height of blade sweep; D – Well Above the height of blade sweep.



9

Quality Control: This form is complete (✓) & legible (✓).

Signature: _____ (Field Personnel)

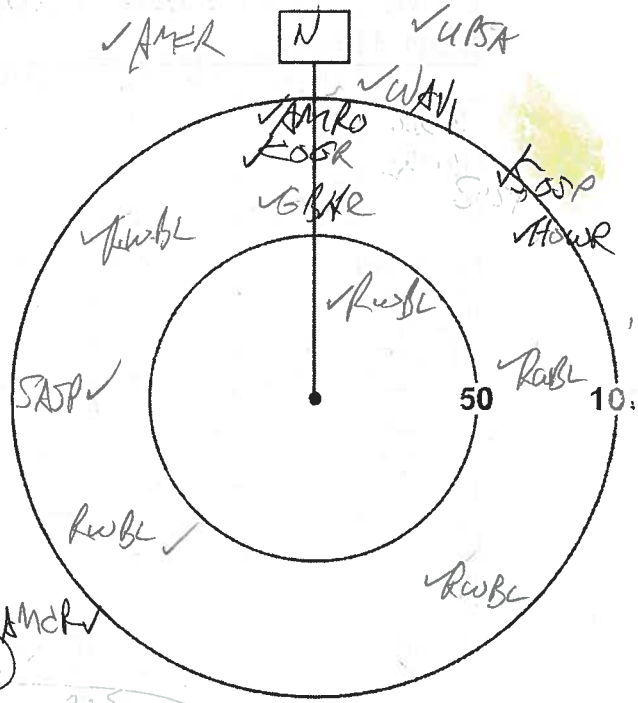
Signature: _____ (Project Manager)

REV: May, 07 Form 020

G2

Station: G2
Habitat: ✓Forest Swamp Marsh Hay Pasture Crop _____
UTM: 17 589789E 4752199N (Po1063)
Start Time: 6:31

Species	<50 m	50-100 m	> 100m	Flyovers	Height*
COGR		✓ 1		✓	A
GBHE		✓ 1		✓	B
AMER			✓ 2		A
HOWA			✓ 1		A
WAVI			✓ 1		A
SOSP		✓	✓ 1		A
UPSA			✓ 1		A
SASP		✓ 1			A
RWBL	✓ 1	✓ 4			A
AMRO		✓ 1			A



*Height of blade sweep will vary from project to project; Check with Project Manager
O – On ground; A – Below height of blade sweep; B – At height of blade sweep;
C – Above height of blade sweep; D – Well Above the height of blade sweep

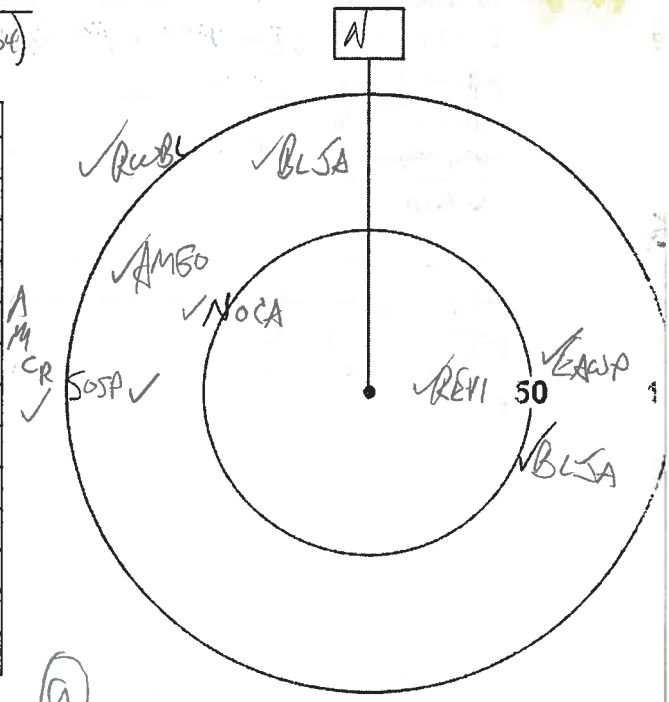
15

SASP = SAVS

W3

Station: W3
Habitat: ✓Forest Swamp Marsh Hay Pasture Crop _____
UTM: 17 590014E 4751764N (Po1064)
Start Time: 6:58

Species	<50 m	50-100 m	> 100m	Flyovers	Height*
AMER			✓ 1		?
REVI	✓ 1				A
NOCA	✓ 1				A
BLJA		✓ 2			A
AMGO		✓ 1			A
SOSP		✓ 1			A
EAWP		✓ 1			A
RWBL			✓ 1		A



AMCR ✓

*Height of blade sweep will vary from project to project; Check with Project Manager
O – On ground; A – Below height of blade sweep; B – At height of blade sweep;
C – Above height of blade sweep; D – Well Above the height of blade sweep

9

Quality Control: This form is complete (✓) & legible (✓).

Signature: _____ (Field Personnel)

Signature: _____ (Project Manager)

REV: May, 07 Form 020

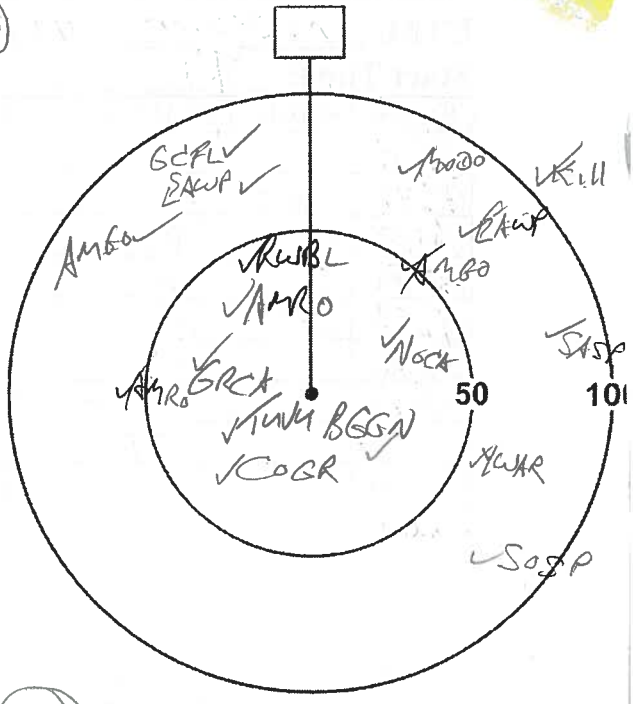
Station: W25

Habitat: ✓Forest Swamp Marsh Hay Pasture Crop

UTM: 17 591385E 4746920N (P01067)

Start Time: 8:08

Species	<50 m	50-100 m	> 100m	Flyovers	Height*
TUVU	✓1			✓	B
RWBL	✓1			✓	A
AMRO	✓2				A
NOCA	✓1				A
GRCA	✓1				A
BGGN	✓1				A
COGR	✓1				A
WAR		✓1			A
EAWP		✓2			A
AMGO		✓2			A
GCFL		✓1			A
MODO		✓1			A
KILL			✓1		A
SASP			✓1		A
SOSP			✓1		A



*Height of blade sweep will vary from project to project; Check with Project Manager
O – On ground; A – Below height of blade sweep; B – At height of blade sweep;
C – Above height of blade sweep; D – Well Above the height of blade sweep

18

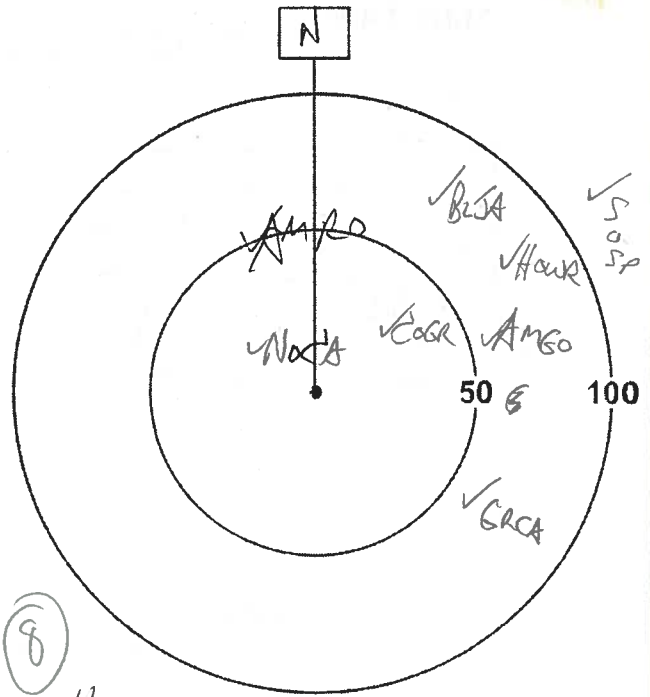
Station: W4

Habitat: ✓Forest Swamp Marsh Hay Pasture Crop

UTM: 17 588188E 4744055N

Start Time: 8:50

Species	<50 m	50-100 m	> 100m	Flyovers	Height*
COGR	✓1			✓	A
AMGO		✓1		✓	A
NOCA	✓1				
AMRO		✓1			
BLJA		✓1			
HOWR		✓1			
GRCA		✓1			
SOSP			✓1		



*Height of blade sweep will vary from project to project; Check with Project Manager
O – On ground; A – Below height of blade sweep; B – At height of blade sweep;
C – Above height of blade sweep; D – Well Above the height of blade sweep.

8

Quality Control: This form is complete (✓) & legible (✓).

Signature: _____ (Field Personnel)

Signature: _____ (Project Manager)

REV: May, 07 Form 020

W6

Station: W23

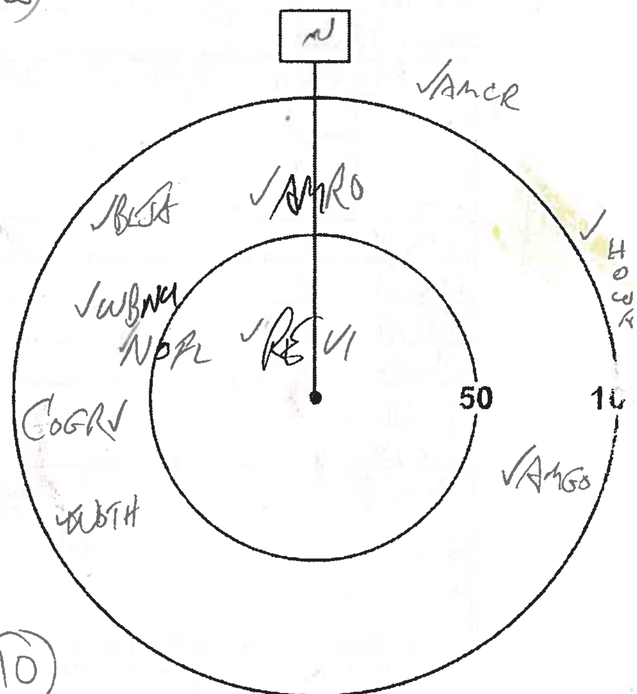
Habitat: ✓Forest Swamp Marsh Hay Pasture Crop

(wind light)

UTM: 17 590313E 4750826 N (P01 065)

Start Time: 7:11

Species	<50 m	50-100 m	> 100m	Flyovers	Height*
AMCR			✓ 1		?
REVI	✓ 1				A
AMGO		✓ 1			A
AMRO		✓ 1			A
BLJA		✓ 1			A
WBNU		✓ 1			A
NOFL	✓ 1				A
COGR		✓ 1			A
HOWR			✓ 1		A
WOTH		1			



*Height of blade sweep will vary from project to project; Check with Project Manager
O – On ground; **A** – Below height of blade sweep; **B** – At height of blade sweep;
C – Above height of blade sweep; **D** – Well Above the height of blade sweep

(10)

W7

Station: W24

Habitat: ✓Forest Swamp Marsh Hay Pasture Crop

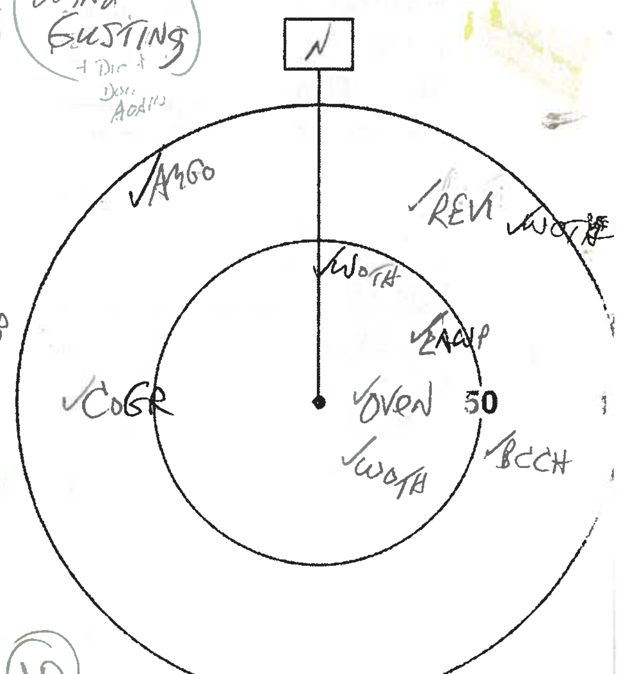
(Wind GUSTING)

UTM: 17 592378E 4749790N (P01 066)

Start Time: 7:36

Species	<50 m	50-100 m	> 100m	Flyovers	Height*
COGR		✓ 1		✓	A
WOTH	✓ 2		✓ 1		A
OVEN	✓ 1				A
EAWP	✓ 1				A
REVI		✓ 1			A
BCCH		✓ 1			A
AMGO		✓ 1			A
~~BCCH~~		~~✓~~			~~A~~
FISP			✓ 1		A

FISP ✓



*Height of blade sweep will vary from project to project; Check with Project Manager
O – On ground; **A** – Below height of blade sweep; **B** – At height of blade sweep;
C – Above height of blade sweep; **D** – Well Above the height of blade sweep

(10)

Quality Control: This form is complete (✓) & legible (✓).

Signature: [signature] (Field Personnel) Signature: [signature] (Project Manager)

 REV: May, 07 Form 020

Samsung Point Counts

Section 1- total 9 counts
Grassland- 1, 2
Woodland- 1, 2, 4, 5, 23, 24, 25 Jim

Section 2- total 10 counts
Grassland- 3, 4, 5, 6, 7
Woodland- 30, 29, 3, 22, 11 Melissa

Section 3- 11 counts
No grassland
Woodland- 9, 10, 12, 13, 16, 14, 17, 18, 19, 20, 27 Val

Section 4- 10 counts
Grassland- 8, 9, 10
Woodland- 6, 15,21, 26, 7, 8, 28 Jim

If there is a problem with a point count (access, wrong habitat) please replace it with a new point count location in the same habitat in your section.

Try to get as many of your counts done as possible, if you can't get them all done in the allocated time, call Nicole and let me know which ones you didn't get done.

590000 600000 610000

4750000

WIND AND SOLAR SITING AREA

Cayuga
Nelles Corners
Fisherville
Dunnville
Grand River
Lake Erie

TOWNLINE ROAD
REEDS ROAD
RIVER ROAD
HIGHWAY 3
MCFARLANE ROAD
WINDECKER ROAD
CONCESSION 2
JUNCTION ROAD
ORTT ROAD
ROBINSON ROAD
HALDIMAND ROAD 17
BURKE ROAD
DILTZ ROAD
MCLAUGHLIN ROAD
BIRD ROAD
IRISH LINE
CONCESSION 8
GIBSON ROAD
LINK ROAD
CONCESSION 7
CONCESSION 6
CONCESSION 5
CONCESSION 4
CONCESSION 3
HALDIMAND ROAD 53
HALDIMAND ROAD 12
ERIE STREET NORTH
MAIN STREET WEST
WHEELER ROAD
FISHERVILLE ROAD
LAKESHORE ROAD
REICHELD ROAD
BROOKERS ROAD
SWEETS CORNERS ROAD
MEADOWS ROAD
SUTTON ROAD
ROBERT ROAD
YAREMY ROAD
HALDIMAND ROAD 20
BAINS ROAD
SOUTH CAYUGA ROAD
HALDIMAND ROAD 55
HALDIMAND TOWNLINE ROAD
AIKENS ROAD
HALDIMAND ROAD 49
HALDIMAND TRACT ROAD
KINGS ROW
MARSHALL ROAD
JOHNSON ROAD

1 2 3 4

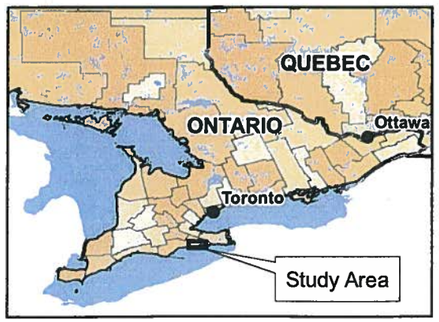
0 1 2 km
1:85,000

June, 2010
160960577

W:\active\160960577\drawing\GIS\MXD\OptionedLands\160960577_Fig1-0_OptionedLands_Ortho_20100614_CEW.mxd - 6/14/2010 @ 3:55:38 PM

Legend

- Project Location
- Elexco_acquired_agreements Drawing
- Woodlot > 10ha
- Wooded Area
- Road
- Waterbody (OBM)



Notes

1. Coordinate System: UTM NAD 83 - Zone 17 (N).
2. Data Sources: Ontario Ministry of Natural Resources © Queens Printer Ontario, 2009; © GREP, 2010; © Samsung, 2010.
3. Image Sources: © FirstBase Solutions, WMS 2010.

Client/Project
SAMSUNG C&T
GRAND RENEWABLE ENERGY PARK

Figure No.
1.0

Title
OPTIONED LANDS - ORTHOS 2010-06-03

Stantec

Massland -

G = grassland
C = crop
P = pasture

4 moon days · grasslands.

: please points
: (1) → 10 grasslands
(1) → 30 woodland

Woodland

grassland.

Stantec Consulting Ltd.
70-1 Southgate Drive
Guelph, Ontario, Canada
N1G 4P5
Tel: (519) 836-6050
Fax: (519) 836-2493

Breeding Bird Survey Observation Form

Project Number 160910057 7

Project Name: Samsung

Date / Time: 17-June-2010

Field Personnel: Melissa Straus

Weather Conditions:	Temp:	Wind:	Cloud:	PPT:	PPT in last 24 hrs:
	16°C	3	1%	none	Rain

Start Time: 05:15 End Time: 10:00

Habitat #	ELC Code(s) or Habitat Description
1	Grasslands
2	Woodlot
3	~~Offsite~~

Quality Control: This form is complete (✓) & legible (✓).

Signature: Melissa Straus (Field Personnel)

Signature: Valen Wyatt (Project Manager)

Record location of all significant species on site map

** Endangered, Threatened or Special Concern
† Partners In Flight
‡ Area Sensitive Species

Species	Habitats	BE*	Species	Habitats	BE*	Species	Habitats	BE*
Canada Goose			Red-headed Wo** †			Blue-wing. Wa. †		
Wood Duck			Red-bellied Wo.			Gold-wing. Wa** †		
Am. Black Duck			Yell-bellied Sap. ‡			Nashville Wa.		
Mallard			Downy Wo.	2	H	Yellow Wa.	1	S
Ring-neck. Pheasant			Hairy Wo.			Chestnut-sided Wa.		
Ruffed Grouse ‡			Northern Flicker †	1	H	Magnolia Wa. ‡		
Wild Turkey	2	H	Pileated Wo. ‡			Bl-thr Blue Wa. ‡		
Common Loon ‡			Ea. Wood-Pewee †	2	S	Yel-rumped Wa. ‡		
Pied-billed Grebe			Alder Fly.			Bl-thr Gr. Wa. ‡		
D. C. Cormorant ‡			Willow Fly. †	1	S	Blackburnian Wa. ‡		
American Bittern			Least Fly.			Pine Wa. ‡		
Least Bittern** ‡			Eastern Phoebe			Cerulean Wa** †‡		
Great Blue Heron			Great Crested Fly.	2	S	Bl-and-wh Wa. ‡		
Great Egret			Eastern Kingbird †			Am. Redstart ‡		
Green Heron			Yellow-thr. Vireo ‡			Ovenbird ‡	2	S
Turkey Vulture			Blue-headed Vireo ‡			No. Waterthrush ‡		
Osprey			Warbling Vireo			Mourning Wa. ‡		
Northern Harrier †‡			Red-eyed Vireo	2	S	Co. Yellowthroat		
Sharp-shin. Hawk ‡			Blue Jay	2	H	Hooded Wa** †‡		
Coopers Hawk ‡			American Crow	2	H	Canada Wa. †‡		
Red-shou. Hawk †‡			Common Raven			Scarlet Tanager ‡		
Red-tailed Hawk	1	H	Horned Lark	1	S	Eastern Towhee †		
Am. Kestrel †			Purple Mart.	1	H	Chipping Sp.	2	S
Virginia Rail			Tree Swallow	1	H	Clay-colored Sp.		
Sora			No. R. W. Swallow			Field Sp. †	1	S
Sandhill Crane			Bank Swallow †			Vesper Sp. †	1	S
Killdeer	1	A	Cliff Swallow			Savannah Sp. †	1	S
Spotted Sandpiper	1	P,A	Barn Swallow	1	H	Grasshopper Sp. †		
Upland Sandpiper ‡			Bl-capped Chickadee	2	FY	Song Sp.	1,2	A
Wilson's Snipe	1	FY	Tufted Titmouse			Swamp Sp.		
American Woodcock			Red-br. Nuthatch			Wh-throated Sp. ‡		
Ring-billed Gull			Wh-br. Nuthatch	2		Northern Cardinal	2	A
Herring Gull			Br. Creeper ‡			Rose-br. Grosbeak †	2,3	S
Caspian Tern			Carolina Wren.			Indigo Bunting	2	S
Black Tern** ‡			House Wren	2	S	Bobolink †	1	HC
Common Tern			Winter Wren ‡			Red-winged Bl.	1	FY
Rock Dove	1	H	Sedge Wren			Ea. Meadowlark †	1	S
Mourning Dove	1	H	Marsh Wren			Common Grackle	1	H
Yellow-bill. Cuckoo			Golded-cr. Kinglet ‡			Br-headed Cowbird	1	S
Black-bill. Cuckoo †			B. G. Gnatcatcher ‡			Orchard Oriole		
Eastern Screech Owl			Eastern Bluebird	1	S	Baltimore Oriole †	2	S
Great Horned Owl			Veery			Purple Finch		
Barred Owl ‡			Hermit Thrush ‡			House Finch		
Long-eared Owl			Wood Thrush †	3	S	Pine Siskin		
N. Saw-whet Owl			American Robin	1,2,3	S	Am. Goldfinch	1,2	H
Co. Nighthawk**			Gray Catbird			House Sparrow		
Whip-poor-will †‡			No. Mockingbird			Other Species …		
Chimney Swift** †			Brown Thrasher †	1	S			
Ruby-thr. Humming.			European Starling	1	A	1		
Belted Kingfisher †			Cedar Waxwing					

*Record highest Breeding Evidence (BE) observed over all habitat. Use codes as in Breeding Bird Atlas of Ontario

Quality Control: This form is complete (__) & legible (__).

Signature: _____ Signature: _____

(Field Personnel) (Project Manager)

Stantec Consulting Ltd.
361 Southgate Drive
Guelph, Ontario, Canada
N1G 3M5
Tel: (519) 836-6050
Fax: (519) 836-2493

Birding Point Counts Survey Observation Form

Project Number 160960577 Project Name: Samsung

Date 17 June - 2010 Field Personnel: Melissa Straus

Weather Conditions:	Temp:	Wind:	Cloud:	PPT:	PPT in last 24 hrs:
	16°C	3	1%	none	Rain

GPS #: T Personal

G3

Station: G3

Habitat: ☐Forest ☐Swamp ☐Marsh ☒Hay ☐Pasture ☐Crop Clover w some knee high grasses

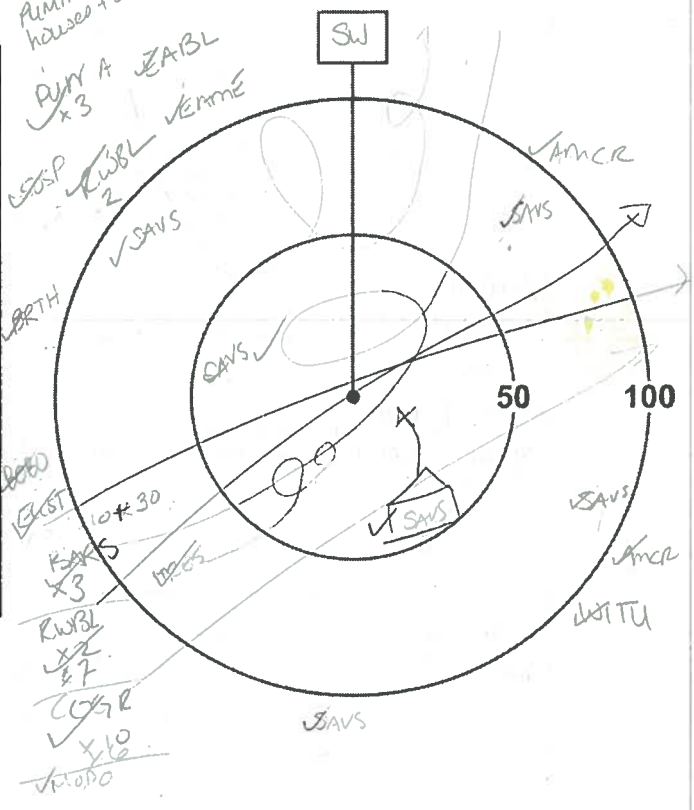
UTM: 594145 - 4751440

Start Time: 05:25

Species	<50 m	50-100 m	> 100m	Flyovers	Height*
EUST				40	B
COGR				16	B
RWBL			11	9	A
BARS				3	A
TREE				1	A
SAVS	II	III	1		O
WITU			1		O
AMCR			11		A
EAME			1		A
PUMA			3		A
SOSP			1		A
BRTH			1		A
EABL			1		A

*Height of blade sweep will vary from project to project; Check with Project Manager
O – On ground; **A** – Below height of blade sweep; **B** – At height of blade sweep;
C – Above height of blade sweep; **D** – Well Above the height of blade sweep

MODO 1 ?
BOBO 1 O



Quality Control: This form is complete (✓) & legible (✓).

Signature: Melissa Straus (Field Personnel) Signature: Valerie Wyatt (Project Manager)

Page 1 of 5

REV: May, 07 Form 020

G4

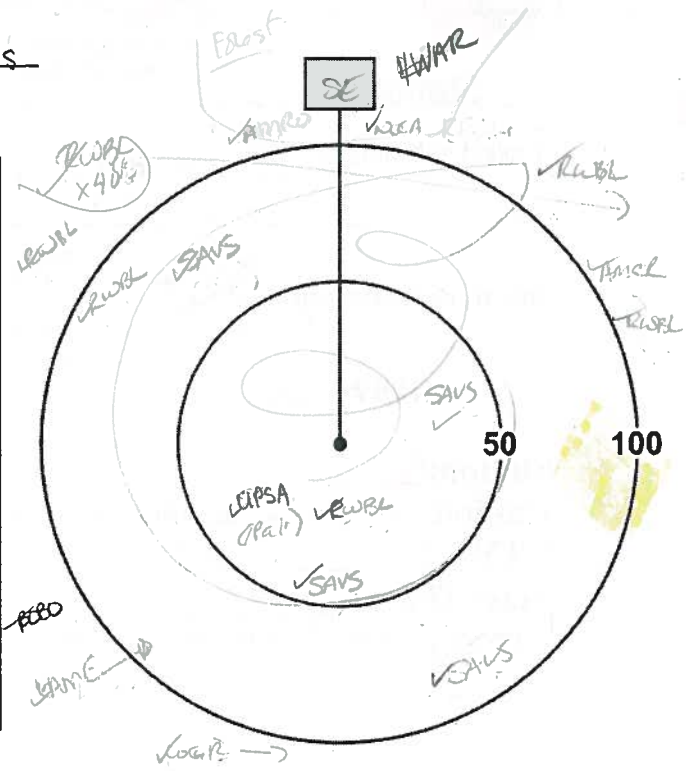
Station: G4

Habitat: ☐Forest ☐Swamp ☐Marsh ☒Hay ☐Pasture ☐Crop Timothy + weeds

UTM: 595226 · 4749402

Start Time: 15:58

Species	<50 m	50-100 m	> 100m	Flyovers	Height*
COGR				1	B
SAVS	II	II			O
UPSA	1				O, B
RWBL	1	1	III	40	A
EAME		1			A
AMRO			1		?
YWAR			1		A
NOCA			1		A
AMCR			1		?
BOBO			1		O



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C – Above height of blade sweep; **D** – Well Above the height of blade sweep

40 (17)

G5

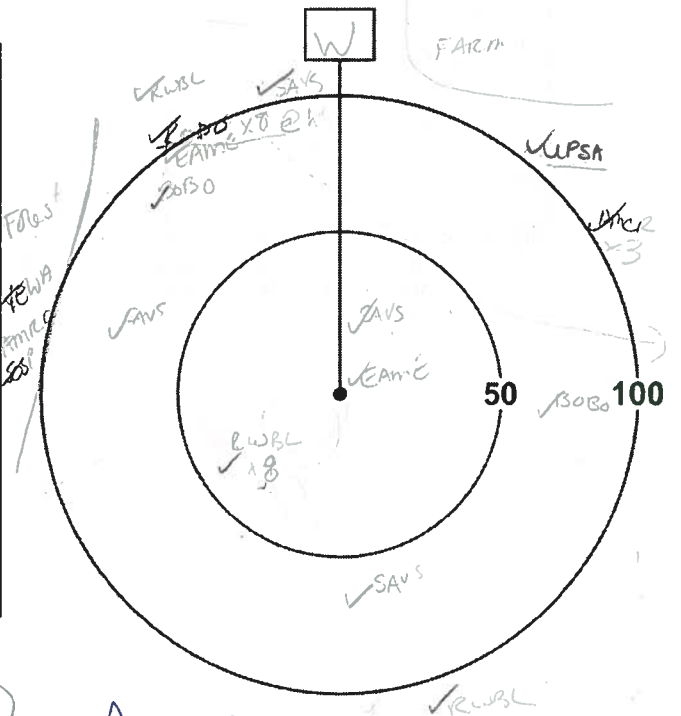
Station: G5

Habitat: ☐Forest ☐Swamp ☐Marsh ☐Hay ☒Pasture ☐Crop long grasses

UTM: 595438 · 4750252

Start Time: 16:19

Species	<50 m	50-100 m	> 100m	Flyovers	Height*
YWAR			1		A
AMRO			1		A
SOSP			1		A
EAME	1	1			A
RODO				8	B
BOBO		II			O
SAVS	1	II	1		O
RWBL		### III	II		A
AMCR			III		A
UPSA			1		O, B



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O – On ground; **A** – Below height of blade sweep; **B** – At height of blade sweep;
C – Above height of blade sweep; **D** – Well Above the height of blade sweep

33

Quality Control: This form is complete (✓ & legible ✓).

Signature: William Straub (Field Personnel)

Signature: (Project Manager)

W8

Station: W30

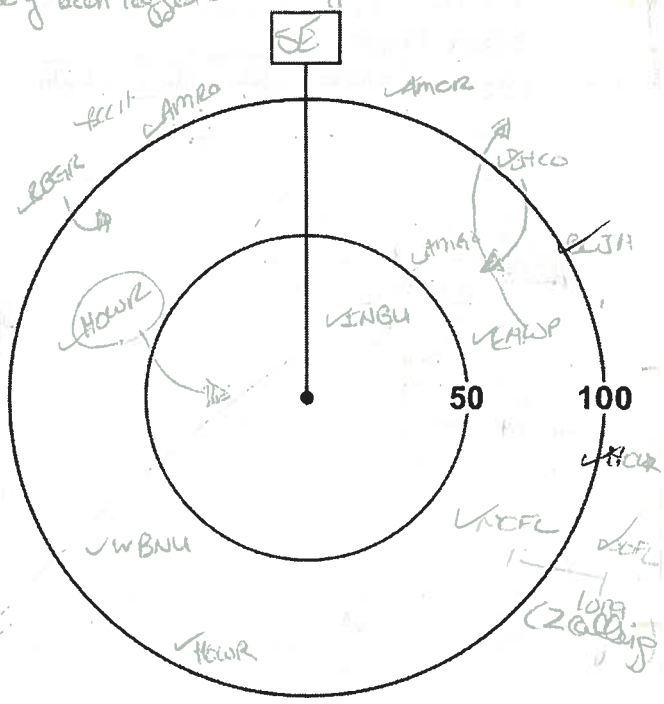
Habitat: ☒Forest ☐Swamp ☐Marsh ☐Hay ☐Pasture ☐Crop Maple/Beech - dense understory

Likely been logged selectively

UTM: 594085.4750125

Start Time: 07:00

Species	<50 m	50-100 m	> 100m	Flyovers	Height*
HOWR	1	1	1		A
WBNU		1			A
TNBU	1				A
RBGR		1			A
BCCH			1		A
AMRO			1		A
AMCR			1		?
BLJA			1		A
EAWP		1			A
AMGO				1	B
BHCO		1			A
NOFL		1	1		A



*Height of blade sweep will vary from project to project; Check with Project Manager
O – On ground; A – Below height of blade sweep; B – At height of blade sweep;
C – Above height of blade sweep; D – Well Above the height of blade sweep

15

W9

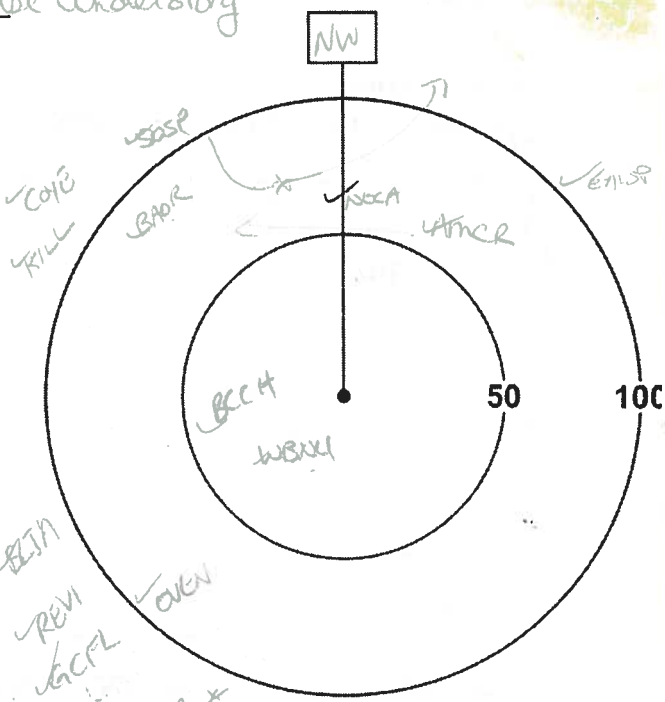
Station: W3

Habitat: ☒Forest ☐Swamp ☐Marsh ☐Hay ☐Pasture ☐Crop Hickory is dense understory

UTM: 597315.4749718

Start Time: 07:49

Species	<50 m	50-100 m	> 100m	Flyovers	Height*
BLJA			1		A
REVI			1		
GCFL			1		
AMCR		1	1		
RBGR			1		
OVEN		1			
BAOR		1			
KILL			1		
COHA			1		
SOSP		1			
NOCA		1			
EAWP			1		
BCCH	1				



*Height of blade sweep will vary from project to project; Check with Project Manager
O – On ground; A – Below height of blade sweep; B – At height of blade sweep;
C – Above height of blade sweep; D – Well Above the height of blade sweep

WBNU

15

Quality Control: This form is complete (__) & legible (__).

Signature: _____ (Field Personnel)

Signature: _____ (Project Manager)

REV: May, 07 Form 0

G6

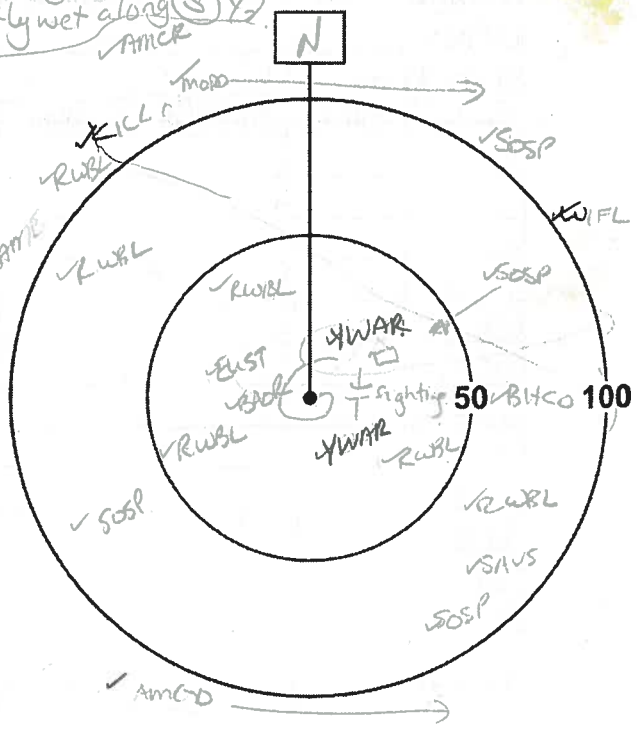
Station: G7

Habitat: ☐Forest ☐Swamp ☐Marsh ☒Hay ☐Pasture ☐Crop long grasses - lots of teasels slightly wet along (S) Y2

UTM: 597203 · 4750454

Start Time: 08:14

Species	<50 m	50-100 m	> 100m	Flyovers	Height*
KILL				1	B
MODO				1	A
AMCR				1	A
SOSP	1	11	1		
EAME			1		
RWBL	111	11	1		
YWAR	11				
EUST	1				
BAOR	1				
SAVS		1			
BHCO		1			
WIFL			1		
AMCR			1		



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O – On ground; **A** – Below height of blade sweep; **B** – At height of blade sweep;
C – Above height of blade sweep; **D** – Well Above the height of blade sweep.

22

G7

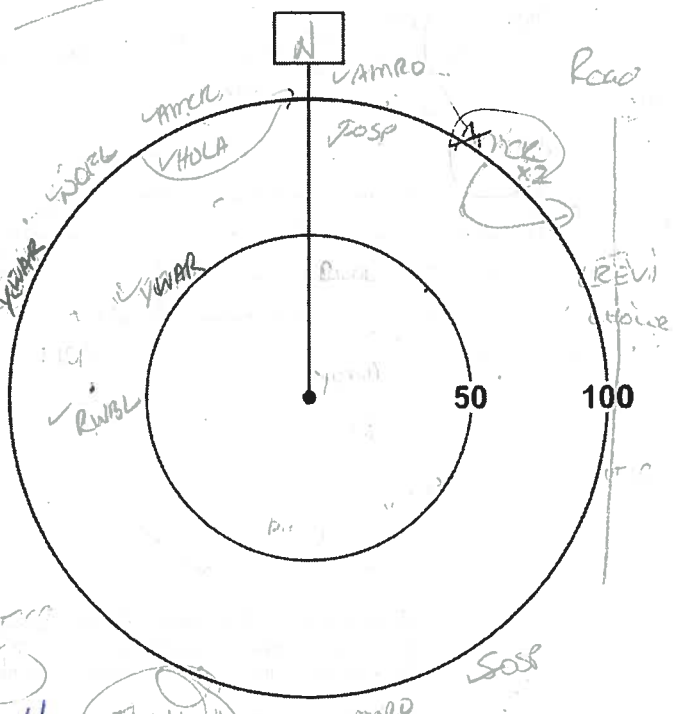
Station: G10

Habitat: ☐Forest ☐Swamp ☐Marsh ☒Hay ☐Pasture ☐Crop Planted grass

UTM: 597914 · 4750473

Start Time: 08:38

Species	<50 m	50-100 m	> 100m	Flyovers	Height*
AMCR			1	11	B
HOLA		1			B
NOFL			1		A
REVI			1		A
HOWR			1		A
YWAR		1	1		A
TUVU				1	C
AMRO			11		
SOSP		1	1		
RWBL		1			



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O – On ground; **A** – Below height of blade sweep; **B** – At height of blade sweep;
C – Above height of blade sweep; **D** – Well Above the height of blade sweep.

Quality Control: This form is complete (✓) & legible (✓).

Signature: H Wilson X Travis (Field Personnel)

Signature: (Project Manager)

REV: May, 07 Form 020

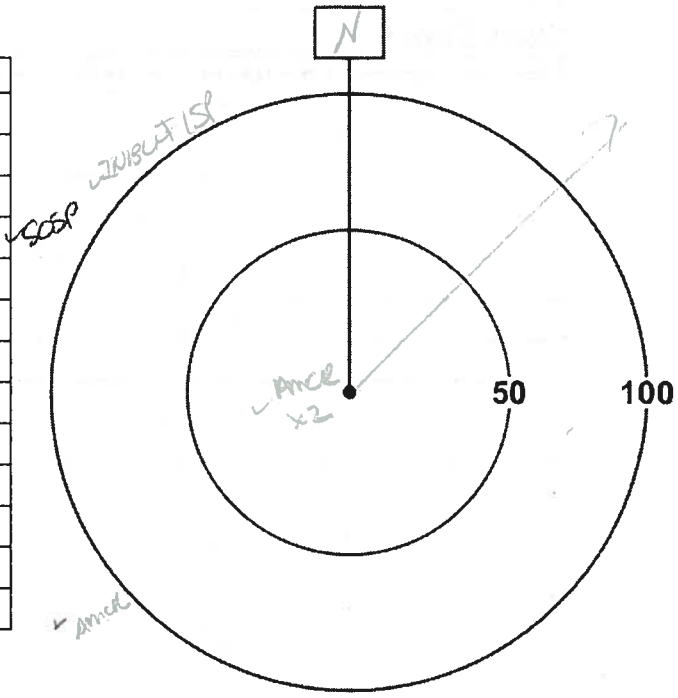
Station: W22

Habitat: ☒Forest ☐Swamp ☐Marsh ☐Hay ☐Pasture ☐Crop Sugar Maple/Beech - selectively logged.

UTM: 597841 · 4750123

W10 **Start Time:** 09:06

Species	<50 m	50-100 m	> 100m	Flyovers	Height*
SOSP			1		A
JNBU			1		
FLSP			1		
AMCR	11		1		



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O – On ground; **A** – Below height of blade sweep; **B** – At height of blade sweep;
C – Above height of blade sweep; **D** – Well Above the height of blade sweep

(6)

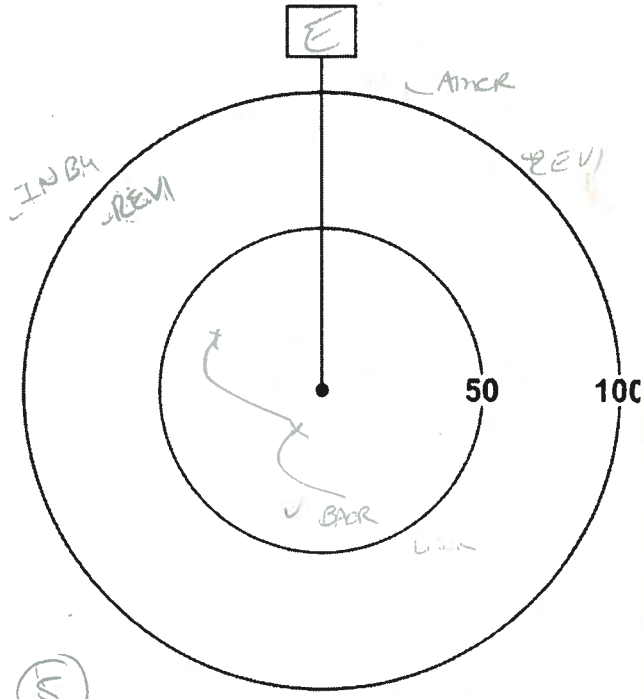
Station: W29

W11 **Habitat:** ☒Forest ☐Swamp ☐Marsh ☐Hay ☐Pasture ☐Crop (Red) Maple · Hickory

UTM: 596589 · 4749490

Start Time: ca 310

Species	<50 m	50-100 m	> 100m	Flyovers	Height*
INBU			1		
REVI		1	1		
BAOR	1				
AMCR			1		



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C – Above height of blade sweep; **D** – Well Above the height of blade sweep

(5)

Quality Control: This form is complete (✓) & legible (✓).

Signature: _____ (Field Personnel)

Signature: _____ (Project Manager)

REV: May, 07 Form 020

590000 600000 610000

4750000

WIND AND SOLAR SITING AREA

Cayuga
Nelles Corners
Fisherville
Dunnville
Grand River
Lake Erie

TOWNLINE ROAD
REEDS ROAD
RIVER ROAD
HIGHWAY 3
MCFARLANE ROAD
WINDECKER ROAD
CONCESSION 2
JUNCTION ROAD
ORTT ROAD
JARDEN ROAD
BURKE ROAD
ROBINSON ROAD
DILTZ ROAD
MCLAUGHLIN ROAD
BIRD ROAD
HALDIMAND ROAD 17
TRISH LINE
CONCESSION 8
GIBSON ROAD
LINK ROAD
CONCESSION 7
ROBERT ROAD
MEADOWS ROAD
YAREMY ROAD
HALDIMAND ROAD 20
AIKENS ROAD
CONCESSION 6
HALDIMAND ROAD 53
CONCESSION 5
BAINS ROAD
SOUTH CAYUGA ROAD
HALDIMAND TRACT ROAD
MARSHALL ROAD
KINGS ROW
CONCESSION 4
HALDIMAND ROAD 12
ERIE STREET NORTH
SWEETS CORNERS ROAD
BROOKERS ROAD
REICHELD ROAD
JOHNSON ROAD
MAIN STREET WEST
FISHERVILLE ROAD
LAKESHORE ROAD
WHEELER ROAD

0 1 2 km
1:85,000

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June, 2010
160960577

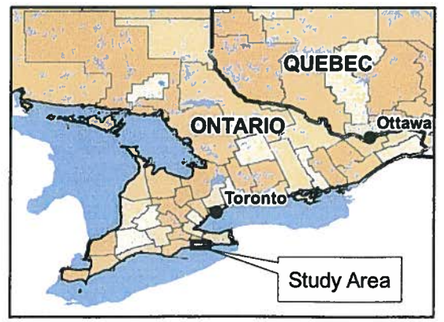
Legend

- Project Location
- Elexco_acquired_agreements Drawing
- Woodlot > 10ha
- Wooded Area
- Road
- Waterbody (OBM)

G = grassland
C = crop
P = pasture

: please confirm
: (1) → 10 grasslands
(1) → 30 woodland

4 more days · grasslands.



Notes

1. Coordinate System: UTM NAD 83 - Zone 17 (N).
2. Data Sources: Ontario Ministry of Natural Resources © Queens Printer Ontario, 2009; © GREP, 2010; © Samsung, 2010.
3. Image Sources: © FirstBase Solutions, WMS 2010.

Client/Project
SAMSUNG C&T
GRAND RENEWABLE ENERGY PARK

Figure No.
1.0

Title
OPTIONED LANDS - ORTHOS
2010-06-03

Stantec

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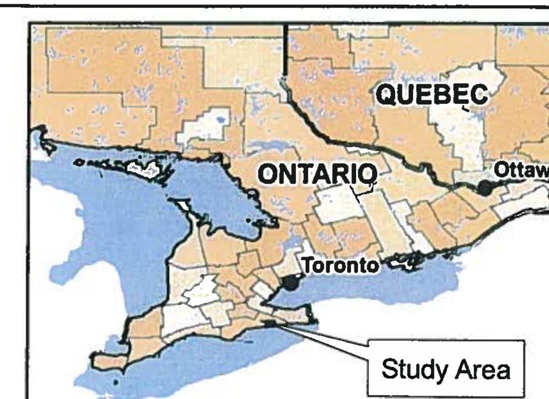
June, 2010
160960577

Legend

- Project Location
- Elexco_acquired_agreements Drawing
- Woodlot > 10ha
- Wooded Area
- Road
- Waterbody (OBM)



Notes

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3. Image Sources: © FirstBase Solutions, WMS 2010.

Client/Project

SAMSUNG C&T
GRAND RENEWABLE ENERGY PARK

Figure No.

1.0

Title

OPTIONED LANDS - ORTHOS
2010-06-03

Stantec

2/3

see 1 ↓

see. 2 ↓

590000

4750000

LITTLE ROAD

LINK ROAD

GIBSON ROAD

RICHERT ROAD

2

23

24

3

30

5

4

N

0 0.5 1 km

1:20,000

590000

4750000

June, 2010
160960577

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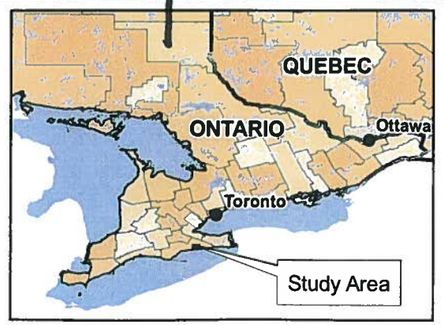
Legend

- Project Location
- Elexco_acquired_agreements Drawing
- Woodlot > 10ha
- Wooded Area
- Road
- Waterbody (OBM)

(#) = woodland

(#) = grassland



Stantec

1/2

Notes

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Client/Project
SAMSUNG C&T
GRAND RENEWABLE ENERGY PARK

Figure No.
1.0

Title
OPTIONED LANDS - ORTHOS 2010-06-03

Stantec Consulting Ltd.
70-1 Southgate Drive
Guelph, Ontario, Canada
N1G 4P5
Tel: (519) 836-6050
Fax: (519) 836-2493

Breeding Bird Survey Observation Form

Project Number _____ Project Name: Samsung

Date / Time: Jun 28 VISIT 2 Field Personnel: BH

Weather Conditions:	Temp: Lea	Wind: Pg	Cloud: 1	PPT:	PPT in last 24 hrs:

Start Time: _____ End Time: _____

Habitat #	ELC Code(s) or Habitat Description
A	Woods- PC's 22, 13
B	PC Woods 29
C	PC Woods 30

Quality Control: This form is complete (__) & legible (__).

Signature: _____ (Field Personnel) Signature: _____ (Project Manager)

Woodlot 9T10 // Woodlot 8 //

Record location of all significant species on site map

** Endangered, Threatened or Special Concern
† Partners In Flight
‡ Area Sensitive Species

A B C A B C

Species	Habitats	BE*	Species	Habitats	BE*	Species	Habitats	BE*
Canada Goose			Red-headed Wo** †			Blue-wing. Wa. †		
Wood Duck	✓	S H	Red-bellied Wo.	✓	S H	Gold-wing. Wa** †		
Am. Black Duck			Yell-bellied Sap. ‡			Nashville Wa.		
Mallard	✓	S H	Downy Wo.	✓ ✓	S H	Yellow Wa.	✓ ✓ ✓	S M
Ring-neck. Pheasant			Hairy Wo.			Chestnut-sided Wa.		
Ruffed Grouse ‡			Northern Flicker †	✓ ✓ ✓	S H	Magnolia Wa. ‡		
Wild Turkey			Pileated Wo. ‡			Bl-thr Blue Wa. ‡		
Common Loon ‡			Ea. Wood-Pewee †	✓ ✓ ✓	S M	Yel-rumped Wa. ‡		
Pied-billed Grebe			Alder Fly.			Bl-thr Gr. Wa. ‡		
D. C. Cormorant ‡			Willow Fly. †	✓ ✓ ✓	S M	Blackburnian Wa. ‡		
American Bittern			Least Fly.			Pine Wa. ‡		
Least Bittern** ‡			Eastern Phoebe	✓	S M	Cerulean Wa** †‡		
Great Blue Heron	✓	O	Great Crested Fly.	✓ ✓ ✓	S M	Bl-and-wh Wa. ‡		
Great Egret			Eastern Kingbird †			Am. Redstart ‡		
Green Heron			Yellow-thr. Vireo ‡			Ovenbird ‡	✓	S M
Turkey Vulture	✓	S H	Blue-headed Vireo ‡			No. Waterthrush ‡		
Osprey			Warbling Vireo	✓ ✓	S M	Mourning Wa. ‡		
Northern Harrier †‡			Red-eyed Vireo	✓ ✓ ✓	S M	Co. Yellowthroat	✓ ✓ ✓	S M
Sharp-shin. Hawk ‡			Blue Jay			Hooded Wa** †‡		
Coopers Hawk ‡	✓	S H	American Crow	✓ ✓ ✓	S H	Canada Wa. †‡		
Red-shou. Hawk †‡			Common Raven			Scarlet Tanager ‡		
Red-tailed Hawk	✓	S H	Horned Lark			Eastern Towhee †		
Am. Kestrel †			Purple Mart.			Chipping Sp.	✓	S M
Virginia Rail			Tree Swallow	✓	S H	Clay-colored Sp.		
Sora			No. R. W. Swallow			Field Sp. †		
Sandhill Crane			Bank Swallow †			Vesper Sp. †		
Killdeer			Cliff Swallow			Savannah Sp. †		
Spotted Sandpiper			Barn Swallow			Grasshopper Sp. †		
Upland Sandpiper ‡			Bl-capped Chickadee	✓ ✓	S M	Song Sp.	✓ ✓ ✓	S M
Wilson's Snipe			Tufted Titmouse			Swamp Sp.		
American Woodcock			Red-br. Nuthatch			Wh-throated Sp. ‡		
Ring-billed Gull	✓	O	Wh-br. Nuthatch	✓ ✓	S M	Northern Cardinal	✓	S H
Herring Gull			Br. Creeper ‡			Rose-br. Grosbeak †		
Caspian Tern			Carolina Wren.			Indigo Bunting	✓ ✓	S M
Black Tern** ‡			House Wren	✓ ✓ ✓	S M	Bobolink †		
Common Tern			Winter Wren ‡			Red-winged Bl.	✓ ✓ ✓	S H
Rock Dove			Sedge Wren			Ea. Meadowlark †		
Mourning Dove	✓ ✓	S H	Marsh Wren			Common Grackle		
Yellow-bill. Cuckoo			Golded-cr. Kinglet ‡			Br-headed Cowbird	✓ ✓	S H
Black-bill. Cuckoo †	✓	S H	B. G. Gnatcatcher ‡			Orchard Oriole		
Eastern Screech Owl			Eastern Bluebird			Baltimore Oriole †	✓	S H
Great Horned Owl			Veery	✓ ✓	S M	Purple Finch		
Barred Owl ‡			Hermit Thrush ‡			House Finch		
Long-eared Owl			Wood Thrush †	✓ ✓	S M	Pine Siskin		
N. Saw-whet Owl			American Robin	✓ ✓ ✓	N	Am. Goldfinch	✓ ✓ ✓	S H
Co. Nighthawk**			Gray Catbird	✓ ✓ ✓	S H	House Sparrow		
Whip-poor-will †‡			No. Mockingbird			Other Species …		
Chimney Swift** †			Brown Thrasher †	✓	S H			
Ruby-thr. Humming.	✓	S H	European Starling	✓ ✓ ✓	S H	/		
Belted Kingfisher †			Cedar Waxwing	✓ ✓ ✓	S H			

*Record highest Breeding Evidence (BE) observed over all habitat. Use codes as in Breeding Bird Atlas of Ontario

Quality Control: This form is complete (__) & legible (__).

Signature: _____ (Field Personnel)

Signature: _____ (Project Manager)

REV:Apr.08 FORM 031

Stantec Consulting Ltd.
361 Southgate Drive
Guelph, Ontario, Canada
N1G 3M5
Tel: (519) 836-6050
Fax: (519) 836-2493

Birding Point Counts Survey Observation Form

Project Number 160010624 Project Name: Samsung - Part 2

Date June 28, 2010 VISIT 2 Field Personnel: B. Holden

Weather Conditions:	Temp:	Wind:	Cloud:	PPT:	PPT in last 24 hrs:
	14-19	2-3	60-80	✓	RAIN

GPS #: T___

G3 **Station:** G3

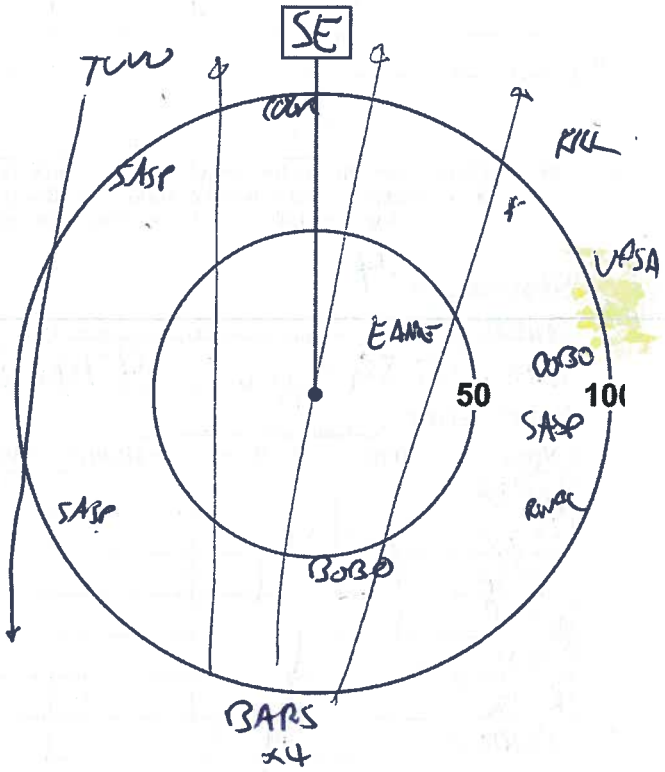
Habitat: ☐Forest ☐Swamp ☐Marsh ☒Hay ☐Pasture ☐Crop _____

UTM: 0594145 4751441

Start Time: 0600

Species	<50 m	50-100 m	> 100m	Flyovers	Height*
BOBO		II			
SASP		III			
RWBL		I			
EAME	I				
BARS				IIII	Jm
TUVU				I	40m
KILL			I		
COGR		I			
UPSA			I		

*Height of blade sweep will vary from project to project; Check with Project Manager
O – On ground; **A** – Below height of blade sweep; **B** – At height of blade sweep;
C – Above height of blade sweep; **D** – Well Above the height of blade sweep



15

Quality Control: This form is complete (✓) & legible (✓).

Signature: _____ (Field Personnel) Signature: _____ (Project Manager)

REV: May, 07 Form 020

G5

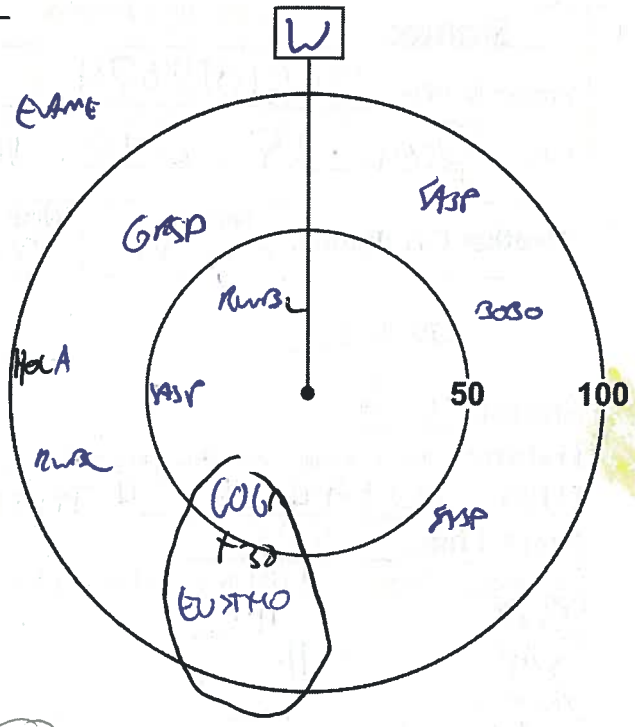
Station: G5

Habitat: □Forest □Swamp □Marsh ☑Hay □Pasture □Crop

UTM: 0595438 4750253

Start Time: 0628

Species	<50 m	50-100 m	> 100m	Flyovers	Height*
GRSP	1				
SASP	1	11			
BOBO		1			
HOLA		1			
COGR	10	20			
EUST		10			
RWBL	1	1			
GAME			1		



*Height of blade sweep will vary from project to project; Check with Project Manager
O – On ground; **A** – Below height of blade sweep; **B** – At height of blade sweep;
C – Above height of blade sweep; **D** – Well Above the height of blade sweep

49

G4

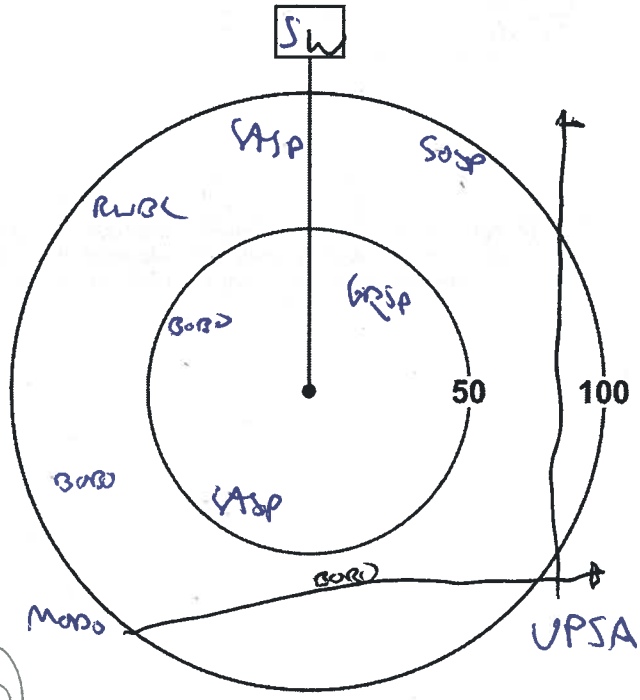
Station: G4

Habitat: □Forest □Swamp □Marsh ☑Hay □Pasture □Crop

UTM: 0595226 4749903

Start Time: 0659

Species	<50 m	50-100 m	> 100m	Flyovers	Height*
UPSA				1	40m
BOBO	1	11			
SASP	1	1			
GRSP	1				
VESP		1			
RWBL		1			
MODO		4		1	15m



*Height of blade sweep will vary from project to project; Check with Project Manager
O – On ground; **A** – Below height of blade sweep; **B** – At height of blade sweep;
C – Above height of blade sweep; **D** – Well Above the height of blade sweep

10

Quality Control: This form is complete (✓) & legible (✓)

Signature: _____ (Field Personnel)

Signature: _____ (Project Manager)

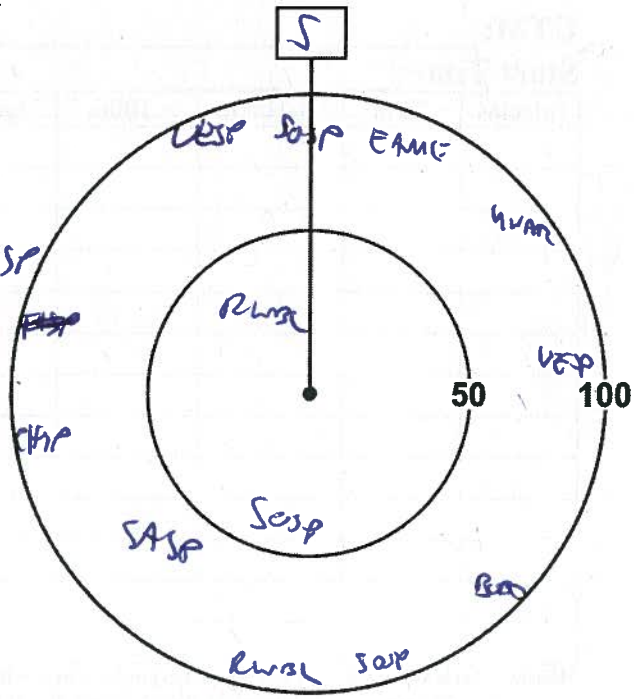
G7 **Station:** G6

Habitat: ☐Forest ☐Swamp ☐Marsh ☐Hay ☐Pasture ☐Crop _____

UTM: 0597914 4750474

Start Time: 0934

Species	<50 m	50-100 m	> 100m	Flyovers	Height*
VESP		11			
YLWAR	4	1			
SOSP		11			
BOBO		1			
SASP		1			
RWBL	1	1			
EAME		1			
CHSP		1			
FISP		1	1		



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O – On ground; **A** – Below height of blade sweep; **B** – At height of blade sweep;
C – Above height of blade sweep; **D** – Well Above the height of blade sweep

13

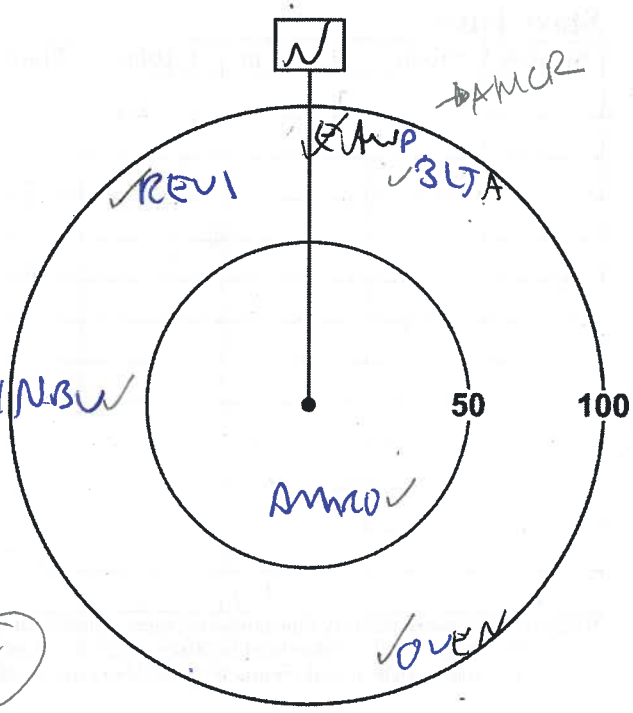
W10 **Station:** W 22

Habitat: ☐Forest ☐Swamp ☐Marsh ☐Hay ☐Pasture ☐Crop _____

UTM: 597841 · 4750123

Start Time: 0951

Species	<50 m	50-100 m	> 100m	Flyovers	Height*
EAKI		1			
AMRO	1				
OVEN		1			
REVI		1			
AMCR			1		
INBU		1			
BLJA		1			



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C – Above height of blade sweep; **D** – Well Above the height of blade sweep.

7

Quality Control: This form is complete (✓) & legible (✓).

Signature: _____ (Field Personnel) Signature: _____ (Project Manager)

REV: May, 07 Form 020

W9

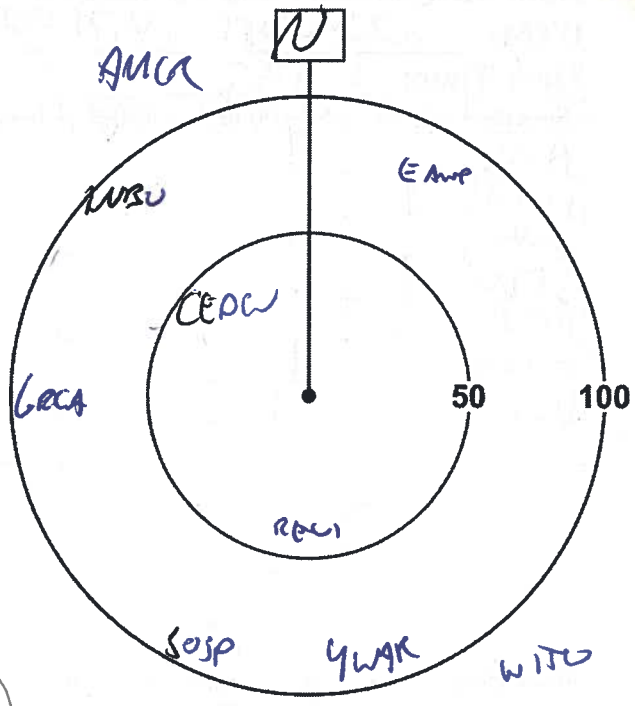
Station: W3

Habitat: ☒Forest ☐Swamp ☐Marsh ☐Hay ☐Pasture ☐Crop

UTM: 0597315 4749713

Start Time: 0836

Species	<50 m	50-100 m	> 100m	Flyovers	Height*
ROVI	1				
EAWP		1			
GRCA		1			
LNBU		1			
SOSP		1			
YLWA		1			
AMCR			1		
CEDW	1				
WITU			1		



*Height of blade sweep will vary from project to project; Check with Project Manager
O – On ground; **A** – Below height of blade sweep; **B** – At height of blade sweep;
C – Above height of blade sweep; **D** – Well Above the height of blade sweep

9

G6

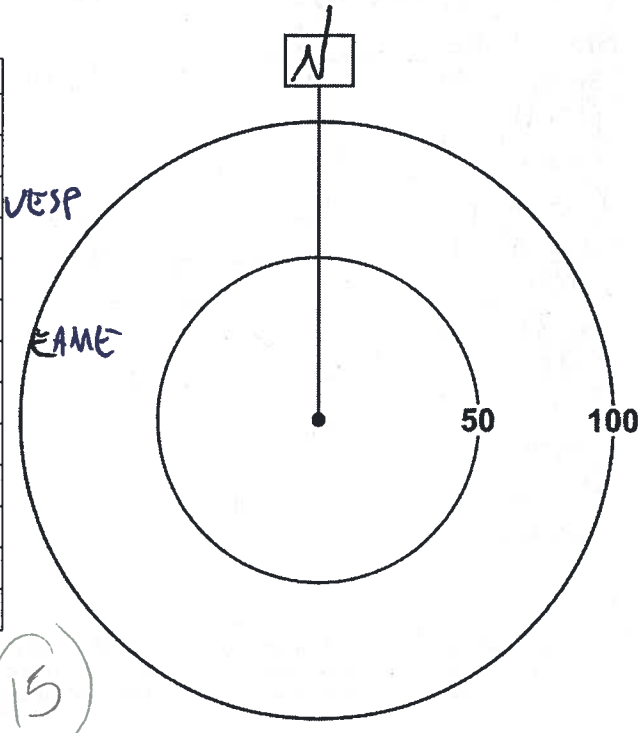
Station: G7

Habitat: ☐Forest ☐Swamp ☐Marsh ☐Hay ☐Pasture ☐Crop

UTM: 0597203 4750060

Start Time: 0910

Species	<50 m	50-100 m	> 100m	Flyovers	Height*
EAWP		1			
AMCR			𝍸		
AMGO		11			
SASP	11	1			
BOBO		11			
SOSP		1			
VESP			1		



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C – Above height of blade sweep; **D** – Well Above the height of blade sweep.

15

Quality Control: This form is complete (__) & legible (__).

Signature: _____ (Field Personnel)

Signature: _____ (Project Manager)

W8

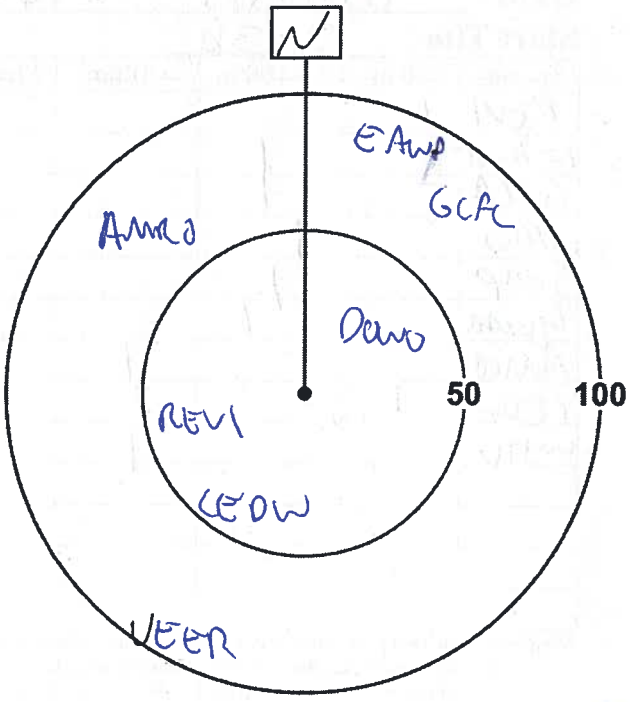
Station: W30

Habitat: ☒Forest ☐Swamp ☐Marsh ☐Hay ☐Pasture ☐Crop

UTM: 0594085 4750126

Start Time: 0733

Species	<50 m	50-100 m	> 100m	Flyovers	Height*
AMRO		1			
DOWO	1				
GCFL		1			
CEDW	1				
REVI	1				
EAWP		1			
VEER		1			



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O – On ground; **A** – Below height of blade sweep; **B** – At height of blade sweep;
C – Above height of blade sweep; **D** – Well Above the height of blade sweep

(7)

W11

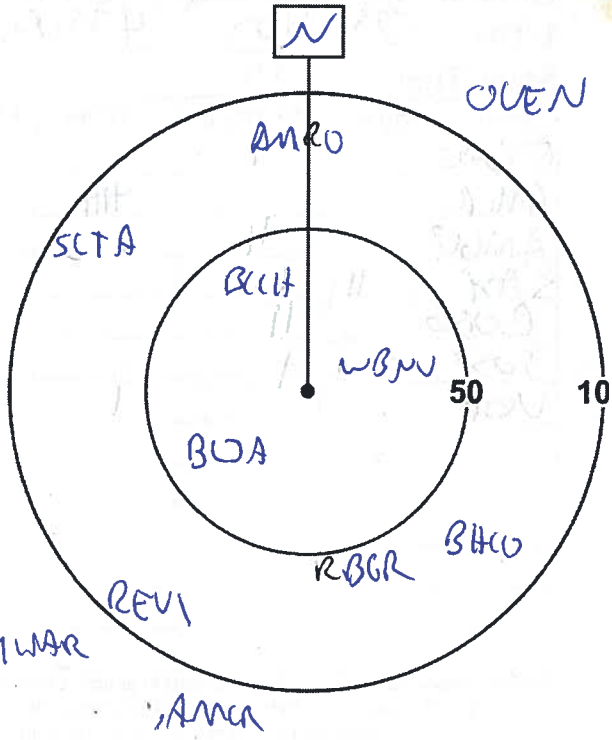
Station: W29

Habitat: ☒Forest ☐Swamp ☐Marsh ☐Hay ☐Pasture ☐Crop

UTM: 0596588 4749491

Start Time: 0810

Species	<50 m	50-100 m	> 100m	Flyovers	Height*
BCCH	1				
REVI		1			
RBGR		1			
BLJA	1				
WBNU	1				
SCTA		1			
BHCO		1			
OVEN			1		
AMRO		1			
YWAR			1		
AMCR			1		



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C – Above height of blade sweep; **D** – Well Above the height of blade sweep

(11)

Quality Control: This form is complete (__) & legible (__).

Signature: _____ (Field Personnel)

Signature: _____ (Project Manager)

REV: May, 07 Form 020

Sec 2 ↓ Sec 5 ↓

W:\active\60960577\drawing\GIS\MXD\OptionedLands\60960577_Fig1-0_OptionedLands_Ortho_FieldWork_20100618_CEW.mxd - 6/18/2010 @ 2:03:04 PM

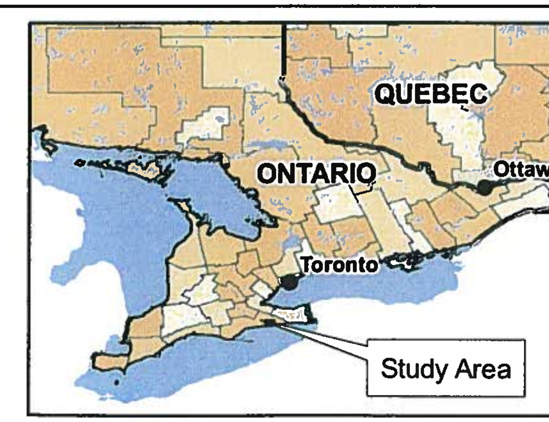
June, 2010
160960577

Legend

- Project Location
- Elexco_acquired_agreements Drawing
- Woodlot > 10ha
- Wooded Area
- Road
- Waterbody (OBM)

2
Wood

227 Grass



Notes

1. Coordinate System: UTM NAD 83 - Zone 17 (N).
2. Data Sources: Ontario Ministry of Natural Resources © Queens Printer Ontario, 2009; © GREP, 2010; © Samsung, 2010.
3. Image Sources: © FirstBase Solutions, WMS 2010.

Client/Project
SAMSUNG C&T
GRAND RENEWABLE ENERGY PARK

Figure No.
1.0

Title
OPTIONED LANDS - ORTHOS
2010-06-03

Stantec

2/3

Stantec Consulting Ltd.
70-1 Southgate Drive
Guelph, Ontario, Canada
N1G 4P5
Tel: (519) 836-6050
Fax: (519) 836-2493

Breeding Bird Survey Observation Form

Project Number 161010624 Project Name: Samsung - GREP

Date / Time: June 17, 2010 VISIT 1 Field Personnel: V. Wyatt

Weather Conditions:	Temp:	Wind:	Cloud:	PPT:	PPT in last 24 hrs:
	14°	2	5%	—	—

Start Time: 05:45 End Time: 10:00

Habitat #	ELC Code(s) or Habitat Description
1	crop / hedgerows
A	woodlot A (points 13/16) (mid aged hickory, good structure + herbaceous ~3 pair WOTH — sig)
B	woodlot B (points 12/18) v. similar to A.
C	woodlot C (points 10/27) " but more topographically int

Quality Control: This form is complete (✓) & legible (✓).

Signature: _____ (Field Personnel) Signature: _____ (Project Manager)

REV:Apr.08 FORM 031

Woodlot/PC
A=1/12+13
B=1 14+15
C=1/16+17

Record location of all significant species on site map

** Endangered, Threatened or Special Concern
† Partners In Flight
‡ Area Sensitive Species

Species	Habitats	BE*	Species	Habitats	BE*	Species	Habitats	BE*
Canada Goose			Red-headed Wo** †			Blue-wing. Wa. †		
Wood Duck			Red-bellied Wo.	A,B,C	SM	Gold-wing. Wa** †		
Am. Black Duck			Yell-bellied Sap. ‡			Nashville Wa.		
Mallard			Downy Wo.	A	SM	Yellow Wa.		
Ring-neck. Pheasant			Hairy Wo.			Chestnut-sided Wa.		
Ruffed Grouse ‡			Northern Flicker †	A,1	SH	Magnolia Wa. ‡		
Wild Turkey			Pileated Wo. ‡			Bl-thr Blue Wa. ‡		
Common Loon ‡			Ea. Wood-Pewee †	A,B,C	SM	Yel-rumped Wa. ‡		
Pied-billed Grebe			Alder Fly.			Bl-thr Gr. Wa. ‡		
D. C. Cormorant ‡			Willow Fly. †	1	SM	Blackburnian Wa. ‡		
American Bittern			Least Fly.			Pine Wa. ‡		
Least Bittern** ‡			Eastern Phoebe			Cerulean Wa** †‡		
Great Blue Heron			Great Crested Fly.	A,C	SM	Bl-and-wh Wa. ‡		
Great Egret			Eastern Kingbird †			Am. Redstart ‡		
Green Heron			Yellow-thr. Vireo ‡			Ovenbird ‡	C	SM
Turkey Vulture			Blue-headed Vireo ‡			No. Waterthrush ‡		
Osprey			Warbling Vireo			Mourning Wa. ‡		
Northern Harrier †‡			Red-eyed Vireo	A,B,C	SM	Co. Yellowthroat	1	SM
Sharp-shin. Hawk ‡			Blue Jay	C	SH	Hooded Wa** †‡		
Coopers Hawk ‡			American Crow	A	SH	Canada Wa. †‡		
Red-shou. Hawk †‡			Common Raven			Scarlet Tanager ‡		
Red-tailed Hawk			Horned Lark			Eastern Towhee †		
Am. Kestrel †			Purple Mart.			Chipping Sp.		
Virginia Rail			Tree Swallow			Clay-colored Sp.		
Sora			No. R. W. Swallow			Field Sp. †		
Sandhill Crane			Bank Swallow †			Vesper Sp. †		
Killdeer			Cliff Swallow			Savannah Sp. †	1	SM
Spotted Sandpiper			Barn Swallow			Grasshopper Sp. †		
Upland Sandpiper ‡			Bl-capped Chickadee	1	SH	Song Sp.	1	SM
Wilson's Snipe			Tufted Titmouse			Swamp Sp.		
American Woodcock			Red-br. Nuthatch			Wh-throated Sp. ‡		
Ring-billed Gull			Wh-br. Nuthatch			Northern Cardinal	C	SM
Herring Gull			Br. Creeper ‡			Rose-br. Grosbeak †	A,B	SM
Caspian Tern			Carolina Wren.			Indigo Bunting	1	SM
Black Tern** ‡			House Wren			Bobolink †		
Common Tern			Winter Wren ‡			Red-winged Bl.	1	FO
Rock Dove			Sedge Wren			Ea. Meadowlark †		
Mourning Dove	1	SH	Marsh Wren			Common Grackle	1	SH
Yellow-bill. Cuckoo			Golded-cr. Kinglet ‡			Br-headed Cowbird	A,B	SH
Black-bill. Cuckoo †			B. G. Gnatcatcher ‡			Orchard Oriole		
Eastern Screech Owl			Eastern Bluebird			Baltimore Oriole †	1	SM
Great Horned Owl			Veery			Purple Finch		
Barred Owl ‡			Hermit Thrush ‡			House Finch		
Long-eared Owl			Wood Thrush †	A,B,C	FY	Pine Siskin		
N. Saw-whet Owl			American Robin	1,C	SM	Am. Goldfinch		
Co. Nighthawk**			Gray Catbird	1	SH	House Sparrow		
Whip-poor-will †‡			No. Mockingbird			Other Species …		
Chimney Swift** †			Brown Thrasher †					
Ruby-thr. Humming.			European Starling			/		
Belted Kingfisher †			Cedar Waxwing					

*Record highest Breeding Evidence (BE) observed over all habitat. Use codes as in Breeding Bird Atlas of Ontario

Quality Control: This form is complete (__) & legible (__).

Signature: _____ Signature: _____

(Field Personnel) (Project Manager)

REV:Apr.08 FORM 031

Stantec Consulting Ltd.
361 Southgate Drive
Guelph, Ontario, Canada
N1G 3M5
Tel: (519) 836-6050
Fax: (519) 836-2493

Birding Point Counts Survey Observation Form

Project Number 161010624 Project Name: Samsung GREP

Date June 17, 2010 Field Personnel: V. Wyatt

Weather Conditions:	Temp:	Wind:	Cloud:	PPT:	PPT in last 24 hrs:
	14°C	2	5%	-	-

GPS #: T 001

W12

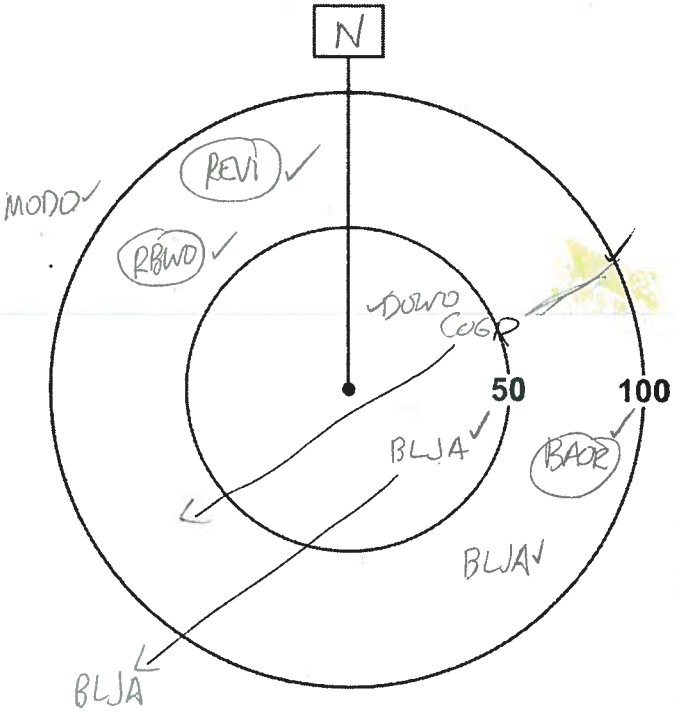
Station: 13

Habitat: ☑Forest ☐Swamp ☐Marsh ☐Hay ☐Pasture ☐Crop FOD

UTM: 17 T 0603918 4749725 on trail

Start Time: 06:04

Species	<50 m	50-100 m	> 100m	Flyovers	Height*
MODO			1		A
REVI		1			A
RBWO		1			A
DOWO	1				A
COGR				1	A
BLJA		1		1	A
BAOR		1			A



*Height of blade sweep will vary from project to project; Check with Project Manager
O – On ground; **A** – Below height of blade sweep; **B** – At height of blade sweep;
C – Above height of blade sweep; **D** – Well Above the height of blade sweep

raccoon family-agitated
very noisy for 3 minutes

8

Quality Control: This form is complete (✓) & legible (✓).

Signature: Valerie Wyatt (Field Personnel) Signature: _____ (Project Manager)

REV: May, 07 Form 020

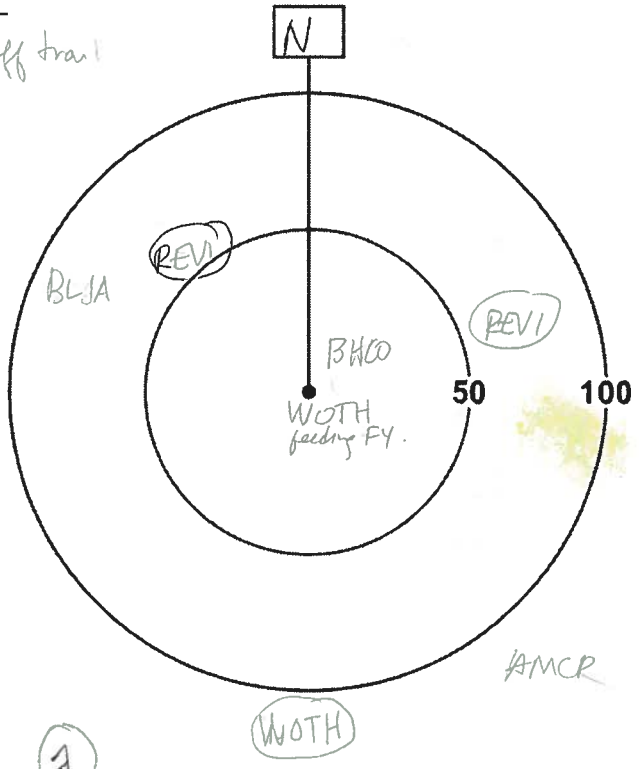
W13 **Station:** 16

Habitat: ☑Forest ☐Swamp ☐Marsh ☐Hay ☐Pasture ☐Crop FOD

UTM: 002 - 17T 0604309 4749960 - on diff trail

Start Time: 06:39

Species	<50 m	50-100 m	> 100m	Flyovers	Height*
WOTH	1		1		A
BLJA		1			A
REVI		2			A
BHCO	1				A
AMCR			1		A



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C – Above height of blade sweep; **D** – Well Above the height of blade sweep

7

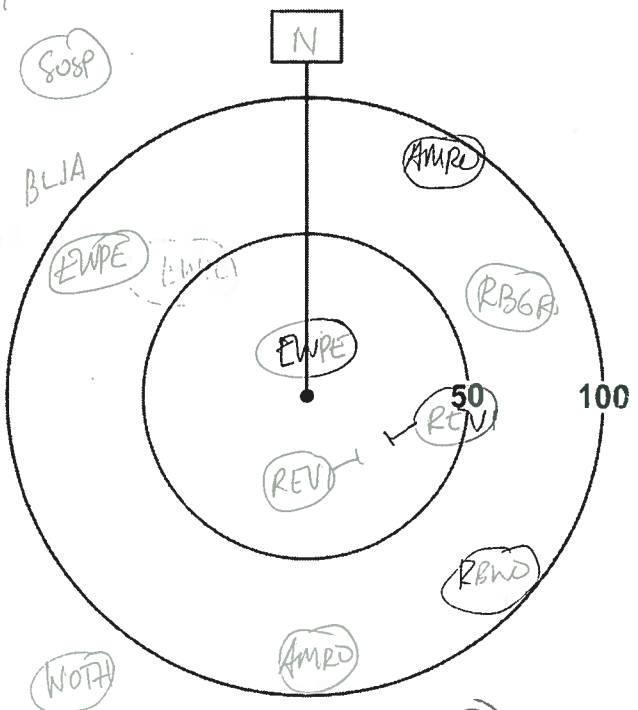
W14 **Station:** 12

Habitat: ☑Forest ☐Swamp ☐Marsh ☐Hay ☐Pasture ☐Crop FOD

UTM: 003 - 17T 0603210 4749616 clearing n. of trail

Start Time: 07:30

Species	<50 m	50-100 m	> 100m	Flyovers	Height*
SOSP			1		A
BLJA			1		A
EWPE	1	1			A
WOTH			1		A
REVI	2				A
AMRO		2			A
RBWO		1			A
RBGR		1			A



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C – Above height of blade sweep; **D** – Well Above the height of blade sweep

11

Quality Control: This form is complete (✓) & legible (✓).

Signature: Helen Wyatt (Field Personnel)

Signature: _____ (Project Manager)

REV: May, 07 Form 020

Station: 18 W15

Habitat: ☑Forest ☑Swamp ☐Marsh ☐Hay ☐Pasture ☐Crop FOD/SWD

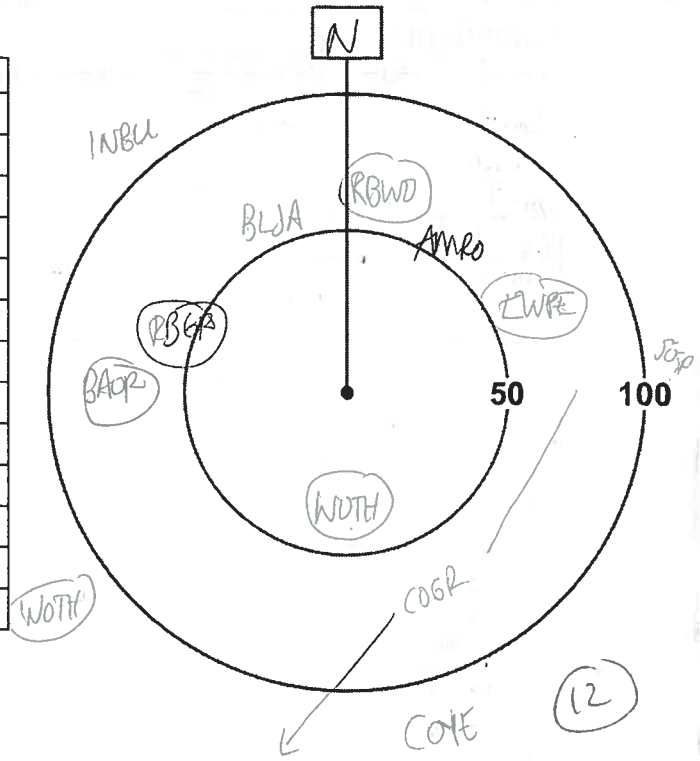
UTM: 004 - 17T 0602916 4749395

Start Time: 08:02

Species	<50 m	50-100 m	> 100m	Flyovers	Height*
INBU			1		A
BLJA		1			A
RBGR		1			A
BAOR		1			A
WOTH	1		1		A
RBWO		1			A
AMRO		1			A
EWPE		1			A
COGR				1	A
SOSP			1		A
COYE			1		A

*Height of blade sweep will vary from project to project; Check with Project Manager
O – On ground; **A** – Below height of blade sweep; **B** – At height of blade sweep;
C – Above height of blade sweep; **D** – Well Above the height of blade sweep

green frog



W16 **Station:** 10

Habitat: ☑Forest ☐Swamp ☐Marsh ☐Hay ☐Pasture ☐Crop FOD

UTM: 005 - 17T 0600934 4740868 at trail crossroads

Start Time: 08:51

Species	<50 m	50-100 m	> 100m	Flyovers	Height*
AMCR			1		A
OVEN		1			A
REVI	1				A
GCFL	1				A
INBU		1			A
COGR				2	A
NOCA			1		A

*Height of blade sweep will vary from project to project; Check with Project Manager
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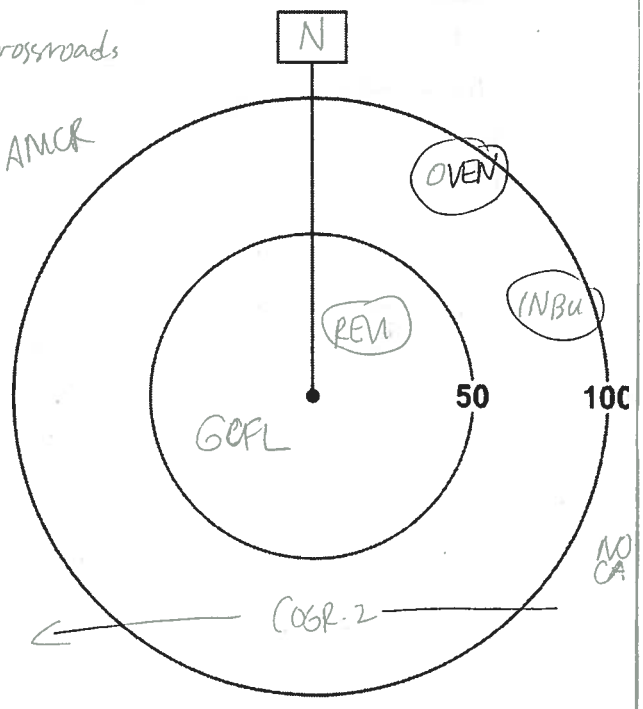
C – Above height of blade sweep; **D** – Well Above the height of blade sweep



Quality Control: This form is complete (✓) & legible (✓).

Signature: _____ (Field Personnel)

Signature: _____ (Project Manager)

REV: May, 07 Form 020

W17

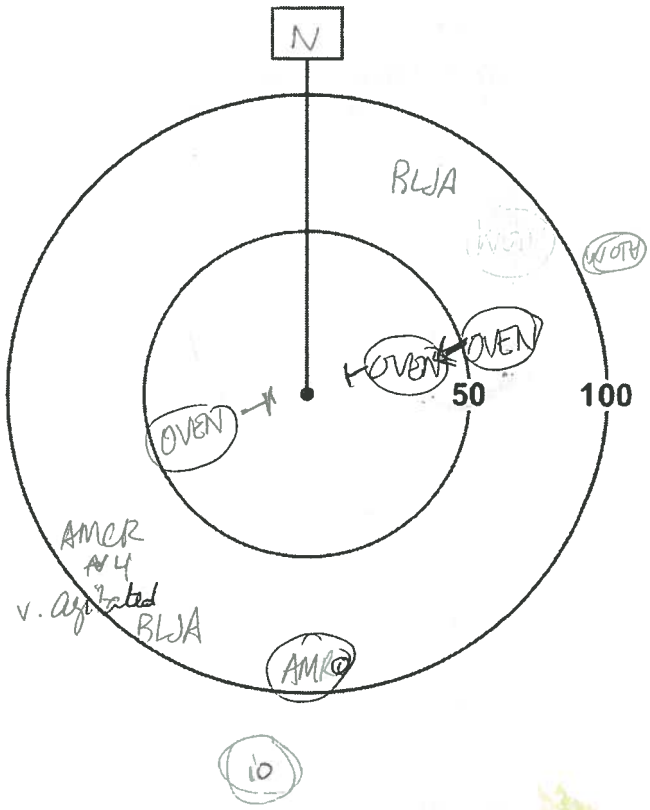
Station: 27

Habitat: ☑Forest ☐Swamp ☐Marsh ☐Hay ☐Pasture ☐Crop FOD

UTM: 006 - 17T 0600450 4748563

Start Time: 09:24

Species	<50 m	50-100 m	> 100m	Flyovers	Height*
BLJA		2			A
OVEN	2				A
WOTH			1		A
AMCR		4			A
AMRO		1			A



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C – Above height of blade sweep; **D** – Well Above the height of blade sweep

10

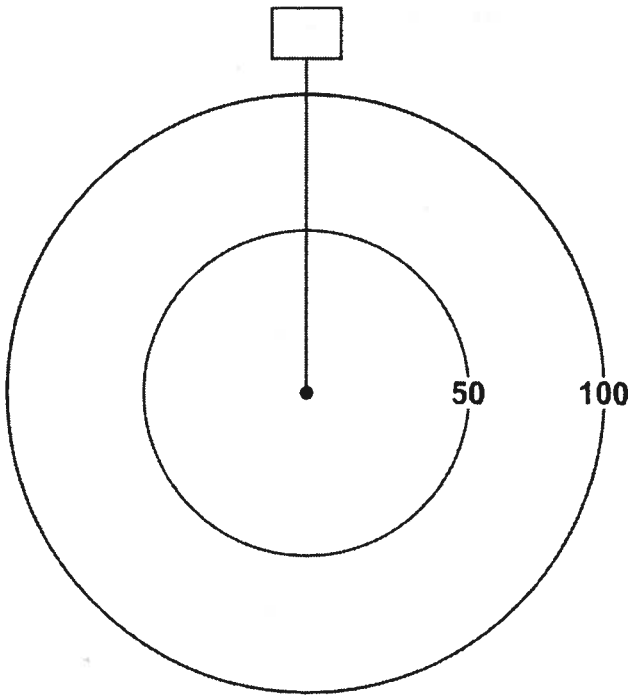
Station: _____

Habitat: ☐Forest ☐Swamp ☐Marsh ☐Hay ☐Pasture ☐Crop _____

UTM: _____

Start Time: _____

Species	<50 m	50-100 m	> 100m	Flyovers	Height*



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C – Above height of blade sweep; **D** – Well Above the height of blade sweep.

Quality Control: This form is complete(✓) & legible (✓).

Signature: Valerie Wyatt (Field Personnel)

Signature: _____ (Project Manager)

Page 4 of 4

REV: May, 07 Form 020

Stantec Consulting Ltd.
361 Southgate Drive
Guelph, Ontario, Canada
N1G 3M5
Tel: (519) 836-6050
Fax: (519) 836-2493

Stantec

Breeding Bird Survey Observation Form

Project Number 161010624 Project Name: Samsung GREP

Date / Time: June 18, 2010 VISIT 1 Field Personnel: V. Wyatt

Weather Conditions:	Temp:	Wind:	Cloud:	PPT:	PPT in last 24 hrs:
	18°C	0	0	-	-

Start Time: 07:35 End Time: 08:30

Habitat #	ELC Code(s) or Habitat Description
A	woodlot A (point 14+17)

Quality Control: This form is complete (✓) & legible (✓).

Signature: _____ (Field Personnel) Signature: _____ (Project Manager)

REV:Apr.07 FORM 013

Record location of all significant species on site map

** Endangered, Threatened or Special Concern
† Partners In Flight
‡ Area Sensitive Species

Species	Habitats	BE*	Species	Habitats	BE*	Species	Habitats	BE*
Canada Goose			Red-headed Wo** †			Blue-wing. Wa. †		
Wood Duck			Red-bellied Wo.			Gold-wing. Wa** †		
Am. Black Duck			Yell-bellied Sap. ‡			Nashville Wa.		
Mallard			Downy Wo.			Yellow Wa.	A	SM
Ring-neck. Pheasant			Hairy Wo.			Chestnut-sided Wa.		
Ruffed Grouse ‡			Northern Flicker †			Magnolia Wa. ‡		
Wild Turkey			Pileated Wo. ‡		SM	Bl-thr Blue Wa. ‡		
Common Loon ‡			Ea. Wood-Pewee †	A		Yel-rumped Wa. ‡		
Pied-billed Grebe			Alder Fly.			Bl-thr Gr. Wa. ‡		
D. C. Cormorant ‡			Willow Fly. †			Blackburnian Wa. ‡		
American Bittern			Least Fly.			Pine Wa. ‡		
Least Bittern** ‡			Eastern Phoebe			Cerulean Wa** †‡		
Great Blue Heron			Great Crested Fly.	A	SM	Bl-and-wh Wa. ‡		
Great Egret			Eastern Kingbird †			Am. Redstart ‡		
Green Heron			Yellow-thr. Vireo ‡			Ovenbird ‡		
Turkey Vulture			Blue-headed Vireo ‡			No. Waterthrush ‡		
Osprey			Warbling Vireo			Mourning Wa. ‡		
Northern Harrier †‡			Red-eyed Vireo	A	SM	Co. Yellowthroat		
Sharp-shin. Hawk ‡			Blue Jay			Hooded Wa** †‡		
Coopers Hawk ‡			American Crow			Canada Wa. †‡		
Red-shou. Hawk †‡			Common Raven			Scarlet Tanager ‡		
Red-tailed Hawk			Horned Lark			Eastern Towhee †		
Am. Kestrel †			Purple Mart.			Chipping Sp.		
Virginia Rail			Tree Swallow			Clay-colored Sp.		
Sora			No. R. W. Swallow			Field Sp. †		
Sandhill Crane			Bank Swallow †			Vesper Sp. †		
Killdeer			Cliff Swallow			Savannah Sp. †		
Spotted Sandpiper			Barn Swallow			Grasshopper Sp. †		
Upland Sandpiper ‡			Bl-capped Chickadee			Song Sp.		
Wilson's Snipe			Tufted Titmouse			Swamp Sp.		
American Woodcock			Red-br. Nuthatch			Wh-throated Sp. ‡		
Ring-billed Gull			Wh-br. Nuthatch			Northern Cardinal	A	SM
Herring Gull			Br. Creeper ‡			Rose-br. Grosbeak †	A	SM
Caspian Tern			Carolina Wren.			Indigo Bunting		
Black Tern** ‡			House Wren			Bobolink †		
Common Tern			Winter Wren ‡			Red-winged Bl.		
Rock Dove			Sedge Wren			Ea. Meadowlark †		
Mourning Dove	A	SM	Marsh Wren			Common Grackle	A	SH
Yellow-bill. Cuckoo			Golded-cr. Kinglet ‡			Br-headed Cowbird	A	SH
Black-bill. Cuckoo †			B. G. Gnatcatcher ‡			Orchard Oriole		
Eastern Screech Owl			Eastern Bluebird			Baltimore Oriole †		
Great Horned Owl			Veery			Purple Finch		
Barred Owl ‡			Hermit Thrush ‡			House Finch		
Long-eared Owl			Wood Thrush †			Pine Siskin		
N. Saw-whet Owl			American Robin	A	SM	Am. Goldfinch	A	FO
Co. Nighthawk**			Gray Catbird			House Sparrow		
Whip-poor-will †‡			No. Mockingbird			Other Species …		
Chimney Swift** †			Brown Thrasher †					
Ruby-thr. Humming.			European Starling	A	SH	/		
Belted Kingfisher †			Cedar Waxwing					

*Record highest Breeding Evidence (BE) observed over all habitat. Use codes as in Breeding Bird Atlas of Ontario

Quality Control: This form is complete ( ) & legible ( ).

Signature: _____ (Field Personnel)

Signature: _____ (Project Manager)

REV:Apr.07 FORM 013

W18

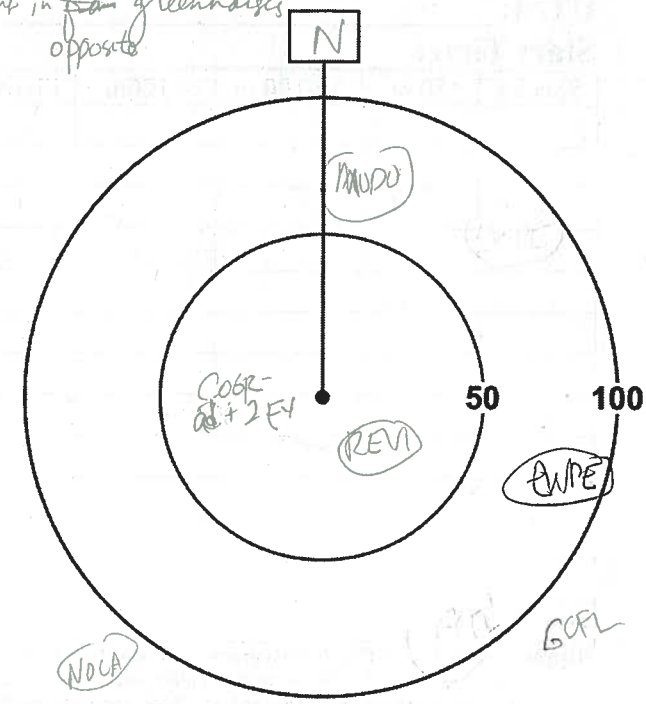
Station: 17

Habitat: ☒Forest ☐Swamp ☐Marsh ☐Hay ☐Pasture ☐Crop FOD/SWD v. young stand. — not flagged

UTM: 010 - 17T 0603209 4748347 - straight in ~~from~~ greenhouses opposite

Start Time: 07:44

Species	<50 m	50-100 m	> 100m	Flyovers	Height*
MODO		1			A
COGR	3				A
REVI	1				A
EWPE		1			A
NOCA			1		A
GCFL			1		



*Height of blade sweep will vary from project to project; Check with Project Manager
O – On ground; **A** – Below height of blade sweep; **B** – At height of blade sweep;
C – Above height of blade sweep; **D** – Well Above the height of blade sweep

W19

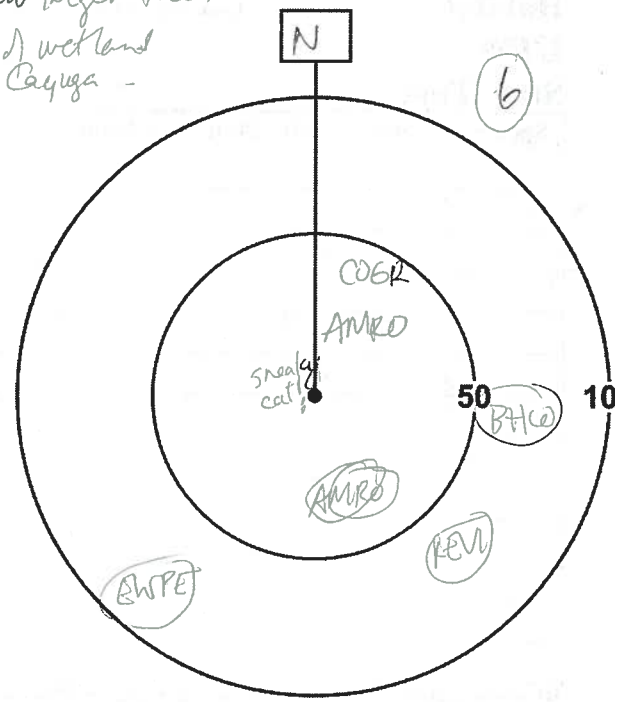
Station: 14

Habitat: ☒Forest ☒Swamp ☐Marsh ☐Hay ☐Pasture ☐Crop FOD/SWD few larger trees.

UTM: 011 - 17T 0603800 4748401 go south of wetland off S. Cayuga -

Start Time: 08:12

Species	<50 m	50-100 m	> 100m	Flyovers	Height*
AMRO	2				A
COGR	1				A
EWPE		1			A
REVI		1			A
BHCO		1			A



*Height of blade sweep will vary from project to project; Check with Project Manager
O – On ground; **A** – Below height of blade sweep; **B** – At height of blade sweep;
C – Above height of blade sweep; **D** – Well Above the height of blade sweep

Quality Control: This form is complete (__) & legible (✓).

Signature: Valerie Wyeth (Field Personnel) Signature: _____ (Project Manager)

REV: May, 07 Form 020

590000 600000 610000

4750000

WIND AND SOLAR SITING AREA

Cayuga
Nelles Corners
Fisherville
Dunnville
Lake Erie
Grand River

TOWNLINE ROAD
RIVER ROAD
REEDS ROAD
HIGHWAY 3
MCFARLANE ROAD
WHIDDEKER ROAD
CONCESSION 2
JUNCTION ROAD
ORTT ROAD
JAMES ROAD
ROBINSON ROAD
MCLAUGHLIN ROAD
BIRD ROAD
HALDIMAND ROAD 17
JARDEN ROAD
BURKE ROAD
IRISH LINE
LITTLE ROAD
GIBSON ROAD
CONCESSION 8
CONCESSION 7
CONCESSION 6
CONCESSION 5
CONCESSION 4
CONCESSION 3
LINK ROAD
MEADOWS ROAD
YAREMY ROAD
HALDIMAND ROAD 20
HALD DUNN TOWNLINE ROAD
AIKENS ROAD
RICHERT ROAD
SUTOR ROAD
BAINS ROAD
HALDIMAND ROAD 50
SOUTH CAYUGA ROAD
HALDIMAND TRACT ROAD
HALDIMAND ROAD 53
HALDIMAND ROAD 12
HALDIMAND ROAD 49
MARSHALL ROAD
KINGS ROW
JOHNSON ROAD
KOHLER ROAD
SWEETS CORNERS ROAD
BROOKERS ROAD
RAINHAM ROAD
REICHELD ROAD
ERIE STREET NORTH
FISHERVILLE ROAD
MAIN STREET WEST
WHEELER ROAD
LAKESHORE ROAD

0 1 2 km
1:85,000

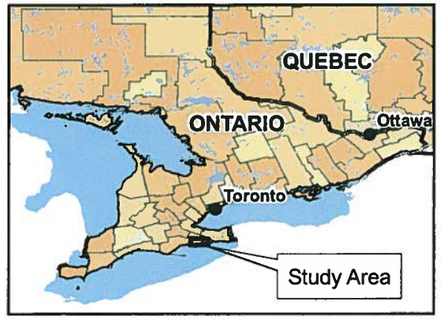
590000 600000 610000

June, 2010
160960577

W:\active\60960577\drawing\GIS\MXD\OptionedLands\60960577_Fig1-0_OptionedLands_Ortho_20100621_PW.mxd - 6/21/2010 @ 10:26:40 AM

Legend

- Project Location
- Elexco_acquired_agreements Drawing
- MEI
- Woodlot > 10ha
- Wooded Area
- Road
- Waterbody (OBM)



Notes

1. Coordinate System: UTM NAD 83 - Zone 17 (N).
2. Data Sources: Ontario Ministry of Natural Resources © Queens Printer Ontario, 2009; © GREP, 2010; © Samsung, 2010.
3. Image Sources: © FirstBase Solutions, WMS 2010.

Client/Project
SAMSUNG C&T
GRAND RENEWABLE ENERGY PARK

Figure No.
1.0

Title
OPTIONED LANDS - ORTHOS
2010-06-21

Stantec

Stantec Consulting Ltd.
361 Southgate Drive
Guelph, Ontario, Canada
N1G 3M5
Tel: (519) 836-6050
Fax: (519) 836-2493

Breeding Bird Survey Observation Form

Project Number 161010624 Project Name: Samsung

Date / Time: VISIT 2 29 Jun 10 Field Personnel: BH

Weather Conditions:	Temp:	~~Wind:~~	~~Cloud:~~	PPT: Lee Pg	PPT in last 24 hrs: 1

Start Time: 5am End Time: 10am

Habitat #	ELC Code(s) or Habitat Description
A	PC's 13, 16
B	PC's 18, 12
C	PC's 17, 14

Quality Control: This form is complete (__) & legible (__).

Signature: _____ (Field Personnel) Signature: _____ (Project Manager)

A = 12+13
B = 14+15
C = 18+19

Record location of all significant species on site map

** Endangered, Threatened or Special Concern
† Partners In Flight
‡ Area Sensitive Species ABC

Species	Habitats	BE*	Species	Habitats	BE*	Species	Habitats	BE*
Canada Goose			Red-headed Wo** †			Blue-wing. Wa. †		
Wood Duck	✓	S4	Red-bellied Wo.	✓	S4	Gold-wing. Wa** †		
Am. Black Duck			Yell-bellied Sap. ‡			Nashville Wa.		
Mallard	✓	S4	Downy Wo.	✓	S4	Yellow Wa.	✓✓✓	SM
Ring-neck. Pheasant			Hairy Wo.			Chestnut-sided Wa.		
Ruffed Grouse ‡			Northern Flicker †	✓✓	S4	Magnolia Wa. ‡		
Wild Turkey			Pileated Wo. ‡			Bl-thr Blue Wa. ‡		
Common Loon ‡			Ea. Wood-Pewee †	✓✓✓	SM	Yel-rumped Wa. ‡		
Pied-billed Grebe			Alder Fly.			Bl-thr Gr. Wa. ‡		
D. C. Cormorant ‡			Willow Fly. †	✓✓✓	SM	Blackburnian Wa. ‡		
American Bittern			Least Fly.	✓	SM	Pine Wa. ‡		
Least Bittern** ‡			Eastern Phoebe	✓	SM	Cerulean Wa** †‡		
Great Blue Heron	✓	O	Great Crested Fly.	✓✓✓	SM	Bl-and-wh Wa. ‡		
Great Egret			Eastern Kingbird †	✓	SM	Am. Redstart ‡		
Green Heron			Yellow-thr. Vireo ‡			Ovenbird ‡	✓✓	A
Turkey Vulture	✓	S4	Blue-headed Vireo ‡			No. Waterthrush ‡		
Osprey			Warbling Vireo			Mourning Wa. ‡		
Northern Harrier †‡			Red-eyed Vireo	✓✓✓	SM	Co. Yellowthroat	✓✓	SM
Sharp-shin. Hawk ‡			Blue Jay			Hooded Wa** †‡		
Coopers Hawk ‡			American Crow	✓✓	S4	Canada Wa. †‡		
Red-shou. Hawk †‡			Common Raven			Scarlet Tanager ‡		
Red-tailed Hawk	✓	S4	Horned Lark			Eastern Towhee †		
Am. Kestrel †			Purple Mart.			Chipping Sp.	✓	SM
Virginia Rail			Tree Swallow	✓✓	O	Clay-colored Sp.		
Sora			No. R. W. Swallow			Field Sp. †		
Sandhill Crane			Bank Swallow †			Vesper Sp. †		
Killdeer			Cliff Swallow			Savannah Sp. †		
Spotted Sandpiper			Barn Swallow			Grasshopper Sp. †		
Upland Sandpiper ‡			Bl-capped Chickadee	✓✓	S4	Song Sp.		
Wilson's Snipe			Tufted Titmouse			Swamp Sp.	✓	PM
American Woodcock			Red-br. Nuthatch			Wh-throated Sp. ‡		
Ring-billed Gull	✓✓✓	O	Wh-br. Nuthatch	✓	P	Northern Cardinal	✓✓	SM
Herring Gull			Br. Creeper ‡			Rose-br. Grosbeak †	✓✓✓	PM
Caspian Tern			Carolina Wren.			Indigo Bunting	✓✓✓	SM
Black Tern** ‡			House Wren	✓✓	DM	Bobolink †		
Common Tern			Winter Wren ‡			Red-winged Bl.	✓✓✓	PM
Rock Dove	✓	S4	Sedge Wren			Ea. Meadowlark †		
Mourning Dove	✓✓✓	S4	Marsh Wren			Common Grackle	✓✓	S4
Yellow-bill. Cuckoo	✓	S4	Golded-cr. Kinglet ‡			Br-headed Cowbird	✓✓	P
Black-bill. Cuckoo †			B. G. Gnatcatcher ‡			Orchard Oriole		
Eastern Screech Owl			Eastern Bluebird			Baltimore Oriole †	✓	S4
Great Horned Owl			Veery	✓	SM	Purple Finch		
Barred Owl ‡			Hermit Thrush ‡			House Finch		
Long-eared Owl			Wood Thrush †	✓✓	SM	Pine Siskin		
N. Saw-whet Owl			American Robin	✓✓✓	A	Am. Goldfinch	✓	S4
Co. Nighthawk**			Gray Catbird	✓✓	A	House Sparrow		
Whip-poor-will †‡			No. Mockingbird			Other Species …		
Chimney Swift** †			Brown Thrasher †	✓	S4			
Ruby-thr. Humming.			European Starling	✓✓✓	S4	/		
Belted Kingfisher †			Cedar Waxwing	✓✓✓	S4			

*Record highest Breeding Evidence (BE) observed over all habitat. Use codes as in Breeding Bird Atlas of Ontario

Quality Control: This form is complete (__) & legible (__).

Signature: _____ Signature: _____

(Field Personnel) (Project Manager)

REV:Apr.07 FORM 013

D=21
E=17+16+20

Record location of all significant species on site map

** Endangered, Threatened or Special Concern
† Partners In Flight
‡ Area Sensitive Species

O E O E O E

Species	Habitats	BE*	Species	Habitats	BE*	Species	Habitats	BE*
Canada Goose			Red-headed Wo** †			Blue-wing. Wa. †		
Wood Duck			Red-bellied Wo.	✓	SH	Gold-wing. Wa** †		
Am. Black Duck			Yell-bellied Sap. ‡			Nashville Wa.		
Mallard	✓	SH	Downy Wo.	✓	SH	Yellow Wa.	✓ ✓	A
Ring-neck. Pheasant			Hairy Wo.			Chestnut-sided Wa.		
Ruffed Grouse ‡			Northern Flicker †	✓ ✓	SH	Magnolia Wa. ‡		
Wild Turkey			Pileated Wo. ‡			Bl-thr Blue Wa. ‡		
Common Loon ‡			Ea. Wood-Pewee †	✓ ✓	SM	Yel-rumped Wa. ‡		
Pied-billed Grebe			Alder Fly.			Bl-thr Gr. Wa. ‡		
D. C. Cormorant ‡			Willow Fly. †	✓	SM	Blackburnian Wa. ‡		
American Bittern			Least Fly.			Pine Wa. ‡		
Least Bittern** ‡			Eastern Phoebe	✓	SM	Cerulean Wa** †‡		
Great Blue Heron			Great Crested Fly.	✓ ✓	SM	Bl-and-wh Wa. ‡		
Great Egret			Eastern Kingbird †			Am. Redstart ‡		
Green Heron			Yellow-thr. Vireo ‡			Ovenbird ‡	✓	SH
Turkey Vulture			Blue-headed Vireo ‡			No. Waterthrush ‡		
Osprey			Warbling Vireo			Mourning Wa. ‡		
Northern Harrier †‡			Red-eyed Vireo	✓ ✓	SM	Co. Yellowthroat	✓	SH
Sharp-shin. Hawk ‡			Blue Jay			Hooded Wa** †‡		
Coopers Hawk ‡			American Crow	✓	SH	Canada Wa. †‡		
Red-shou. Hawk †‡	✓		Common Raven			Scarlet Tanager ‡	✓	SM
Red-tailed Hawk	✓	SH	Horned Lark			Eastern Towhee †		
Am. Kestrel †			Purple Mart.			Chipping Sp.		
Virginia Rail			Tree Swallow	✓ ✓	SH	Clay-colored Sp.		
Sora			No. R. W. Swallow			Field Sp. †		
Sandhill Crane			Bank Swallow †			Vesper Sp. †		
Killdeer			Cliff Swallow			Savannah Sp. †		
Spotted Sandpiper			Barn Swallow			Grasshopper Sp. †		
Upland Sandpiper ‡			Bl-capped Chickadee	✓	SM	Song Sp.	✓ ✓	A
Wilson's Snipe			Tufted Titmouse			Swamp Sp.	✓	SM
American Woodcock			Red-br. Nuthatch			Wh-throated Sp. ‡		
Ring-billed Gull			Wh-br. Nuthatch	✓	SM	Northern Cardinal	✓ ✓	SM
Herring Gull			Br. Creeper ‡			Rose-br. Grosbeak †	✓ ✓	SM
Caspian Tern			Carolina Wren.			Indigo Bunting	✓ ✓	SM
Black Tern** ‡			House Wren	✓ ✓	SM	Bobolink †		
Common Tern			Winter Wren ‡			Red-winged Bl.	✓ ✓	A
Rock Dove			Sedge Wren			Ea. Meadowlark †		
Mourning Dove	✓ ✓	SH	Marsh Wren			Common Grackle	✓	SH
Yellow-bill. Cuckoo			Golded-cr. Kinglet ‡			Br-headed Cowbird	✓ ✓	P
Black-bill. Cuckoo †			B. G. Gnatcatcher ‡			Orchard Oriole		
Eastern Screech Owl			Eastern Bluebird			Baltimore Oriole †	✓	SH
Great Horned Owl			Veery	✓	SM	Purple Finch		
Barred Owl ‡			Hermit Thrush ‡			House Finch		
Long-eared Owl			Wood Thrush †	✓	SM	Pine Siskin		
N. Saw-whet Owl			American Robin	✓ ✓	N	Am. Goldfinch	✓ ✓	P
Co. Nighthawk**			Gray Catbird	✓ ✓	P	House Sparrow		
Whip-poor-will †‡			No. Mockingbird	✓	SH	Other Species …		
Chimney Swift** †			Brown Thrasher †					
Ruby-thr. Humming.	✓	SH	European Starling	✓ ✓	SH	/		
Belted Kingfisher †			Cedar Waxwing	✓ ✓	SH			

*Record highest Breeding Evidence (BE) observed over all habitat. Use codes as in Breeding Bird Atlas of Ontario

Quality Control: This form is complete (__) & legible (__).

Signature: _____ Signature: _____

(Field Personnel) (Project Manager)

REV:Apr.07 FORM 013

Stantec Consulting Ltd.
361 Southgate Drive
Guelph, Ontario, Canada
N1G 3M5
Tel: (519) 836-6050
Fax: (519) 836-2493

Breeding Bird Survey Observation Form

Project Number 161010624 Project Name: Samsung

Date / Time: 29 Jun 2010 Visit 2 Field Personnel: BH

Weather Conditions:	Temp:	Wind: Lee	Cloud: Py	PRT: 1	PPT in last 24 hrs:

Start Time: 5 am End Time: 10 am

Habitat #	ELC Code(s) or Habitat Description
D	PC's - 9
E	PC's - 19, 27, 10

Quality Control: This form is complete (__) & legible (__).

Signature: _____ (Field Personnel) Signature: _____ (Project Manager)

REV:Apr.07 FORM 013

Stantec Consulting Ltd.
361 Southgate Drive
Guelph, Ontario, Canada
N1G 3M5
Tel: (519) 836-6050
Fax: (519) 836-2493

Birding Point Counts Survey Observation Form

Project Number: 160910624 Project Name: Samsung

Date: Jun 29, 2010 VISIT 2 Field Personnel: B Holden

Weather Conditions:	Temp:	Wind:	Cloud:	PPT:	PPT in last 24 hrs:
	15-19	1-2	30-80%		

GPS #: T___

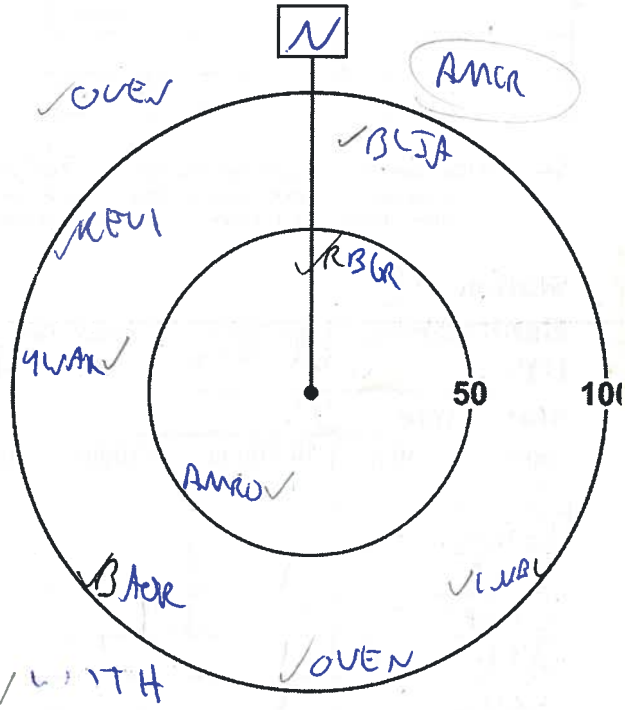
W20 Station: 19

Habitat: ☒Fores ☐Swamp ☐Marsh ☐Hay ☐Pasture ☐Crop _____

UTM: see visit #1 → same

Start Time: 0551

Species	<50 m	50-100 m	> 100m	Flyovers	Height*
OVEN		1	1		
REVI		1			
WOTH			1		
RBGR	1				
YWAR		1			
LNBU		1			
AMRO	1				
BAOR		1			
BLJA		1			
AMCR			1		



*Height of blade sweep will vary from project to project; Check with Project Manager
O – On ground; A – Below height of blade sweep; B – At height of blade sweep;
C – Above height of blade sweep; D – Well Above the height of blade sweep

Quality Control: This form is complete (__) & legible (__).

Signature: _____ (Field Personnel) Signature: _____ (Project Manager)

REV: May, 07 Form 020

W17

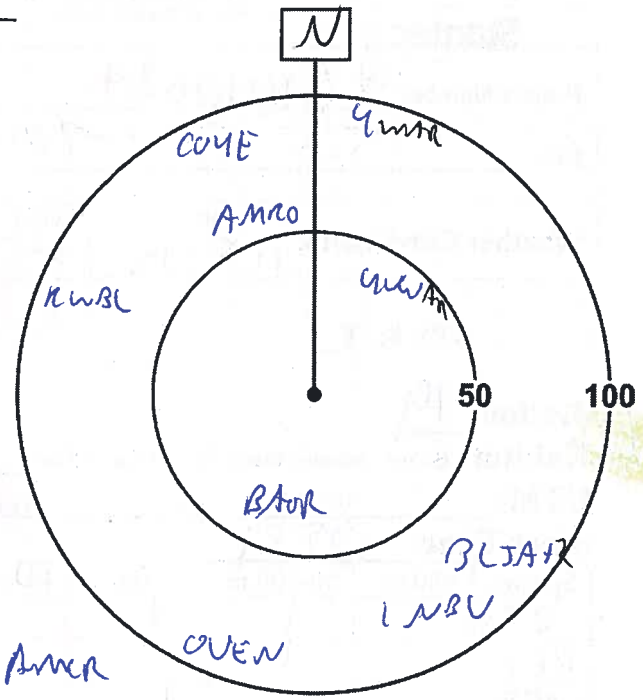
Station: 27

Habitat: ☒Forest ☐Swamp ☐Marsh ☐Hay ☐Pasture ☐Crop

UTM: 0600450 4746363

Start Time: 0614

Species	<50 m	50-100 m	> 100m	Flyovers	Height*
YRWA	1	1			
OVEN		1			
BLJA		11			
COYE		1			
BAOR	1				
RWBL		1			
AMRO		1			
INBU		1			
AMCR			1		



*Height of blade sweep will vary from project to project; Check with Project Manager
O – On ground; **A** – Below height of blade sweep; **B** – At height of blade sweep;
C – Above height of blade sweep; **D** – Well Above the height of blade sweep

11

W16

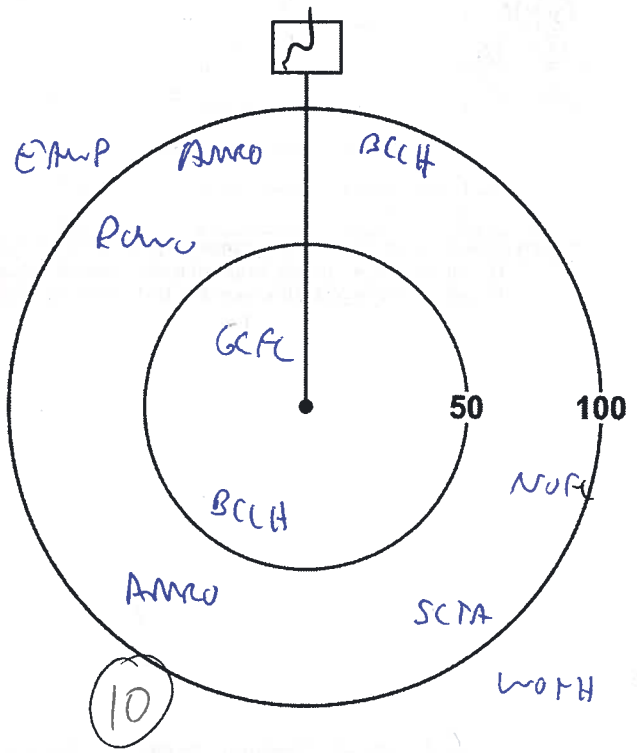
Station: 10

Habitat: ☒Forest ☐Swamp ☐Marsh ☐Hay ☐Pasture ☐Crop

UTM: 0600934 4746886

Start Time: 0638

Species	<50 m	50-100 m	> 100m	Flyovers	Height*
GCFL		1			
DOWO		1			
SCTA		1			
EAWP			1		
BCCH	1	1			
NOFL		1			
AMRO	1	1			
WOTH			1		



*Height of blade sweep will vary from project to project; Check with Project Manager
O – On ground; **A** – Below height of blade sweep; **B** – At height of blade sweep;
C – Above height of blade sweep; **D** – Well Above the height of blade sweep

Quality Control: This form is complete (__) & legible (__).

Signature: _____ (Field Personnel) Signature: _____ (Project Manager)

REV: May, 07 Form 020

W12

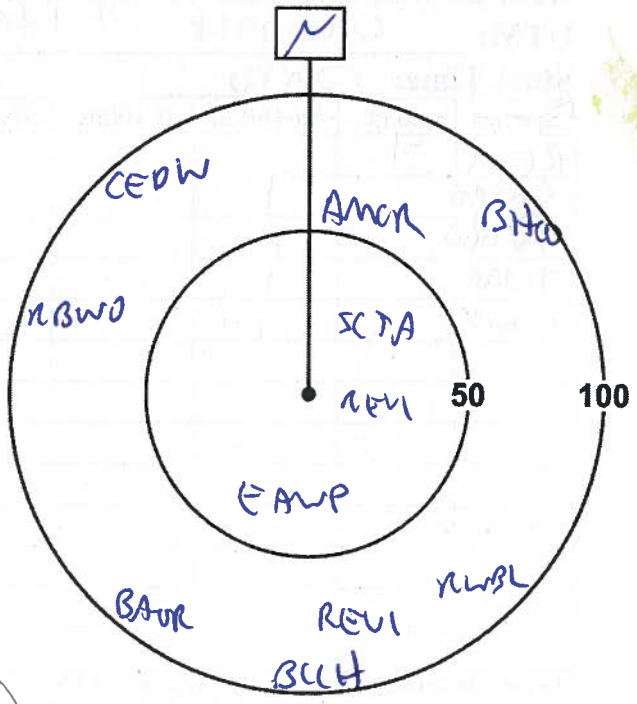
Station: 13

Habitat: ☒Forest ☐Swamp ☐Marsh ☐Hay ☐Pasture ☐Crop _____

UTM: 0603918 4749725

Start Time: 0914

Species	<50 m	50-100 m	> 100m	Flyovers	Height*
REVI	1	1			
RWBL		1			
SCTA	1				
BHCO		1			
EAWP	1				
AMCR		1			
BCCH		1			
RBWO		1			
CEDW		1			
BAOR		1			



*Height of blade sweep will vary from project to project; Check with Project Manager
O – On ground; **A** – Below height of blade sweep; **B** – At height of blade sweep;
C – Above height of blade sweep; **D** – Well Above the height of blade sweep

11

W14

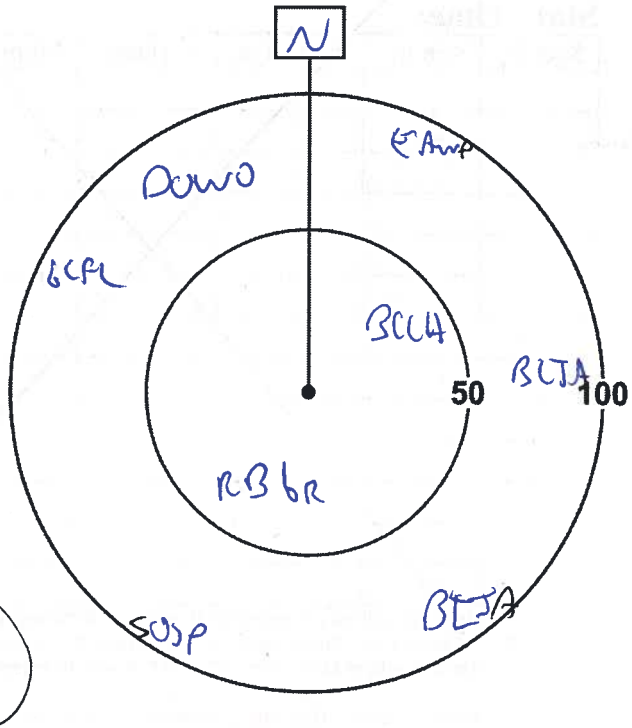
Station: ~~POR~~ 12

Habitat: ☒Forest ☐Swamp ☐Marsh ☐Hay ☐Pasture ☐Crop _____

UTM: 0603210 4749616

Start Time: 0934

Species	<50 m	50-100 m	> 100m	Flyovers	Height*
DOWO		1			
RBGR	1				
BCCH	1				
SOSP		1			
BLJA		11			
EAWP		1			
GCFL		1			



*Height of blade sweep will vary from project to project; Check with Project Manager
O – On ground; **A** – Below height of blade sweep; **B** – At height of blade sweep;
C – Above height of blade sweep; **D** – Well Above the height of blade sweep.

8

Quality Control: This form is complete (__) & legible (__).

Signature: _____ (Field Personnel)

Signature: _____ (Project Manager)

REV: May, 07 Form 020

Station: 1B

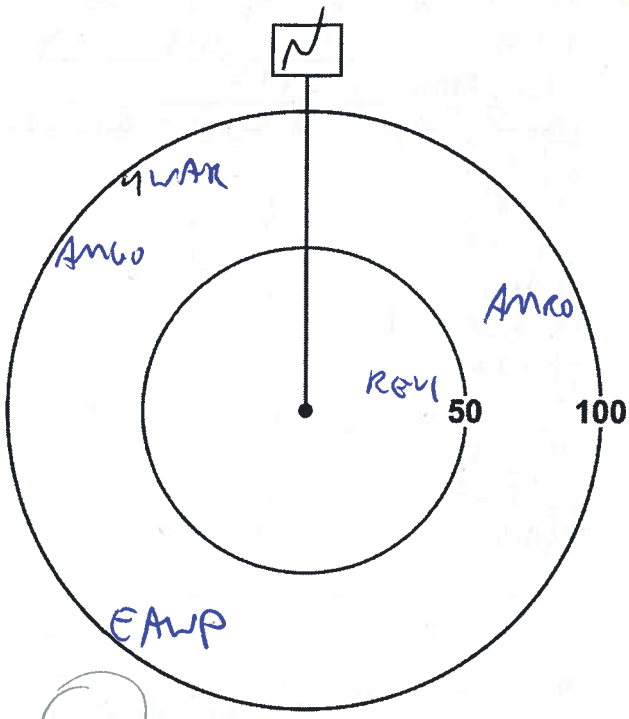
Habitat: ☒Forest ☐Swamp ☐Marsh ☐Hay ☐Pasture ☐Crop _____

UTM: 0602916 4749345

Start Time: 0950

WLS

Species	<50 m	50-100 m	> 100m	Flyovers	Height*
REVI	1				
AMRO		1			
AMRO		1			
YWAR		1			
EAWP		1			



5

*Height of blade sweep will vary from project to project; Check with Project Manager
O – On ground; **A** – Below height of blade sweep; **B** – At height of blade sweep;
C – Above height of blade sweep; **D** – Well Above the height of blade sweep

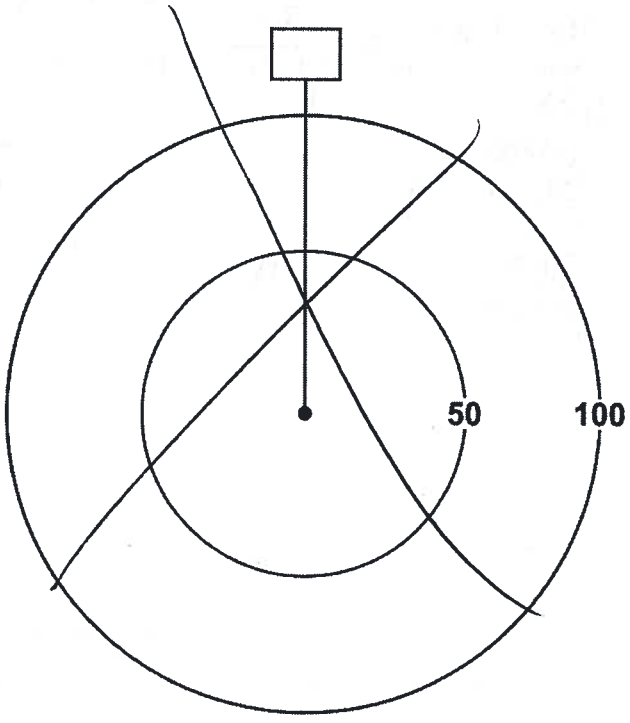
Station: _____

Habitat: ☐Forest ☐Swamp ☐Marsh ☐Hay ☐Pasture ☐Crop _____

UTM: _____

Start Time: _____

Species	<50 m	50-100 m	> 100m	Flyovers	Height*



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O – On ground; **A** – Below height of blade sweep; **B** – At height of blade sweep;
C – Above height of blade sweep; **D** – Well Above the height of blade sweep.

Quality Control: This form is complete (__) & legible (__).

Signature: _____ (Field Personnel) Signature: _____ (Project Manager)

REV: May, 07 Form 020

W21

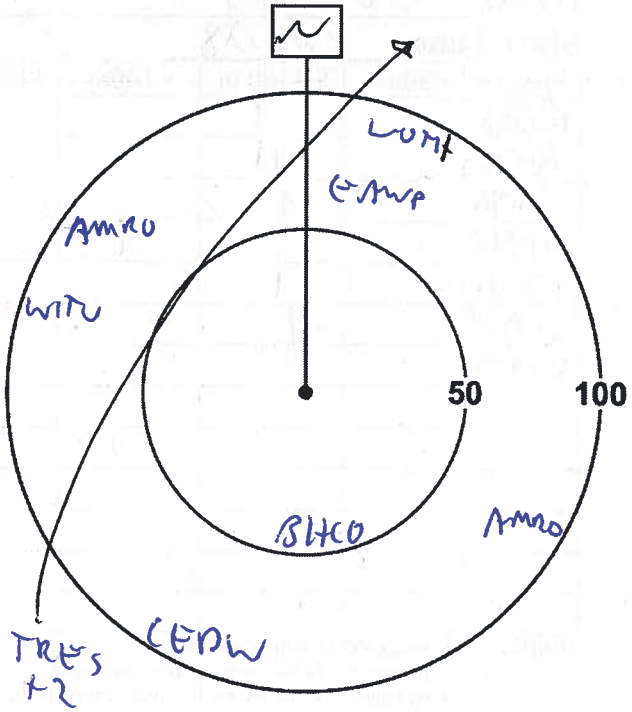
Station: 9

Habitat: ☒Forest ☐Swamp ☐Marsh ☐Hay ☐Pasture ☐Crop _____

UTM: 0601318 4747702

Start Time: 0711

Species	<50 m	50-100 m	> 100m	Flyovers	Height*
EAWP		1			
AMRO		11			
BHCO	1				
TRES				11	10m
CEDW		1			
WOTH		1			
WITU		1			



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O – On ground; **A** – Below height of blade sweep; **B** – At height of blade sweep;
C – Above height of blade sweep; **D** – Well Above the height of blade sweep

9

W18

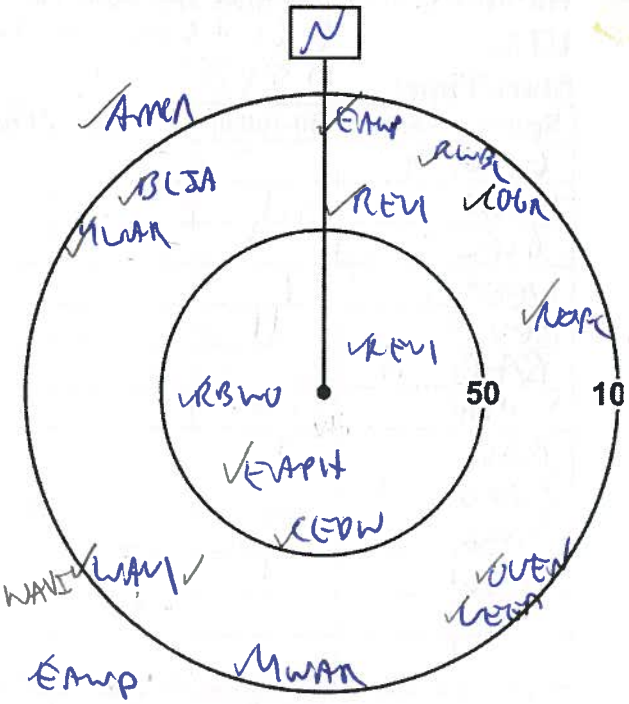
Station: 17

Habitat: ☒Forest ☐Swamp ☐Marsh ☐Hay ☐Pasture ☐Crop _____

UTM: 0603208 4748347

Start Time: 0744

Species	<50 m	50-100 m	> 100m	Flyovers	Height*
EAPH	1				
REVI	1	1			
CEDW	1				
VEER		1			
EAWP		1	1		
COGR		1			
RBWO	1				
OVEN		1			
YWAR	8	11			
NOPA		1			
BLJA		1			
RWBL		1			
AMCR			1		



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O – On ground; **A** – Below height of blade sweep; **B** – At height of blade sweep;
C – Above height of blade sweep; **D** – Well Above the height of blade sweep

WAVI 1 1 1

18

Quality Control: This form is complete (__) & legible (__).

Signature: _____ (Field Personnel) Signature: _____ (Project Manager)

REV: May, 07 Form 020

W19

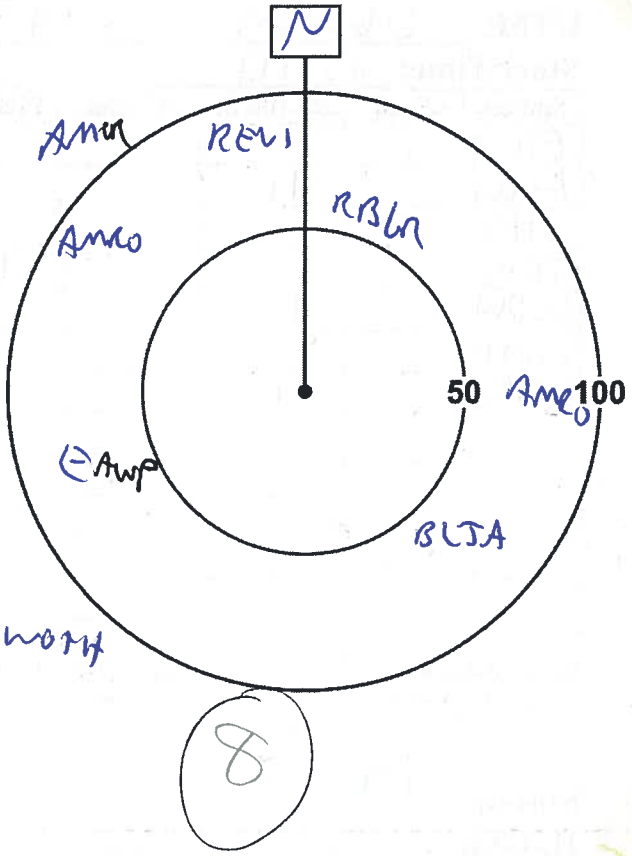
Station: 14

Habitat: ☒Forest ☐Swamp ☐Marsh ☐Hay ☐Pasture ☐Crop

UTM: 0603800 4748401

Start Time: 0908

Species	<50 m	50-100 m	> 100m	Flyovers	Height*
RBGR		1			
AMRO		11			
BLJA		1			
AMCR			1		
REVI		1			
EAWP		1			
WOTH			1		



8

*Height of blade sweep will vary from project to project; Check with Project Manager
O – On ground; A – Below height of blade sweep; B – At height of blade sweep;
C – Above height of blade sweep; D – Well Above the height of blade sweep

W13

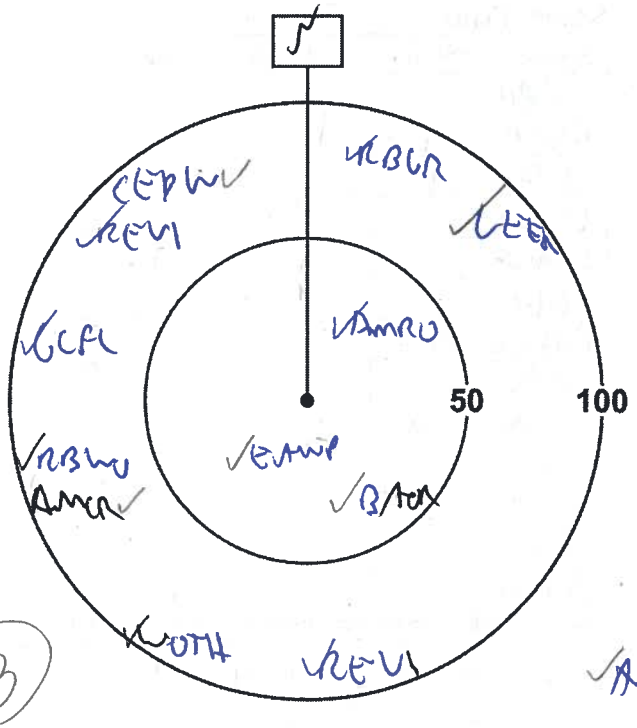
Station: 16

Habitat: ☒Forest ☐Swamp ☐Marsh ☐Hay ☐Pasture ☐Crop

UTM: 0604300 4747600

Start Time: 0850

Species	<50 m	50-100 m	> 100m	Flyovers	Height*
EAWP	1				
RBWO		1			
GCFL		1			
VEER		1			
REVI		11			
BAOR	1				
WOTH		1			
RBGR		1			
AMRO	1				
AMCR		1	1		
CEDW		1			



13

*Height of blade sweep will vary from project to project; Check with Project Manager
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C – Above height of blade sweep; D – Well Above the height of blade sweep.

Quality Control: This form is complete (__) & legible (__).

Signature: _____ Signature: _____

(Field Personnel) (Project Manager)

REV: May, 07 Form 020

Areas

13, 16

16, 12

17, 14

9

14, 27, 16

W:\active\160960577\drawing\GIS\MXD\OptionedLands\160960577_Fig1-0_OptionedLands_Ortho_FieldWork_20100818_CEW.mxd - 8/18/2010 @ 2:03:04 PM

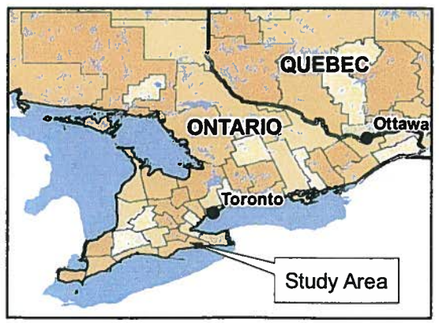
June, 2010
160960577

Legend

- Project Location
- Elexco_acquired_agreements Drawing
- Woodlot > 10ha
- Wooded Area
- Road
- Waterbody (OBM)

Part 3

Woodlands - 9, 10, 27, 9, 17, 14, 16, 13, 12, 18



3

Notes

1. Coordinate System: UTM NAD 83 - Zone 17 (N).
2. Data Sources: Ontario Ministry of Natural Resources © Queens Printer Ontario, 2009; © GREP, 2010; © Samsung, 2010.
3. Image Sources: © FirstBase Solutions, WMS 2010.

Client/Project
SAMSUNG C&T
GRAND RENEWABLE ENERGY PARK

Figure No.
1.0

Title
OPTIONED LANDS - ORTHOS
2010-06-03

Stantec Consulting Ltd.
70-1 Southgate Drive
Guelph, Ontario, Canada
N1G 4P5
Tel: (519) 836-6050
Fax: (519) 836-2493

Breeding Bird Survey Observation Form

Project Number 161010624.210.100.102 Project Name: SAMSUNG - PT. 4

Date / Time: 1 JULY/10 VISIT 2 Field Personnel: J. HESLOP

Weather Conditions:	Temp:	Wind:	Cloud:	PPT:	PPT in last 24 hrs:
	10°-20°C	2	Ø	Ø	Ø

Start Time: 5:45 End Time: 11:00

Habitat #	ELC Code(s) or Habitat Description
G	Grassland @ G8-10
W	Woodland @ W6-8, W21, W26, W28

Quality Control: This form is complete (__) & legible (__).

Signature: _____ (Field Personnel) Signature: _____ (Project Manager)

Record location of all significant species on site map

** Endangered, Threatened or Special Concern
† Partners In Flight
‡ Area Sensitive Species

Species	Habitats	BE*	Species	Habitats	BE*	Species	Habitats
Canada Goose			Red-headed Wo** †			Blue-wing. Wa. †	
Wood Duck			Red-bellied Wo.	W	H	Gold-wing. Wa** †	
Am. Black Duck			Yell-bellied Sap. ‡			Nashville Wa.	
Mallard			Downy Wo.	W	H	Yellow Wa.	
Ring-neck. Pheasant			Hairy Wo.			Chestnut-sided Wa.	W SM
Ruffed Grouse ‡			Northern Flicker †	W	H	Magnolia Wa. ‡	
Wild Turkey	W	H	Pileated Wo. ‡			Bl-thr Blue Wa. ‡	
Common Loon ‡			Ea. Wood-Pewee †	W	SM	Yel-rumped Wa. ‡	
Pied-billed Grebe			Alder Fly.			Bl-thr Gr. Wa. ‡	
D. C. Cormorant ‡	G/W	X	Willow Fly. †	G	SM	Blackburnian Wa. ‡	
American Bittern			Least Fly.			Pine Wa. ‡	
Least Bittern** ‡			Eastern Phoebe			Cerulean Wa** †‡	
Great Blue Heron			Great Crested Fly.	W	A	Bl-and-wh Wa. ‡	
Great Egret			Eastern Kingbird †	G	H	Am. Redstart ‡	
Green Heron			Yellow-thr. Vireo ‡			Ovenbird ‡	
Turkey Vulture	G/W	H	Blue-headed Vireo ‡			No. Waterthrush ‡	
Osprey			Warbling Vireo	G	SM	Mourning Wa. ‡	
Northern Harrier †‡			Red-eyed Vireo	W	SM	Co. Yellowthroat	W SM
Sharp-shin. Hawk ‡	W	H	Blue Jay	W	A	Hooded Wa** †‡	
Coopers Hawk ‡			American Crow	W	H	Canada Wa. †‡	
Red-shou. Hawk †‡			Common Raven			Scarlet Tanager ‡	
Red-tailed Hawk	G/W	A	Horned Lark	G	D	Eastern Towhee †	
Am. Kestrel †			Purple Mart.	G	X	Chipping Sp.	W SM
Virginia Rail			Tree Swallow	G	H	Clay-colored Sp.	
Sora			No. R. W. Swallow			Field Sp. †	
Sandhill Crane			Bank Swallow †			Vesper Sp. †	G SM
Killdeer			Cliff Swallow			Savannah Sp. †	
Spotted Sandpiper			Barn Swallow	G	H	Grasshopper Sp. †	
Upland Sandpiper ‡			Bl-capped Chickadee	W	A	Song Sp.	W SM
Wilson's Snipe			Tufted Titmouse			Swamp Sp.	
American Woodcock			Red-br. Nuthatch			Wh-throated Sp. ‡	
Ring-billed Gull	G	X	Wh-br. Nuthatch	W	A	Northern Cardinal	W A
Herring Gull			Br. Creeper ‡			Rose-br. Grosbeak †	W SM
Caspian Tern			Carolina Wren.			Indigo Bunting	W SM
Black Tern** ‡			House Wren	W	SM	Bobolink †	
Common Tern			Winter Wren ‡			Red-winged Bl.	G A
Rock Dove	G	X	Sedge Wren			Ea. Meadowlark †	
Mourning Dove	G/W	H	Marsh Wren			Common Grackle	G/W CF
Yellow-bill. Cuckoo			Golded-cr. Kinglet ‡			Br-headed Cowbird	W H
Black-bill. Cuckoo †			B. G. Gnatcatcher ‡			Orchard Oriole	
Eastern Screech Owl			Eastern Bluebird			Baltimore Oriole †	G H
Great Horned Owl	W	H	Veery	W	SM	Purple Finch	
Barred Owl ‡			Hermit Thrush ‡			House Finch	
Long-eared Owl			Wood Thrush †	W	SM	Pine Siskin	
N. Saw-whet Owl			American Robin	W	F	Am. Goldfinch	W SM
Co. Nighthawk**			Gray Catbird	W	A	House Sparrow	G H
Whip-poor-will †‡			No. Mockingbird			Other Species …	
Chimney Swift** †			Brown Thrasher †				
Ruby-thr. Humming.			European Starling	G	X	/	
Belted Kingfisher †			Cedar Waxwing				

*Record highest Breeding Evidence (BE) observed over all habitat. Use codes as in Breeding Bird Atlas of Ontario

Quality Control: This form is complete (__) & legible (__).

Signature: _____ (Field Personnel)

Signature: _____ (Project Manager)

Stantec Consulting Ltd.
361 Southgate Drive
Guelph, Ontario, Canada
N1G 3M5
Tel: (519) 836-6050
Fax: (519) 836-2493

Birding Point Counts Survey Observation Form

Project Number 161010624.210.100.102 Project Name: SAMSUNG - PART-4

Date 1 JUNE/10 Field Personnel: J. HESLOP

Weather Conditions:	Temp: 10°-20°C	Wind: 2	Cloud: 0	PPT: 0	PPT in last 24 hrs: 0

GPS #: T71

W22

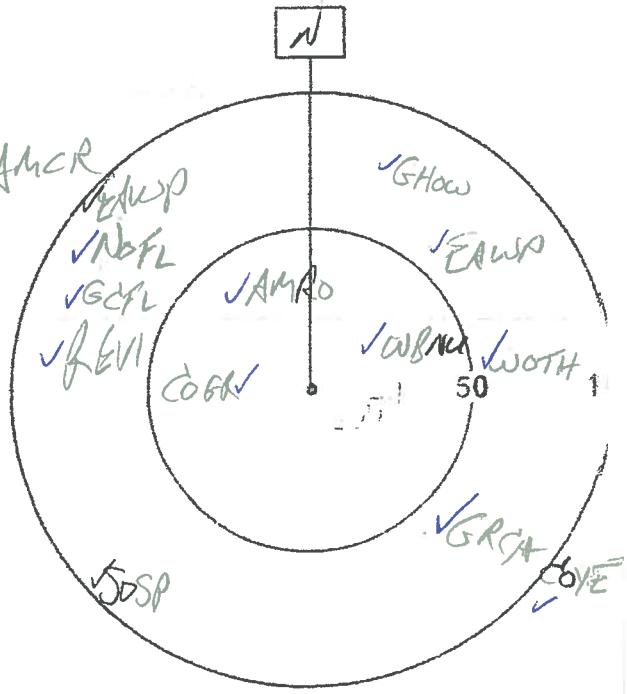
Station: W15

Habitat: ✓Forest Swamp Marsh Hay Pasture Crop _____

UTM: 17 607869E 47 49956N (P0107)

Start Time: 6:00

Species	<50 m	50-100 m	>100m	Flyovers	Height*
AMCR			✓1		?
~~SACR~~			✓		?
AMRO	✓1				A
COGR	✓1				A
WBNU	✓1				A
EAWP		✓2			A
WOTH		✓1			A
GRCA		✓1			A
SOSP		✓1			A
REVI		✓1			A
GCFL		✓1			A
NOFL		✓1			A
~~GHOW~~ COYE		✓1			A



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O – On ground; A – Below height of blade sweep; B – At height of blade sweep;
C – Above height of blade sweep; D – Well Above the height of blade sweep

14

Quality Control: This form is complete (__) & legible (__).

Signature: _____ (Field Personnel) Signature: _____ (Project Manager)

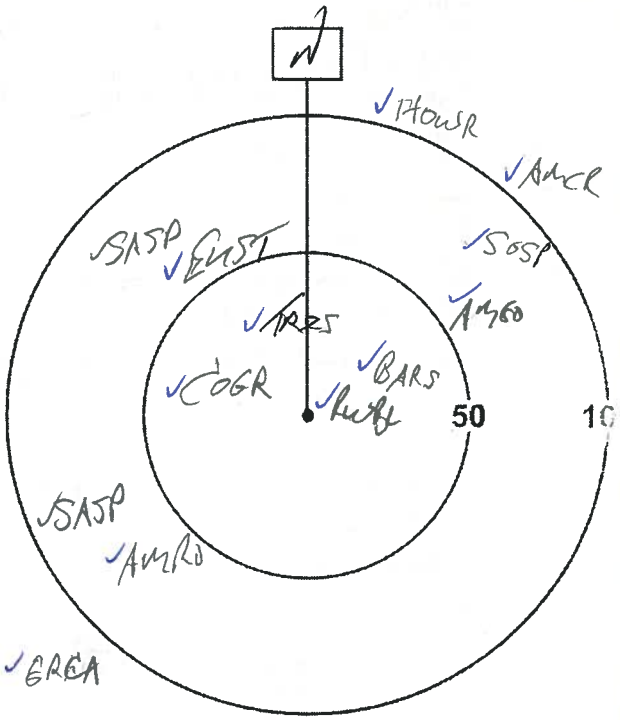
REV: May, 07 Form 020

G8

Station: G10
Habitat: Forest Swamp Marsh Hay ✓Pasture Crop _____
UTM: 17 611835E 4748280N (P0107a)
Start Time: 6:31

Species	<50 m	50-100 m	> 100m	Flyovers	Height*
EUST		✓1		✓	A
COGR	✓1			✓	A
RWBL	✓1			✓	A
BARS	✓1			✓	A
TRES	✓1			✓	A
AMGO		✓1		✓	A
RBGR		✓		✓	B
MODO		✓		✓	A
HOSP	✓			✓	A
SOSP		✓1			A
SASP		✓2			A
AMRO		✓1			A
GRCA			✓1		A
AMCR			✓1		A
HOWR					A

*Height of blade sweep will vary from project to project; Check with Project Manager
O – On ground; A – Below height of blade sweep; B – At height of blade sweep;
C – Above height of blade sweep; D – Well Above the height of blade sweep



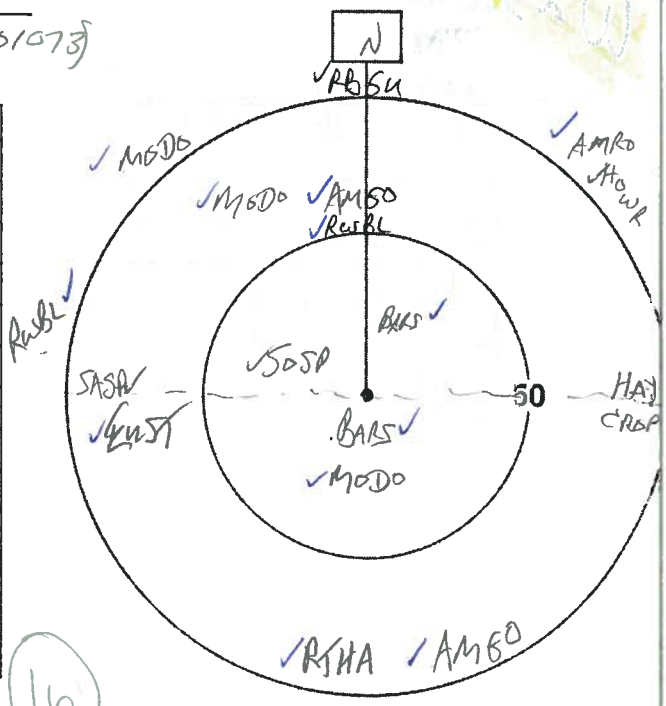
13

G9

Station: G8
Habitat: Forest Swamp Marsh ✓Hay Pasture ✓Crop _____
UTM: 17 612285E 4748423N (P0107b)
Start Time: 6:48

Species	<50 m	50-100 m	> 100m	Flyovers	Height*
MODO	✓1	✓1	✓1	✓	A
RWBL		✓1	1	✓	A
RBGR			✓1	✓	B
BARS	✓2			✓	A
EUST		✓1		✓	A
SOSP	✓1				A
SASP		1			A
AMGO		2		✓	A
RTHA		1			A
~~AMGO~~		✓		✓	A
AMRO			✓1		A
HOWR			✓1		A

*Height of blade sweep will vary from project to project; Check with Project Manager
O – On ground; A – Below height of blade sweep; B – At height of blade sweep;
C – Above height of blade sweep; D – Well Above the height of blade sweep



16

Quality Control: This form is complete (__) & legible (__).
Signature: _____ (Field Personnel) Signature: _____ (Project Manager)

REV: May, 07 Form 020

G10

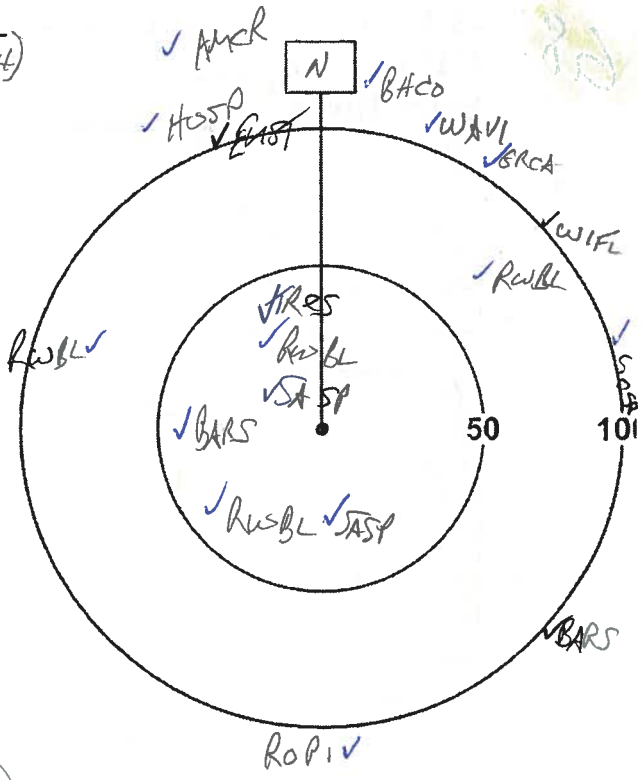
Station: G9

Habitat: Forest Swamp Marsh ✓Hay Pasture Crop _____

UTM: 17 610765 E 4747657 N (Pt 074)

Start Time: 7:08

Species	<50 m	50-100 m	> 100m	Flyovers	Height*
TRES	✓1			✓	A
COGR			✓	✓	A
BARS	✓1		✓1	✓	A
AMCR			✓1		?
RWBL	✓2	✓2			A
SASP	✓2				A
SOSP			✓1		A
ROPI			✓1		A
WIFL			✓1		A
HOSP EAST			✓1		A
BHCO WAVI			✓1		A
GRCA			✓1		A



*Height of blade sweep will vary from project to project; Check with Project Manager
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C – Above height of blade sweep; D – Well Above the height of blade sweep

18

W23

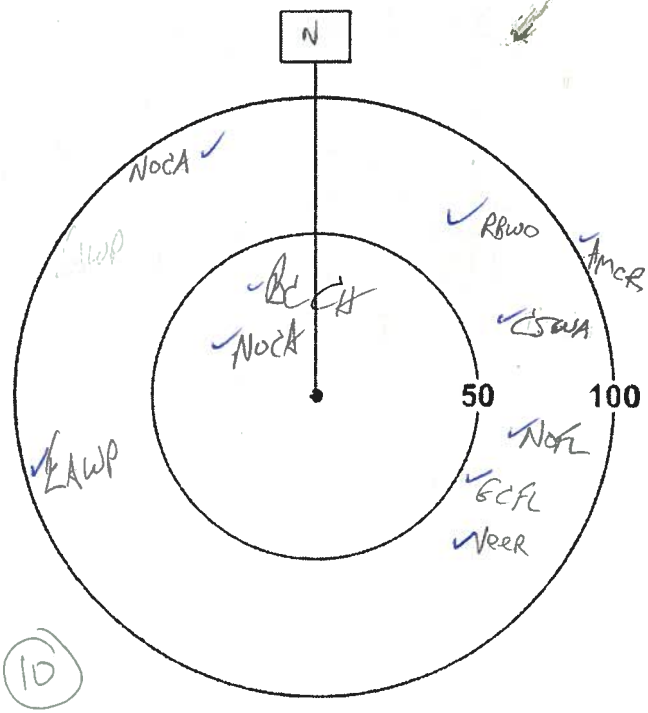
Station: W28

Habitat: ✓Forest Swamp Marsh Hay Pasture Crop _____

UTM: 17 603186 E 47 46364 N (Pt 075)

Start Time: 7:43

Species	<50 m	50-100 m	> 100m	Flyovers	Height*
NOCA	✓1	✓1			A
AMCR			✓1		?
BCCH	✓1				A
EAWP		✓1			A
CSWA		✓1			A
NOFL		✓1			A
VEER		✓1			A
GCFL		✓1			A
RBWO		✓1			A



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C – Above height of blade sweep; D – Well Above the height of blade sweep.

10

Quality Control: This form is complete (__) & legible (__).

Signature: _____ (Field Personnel)

Signature: _____ (Project Manager)

REV: May, 07 Form 020

W24

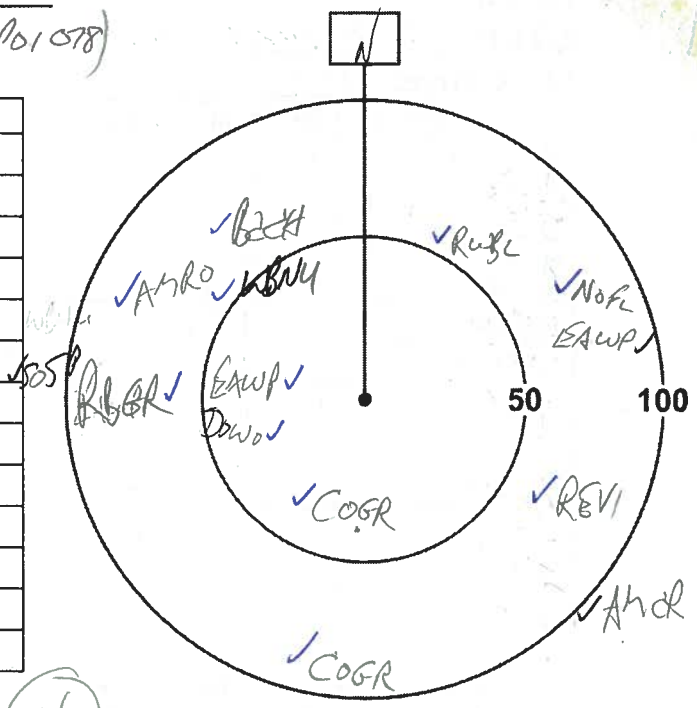
Station: W26

Habitat: ☑Forest ☐Swamp ☐Marsh ☐Hay ☐Pasture ☐Crop _____

UTM: 17 597742E 47 44626N (P01078)

Start Time: 9:38

Species	<50 m	50-100 m	> 100m	Flyovers	Height*
AWBL		✓1		✓	A
AMCR			✓1		?
COGR	✓1	✓1		✓	A
EAWP	✓1	✓1			
DOWO	✓1				
WBNU		✓1			
BCCH		✓1			
AMRO		✓1			
RBGR		✓1			
NOFL		✓1			
REVI		✓1			
SOSP			✓1		



*Height of blade sweep will vary from project to project; Check with Project Manager
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C – Above height of blade sweep; **D** – Well Above the height of blade sweep

14

W25

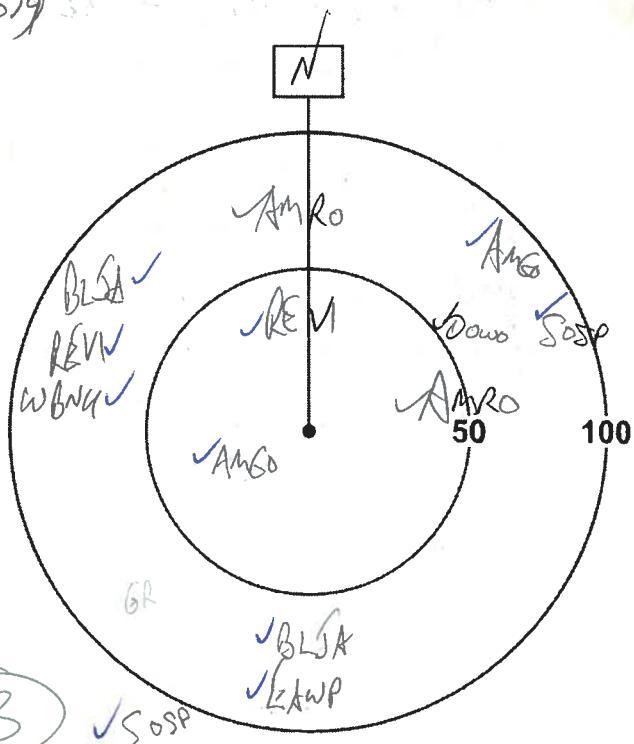
Station: W21

Habitat: ☑Forest ☐Swamp ☐Marsh ☐Hay ☐Pasture ☐Crop _____

UTM: 17 597509E 47 44482N (P01079)

Start Time: 9:50

Species	<50 m	50-100 m	> 100m	Flyovers	Height*
AMGO	✓1	✓1		✓	A
REVI	✓1				A
AMRO		2			A
SOSP		✓1	✓1		A
DOWO		✓1			A
BLJA		✓2			A
REVI		✓1			A
WBNU		✓1			A
EAWP		✓1			A



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O – On ground; **A** – Below height of blade sweep; **B** – At height of blade sweep;
C – Above height of blade sweep; **D** – Well Above the height of blade sweep.

13

Quality Control: This form is complete (__) & legible (__).

Signature: _____ (Field Personnel)

Signature: _____ (Project Manager)

REV: May, 07 Form 020

W26

Station: W6

Habitat: ☑Forest ☐Swamp ☐Marsh ☐Hay ☐Pasture ☐Crop _____

UTM: 17 597082E 47 44577N (P01080)

Start Time: 10:15

Species	<50 m	50-100 m	> 100m	Flyovers	Height*
AMGO			✓1	✓	?
COGR	✓1			✓	A
BLJA	✓1	1			A
BCCH	✓1				A
WBNU		✓1			A
WOTH		✓1			A
AMRO		✓1			A
DOWO		✓1			A
EAWP			✓1		A
GCFL			✓1		A
INBU			✓1		A
GRCA		1			

*Height of blade sweep will vary from project to project; Check with Project Manager
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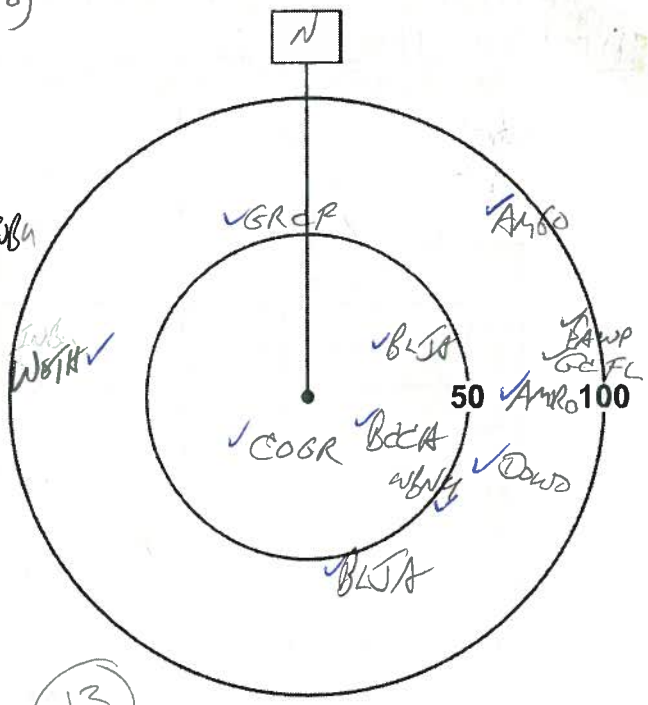
C – Above height of blade sweep; D – Well Above the height of blade sweep



13

W27

Station: W8

Habitat: ☑Forest ☐Swamp ☐Marsh ☐Hay ☐Pasture ☐Crop _____

UTM: 17 602488E 47 46025N (P01076)

Start Time: 8:08

Species	<50 m	50-100 m	> 100m	Flyovers	Height*
AMCR			✓1		?
AMGO		✓2		✓	A
GCFL	✓1	✓1			
DOWO	✓1				
AMRO		✓1			
EAWP		✓1			
WOTH		✓1			
REVI		✓1			

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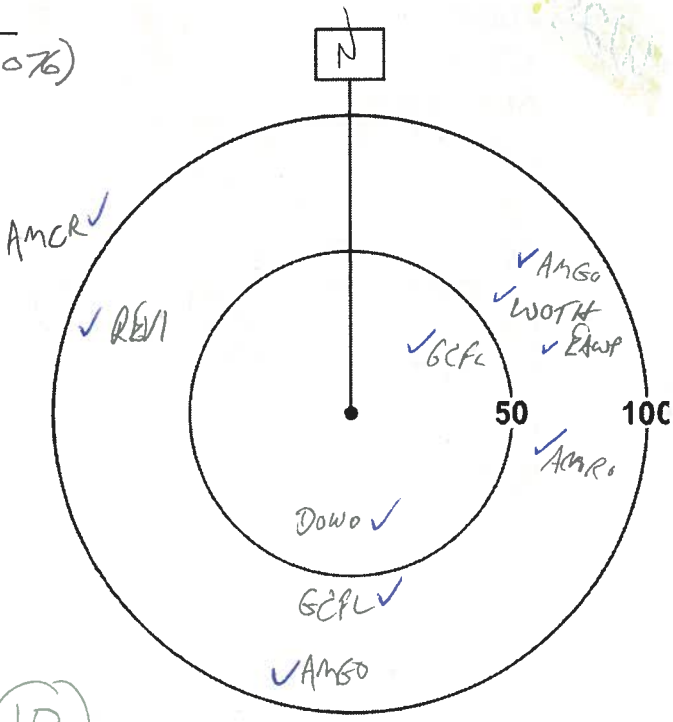
O – On ground; A – Below height of blade sweep; B – At height of blade sweep;
C – Above height of blade sweep; D – Well Above the height of blade sweep



10

Quality Control: This form is complete (__) & legible (__).

Signature: _____ (Field Personnel)

Signature: _____ (Project Manager)

REV: May, 07 Form 020

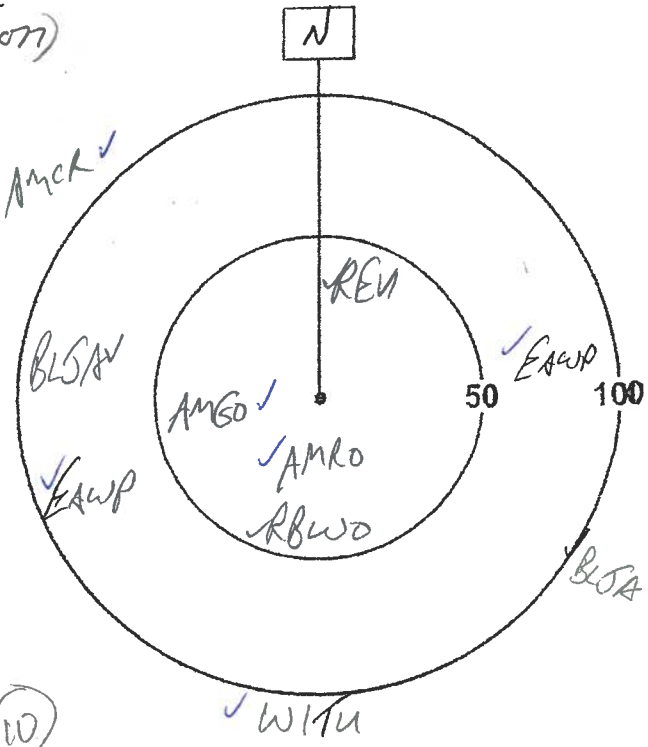
Station: W7

Habitat: ✓Forest Swamp Marsh Hay Pasture Crop _____

W28 **UTM:** 17 600 5[illegible]E 47 45397N (Point)

Start Time: 8:56

Species	<50 m	50-100 m	> 100m	Flyovers	Height*
AMCR			✓1		A
AMGO	✓1			✓	A
REVI	✓1				A
AMRO	✓1				A
RBWO	✓1				A
EAWP		✓2	*		A
BLJA		✓1	1		A
WITH			✓1		O



*Height of blade sweep will vary from project to project; Check with Project Manager
O – On ground; A – Below height of blade sweep; B – At height of blade sweep;
C – Above height of blade sweep; D – Well Above the height of blade sweep

(10)

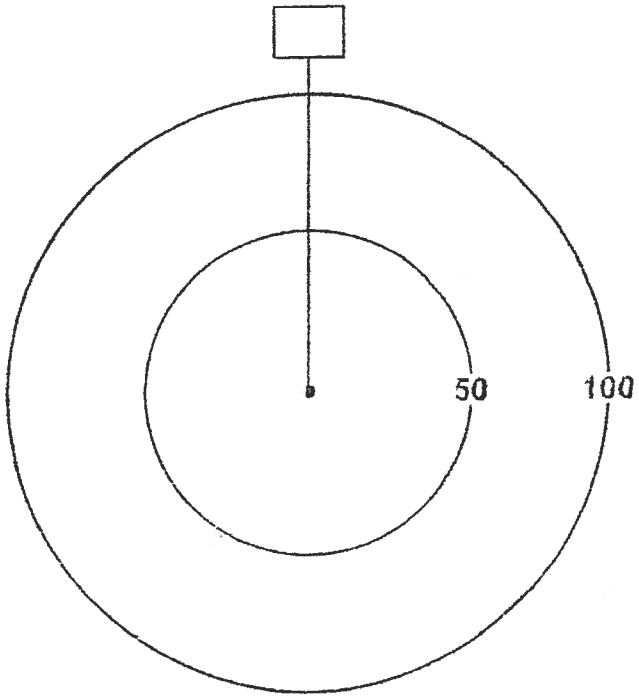
Station: _____

Habitat: Forest Swamp Marsh Hay Pasture Crop _____

UTM: _____

Start Time: _____

Species	<50 m	50-100 m	> 100m	Flyovers	Height*



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C – Above height of blade sweep; D – Well Above the height of blade sweep.

Quality Control: This form is complete (__) & legible (__).

Signature: _____ (Field Personnel)

Signature: _____ (Project Manager)

REV: May, 07 Form 020

Stantec Consulting Ltd.
70-1 Southgate Drive
Guelph, Ontario, Canada
N1G 4P5
Tel: (519) 836-6050
Fax: (519) 836-2493

Breeding Bird Survey Observation Form

Project Number 161010624.210.100.102 Project Name: SAMSUNG - PART 4

Date / Time: 18 June/10 VISIT 1 Field Personnel: J. Herzog

Weather Conditions:	Temp: 15°C	Wind: Ø	Cloud: 10%	PPT: Ø	PPT in last 24 hrs:

Start Time: 5:30 End Time: 11:00

Habitat #	ELC Code(s) or Habitat Description
G	grassland @ G8-10
W	woodland @ W6-8, W25, W21, W26, W28

Quality Control: This form is complete (__) & legible (__).

Signature: _____ (Field Personnel) Signature: _____ (Project Manager)

Record location of all significant species on site map

** Endangered, Threatened or Special Concern
† Partners In Flight
‡ Area Sensitive Species

Species	Habitats	BE*	Species	Habitats	BE*	Species	Habitats	BE*
Canada Goose			Red-headed Wo** †			Blue-wing. Wa. †		
Wood Duck			Red-bellied Wo.	W	H	Gold-wing. Wa** †		
Am. Black Duck			Yell-bellied Sap. ‡			Nashville Wa.		
Mallard			Downy Wo.	W	H	Yellow Wa.		
Ring-neck. Pheasant			Hairy Wo.	W	H	Chestnut-sided Wa.		
Ruffed Grouse ‡			Northern Flicker †	W	H	Magnolia Wa. ‡		
Wild Turkey	W	H	Pileated Wo. ‡			Bl-thr Blue Wa. ‡		
Common Loon ‡			Ea. Wood-Pewee †			Yel-rumped Wa. ‡		
Pied-billed Grebe			Alder Fly.			Bl-thr Gr. Wa. ‡		
D. C. Cormorant ‡			Willow Fly. †	G	SM	Blackburnian Wa. ‡		
American Bittern			Least Fly.			Pine Wa. ‡		
Least Bittern** ‡			Eastern Phoebe	G	SM	Cerulean Wa** †‡		
Great Blue Heron	W	X	Great Crested Fly.	W	A	Bl-and-wh Wa. ‡		
Great Egret			Eastern Kingbird †			Am. Redstart ‡		
Green Heron			Yellow-thr. Vireo ‡			Ovenbird ‡		
Turkey Vulture			Blue-headed Vireo ‡			No. Waterthrush ‡		
Osprey			Warbling Vireo			Mourning Wa. ‡		
Northern Harrier †‡			Red-eyed Vireo	W	SM	Co. Yellowthroat		
Sharp-shin. Hawk ‡			Blue Jay	W	A	Hooded Wa** †‡		
Coopers Hawk ‡			American Crow	W	A	Canada Wa. †‡		
Red-shou. Hawk †‡			Common Raven			Scarlet Tanager ‡		
Red-tailed Hawk			Horned Lark	G	H	Eastern Towhee †		
Am. Kestrel †			Purple Mart.			Chipping Sp.		
Virginia Rail			Tree Swallow	G	H	Clay-colored Sp.		
Sora			No. R. W. Swallow			Field Sp. †	G	SM
Sandhill Crane			Bank Swallow †			Vesper Sp. †		
Killdeer	G	A	Cliff Swallow			Savannah Sp. †	G	SM
Spotted Sandpiper			Barn Swallow	G	H	Grasshopper Sp. †		
Upland Sandpiper ‡			Bl-capped Chickadee	W	SM	Song Sp.	W	SM
Wilson's Snipe			Tufted Titmouse			Swamp Sp.		
American Woodcock			Red-br. Nuthatch			Wh-throated Sp. ‡		
Ring-billed Gull			Wh-br. Nuthatch	W	SM	Northern Cardinal	W	SM
Herring Gull			Br. Creeper ‡			Rose-br. Grosbeak †	W	CF
Caspian Tern			Carolina Wren.			Indigo Bunting		
Black Tern** ‡			House Wren	W	SM	Bobolink †	G	SM
Common Tern			Winter Wren ‡			Red-winged Bl.	G	A
Rock Dove			Sedge Wren			Ea. Meadowlark †		
Mourning Dove	G	H	Marsh Wren			Common Grackle	W	H
Yellow-bill. Cuckoo			Golded-cr. Kinglet ‡			Br-headed Cowbird	W	H
Black-bill. Cuckoo †			B. G. Gnatcatcher ‡			Orchard Oriole		
Eastern Screech Owl			Eastern Bluebird	G	H	Baltimore Oriole †	W	A
Great Horned Owl	W	A	Veery			Purple Finch		
Barred Owl ‡			Hermit Thrush ‡			House Finch		
Long-eared Owl			Wood Thrush †	W	SM	Pine Siskin		
N. Saw-whet Owl			American Robin	W	CF	Am. Goldfinch	W	SM
Co. Nighthawk**			Gray Catbird			House Sparrow	G	H
Whip-poor-will †‡			No. Mockingbird			Other Species …		
Chimney Swift** †			Brown Thrasher †					
Ruby-thr. Humming.			European Starling	W	H	/		
Belted Kingfisher †			Cedar Waxwing	W	H			

*Record highest Breeding Evidence (BE) observed over all habitat. Use codes as in Breeding Bird Atlas of Ontario

Quality Control: This form is complete (__) & legible (__).

Signature: _____ (Field Personnel)

Signature: _____ (Project Manager)

REV:Apr.08 FORM 031

Stantec

Stantec Consulting Ltd.
361 Southgate Drive
Guelph, Ontario, Canada
N1G 3M5
Tel: (519) 836-6050
Fax: (519) 836-2493

Birding Point Counts Survey Observation Form

Project Number 161010624-210-100-102   Project Name: SAMSUNG – PART 4

Date 18 June/10 Visit 1   Field Personnel: J. HESLOP

Weather Conditions:	Temp: 15°C	Wind: Ø	Cloud: 10%	PPT: Ø	PPT in last 24 hrs:

W27

GPS #: T___

Station: W15

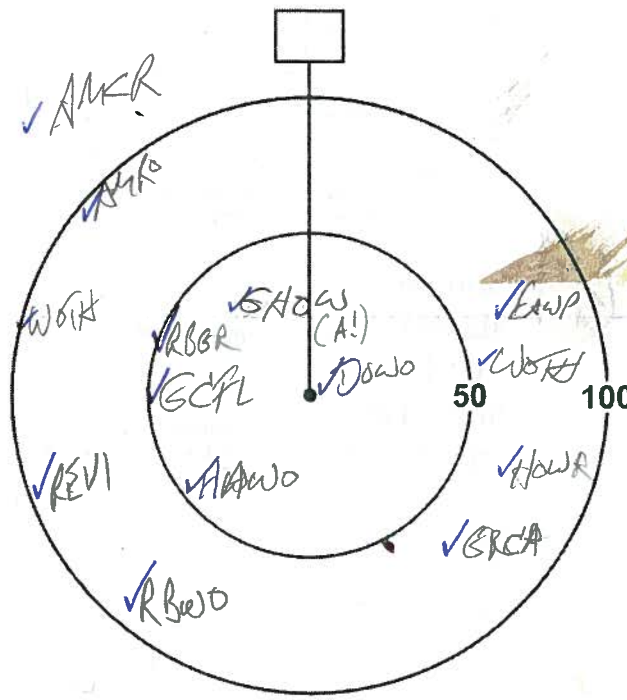
Habitat: ☑Forest ☐Swamp ☐Marsh ☐Hay ☐Pasture ☐Crop

UTM: 17 0618698 4749956N (POI 71)

Start Time: 5:42

Species	<50 m	50-100 m	> 100m	Flyovers	Height*
AMCR			✓ 1		?
GHOW	✓ 1				A
WOTH		✓ 2			A
REVI		✓ 1			A
DOWO	✓ 1				A
HAWO	✓ 1				A
GCFL	✓ 1				A
RBGR	✓ 1				A
RBWO		✓ 1			A
GRCA		✓ 1			A
HOWR		✓ 1			A
EAWP		✓ 1			A
AMRO		✓ 1			A

*Height of blade sweep will vary from project to project; Check with Project Manager
O – On ground; **A** – Below height of blade sweep; **B** – At height of blade sweep;
C – Above height of blade sweep; **D** – Well Above the height of blade sweep



(14)

Quality Control: This form is complete (__) & legible (__).
Signature: [signature] (Field Personnel)   Signature: ______________ (Project Manager)

    REV: May, 07   Form 020

G8

Station: G10

Habitat: ☐Forest ☐Swamp ☐Marsh ☐Hay ☑Pasture ☐Crop

UTM: 17 611835E 4748280N Pol:72

Start Time: 6:15

Species	<50 m	50-100 m	> 100m	Flyovers	Height*
COGR	✓1			✓	A
AMCR			✓1		?
RBGR		✓1		✓	B
BLJA			✓1		A
BARS		✓1			A
MODO		✓1			A
AMRO			✓1		A
SASP	✓1	✓1			A
BOBO	1				A
RWBL	1				A
TRES	1				A
WIFL			✓1		A

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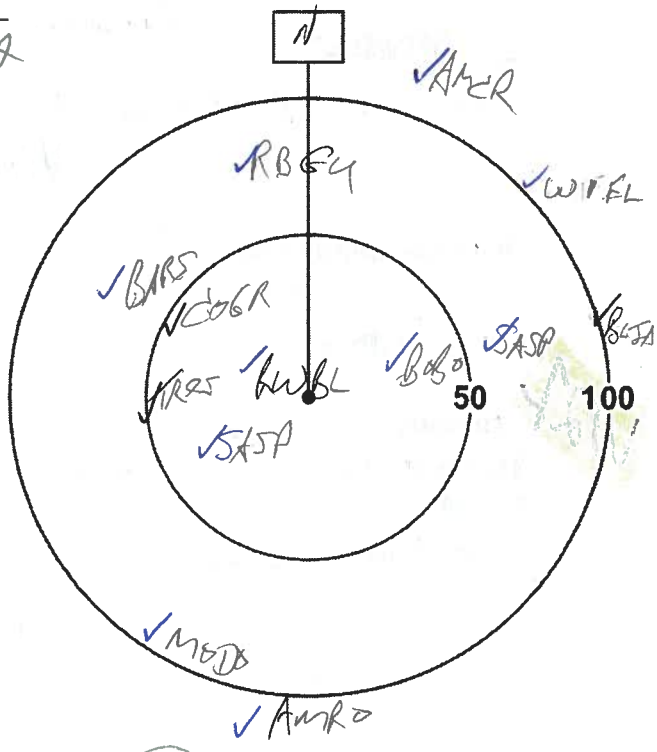
C – Above height of blade sweep; **D** – Well Above the height of blade sweep



13

G9

Station: G8

Habitat: ☐Forest ☐Swamp ☐Marsh ☑Hay ☐Pasture ☐Crop

UTM: 17 612885E 4748423N (Pol:73)

Start Time: 6:34

Species	<50 m	50-100 m	> 100m	Flyovers	Height*
RBGR			✓1	✓	B
COGR	✓1			✓	A
BARS	1			✓	A
RTHA			✓1		A
AMGO		✓1		✓	A
RWBL	1				A
SASP	✓1	✓1			A
SOSP		✓1			A
BHCO		✓1			A
AMRO		✓2			A
MODO		1	✓1		A
~~RTHA~~			✓		~~A~~
EAWP		✓1			A
EUST		✓1			A
GRCA		✓1			A
AMCR		✓1			A
WOTH		✓1			A
BLJA		✓1			A
HOWR		✓1			A

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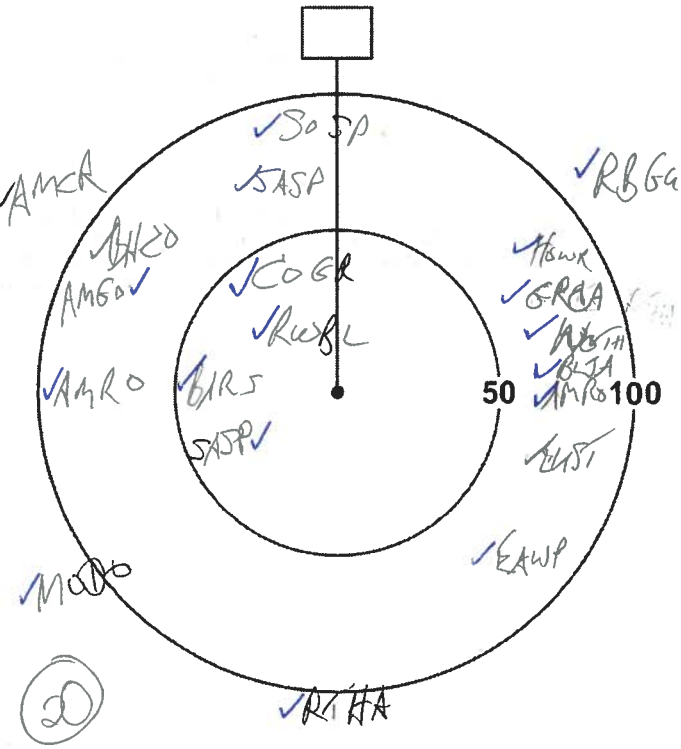


20

Quality Control: This form is complete (__) & legible (__).

Signature: _____ (Field Personnel)

Signature: _____ (Project Manager)

REV: May, 07 Form 020

G10

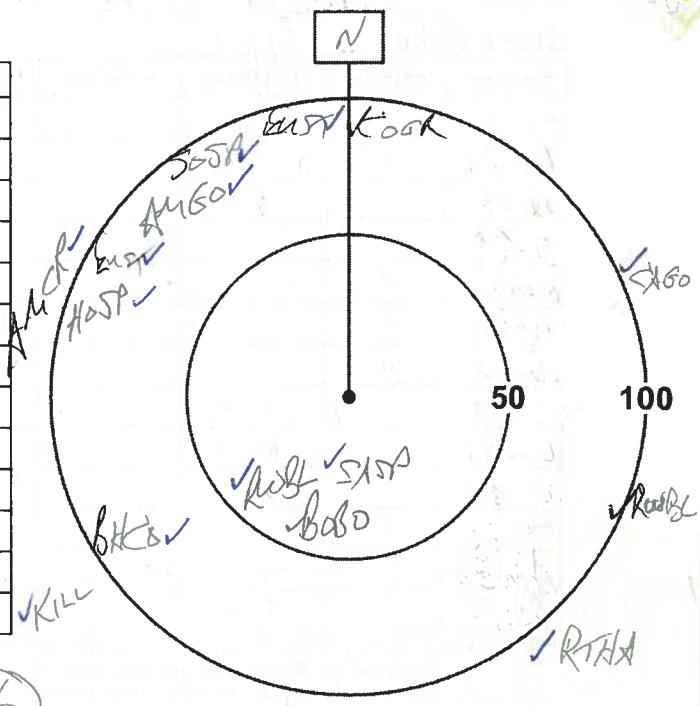
Station: G9

Habitat: ☐Forest ☐Swamp ☐Marsh ☑Hay ☐Pasture ☐Crop

UTM: M 607655 4747657N Point

Start Time: 6:58

Species	<50 m	50-100 m	> 100m	Flyovers	Height*
RWBL	✓1		✓1		A
SASP	✓1				A
BOBO	✓1				A
COGR		✓1			A
EUST		✓2			A
SOSP		✓1			A
AMGO		✓1			A
HOSP		✓1			A
BHCO		✓1			A
AMCR			✓1		A
CAGO			✓1		A
RTHA			✓1		A
KILL			✓1		A



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C – Above height of blade sweep; **D** – Well Above the height of blade sweep

15

W29

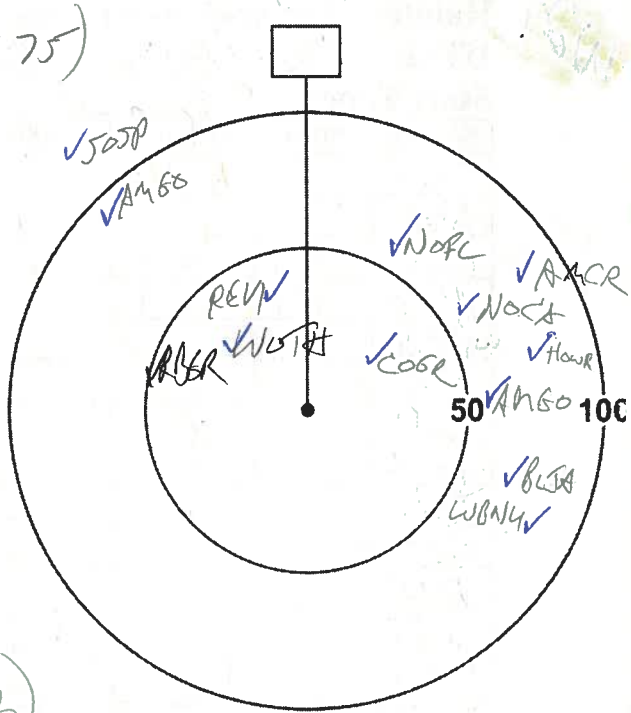
Station: W28

Habitat: ☑Forest ☐Swamp ☐Marsh ☐Hay ☐Pasture ☐Crop

UTM: 17 603186E 4746364N (Point 75)

Start Time: 7:31

Species	<50 m	50-100 m	> 100m	Flyovers	Height*
COGR	✓1			✓	A
WOTH	✓1				
RBGR	✓1				
REVI	✓1				
AMGO		✓2			
NOFL		✓1			
NOCA		✓1			
HOWR		✓1			
BLJA		✓1			
WBNU		✓1			
AMCR			✓1		
SOSP			✓1		



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O – On ground; **A** – Below height of blade sweep; **B** – At height of blade sweep;
C – Above height of blade sweep; **D** – Well Above the height of blade sweep

13

Quality Control: This form is complete (__) & legible (__).

Signature: _____ (Field Personnel)

Signature: _____ (Project Manager)

REV: May, 07 Form 020

W24

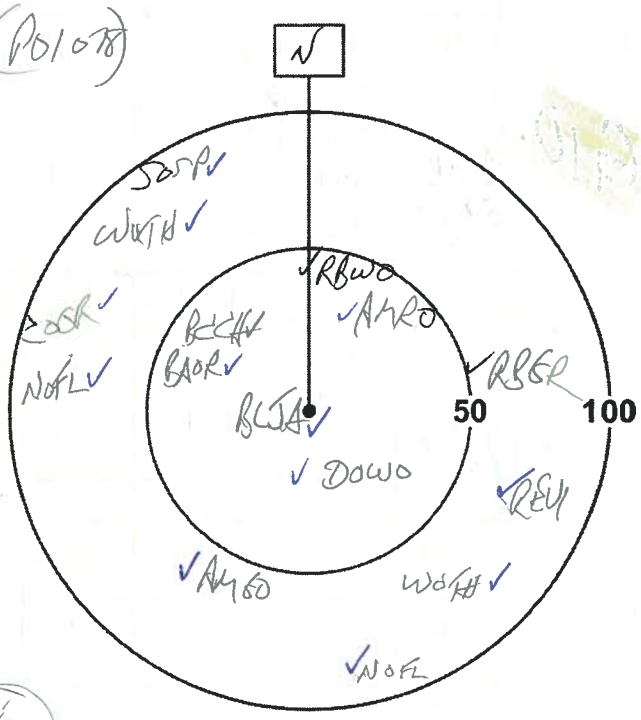
Station: W26

Habitat: ☑Forest ☐Swamp ☐Marsh ☐Hay ☐Pasture ☐Crop

UTM: ~~17 S~~ 17 597742E 4744626N (P0108)

Start Time: 9:38

Species	<50 m	50-100 m	> 100m	Flyovers	Height*
AMGO		✓1		✓	A
BCCH	✓1				A
BAOR	✓1				A
BLJA	✓1				A
RBWO	✓1				A
AMRO	✓1				A
DOWO	✓1				A
SOSP		✓1			A
WOTH		✓2			A
COGR		✓1			A
NOFL		✓2			A
~~AMGO~~		✓			A
REVI		✓1			A



*Height of blade sweep will vary from project to project; Check with Project Manager
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RBGR 1

15

W25

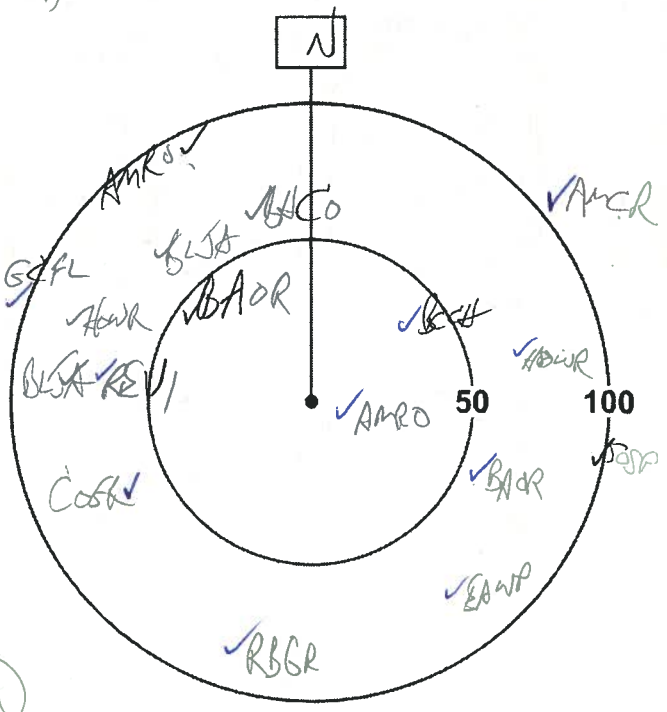
Station: W21

Habitat: ☑Forest ☐Swamp ☐Marsh ☐Hay ☐Pasture ☐Crop

UTM: 17 597509E 4744482N (P0179)

Start Time: 9:55

Species	<50 m	50-100 m	> 100m	Flyovers	Height*
COGR		✓1		✓	A
AMCR			✓1		A
BAOR	✓1	✓1			A
AMRO	✓1	✓1			A
BCCH	✓1				A
BHCO		✓1			A
BLJA		✓2			A
HOWR		✓2			A
REVI		✓1			A
GCFL			✓1		A
~~HOWR~~		✓			A
SOSP			✓1		A
EAWP		1			A



*Height of blade sweep will vary from project to project; Check with Project Manager
O – On ground; **A** – Below height of blade sweep; **B** – At height of blade sweep; **C** – Above height of blade sweep; **D** – Well Above the height of blade sweep.

RBGR 1

17

Quality Control: This form is complete (__) & legible (__).

Signature: _____ (Field Personnel)

Signature: _____ (Project Manager)

REV: May, 07 Form 020

Station: W6

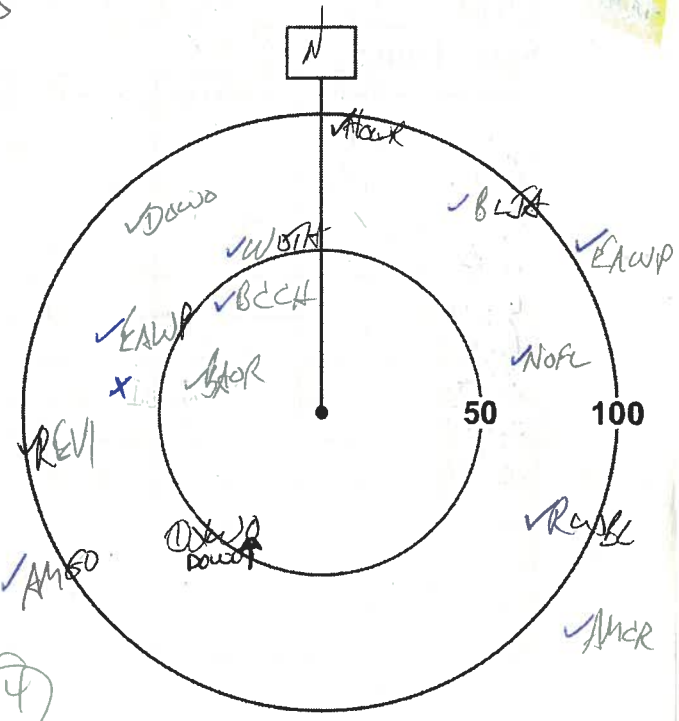
Habitat: ☑Forest ☐Swamp ☐Marsh ☐Hay ☐Pasture ☐Crop

UTM: 17597085E 4745771N PDOP 80

Start Time: 10:18

W26

Species	<50 m	50-100 m	> 100m	Flyovers	Height*
RWBL	✓	✓ 1		✓	A
AMCR			✓ 1		A
BCCH	✓ 1				A
BAOR	✓ 1				A
DOWO	✓ 1	1			A
WOTH		1	✓		A
HOWR		1	✓		A
BLJA		1	✓		A
NOFL		1	✓		A
AMGO			✓ 1		A
REVI		1	1 ✓		A
EAWP		1	✓		A
~~DOWO~~			✓		A



*Height of blade sweep will vary from project to project; Check with Project Manager
O – On ground; **A** – Below height of blade sweep; **B** – At height of blade sweep;
C – Above height of blade sweep; **D** – Well Above the height of blade sweep

14

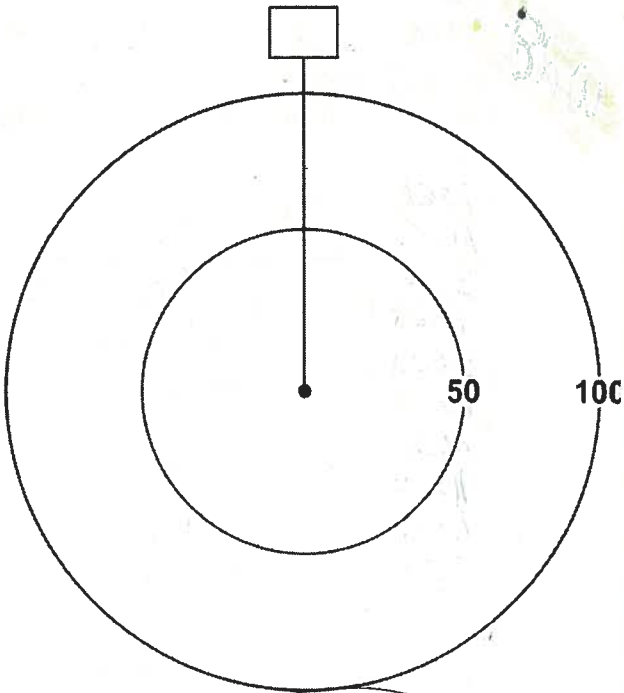
Station: ~~W6~~

Habitat: ☐Forest ☐Swamp ☐Marsh ☐Hay ☐Pasture ☐Crop

UTM:

Start Time:

Species	<50 m	50-100 m	> 100m	Flyovers	Height*



*Height of blade sweep will vary from project to project; Check with Project Manager
O – On ground; **A** – Below height of blade sweep; **B** – At height of blade sweep;
C – Above height of blade sweep; **D** – Well Above the height of blade sweep

MORE

Quality Control: This form is complete (__) & legible (__).

Signature: _____ (Field Personnel)

Signature: _____ (Project Manager)

REV: May, 07 Form 020

W27

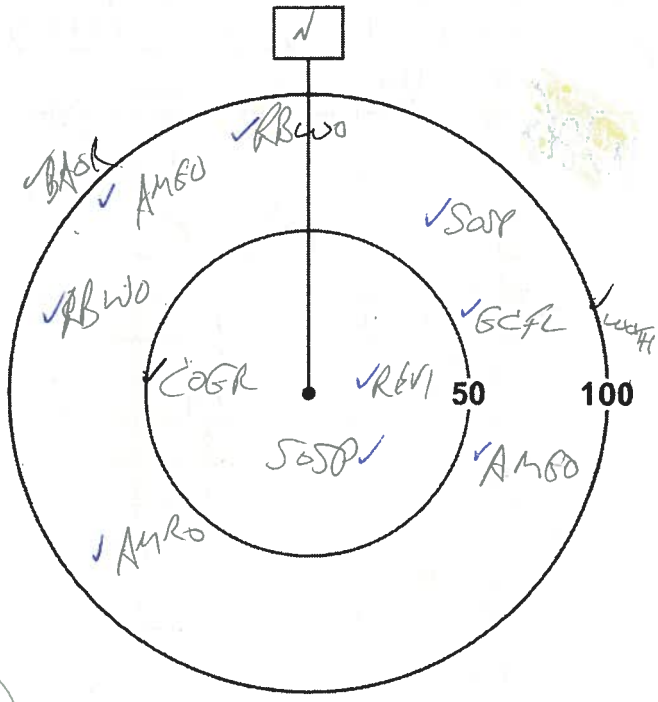
Station: W8

Habitat: ☑Forest ☐Swamp ☐Marsh ☐Hay ☐Pasture ☐Crop

UTM: 17 602488E 4746075N Pol 76

Start Time: 8:06

Species	<50 m	50-100 m	> 100m	Flyovers	Height*
COGR	✓1			✓	A
REVI	✓1				A
SOSP	✓1	✓1			A
AMGO		✓2			A
BCFL		✓1			A
RBWO		✓2			A
AMRO		✓1			A
WOTH			✓1		A
BAOR			✓1		A



*Height of blade sweep will vary from project to project; Check with Project Manager
O – On ground; **A** – Below height of blade sweep; **B** – At height of blade sweep;
C – Above height of blade sweep; **D** – Well Above the height of blade sweep

12

Station: [redacted] W7

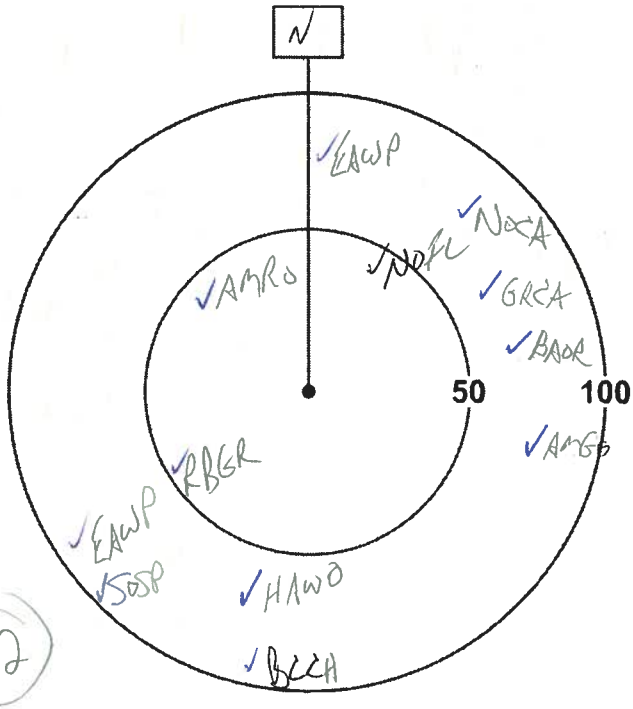
W28

Habitat: ☑Forest ☐Swamp ☐Marsh ☐Hay ☐Pasture ☐Crop

UTM: 17 600518E 4745397N Pol 77

Start Time: 8:54

Species	<50 m	50-100 m	> 100m	Flyovers	Height*
AMRO	✓1				A
RBGR	✓1				A
NOFL		✓1			A
EAWP		✓2			A
NOCA		✓1			A
GRCA		✓1			A
BAOR		✓1			A
AMGO		✓1			A
HAWO		✓1			A
BCCH		✓1			A
SOSP		✓1			A



*Height of blade sweep will vary from project to project; Check with Project Manager
O – On ground; **A** – Below height of blade sweep; **B** – At height of blade sweep;
C – Above height of blade sweep; **D** – Well Above the height of blade sweep.

12

Quality Control: This form is complete (__) & legible (__).

Signature: _____ (Field Personnel)

Signature: _____ (Project Manager)

REV: May, 07 Form 020

Part 3

Part 4

600000

SWEETS CORNERS ROAD

BROOKERS ROAD

RAINHAM (HWY 3)

20

28

8

7

10

20

21

N

0 0.5 1 km

1:20,000

600000

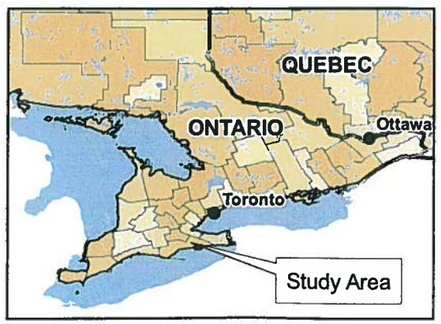
June, 2010
160960577

W:\active\160960577\drawing\GIS\MXD\OptionedLands\160960577_Fig1-0_OptionedLands_Ortho_FieldWork_20100616_CEW.mxd - 6/16/2010 @ 2:03:04 PM

Legend

- Project Location
- Elexco_acquired_agreements Drawing
- Woodlot > 10ha
- Wooded Area
- Road
- Waterbody (OBM)

Stantec



4/3

Notes

1. Coordinate System: UTM NAD 83 - Zone 17 (N).
2. Data Sources: Ontario Ministry of Natural Resources © Queens Printer Ontario, 2009; © GREP, 2010; © Samsung, 2010.
3. Image Sources: © FirstBase Solutions, WMS 2010.

Client/Project
SAMSUNG C&T
GRAND RENEWABLE ENERGY PARK

Figure No.
1.0

Title
OPTIONED LANDS - ORTHOS 2010-06-03

610000

4750000

Dunnville

Grand River

N

HALDIMAND ROAD 49

HALDIMAND TRACT ROAD

15

9

10

8

0 0.5 1 km

1:20,000

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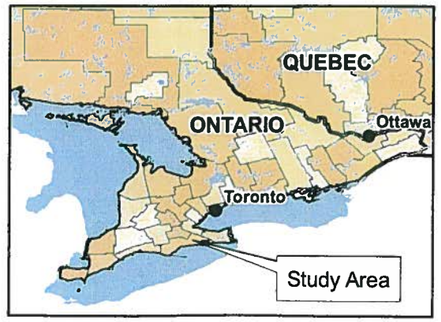
June, 2010
160960577

Legend

- Project Location
- Elexco_acquired_agreements Drawing
- Woodlot > 10ha
- Wooded Area
- Road
- Waterbody (OBM)

#) = grassland

#) = woodland



4

Notes

1. Coordinate System: UTM NAD 83 - Zone 17 (N).
2. Data Sources: Ontario Ministry of Natural Resources © Queens Printer Ontario, 2009; © GREP, 2010; © Samsung, 2010.
3. Image Sources: © FirstBase Solutions, WMS 2010.

Client/Project
SAMSUNG C&T
GRAND RENEWABLE ENERGY PARK

Figure No.
1.0

Title
OPTIONED LANDS - ORTH(
2010-06-03

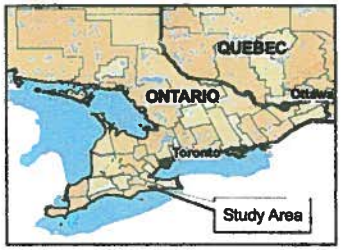
Stantec

J. Heslop. June 22, 2010

June, 2010
160960577

Legend

- Project Location
- Elexco_acquired_agreements Drawing
- MEI
- Woodlot > 10ha
- Wooded Area
- Road
- Waterbody (OBM)



Notes

1. Coordinate System: UTM NAD 83 - Zone 17 (N).
2. Data Sources: Ontario Ministry of Natural Resources © Queens Printer Ontario, 2009; © GREP, 2010; © Samsung, 2010.
3. Image Sources: © FirstBase Solutions, WMS 2010.

Client/Project
SAMSUNG C&T
GRAND RENEWABLE ENERGY PARK

Figure No.
1.0

Title
OPTIONED LANDS - ORTHOS
2010-06-21

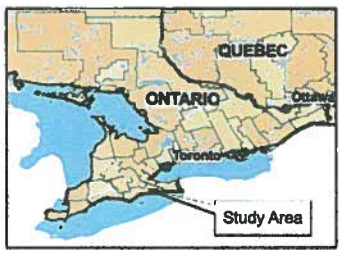
Stantec

Rimrkd to 34/35

June, 2010
160960577

Legend

- Project Location
- Elexco_acquired_agreements Drawing
- MEI
- Woodlot > 10ha
- Wooded Area
- Road
- Waterbody (OSM)



Notes

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2. Data Sources: Ontario Ministry of Natural Resources © Queens Printer Ontario, 2009; © GREP, 2010; © Samsung, 2010.
3. Image Sources: © FirstBase Solutions, WMS 2010.

Client/Project
SAMSUNG C&T
GRAND RENEWABLE ENERGY PARK

Figure No.
1.0

Title
OPTIONED LANDS - ORTHOS
2010-06-21

Stantec

Stantec Consulting Ltd.
70-1 Southgate Drive
Guelph, Ontario, Canada
N1G 4P5
Tel: (519) 836-6050
Fax: (519) 836-2493

Breeding Bird Survey Observation Form

(use separate form for each habitat type)

Project Number 161010604-210-100-102 Project Name: SAMSUNG - 34+35

Date / Time: 22 JUNE/10 VISIT 1 Field Personnel: J. HESLOP

Weather Conditions:	Temp: 15°C	Wind: 0	Cloud: 100%	PPT: 0 / 0	PPT in last 24 hrs: 0

Habitat Type: Forest

Start Time: 6:30 End Time: 7:45 (RAIN STARTED @ 7:30 + ENDED @ 7:45)

Record location of all significant species on site map

** Endangered, Threatened or Special Concern
† Partners In Flight
‡ Area Sensitive Species

Species	BE*	Species	BE*	Species	BE*		BE*
Can. Goose		Yellow-b Cuckoo		Bank Swallow †		Bl-and-wh Wa. ‡	
Wood Du.		Black-b Cuckoo †		Cliff Swallow		Am. Redstart ‡	
Am. Black Duck		Ea. Screech Owl		Barn Swallow		Ovenbird ‡	
Mallard		Gr. Horned Owl		Bl-capped Chickadee	SM	No. Waterthrush ‡	
R. N. Pheasant		Barred Owl ‡		Tufted Titmouse		Mourning Wa. ‡	
Ruffed Grouse ‡		Long-eared Owl		Red-br. Nuthatch		Co. Yellowthroat	
W. Turkey	H	No. Saw-whet Owl		Wh-br. Nuthatch		Hooded Wa** †‡	
Co. Loon ‡		Co. Nighthawk**		Br. Creeper ‡		Canada Wa. †‡	
Pied-b. Grebe		Whip-poor-will †‡		Carolina Wren.		Scarlet Tanager ‡	
D. C. Cormorant ‡		Chimney Swift** †		House Wren		Eastern Towhee †	
Am. Bittern		Ruby-thr. Humming.		Winter Wren ‡		Chipping Sp.	
Least Bittern** ‡		Belt. Kingfisher †		Sedge Wren		Clay-colored Sp.	
G. B. Heron		Red-headed Wo** †		Marsh Wren		Field Sp. †	
Gr. Egret		Red-bellied Wo.	H	Golded-cr. Kinglet ‡		Vesper Sp. †	
Green Heron		Yell-bellied Sap. ‡		B. G. Gnatcatcher ‡		Savannah Sp. †	
T. Vulture	H	Downy Wo.	H	Ea. Bluebird		Grasshopper Sp. †	
Osprey		Hairy Wo.		Veery	SM	Song Sp.	SM
N. Harrier †‡		No. Flicker †	H	Hermit Thrush ‡		Swamp Sp.	
Sharp-sh. Hawk ‡		Pileated Wo. ‡		Wood Thrush †	SM	Wh-throated Sp. ‡	
Coopers Hawk ‡		Ea. Wood-Pewee †	SM	Am. Robin		No. Cardinal	SM
Red-shou. Hawk †‡		Alder Fly.		Gray Catbird	SM	Rose-br. Grosbeak †	SM
Red-tailed Hawk		Willow Fly. †		No. Mockingbird		Indigo Bunt.	SM
Am. Kestrel †		Least Fly.		Br. Thrasher †		Bobolink †	
Virginia Rail		Ea. Phoebe	SM	European Starling		Red-winged Bl.	H
Sora		Gr. Crested Fly.	SM	Cedar Waxwing		Ea. Meadowlark †	
Killdeer		Ea. Kingbird †		Blue-wing. Wa. †		Co. Grackle	H
Spot. Sandpiper		Yellow-thr. Vireo ‡		Gold-wing. Wa** †		Br-headed Cow.	SM
Upla. Sandpiper ‡		Blue-headed Vireo ‡		Nashville Wa.		Orchard Oriole	
Wilson's Snipe		Warbling Vireo		Yellow Wa.	SM	Baltimore Oriole †	H
Am. Woodcock		Red-eyed Vireo	SM	Chestnut-s. Wa.		Purple Finch	
Ring-b. Gull		Blue Jay	SM	Magnolia Wa. ‡		House Finch	
Herring Gull		Am. Crow	H	Bl-thr Blue Wa. ‡		Pine Siskin	
Caspian Tern		Co. Raven		Yel-rumped Wa. ‡		Am. Goldfinch	H
Black Tern** ‡		Horned Lark		Bl-thr Gr. Wa. ‡		House Sparrow	
Common Tern		Purple Mart.	X	Blackburnian Wa. ‡		Other Species …	
Rock Dove		Tree Swallow		Pine Wa. ‡			
Mourn. Dove		No. R. W. Swal.		Cerulean Wa** †‡			

*Record highest Breeding Evidence (BE) observed over all habitat. Use codes as in Breeding Bird Atlas of Ontario

Quality Control: This form is complete (✓) & legible (✓).

Signature: _____ (Field Personnel) Signature: _____ (Project Manager)

W29

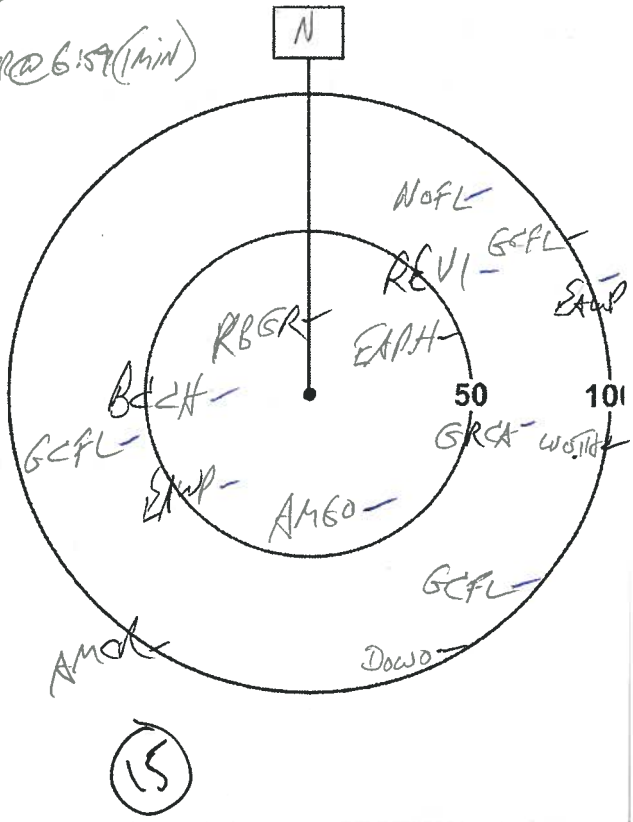
Station: W34

Habitat: ✓Forest Swamp Marsh Hay Pasture Crop

UTM: 17 602564E 4751221N POI 085

Start Time: 6:56 HIGH WIND @ 6:59 (1 min)

Species	<50 m	50-100 m	> 100m	Flyovers	Height*
COGR	~~✓ 2~~			✓	A
AMGO	✓ 1			✓	A
EAPH	✓ 1				A
RBGR	✓ 1				A
BCCH	✓ 1				A
~~AMGO~~	~~✓~~				A
GRCA		✓ 1			A
GCFL		✓ 3			A
WOTH		✓ 1			A
NOFL		✓ 1			A
EAWP		✓ 2			A
DOWO		✓ 1			A
REVI		✓ 1			A
AMCR			✓ 1		A



15

*Height of blade sweep will vary from project to project; Check with Project Manager

O – On ground; **A** – Below height of blade sweep; **B** – At height of blade sweep;
C – Above height of blade sweep; **D** – Well Above the height of blade sweep

W30

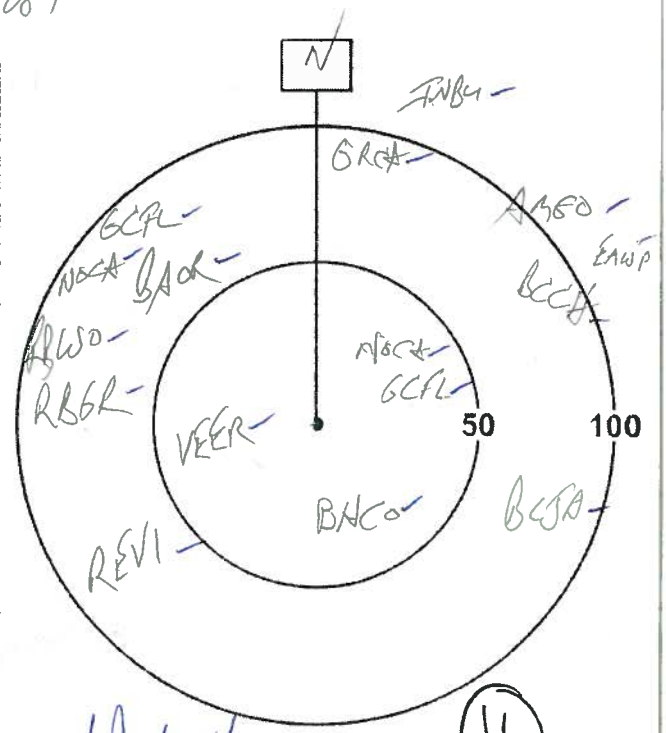
Station: W35

Habitat: ✓Forest Swamp Marsh Hay Pasture Crop

UTM: 17 601786E 4751220N POI 087

Start Time: 7:20

Species	<50 m	50-100 m	> 100m	Flyovers	Height*
VEER	✓ 1				A
BHCO	✓ 1				A
GCFL	✓ 1	1			A
NOCA	✓ 1	1			A
BAOR		✓ 1			A
~~NOCA~~	~~✓~~	~~✓~~			A
RBWO		✓ 1			A
RBGR		✓ 1			A
REVI		✓ 1			A
BLJA		✓ 1			A
BCCH		✓ 1			A
GRCA		✓ 1			A
INBU			✓ 1		A
AMGO			✓ 1		A
EAWP			✓ 1		A



16

*Height of blade sweep will vary from project to project; Check with Project Manager

O – On ground; **A** – Below height of blade sweep; **B** – At height of blade sweep;
C – Above height of blade sweep; **D** – Well Above the height of blade sweep.

Quality Control: This form is complete (✓) & legible (✓).

Signature: _____ (Field Personnel)

Signature: _____ (Project Manager)

REV: May, 07 Form 020

Stantec Consulting Ltd.
70-1 Southgate Drive
Guelph, Ontario, Canada
N1G 4P5
Tel: (519) 836-6050
Fax: (519) 836-2493

Breeding Bird Survey Observation Form

(use separate form for each habitat type)

Project Number 161010624.200.100.102 Project Name: SAMSUNG - 31/32/33

Date / Time: 22 June/10 VISIT 1. Field Personnel: J. HESLOP

Weather Conditions:	Temp:	Wind:	Cloud:	PPT:	PPT in last 24 hrs:
	21°C	2	100%	1/0	2

Habitat Type: FOREST

Start Time: 8:00 AM End Time: 10:45

Record location of all significant species on site map

** Endangered, Threatened or Special Concern
† Partners In Flight
‡ Area Sensitive Species

Species	BE*	Species	BE*	Species	BE*		BE*
Can. Goose		Yellow-b Cuckoo		Bank Swallow †		Bl-and-wh Wa. ‡	
Wood Du.		Black-b Cuckoo †		Cliff Swallow		Am. Redstart ‡	
Am. Black Duck		Ea. Screech Owl		Barn Swallow	X	Ovenbird ‡	SM
Mallard		Gr. Horned Owl		Bl-capped Chickadee	SM	No. Waterthrush ‡	
R. N. Pheasant		Barred Owl ‡		Tufted Titmouse		Mourning Wa. ‡	
Ruffed Grouse ‡	H	Long-eared Owl		Red-br. Nuthatch		Co. Yellowthroat	SM
W. Turkey		No. Saw-whet Owl		Wh-br. Nuthatch		Hooded Wa** †‡	
Co. Loon ‡		Co. Nighthawk**		Br. Creeper ‡		Canada Wa. †‡	
Pied-b. Grebe		Whip-poor-will †‡		Carolina Wren.		Scarlet Tanager ‡	SM
D. C. Cormorant ‡		Chimney Swift** †		House Wren	SM	Eastern Towhee †	
Am. Bittern		Ruby-thr. Humming.	H	Winter Wren ‡		Chipping Sp.	
Least Bittern** ‡		Belt. Kingfisher †		Sedge Wren		Clay-colored Sp.	
G. B. Heron		Red-headed Wo** †		Marsh Wren		Field Sp. †	
Gr. Egret		Red-bellied Wo.	H	Golded-cr. Kinglet ‡		Vesper Sp. †	
Green Heron		Yell-bellied Sap. ‡		B. G. Gnatcatcher ‡		Savannah Sp. †	
T. Vulture		Downy Wo.	H	Ea. Bluebird		Grasshopper Sp. †	
Osprey		Hairy Wo.		Veery	SM	Song Sp.	SM
N. Harrier †‡		No. Flicker †		Hermit Thrush ‡		Swamp Sp.	
Sharp-sh. Hawk ‡		Pileated Wo. ‡		Wood Thrush †	SM	Wh-throated Sp. ‡	
Coopers Hawk ‡		Ea. Wood-Pewee †	SM	Am. Robin	SM	No. Cardinal	SM
Red-shou. Hawk †‡		Alder Fly.		Gray Catbird	A	Rose-br. Grosbeak †	
Red-tailed Hawk		Willow Fly. †		No. Mockingbird		Indigo Bunt.	SM
Am. Kestrel †		Least Fly.		Br. Thrasher † (2 SO)	H	Bobolink †	
Virginia Rail		Ea. Phoebe		European Starling	H	Red-winged Bl.	SM
Sora		Gr. Crested Fly.	SM	Cedar Waxwing		Ea. Meadowlark †	
Killdeer		Ea. Kingbird †		Blue-wing. Wa. †		Co. Grackle	
Spot. Sandpiper		Yellow-thr. Vireo ‡		Gold-wing. Wa** †		Br-headed Cow.	H
Upla. Sandpiper ‡		Blue-headed Vireo ‡		Nashville Wa.		Orchard Oriole	
Wilson's Snipe		Warbling Vireo		Yellow Wa.		Baltimore Oriole †	A
Am. Woodcock		Red-eyed Vireo		Chestnut-s. Wa.		Purple Finch	
Ring-b. Gull		Blue Jay	A	Magnolia Wa. ‡		House Finch	
Herring Gull		Am. Crow	H	Bl-thr Blue Wa. ‡		Pine Siskin	
Caspian Tern		Co. Raven		Yel-rumped Wa. ‡		Am. Goldfinch	H
Black Tern** ‡		Horned Lark		Bl-thr Gr. Wa. ‡		House Sparrow	
Common Tern		Purple Mart.		Blackburnian Wa. ‡		Other Species …	
Rock Dove		Tree Swallow		Pine Wa. ‡			
Mourn. Dove		No. R. W. Swal.		Cerulean Wa** †‡			

*Record highest Breeding Evidence (BE) observed over all habitat. Use codes as in Breeding Bird Atlas of Ontario

Quality Control: This form is complete (__) & legible (✓).

Signature: _____ (Field Personnel) Signature: _____ (Project Manager)

Stantec Consulting Ltd.
361 Southgate Drive
Guelph, Ontario, Canada
N1G 3M5
Tel: (519) 836-6050
Fax: (519) 836-2493

Birding Point Counts Survey Observation Form

Project Number 161010624.210.100.102 Project Name: SAMSUNG 31/32/33

Date 22 June/10 Field Personnel: J. Heslop

Weather Conditions:	Temp: 21°C	Wind: 2	Cloud: 100%	PPT: 1/0	PPT in last 24 hrs: 2

GPS #: T___

Station: W31

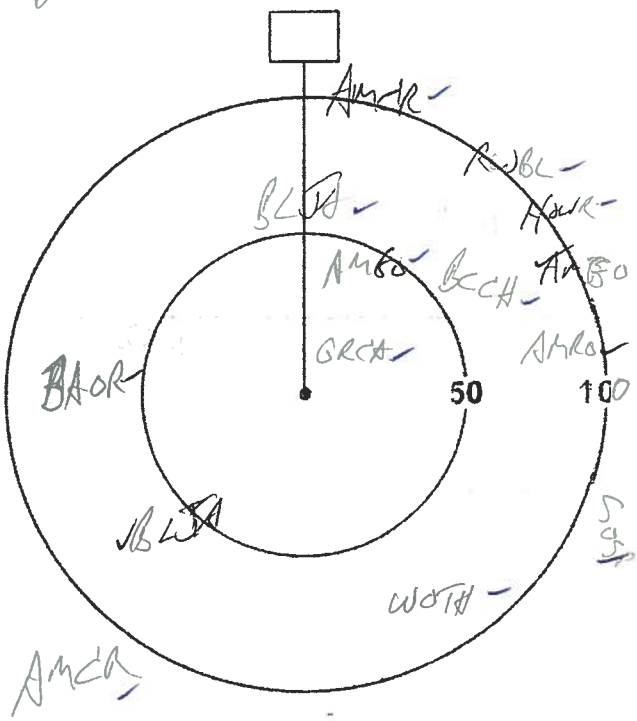
Habitat: √Forest Swamp Marsh Hay Pasture Crop _____

UTM: 17 599414E 4750842N P01092

Start Time: 9:37

Species	<50 m	50-100 m	> 100m	Flyovers	Height*
GRCA	√1				A
BLJA		√2			A
AMGO	√1		1		A
BCCH		√1			A
BAOR		√1			A
WOTH		√1			A
AMRO		√1			A
RWBL		√1			A
HOWR		√1			A
SOSP			√1		A
AMCR			√2		A

*Height of blade sweep will vary from project to project; Check with Project Manager
O – On ground; A – Below height of blade sweep; B – At height of blade sweep;
C – Above height of blade sweep; D – Well Above the height of blade sweep



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Quality Control: This form is complete (✓) & legible (✓).

Signature: _____ (Field Personnel) Signature: _____ (Project Manager)

REV: May, 07 Form 020

Station: 32

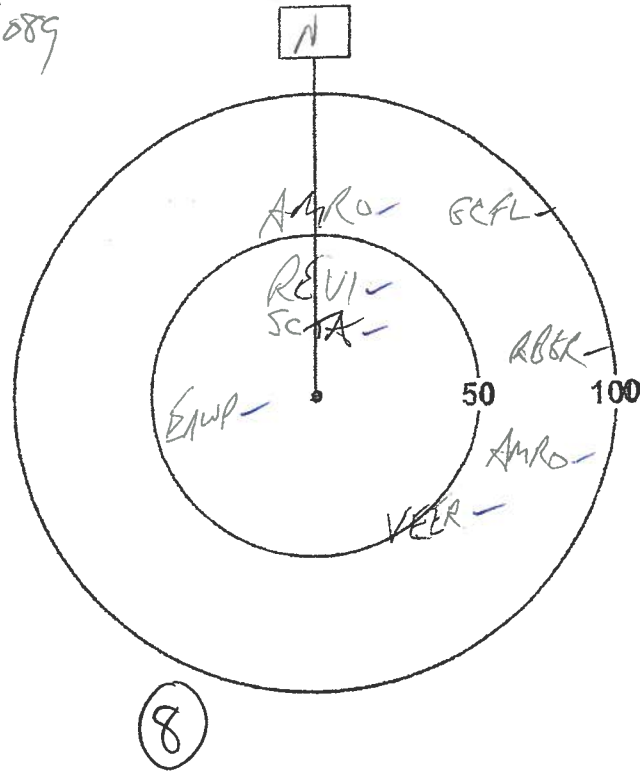
Habitat: ✓Forest Swamp Marsh Hay Pasture Crop _____

UTM: 17 599885E 4749965N (01089)

Start Time: 8:24

W32

Species	<50 m	50-100 m	> 100m	Flyovers	Height*
COGR	~~✓1~~			✓1	B
EAWP	✓1				A
SCTA	✓1				A
REVI	✓1				A
VEER		✓1			A
AMRO		✓2			A
RBGR		✓1			A
GCFL		✓1			A



*Height of blade sweep will vary from project to project; Check with Project Manager
O – On ground; A – Below height of blade sweep; B – At height of blade sweep;
C – Above height of blade sweep; D – Well Above the height of blade sweep

Station: 33

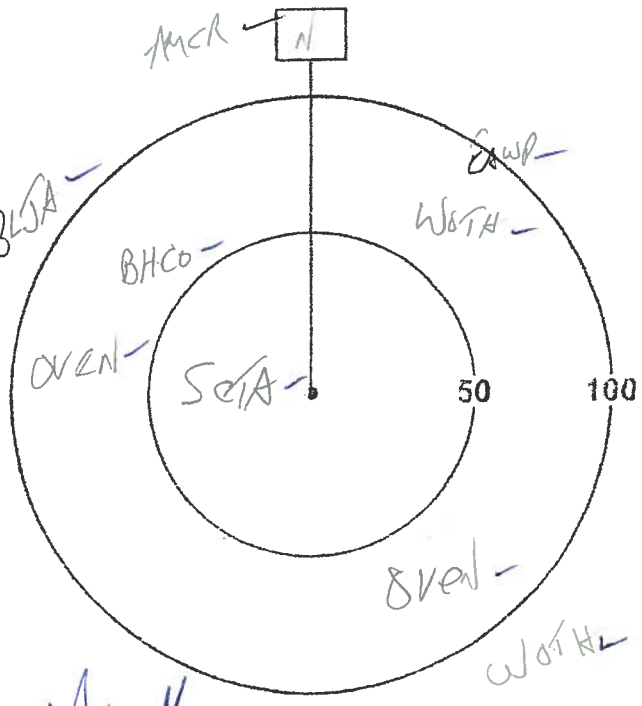
Habitat: ✓Forest Swamp Marsh Hay Pasture Crop _____

UTM: 17 599480E 4750338N (01091)

Start Time: 9:03

W33

Species	<50 m	50-100 m	> 100m	Flyovers	Height*
SCTA	✓1				A
WOTH		✓1	✓1		A
EAWP		✓1			A
OVEN		✓2			A
BHCO		✓1			A
BLJA			✓1		A
AMCR			✓1		A



*Height of blade sweep will vary from project to project; Check with Project Manager
O – On ground; A – Below height of blade sweep; B – At height of blade sweep;
C – Above height of blade sweep; D – Well Above the height of blade sweep.

Quality Control: This form is complete (✓) & legible (✓).

Signature: _____ (Field Personnel)

Signature: _____ (Project Manager)

Stantec Consulting Ltd.
70-1 Southgate Drive
Guelph, Ontario, Canada
N1G 4P5
Tel: (519) 836-6050
Fax: (519) 836-2493

Breeding Bird Survey Observation Form

(use separate form for each habitat type)

Project Number 161010624.210.100.102 Project Name: SAMSUNG - 9

Date / Time: 22 JUNE/10 VISIT 1 Field Personnel: J. HOSKIN

Weather Conditions:	Temp: 19°C	Wind: 1	Cloud: 50%	PPT: 0	PPT in last 24 hrs: 0

Habitat Type: FOREST

Start Time: 5:45 End Time: 6:15

Record location of all significant species on site map

** Endangered, Threatened or Special Concern
† Partners In Flight
‡ Area Sensitive Species

Species	BE*	Species	BE*	Species	BE*		BE*
Can. Goose		Yellow-b Cuckoo		Bank Swallow †		Bl-and-wh Wa. ‡	
Wood Du.		Black-b Cuckoo †		Cliff Swallow		Am. Redstart ‡	
Am. Black Duck		Ea. Screech Owl		Barn Swallow	X	Ovenbird ‡	
Mallard		Gr. Horned Owl		Bl-capped Chickadee	SM	No. Waterthrush ‡	
R. N. Pheasant		Barred Owl ‡		Tufted Titmouse		Mourning Wa. ‡	
Ruffed Grouse ‡		Long-eared Owl		Red-br. Nuthatch		Co. Yellowthroat	
W. Turkey		No. Saw-whet Owl		Wh-br. Nuthatch		Hooded Wa** †‡	
Co. Loon ‡		Co. Nighthawk**		Br. Creeper ‡		Canada Wa. †‡	
Pied-b. Grebe		Whip-poor-will †‡		Carolina Wren.		Scarlet Tanager ‡	
D. C. Cormorant ‡		Chimney Swift** †		House Wren		Eastern Towhee †	
Am. Bittern		Ruby-thr. Humming.		Winter Wren ‡		Chipping Sp.	
Least Bittern** ‡		Belt. Kingfisher †		Sedge Wren		Clay-colored Sp.	
G. B. Heron		Red-headed Wo** †		Marsh Wren		Field Sp. †	
Gr. Egret		Red-bellied Wo.	SM	Golded-cr. Kinglet ‡		Vesper Sp. †	
Green Heron		Yell-bellied Sap. ‡		B. G. Gnatcatcher ‡		Savannah Sp. †	
T. Vulture		Downy Wo.	A	Ea. Bluebird		Grasshopper Sp. †	
Osprey		Hairy Wo.	H	Veery		Song Sp.	SM
N. Harrier †‡		No. Flicker †		Hermit Thrush ‡		Swamp Sp.	
Sharp-sh. Hawk ‡		Pileated Wo. ‡		Wood Thrush †	SM	Wh-throated Sp. ‡	
Coopers Hawk ‡		Ea. Wood-Pewee †	SM	Am. Robin	SM	No. Cardinal	
Red-shou. Hawk †‡		Alder Fly.		Gray Catbird		Rose-br. Grosbeak †	
Red-tailed Hawk		Willow Fly. †		No. Mockingbird		Indigo Bunt.	
Am. Kestrel †		Least Fly.		Br. Thrasher †		Bobolink †	
Virginia Rail		Ea. Phoebe		European Starling		Red-winged Bl.	
Sora		Gr. Crested Fly.		Cedar Waxwing		Ea. Meadowlark †	
Killdeer		Ea. Kingbird †		Blue-wing. Wa. †		Co. Grackle	H
Spot. Sandpiper		Yellow-thr. Vireo ‡		Gold-wing. Wa** †		Br-headed Cow.	
Upla. Sandpiper ‡		Blue-headed Vireo ‡		Nashville Wa.		Orchard Oriole	
Wilson's Snipe		Warbling Vireo		Yellow Wa.		Baltimore Oriole †	
Am. Woodcock		Red-eyed Vireo	SM	Chestnut-s. Wa.		Purple Finch	
Ring-b. Gull		Blue Jay	A	Magnolia Wa. ‡		House Finch	
Herring Gull		Am. Crow	H	Bl-thr Blue Wa. ‡		Pine Siskin	
Caspian Tern		Co. Raven		Yel-rumped Wa. ‡		Am. Goldfinch	
Black Tern** ‡		Horned Lark		Bl-thr Gr. Wa. ‡		House Sparrow	
Common Tern		Purple Mart.		Blackburnian Wa. ‡		Other Species …	
Rock Dove		Tree Swallow		Pine Wa. ‡			
Mourn. Dove		No. R. W. Swal.		Cerulean Wa** †‡			

*Record highest Breeding Evidence (BE) observed over all habitat. Use codes as in Breeding Bird Atlas of Ontario

Quality Control: This form is complete (✓) & legible (✓).

Signature: _____ (Field Personnel) Signature: _____ (Project Manager)

Stantec Consulting Ltd.
361 Southgate Drive
Guelph, Ontario, Canada
N1G 3M5
Tel: (519) 836-6050
Fax: (519) 836-2493

Birding Point Counts Survey Observation Form

Project Number 161010624.210.100.102 Project Name: SAMSUNG

Date 22 June/10 Field Personnel: J. Heslop

Weather Conditions:	Temp: 15°C	Wind: 1	Cloud: 50%	PPT: 0	PPT in last 24 hrs: 0

GPS #: T 101083

W21

Station: W9

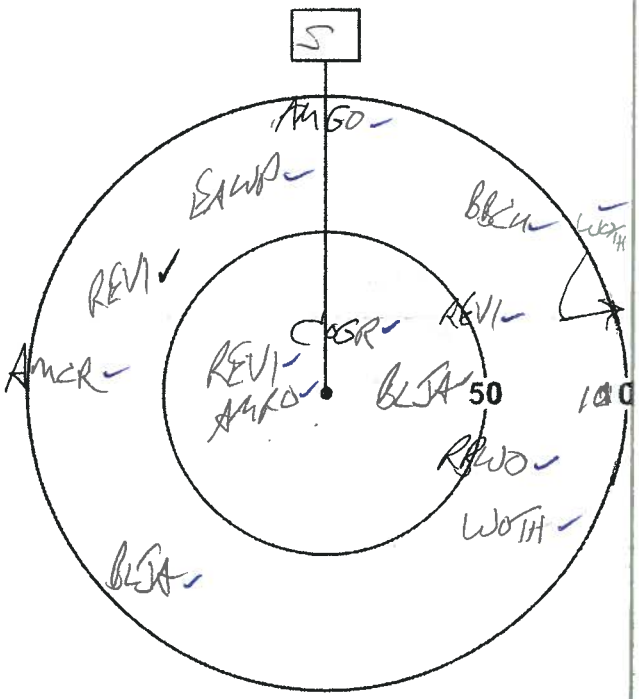
Habitat: ✓Forest ☐Swamp ☐Marsh ☐Hay ☐Pasture ☐Crop _____

UTM: 17 601388E 4747701N

Start Time: 5:53

Species	<50 m	50-100 m	> 100m	Flyovers	Height*
COGR	✓ 1			✓	A
REVI	✓ 1	11			A
AMRO	✓ 1				A
BLJA	✓ 1	1			A
RBWO		✓ 1			A
WOTH		✓ 1	✓ 1		A
~~BLJA~~		✓			A
AMCR		✓ 1			A
~~REVI~~		✓			A
EAWP		✓ 1			A
AMGO		✓ 1			A
BBCU		✓ 1			A
					A

*Height of blade sweep will vary from project to project; Check with Project Manager
O – On ground; **A** – Below height of blade sweep; **B** – At height of blade sweep;
C – Above height of blade sweep; **D** – Well Above the height of blade sweep



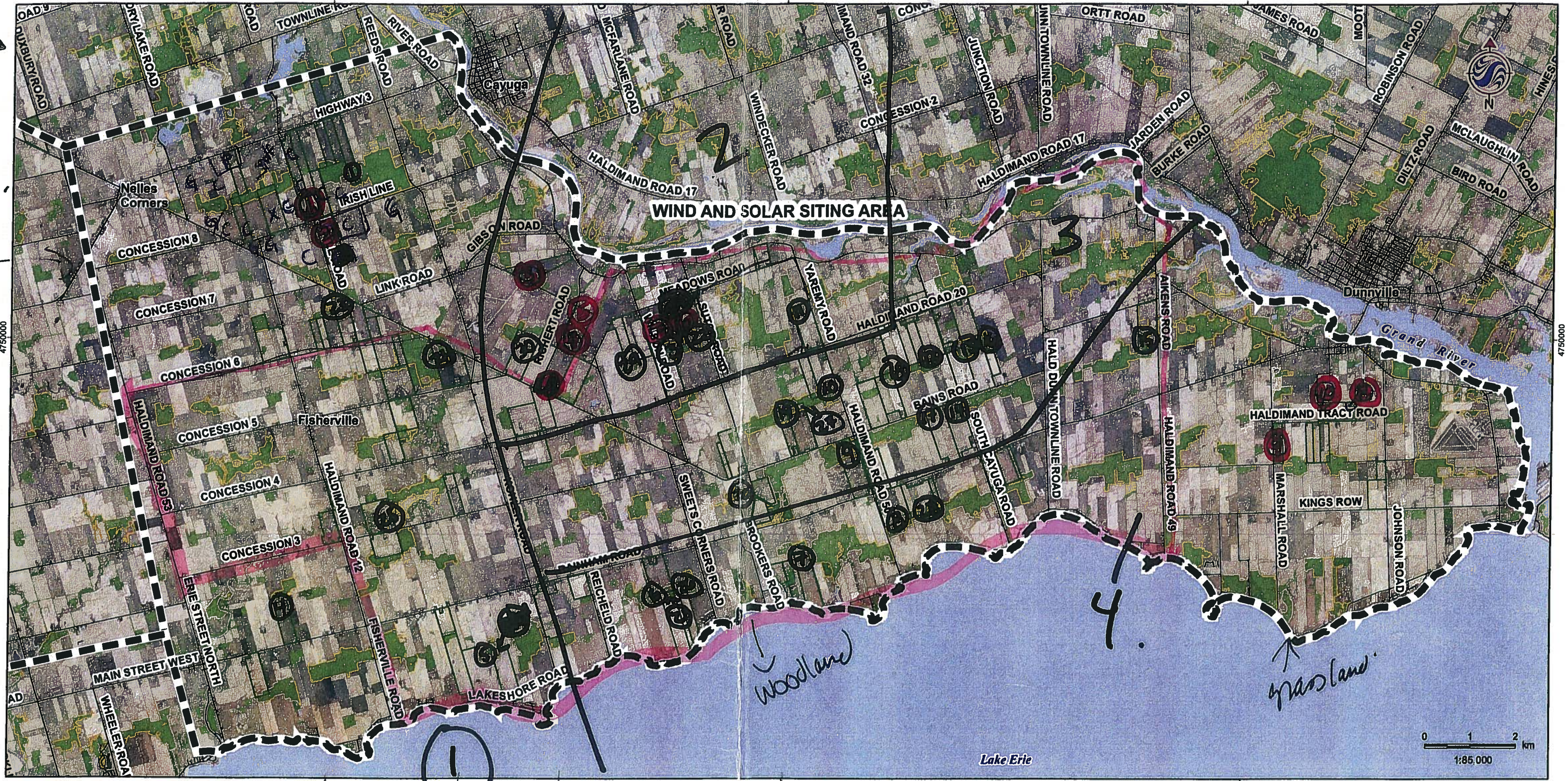
14

Quality Control: This form is complete (✓) & legible (✓).

Signature: _____ (Field Personnel) Signature: _____ (Project Manager)

Page 1 of 1

REV: May, 07 Form 020


590000
600000
610000
4750000
WIND AND SOLAR SITING AREA
Cayuga
Nelles Corners
Fisherville
Dunnville
Grand River
Lake Erie
TOWNLINE ROAD
HIGHWAY 3
REEDS ROAD
RIVER ROAD
MCFARLANE ROAD
WINDECKER ROAD
HALDIMAND ROAD 32
JUNCTION ROAD
CONCESSION 2
HALDIMAND ROAD 17
ORTT ROAD
JAMES ROAD
ROBINSON ROAD
MCLAUGHLIN ROAD
BIRD ROAD
DILTZ ROAD
JARDEN ROAD
BURKE ROAD
IRISH LINE
GIBSON ROAD
CONCESSION 8
LINK ROAD
CONCESSION 7
MEADOWS ROAD
YAREMY ROAD
HALDIMAND ROAD 20
AIKENS ROAD
CONCESSION 6
CONCESSION 5
CONCESSION 4
CONCESSION 3
HALDIMAND ROAD 53
HALDIMAND ROAD 12
BAINS ROAD
SOUTH CAYUGA ROAD
HALDIMAND TOWNLINE ROAD
HALDIMAND ROAD 49
HALDIMAND TRACT ROAD
KINGS ROW
MARSHALL ROAD
JOHNSON ROAD
SWEETS CORNERS ROAD
BROOKERS ROAD
REICHELD ROAD
FISHERVILLE ROAD
ERIE STREET NORTH
MAIN STREET WEST
WHEELER ROAD
LAKESHORE ROAD
1:85,000
0 1 2 km
grassland
woodland
grassland
2
3
4
1

June, 2010
160960577

4 moon days · grasslands

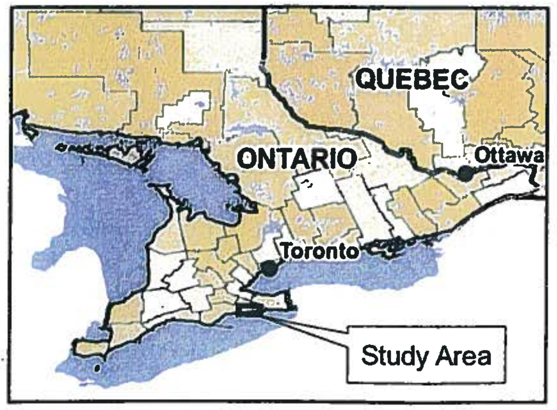
Legend

- Project Location
- Elexco_acquired_agreements Drawing
- Woodlot > 10ha
- Wooded Area
- Road
- Waterbody (OBM)

· place points
· ① → 10 grasslands
① → 30 woodland

G = grassland
C = crop
P = pasture

Stantec



Notes

1. Coordinate System: UTM NAD 83 - Zone 17 (N).
2. Data Sources: Ontario Ministry of Natural Resources © Queens Printer Ontario, 2009; © GREP, 2010; © Samsung, 2010.
3. Image Sources: © FirstBase Solutions, WMS 2010.

Client/Project
SAMSUNG C&T
GRAND RENEWABLE ENERGY PARK

Figure No.
1.0

Title
OPTIONED LANDS - ORTHOS 2010-06-03

Stantec Consulting Ltd.
70-1 Southgate Drive
Guelph, Ontario, Canada
N1G 4P5
Tel: (519) 836-6050
Fax: (519) 836-2493

Breeding Bird Survey Observation Form

Project Number 161610624 Project Name: Samsung

Date / Time: June 30, 2010 N5172 Field Personnel: BH

Weather Conditions:	Temp:	Wind:	Cloud:	PPT:	PPT in last 24 hrs:
		Lt	ag	Clr	

Start Time: 5:50 End Time: 9:45 am

Habitat #	ELC Code(s) or Habitat Description
A	Woodlot PC's - 31 32 33
B	Woodlot PC's 34, 35
[illegible]	[illegible]

Quality Control: This form is complete (__) & legible (__).

Signature: _____ (Field Personnel) Signature: _____ (Project Manager)

Record location of all significant species on site map

** Endangered, Threatened or Special Concern
† Partners In Flight
‡ Area Sensitive Species

Species	Habitats A	Habitats B	BE*	Species	Habitats A	Habitats B	BE*	Species	Habitats A	Habitats B	BE*
Canada Goose				Red-headed Wo** †				Blue-wing. Wa. †			
Wood Duck	✓	✓	SH	Red-bellied Wo.	✓	✓	SH	Gold-wing. Wa** †			
Am. Black Duck				Yell-bellied Sap. ‡				Nashville Wa.			
Mallard	✓		P	Downy Wo.	✓	✓	SH	Yellow Wa.	✓	✓	Sm
Ring-neck. Pheasant				Hairy Wo.	✓		SH	Chestnut-sided Wa.			
Ruffed Grouse ‡	✓			Northern Flicker †				Magnolia Wa. ‡			
Wild Turkey	✓	✓	SH	Pileated Wo. ‡				Bl-thr Blue Wa. ‡			
Common Loon ‡				Ea. Wood-Pewee †	✓	✓	Sm	Yel-rumped Wa. ‡			
Pied-billed Grebe				Alder Fly.				Bl-thr Gr. Wa. ‡			
D. C. Cormorant ‡				Willow Fly. †	✓	✓	Sm	Blackburnian Wa. ‡			
American Bittern				Least Fly.				Pine Wa. ‡			
Least Bittern** ‡				Eastern Phoebe				Cerulean Wa** †‡			
Great Blue Heron	✓		SH	Great Crested Fly.	✓	✓	Sm	Bl-and-wh Wa. ‡			
Great Egret				Eastern Kingbird †	✓	✓	Sm	Am. Redstart ‡		✓	Sm
Green Heron				Yellow-thr. Vireo ‡				Ovenbird ‡	✓	✓	Sm
Turkey Vulture	✓	✓	SH	Blue-headed Vireo ‡				No. Waterthrush ‡			
Osprey				Warbling Vireo	✓		Sm	Mourning Wa. ‡			
Northern Harrier †‡				Red-eyed Vireo	✓	✓	Sm	Co. Yellowthroat	✓	✓	Sm
Sharp-shin. Hawk ‡		✓	SH	Blue Jay	✓	✓	P	Hooded Wa** †‡			
Coopers Hawk ‡	✓		A	American Crow	✓	✓	SH	Canada Wa. †‡			
Red-shou. Hawk †‡				Common Raven				Scarlet Tanager ‡	✓		Sm
Red-tailed Hawk	✓		SH	Horned Lark				Eastern Towhee †		✓	Sm
Am. Kestrel †		✓	SH	Purple Mart.				Chipping Sp.	✓		Sm
Virginia Rail				Tree Swallow				Clay-colored Sp.			
Sora				No. R. W. Swallow				Field Sp. †			
Sandhill Crane				Bank Swallow †				Vesper Sp. †			
Killdeer				Cliff Swallow				Savannah Sp. †			
Spotted Sandpiper				Barn Swallow				Grasshopper Sp. †			
Upland Sandpiper ‡				Bl-capped Chickadee	✓	✓	SH	Song Sp.	✓	✓	Sm
Wilson's Snipe				Tufted Titmouse				Swamp Sp.			
American Woodcock		✓	SH	Red-br. Nuthatch				Wh-throated Sp. ‡			
Ring-billed Gull	✓	✓	O	Wh-br. Nuthatch		✓	Sm	Northern Cardinal	✓	✓	Sm
Herring Gull				Br. Creeper ‡				Rose-br. Grosbeak †	✓	✓	Sm
Caspian Tern				Carolina Wren.				Indigo Bunting	✓	✓	Sm
Black Tern** ‡				House Wren	✓	✓	Sm	Bobolink †			
Common Tern				Winter Wren ‡				Red-winged Bl.	✓	✓	Sm
Rock Dove				Sedge Wren				Ea. Meadowlark †			
Mourning Dove	✓	✓	SH	Marsh Wren				Common Grackle	✓	✓	A
Yellow-bill. Cuckoo				Golded-cr. Kinglet ‡				Br-headed Cowbird	✓	✓	SH
Black-bill. Cuckoo †				B. G. Gnatcatcher ‡				Orchard Oriole			
Eastern Screech Owl				Eastern Bluebird				Baltimore Oriole †	✓	✓	N
Great Horned Owl	✓		SH	Veery	✓		Sm	Purple Finch			
Barred Owl ‡				Hermit Thrush ‡				House Finch			
Long-eared Owl				Wood Thrush †	✓		Sm	Pine Siskin			
N. Saw-whet Owl				American Robin	✓	✓	FY	Am. Goldfinch	✓	✓	SH
Co. Nighthawk**				Gray Catbird	✓	✓	Sm	House Sparrow			
Whip-poor-will †‡				No. Mockingbird				Other Species …			
Chimney Swift** †				Brown Thrasher †							
Ruby-thr. Humming.		✓	SH	European Starling	✓	✓	SH	/			
Belted Kingfisher †				Cedar Waxwing	✓	✓	SH				

*Record highest Breeding Evidence (BE) observed over all habitat. Use codes as in Breeding Bird Atlas of Ontario

Quality Control: This form is complete (__) & legible (__).

Signature: _____ Signature: _____

(Field Personnel) (Project Manager)

REV:Apr.08 FORM 031

Stantec Consulting Ltd.
70-1 Southgate Drive
Guelph, Ontario, Canada
N1G 4P5
Tel: (519) 836-6050
Fax: (519) 836-2493

Breeding Bird Survey Observation Form

Project Number 161010624 Project Name: Samsung

Date / Time: Jun 30 Field Personnel: BH

Weather Conditions:	Temp:	Wind: Lgt	Cloud: Pcy	PPT: 1	PPT in last 24 hrs:

Start Time: _____ End Time: _____

Habitat #	ELC Code(s) or Habitat Description
C	PC-11

Quality Control: This form is complete (__) & legible (__).

Signature: _____ Signature: _____

(Field Personnel) (Project Manager)

REV:Apr.08 FORM 031

Record location of all significant species on site map

** Endangered, Threatened or Special Concern
† Partners In Flight
‡ Area Sensitive Species

Species	Habitats	BE*	Species	Habitats	BE*	Species	Habitats	BE*
Canada Goose			Red-headed Wo** †			Blue-wing. Wa. †		
Wood Duck			Red-bellied Wo.	✓	SH	Gold-wing. Wa** †		
Am. Black Duck			Yell-bellied Sap. ‡			Nashville Wa.		
Mallard			Downy Wo.	✓	SH	Yellow Wa.	✓	SM
Ring-neck. Pheasant			Hairy Wo.			Chestnut-sided Wa.		
Ruffed Grouse ‡			Northern Flicker †	✓	SH	Magnolia Wa. ‡		
Wild Turkey			Pileated Wo. ‡			Bl-thr Blue Wa. ‡		
Common Loon ‡			Ea. Wood-Pewee †			Yel-rumped Wa. ‡		
Pied-billed Grebe			Alder Fly.			Bl-thr Gr. Wa. ‡		
D. C. Cormorant ‡			Willow Fly. †	✓	SM	Blackburnian Wa. ‡		
American Bittern			Least Fly.			Pine Wa. ‡		
Least Bittern** ‡			Eastern Phoebe			Cerulean Wa** †‡		
Great Blue Heron			Great Crested Fly.			Bl-and-wh Wa. ‡		
Great Egret			Eastern Kingbird †	✓	SH	Am. Redstart ‡		
Green Heron			Yellow-thr. Vireo ‡			Ovenbird ‡		
Turkey Vulture			Blue-headed Vireo ‡			No. Waterthrush ‡		
Osprey			Warbling Vireo			Mourning Wa. ‡		
Northern Harrier †‡			Red-eyed Vireo	✓	SH	Co. Yellowthroat	✓	SM
Sharp-shin. Hawk ‡			Blue Jay	✓	SH	Hooded Wa** †‡		
Coopers Hawk ‡			American Crow			Canada Wa. †‡		
Red-shou. Hawk †‡			Common Raven			Scarlet Tanager ‡		
Red-tailed Hawk			Horned Lark			Eastern Towhee †		
Am. Kestrel †			Purple Mart.			Chipping Sp.	✓	SM
Virginia Rail			Tree Swallow	✓	SH	Clay-colored Sp.		
Sora			No. R. W. Swallow			Field Sp. †		
Sandhill Crane			Bank Swallow †			Vesper Sp. †		
Killdeer			Cliff Swallow			Savannah Sp. †		
Spotted Sandpiper			Barn Swallow			Grasshopper Sp. †		
Upland Sandpiper ‡			Bl-capped Chickadee			Song Sp.	✓	SH
Wilson's Snipe			Tufted Titmouse			Swamp Sp.		
American Woodcock			Red-br. Nuthatch			Wh-throated Sp. ‡		
Ring-billed Gull			Wh-br. Nuthatch			Northern Cardinal		
Herring Gull			Br. Creeper ‡			Rose-br. Grosbeak †		
Caspian Tern			Carolina Wren.			Indigo Bunting	✓	SH
Black Tern** ‡			House Wren			Bobolink †		
Common Tern			Winter Wren ‡			Red-winged Bl.	✓	SH
Rock Dove			Sedge Wren			Ea. Meadowlark †		
Mourning Dove			Marsh Wren			Common Grackle		
Yellow-bill. Cuckoo			Golded-cr. Kinglet ‡			Br-headed Cowbird	✓	SH
Black-bill. Cuckoo †			B. G. Gnatcatcher ‡			Orchard Oriole		
Eastern Screech Owl			Eastern Bluebird			Baltimore Oriole †		
Great Horned Owl			Veery			Purple Finch		
Barred Owl ‡			Hermit Thrush ‡			House Finch		
Long-eared Owl			Wood Thrush †			Pine Siskin		
N. Saw-whet Owl			American Robin	✓	SH	Am. Goldfinch	✓	SH
Co. Nighthawk**			Gray Catbird			House Sparrow		
Whip-poor-will †‡			No. Mockingbird			Other Species …		
Chimney Swift** †			Brown Thrasher †					
Ruby-thr. Humming.			European Starling	✓	SH	/		
Belted Kingfisher †			Cedar Waxwing					

*Record highest Breeding Evidence (BE) observed over all habitat. Use codes as in Breeding Bird Atlas of Ontario

Quality Control: This form is complete (__) & legible (__).

Signature: _____ Signature: _____

(Field Personnel) (Project Manager)

W33

Station: W32

Habitat: ☒Forest ☐Swamp ☐Marsh ☐Hay ☐Pasture ☐Crop ______

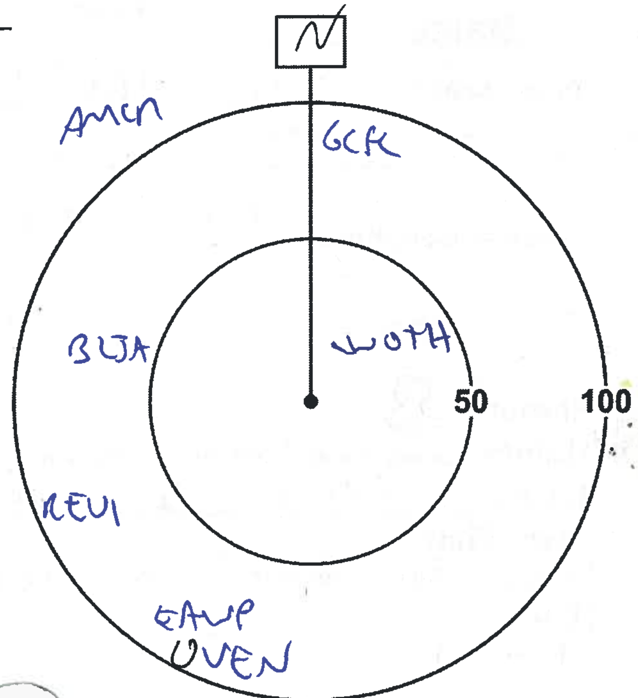
UTM: 569480 4750378

Start Time: ______

Species	<50 m	50-100 m	> 100m	Flyovers	Height*
WOTH	1				
OVEN		1			
REVI		1			
GCFL		1			
AMCR			1		
BLJA		1			
EAWP		1			

*Height of blade sweep will vary from project to project; Check with Project Manager
O – On ground; **A** – Below height of blade sweep; **B** – At height of blade sweep;
C – Above height of blade sweep; **D** – Well Above the height of blade sweep

(7)



W31

Station: W31

Habitat: ☑Forest ☐Swamp ☐Marsh ☐Hay ☐Pasture ☐Crop ______

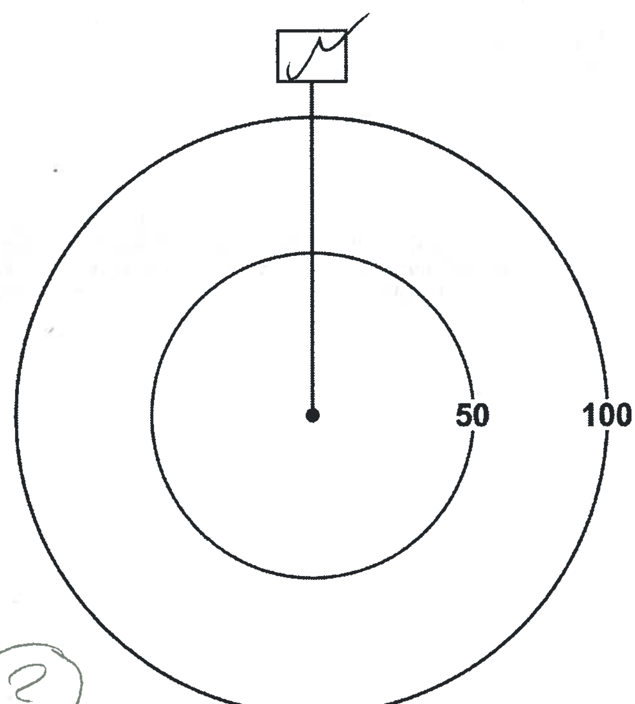
UTM: 569419 4750842

Start Time: ______

Species	<50 m	50-100 m	> 100m	Flyovers	Height*
WAVI		1			
YWAR		1			
BAWW		1			
RWBL		1			
GRCA		1			
CERW		1			
SOSP		1			
INBU		1			
CHSP		1			
AMRO		1			
AMGO		1			

*Height of blade sweep will vary from project to project; Check with Project Manager
O – On ground; **A** – Below height of blade sweep; **B** – At height of blade sweep;
C – Above height of blade sweep; **D** – Well Above the height of blade sweep

(?)



Quality Control: This form is complete (__) & legible (__).

Signature: ______ (Field Personnel) Signature: ______ (Project Manager)

Page 2 of 3

REV: May, 07 Form 020

Stantec Consulting Ltd.
361 Southgate Drive
Guelph, Ontario, Canada
N1G 3M5
Tel: (519) 836-6050
Fax: (519) 836-2493

Birding Point Counts Survey Observation Form

Project Number: 16 1010624 Project Name: Sanving

Date: Jun 30, 2010 Field Personnel: B. Holden

Weather Conditions:	Temp: 16-20	Wind: 2-3	Cloud: 20-70	PPT: —	PPT in last 24 hrs: —

GPS #: T.___

W32

Station: 38

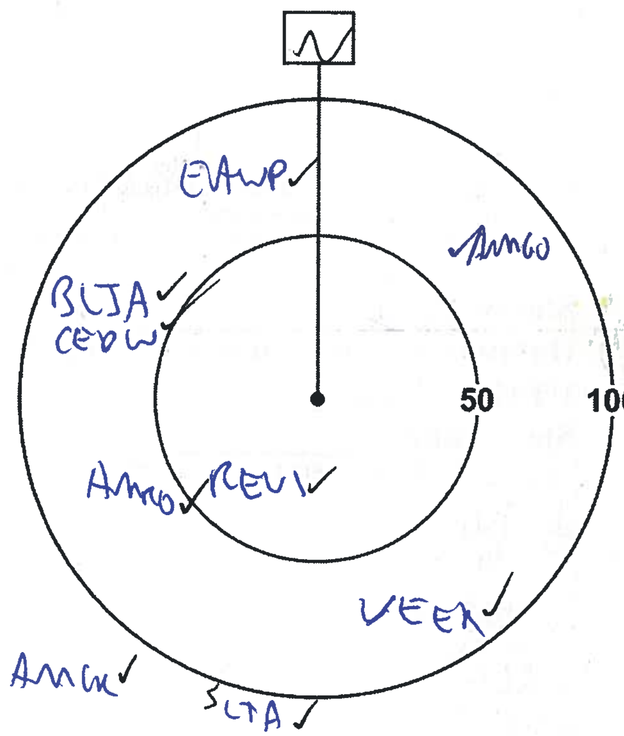
Habitat: ☑Forest ☐Swamp ☐Marsh ☐Hay ☐Pasture ☐Crop ______

UTM: [illegible]

Start Time: ______

Species	<50 m	50-100 m	> 100m	Flyovers	Height*
EAWP	1				
REVI	1				
BLJA		1			
AMCR			1		
AMRO		1			
VEER		1			
SCTA			1		
AMGO		1			
CEDW		1			

*Height of blade sweep will vary from project to project; Check with Project Manager
O – On ground; A – Below height of blade sweep; B – At height of blade sweep;
C – Above height of blade sweep; D – Well Above the height of blade sweep



9.

Quality Control: This form is complete (__) & legible (__).
Signature: ______ (Field Personnel) Signature: ______ (Project Manager)

Page 1 of 3 REV: May, 07 Form 020

W34

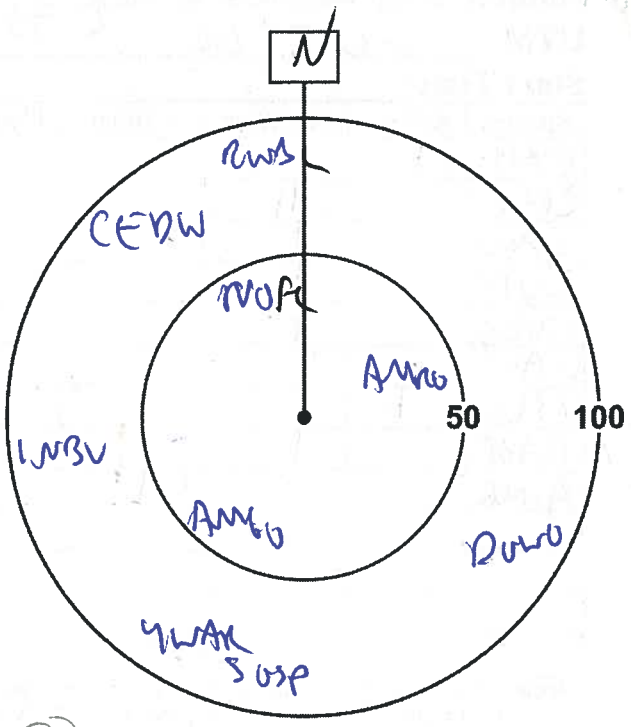
Station: W11

Habitat: ☒Forest ☐Swamp ☐Marsh ☐Hay ☐Pasture ☐Crop _____

UTM: _____

Start Time: _____

Species	<50 m	50-100 m	> 100m	Flyovers	Height*
NOFL	1				
AMRO	1				
CEDW		1			
LWBV		1			
OCWO		1			
SOSP	1				
YWAR		1			
AMRO	1				
RWBL		1			



*Height of blade sweep will vary from project to project; Check with Project Manager
O – On ground; **A** – Below height of blade sweep; **B** – At height of blade sweep;
C – Above height of blade sweep; **D** – Well Above the height of blade sweep

9

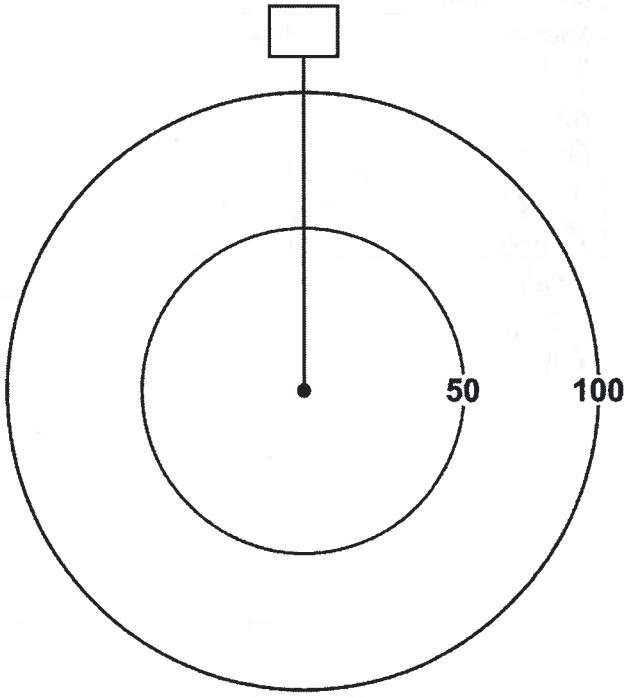
Station: _____

Habitat: ☐Forest ☐Swamp ☐Marsh ☐Hay ☐Pasture ☐Crop _____

UTM: _____

Start Time: _____

Species	<50 m	50-100 m	> 100m	Flyovers	Height*



*Height of blade sweep will vary from project to project; Check with Project Manager
O – On ground; **A** – Below height of blade sweep; **B** – At height of blade sweep;
C – Above height of blade sweep; **D** – Well Above the height of blade sweep.

Quality Control: This form is complete (__) & legible (__).

Signature: _____ (Field Personnel)

Signature: _____ (Project Manager)

REV: May, 07 Form 020

W29

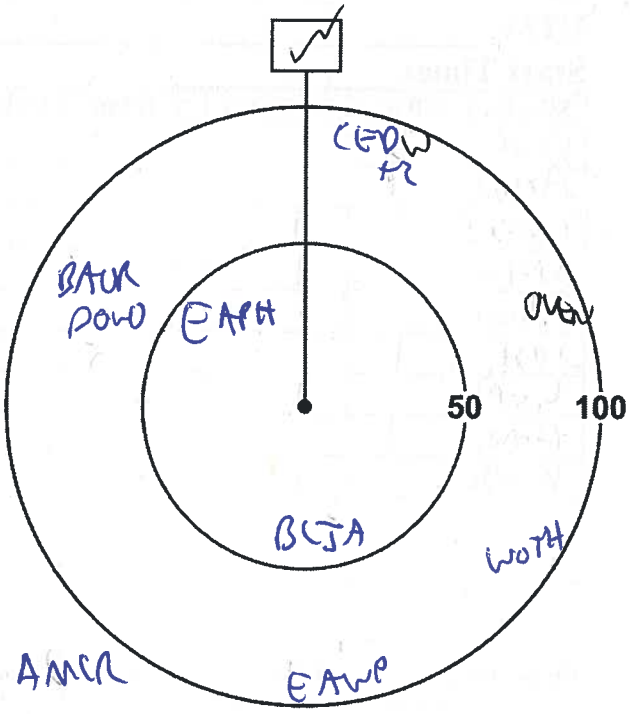
Station: 34

Habitat: ☑Forest ☐Swamp ☐Marsh ☐Hay ☐Pasture ☐Crop

UTM: 607564 4751271

Start Time: _____

Species	<50 m	50-100 m	> 100m	Flyovers	Height*
EAPH	1				
CEDW		11			
DOWO		1			
WOTH		1			
OVEN		1			
EAWP		1			
BLJA	1				
BAOR		1			
AMER			1		



*Height of blade sweep will vary from project to project; Check with Project Manager
O – On ground; **A** – Below height of blade sweep; **B** – At height of blade sweep;
C – Above height of blade sweep; **D** – Well Above the height of blade sweep

10

W30

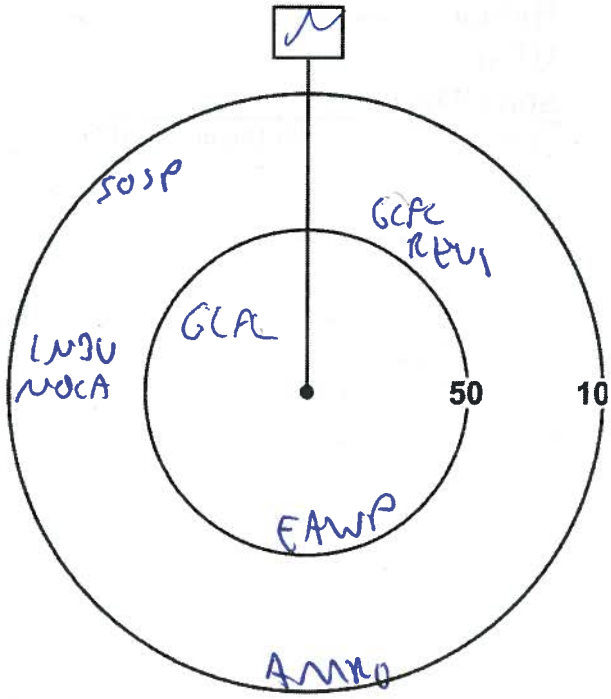
Station: 35

Habitat: ☑Forest ☐Swamp ☐Marsh ☐Hay ☐Pasture ☐Crop

UTM: 607569 4751270

Start Time: _____

Species	<50 m	50-100 m	> 100m	Flyovers	Height*
GCFL	1				
NOCA		1			
REVI		1			
SOSP		1			
RBWO		1			
INBU		1			
EAWP	1				
AMRO		1			



*Height of blade sweep will vary from project to project; Check with Project Manager
O – On ground; **A** – Below height of blade sweep; **B** – At height of blade sweep;
C – Above height of blade sweep; **D** – Well Above the height of blade sweep

8

Quality Control: This form is complete (__) & legible (__).

Signature: _____ (Field Personnel) Signature: _____ (Project Manager)

REV: May, 07 Form 020

600000

4750000

MEADOWS ROAD

SUTOR ROAD

WILSON ROAD

YAREMY ROAD

HALDIMAND ROAD 20

31

32

33

34

35

N

0 0.5 1 km

1:20,000

600000

4750000

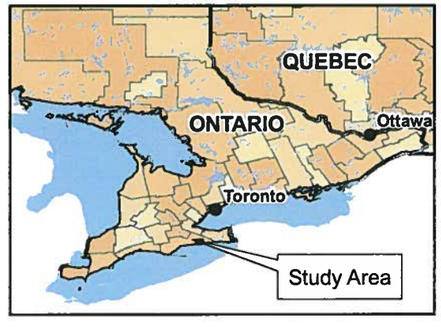
June, 2010
160960577

W:\active\160960577\drawing\GIS\MXD\OptionedLands\160960577_Fig1-0_OptionedLands_Ortho_FieldWork_20100621_PW.mxd - 6/21/2010 @ 11:03:39 AM

Legend

- Project Location
- Elexco_acquired_agreements Drawing
- MEI
- Woodlot > 10ha
- Wooded Area
- Road
- Waterbody (OBM)

Stantec



Notes

1. Coordinate System: UTM NAD 83 - Zone 17 (N).
2. Data Sources: Ontario Ministry of Natural Resources © Queens Printer Ontario, 2009; © GREP, 2010; © Samsung, 2010.
3. Image Sources: © FirstBase Solutions, WMS 2010.

Client/Project

SAMSUNG C&T
GRAND RENEWABLE ENERGY PARK

Figure No.

1.0

Title

OPTIONED LANDS - ORTHOS 2010-06-21

Stantec Consulting Ltd.
361 Southgate Drive
Guelph, Ontario, Canada
N1G 3M5
Tel: (519) 836-6050
Fax: (519) 836-2493

Breeding Bird Survey Observation Form

Project Number 161010624 Project Name: Samsung - GREP SOLAR

Date / Time: June 18, 2010 - VISIT 1 Field Personnel: V. Wyatt

Weather Conditions:	Temp:	Wind:	Cloud:	PPT:	PPT in last 24 hrs:
	17°C	0→1	0	-	<

Start Time: 05:50 End Time: 10:00 focus on solar properties

Habitat #	ELC Code(s) or Habitat Description
1	open - fallow / hay 0-25 cm - north of Haldimand Rd. 20
2	woodland - north of Haldimand Rd 20.
3 (Feature 39)	woodland - south of " + west of Wilson
4	thicket

Quality Control: This form is complete (__) & legible (__).

Signature: _____ (Field Personnel) Signature: _____ (Project Manager)

Record location of all significant species on site map

** Endangered, Threatened or Special Concern
† Partners In Flight
‡ Area Sensitive Species

Species	Habitats	BE*	Species	Habitats	BE*	Species	Habitats	BE*
Canada Goose			Red-headed Wo** †			Blue-wing. Wa. †		
Wood Duck			Red-bellied Wo.	2,1	SM	Gold-wing. Wa** †		
Am. Black Duck			Yell-bellied Sap. ‡			Nashville Wa.		
Mallard			Downy Wo.	3	SH	Yellow Wa.	1,3	SM
Ring-neck. Pheasant			Hairy Wo.			Chestnut-sided Wa.		
Ruffed Grouse ‡			Northern Flicker †	3 - pair @ nest entrance		Magnolia Wa. ‡		
Wild Turkey			Pileated Wo. ‡			Bl-thr Blue Wa. ‡		
Common Loon ‡			Ea. Wood-Pewee †	3	SM	Yel-rumped Wa. ‡		
Pied-billed Grebe			Alder Fly.	1	SM	Bl-thr Gr. Wa. ‡		
D. C. Cormorant ‡			Willow Fly. †	4	SM	Blackburnian Wa. ‡		
American Bittern			Least Fly.			Pine Wa. ‡		
Least Bittern** ‡			Eastern Phoebe			Cerulean Wa** †‡		
Great Blue Heron			Great Crested Fly.	3	SM	Bl-and-wh Wa. ‡		
Great Egret			Eastern Kingbird †			Am. Redstart ‡		
Green Heron			Yellow-thr. Vireo ‡			Ovenbird ‡		
Turkey Vulture			Blue-headed Vireo ‡			No. Waterthrush ‡		
Osprey	1	FO	Warbling Vireo			Mourning Wa. ‡		
Northern Harrier †‡			Red-eyed Vireo	3	SM	Co. Yellowthroat		
Sharp-shin. Hawk ‡			Blue Jay	1	SH	Hooded Wa** †‡		
Coopers Hawk ‡			American Crow	1	SH	Canada Wa. †‡		
Red-shou. Hawk †‡			Common Raven			Scarlet Tanager ‡		
Red-tailed Hawk	1	P	Horned Lark	1	SM	Eastern Towhee †		
Am. Kestrel †			Purple Mart.			Chipping Sp.		
Virginia Rail			Tree Swallow			Clay-colored Sp.		
Sora			No. R. W. Swallow			Field Sp. †	1	SM
Sandhill Crane			Bank Swallow †			Vesper Sp. †		
Killdeer	1	A	Cliff Swallow			Savannah Sp. †	1	SM
Spotted Sandpiper			Barn Swallow	1,4		Grasshopper Sp. †	1	SM
Upland Sandpiper ‡			Bl-capped Chickadee	3	SH	Song Sp.	1,4,3	SM
Wilson's Snipe			Tufted Titmouse			Swamp Sp.		
American Woodcock			Red-br. Nuthatch			Wh-throated Sp. ‡		
Ring-billed Gull			Wh-br. Nuthatch	3	SH	Northern Cardinal	1	SM
Herring Gull			Br. Creeper ‡			Rose-br. Grosbeak †		
Caspian Tern			Carolina Wren.			Indigo Bunting	3	SM
Black Tern** ‡			House Wren	1,3	FY	Bobolink †		
Common Tern			Winter Wren ‡			Red-winged Bl.	1,4	SH
Rock Dove	1	SH	Sedge Wren			Ea. Meadowlark †	1	SM
Mourning Dove	1,4	SH	Marsh Wren			Common Grackle	4,3,1	SH
Yellow-bill. Cuckoo			Golded-cr. Kinglet ‡			Br-headed Cowbird	1,4,3	SH
Black-bill. Cuckoo †			B. G. Gnatcatcher ‡			Orchard Oriole		
Eastern Screech Owl			Eastern Bluebird			Baltimore Oriole †	2,3	SM
Great Horned Owl			Veery			Purple Finch		
Barred Owl ‡			Hermit Thrush ‡			House Finch		
Long-eared Owl			Wood Thrush †			Pine Siskin		
N. Saw-whet Owl			American Robin	1,4,3	SM	Am. Goldfinch		
Co. Nighthawk**			Gray Catbird			House Sparrow	4	SH
Whip-poor-will †‡			No. Mockingbird			Other Species …		
Chimney Swift** †			Brown Thrasher †					
Ruby-thr. Humming.			European Starling	1	SH	/		
Belted Kingfisher †			Cedar Waxwing					

*Record highest Breeding Evidence (BE) observed over all habitat. Use codes as in Breeding Bird Atlas of Ontario

Quality Control: This form is complete (__) & legible (__).

Signature: _____ Signature: _____

(Field Personnel) (Project Manager)

REV:Apr.07 FORM 013

Stantec Consulting Ltd.
361 Southgate Drive
Guelph, Ontario, Canada
N1G 3M5
Tel: (519) 836-6050
Fax: (519) 836-2493

Birding Point Counts Survey Observation Form

Project Number 161010624 Project Name: Samsung - GREP

Date June 18, 2010 Field Personnel: V. Wyatt

Weather Conditions:	Temp:	Wind:	Cloud:	PPT:	PPT in last 24 hrs:
	16°C.	0	5%	0	0

GPS #: T___

G11

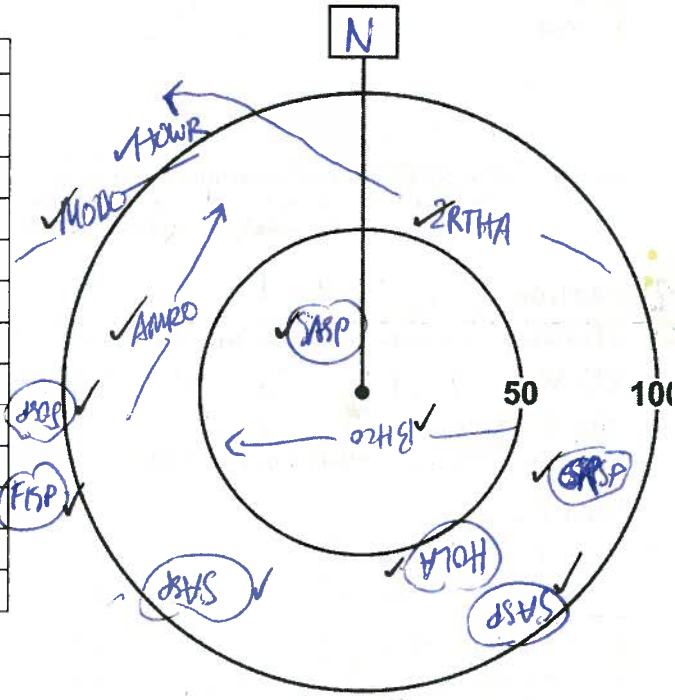
Station: Solar 1 - G11

Habitat: ☐Forest ☐Swamp ☐Marsh ☑Hay ☐Pasture ☐Crop Fallow ~10 cm high some bare ground

UTM: 007- 17T0596259 4748517

Start Time: 06:01

Species	<50 m	50-100 m	> 100m	Flyovers	Height*
HOWR			1		A
RTHA				2	A
MODO			1		A
AMRO				1	A
SOSP			1		A
FISP			1		A
SASP	1	2			O
RHCO			1	1	A
GRSP		1			O
HOLA		1			



*Height of blade sweep will vary from project to project; Check with Project Manager
O – On ground; **A** – Below height of blade sweep; **B** – At height of blade sweep;
C – Above height of blade sweep; **D** – Well Above the height of blade sweep

13

Quality Control: This form is complete ✓ & legible ✓.

Signature: _____ (Field Personnel) Signature: _____ (Project Manager)

REV: May, 07 Form 020

G12

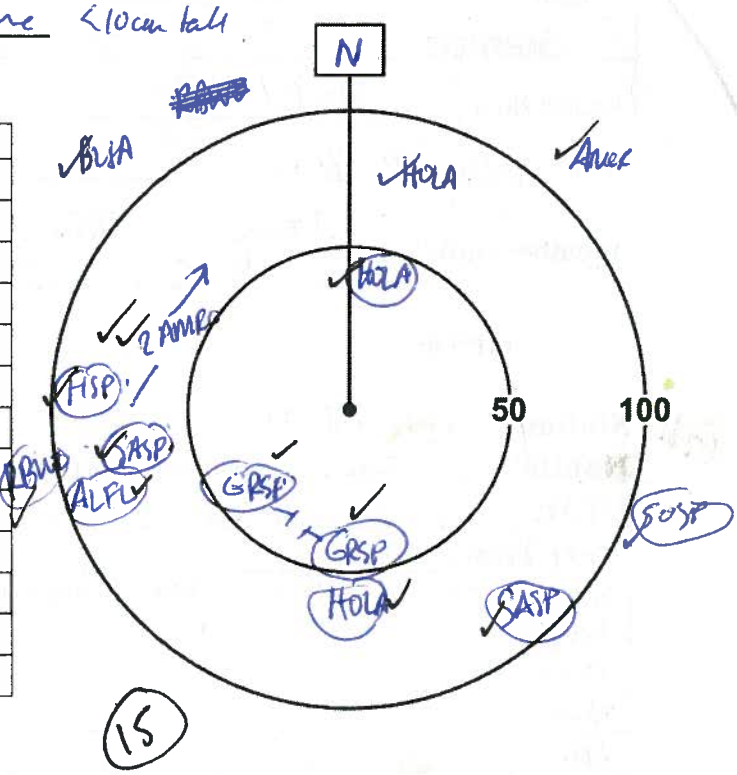
Station: Solar2 - G12

Habitat: ☐Forest ☐Swamp ☐Marsh ☑Hay ☐Pasture ☐Crop fallow - some bare <10cm tall

UTM: 008 - 17T 0596187 4749052

Start Time: 06:29

Species	<50 m	50-100 m	> 100m	Flyovers	Height*
RBWO			1		A
BLJA			1		A
HOLA	1	2			A
AMRO		2			A
FISP		1			A
ALFL		1			A
SASP		2			O
CRSP	2				O
SOSP			1		A
AMCR			1		A



*Height of blade sweep will vary from project to project; Check with Project Manager
O – On ground; **A** – Below height of blade sweep; **B** – At height of blade sweep;
C – Above height of blade sweep; **D** – Well Above the height of blade sweep

G13

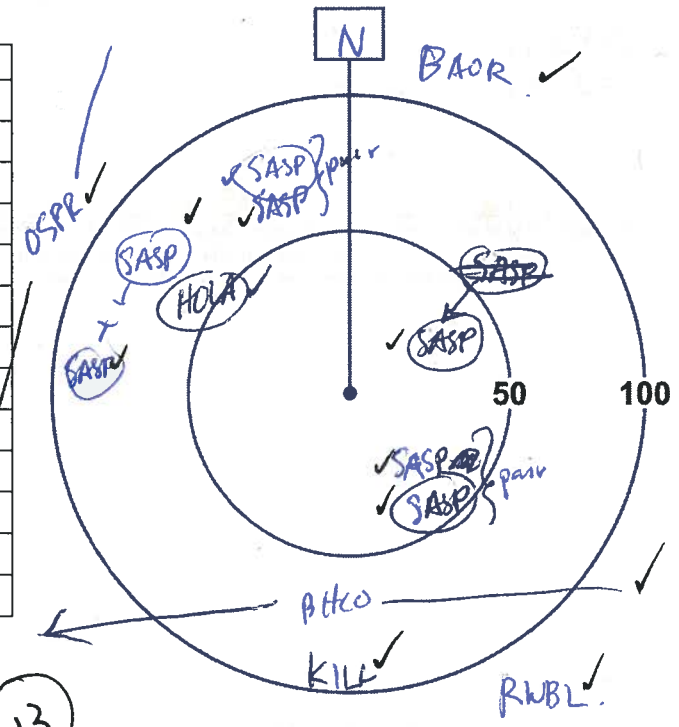
Station: Solar 3 - G13

Habitat: ☐Forest ☐Swamp ☐Marsh ☐Hay ☐Pasture ☐Crop fallow - some bare areas. ~10-25 cm high

UTM: 008 - 17T 0597120 4748961

Start Time: 06:57

Species	<50 m	50-100 m	> 100m	Flyovers	Height*
OSPR				1	A
SASP	3	4			O
HOLA		1			O
RHCO				1	A
KILL		1			O
RWBL			1		A
BAOR			1		A



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O – On ground; **A** – Below height of blade sweep; **B** – At height of blade sweep;
C – Above height of blade sweep; **D** – Well Above the height of blade sweep

Quality Control: This form is complete (✓) & legible (✓).

Signature: _____ (Field Personnel)

Signature: _____ (Project Manager)

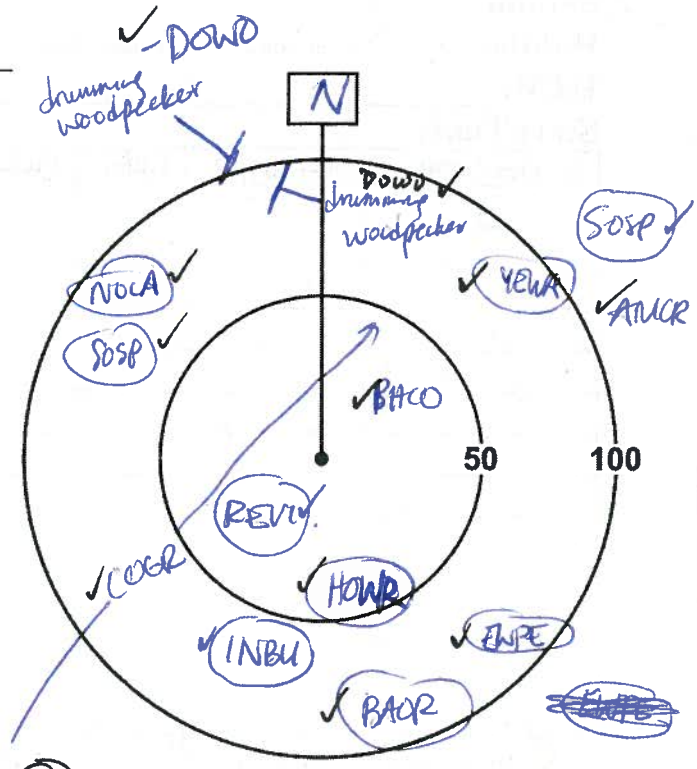
Station: Solar 4. W36

Habitat: ☐Forest ☐Swamp ☐Marsh ☐Hay ☐Pasture ☐Crop FOD

UTM: 012 - 17T 0597562 4748879

W35 **Start Time:** 09:06

Species	<50 m	50-100 m	> 100m	Flyovers	Height*
DOWO		1	1		A
NOCA		1			A
SOSP		1	1		A
COGR				1	A
INBU		1			A
REVI	1				A
HOWR	1				A
BAOR		1			A
EWPE	2	1			A
YEWA		1			A
BHCO	1				A
AMCR			1		A



14

*Height of blade sweep will vary from project to project; Check with Project Manager
O – On ground; **A** – Below height of blade sweep; **B** – At height of blade sweep;
C – Above height of blade sweep; **D** – Well Above the height of blade sweep

Station: Solar 5 W37

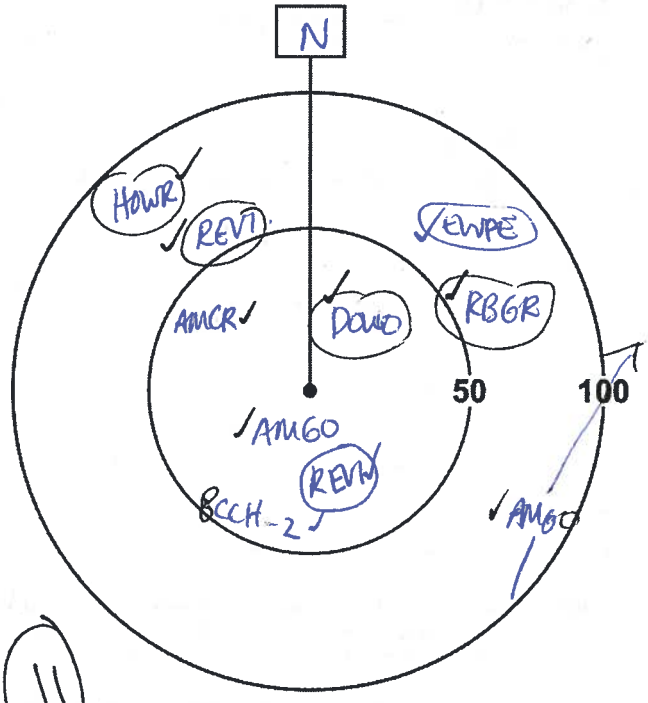
Habitat: ☐Forest ☐Swamp ☐Marsh ☐Hay ☐Pasture ☐Crop FOD

UTM: 013 - 17T 0597276 4748052

Start Time: 09:27

W36

Species	<50 m	50-100 m	> 100m	Flyovers	Height*
HOWR		1			A
REVI	1	1			A
EWPE		1			A
RBGR		1			A
DOWO	1				A
AMCR	1				A
BCCH	2				A
AMGO	1			1	A



11

*Height of blade sweep will vary from project to project; Check with Project Manager
O – On ground; **A** – Below height of blade sweep; **B** – At height of blade sweep;
C – Above height of blade sweep; **D** – Well Above the height of blade sweep.

Quality Control: This form is complete (✓) & legible (✓).

Signature: _____ (Field Personnel)

Signature: _____ (Project Manager)

REV: May, 07 Form 020

Stantec Consulting Ltd.
361 Southgate Drive
Guelph, Ontario, Canada
N1G 3M5
Tel: (519) 836-6050
Fax: (519) 836-2493

Breeding Bird Survey Observation Form

Project Number 161010624 Project Name: Samsung - GREP Solar

Date / Time: July 2, 2010 05:50 VISIT 2 Field Personnel: V. Wyatt

Weather Conditions:	Temp:	Wind:	Cloud:	PPT:	PPT in last 24 hrs:
	10°	0	0	-	-

Start Time: 05:50 End Time: 09:45

Habitat #	ELC Code(s) or Habitat Description
1	open - fallow / hay 0-25 cm north of Haldimand Rd 20.
2	woodland - north of Haldimand Rd 20.
3 (Feature 39)	woodland - south of " + west of Wilson
4	thicket
5	south of Bains Rd - woodland.
6	south of Bains Rd - agriculture.
7	agriculture W of Wilson
8	outside solar areas W. of Mount Olivet Rd.

Quality Control: This form is complete (Y) & legible (Y).

Signature: V. Wyatt (Field Personnel) Signature: _____ (Project Manager)

REV:Apr.07 FORM 013

Wt deer
raccoon

Record location of all significant species on site map

** Endangered, Threatened or Special Concern
† Partners In Flight
‡ Area Sensitive Species

Species	Habitats	BE*	Species	Habitats	BE*	Species	Habitats	BE*
Canada Goose			Red-headed Wo** †			Blue-wing. Wa. †		
Wood Duck			Red-bellied Wo.	5,3		Gold-wing. Wa** †		
Am. Black Duck			Yell-bellied Sap. ‡			Nashville Wa.		
Mallard			Downy Wo.	3		Yellow Wa.		
Ring-neck. Pheasant			Hairy Wo.			Chestnut-sided Wa.		
Ruffed Grouse ‡			Northern Flicker †			Magnolia Wa. ‡		
Wild Turkey			Pileated Wo. ‡			Bl-thr Blue Wa. ‡		
Common Loon ‡			Ea. Wood-Pewee †	3		Yel-rumped Wa. ‡		
Pied-billed Grebe			Alder Fly.			Bl-thr Gr. Wa. ‡		
D. C. Cormorant ‡			Willow Fly. †			Blackburnian Wa. ‡		
American Bittern			Least Fly.			Pine Wa. ‡		
Least Bittern** ‡			Eastern Phoebe			Cerulean Wa** †‡		
Great Blue Heron			Great Crested Fly.	5,3		Bl-and-wh Wa. ‡		
Great Egret			Eastern Kingbird †	1		Am. Redstart ‡		
Green Heron			Yellow-thr. Vireo ‡			Ovenbird ‡		
Turkey Vulture	1	FO	Blue-headed Vireo ‡			No. Waterthrush ‡		
Osprey			Warbling Vireo			Mourning Wa. ‡		
Northern Harrier †‡			Red-eyed Vireo	5,3		Co. Yellowthroat	5	
Sharp-shin. Hawk ‡			Blue Jay	5,3		Hooded Wa** †‡		
Coopers Hawk ‡			American Crow	5,1	SH	Canada Wa. †‡		
Red-shou. Hawk †‡			Common Raven			Scarlet Tanager ‡		
Red-tailed Hawk			Horned Lark	1		Eastern Towhee †		
Am. Kestrel †			Purple Mart.			Chipping Sp.	6,1	P
Virginia Rail			Tree Swallow	1		Clay-colored Sp.		
Sora			No. R. W. Swallow			Field Sp. †	1	
Sandhill Crane			Bank Swallow †			Vesper Sp. †		
Killdeer			Cliff Swallow			Savannah Sp. †	6,7,1	SM
Spotted Sandpiper			Barn Swallow	1		Grasshopper Sp. †	1	
Upland Sandpiper ‡			Bl-capped Chickadee	5,3	SH	Song Sp.	5,6,3,1	SM
Wilson's Snipe			Tufted Titmouse			Swamp Sp.		
American Woodcock			Red-br. Nuthatch			Wh-throated Sp. ‡		
Ring-billed Gull			Wh-br. Nuthatch			Northern Cardinal	5,1	
Herring Gull			Br. Creeper ‡			Rose-br. Grosbeak †	5,3	SH/SM
Caspian Tern			Carolina Wren.			Indigo Bunting	6,3	SM
Black Tern** ‡			House Wren	5,3,1		Bobolink †		
Common Tern			Winter Wren ‡			Red-winged Bl.	7,1	
Rock Dove	7		Sedge Wren			Ea. Meadowlark †	7	SM
Mourning Dove	6,1		Marsh Wren			Common Grackle	6,1,3	FO
Yellow-bill. Cuckoo			Golded-cr. Kinglet ‡			Br-headed Cowbird	1	
Black-bill. Cuckoo †			B. G. Gnatcatcher ‡			Orchard Oriole		
Eastern Screech Owl			Eastern Bluebird			Baltimore Oriole †		
Great Horned Owl			Veery			Purple Finch		
Barred Owl ‡			Hermit Thrush ‡			House Finch		
Long-eared Owl			Wood Thrush †	5		Pine Siskin		
N. Saw-whet Owl			American Robin	5,1	FY	Am. Goldfinch	1,3	
Co. Nighthawk**			Gray Catbird			House Sparrow	7	
Whip-poor-will †‡			No. Mockingbird	1		Other Species …		
Chimney Swift** †			Brown Thrasher †					
Ruby-thr. Humming.			European Starling	1		/		
Belted Kingfisher †			Cedar Waxwing					

at black knight

*Record highest Breeding Evidence (BE) observed over all habitat. Use codes as in Breeding Bird Atlas of Ontario

Quality Control: This form is complete (✓) & legible (✓).

Signature: _____ (Field Personnel)

Signature: _____ (Project Manager)

REV:Apr.07 FORM 013

Stantec Consulting Ltd.
361 Southgate Drive
Guelph, Ontario, Canada
N1G 3M5
Tel: (519) 836-6050
Fax: (519) 836-2493

Birding Point Counts Survey Observation Form

Project Number 1610 10624 Project Name: Samsung GREP-Solar

Date July 2, 2010 Field Personnel: V. Wyatt

Weather Conditions:	Temp:	Wind:	Cloud:	PPT:	PPT in last 24 hrs:
	10°	0	0	0	0

GPS #: T___

Station: 014 (W38)

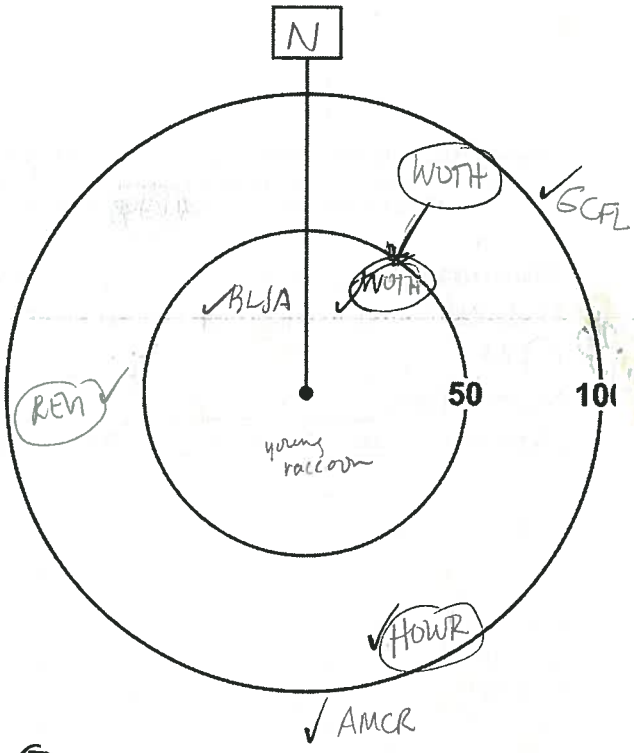
Habitat: ☒Forest ☐Swamp ☐Marsh ☐Hay ☐Pasture ☐Crop FOD

UTM: 17T 0600200 4747284

Start Time: 06:09

Species	<50 m	50-100 m	> 100m	Flyovers	Height*
WOTH	1				A
BLJA	1				A
REVI		1			A
HOWR		1			A
GCFL			1		A
AMCR			1		A

*Height of blade sweep will vary from project to project; Check with Project Manager
O – On ground; **A** – Below height of blade sweep; **B** – At height of blade sweep;
C – Above height of blade sweep; **D** – Well Above the height of blade sweep



6

Quality Control: This form is complete (✓) & legible (✓).

Signature: V. Wyatt (Field Personnel) Signature: _____ (Project Manager)

REV: May, 07 Form 020

W35

Station: 012 (W36).

Habitat: ☒Forest ☐Swamp ☐Marsh ☐Hay ☐Pasture ☐Crop _____

UTM: 17T0597562 4747879

Start Time: 0722

Species	<50 m	50-100 m	> 100m	Flyovers	Height*
SOSP		1	1		A
RBWO		1			A
RBGR	1				A
GCFL	1				A
BCCH			1		A
REVI	1				A
HOWR		1			A
EWPE			1		A
BLJA		1			A

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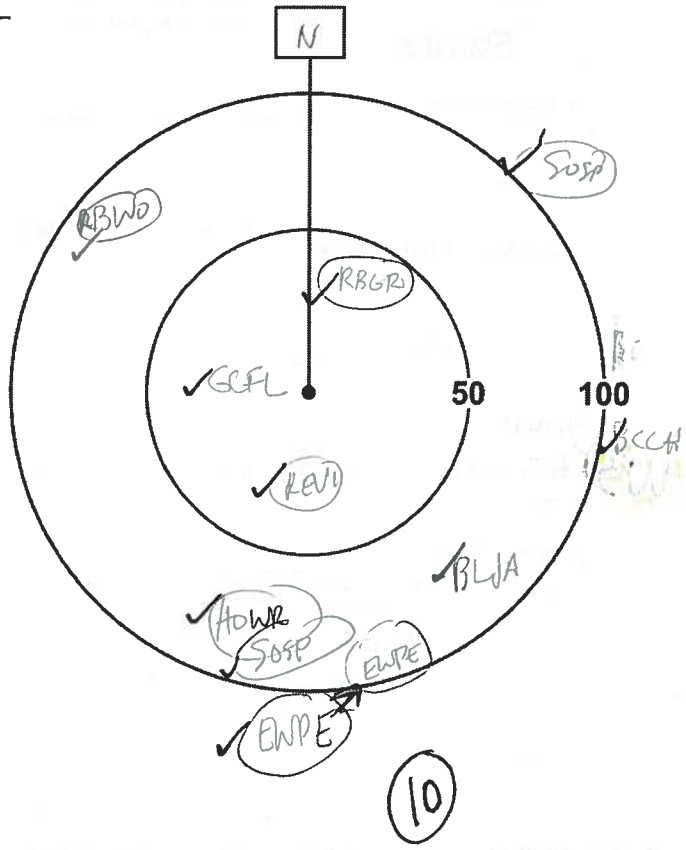

W36

Station: 013 (W37)

Habitat: ☒Forest ☐Swamp ☐Marsh ☐Hay ☐Pasture ☐Crop _____

UTM: 17T 0597276 4748052

Start Time: 07:46

Species	<50 m	50-100 m	> 100m	Flyovers	Height*
REVI	1	1			A
DOWO		1			A
GCFL		1			A
COGR	1				A
AMGO				1	A
HOWR	1				A
RBGR			1		A
BLJA			1		A

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O – On ground; **A** – Below height of blade sweep; **B** – At height of blade sweep;
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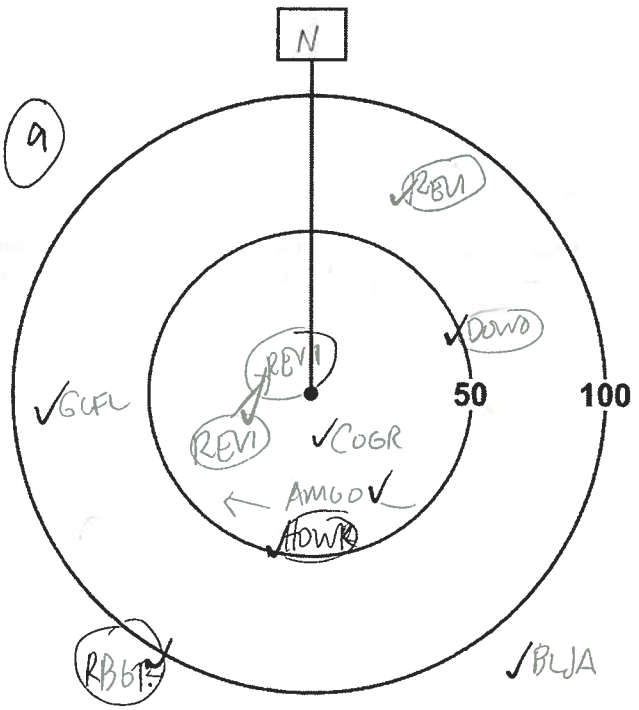

Quality Control: This form is complete (✓) & legible (✓).

Signature: _____ (Field Personnel)

Signature: _____ (Project Manager)

after PC – found SASP nest w/4 eggs 60m east of point 009

Monarch

constant stream over 10 min +400

400 RWBL + COGR @ tree height to above

RTHA

AMCR (in woodlot).

G13

Station: 009 (G13)

Habitat: □Forest □Swamp □Marsh □Hay □Pasture □Crop fallow <30cm

UTM: 17T 0597120 4748961

Start Time: 07:21

Species	<50 m	50-100 m	> 100m	Flyovers	Height*
HOLA				4	A
SASP	2	2			A
AMGO				4	A
EUST				2	A
BARS				1	A
AMCR			1		A
SOSP			1		A

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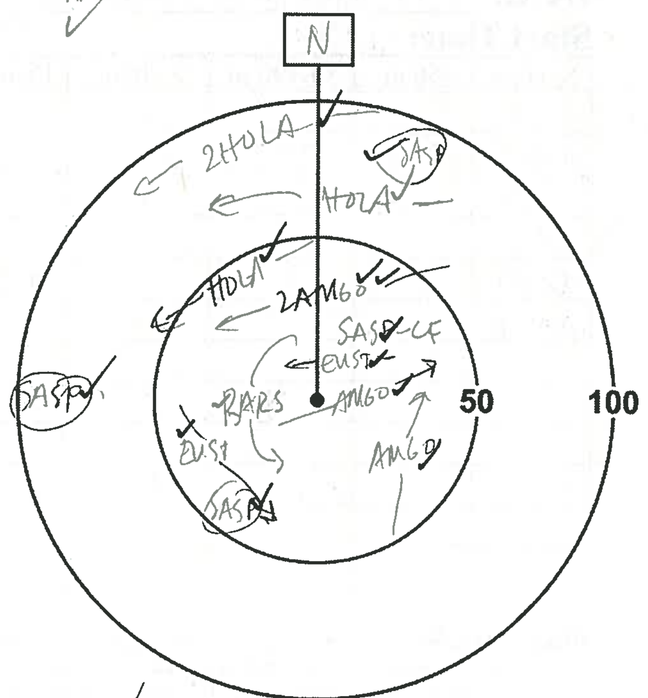
C – Above height of blade sweep; D – Well Above the height of blade sweep



✓ SOSP

(17)

G11

Station: 007 (G11)

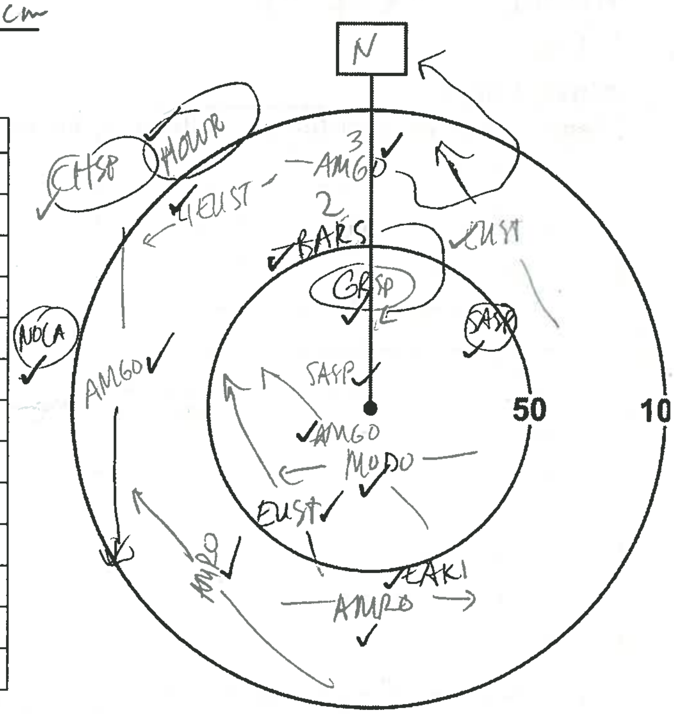
Habitat: □Forest □Swamp □Marsh □Hay □Pasture □Crop fallow <30cm

UTM: 17T 0596259 4748517

Start Time: 08:48

Species	<50 m	50-100 m	> 100m	Flyovers	Height*
EUST				2+4	A/B-1
CHSP			1		A
HOWR			1		A
NOCA			1		A
AMGO				5	A
AMRO				2	A
GRSP	1				A
SASP	2				A
EAKI		1			A
MODO				1	A
BARS				2	A

*Height of blade sweep will vary from project to project; Check with Project Manager
O – On ground; A – Below height of blade sweep; B – At height of blade sweep;
C – Above height of blade sweep; D – Well Above the height of blade sweep



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Quality Control: This form is complete (✓) & legible ( ).

Signature: V. Matt (Field Personnel) Signature: ______________ (Project Manager)

Page 3 of 14 REV: May, 07 Form 020

G12

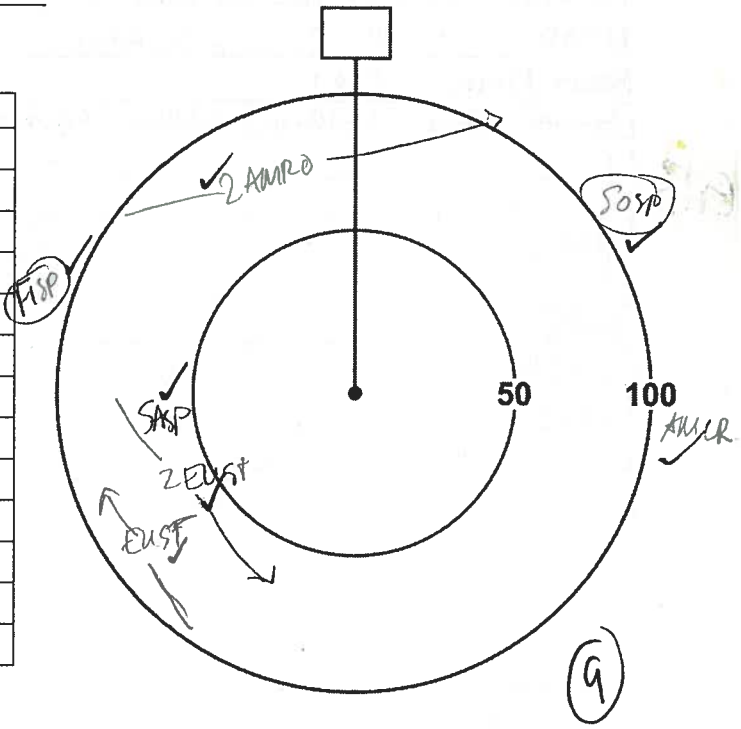
Station: 008 (G12)

Habitat: ☐Forest ☐Swamp ☐Marsh ☐Hay ☐Pasture ☐Crop fallow < 20 cm

UTM: 17T 0596187 4749052

Start Time: 09:20

Species	<50 m	50-100 m	> 100m	Flyovers	Height*
FISP			1		A
AMRO			2	2	A
SOSP			1		A
SASP		1			A
EUST				3	A
AMCR			1		A



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C – Above height of blade sweep; **D** – Well Above the height of blade sweep

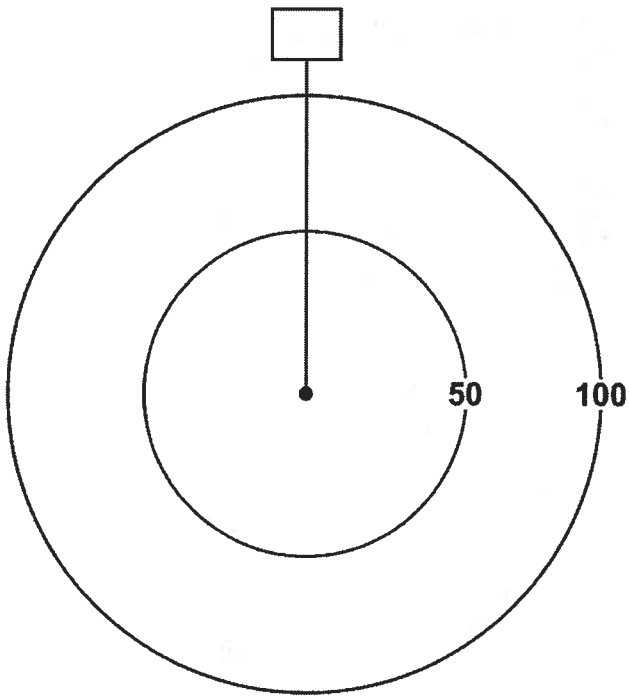
Station: _____

Habitat: ☐Forest ☐Swamp ☐Marsh ☐Hay ☐Pasture ☐Crop _____

UTM: _____

Start Time: _____

Species	<50 m	50-100 m	> 100m	Flyovers	Height*



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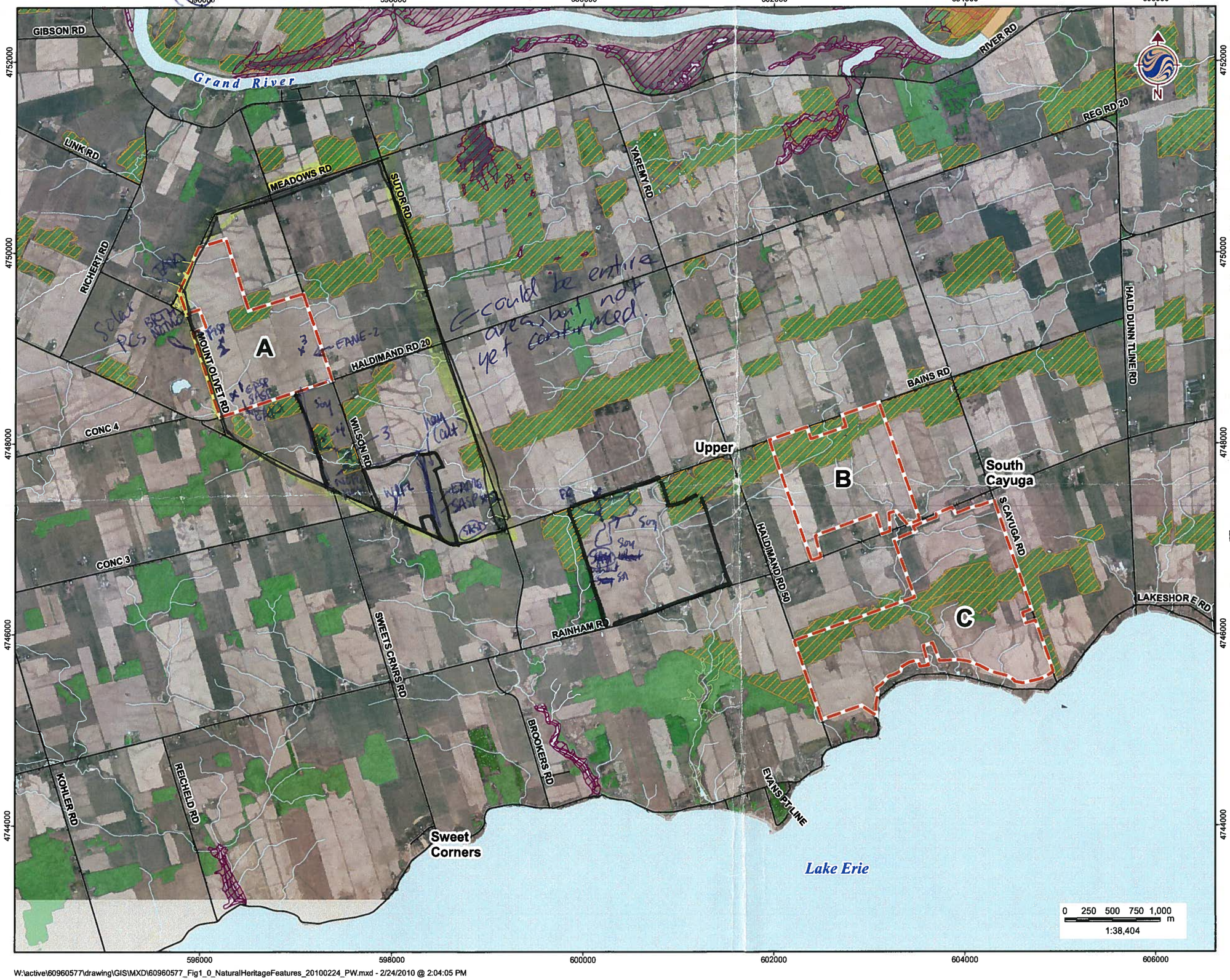
O – On ground; **A** – Below height of blade sweep; **B** – At height of blade sweep;
C – Above height of blade sweep; **D** – Well Above the height of blade sweep.

Quality Control: This form is complete (✓) & legible (✓).

Signature: _____ (Field Personnel)

Signature: _____ (Project Manager)

REV: May, 07 Form 020



Legend

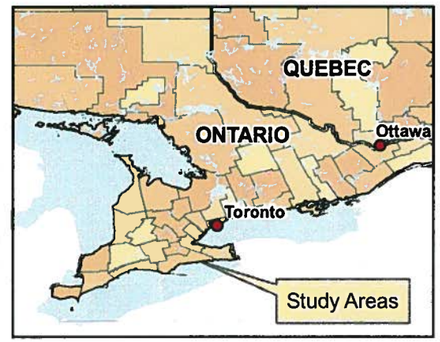
- Study Areas
- Road
- Watercourse
- Waterbody
- Woodlot
- Deer Yard

Area of Natural and Scientific Interest (ANSI)

- Life Science, Provincially Significant
- Earth Science, Provincially Significant

Wetland

- Provincially Significant
- Non-Provincially Significant



Notes

1. Coordinate System: UTM NAD 83 - Zone 17 (N).
2. Data Sources: Ontario Ministry of Natural Resources © Queens Printer Ontario, 2009.
3. Image Sources: © First Base Solutions WMS, 2010 - Imagery Date: Spring 2006).

Area Search / Point Count Notes.
- June 18
- July 2.

Stantec

February 24, 2010
160960577

Client/Project

SAMSUNG ~~C&T~~
ONTARIO SOLAR PV ENERGY PROJECT

Figure No.

1

Title

NATURAL HERITAGE FEATURES

W:\active\60960577\drawing\GIS\MXD\60960577_Fig1_0_NaturalHeritageFeatures_20100224_PW.mxd - 2/24/2010 @ 2:04:05 PM

007 → G11
008 → G12
009 → G13
012 → W36
013 → W37
014 → W38.

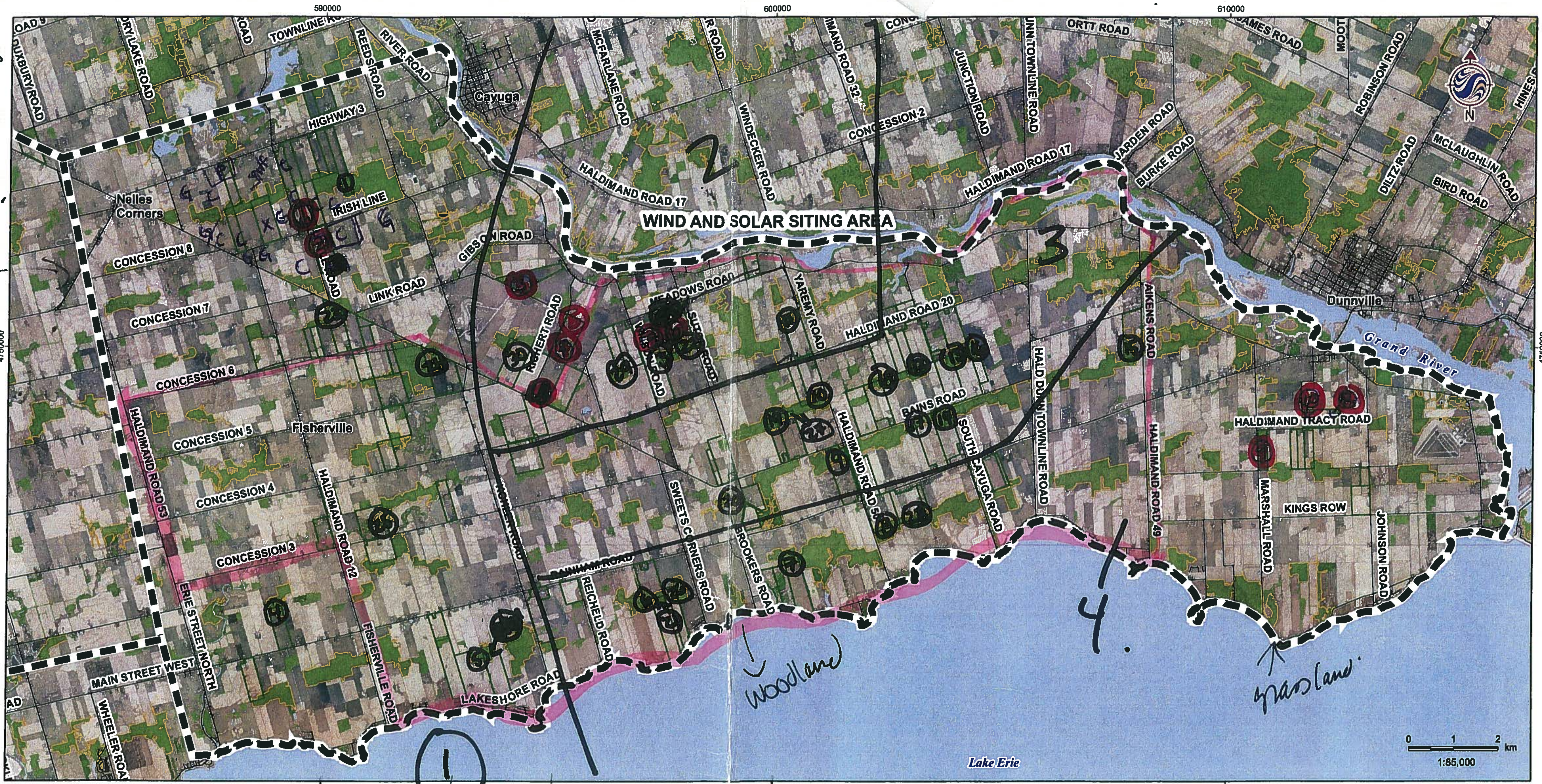
woodlot 1

- substantial SWT/MAM associated w/ watercourse
- nice mid-aged stand w/ sloping top towards " , good structure
- raccoon, wt deer, gray squirrel, green frog
- watercourse ~~appears to have~~ has forks
  + very large tadpoles + crayfish @ culvert @ Wilson

woodlot 2

- mid-aged upland stand, good structure + regen
- raccoon, gr squirrel

Woodland 3 — good quality mid-aged maple-beech
05:50-07:00 — good diversity understorey + garlic mustard (v. limited)
watercourse 20-80 cm wide w/ mostly standing water
multiple nice snags



590000
600000
610000
4750000
WIND AND SOLAR SITING AREA
Cayuga
Nelles Corners
Fisherville
Dunnville
Grand River
Lake Erie
HIGHWAY 3
IRISH LINE
GIBSON ROAD
LINK ROAD
CONCESSION 8
CONCESSION 7
CONCESSION 6
CONCESSION 5
CONCESSION 4
CONCESSION 3
CONCESSION 2
HALDIMAND ROAD 17
HALDIMAND ROAD 20
HALDIMAND ROAD 12
HALDIMAND ROAD 53
HALDIMAND ROAD 49
HALDIMAND ROAD 32
HALDIMAND TRACT ROAD
TOWNLINE ROAD
REEDS ROAD
RIVER ROAD
MCFARLANE ROAD
WINDECKER ROAD
JUNCTION ROAD
ORTT ROAD
JAMES ROAD
ROBINSON ROAD
MCLAUGHLIN ROAD
BIRD ROAD
DILTZ ROAD
JARDEN ROAD
BURKE ROAD
MEADOWS ROAD
YAREMY ROAD
RICHERT ROAD
BAINS ROAD
SOUTH CAYUGA ROAD
AIKENS ROAD
MARSHALL ROAD
KINGS ROW
JOHNSON ROAD
SWEETS CORNERS ROAD
BROOKERS ROAD
REICHELD ROAD
DUNNHAM ROAD
LAKESHORE ROAD
FISHERVILLE ROAD
ERIE STREET NORTH
MAIN STREET WEST
WHEELER ROAD
DUXBURY ROAD
1:85,000
0 1 2 km
N
grassland
woodland
grassland
1
2
3
4.
4 moon days
grasslands

June, 2010
160960577

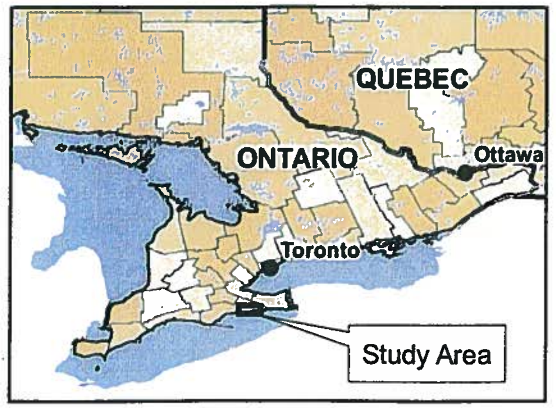
W:\active\60960577\drawing\GIS\MXD\OptionedLands\60960577_Fig1-0_OptionedLands_Ortho_20100614_CEW.mxd - 6/14/2010 @ 3:55:38 PM

Legend

- Project Location
- Elexco_acquired_agreements Drawing
- Woodlot > 10ha
- Wooded Area
- Road
- Waterbody (OBM)

place points
(1) → 10 grasslands
(1) → 30 woodland

G = grassland
C = crop
P = pasture



Notes

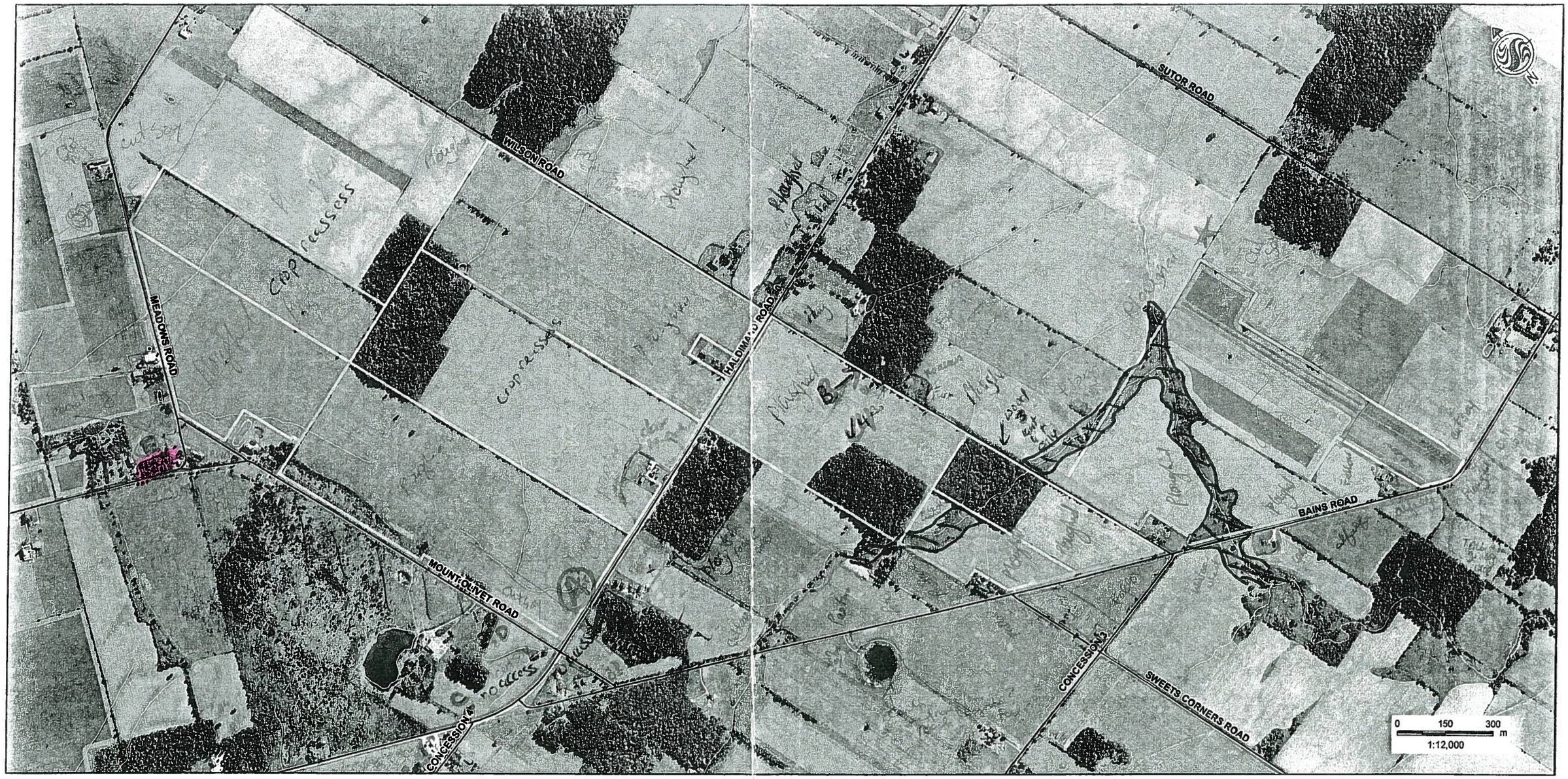
1. Coordinate System: UTM NAD 83 - Zone 17 (N).
2. Data Sources: Ontario Ministry of Natural Resources © Queens Printer Ontario, 2009; © GREP, 2010; © Samsung, 2010.
3. Image Sources: © FirstBase Solutions, WMS 2010.

Client/Project
SAMSUNG C&T
GRAND RENEWABLE ENERGY PARK

Figure No.
1.0

Title
OPTIONED LANDS - ORTHOS
2010-06-03

Stantec



September 2010
160960577

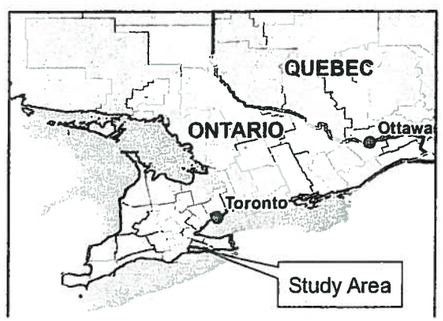
Legend

- Project Location
- Government Lands
- Road
- Railway
- Abandoned Railway
- Watercourse (OBM)
- Waterbody (OBM)

Correction : 7-March-2011

- every field in yellow reassessed in 120m
- Only some woodlots needed. See notes.

todd
CUW1-12* - Black Walnut
Cultural Woodland.



Notes

1. Coordinate System: UTM NAD 83 - Zone 17 (N).
2. Data Sources: Ontario Ministry of Natural Resources © Queens Printer Ontario, 2009; © GREP, 2010; © Samsung, 2010.
3. LIDAR IMAGERY SOURCE???

Client/Project
SAMSUNG C&T
GRAND RENEWABLE ENERGY PARK

Figure No.
DRAFT

Title
PROJECT LOCATION MAP

Stantec

GREP
Solar
No Associated Features.
7. March, 2011

No Feature.

ELC COMMUNITY DESCRIPTION & CLASSIFICATION

SITE:		POLYGON:	
SURVEYOR(S):	DATE:	UTME:	
START:	END	UTMZ:	UTMN:

POLYGON DESCRIPTION

SYSTEM	SUBSTRATE	TOPOGRAPHIC FEATURE	HISTORY	PLANT FORM	COMMUNITY
☐ TERRESTRIAL ☐ WETLAND ☐ AQUATIC	☐ ORGANIC ☐ MINERAL SOIL ☐ PARENT MIN. ☐ ACIDIC BEDRK. ☐ BASIC BEDRK. ☐ CARB. BEDRK.	☐ LACUSTRINE ☐ RIVERINE ☐ BOTTOMLAND ☐ TERRACE ☐ VALLEY SLOPE ☐ TABLELAND ☐ ROLL. UPLAND ☐ CLIFF ☐ TALUS ☐ CREVICE / CAVE ☐ ALVAR ☐ ROCKLAND ☐ BEACH / BAR ☐ SAND DUNE ☐ BLUFF	☐ NATURAL ☐ CULTURAL	☐ PLANKTON ☐ SUBMERGED ☐ FLOATING-LVD. ☐ GRAMINOID ☐ FORB ☐ LICHEN ☐ BRYOPHYTE ☐ DECIDUOUS ☐ CONIFEROUS ☐ MIXED	☐ LAKE ☐ POND ☐ RIVER ☐ STREAM ☐ MARSH ☐ SWAMP ☐ FEN ☐ BOG ☐ BARREN ☐ MEADOW ☐ PRAIRIE ☐ THICKET ☐ SAVANNAH ☐ WOODLAND ☐ FOREST ☐ PLANTATION
SITE ☐ OPEN WATER ☐ SHALLOW WATER ☐ SURFICIAL DEP. ☐ BEDROCK			**COVER** ☐ OPEN ☐ SHRUB ☐ TREED		

STAND DESCRIPTION:

	LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1	CANOPY			
2	SUB-CANOPY			
3	UNDERSTOREY			
4	GRD. LAYER			

HT CODES: 1 = >25 m 2 = 10<HT≤25 m 3 = 2<HT≤10 m 4 = 1<HT≤2 m 5 = 0.5<HT≤1 m 6 = 0.2<HT≤0.5 m 7 = HT≤0.2 m

CVR CODES: 0= NONE 1= 0% < CVR ≤ 10% 2= 10 < CVR ≤ 25% 3= 25 < CVR ≤ 60% 4= CVR > 60%

STAND COMPOSITION:	BA:

SIZE CLASS ANALYSIS:		< 10		10 - 24		25 - 50		> 50
STANDING SNAGS:		< 10		10 - 24		25 - 50		> 50
DEADFALL / LOGS:		< 10		10 - 24		25 - 50		> 50

ABUNDANCE CODES: N = NONE R = RARE O = OCCASIONAL A = ABUNDANT

COMM. AGE :		PIONEER		YOUNG		MID-AGE		MATURE		OLD GROWTH

SOIL ANALYSIS:

TEXTURE:	DEPTH TO MOTTLES / GLEY	g =	G=
MOISTURE:	DEPTH OF ORGANICS:		(cm)
HOMOGENEOUS / VARIABLE	DEPTH TO BEDROCK:		(cm)

COMMUNITYCLASSIFICATION:

COMMUNITY CLASS:	CODE:
COMMUNITY SERIES:	CODE:
ECOSITE:	CODE:
VEGETATION TYPE: Black Walnut Cultural Woodland	CODE: CUW1-12*
INCLUSION	CODE:
COMPLEX	CODE:

Notes: Tree sp. without leaves were inaccurately ID-d. CORRECTION required.

p. 184 & 187

ELC PLANT SPECIES LIST

SITE:	GREP
POLYGON:	"E" from 2.Dec.2010
DATE:	7-March-2011
SURVEYOR(S):	MS, JL

CORRECTION to

LAYERS: 1 = CANOPY > 10m 2 = SUB-CANOPY 3 = UNDERSTOREY 4 = GROUND (GRD.) LAYER

ABUNDANCE CODES: R = RARE O = OCCASIONAL A = ABUNDANT D = DOMINANT

SPECIES CODE	LAYER 1	2	3	4	COLL.
JUGNIGR	O	O			
Shrubs			O		

SPECIES CODE	LAYER 1	2	3	4	COLL.
goldenrods				O	
asters				O	

ELC

COMMUNITY DESCRIPTION & CLASSIFICATION

SITE:		POLYGON:	
SURVEYOR(S):	DATE:		UTME:
START:	END	UTMZ:	UTMN:

POLYGON DESCRIPTION

SYSTEM	SUBSTRATE	TOPOGRAPHIC FEATURE	HISTORY	PLANT FORM	COMMUNITY
☐ TERRESTRIAL ☐ WETLAND ☐ AQUATIC	☐ ORGANIC ☐ MINERAL SOIL ☐ PARENT MIN. ☐ ACIDIC BEDRK. ☐ BASIC BEDRK. ☐ CARB. BEDRK.	☐ LACUSTRINE ☐ RIVERINE ☐ BOTTOMLAND ☐ TERRACE ☐ VALLEY SLOPE ☐ TABLELAND ☐ ROLL. UPLAND ☐ CLIFF ☐ TALUS ☐ CREVICE / CAVE ☐ ALVAR ☐ ROCKLAND ☐ BEACH / BAR ☐ SAND DUNE ☐ BLUFF	☐ NATURAL ☐ CULTURAL	☐ PLANKTON ☐ SUBMERGED ☐ FLOATING-LVD. ☐ GRAMINOID ☐ FORB ☐ LICHEN ☐ BRYOPHYTE ☐ DECIDUOUS ☐ CONIFEROUS ☐ MIXED	☐ LAKE ☐ POND ☐ RIVER ☐ STREAM ☐ MARSH ☐ SWAMP ☐ FEN ☐ BOG ☐ BARREN ☐ MEADOW ☐ PRAIRIE ☐ THICKET ☐ SAVANNAH ☐ WOODLAND ☐ FOREST ☐ PLANTATION
SITE			**COVER**		
☐ OPEN WATER ☐ SHALLOW WATER ☐ SURFICIAL DEP. ☐ BEDROCK			☐ OPEN ☐ SHRUB ☐ TREED		

STAND DESCRIPTION:

	LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1	CANOPY			
2	SUB-CANOPY			
3	UNDERSTOREY			
4	GRD. LAYER			

HT CODES: 1 = >25 m 2 = 10<HT≤25 m 3 = 2<HT≤10 m 4 = 1<HT≤2 m 5 = 0.5<HT≤1 m 6 = 0.2<HT≤0.5 m 7 = HT<0.2 m
CVR CODES 0= NONE 1= 0% < CVR ≤ 10% 2= 10 < CVR ≤ 25% 3= 25 < CVR ≤ 60% 4= CVR > 60%

STAND COMPOSITION:								BA:	
SIZE CLASS ANALYSIS:		< 10		10 - 24		25 - 50			> 50
STANDING SNAGS:		< 10		10 - 24		25 - 50			> 50
DEADFALL / LOGS:		< 10		10 - 24		25 - 50			> 50

ABUNDANCE CODES: N = NONE R = RARE O = OCCASIONAL A = ABUNDANT

COMM. AGE :		PIONEER		YOUNG		MID-AGE		MATURE		OLD GROWTH

SOIL ANALYSIS:

TEXTURE:	DEPTH TO MOTTLES / GLEY	g =	G=
MOISTURE:	DEPTH OF ORGANICS:		(cm)
HOMOGENEOUS / VARIABLE	DEPTH TO BEDROCK:		(cm)

COMMUNITYCLASSIFICATION:

COMMUNITY CLASS:	CODE:
COMMUNITY SERIES:	CODE:
ECOSITE:	CODE:
VEGETATION TYPE:	CODE:
INCLUSION	CODE:
COMPLEX	CODE:

Notes:

ELC

PLANT SPECIES LIST

SITE:	
POLYGON:	
DATE:	
SURVEYOR(S):	

LAYERS: 1 = CANOPY > 10m 2 = SUB-CANOPY 3 = UNDERSTOREY 4 = GROUND (GRD.) LAYER
ABUNDANCE CODES: R = RARE O = OCCASIONAL A = ABUNDANT D = DOMINANT

SPECIES CODE	LAYER 1	LAYER 2	LAYER 3	LAYER 4	COLL.	SPECIES CODE	LAYER 1	LAYER 2	LAYER 3	LAYER 4	COLL.

ELC	PROJECT NO. 161010646.210.100.102
	SITE: Grand Renewable Energy Park
	ELC Label: FOD9-6 Feature #: 15
STAND & SOIL CHARACTERISTICS	DATE: Thur 24 March 2011
	SURVEYOR(S): EJM

Ats, Ironwood
Minor Mh,

TREE TALLY BY SPECIES:

PRISM FACTOR

SPECIES	TALLY 1	TALLY 2	TALLY 3	TALLY 4	TOTAL	RELATIVE AVERAGE
TOTAL						100
BASAL AREA (BA)						MEAN:
DEAD						

STAND COMPOSITION:

SOIL ASSESSMENT:	1	2	3	4
TEXTURE	C			
DEPTH TO MOTTLES:	g= 20	g=	g=	g=
DEPTH TO GLEY:	G= —	G=	G=	G=
DEPTH TO ORGANICS	—			
DEPTH TO BEDROCK	—			
MOISTURE REGIME	6			

SOIL PROFILE

COMMUNITY PROFILE DIAGRAM

WP: 723 ± 3

Slope: 3.0%

Surface Stoniness:

NOTES:

Horizon	Depth	Matrix	Mottles	Texture	CF%
Ah	0-14	10YR 3/2	—	S:CL	Ø
Bm	14-20	10YR 5/3	—	S:CL	Ø
B	20-46	10YR 5/4	10YR 5/8	S:C→HC	Ø
Ck	46-65+	10YR 5/3	10YR 4/4	S.C	Ø

Phot 1 - N
- S view of MAM
- profile

Hs #M4 ~~Hawthor~~
Mirror Hawthorn

ELC STAND & SOIL CHARACTERISTICS	
PROJECT NO.	161010646.210.100.102
SITE:	Grand Renewable Energy Park
ELC Label: FOD 9-4A	Feature #: 31
DATE:	Thu 24 March 2011
SURVEYOR(S):	EJM

TREE TALLY BY SPECIES:

PRISM FACTOR

SPECIES	TALLY 1	TALLY 2	TALLY 3	TALLY 4	TOTAL	RELATIVE AVERAGE
TOTAL						100
BASAL AREA (BA)						MEAN:
DEAD						

STAND COMPOSITION:

SOIL ASSESSMENT:	1	2	3	4
TEXTURE	C			
DEPTH TO MOTTLES:	g= 14	g=	g=	g=
DEPTH TO GLEY:	G= 14	G=	G=	G=
DEPTH TO ORGANICS	—			
DEPTH TO BEDROCK	—			
MOISTURE REGIME	6			

SOIL PROFILE

COMMUNITY PROFILE DIAGRAM

WP: 724 ± 4

Slope: 1.07,

Surface Stoniness: ∅

NOTES:

Horizon	Depth	Matrix	Mottles	Texture	CF%
Ah	0-14	10YR3/2	—	SiCL	∅
Bg1	14-32	10YR5/2	10YR5/8	SiCL	∅
Bg2	32-60	10YR5/3	10YR4/6	SiC-HC	∅
Ckg	60-80+	10YR5/2	10YR5/4	SiC?HC	∅

Photo N
S
Profile

	PROJECT NO. 161010646.210.100.102
ELC	SITE: Grand Renewable Energy Park
	ELC Label: FOD4-4C Feature #: 31
STAND & SOIL CHARACTERISTICS	DATE: 24 March 2011
	SURVEYOR(S): EJM

Hs
Minor Mh, iron wood

TREE TALLY BY SPECIES:

PRISM FACTOR

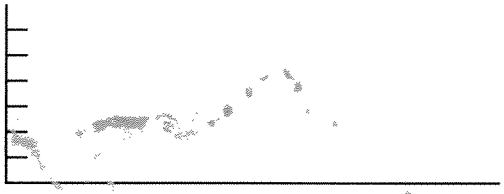
SPECIES	TALLY 1	TALLY 2	TALLY 3	TALLY 4	TOTAL	RELATIVE AVERAGE
TOTAL						100
BASAL AREA (BA)						MEAN:
DEAD						

STAND COMPOSITION:

SOIL ASSESSMENT:	1	2	3	4
TEXTURE	C			
DEPTH TO MOTTLES:	g= 10	g=	g=	g=
DEPTH TO GLEY:	G= 10	G=	G=	G=
DEPTH TO ORGANICS	—			
DEPTH TO BEDROCK	—			
MOISTURE REGIME	6			

SOIL PROFILE

COMMUNITY PROFILE DIAGRAM



WP: 725 ± 3

Slope: 1.5°

Surface Stoniness: 0

NOTES:

Horizon	Depth	Matrix	Mottles	Texture	CF%
Ah	0-10	10YR 3/1	—	S:CL	0
Bg1	10-24	10YR 5/2	10YR 5/8	S CL	0
Bg2	24-52	10YR 5/3	10YR 4/4	HC	0
Ckg	52-65+	10YR 5/3	10YR 5/6	S:C	0

ELC STAND & SOIL CHARACTERISTICS	
	PROJECT NO. 161010646.210.100.102
	SITE: Grand Renewable Energy Park
	ELC Label: FOD9-6 Feature #: 42
	DATE: 25 March 2011
	SURVEYOR(S): EJM

Or, Hs
Minor Aw

TREE TALLY BY SPECIES:

PRISM FACTOR

SPECIES	TALLY 1	TALLY 2	TALLY 3	TALLY 4	TOTAL	RELATIVE AVERAGE
TOTAL						100
BASAL AREA (BA)						MEAN:
DEAD						

STAND COMPOSITION:

SOIL ASSESSMENT:	1	2	3	4
TEXTURE	C			
DEPTH TO MOTTLES:	g= 16	g=	g=	g=
DEPTH TO GLEY:	G= —	G=	G=	G=
DEPTH TO ORGANICS	—			
DEPTH TO BEDROCK	—			
MOISTURE REGIME	6			

COMMUNITY PROFILE DIAGRAM

SOIL PROFILE

WP: 726 ± 3

Slope: 1%

Surface Stoniness: ∅

NOTES:

Horizon	Depth	Matrix	Mottles	Texture	CF%
Ah	0-16	10YR3/2	—	SiCL	∅
Bg1	16-36	10YR5/3	10YR5/8	SiCL	∅
Bg2	36-56	10YR 5/3	10YR4/4	HC	∅
Ckg	56-70+	10YR 5/3	10YR4/6	HC	∅

Photo N
S
profile

ELC

STAND & SOIL CHARACTERISTICS

PROJECT NO.	161010646.210.100.102
SITE:	Grand Renewable Energy Park
ELC Label:	F009-4C Feature #: 42
DATE:	25 March 2011
SURVEYOR(S):	EJM

TREE TALLY BY SPECIES:

PRISM FACTOR

SPECIES	TALLY 1	TALLY 2	TALLY 3	TALLY 4	TOTAL	RELATIVE AVERAGE
TOTAL						100
BASAL AREA (BA)						MEAN:
DEAD						

STAND COMPOSITION:

SOIL ASSESSMENT:	1	2	3	4
TEXTURE	C			
DEPTH TO MOTTLES:	g= 17	g=	g=	g=
DEPTH TO GLEY:	G= —	G=	G=	G=
DEPTH TO ORGANICS	—			
DEPTH TO BEDROCK	—			
MOISTURE REGIME	6			

SOIL PROFILE

COMMUNITY PROFILE DIAGRAM

WP: 727 ± 4

Slope: 1.0%

Surface Stoniness: 0

NOTES:

Horizon	Depth	Matrix	Mottles	Texture	CF%
Ah	0-17	10YR3/2	—	S-CL	0
B,1	17-38	10YR5/3	10YR5/8	S-CL	0
B,2	38-56	10YR5/3	10YR4/6	CL	0
Clg	56-70+	10YR5/2	10YR4/6	HC	0

ELC	PROJECT NO. 161010646.210.100.102
	SITE: Grand Renewable Energy Park
	ELC Label: F009-4B Feature #: 42
STAND & SOIL CHARACTERISTICS	DATE: 25 March 2011
	SURVEYOR(S): EJM

H5

TREE TALLY BY SPECIES:

PRISM FACTOR

SPECIES	TALLY 1	TALLY 2	TALLY 3	TALLY 4	TOTAL	RELATIVE AVERAGE
TOTAL						100
BASAL AREA (BA)						MEAN:
DEAD						

STAND COMPOSITION:

SOIL ASSESSMENT:	1	2	3	4
TEXTURE	C			
DEPTH TO MOTTLES:	g= 12	g=	g=	g=
DEPTH TO GLEY:	G= —	G=	G=	G=
DEPTH TO ORGANICS	—			
DEPTH TO BEDROCK	—			
MOISTURE REGIME	C			

SOIL PROFILE

COMMUNITY PROFILE DIAGRAM

WP: 728 ± 3

Slope: 1.0%

Surface Stoniness: 0

NOTES:

Horizon	Depth	Matrix	Mottles	Texture	CF%
	0-12	10YR 3/1	—	S:CL	0
	12-20	10YR 6/3	10YR 5/6	S:CL	6
	20-32	10YR 5/3	10YR 5/4	S:CL	6
	32-80	10YR 5/3	10YR 5/6	CL	0
	80-95+	10YR 5/2	10YR 4/6	HC	0

Phot. N

S

profile

ELC	PROJECT NO. 161010646.210.100.102
	SITE: Grand Renewable Energy Park
	ELC Label: FOD9-4A Feature #: 69
STAND & SOIL CHARACTERISTICS	DATE: 25 March 2011
	SURVEYOR(S): EJM

TREE TALLY BY SPECIES:

PRISM FACTOR

SPECIES	TALLY 1	TALLY 2	TALLY 3	TALLY 4	TOTAL	RELATIVE AVERAGE
TOTAL						100
BASAL AREA (BA)						MEAN:
DEAD						

STAND COMPOSITION:

SOIL ASSESSMENT:	1	2	3	4
TEXTURE	C			
DEPTH TO MOTTLES:	g= 10	g=	g=	g=
DEPTH TO GLEY:	G= —	G=	G=	G=
DEPTH TO ORGANICS	—			
DEPTH TO BEDROCK	—			
MOISTURE REGIME	6			

SOIL PROFILE

COMMUNITY PROFILE DIAGRAM

WP: 730 ± 4 dd/dt 729

Slope: 1.0

Surface Stoniness: 0

NOTES:

Horizon	Depth	Matrix	Mottles	Texture	CF%
Ah	0-10	10YR3/1	—	S:CL	0
B_{f1}	10-23	10YR6/3	10YR5/6	S:CL	0
B_{f2}	23-46	10YR5/3	10YR4/6	CL	0
Cdg	46-60+	10YR5/3	10YR4/4	HC	0

Pit 5

N

profile

Or, Ao Mh, Hs

ELC STAND & SOIL CHARACTERISTICS	PROJECT NO. 161010646.210.100.102
	SITE: Grand Renewable Energy Park
	ELC Label: FOD9-4B Feature #: 69
	DATE: 25 March 2011
	SURVEYOR(S): EJM

TREE TALLY BY SPECIES:

PRISM FACTOR

SPECIES	TALLY 1	TALLY 2	TALLY 3	TALLY 4	TOTAL	RELATIVE AVERAGE
TOTAL						100
BASAL AREA (BA)						MEAN:
DEAD						

STAND COMPOSITION:

SOIL ASSESSMENT:	1	2	3	4
TEXTURE	C			
DEPTH TO MOTTLES:	g= 16	g=	g=	g=
DEPTH TO GLEY:	G= –	G=	G=	G=
DEPTH TO ORGANICS	–			
DEPTH TO BEDROCK	–			
MOISTURE REGIME	6			

SOIL PROFILE

COMMUNITY PROFILE DIAGRAM

WP: 731 t 4

Slope: ~~0~~ 2.5 2

Surface Stoniness: 0

NOTES:

Horizon	Depth	Matrix	Mottles	Texture	CF%
Ah	0-16	10YR 3/2	–	SCL	0
B,1	16-34	10YR 6/3	10YR 5/6	CL	0
B,2	34-65	10YR 5/3	10YR 4/1	CL	0
Chg	65-80+	10YR 5/3	10YR 4/4	HC	0

ELC	PROJECT NO. 161010646.210.100.102
	SITE: Grand Renewable Energy Park
	ELC Label: FOD9-6 Feature #: 69
STAND & SOIL CHARACTERISTICS	DATE: 25 March 2011
	SURVEYOR(S): EJM

TREE TALLY BY SPECIES:

PRISM FACTOR

SPECIES	TALLY 1	TALLY 2	TALLY 3	TALLY 4	TOTAL	RELATIVE AVERAGE
TOTAL						100
BASAL AREA (BA)						MEAN:
DEAD						

STAND COMPOSITION:

SOIL ASSESSMENT:	1	2	3	4
TEXTURE	C			
DEPTH TO MOTTLES:	g= 17	g=	g=	g=
DEPTH TO GLEY:	G= —	G=	G=	G=
DEPTH TO ORGANICS	—			
DEPTH TO BEDROCK	—			
MOISTURE REGIME	6			

SOIL PROFILE

COMMUNITY PROFILE DIAGRAM

WP: 732 ± 4

Slope: 2.5%

Surface Stoniness: Ø

NOTES:

Horizon	Depth	Matrix	Mottles	Texture	CF%
Ah	0-17	10YR3/2	—	S:CL	Ø
Bg	17-44	10YR5/3	10YR4/6	S:C	Ø
Clg	44-60+	10YR5/3	10YR4/4	HC	1

photo N

S

profile

ELC — COMMUNITY DESCRIPTION & CLASSIFICATION

SITE:		POLYGON: CUW
SURVEYOR(S):	DATE:	UTME:
START:	END	UTMZ: / UTMN:

POLYGON DESCRIPTION

SYSTEM	SUBSTRATE	TOPOGRAPHIC FEATURE	HISTORY	PLANT FORM	COMMUNITY
☐ TERRESTRIAL ☐ WETLAND ☐ AQUATIC	☐ ORGANIC ☐ MINERAL SOIL ☐ PARENT MIN. ☐ ACIDIC BEDRK. ☐ BASIC BEDRK. ☐ CARB. BEDRK.	☐ LACUSTRINE ☐ RIVERINE ☐ BOTTOMLAND ☐ TERRACE ☐ VALLEY SLOPE ☐ TABLELAND ☐ ROLL. UPLAND ☐ CLIFF ☐ TALUS ☐ CREVICE / CAVE ☐ ALVAR ☐ ROCKLAND ☐ BEACH / BAR ☐ SAND DUNE ☐ BLUFF	☐ NATURAL ☐ CULTURAL	☐ PLANKTON ☐ SUBMERGED ☐ FLOATING-LVD. ☐ GRAMINOID ☐ FORB ☐ LICHEN ☐ BRYOPHYTE ☐ DECIDUOUS ☐ CONIFEROUS ☐ MIXED	☐ LAKE ☐ POND ☐ RIVER ☐ STREAM ☐ MARSH ☐ SWAMP ☐ FEN ☐ BOG ☐ BARREN ☐ MEADOW ☐ PRAIRIE ☐ THICKET ☐ SAVANNAH ☐ WOODLAND ☐ FOREST ☐ PLANTATION
SITE ☐ OPEN WATER ☐ SHALLOW WATER ☐ SURFICIAL DEP. ☐ BEDROCK			**COVER** ☐ OPEN ☐ SHRUB ☐ TREED		

STAND DESCRIPTION: CUW

	LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1	CANOPY	8-10	50%	Frapenn > Shagbark hickory > Ulmamer > Blackoak > B. walnut
2	SUB-CANOPY	4	10%	Shagbark hickory > Frapena > Burroak > Coastal
3	UNDERSTOREY	2-3	50%	Hawthorn > Rhacath > Corrace > Coastal
4	GRD. LAYER			

HT CODES: 1 = >25 m 2 = 10<HT<25 m 3 = 2<HT<10 m 4 = 1<HT<2 m 5 = 0.5<HT<1 m 6 = 0.2<HT<0.5 m 7 = HT<0.2 m

CVR CODES: 0 = NONE 1 = 0% < CVR < 10% 2 = 10 < CVR < 25% 3 = 25 < CVR < 60% 4 = CVR > 60%

STAND COMPOSITION:		BA:

SIZE CLASS ANALYSIS:	☐ < 10	☐ 10 - 24	☐ 25 - 50	☐ > 50
STANDING SNAGS:	☐ < 10	☐ 10 - 24	☐ 25 - 50	☐ > 50
DEADFALL / LOGS:	☐ < 10	☐ 10 - 24	☐ 25 - 50	☐ > 50

ABUNDANCE CODES: N = NONE R = RARE O = OCCASIONAL A = ABUNDANT

COMM. AGE:	☐ PIONEER	☐ YOUNG	☐ MID-AGE	☐ MATURE	☐ OLD GROWTH

SOIL ANALYSIS:

TEXTURE:	DEPTH TO MOTTLES / GLEY	g =	G=
MOISTURE:	DEPTH OF ORGANICS:		(cm)
HOMOGENEOUS / VARIABLE	DEPTH TO BEDROCK:		(cm)

COMMUNITYCLASSIFICATION:

COMMUNITY CLASS:	CODE:
COMMUNITY SERIES:	CODE:
ECOSITE:	CODE:
VEGETATION TYPE:	CODE:
☐ INCLUSION	CODE:
☐ COMPLEX	CODE:

Notes:

ELC — PLANT SPECIES LIST

SITE:
POLYGON:
DATE:
SURVEYOR(S):

LAYERS: 1 = CANOPY > 10m 2 = SUB-CANOPY 3 = UNDERSTOREY 4 = GROUND (GRD.) LAYER

ABUNDANCE CODES: R = RARE O = OCCASIONAL A = ABUNDANT D = DOMINANT

SPECIES CODE	LAYER 1	2	3	4	COLL.
Ulmamer					
Frapenn					
Shagbark hickory					
Prusero					
Queelo-bur					
Black walnut			✓		
Hawthorn sp					
Frpa					
Coastal					
Corrace					
Rhacath					

SPECIES CODE	LAYER 1	2	3	4	COLL.

Stantec Consulting Ltd.
70-1 Southgate Drive
Guelph, Ontario, Canada
N1G 4P5
Tel: (519) 836-6050
Fax: (519) 836-2493

Windfarm Wildlife Habitat Assessment

Project Number _____ Project Name: _____

Date / Time: _____ Field Personnel: _____

Weather Conditions:	Temp:	Wind:	Cloud:	PPT:	PPT in last 24 hrs:

Location (i.e. turbine #s/description) CW

Visual assessment (roadside – no access) ☐
Physical assessment (walk through feature) ☑

Extent of physical investigation of feature: ☑ Entire ☐ Partial (indicate on map)

Reptile Hibernacula Features (i.e. features that would provide a route underground, including buried concrete or rock (e.g. foundations, bridge abutments or culverts with cracks/entry points, exposed rock crevices or inactive animal burrows))
Contains potential reptile hibernacula features? ☐ Y ☑ N ☐ Unknown – no access (if yes, describe in Table 1).

Bat Hibernacula Features (i.e. karst topography, abandoned mines or caves)
Contains potential bat hibernacula features? ☐ Y ☑ N ☐ Unknown – no access (if yes, describe in Table 1).

Table 1: Potential bat/reptile hibernacula features identified on site

UTM	Feature type	Photo #	Description	Spp. observed using feature

Species Observations List species and type of observation (indicate on map):
(CA = carcass; DP = distinctive parts; FE = feeding evidence; FY = eggs, nest; HO = house/den; OB = observed; SC = scat; SI = other sign; TK = track; VO = vocalization)

Birds	Mammals	Herps	Butterflies / Dragonflies	Other
i.e.) A: AMRO/VO NOCA - VO SOSP - VO AMRO - VO	deer - rubs on shrubs			

bird nesting habitat

ELC COMMUNITY DESCRIPTION & CLASSIFICATION

SITE:		POLYGON: CUS1-1
SURVEYOR(S):	DATE:	UTME:
START:	END	UTMZ: UTMN:

POLYGON DESCRIPTION

SYSTEM	SUBSTRATE	TOPOGRAPHIC FEATURE	HISTORY	PLANT FORM	COMMUNITY
☐ TERRESTRIAL ☐ WETLAND ☐ AQUATIC	☐ ORGANIC ☐ MINERAL SOIL ☐ PARENT MIN. ☐ ACIDIC BEDRK. ☐ BASIC BEDRK. ☐ CARB. BEDRK.	☐ LACUSTRINE ☐ RIVERINE ☐ BOTTOMLAND ☐ TERRACE ☐ VALLEY SLOPE ☐ TABLELAND ☐ ROLL. UPLAND ☐ CLIFF ☐ TALUS ☐ CREVICE / CAVE ☐ ALVAR ☐ ROCKLAND ☐ BEACH / BAR ☐ SAND DUNE ☐ BLUFF	☐ NATURAL ☐ CULTURAL	☐ PLANKTON ☐ SUBMERGED ☐ FLOATING-LVD. ☐ GRAMINOID ☐ FORB ☐ LICHEN ☐ BRYOPHYTE ☐ DECIDUOUS ☐ CONIFEROUS ☐ MIXED	☐ LAKE ☐ POND ☐ RIVER ☐ STREAM ☐ MARSH ☐ SWAMP ☐ FEN ☐ BOG ☐ BARREN ☐ MEADOW ☐ PRAIRIE ☐ THICKET ☐ SAVANNAH ☐ WOODLAND ☐ FOREST ☐ PLANTATION
SITE ☐ OPEN WATER ☐ SHALLOW WATER ☐ SURFICIAL DEP. ☐ BEDROCK			**COVER** ☐ OPEN ☐ SHRUB ☐ TREED		

STAND DESCRIPTION: CUS1-1

	LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1	CANOPY	15	<5	Ulmaer
2	SUB-CANOPY	5-6	10%	Ulmaer > Fraaner
3	UNDERSTOREY	2-4	80	Hawthorn sp > Corrace > Rhacath
4	GRD. LAYER		10%	Trout Lily > Fravir = Geum sp > Alloff.

HT CODES: 1 = >25 m 2 = 10<HT<25 m 3 = 2<HT<10 m 4 = 1<HT<2 m 5 = 0.5<HT<1 m 6 = 0.2<HT<0.5 m 7 = HT<0.2 m

CVR CODES 0= NONE 1= 0% < CVR < 10% 2= 10 < CVR < 25% 3= 25 < CVR < 60% 4= CVR > 60%

STAND COMPOSITION:					BA:
SIZE CLASS ANALYSIS:	< 10	10 - 24	25 - 50	> 50	
STANDING SNAGS:	< 10	10 - 24	25 - 50	> 50	
DEADFALL / LOGS:	< 10	10 - 24	25 - 50	> 50	

ABUNDANCE CODES: N = NONE R = RARE O = OCCASIONAL A = ABUNDANT

COMM. AGE :	PIONEER	YOUNG	MID-AGE	MATURE	OLD GROWTH

SOIL ANALYSIS:

TEXTURE:	DEPTH TO MOTTLES / GLEY	g =	G=
MOISTURE:	DEPTH OF ORGANICS:		(cm)
HOMOGENEOUS / VARIABLE	DEPTH TO BEDROCK:		(cm)

COMMUNITYCLASSIFICATION:

	CODE:
COMMUNITY CLASS:	
COMMUNITY SERIES:	
ECOSITE:	
VEGETATION TYPE:	
INCLUSION	
COMPLEX	

Notes:

ELC PLANT SPECIES LIST

SITE:
POLYGON:
DATE:
SURVEYOR(S):

LAYERS: 1 = CANOPY > 10m 2 = SUB-CANOPY 3 = UNDERSTOREY 4 = GROUND (GRD.) LAYER

ABUNDANCE CODES: R = RARE O = OCCASIONAL A = ABUNDANT D = DOMINANT

SPECIES CODE	LAYER 1	2	3	4	COLL.
Ulmaer.					
Fraaner					
Hawthorn sp.			D		
Corrace			C		
Rhacath			C		
Vitripi					

SPECIES CODE	LAYER 1	2	3	4	COLL.
Trout Lily					
Alloff.					
Fravir					
Geum sp					

ELC — COMMUNITY DESCRIPTION & CLASSIFICATION

SITE:		POLYGON: SWD4-1	
SURVEYOR(S):		DATE:	UTME:
START:	END	UTMZ:	UTMN:

POLYGON DESCRIPTION

SYSTEM	SUBSTRATE	TOPOGRAPHIC FEATURE	HISTORY	PLANT FORM	COMMUNITY
☐ TERRESTRIAL ☐ WETLAND ☐ AQUATIC	☐ ORGANIC ☐ MINERAL SOIL ☐ PARENT MIN. ☐ ACIDIC BEDRK. ☐ BASIC BEDRK. ☐ CARB. BEDRK.	☐ LACUSTRINE ☐ RIVERINE ☐ BOTTOMLAND ☐ TERRACE ☐ VALLEY SLOPE ☐ TABLELAND ☐ ROLL UPLAND ☐ CLIFF ☐ TALUS ☐ CREVICE / CAVE ☐ ALVAR ☐ ROCKLAND ☐ BEACH / BAR ☐ SAND DUNE ☐ BLUFF	☐ NATURAL ☐ CULTURAL	☐ PLANKTON ☐ SUBMERGED ☐ FLOATING-LVD. ☐ GRAMINOID ☐ FORB ☐ LICHEN ☐ BRYOPHYTE ☐ DECIDUOUS ☐ CONIFEROUS ☐ MIXED	☐ LAKE ☐ POND ☐ RIVER ☐ STREAM ☐ MARSH ☐ SWAMP ☐ FEN ☐ BOG ☐ BARREN ☐ MEADOW ☐ PRAIRIE ☐ THICKET ☐ SAVANNAH ☐ WOODLAND ☐ FOREST ☐ PLANTATION
SITE ☐ OPEN WATER ☐ SHALLOW WATER ☐ SURFICIAL DEP. ☐ BEDROCK			**COVER** ☐ OPEN ☐ SHRUB ☐ TREED		

STAND DESCRIPTION: SWD4-1

	LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1	CANOPY	8	70%	Salxrube >> Ulmames > Tilames
2	SUB-CANOPY	3-6	20	Salxrube > Thicket Creeper
3	UNDERSTOREY	1.5-4	30%	Rhacath > Hawthorn sp > ~~Rubidae~~ Proviv
4	GRD. LAYER		100	Phaarun = Rubidae >> ~~Arcmin~~

HT CODES: 1 = >25 m 2 = 10<HT<25 m 3 = 2<HT<10 m 4 = 1<HT<2 m 5 = 0.5<HT<1 m 6 = 0.2<HT<0.5 m 7 = HT<0.2 m

CVR CODES: 0 = NONE 1 = 0% < CVR < 10% 2 = 10 < CVR < 25% 3 = 25 < CVR < 60% 4 = CVR > 60%

STAND COMPOSITION:							BA:	
SIZE CLASS ANALYSIS:		< 10		10 - 24		25 - 50		> 50
STANDING SNAGS:		< 10		10 - 24		25 - 50		> 50
DEADFALL / LOGS:		< 10		10 - 24		25 - 50		> 50

ABUNDANCE CODES: N = NONE R = RARE O = OCCASIONAL A = ABUNDANT

NOCA - VO
SOSP - VO

COMM. AGE:		PIONEER		YOUNG		MID-AGE		MATURE		OLD GROWTH

SOIL ANALYSIS:

TEXTURE:	DEPTH TO MOTTLES / GLEY	g =	G=
MOISTURE:	DEPTH OF ORGANICS:		(cm)
HOMOGENEOUS / VARIABLE	DEPTH TO BEDROCK:		(cm)

COMMUNITY CLASSIFICATION:

COMMUNITY CLASS:	CODE:
COMMUNITY SERIES:	CODE:
ECOSITE:	CODE:
VEGETATION TYPE:	CODE:
INCLUSION	CODE:
COMPLEX	CODE:

Notes:

ELC — PLANT SPECIES LIST

	SITE:
	POLYGON:
	DATE:
	SURVEYOR(S):

LAYERS: 1 = CANOPY > 10m 2 = SUB-CANOPY 3 = UNDERSTOREY 4 = GROUND (GRD.) LAYER

ABUNDANCE CODES: R = RARE O = OCCASIONAL A = ABUNDANT D = DOMINANT

SPECIES CODE	LAYER 1	2	3	4	COLL.
Salxrube	D	✓			
Tilames					
Ulmames					
~~Rubidae~~					
Hawthorn sp					
Proviv					
Rhacath					
Rosmulti					
Thicket creeper					

SPECIES CODE	LAYER 1	2	3	4	COLL.
Arcmine					
Rubidae				D	
Phaarun				D	

Page ..... of .....

Woodland Assessment complete 1 assessment for each woodland

Woodlot # (indicate on map) SWD41 ; **Approximate age of stand** 30

Are large (i.e. >40cmDBH and >25m tall) **trees present?** ☐ Y ☑ N ☐ Unknown – no access
If yes, approximate # present or % of stand _____
Location in stand (i.e. throughout, west side only, FOD2-6 only, etc.) _____

Are snags present? ☐ Y ☑ N ☐ Unknown – no access
If yes, provide characterization of number present, height and DBH of snags and indications of loose bark.

Potential Bat Maternity Roost Contains large, mature (i.e. >80 year old) snags or trees (living or dead) containing medium to large cavities. ☐ Y ☑ N ☐ Unknown – no access (if yes, describe in Table 2).

Cavities present? ☑ No ☐ Rare ☐ Occasional ☐ Abundant ☐ Unknown – no access

Table 2: Potential bat maternity roost features identified on site

Range of tree height	Range of tree DBH	Range of cavity heights	Cavity sizes small: small birds, medium= large woodpeckers, large= mammals Hollow?

Presence of large stick nests (i.e. raptor nests)? ☐ Y ☑ N ☐ Unknown – no access
If yes, UTM and describe tree type, height and position in tree, size of nest, species present: _____

Evidence of disturbance (i.e logging, roads, ATV use, trails, garbage)? ☐ Y ☑ N ☐ Unknown – no access
If yes, describe _____

Seeps / springs present? ☐ Y ☑ N ☐ Unknown – no access (if yes, describe in Table 3).

Table 3: Seep/spring identification

Seep/Spring #	UTM	Description	Surrounding Habitat

Vernal Pools Present? ☐ Y ☑ N ☐ Unknown – no access (if yes, describe in Table 4).

Table 4: Vernal pool identification

Vernal pool #	UTM	Depth of water	Size of pool (diameter)	Presence of emergent/submergent veg?	Presence of shrubs, logs at pond edge

Stantec Consulting Ltd.
70-1 Southgate Drive
Guelph, Ontario, Canada
N1G 4P5
Tel: (519) 836-6050
Fax: (519) 836-2493

Windfarm Wildlife Habitat Assessment

Project Number _____ Project Name: _____

Date / Time: _____ Field Personnel: _____

Weather Conditions:	Temp:	Wind:	Cloud:	PPT:	PPT in last 24 hrs:

Location (i.e. turbine #s/description) SWD4-1

Visual assessment (roadside – no access) ☐
Physical assessment (walk through feature) ☑

Extent of physical investigation of feature: ☑ Entire ☐ Partial (indicate on map)

Reptile Hibernacula Features (i.e. features that would provide a route underground, including buried concrete or rock (e.g. foundations, bridge abutments or culverts with cracks/entry points, exposed rock crevices or inactive animal burrows))
Contains potential reptile hibernacula features? ☐ Y ☑ N ☐ Unknown – no access (if yes, describe in Table 1).

Bat Hibernacula Features (i.e. karst topography, abandoned mines or caves)
Contains potential bat hibernacula features? ☐ Y ☑ N ☐ Unknown – no access (if yes, describe in Table 1).

Table 1: Potential bat/reptile hibernacula features identified on site

UTM	Feature type	Photo #	Description	Spp. observed using feature

Species Observations List species and type of observation (indicate on map):
(CA = carcass; DP = distinctive parts; FE = feeding evidence; FY = eggs, nest; HO = house/den; OB = observed; SC = scat; SI = other sign; TK = track; VO = vocalization)

Birds	Mammals	Herps	Butterflies / Dragonflies	Other
i.e.) A: AMRO/VO				

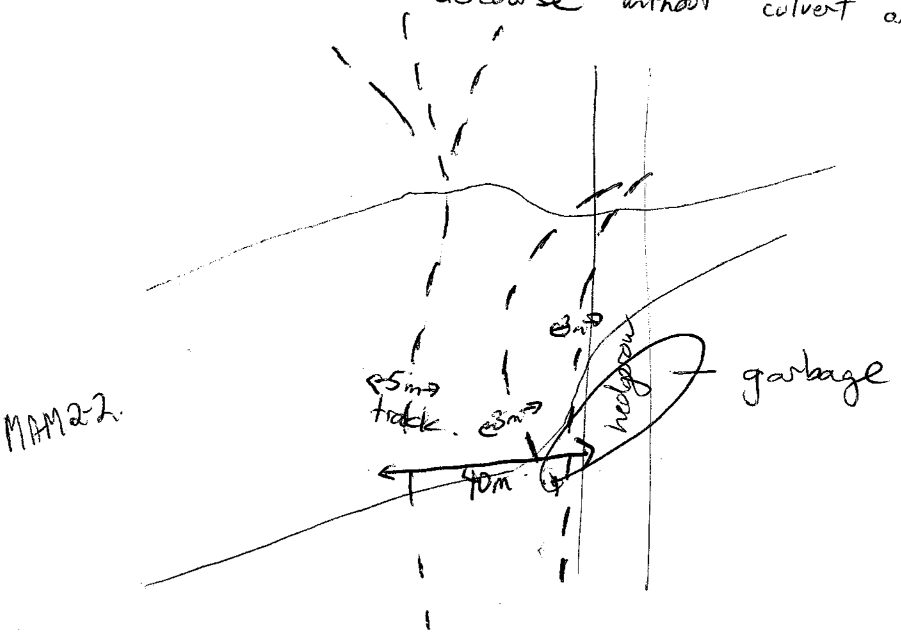
HR(D)1 - sparsely treed (30%) a shrubby hedgerow. Hawthorn sp. (3m) dom > Prapenn dom @ 3-4m → Corrace. Aster sp., Geum sp. Fravirg. Troutlily, Rubidae, teasel. Also C. burdock, solidago sp

HR(D) 2 - dense (70%) but narrow (2m) thicket strongly dom. hedgerow. Corrace (dom) 0.5-2m ↑
Also Ast. sp., Fravirg, Cirvulg, Yellow rocket, Robocci, Daucaro, Geum sp
Thicket creeper, Teasel, Rubidae, Hawthorn sp, Rhacath
Chokecherry (2nd), Corstol.

HR(D) 3 - tree dom. hedgerow. Canopy 8-12m, 80% cover
Bur oak (Dom), Shagbark hickory (2), Tilaner (distant 3rd)
Gray dogwood (3), Hawthorn (Dom), Rhacath (2nd), ~~M~~ Rosmulti
Troutlily, Potrect, Fravirg, Geum sp, Teasel, Alloff.
~~Canopy~~ Understory
Shrubs 1-3m, 70%

HR(D)4
shrub dom. hedgerow
Canopy 4-8; 20% Shagbark hickory > Ulmamer > Acerubr
Shrubs 3-5m↑; 60% Hawthorn sp > Rhacath

Crossing Area - area on aerial where prior crossings are apparent. Wheeled vehicles have crossed int. watercourse without culvert or roadbed over a width of 40m.



~~Perhaps~~ 1 track appears to just meet 5m criteria (it was measured) while generally crossing area exceeds it as it is 40m wide. With placement of culvert & removal of garbage, can argue improvements would be a net benefit to watercourse & receiving downstream wetland.
Also while veg. comm. along watercourses are wetland communities, can argue that complexing them with PSW ~~to~~ isn't required as their presence does not contribute to value of PSW.

ELC — COMMUNITY DESCRIPTION & CLASSIFICATION

SITE:		POLYGON: 4	
SURVEYOR(S):	DATE:		UTME:
START:	END	UTMZ:	UTMN:

POLYGON DESCRIPTION

SYSTEM	SUBSTRATE	TOPOGRAPHIC FEATURE	HISTORY	PLANT FORM	COMMUNITY
☐ TERRESTRIAL ☐ WETLAND ☐ AQUATIC	☐ ORGANIC ☐ MINERAL SOIL ☐ PARENT MIN. ☐ ACIDIC BEDRK. ☐ BASIC BEDRK. ☐ CARB. BEDRK.	☐ LACUSTRINE ☐ RIVERINE ☐ BOTTOMLAND ☐ TERRACE ☐ VALLEY SLOPE ☐ TABLELAND ☐ ROLL UPLAND ☐ CLIFF ☐ TALUS ☐ CREVICE / CAVE ☐ ALVAR ☐ ROCKLAND ☐ BEACH / BAR ☐ SAND DUNE ☐ BLUFF	☐ NATURAL ☐ CULTURAL	☐ PLANKTON ☐ SUBMERGED ☐ FLOATING-LVD. ☐ GRAMINOID ☐ FORB ☐ LICHEN ☐ BRYOPHYTE ☐ DECIDUOUS ☐ CONIFEROUS ☐ MIXED	☐ LAKE ☐ POND ☐ RIVER ☐ STREAM ☐ MARSH ☐ SWAMP ☐ FEN ☐ BOG ☐ BARREN ☐ MEADOW ☐ PRAIRIE ☐ THICKET ☐ SAVANNAH ☐ WOODLAND ☐ FOREST ☐ PLANTATION
SITE ☐ OPEN WATER ☐ SHALLOW WATER ☐ SURFICIAL DEP. ☐ BEDROCK			**COVER** ☐ OPEN ☐ SHRUB ☐ TREED		

STAND DESCRIPTION: SWT2-9/CUT/~~MAM2-2~~ (4)

	LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1	CANOPY	10	10%	Ulmamer (dead)
2	SUB-CANOPY			
3	UNDERSTOREY	1.5-4	90%	Corrace = Rhacath > Hawthorn sp > Corstol
4	GRD. LAYER		150%	Phaarun > Solidago sp > Teasel > Geumsp

HT CODES: 1 = >25 m 2 = 10<HT<25 m 3 = 2<HT<10 m 4 = 1<HT<2 m 5 = 0.5<HT<1 m 6 = 0.2<HT<0.5 m 7 = HT<0.2 m

CVR CODES 0 = NONE 1 = 0% < CVR < 10% 2 = 10 < CVR < 25% 3 = 25 < CVR < 60% 4 = CVR > 60%

STAND COMPOSITION:							BA:	
SIZE CLASS ANALYSIS:		< 10		10 - 24		25 - 50		> 50
STANDING SNAGS:		< 10		10 - 24		25 - 50		> 50
DEADFALL / LOGS:		< 10		10 - 24		25 - 50		> 50

ABUNDANCE CODES: N = NONE R = RARE O = OCCASIONAL A = ABUNDANT

COMM. AGE:		PIONEER		YOUNG		MID-AGE		MATURE		OLD GROWTH

SOIL ANALYSIS:

TEXTURE:	DEPTH TO MOTTLES / GLEY	g =	G=
MOISTURE:	DEPTH OF ORGANICS:		(cm)
HOMOGENEOUS / VARIABLE	DEPTH TO BEDROCK:		(cm)

COMMUNITYCLASSIFICATION:

COMMUNITY CLASS:		CODE:
COMMUNITY SERIES:		CODE:
ECOSITE:		CODE:
VEGETATION TYPE:		CODE:
INCLUSION		CODE:
COMPLEX		CODE:

Notes: A complex with MAM2-2 in area where undefined channel of watercourse passes, SWT2-9 in wet soils, CUT in slightly drier areas. Corrace dom. shrubs in wet ~~dry~~ areas; Rhacath & Hawthorn sp dom in slightly drier areas.

ELC — PLANT SPECIES LIST

SITE:	
POLYGON:	
DATE:	
SURVEYOR(S):	

LAYERS: 1 = CANOPY > 10m 2 = SUB-CANOPY 3 = UNDERSTOREY 4 = GROUND (GRD.) LAYER

ABUNDANCE CODES: R = RARE O = OCCASIONAL A = ABUNDANT D = DOMINANT

SPECIES CODE	LAYER 1	2	3	4	COLL.
Ulmamer					
Pear					
Corrace					
Rhacath					
Hawthorn sp					
Rosa-multi					
Corstol					

SPECIES CODE	LAYER 1	2	3	4	COLL.
Solidago sp					
Teasel					
Geum sp					
Phaarun.					
Epilobium sp					
Eupmacu					
Allofi					
Galpalustre					
Spiraea sp					

*orange young twigs & grey on older

Woodland Assessment complete 1 assessment for each woodland

Woodlot # (indicate on map) SWT2-9/CWT/~~MAP 2-3~~ ; **Approximate age of stand** 40

Are large (i.e. >40cmDBH and >25m tall) **trees present?** ☐ Y ☑ N ☐ Unknown – no access

If yes, approximate # present or % of stand _____

Location in stand (i.e. throughout, west side only, FOD2-6 only, etc.) _____

Are snags present? ☑ Y ☐ N ☐ Unknown – no access

If yes, provide characterization of number present, height and DBH of snags and indications of loose bark.

5-10 m in height, 20-30cm DBH, snags are dead American Elm

Potential Bat Maternity Roost Contains large, mature (i.e. >80 year old) snags or trees (living or dead) containing medium to large cavities. ☐ Y ☑ N ☐ Unknown – no access (if yes, describe in Table 2).

Cavities present? ☐ No ☐ Rare ☐ Occasional ☑ Abundant ☐ Unknown – no access

Table 2: Potential bat maternity roost features identified on site

Range of tree height	Range of tree DBH	Range of cavity heights	Cavity sizes small: small birds, medium= large woodpeckers, large= mammals Hollow?
5-10	20-30 cm	3-8	Small & medium

Presence of large stick nests (i.e. raptor nests)? ☐ Y ☑ N ☐ Unknown – no access

If yes, UTM and describe tree type, height and position in tree, size of nest, species present: _____

Evidence of disturbance (i.e logging, roads, ATV use, trails, garbage)? ☐ Y ☑ N ☐ Unknown – no access

If yes, describe _____

Seeps / springs present? ☐ Y ☑ N ☐ Unknown – no access (if yes, describe in Table 3).

Table 3: Seep/spring identification

Seep/Spring #	UTM	Description	Surrounding Habitat

Vernal Pools Present? ☐ Y ☑ N ☐ Unknown – no access (if yes, describe in Table 4).

Table 4: Vernal pool identification

Vernal pool #	UTM	Depth of water	Size of pool (diameter)	Presence of emergent/submergent veg?	Presence of shrubs, logs at pond edge

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70-1 Southgate Drive
Guelph, Ontario, Canada
N1G 4P5
Tel: (519) 836-6050
Fax: (519) 836-2493

Windfarm Wildlife Habitat Assessment

Project Number _____ Project Name: _____

Date / Time: _____ Field Personnel: _____

Weather Conditions:	Temp:	Wind:	Cloud:	PPT:	PPT in last 24 hrs:

Location (i.e. turbine #s/description) Polygon 4 SWT 2-9 / COT / ~~MM2-2~~

Visual assessment (roadside – no access) ☐
Physical assessment (walk through feature) ☑

Extent of physical investigation of feature: ☑ Entire ☐ Partial (indicate on map)

Reptile Hibernacula Features (i.e. features that would provide a route underground, including buried concrete or rock (e.g. foundations, bridge abutments or culverts with cracks/entry points, exposed rock crevices or inactive animal burrows))
Contains potential reptile hibernacula features? ☐ Y ☑ N ☐ Unknown – no access (if yes, describe in Table 1).

Bat Hibernacula Features (i.e. karst topography, abandoned mines or caves)
Contains potential bat hibernacula features? ☐ Y ☑ N ☐ Unknown – no access (if yes, describe in Table 1).

Table 1: Potential bat/reptile hibernacula features identified on site

UTM	Feature type	Photo #	Description	Spp. observed using feature

Species Observations List species and type of observation (indicate on map):
(CA = carcass; DP = distinctive parts; FE = feeding evidence; FY = eggs, nest; HO = house/den; OB = observed; SC = scat; SI = other sign; TK = track; VO = vocalization)

Birds	Mammals	Herps	Butterflies / Dragonflies	Other
i.e.) A: AMRO/VO SOSP - OB TRSW - OB BHCO - OB AMRO - OB		Chorus Frog - 1		

Nesting habitat for birds - cavities in old elm (TRSWs) at 1; old cup nests of songbirds seen in shrubs

ELC COMMUNITY DESCRIPTION & CLASSIFICATION

SITE:

POLYGON: 2

SURVEYOR(S):

DATE:

UTME:

START:

END

UTMZ:

UTMN:

POLYGON DESCRIPTION

SYSTEM	SUBSTRATE	TOPOGRAPHIC FEATURE	HISTORY	PLANT FORM	COMMUNITY
☐ TERRESTRIAL ☑ WETLAND ☐ AQUATIC	☐ ORGANIC ☐ MINERAL SOIL ☐ PARENT MIN. ☐ ACIDIC BEDRK. ☐ BASIC BEDRK. ☐ CARB. BEDRK.	☐ LACUSTRINE ☐ RIVERINE ☐ BOTTOMLAND ☐ TERRACE ☐ VALLEY SLOPE ☐ TABLELAND ☑ ROLL UPLAND ☐ CLIFF ☐ TALUS ☐ CREVICE / CAVE ☐ ALVAR ☐ ROCKLAND ☐ BEACH / BAR ☐ SAND DUNE ☐ BLUFF	☑ NATURAL ☐ CULTURAL	☐ PLANKTON ☐ SUBMERGED ☐ FLOATING-LVD. ☑ GRAMINOID ☐ FORB ☐ LICHEN ☐ BRYOPHYTE ☐ DECIDUOUS ☐ CONIFEROUS ☐ MIXED	☐ LAKE ☐ POND ☐ RIVER ☐ STREAM ☐ MARSH ☐ SWAMP ☐ FEN ☐ BOG ☐ BARREN ☑ MEADOW ☐ PRAIRIE ☐ THICKET ☐ SAVANNAH ☐ WOODLAND ☐ FOREST ☐ PLANTATION

SITE
☐ OPEN WATER ☐ SHALLOW WATER ☐ SURFICIAL DEP. ☐ BEDROCK

COVER
☑ OPEN ☐ SHRUB ☐ TREED

STAND DESCRIPTION:

MAM 2-2

	LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1	CANOPY			None
2	SUB-CANOPY			None
3	UNDERSTOREY		<27	Carex > Cirstol. Carex > Cirstol
4	GRD. LAYER		100%	Phaarun > Yellow rocket = P. loosestrife > Geum sp.

HT CODES: 1 = >25 m 2 = 10<HT<25 m 3 = 2<HT<10 m 4 = 1<HT<2 m 5 = 0.5<HT<1 m 6 = 0.2<HT<0.5 m 7 = HT<0.2 m

CVR CODES: 0 = NONE 1 = 0% < CVR < 10% 2 = 10 < CVR < 25% 3 = 25 < CVR < 50% 4 = CVR > 60%

STAND COMPOSITION: BA:

SIZE CLASS ANALYSIS:	< 10	10 - 24	25 - 50	> 50
STANDING SNAGS:	< 10	10 - 24	25 - 50	> 50
DEADFALL / LOGS:	< 10	10 - 24	25 - 50	> 50

ABUNDANCE CODES: N = NONE R = RARE O = OCCASIONAL A = ABUNDANT

COMM. AGE :	PIONEER	YOUNG	MID-AGE	MATURE	OLD GROWTH

SOIL ANALYSIS:

TEXTURE:	DEPTH TO MOTTLES / GLEY	g =	G=
MOISTURE:	DEPTH OF ORGANICS:		(cm)
HOMOGENEOUS / VARIABLE	DEPTH TO BEDROCK:		(cm)

COMMUNITY CLASSIFICATION:

COMMUNITY CLASS:	CODE:
COMMUNITY SERIES:	CODE:
ECOSITE:	CODE:
VEGETATION TYPE:	CODE:
INCLUSION	CODE:
COMPLEX	CODE:

Notes: MAM 2-2 dependent on int. channel 5-10 cm deep @ time of obs. Community is ± 8m wide - located btwn fields. Farm lane (X) 5.4 m wide crosses community - follows hedgerow - should allow access. Includes inclusion of MAS (typha) directly north of church (<<0.5 ha) (15 m x 10 m). Deer use.

ELC PLANT SPECIES LIST

SITE:

POLYGON:

DATE:

SURVEYOR(S):

LAYERS: 1 = CANOPY > 10m 2 = SUB-CANOPY 3 = UNDERSTOREY 4 = GROUND (GRD.) LAYER

ABUNDANCE CODES: R = RARE O = OCCASIONAL A = ABUNDANT D = DOMINANT

SPECIES CODE	LAYER 1	2	3	4	COLL.
Phaarun				D	
Yellow rocket				✓	
Epilobium sp				✓	
P. loosestife				✓	
Geum sp.				i	
Runcy's				✓	
Teasel					
Pepper grass					
Teasel					
Yarrow					
C. Dandelion					
Aster sp					
Juncus effusus					
Purple Vervain					

SPECIES CODE	LAYER 1	2	3	4	COLL.

Page ..... of .....

At west end of site crossing MAM 2-2 old tracks of farm vehicles. No roadbed. At west end of site, as MAM 2-2 is oriented north-south it is

ELC — COMMUNITY DESCRIPTION & CLASSIFICATION

SITE:		POLYGON: 3	
SURVEYOR(S):	DATE:		UTME:
START:	END	UTMZ:	UTMN:

POLYGON DESCRIPTION

SYSTEM	SUBSTRATE	TOPOGRAPHIC FEATURE	HISTORY	PLANT FORM	COMMUNITY
☐ TERRESTRIAL ☐ WETLAND ☐ AQUATIC	☐ ORGANIC ☐ MINERAL SOIL ☐ PARENT MIN. ☐ ACIDIC BEDRK. ☐ BASIC BEDRK. ☐ CARB. BEDRK.	☐ LACUSTRINE ☐ RIVERINE ☐ BOTTOMLAND ☐ TERRACE ☐ VALLEY SLOPE ☐ TABLELAND ☐ ROLL. UPLAND ☐ CLIFF ☐ TALUS ☐ CREVICE / CAVE ☐ ALVAR ☐ ROCKLAND ☐ BEACH / BAR ☐ SAND DUNE ☐ BLUFF	☐ NATURAL ☐ CULTURAL	☐ PLANKTON ☐ SUBMERGED ☐ FLOATING-LVD. ☐ GRAMINOID ☐ FORB ☐ LICHEN ☐ BRYOPHYTE ☐ DECIDUOUS ☐ CONIFEROUS ☐ MIXED	☐ LAKE ☐ POND ☐ RIVER ☐ STREAM ☐ MARSH ☐ SWAMP ☐ FEN ☐ BOG ☐ BARREN ☐ MEADOW ☐ PRAIRIE ☐ THICKET ☐ SAVANNAH ☐ WOODLAND ☐ FOREST ☐ PLANTATION
SITE ☐ OPEN WATER ☐ SHALLOW WATER ☐ SURFICIAL DEP. ☐ BEDROCK			**COVER** ☐ OPEN ☐ SHRUB ☐ TREED		

STAND DESCRIPTION:

MAM 2-6 (Sedge > 0.5 cm)

	LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1	CANOPY			
2	SUB-CANOPY			
3	UNDERSTOREY			
4	GRD. LAYER			<0.5m tall, Sedge sp >> P. loose strife > Juneffu > Yellow rocket

HT CODES: 1 = >25 m 2 = 10<HT<25 m 3 = 2<HT<10 m 4 = 1<HT<2 m 5 = 0.5<HT<1 m 6 = 0.2<HT<0.5 m 7 = HT<0.2 m

CVR CODES: 0 = NONE 1 = 0% < CVR < 10% 2 = 10 < CVR < 25% 3 = 25 < CVR < 60% 4 = CVR > 60%

STAND COMPOSITION:							BA:	
SIZE CLASS ANALYSIS:		< 10		10 - 24		25 - 50		> 50
STANDING SNAGS:		< 10		10 - 24		25 - 50		> 50
DEADFALL / LOGS:		< 10		10 - 24		25 - 50		> 50

ABUNDANCE CODES: N = NONE R = RARE O = OCCASIONAL A = ABUNDANT

COMM. AGE:		PIONEER		YOUNG		MID-AGE		MATURE		OLD GROWTH

SOIL ANALYSIS:

TEXTURE:	DEPTH TO MOTTLES / GLEY	g =	G=
MOISTURE:	DEPTH OF ORGANICS:		(cm)
HOMOGENEOUS / VARIABLE	DEPTH TO BEDROCK:		(cm)

COMMUNITY CLASSIFICATION:

COMMUNITY CLASS:		CODE:
COMMUNITY SERIES:		CODE:
ECOSITE:		CODE:
VEGETATION TYPE:		CODE:
☐ INCLUSION		CODE:
☐ COMPLEX		CODE:

Notes:

ELC — PLANT SPECIES LIST

SITE:	
POLYGON:	
DATE:	
SURVEYOR(S):	

LAYERS: 1 = CANOPY > 10m 2 = SUB-CANOPY 3 = UNDERSTOREY 4 = GROUND (GRD.) LAYER

ABUNDANCE CODES: R = RARE O = OCCASIONAL A = ABUNDANT D = DOMINANT

SPECIES CODE	LAYER 1	2	3	4	COLL.
Sedge sp. (<0.5 cm) dumped				D	
Epilobium sp				✓	
Juneffu.				✓	
Purple veronica				✓	
Aster sp.				✓	
P. loosestrife				✓	
Yellow rocket				✓	

SPECIES CODE	LAYER 1	2	3	4	COLL.

Wildlife: deer tracks, voles/mice

ELC
COMMUNITY DESCRIPTION & CLASSIFICATION

SITE: Townline Rd.		POLYGON:
SURVEYOR(S):	DATE:	UTME:
START:	END:	UTMZ:	UTMN:

POLYGON DESCRIPTION

SYSTEM	SUBSTRATE	TOPOGRAPHIC FEATURE	HISTORY	PLANT FORM	COMMUNITY
☐ TERRESTRIAL ☐ WETLAND ☐ AQUATIC	☐ ORGANIC ☐ MINERAL SOIL ☐ PARENT MIN. ☐ ACIDIC BEDRK. ☐ BASIC BEDRK. ☐ CARB. BEDRK.	☐ LACUSTRINE ☐ RIVERINE ☐ BOTTOMLAND ☐ TERRACE ☐ VALLEY SLOPE ☐ TABLELAND ☐ ROLL. UPLAND ☐ CLIFF ☐ TALUS ☐ CREVICE / CAVE ☐ ALVAR ☐ ROCKLAND ☐ BEACH / BAR ☐ SAND DUNE ☐ BLUFF	☐ NATURAL ☐ CULTURAL	☐ PLANKTON ☐ SUBMERGED ☐ FLOATING-LVD. ☐ GRAMINOID ☐ FORB ☐ LICHEN ☐ BRYOPHYTE ☐ DECIDUOUS ☐ CONIFEROUS ☐ MIXED	☐ LAKE ☐ POND ☐ RIVER ☐ STREAM ☐ MARSH ☐ SWAMP ☐ FEN ☐ BOG ☐ BARREN ☐ MEADOW ☐ PRAIRIE ☐ THICKET ☐ SAVANNAH ☐ WOODLAND ☐ FOREST ☐ PLANTATION
SITE			**COVER**		
☐ OPEN WATER ☐ SHALLOW WATER ☐ SURFICIAL DEP. ☐ BEDROCK			☐ OPEN ☐ SHRUB ☐ TREED		

STAND DESCRIPTION:

FOD9-4

	LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1	CANOPY	15	80%	Shagbark hickory >> Green Ash.
2	SUB-CANOPY			
3	UNDERSTOREY			
4	GRD. LAYER			

HT CODES: 1 = >25 m 2 = 10<HT≤25 m 3 = 2<HT≤10 m 4 = 1<HT≤2 m 5 = 0.5<HT≤1 m 6 = 0.2<HT≤0.5 m 7 = HT<0.2 m
CVR CODES 0= NONE 1= 0% < CVR ≤ 10% 2= 10 < CVR ≤ 25% 3= 25 < CVR ≤ 60% 4= CVR > 60%

STAND COMPOSITION:							BA:	
SIZE CLASS ANALYSIS:		< 10		10 - 24		25 - 50		> 50
STANDING SNAGS:		< 10		10 - 24		25 - 50		> 50
DEADFALL / LOGS:		< 10		10 - 24		25 - 50		> 50

ABUNDANCE CODES: N = NONE R = RARE O = OCCASIONAL A = ABUNDANT

COMM. AGE :		PIONEER		YOUNG		MID-AGE		MATURE		OLD GROWTH

SOIL ANALYSIS:

TEXTURE:	DEPTH TO MOTTLES / GLEY	g =	G=
MOISTURE:	DEPTH OF ORGANICS:		(cm)
HOMOGENEOUS / VARIABLE	DEPTH TO BEDROCK:		(cm)

COMMUNITY CLASSIFICATION:

COMMUNITY CLASS:	CODE:
COMMUNITY SERIES:	CODE:
ECOSITE:	CODE:
VEGETATION TYPE:	CODE:
INCLUSION	CODE:
COMPLEX	CODE:

Notes:

ELC
PLANT SPECIES LIST

SITE:
POLYGON:
DATE:
SURVEYOR(S):

LAYERS: 1 = CANOPY > 10m 2 = SUB-CANOPY 3 = UNDERSTOREY 4 = GROUND (GRD.) LAYER
ABUNDANCE CODES: R = RARE O = OCCASIONAL A = ABUNDANT D = DOMINANT

SPECIES CODE	LAYER 1	2	3	4	COLL.	SPECIES CODE	LAYER 1	2	3	4	COLL.

Location: Townline Rd east side, 200 m south of Bain Rd

Page ...... of ......

Woodland Assessment complete 1 assessment for each woodland

Woodlot # (indicate on map) FOD 9-4; **Approximate age of stand** 50

Are large (i.e. >40cmDBH and >25m tall) **trees present?** ☐ Y ☑ N ☐ Unknown – no access
If yes, approximate # present or % of stand _____
Location in stand (i.e. throughout, west side only, FOD2-6 only, etc.) _____

Are snags present? ☐ Y ☐ N ☑ Unknown – no access
If yes, provide characterization of number present, height and DBH of snags and indications of loose bark.

Potential Bat Maternity Roost Contains large, mature (i.e. >80 year old) snags or trees (living or dead) containing medium to large cavities. ☐ Y ☑ N ☐ Unknown – no access (if yes, describe in Table 2).

Cavities present? ☐ No ☐ Rare ☐ Occasional ☐ Abundant ☐ Unknown – no access

Table 2: Potential bat maternity roost features identified on site

Range of tree height	Range of tree DBH	Range of cavity heights	Cavity sizes small: small birds, medium= large woodpeckers, large= mammals Hollow?

Presence of large stick nests (i.e. raptor nests)? ☐ Y ☑ N ☐ Unknown – no access
If yes, UTM and describe tree type, height and position in tree, size of nest, species present: _____

Evidence of disturbance (i.e logging, roads, ATV use, trails, garbage)? ☐ Y ☐ N ☑ Unknown – no access
If yes, describe _____

Seeps / springs present? ☐ Y ☐ N ☑ Unknown – no access (if yes, describe in Table 3).

Table 3: Seep/spring identification

Seep/Spring #	UTM	Description	Surrounding Habitat

Vernal Pools Present? ☑ Y ☐ N ☐ Unknown – no access (if yes, describe in Table 4).
Vernal pools could not be seen but calling Chorus frogs indicate these must be present.

Table 4: Vernal pool identification

Vernal pool #	UTM	Depth of water	Size of pool (diameter)	Presence of emergent/submergent veg?	Presence of shrubs, logs at pond edge

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70-1 Southgate Drive
Guelph, Ontario, Canada
N1G 4P5
Tel: (519) 836-6050
Fax: (519) 836-2493

Windfarm Wildlife Habitat Assessment

Project Number _____ Project Name: _____

Date / Time: _____ Field Personnel: _____

Weather Conditions:	Temp:	Wind:	Cloud:	PPT:	PPT in last 24 hrs:
	15	1	10%	None	Rain

Location (i.e. turbine #s/description) Townline Rd, east side, 200m south of Barn Rd FOD 9-4

Visual assessment (roadside – no access) ☐
Physical assessment (walk through feature) ☐

Extent of physical investigation of feature: ☐ Entire ☑ Partial (indicate on map) limited to roadside

Reptile Hibernacula Features (i.e. features that would provide a route underground, including buried concrete or rock (e.g. foundations, bridge abutments or culverts with cracks/entry points, exposed rock crevices or inactive animal burrows))
Contains potential reptile hibernacula features? ☐ Y ☐ N ☑ Unknown – no access (if yes, describe in Table 1).

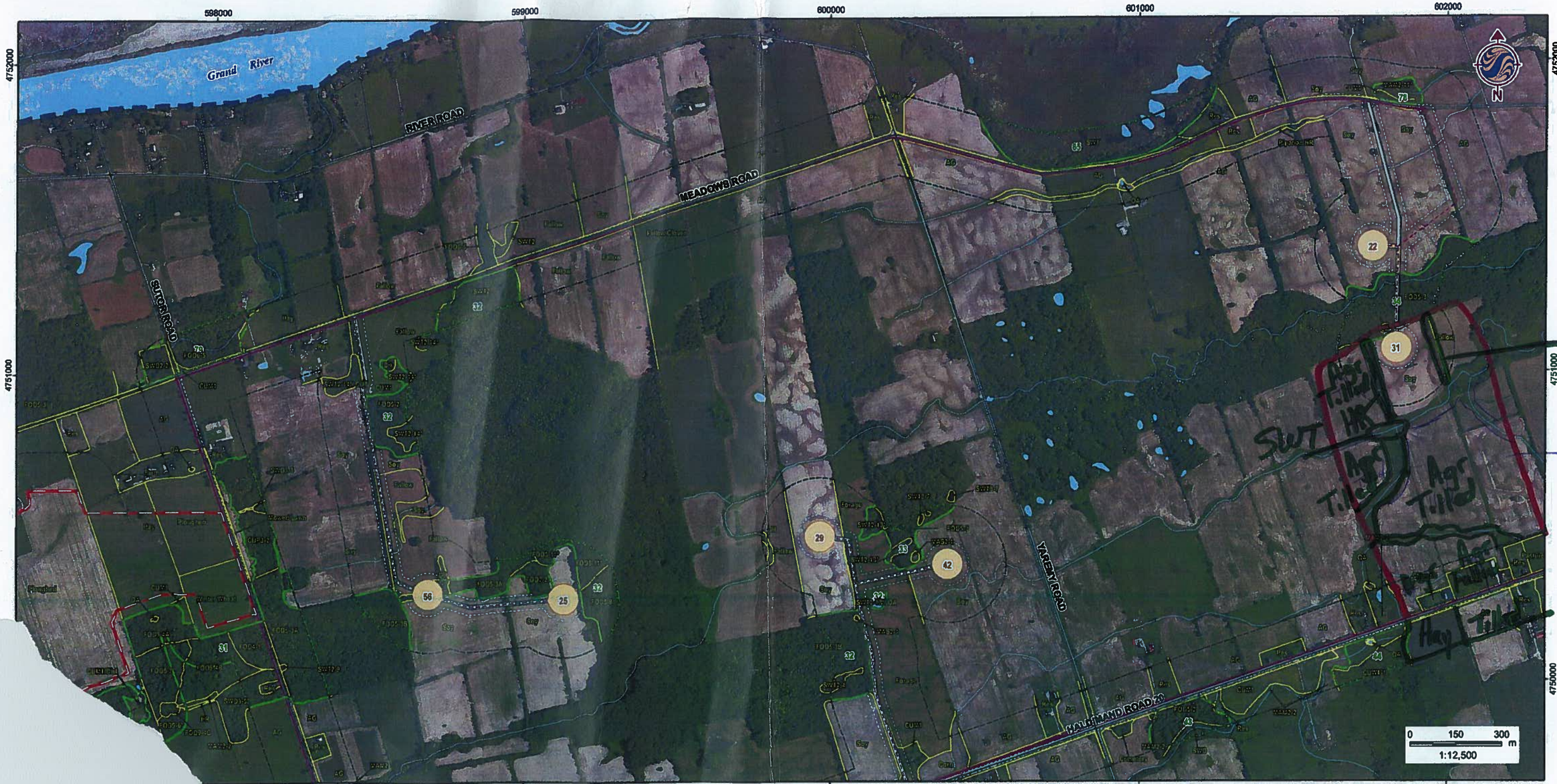
Bat Hibernacula Features (i.e. karst topography, abandoned mines or caves)
Contains potential bat hibernacula features? ☐ Y ☐ N ☑ Unknown – no access (if yes, describe in Table 1).

Table 1: Potential bat/reptile hibernacula features identified on site

UTM	Feature type	Photo #	Description	Spp. observed using feature

Species Observations List species and type of observation (indicate on map):
(CA = carcass; DP = distinctive parts; FE = feeding evidence; FY = eggs, nest; HO = house/den; OB = observed; SC = scat; SI = other sign; TK = track; VO = vocalization)

Birds	Mammals	Herps	Butterflies / Dragonflies	Other
i.e.) A: AMRO/VO		Chorus Frogs - level 2		



Forest Communities (FO)
FOM1-2-2 – Dry-fresh White Pine – Sugar Maple Mixed Forest
FOD – Deciduous Forest
FOD1-1 – Dry-fresh Red Oak Deciduous Forest
FOD2-1 – Dry-fresh Oak – Red Maple Deciduous Forest
FOD2-2 – Dry-fresh Oak – Hickory Deciduous Forest
FOD2-4 – Dry-fresh Oak – Hardwood Deciduous Forest
FOD 3-1 – Dry-fresh Poplar Deciduous Forest
FOD4-1 – Dry-fresh Beech Deciduous Forest
FOD4-2 – Dry-fresh White Ash Deciduous Forest
FOD5 – Dry-fresh Sugar Maple Deciduous Forest Ecosite
FOD5-1 – Dry-fresh Sugar Maple Deciduous Forest
FOD5-2 – Dry-fresh Sugar Maple – Beech Deciduous Forest
FOD5-3 – Dry-fresh Sugar Maple – Oak Deciduous Forest
FOD5-5 – Dry-fresh Sugar Maple – White Ash Deciduous Forest
FOD5-9 - Dry-fresh Sugar Maple-Red Maple Deciduous Forest
FOD5-11* - Dry-fresh Sugar Maple – Oak – Beech Deciduous Forest
FOD5-12* - Dry-fresh Sugar Maple – Hickory – Beech Deciduous Forest
FOD6-1 – Fresh-moist Sugar Maple – Lowland Ash Deciduous Forest
FOD6-5 – Fresh-moist Sugar Maple – Hardwood Deciduous Forest
FOD6-6* - Fresh-moist Sugar Maple – Hickory Deciduous Forest
FOD7-1 – Fresh – moist White Elm Lowland Deciduous Forest
FOD7-2 – Fresh-moist Ash Lowland Deciduous Forest
FOD8-1 – Fresh-moist Oak – Sugar Maple Deciduous Forest
FOD9-3 - Fresh-moist Bur Oak Deciduous Forest
FOD9-4 – Fresh-moist Shagbark Hickory Deciduous Forest
FOD9-6* - Fresh-moist Red Oak – Shagbark Hickory Deciduous Forest

Cultural Communities (CU)
CUP1-4 – Hybrid Poplar Deciduous Plantation
CUP2 – Mixed Plantation
CUP3-1 – Red Pine Coniferous Plantation
CUP3-2 – White Pine Coniferous Plantation
CUP3-12* – White Pine – White/Norway Spruce Coniferous Plantation
CUP3-13* - White Spruce Coniferous Plantation
CUM1 – Mineral Cultural Meadow
CUT1 – Mineral Cultural Thicket
CUT1-1 – Sumac Cultural Thicket
CUT1-4 – Gray Dogwood Cultural Thicket
CUT1-7 – European Buckthorn – Sweet Cherry Cultural thicket
CUW1 – Mineral Cultural Woodland
CUW1-1 – Red Cedar Mineral Cultural Woodland
CUW1-3* - Ash – Sumac Mineral Cultural Woodland
CUW1-4* - Green Ash Mineral Cultural Woodland
CUW1-5* – Norway Maple Mineral Cultural Woodland
CUW1-6* - White Elm Cultural Woodland
CUW1-7* - Red maple Mineral Cultural Woodland
CUW1-11* - White Pine Cultural Woodland

Swamp Communities (SW)
SWD – Deciduous Swamp
SWD1-1 – Swamp Oak Mineral Deciduous Swamp
SWD1-2 – Bur Oak Mineral Deciduous Swamp
SWD2-2 – Green Ash Mineral Deciduous Swamp
SWD2-3* - Ash – Hardwood Mineral Deciduous Swamp
SWD2-4* - Green Ash – Red Maple Mineral Deciduous Swamp
SWD3-1 – Red Maple Mineral Deciduous Swamp
SWD3-2 – Silver Maple Mineral Deciduous Swamp
SWD3-3 – Swamp Maple Mineral Deciduous Swamp
SWD4-1 – Willow Mineral Deciduous Swamp
SWD4-2 – White Elm Mineral Deciduous Swamp
SWD4-6* - Green Ash – Swamp Maple Mineral Deciduous Swamp
SWT – Thicket Swamp
SWT2 – Mineral Thicket Swamp
SWT2-4 – Buttonbush Mineral Thicket Swamp
SWT2-5 – Red Osier Dogwood Mineral Thicket Swamp
SWT2-8 – Silky Dogwood Mineral Thicket Swamp
SWT2-9 – Gray Dogwood Mineral Thicket Swamp
SWT2-13* - Willow – Dogwood Mineral Thicket Swamp
SWT2-14* - Winterberry – Buttonbush Mineral Thicket Swamp
SWT2-15* - Red Maple Mineral Thicket Swamp
SWT3-7 – Winterberry Organic Thicket Swamp

Marsh Communities (MA)
MAM2 – Mineral Meadow Marsh
MAM2-2 – Reed Canary Grass Mineral Meadow Marsh
MAM2-8 – Jewelweed Mineral Meadow Marsh
MAM2-10 – Forb Mineral Meadow Marsh
MAM2-11* - Forb – Graminoid Mineral Meadow Marsh
MAS2-1 – Cattail Mineral Shallow Marsh
MAS2-8 – Rice Cut-grass Mineral Shallow Marsh

Open Water (OA)
OA – Open Aquatic

Shallow Water (SA)
SAM1-2 – Duckweed Mixed Shallow Aquatic

HR – Hedgerow
D – Disturbed
Res - Residential

Notes

1. Coordinate System: UTM NAD 83 - Zone 17 (N).
2. Base features produced under license with the Ontario Ministry of Natural Resources © Queens Printer Ontario, 2011; © Samsung, 2011.
3. Image Source: © Terrapoint, 2011 - Imagery Date: July 2009; Grand River Conservation Authority © First Base Solutions, 2011 - Imagery Date: Spring 2008.

February 2011
160960577

Client/Project
SAMSUNG, PATTERN & KEPCO (SPK)
GRAND RENEWABLE ENERGY PARK

Figure No.
6.7

DRAFT

Title
ELC VEGETATION COMMUNITIES - W7

Path:
Revised on: yyyy-mm-dd By: username

January
Projec

Stantec

Legend
Legend

Note: Small number of chorus & leopard frogs along watercourse downstream of SWT 2-9/CUT community.

Notes
1. Coordinate System: UTM NAD 83 - Zone 17 (N).
2. Base features produced under license with the Ontario

Client/Project
Client / Project

Figure No.
1

Title
~~Drawing Title~~
ELC Communities

ELC — COMMUNITY DESCRIPTION & CLASSIFICATION

SITE: GREP		POLYGON: F68	
SURVEYOR(S): JTL	DATE: MAR 15, 2011		UTME:
START:	END	UTMZ:	UTMN:

POLYGON DESCRIPTION

SYSTEM	SUBSTRATE	TOPOGRAPHIC FEATURE	HISTORY	PLANT FORM	COMMUNITY
☒ TERRESTRIAL	☐ ORGANIC	☐ LACUSTRINE	☒ NATURAL	☐ PLANKTON	☐ LAKE
☐ WETLAND	☒ MINERAL SOIL	☐ RIVERINE	☐ CULTURAL	☐ SUBMERGED	☐ POND
☐ AQUATIC	☐ PARENT MIN.	☐ BOTTOMLAND		☐ FLOATING-LVD.	☐ RIVER
	☐ ACIDIC BEDRK.	☐ TERRACE		☐ GRAMINOID	☐ STREAM
	☐ BASIC BEDRK.	☐ VALLEY SLOPE		☐ FORB	☐ MARSH
	☐ CARB. BEDRK.	☒ TABLELAND		☐ LICHEN	☐ SWAMP
		☐ ROLL. UPLAND		☐ BRYOPHYTE	☐ FEN
		☐ CLIFF		☒ DECIDUOUS	☐ BOG
		☐ TALUS		☐ CONIFEROUS	☐ BARREN
		☐ CREVICE / CAVE		☐ MIXED	☐ MEADOW
		☐ ALVAR			☐ PRAIRIE
		☐ ROCKLAND			☐ THICKET
		☐ BEACH / BAR			☐ SAVANNAH
		☐ SAND DUNE			☐ WOODLAND
		☐ BLUFF			☒ FOREST
					☐ PLANTATION

SITE	COVER
☐ OPEN WATER	☐ OPEN
☐ SHALLOW WATER	☐ SHRUB
☒ SURFICIAL DEP.	☒ TREED
☐ BEDROCK	

STAND DESCRIPTION:

	LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1	CANOPY	2	4	FRAMER = ACESASA > FAGGRA
2	SUB-CANOPY	3	4	ACESASA > FRAMER > OSTVIRG
3	UNDERSTOREY	4	3	ACESASA > FRAMER > SAMCANA
4	GRD. LAYER	5-7	3	PRUVIRG > ASTER SP > ALL PETI

HT CODES: 1 = >25 m 2 = 10<HT≤25 m 3 = 2<HT≤10 m 4 = 1<HT≤2 m 5 = 0.5<HT≤1 m 6 = 0.2<HT≤0.5 m 7 = HT<0.2 m

CVR CODES: 0= NONE 1= 0% < CVR ≤ 10% 2= 10 < CVR ≤ 25% 3= 25 < CVR ≤ 60% 4= CVR > 60%

STAND COMPOSITION:							BA:
SIZE CLASS ANALYSIS:	A	< 10	A	10 - 24	A	25 - 50	N > 50
STANDING SNAGS:	R	< 10	R	10 - 24	N	25 - 50	N > 50
DEADFALL / LOGS:	R	< 10	R	10 - 24	R	25 - 50	N > 50

ABUNDANCE CODES: N = NONE R = RARE O = OCCASIONAL A = ABUNDANT

COMM. AGE :		PIONEER		YOUNG		MID-AGE	X	MATURE		OLD GROWTH

SOIL ANALYSIS:

TEXTURE:	DEPTH TO MOTTLES / GLEY	g =	G=
MOISTURE:	DEPTH OF ORGANICS:		(cm)
HOMOGENEOUS / VARIABLE	DEPTH TO BEDROCK:		(cm)

COMMUNITY CLASSIFICATION:

COMMUNITY CLASS:		CODE:
COMMUNITY SERIES:		CODE:
ECOSITE:		CODE:
VEGETATION TYPE: F-M SUGAR MAPLE - HARDWOOD DECIDUOUS		CODE: FOD6-5
INCLUSION	FOREST	CODE:
COMPLEX		CODE:

Notes:

* REASSESSMENT OF ELC COMMUNITY w/ MNR

ELC — PLANT SPECIES LIST

SITE:	
POLYGON:	
DATE:	
SURVEYOR(S):	

LAYERS: 1 = CANOPY > 10m 2 = SUB-CANOPY 3 = UNDERSTOREY 4 = GROUND (GRD) LAYER

ABUNDANCE CODES: R = RARE O = OCCASIONAL A = ABUNDANT D = DOMINANT

SPECIES CODE	LAYER 1	2	3	4	COLL.
FRAMER	A	O	R		
FAGGRAN	O	O	^		
ACESASA	A	O	A		
OST VIRG	/	O	/		
SHAG. HICK	R	/	R		
CAR CARO	/	/	R		
QUERUBR	R	R	/		
PRUSERO	R	R	/		
PRUVIRG			O		
SAMCANA			O		
ROSA SP.			R		
RHA CATH			R		

SPECIES CODE	LAYER 1	2	3	4	COLL.
XMAS FERN				O	
ASTER SP.				O	
CAREX SP.				O	
ONOSENS				R	
ALL PETI				O	
VIOLA SP.				O	

ELC — COMMUNITY DESCRIPTION & CLASSIFICATION

SITE: GREP		POLYGON: F68	
SURVEYOR(S): JTZ	DATE: MAR 15, 2011	UTME:	
START:	END	UTMZ:	UTMN:

POLYGON DESCRIPTION

SYSTEM	SUBSTRATE	TOPOGRAPHIC FEATURE	HISTORY	PLANT FORM	COMMUNITY
☑ TERRESTRIAL	☐ ORGANIC	☐ LACUSTRINE	☒ NATURAL	☐ PLANKTON	☐ LAKE
☐ WETLAND	☒ MINERAL SOIL	☐ RIVERINE	☐ CULTURAL	☐ SUBMERGED	☐ POND
☐ AQUATIC	☐ PARENT MIN.	☐ BOTTOMLAND		☐ FLOATING-LVD.	☐ RIVER
	☐ ACIDIC BEDRK.	☐ TERRACE		☐ GRAMINOID	☐ STREAM
	☐ BASIC BEDRK.	☐ VALLEY SLOPE		☐ FORB	☐ MARSH
	☐ CARB. BEDRK.	☒ TABLELAND		☐ LICHEN	☐ SWAMP
		☐ ROLL. UPLAND		☐ BRYOPHYTE	☐ FEN
		☐ CLIFF		☒ DECIDUOUS	☐ BOG
		☐ TALUS		☐ CONIFEROUS	☐ BARREN
		☐ CREVICE / CAVE		☐ MIXED	☐ MEADOW
		☐ ALVAR			☐ PRAIRIE
		☐ ROCKLAND			☐ THICKET
		☐ BEACH / BAR			☐ SAVANNAH
		☐ SAND DUNE			☐ WOODLAND
		☐ BLUFF			☒ FOREST
					☐ PLANTATION

SITE	COVER
☐ OPEN WATER	☐ OPEN
☐ SHALLOW WATER	☐ SHRUB
☒ SURFICIAL DEP.	☑ TREED
☐ BEDROCK	

STAND DESCRIPTION:

	LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1	CANOPY	2	4	CALOVAT > ACESACA > PRUSERO
2	SUB-CANOPY	3	4	ACESACA = CALOVAT > FRAAMER
3	UNDERSTOREY	4		
4	GRD. LAYER			

HT CODES: 1 = >25 m 2 = 10<HT≤25 m 3 = 2<HT≤10 m 4 = 1<HT≤2 m 5 = 0.5<HT≤1 m 6 = 0.2<HT≤0.5 m 7 = HT<0.2 m

CVR CODES 0= NONE 1= 0% < CVR ≤ 10% 2= 10 < CVR ≤ 25% 3= 25 < CVR ≤ 60% 4= CVR > 60%

STAND COMPOSITION:							BA:
SIZE CLASS ANALYSIS:	O	< 10	A	10 - 24	A	25 - 50	N > 50
STANDING SNAGS:	N	< 10	R	10 - 24	N	25 - 50	N > 50
DEADFALL / LOGS:	R	< 10	R	10 - 24	N	25 - 50	N > 50

ABUNDANCE CODES: N = NONE R = RARE O = OCCASIONAL A = ABUNDANT

COMM. AGE :		PIONEER		YOUNG		MID-AGE	X	MATURE		OLD GROWTH

SOIL ANALYSIS:

TEXTURE:	DEPTH TO MOTTLES / GLEY	g =	G=
MOISTURE:	DEPTH OF ORGANICS:		(cm)
HOMOGENEOUS / VARIABLE	DEPTH TO BEDROCK:		(cm)

COMMUNITYCLASSIFICATION:

COMMUNITY CLASS:		CODE:
COMMUNITY SERIES:		CODE:
ECOSITE:		CODE:
VEGETATION TYPE: F.M SHAGBARK HICKORY DECID. FOREST		CODE: FOD 9-4
INCLUSION		CODE:
COMPLEX		CODE:

Notes:

RE-ASSESSMENT OF ELC COMMUNITY w/ MNR

ELC — PLANT SPECIES LIST

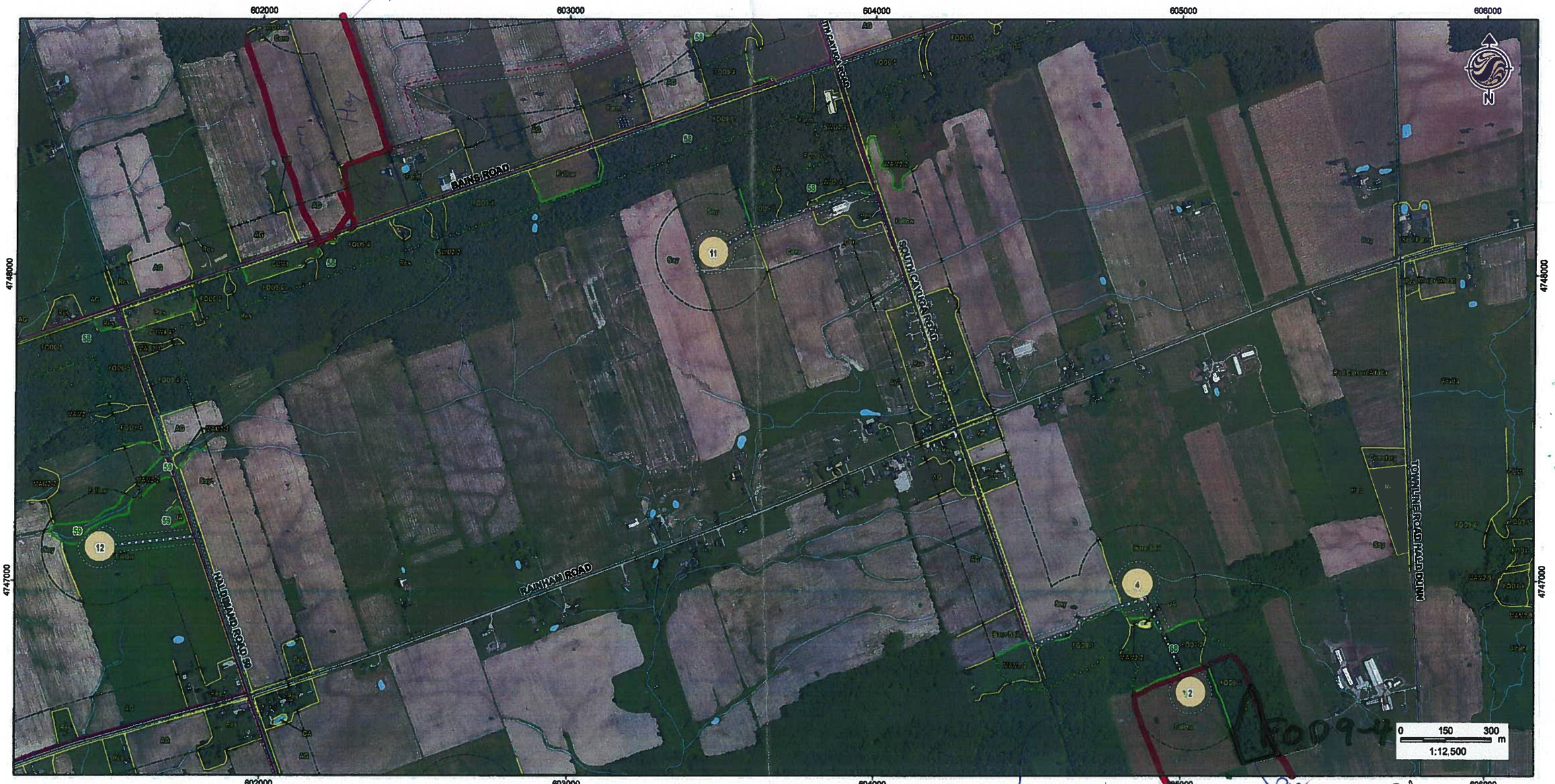
SITE:	
POLYGON:	
DATE:	
SURVEYOR(S):	

LAYERS: 1 = CANOPY > 10m 2 = SUB-CANOPY 3 = UNDERSTOREY 4 = GROUND (GRD) LAYER

ABUNDANCE CODES: R = RARE O = OCCASIONAL A = ABUNDANT D = DOMINANT

SPECIES CODE	LAYER 1	2	3	4	COLL.
CALOVAT	A	O	O		
ACESACA	O	O	A		
FRAAMER	R	O	O		
PRUSERO	R	R	R		
FAGGRA	R	R	/		
RHACATH			R		
RIBES SP.				R	
BERVILG			O		
PRUVIRG			O		

SPECIES CODE	LAYER 1	2	3	4	COLL.
ASTER SP.				O	
CAREX SPP.				O	
SOL FLEX				O	
GEUM SP.				O	



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February 2011
160980577

Stantec

Legend

- Study Area
- Zone of Investigation
- Constructable Area

Wind Project Location

- Proposed Turbine Location
- Access Road
- Overhead Collector Line
- Underground Collector Line

Solar Project Location

- Solar Lands

Transmission Line

- Overhead Transmission Line
- Underground Transmission Line
- Electrical Transmission Component

Existing Features

- Road
- Railway
- Abandoned Railway
- Transmission Line (MNR)
- Watercourse (MNR)
- Waterbody (MNR)
- Natural Feature
- Vegetation Community (ELC)

Forest Communities (FO)

FOM 2-2 – Dry-fresh White Pine – Sugar Maple Mixed Forest
FOD – Deciduous Forest
FOD1+1 – Dry-fresh Red Oak Deciduous Forest
FOD2-1 – Dry-fresh Oak – Red Maple Deciduous Forest
FOD2-2 – Dry-fresh Oak – Hickory Deciduous Forest
FOD2-4 – Dry-fresh Oak – Hardwood Deciduous Forest
FOD 3-1 – Dry-fresh Poplar Deciduous Forest
FOD4-1 – Dry-fresh Beech Deciduous Forest
FOD4-2 – Dry-fresh White Ash Deciduous Forest
FOD5 – Dry-fresh Sugar Maple Deciduous Forest Ecosite
FOD5-1 – Dry-fresh Sugar Maple Deciduous Forest
FOD5-2 – Dry-fresh Sugar Maple – Beech Deciduous Forest
FOD5-3– Dry-fresh Sugar Maple – Oak Deciduous Forest
FOD5-6 – Dry-fresh Sugar Maple – White Ash Deciduous Forest
FOD5-8 – Dry-fresh Sugar Maple-Red Maple Deciduous Forest
FOD5-11* - Dry-fresh Sugar Maple – Oak – Beech Deciduous Forest
FOD5-12* - Dry-fresh Sugar Maple – Hickory – Beech Deciduous Forest
FOD6-1 – Fresh-moist Sugar Maple – Lowland Ash Deciduous Forest
FOD6-5 – Fresh-moist Sugar Maple – Hardwood Deciduous Forest
FOD6-6* - Fresh-moist Sugar Maple – Hickory Deciduous Forest
FOD7-1 – Fresh – moist White Elm Lowland Deciduous Forest
FOD7-2 – Fresh-moist Ash Lowland Deciduous Forest
FOD9-1 – Fresh-moist Oak – Sugar Maple Deciduous Forest
FOD9-3 - Fresh-moist Bur Oak Deciduous Forest
FOD9-4 – Fresh-moist Shagbark Hickory Deciduous Forest
FOD9-6* - Fresh-moist Red Oak – Shagbark Hickory Deciduous Forest

Cultural Communities (CU)

CUP1-4 – Hybrid Poplar Deciduous Plantation
CUP2 – Mixed Plantation
CUP3-1 – Red Pine Coniferous Plantation
CUP3-2 – White Pine Coniferous Plantation
CUP3-12* - White Pine – White/Norway Spruce Coniferous Plantation
CUP3-13* - White Spruce Coniferous Plantation
CUM1 – Mineral Cultural Meadow
CUT1 – Mineral Cultural Thicket
CUT1-1 – Sumac Cultural Thicket
CUT1-4 – Gray Dogwood Cultural Thicket
CUT1-7 – European Buckthorn – Sweet Cherry Cultural thicket
CUW1 – Mineral Cultural Woodland
CUW1-1 – Red Cedar Mineral Cultural Woodland
CUW1-3* - Ash – Sumac Mineral Cultural Woodland
CUW1-4* - Green Ash Mineral Cultural Woodland
CUW1-5* – Norway Maple Mineral Cultural Woodland
CUW1-6* - White Elm Cultural Woodland
CUW1-7* - Red maple Mineral Cultural Woodland
CUW1-11* - White Pine Cultural Woodland

Swamp Communities (SW)

SWD – Deciduous Swamp
SWD1-1 – Swamp Oak Mineral Deciduous Swamp
SWD1-2 – Bur Oak Mineral Deciduous Swamp
SWD2-2 – Green Ash Mineral Deciduous Swamp
SWD2-3* - Ash – Hardwood Mineral Deciduous Swamp
SWD2-4* - Green Ash – Red Maple Mineral Deciduous Swamp
SWD3-1 – Red Maple Mineral Deciduous Swamp
SWD3-2 – Silver Maple Mineral Deciduous Swamp
SWD3-3 – Swamp Maple Mineral Deciduous Swamp
SWD4-1 – Willow Mineral Deciduous Swamp
SWD4-2 – White Elm Mineral Deciduous Swamp
SWD4-6* - Green Ash – Swamp Maple Mineral Deciduous Swamp
SWT – Thicket Swamp
SWT2 – Mineral Thicket Swamp
SWT2-4 – Buttonbush Mineral Thicket Swamp
SWT2-5 – Red Osier Dogwood Mineral Thicket Swamp
SWT2-8 – Silky Dogwood Mineral Thicket Swamp
SWT2-9 – Gray Dogwood Mineral Thicket Swamp
SWT2-13* - Willow – Dogwood Mineral Thicket Swamp
SWT2-14* - Winterberry – Buttonbush Mineral Thicket Swamp
SWT2-15* - Red Maple Mineral Thicket Swamp
SWT3-7 – Winterberry Organic Thicket Swamp

Marsh Communities (MA)

MAM2 – Mineral Meadow Marsh
MAM2-2 – Reed Canary Grass Mineral Meadow Marsh
MAM2-9 – Jewelweed Mineral Meadow Marsh
MAM2-10 – Forb Mineral Meadow Marsh
MAM2-11* - Forb – Graminoid Mineral Meadow Marsh
MAS2-1 – Cattail Mineral Shallow Marsh
MAS2-8 – Rice Cut-grass Mineral Shallow Marsh

Open Water (OA)

OA – Open Aquatic

Shallow Water (SA)

SAM1-2 – Duckweed Mixed Shallow Aquatic

HR – Hedgerow
D – Disturbed
Res - Residential

Notes

1. Coordinate System: UTM NAD 83 - Zone 17 (N).
2. Base features produced under license with the Ontario Ministry of Natural Resources © Queens Printer Ontario, 2011; © Samsung, 2011.
3. Image Source: © Terrapoint, 2011 - Imagery Date: July 2009; Grand River Conservation Authority © First Base Solutions, 2011 - Imagery Date: Spring 2006.

Client/Project
SAMSUNG, PATTERN & KEPCO (SPK) GRAND RENEWABLE ENERGY PARK

Figure No.
6.12

DRAFT

Title
ELC VEGETATION COMMUNITIES - W12

GREP
ELC
Feature 68

Don Graham.

7-APR-2011

FOD 9-4(1)

Stantec Consulting Ltd.
70-1 Southgate Drive
Guelph, Ontario, Canada
N1G 4P5
Tel: (519) 836-6050
Fax: (519) 836-2493

Windfarm Wildlife Habitat Assessment

Project Number: 1610 10646

Project Name: Grand Renewable Energy Wind

Date / Time: Apr 7, 2011 16:30-16:45

Field Personnel: Dan Graham

Weather Conditions:	Temp:	Wind:	Cloud:	PPT:	PPT in last 24 hrs:
	12	1	50%	None	None

Location (i.e. turbine #s/description) North of Lakeshore Rd; immediately east of South Cayuga Rd.

Visual assessment (roadside – no access) ☑

Physical assessment (walk through feature) ☐

Extent of physical investigation of feature: ☐ Entire ☑ Partial (indicate on map)
Limited to South Cayuga Rd.

Reptile Hibernacula Features (i.e. features that would provide a route underground, including buried concrete or rock (e.g. foundations, bridge abutments or culverts with cracks/entry points, exposed rock crevices or inactive animal burrows))
Contains potential reptile hibernacula features? ☐ Y ☐ N ☑ Unknown – no access (if yes, describe in Table 1).

Bat Hibernacula Features (i.e. karst topography, abandoned mines or caves)
Contains potential bat hibernacula features? ☐ Y ☑ N ☑ Unknown – no access (if yes, describe in Table 1).

Table 1: Potential bat/reptile hibernacula features identified on site

UTM	Feature type	Photo #	Description	Spp. observed using feature

Species Observations List species and type of observation (indicate on map):
(CA = carcass; DP = distinctive parts; FE = feeding evidence; FY = eggs, nest; HO = house/den; OB = observed; SC = scat; SI = other sign; TK = track; VO = vocalization)

Birds	Mammals	Herps	Butterflies / Dragonflies	Other
i.e.) A: AMRO/VO				

Woodland Assessment complete 1 assessment for each woodland

Woodlot # (indicate on map) FOD9-4 (1) **Approximate age of stand** 50
East side of South Cavan Rd immediately north of Lakeshore Rd
Are large (i.e. >40cmDBH and >25m tall) **trees present?** ☑ Y ☐ N ☐ Unknown – no access
If yes, approximate # present or % of stand 5%
Location in stand (i.e. throughout, west side only, FOD2-6 only, etc.) throughout

Are snags present? ☑ Y ☐ N ☐ Unknown – no access
If yes, provide characterization of number present, height and DBH of snags and indications of loose bark.
infrequent; 3 - 12m in height, 15cm DBH, no loose bark noted

Potential Bat Maternity Roost Contains large, mature (i.e. >80 year old) snags or trees (living or dead) containing medium to large cavities. ☐ Y ☑ N ☐ Unknown – no access (if yes, describe in Table 2).

Cavities present? ☐ No ☑ Rare ☐ Occasional ☐ Abundant ☐ Unknown – no access

Table 2: Potential bat maternity roost features identified on site

Range of tree height	Range of tree DBH	Range of cavity heights	Cavity sizes small: small birds, medium= large woodpeckers, large= mammals Hollow?
None			

Presence of large stick nests (i.e. raptor nests)? ☐ Y ☑ N ☐ Unknown – no access
If yes, UTM and describe tree type, height and position in tree, size of nest, species present: _____

Evidence of disturbance (i.e logging, roads, ATV use, trails, garbage)? ☑ Y ☐ N ☐ Unknown – no access
If yes, describe Adjacent road & ditch.

Seeps / springs present? ☐ Y ☑ N ☐ Unknown – no access (if yes, describe in Table 3).

Table 3: Seep/spring identification

Seep/Spring #	UTM	Description	Surrounding Habitat
None			

Vernal Pools Present? ☐ Y ☑ N ☐ Unknown – no access (if yes, describe in Table 4).

Table 4: Vernal pool identification

Vernal pool #	UTM	Depth of water	Size of pool (diameter)	Presence of emergent/submergent veg?	Presence of shrubs, logs at pond edge
None					

Proximity of feature to roadside observation pt allowed determination that potential bat maternity roosts, large stick nests, seeps and vernal pools are absent.

Woodland Assessment complete 1 assessment for each woodland

Woodlot # (indicate on map) Residential Lot 50 to ; **Approximate age of stand** _____

Are large (i.e. >40cmDBH and >25m tall) **trees present?** ☑ Y ☐ N ☐ Unknown – no access
If yes, approximate # present or % of stand _____
Location in stand (i.e. throughout, west side only, FOD2-6 only, etc.) _____

Are snags present? ☐ Y ☐ N ☐ Unknown – no access
If yes, provide characterization of number present, height and DBH of snags and indications of loose bark.

Potential Bat Maternity Roost Contains large, mature (i.e. >80 year old) snags or trees (living or dead) containing medium to large cavities. ☐ Y ☐ N ☐ Unknown – no access (if yes, describe in Table 2).

Cavities present? ☐ No ☐ Rare ☐ Occasional ☐ Abundant ☐ Unknown – no access

Table 2: Potential bat maternity roost features identified on site

Range of tree height	Range of tree DBH	Range of cavity heights	Cavity sizes small: small birds, medium= large woodpeckers, large= mammals Hollow?

Presence of large stick nests (i.e. raptor nests)? ☐ Y ☐ N ☐ Unknown – no access
If yes, UTM and describe tree type, height and position in tree, size of nest, species present: _____

Evidence of disturbance (i.e logging, roads, ATV use, trails, garbage)? ☐ Y ☐ N ☐ Unknown – no access
If yes, describe _____

Seeps / springs present? ☐ Y ☐ N ☐ Unknown – no access (if yes, describe in Table 3).

Table 3: Seep/spring identification

Seep/Spring #	UTM	Description	Surrounding Habitat

Vernal Pools Present? ☐ Y ☐ N ☐ Unknown – no access (if yes, describe in Table 4).

Table 4: Vernal pool identification

Vernal pool #	UTM	Depth of water	Size of pool (diameter)	Presence of emergent/submergent veg?	Presence of shrubs, logs at pond edge

North of Lakeshore Rd., immediately east of South Cayuga Rd.

ELC
COMMUNITY DESCRIPTION & CLASSIFICATION

SITE:		POLYGON: FOD9-4(1)	
SURVEYOR(S): Don Graham	DATE: Apr 7, 2011		UTME: 605000
START: 1700	END: 1715	UTMZ:	UTMN: 4745600

POLYGON DESCRIPTION

SYSTEM	SUBSTRATE	TOPOGRAPHIC FEATURE	HISTORY	PLANT FORM	COMMUNITY
☑ TERRESTRIAL ☐ WETLAND ☐ AQUATIC	☐ ORGANIC ☐ MINERAL SOIL ☐ PARENT MIN. ☐ ACIDIC BEDRK. ☐ BASIC BEDRK. ☐ CARB. BEDRK.	☐ LACUSTRINE ☐ RIVERINE ☐ BOTTOMLAND ☐ TERRACE ☐ VALLEY SLOPE ☑ TABLELAND ☐ ROLL. UPLAND ☐ CLIFF ☐ TALUS ☐ CREVICE / CAVE ☐ ALVAR ☐ ROCKLAND ☐ BEACH / BAR ☐ SAND DUNE ☐ BLUFF	☑ NATURAL ☐ CULTURAL	☐ PLANKTON ☐ SUBMERGED ☐ FLOATING-LVD. ☐ GRAMINOID ☐ FORB ☐ LICHEN ☐ BRYOPHYTE ☑ DECIDUOUS ☐ CONIFEROUS ☐ MIXED	☐ LAKE ☐ POND ☐ RIVER ☐ STREAM ☐ MARSH ☐ SWAMP ☐ FEN ☐ BOG ☐ BARREN ☐ MEADOW ☐ PRAIRIE ☐ THICKET ☐ SAVANNAH ☐ WOODLAND ☑ FOREST ☐ PLANTATION
SITE			**COVER**		
☐ OPEN WATER ☐ SHALLOW WATER ☐ SURFICIAL DEP. ☐ BEDROCK			☐ OPEN ☐ SHRUB ☑ TREED		

STAND DESCRIPTION:

	LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1	CANOPY	15	60	Shagbark hickory = Green Ash >> A. elm > Red Oak.
2	SUB-CANOPY			
3	UNDERSTOREY			
4	GRD. LAYER			

HT CODES: 1 = >25 m 2 = 10<HT-25 m 3 = 2<HT≤10 m 4 = 1<HT-2 m 5 = 0.5<HT-1 m 6 = 0.2<HT-0.5 m 7 = HT<0.2 m
CVR CODES 0= NONE 1= 0% < CVR ≤ 10% 2= 10 < CVR ≤ 25% 3= 25 < CVR ≤ 60% 4= CVR > 60%

STAND COMPOSITION:							BA:	
SIZE CLASS ANALYSIS:		< 10		10 - 24		25 - 50		> 50
STANDING SNAGS:		< 10		10 - 24		25 - 50		> 50
DEADFALL / LOGS:		< 10		10 - 24		25 - 50		> 50

ABUNDANCE CODES: N = NONE R = RARE O = OCCASIONAL A = ABUNDANT

COMM. AGE:		PIONEER		YOUNG		MID-AGE		MATURE		OLD GROWTH

SOIL ANALYSIS:

TEXTURE:	DEPTH TO MOTTLES / GLEY	g =	G=
MOISTURE:	DEPTH OF ORGANICS:		(cm)
HOMOGENEOUS / VARIABLE	DEPTH TO BEDROCK:		(cm)

COMMUNITY CLASSIFICATION:

COMMUNITY CLASS:	CODE:
COMMUNITY SERIES:	CODE:
ECOSITE:	CODE:
VEGETATION TYPE:	CODE:
INCLUSION	CODE:
COMPLEX	CODE:

Notes: No access

ELC
PLANT SPECIES LIST

SITE:	
POLYGON:	
DATE:	
SURVEYOR(S):	

LAYERS: 1 = CANOPY > 10m 2 = SUB-CANOPY 3 = UNDERSTOREY 4 = GROUND (GRD.) LAYER
ABUNDANCE CODES: R = RARE O = OCCASIONAL A = ABUNDANT D = DOMINANT

SPECIES CODE	LAYER 1	2	3	4	COLL.	SPECIES CODE	LAYER 1	2	3	4	COLL.

ELC COMMUNITY DESCRIPTION / CLASSIFICATION

SITE: Feature 68		POLYGON: A	
SURVEYOR(S): SC, AT	DATE: Apr. 29-11		UTME:
START: 15:00	END 16:20	UTMZ:	UTMN:

POLYGON DESCRIPTION

SYSTEM	SUBSTRATE	TOPOGRAPHIC FEATURE	HISTORY	PLANT FORM	COMMUNITY
☐ TERRESTRIAL	☐ ORGANIC	☐ LACUSTRINE	☐ NATURAL	☐ PLANKTON	☐ LAKE
☐ WETLAND	☐ MINERAL SOIL	☐ RIVERINE	☐ CULTURAL	☐ SUBMERGED	☐ POND
☐ AQUATIC	☐ PARENT MIN.	☐ BOTTOMLAND		☐ FLOATING-LVD.	☐ RIVER
	☐ ACIDIC BEDRK.	☐ TERRACE		☐ GRAMINOID	☐ STREAM
SITE	☐ BASIC BEDRK.	☐ VALLEY SLOPE	COVER	☐ FORB	☐ MARSH
☐ OPEN WATER	☐ CARB. BEDRK.	☐ TABLELAND		☐ LICHEN	☐ SWAMP
☐ SHALLOW WATER		☐ ROLL. UPLAND	☐ OPEN	☐ BRYOPHYTE	☐ FEN
☐ SURFICIAL DEP.		☐ CLIFF	☐ SHRUB	☐ DECIDUOUS	☐ BOG
☐ BEDROCK		☐ TALUS	☐ TREED	☐ CONIFEROUS	☐ BARREN
		☐ CREVICE / CAVE		☐ MIXED	☐ MEADOW.
		☐ ALVAR			☐ PRAIRIE
		☐ ROCKLAND			☐ THICKET
		☐ BEACH / BAR			☐ SAVANNAH
		☐ SAND DUNE			☐ WOODLAND
		☐ BLUFF			☐ FOREST
					☐ PLANTATION

STAND DESCRIPTION:

	LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1	CANOPY	2	4	Fraamer > Tilamer > Jugnigr
2	SUB-CANOPY	3	1	Fraamer
3	UNDERSTOREY	4.5	4	Lontata > Rubocca
4	GRD. LAYER	6.7	4	see list →

HT CODES: 1 = >25 m 2 = 10<HT≤25 m 3 = 2<HT≤10 m 4 = 1<HT≤2 m 5 = 0.5<HT≤1 m 6 = 0.2<HT≤0.5 m 7 = HT<0.2 m

CVR CODES 0 = NONE 1 = 0% < CVR ≤ 10% 2 = 10 < CVR ≤ 25% 3 = 25 < CVR ≤ 60% 4 = CVR > 60%

STAND COMPOSITION:							BA:	
SIZE CLASS ANALYSIS:		< 10	A	10 - 24		25 - 50		> 50
STANDING SNAGS:		< 10		10 - 24		25 - 50		> 50
DEADFALL / LOGS:		< 10		10 - 24		25 - 50		> 50

ABUNDANCE CODES: N = NONE R = RARE O = OCCASIONAL A = ABUNDANT

COMM. AGE :		PIONEER		YOUNG	✓	MID-AGE		MATURE		OLD GROWTH

SOIL ANALYSIS:

TEXTURE:	DEPTH TO MOTTLES / GLEY	g =	G=
MOISTURE:	DEPTH OF ORGANICS:		(cm)
HOMOGENEOUS / VARIABLE	DEPTH TO BEDROCK:		(cm)

COMMUNITY CLASSIFICATION:

COMMUNITY CLASS: Cultural		CODE: CU
COMMUNITY SERIES: Cultural Woodland		CODE: CUW
ECOSITE: Mineral Cultural Woodland		CODE: CUW
VEGETATION TYPE: White Ash Mineral Cultural Woodland		CODE: CUW1-9*
☐ INCLUSION		CODE:
☐ COMPLEX		CODE:

Notes:

ELC PLANT SPECIES LIST

SITE:

POLYGON:

DATE:

SURVEYOR(S):

LAYERS: 1 = CANOPY > 10m 2 = SUB-CANOPY 3 = UNDERSTOREY 4 = GROUND (GRD.) LAYER

ABUNDANCE CODES: R = RARE O = OCCASIONAL A = ABUNDANT D = DOMINANT

SPECIES CODE	LAYER 1	2	3	4	COVER
Fraamer	D				
Tilamer	O				
Jugnigr	R				
Lontata			O		
Rubocca			O		

SPECIES CODE	COVER
Burdock	O
Hespmatr	A
Motherwort	O
Wild leek	O
spring beauty	O
red trillium	O
Aster sp.	O

ELC COMMUNITY DESCRIPTION & CLASSIFICATION

SITE: Feature 68 | POLYGON: B

SURVEYOR(S): SC, AT | DATE: Apr 29-11 | UTME:

START: 15:00 | END 16:20 | UTMZ: | UTMN:

POLYGON DESCRIPTION

SYSTEM	SUBSTRATE	TOPOGRAPHIC FEATURE	HISTORY	PLANTFORM	COMMUNITY
☑ TERRESTRIAL	☐ ORGANIC	☐ LACUSTRINE	☑ NATURAL	☐ PLANKTON	☐ LAKE
☐ WETLAND	☑ MINERAL SOIL	☐ RIVERINE	☐ CULTURAL	☐ SUBMERGED	☐ POND
☐ AQUATIC	☐ PARENT MIN.	☐ BOTTOMLAND		☐ FLOATING-LVD.	☐ RIVER
	☐ ACIDIC BEDRK.	☐ TERRACE		☐ GRAMINOID	☐ STREAM
SITE	☐ BASIC BEDRK.	☐ VALLEY SLOPE	COVER	☐ FORB	☐ MARSH
☐ OPEN WATER	☐ CARB. BEDRK.	☑ TABLELAND	☐ OPEN	☐ LICHEN	☐ SWAMP
☐ SHALLOW WATER		☐ ROLL. UPLAND	☐ SHRUB	☐ BRYOPHYTE	☐ FEN
☐ SURFICIAL DEP.		☐ CLIFF	☑ TREED	☑ DECIDUOUS	☐ BOG
☑ BEDROCK		☐ TALUS		☐ CONIFEROUS	☐ BARREN
		☐ CREVICE / CAVE		☐ MIXED	☐ MEADOW
		☐ ALVAR			☐ PRAIRIE
		☐ ROCKLAND			☐ THICKET
		☐ BEACH / BAR			☐ SAVANNAH
		☐ SAND DUNE			☑ WOODLAND
		☐ BLUFF			☑ FOREST
					☐ PLANTATION

STAND DESCRIPTION:

	LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1	CANOPY	2	4	Jugnigr
2	SUB-CANOPY	3	1	Jugnigr
3	UNDERSTOREY	4.5	4	Lontata > Rubocci
4	GRD. LAYER	1.0.7	4	→ see beside

HT CODES: 1 = >25 m 2 = 10<HT≤25 m 3 = 2<HT≤10 m 4 = 1<HT≤2 m 5 = 0.5<HT≤1 m 6 = 0.2<HT≤0.5 m 7 = HT<0.2 m

CVR CODES 0= NONE 1= 0% < CVR ≤ 10% 2= 10 < CVR ≤ 25% 3= 25 < CVR ≤ 60% 4= CVR > 60%

STAND COMPOSITION: | BA:

SIZE CLASS ANALYSIS:		< 10	A	10 - 24		25 - 50	> 50
STANDING SNAGS:		< 10		10 - 24		25 - 50	> 50
DEADFALL / LOGS:		< 10		10 - 24		25 - 50	> 50

ABUNDANCE CODES: N = NONE R = RARE O = OCCASIONAL A = ABUNDANT

COMM. AGE :		PIONEER		YOUNG	✓	MID-AGE		MATURE	OLD GROWTH

SOIL ANALYSIS:

TEXTURE:	DEPTH TO MOTTLES / GLEY	g =	G=
MOISTURE:	DEPTH OF ORGANICS:		(cm)
HOMOGENEOUS / VARIABLE	DEPTH TO BEDROCK:		(cm)

COMMUNITY CLASSIFICATION:

COMMUNITY CLASS:	Forest	CODE: FO
COMMUNITY SERIES:	Deciduous Forest	CODE: FOD
ECOSITE:	Fr-mst Lowland Dec. Forest	CODE: FOD7
VEGETATION TYPE:	Fr-mst Black Walnut Lowland Dec. Forest	CODE: FOD7-4
INCLUSION		CODE:
COMPLEX		CODE:

Notes:

ELC PLANT SPECIES LIST

SITE:

POLYGON:

DATE:

SURVEYOR(S):

LAYERS: 1 = CANOPY > 10m 2 = SUB-CANOPY 3 = UNDERSTOREY 4 = GROUND (GRD.) LAYER

ABUNDANCE CODES: R = RARE O = OCCASIONAL A = ABUNDANT D = DOMINANT

SPECIES CODE	LAYER				COLL.
Jugnigr	D				
Rubocci			A		
Lontata			D		

SPECIES CODE					COLL.
Burdock				O	
Viola sp.				O	
Aster sp.				O	
Wild ginger				O	
Red trillium				O	
Motherwort				O	
Spring beauty				O	
Wild leek				O	
Hespmatr				A	

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70-1 Southgate Drive
Guelph, Ontario, Canada
N1G 4P5
Tel: (519) 836-6050
Fax: (519) 836-2493

Windfarm Wildlife Habitat Assessment

Project Number: 160960577

Project Name: GREP

Date / Time: April 29-11 15:00 - 16:20

Field Personnel: SC, AT

Weather Conditions:	Temp:	Wind:	Cloud:	PPT:	PPT in last 24 hrs:
	8°c	1	75-100%	rain	rain

Location (i.e. turbine #s/description) Feature 68 - FOD7-4 + CUW1-

Visual assessment (roadside – no access) ☐
Physical assessment (walk through feature) ☑

Extent of physical investigation of feature: ☑ Entire ☐ Partial (indicate on map)

Reptile Hibernacula Features (i.e. features that would provide a route underground, including buried concrete or rock (e.g. foundations, bridge abutments or culverts with cracks/entry points, exposed rock crevices or inactive animal burrows))
Contains potential reptile hibernacula features? ☐ Y ☑ N ☐ Unknown – no access (if yes, describe in Table 1).

Bat Hibernacula Features (i.e. karst topography, abandoned mines or caves)
Contains potential bat hibernacula features? ☐ Y ☑ N ☐ Unknown – no access (if yes, describe in Table 1).

Table 1: Potential bat/reptile hibernacula features identified on site

UTM	Feature type	Photo #	Description	Spp. observed using feature
none				

Species Observations List species and type of observation (indicate on map):
(CA = carcass; DP = distinctive parts; FE = feeding evidence; FY = eggs, nest; HO = house/den; OB = observed; SC = scat; SI = other sign; TK = track; VO = vocalization)

Birds	Mammals	Herps	Butterflies / Dragonflies	Other
i.e.) A: AMRO/VO	none			

Woodland Assessment complete 1 assessment for each woodland

Woodlot # (indicate on map) A ; **Approximate age of stand** mid-age

Are large (i.e. >40cmDBH and >25m tall) **trees present?** ☐ Y ☑ N ☐ Unknown – no access
If yes, approximate # present or % of stand —
Location in stand (i.e. throughout, west side only, FOD2-6 only, etc.) —

Are snags present? ☐ Y ☑ N ☐ Unknown – no access
If yes, provide characterization of number present, height and DBH of snags and indications of loose bark.

Potential Bat Maternity Roost Contains large, mature (i.e. >80 year old) snags or trees (living or dead) containing medium to large cavities. ☑ Y ☐ N ☐ Unknown – no access (if yes, describe in Table 2).

Cavities present? ☐ No ☑ Rare ☐ Occasional ☐ Abundant ☐ Unknown – no access

Table 2: Potential bat maternity roost features identified on site

Range of tree height	Range of tree DBH	Range of cavity heights	Cavity sizes small: small birds, medium= large woodpeckers, large= mammals Hollow?
~3m	>40cm	~2m	medium; unsure if hollow

Presence of large stick nests (i.e. raptor nests)? ☐ Y ☑ N ☐ Unknown – no access
If yes, UTM and describe tree type, height and position in tree, size of nest, species present: _____

Evidence of disturbance (i.e logging, roads, ATV use, trails, garbage)? ☑ Y ☐ N ☐ Unknown – no access
If yes, describe active agriculture immediately adjacent; high encroachment of non-native, invasive plant sp

Seeps / springs present? ☐ Y ☑ N ☐ Unknown – no access (if yes, describe in Table 3).

Table 3: Seep/spring identification

Seep/Spring #	UTM	Description	Surrounding Habitat

Vernal Pools Present? ☐ Y ☑ N ☐ Unknown – no access (if yes, describe in Table 4).

Table 4: Vernal pool identification

Vernal pool #	UTM	Depth of water	Size of pool (diameter)	Presence of emergent/submergent veg?	Presence of shrubs, logs at pond edge

Woodland Assessment complete 1 assessment for each woodland

Woodlot # (indicate on map) B ; **Approximate age of stand** mid-age

Are large (i.e. >40cmDBH and >25m tall) **trees present?** ☐ Y ☑ N ☐ Unknown – no access
If yes, approximate # present or % of stand _____
Location in stand (i.e. throughout, west side only, FOD2-6 only, etc.) _____

Are snags present? ☐ Y ☑ N ☐ Unknown – no access
If yes, provide characterization of number present, height and DBH of snags and indications of loose bark.

Potential Bat Maternity Roost Contains large, mature (i.e. >80 year old) snags or trees (living or dead) containing medium to large cavities. ☐ Y ☑ N ☐ Unknown – no access (if yes, describe in Table 2).

Cavities present? ☑ No ☐ Rare ☐ Occasional ☐ Abundant ☐ Unknown – no access

Table 2: Potential bat maternity roost features identified on site

Range of tree height	Range of tree DBH	Range of cavity heights	Cavity sizes small: small birds, medium= large woodpeckers, large= mammals Hollow?

Presence of large stick nests (i.e. raptor nests)? ☐ Y ☑ N ☐ Unknown – no access
If yes, UTM and describe tree type, height and position in tree, size of nest, species present: _____

Evidence of disturbance (i.e logging, roads, ATV use, trails, garbage)? ☐ Y ☐ N ☐ Unknown – no access
If yes, describe active agriculture immediately adjacent; high encroachment of non-native, invasive plants

Seeps / springs present? ☐ Y ☑ N ☐ Unknown – no access (if yes, describe in Table 3).

Table 3: Seep/spring identification

Seep/Spring #	UTM	Description	Surrounding Habitat

Vernal Pools Present? ☐ Y ☑ N ☐ Unknown – no access (if yes, describe in Table 4).

Table 4: Vernal pool identification

Vernal pool #	UTM	Depth of water	Size of pool (diameter)	Presence of emergent/submergent veg?	Presence of shrubs, logs at pond edge


MAM 2-2
68-a
68-b
FOD 9-1
FOD 9-4
FOD 6-5
FOD 7-2
FOD 9-1
FOD 9-4
plowed
West ROAD SIDE ONLY
FOD 7-4
FOD 7-4
Hay
FOD 9-4
Hay
HR
Hay
1-9*
CUW
(white ash)
plowed
Hay
FOD 9-4
Lakeshore Rd
Haldimand Dunn Townline Road
Lake Erie
--- approx. 120m
Proposed alternate collector alignment
— above ground
--- below ground
> actual location to be refined.

February 2011
160960577

Legend

Study Area
Zone of Investigation
Constructable Area

Wind Project Location

Proposed Turbine Location
Access Road
Overhead Collector Line
Underground Collector Line

Solar Project Location

Solar Lands

Transmission Line

Overhead Transmission Line
Underground Transmission Line
Electrical Transmission Component

Existing Features

Road
Railway
Abandoned Railway
Transmission Line (MNR)
Watercourse (MNR)
Waterbody (MNR)
Natural Feature
Vegetation Community (ELC)

Forest Communities (FO)

FOM 2-2 – Dry-fresh White Pine – Sugar Maple Mixed Forest
FOD – Deciduous Forest
FOD1-1 – Dry-fresh Red Oak Deciduous Forest
FOD2-1 – Dry-fresh Oak – Red Maple Deciduous Forest
FOD2-2 – Dry-fresh Oak – Hickory Deciduous Forest
FOD2-4 – Dry-fresh Oak – Hardwood Deciduous Forest
FOD 3-1 – Dry-fresh Poplar Deciduous Forest
FOD4-1 – Dry-fresh Beech Deciduous Forest
FOD4-2 – Dry-fresh White Ash Deciduous Forest
FOD5 – Dry-fresh Sugar Maple Deciduous Forest Ecosite
FOD5-1 – Dry-fresh Sugar Maple Deciduous Forest
FOD5-2 – Dry-fresh Sugar Maple – Beech Deciduous Forest
FOD5-3 – Dry-fresh Sugar Maple – Oak Deciduous Forest
FOD5-8 – Dry-fresh Sugar Maple – White Ash Deciduous Forest
FOD5-9 - Dry-fresh Sugar Maple-Red Maple Deciduous Forest
FOD5-11* - Dry-fresh Sugar Maple – Oak – Beech Deciduous Forest
FOD5-12* - Dry-fresh Sugar Maple – Hickory – Beech Deciduous Forest
FOD6-1 – Fresh-moist Sugar Maple – Lowland Ash Deciduous Forest
FOD6-5 – Fresh-moist Sugar Maple – Hardwood Deciduous Forest
FOD6-6* - Fresh-moist Sugar Maple – Hickory Deciduous Forest
FOD7-1 – Fresh – moist White Elm Lowland Deciduous Forest
FOD7-2 – Fresh-moist Ash Lowland Deciduous Forest
FOD9-1 – Fresh-moist Oak – Sugar Maple Deciduous Forest
FOD9-3 - Fresh-moist Bur Oak Deciduous Forest
FOD9-4 – Fresh-moist Shagbark Hickory Deciduous Forest
FOD9-6* - Fresh-moist Red Oak – Shagbark Hickory Deciduous Forest

Cultural Communities (CU)

CUP1-4 – Hybrid Poplar Deciduous Plantation
CUP2 – Mixed Plantation
CUP3-1 – Red Pine Coniferous Plantation
CUP3-2 – White Pine Coniferous Plantation
CUP3-12* - White Pine – White/Norway Spruce Coniferous Plantation
CUP3-13* - White Spruce Coniferous Plantation
CUM1 – Mineral Cultural Meadow
CUT1 – Mineral Cultural Thicket
CUT1-1 – Sumac Cultural Thicket
CUT1-4 – Gray Dogwood Cultural Thicket
CUT1-7 – European Buckthorn – Sweet Cherry Cultural thicket
CUW1 – Mineral Cultural Woodland
CUW1-1 – Red Cedar Mineral Cultural Woodland
CUW1-3* - Ash – Sumac Mineral Cultural Woodland
CUW1-4* - Green Ash Mineral Cultural Woodland
CUW1-5* – Norway Maple Mineral Cultural Woodland
CUW1-6* - White Elm Cultural Woodland
CUW1-7* - Red maple Mineral Cultural Woodland
CUW1-11* - White Pine Cultural Woodland

Swamp Communities (SW)

SWD – Deciduous Swamp
SWD1-1 – Swamp Oak Mineral Deciduous Swamp
SWD1-2 – Bur Oak Mineral Deciduous Swamp
SWD2-2 – Green Ash Mineral Deciduous Swamp
SWD2-3* - Ash – Hardwood Mineral Deciduous Swamp
SWD2-4* - Green Ash – Red Maple Mineral Deciduous Swamp
SWD3-1 – Red Maple Mineral Deciduous Swamp
SWD3-2 – Silver Maple Mineral Deciduous Swamp
SWD3-3 – Swamp Maple Mineral Deciduous Swamp
SWD4-1 – Willow Mi[illegible]
SWD4-2 – White Elm [illegible] Deciduous Swamp
SWD4-6* - Green Ash – [illegible] Maple Mineral Deciduous Swamp
SWT – Thicket Swamp
SWT2 – Mineral Thicket [illegible]
SWT2-4 – Buttonbush Mineral Thicket Swamp
SWT2-5 – Red Osier Dogwood Mineral Thicket Swamp
SWT2-6 – Silky Dogwood Mineral Thicket Swamp
SWT2-9 – Gray Dogwood Mineral Thicket Swamp
SWT2-13* - Willow – Dogwood Mineral Thicket Swamp
SWT2-14* - Winterberry – Buttonbush Mineral Thicket Swamp
SWT2-15* - Red Maple Mineral Thicket Swamp
SWT3-7 – Winterberry Organic Thicket Swamp

Marsh Communities (MA)

MAM2 – Mineral Meadow Marsh
MAM2-2 – Reed Canary Grass Mineral Meadow Marsh
MAM2-9 – Jewelweed Mineral Meadow Marsh
MAM2-10 – Forb Mineral Meadow Marsh
MAM2-11* - Forb – Graminoid Mineral Meadow Marsh
MAS2-1 - Cattail Mineral Shallow Marsh
MAS2-8 – Rice Cut-grass Mineral Shallow Marsh

Open Water (OA)

OA – Open Aquatic

Shallow Water (SA)

SAM1-2 – Duckweed Mixed Shallow Aquatic

HR – Hedgerow
D – Disturbed
Res – Residential

Notes

1. Coordinate System: UTM NAD 83 - Zone 17 (N).
2. Base features produced under license with the Ontario Ministry of Natural Resources © Queens Printer Ontario, 2011; © Samsung, 2011.
3. Image Source: © Terrapoint, 2011 - Imagery Date: July 2009; Grand River Conservation Authority © First Base Solutions, 2011 - Imagery Date: Spring 2006.

Stantec

Client/Project

SAMSUNG, PATTERN & KEPCO (SPK)
GRAND RENEWABLE ENERGY PARK

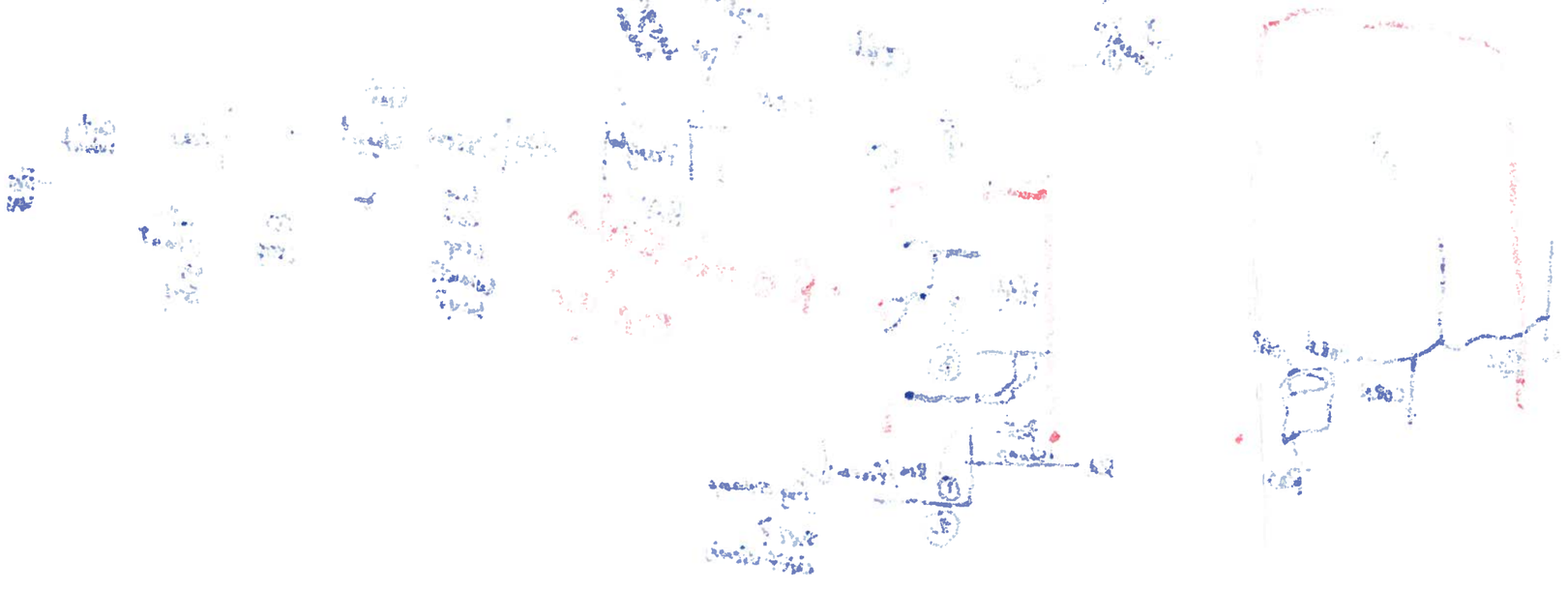
Figure No.

6.15

DRAFT

Title

ELC VEGETATION COMMUNITIES - W15



GREP
ELC
Feature 81

8 APR-2011

M. STOKES

Stantec Consulting Ltd.
70-1 Southgate Drive
Guelph, Ontario, Canada
N1G 4P5
Tel: (519) 836-6050
Fax: (519) 836-2493

Wildlife Habitat Assessment

Project Number: 160960577

Project Name: GLEP

Date / Time: 8-APR-2011

Field Personnel: M. Straus

Weather Conditions:	Temp:	Wind:	Cloud:	PPT:	PPT in last 24 hrs:
	5°C	1	100%	none	none

Reptile Hibernacula Features i.e. features that would provide a route underground, including buried concrete or rock (e.g. foundations, bridge abutments or culverts with cracks/entry points, exposed rock crevices or inactive animal burrows)

Does the site contain potential reptile hibernacula features? ☐ Yes ☒ No (if yes, describe details in Table 1).

Bat Hibernacula Features i.e. karst topography, abandoned mines or caves

Does the site contain potential bat hibernacula features? ☐ Yes ☒ No (if yes, describe details in Table 1).

Table 1: Potential bat/reptile hibernacula features identified on site

UTM	Feature type	Photo #	Description	Species observed using feature

Species Observations

List species and type of observation: (**TK** = track, **SC** = scat, **VO** = vocalization, **OB** = observed, **DP** = distinctive parts, **FE** = feeding evidence, **CA** = carcass, **FY** = eggs, nest, **HO** = house/den, **SI** = other sign)

Birds	Mammals	Herps	Butterflies / Dragonflies	Other
i.e. AMRO/VO GCKI-OB BCCH-OB		CHFR-VO		

edge assessment

Woodland Assessment- *complete 1 assessment for each woodland*

Woodlot # (indicate on map) : SWD2-2 edge only

Approximate age of stand 60 years

Are large (i.e. >40cmDBH and >25m tall) **trees present** ☐ Yes ☒ No
If yes, approximate # present or % of stand _____
Location in stand (i.e throughout, in west side only, in FOD2-6 only etc..) _____

Are snags present? ☐ Yes ☒ No ?
If yes provide characterization of number present, height and DBH of snags and indicate if they contain loose bark.

Trees with cavities present? ☐ No ☐ Rare ☐ Occasional ☐ Abundant ?
If present:

	Height ranges of tree	Range of Tree DBH	Range of Cavity Heights	Cavity sizes (approx. diameter)

Presence of large stick nests (i.e. raptor nests)? ☐ Yes ☒ No
If yes, UTM and describe tree type, height and position in tree, size of nest, species present

_____

Evidence of disturbance? (i.e logging, roads, paths, ATV use, trails) ☐ Yes ☒ No
If yes, describe no

Seeps/ springs present? ☐ Yes ☒ No If yes, ?

Seep/Spring #	UTM	Description	Surrounding Habitat

Vernal Pools Present? ☐ Yes ☒ No If yes, ?

#	Location	Depth of water	Size of pool (diameter)	Presence of emergent/submergent veg?	Presence of shrub logs at pond edge

8-APR-2011

Woodland Assessment- *complete 1 assessment for each woodland*

Woodlot # (indicate on map): 81 - FOD9-4 EDGE ASSESS

Approximate age of stand 80 yrs

Are large (i.e. >40cmDBH and >25m tall) **trees present** ☒ Yes ☐ No
If yes, approximate # present or % of stand <5% community
Location in stand (i.e throughout, in west side only, in FOD2-6 only etc..) Throughout

Are snags present? ☐ Yes ☐ No
If yes provide characterization of number present, height and DBH of snags and indicate if they contain loose bark.

Trees with cavities present? ☐ No ☐ Rare ☒ Occasional ☐ Abundant
If present:

	Height ranges of tree	Range of Tree DBH	Range of Cavity Heights	Cavity sizes (approx. diameter)
	30m	30-40cm	5-10m	med-large

some oaks w internal rot

Presence of large stick nests (i.e. raptor nests)? ☐ Yes ☒ No
If yes, UTM and describe tree type, height and position in tree, size of nest, species present

Evidence of disturbance? (i.e logging, roads, paths, ATV use, trails) ☐ Yes ☒ No
If yes, describe

Seeps/ springs present? ☐ Yes ☒ No ? If yes, EDGE

Seep/Spring #	UTM	Description	Surrounding Habitat

Vernal Pools Present? ☐ Yes ☒ No ? EDGE If yes,

#	Location	Depth of water	Size of pool (diameter)	Presence of emergent/submergent veg?	Presence of shrubs, logs at pond edge

Woodland Assessment- *complete 1 assessment for each woodland*

Woodlot # (indicate on map) : _____

Approximate age of stand _____

Are large (i.e. >40cmDBH and >25m tall) **trees present** ☐ Yes ☐ No
If yes, approximate # present or % of stand _____
Location in stand (i.e throughout, in west side only, in FOD2-6 only etc..) _____

Are snags present? ☐ Yes ☐ No
If yes provide characterization of number present, height and DBH of snags and indicate if they contain loose bark.

Trees with cavities present? ☐ No ☐ Rare ☐ Occasional ☐ Abundant
If present:

	Height ranges of tree	Range of Tree DBH	Range of Cavity Heights	Cavity sizes (approx. diameter)

Presence of large stick nests (i.e. raptor nests)? ☐ Yes ☐ No
If yes, UTM and describe tree type, height and position in tree, size of nest, species present
_____

Evidence of disturbance? (i.e logging, roads, paths, ATV use, trails) ☐ Yes ☐ No
If yes, describe _____

Seeps/ springs present? ☐ Yes ☐ No If yes,

Seep/Spring #	UTM	Description	Surrounding Habitat

Vernal Pools Present? ☐ Yes ☐ No If yes,

#	Location	Depth of water	Size of pool (diameter)	Presence of emergent/submergent veg?	Presence of shrubs, logs at pond edge

ELC — COMMUNITY DESCRIPTION & CLASSIFICATION

SITE:		POLYGON:	
SURVEYOR(S):		DATE:	UTME:
START:	END	UTMZ:	UTMN:

POLYGON DESCRIPTION

SYSTEM	SUBSTRATE	TOPOGRAPHIC FEATURE	HISTORY	PLANT FORM	COMMUNITY
☐ TERRESTRIAL ☐ WETLAND ☐ AQUATIC	☐ ORGANIC ☐ MINERAL SOIL ☐ PARENT MIN. ☐ ACIDIC BEDRK. ☐ BASIC BEDRK. ☐ CARB. BEDRK.	☐ LACUSTRINE ☐ RIVERINE ☐ BOTTOMLAND ☐ TERRACE ☐ VALLEY SLOPE ☐ TABLELAND ☐ ROLL. UPLAND ☐ CLIFF ☐ TALUS ☐ CREVICE / CAVE ☐ ALVAR ☐ ROCKLAND ☐ BEACH / BAR ☐ SAND DUNE ☐ BLUFF	☐ NATURAL ☐ CULTURAL	☐ PLANKTON ☐ SUBMERGED ☐ FLOATING-LVD. ☐ GRAMINOID ☐ FORB ☐ LICHEN ☐ BRYOPHYTE ☐ DECIDUOUS ☐ CONIFEROUS ☐ MIXED	☐ LAKE ☐ POND ☐ RIVER ☐ STREAM ☐ MARSH ☐ SWAMP ☐ FEN ☐ BOG ☐ BARREN ☐ MEADOW ☐ PRAIRIE ☐ THICKET ☐ SAVANNAH ☐ WOODLAND ☐ FOREST ☐ PLANTATION
SITE ☐ OPEN WATER ☐ SHALLOW WATER ☐ SURFICIAL DEP. ☐ BEDROCK			**COVER** ☐ OPEN ☐ SHRUB ☐ TREED		

STAND DESCRIPTION:

	LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1	CANOPY	1		FRAPENN
2	SUB-CANOPY	2		"
3	UNDERSTOREY	3-4		
4	GRD. LAYER	5-7		— dead forbs

HT CODES: 1 = >25 m 2 = 10<HT<25 m 3 = 2<HT<10 m 4 = 1<HT<2 m 5 = 0.5<HT<1 m 6 = 0.2<HT<0.5 m 7 = HT<0.2 m

CVR CODES 0= NONE 1= 0% < CVR < 10% 2= 10 < CVR < 25% 3= 25 < CVR < 60% 4= CVR > 60%

STAND COMPOSITION:							BA:
SIZE CLASS ANALYSIS:	O	< 10	A	10 - 24	O	25 - 50	N > 50
STANDING SNAGS:		< 10		10 - 24		25 - 50	> 50
DEADFALL / LOGS:	N	< 10	O	10 - 24	R	25 - 50	N > 50

ABUNDANCE CODES: N = NONE R = RARE O = OCCASIONAL A = ABUNDANT

COMM. AGE :		PIONEER		YOUNG	X	MID-AGE	X	MATURE		OLD GROWTH

SOIL ANALYSIS:

TEXTURE:	DEPTH TO MOTTLES / GLEY	g =	G=
MOISTURE:	DEPTH OF ORGANICS:		(cm)
HOMOGENEOUS / VARIABLE	DEPTH TO BEDROCK:		(cm)

COMMUNITYCLASSIFICATION:

COMMUNITY CLASS:	CODE:
COMMUNITY SERIES:	CODE:
ECOSITE:	CODE:
VEGETATION TYPE: Green Ash Mineral Deciduous Swamp	CODE: SWD2-2
INCLUSION	CODE:
COMPLEX	CODE:

Notes: edge assessment only

ELC — PLANT SPECIES LIST

SITE: GREP
POLYGON: 81-1
DATE: 8-APR-2011
SURVEYOR(S): M. Stevens

LAYERS: 1 = CANOPY > 10m 2 = SUB-CANOPY 3 = UNDERSTOREY 4 = GROUND (GRD) LAYER

ABUNDANCE CODES: R = RARE O = OCCASIONAL A = ABUNDANT D = DOMINANT

SPECIES CODE	LAYER 1	2	3	4	COLL.
FRAPENN	D	D			
CORSTOL			R		

SPECIES CODE	LAYER 1	2	3	4	COLL.

ELC
COMMUNITY DESCRIPTION & CLASSIFICATION

SITE:		POLYGON:	
SURVEYOR(S):	DATE:		UTME:
START:	END	UTMZ:	UTMN:

POLYGON DESCRIPTION

SYSTEM	SUBSTRATE	TOPOGRAPHIC FEATURE	HISTORY	PLANT FORM	COMMUNITY
☐ TERRESTRIAL ☐ WETLAND ☐ AQUATIC	☐ ORGANIC ☐ MINERAL SOIL ☐ PARENT MIN. ☐ ACIDIC BEDRK. ☐ BASIC BEDRK. ☐ CARB. BEDRK.	☐ LACUSTRINE ☐ RIVERINE. ☐ BOTTOMLAND ☐ TERRACE ☐ VALLEY SLOPE ☐ TABLELAND ☐ ROLL. UPLAND ☐ CLIFF ☐ TALUS ☐ CREVICE / CAVE ☐ ALVAR ☐ ROCKLAND ☐ BEACH / BAR ☐ SAND DUNE ☐ BLUFF	☐ NATURAL ☐ CULTURAL	☐ PLANKTON ☐ SUBMERGED ☐ FLOATING-LVD. ☐ GRAMINOID ☐ FORB ☐ LICHEN ☐ BRYOPHYTE ☐ DECIDUOUS ☐ CONIFEROUS ☐ MIXED	☐ LAKE ☐ POND ☐ RIVER ☐ STREAM ☐ MARSH ☐ SWAMP ☐ FEN ☐ BOG ☐ BARREN ☐ MEADOW ☐ PRAIRIE ☐ THICKET ☐ SAVANNAH ☐ WOODLAND ☐ FOREST ☐ PLANTATION
SITE ☐ OPEN WATER ☐ SHALLOW WATER ☐ SURFICIAL DEP. ☐ BEDROCK			**COVER** ☐ OPEN ☐ SHRUB ☑ TREED		

STAND DESCRIPTION:

LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; ≈ ABOUT EQUAL TO)
1 CANOPY			
2 SUB-CANOPY			?
3 UNDERSTOREY		2-3	Cornus
4 GRD. LAYER		4	?

HT CODES: 1 = >25 m 2 = 10<HT≤25 m 3 = 2<HT≤10 m 4 = 1<HT≤2 m 5 = 0.5<HT≤1 m 6 = 0.2<HT≤0.5 m 7 = HT<0.2 m
CVR CODES 0= NONE 1= 0% < CVR ≤ 10% 2= 10 < CVR ≤ 25% 3= 25 < CVR ≤ 60% 4= CVR > 60%

STAND COMPOSITION:	BA:

SIZE CLASS ANALYSIS:		< 10		10 - 24		25 - 50		> 50
STANDING SNAGS:		< 10		10 - 24		25 - 50		> 50
DEADFALL / LOGS:		< 10		10 - 24		25 - 50		> 50

ABUNDANCE CODES: N = NONE R = RARE O = OCCASIONAL A = ABUNDANT

COMM. AGE :		PIONEER		YOUNG		MID-AGE		MATURE		OLD GROWTH

SOIL ANALYSIS:

TEXTURE:	DEPTH TO MOTTLES / GLEY	g =	G=
MOISTURE:	DEPTH OF ORGANICS:		(cm)
HOMOGENEOUS / VARIABLE	DEPTH TO BEDROCK:		(cm)

COMMUNITY CLASSIFICATION:

COMMUNITY CLASS:	CODE:
COMMUNITY SERIES:	CODE:
ECOSITE:	CODE:
VEGETATION TYPE:	CODE: SWT or MAM
INCLUSION	CODE:
COMPLEX	CODE:

Notes: VERY difficult to see past hedgerow. Can tell open. CHAR Sloping -so known not SWT/MAM

ELC
PLANT SPECIES LIST

SITE:	GRBP
POLYGON:	81-2
DATE:	8-APR-2014
SURVEYOR(S):	M. Straus

LAYERS: 1 = CANOPY > 10m 2 = SUB-CANOPY 3 = UNDERSTOREY 4 = GROUND (GRD.) LAYER
ABUNDANCE CODES: R = RARE O = OCCASIONAL A = ABUNDANT D = DOMINANT

SPECIES CODE	LAYER 1	2	3	4	COLL.
Cornus			O?		

SPECIES CODE	LAYER 1	2	3	4	COLL.
Meadowsweet					
R.C. grass				?	

Page ...... of ......

ELC — COMMUNITY DESCRIPTION & CLASSIFICATION

SITE:		POLYGON:	
SURVEYOR(S):	DATE:		UTME:
START:	END	UTMZ:	UTMN:

POLYGON DESCRIPTION

SYSTEM	SUBSTRATE	TOPOGRAPHIC FEATURE	HISTORY	PLANT FORM	COMMUNITY
☐ TERRESTRIAL ☐ WETLAND ☐ AQUATIC	☐ ORGANIC ☐ MINERAL SOIL ☐ PARENT MIN. ☐ ACIDIC BEDRK. ☐ BASIC BEDRK. ☐ CARB. BEDRK.	☐ LACUSTRINE ☐ RIVERINE ☐ BOTTOMLAND ☐ TERRACE ☐ VALLEY SLOPE ☐ TABLELAND ☐ ROLL UPLAND ☐ CLIFF ☐ TALUS ☐ CREVICE / CAVE ☐ ALVAR ☐ ROCKLAND ☐ BEACH / BAR ☐ SAND DUNE ☐ BLUFF	☐ NATURAL ☐ CULTURAL	☐ PLANKTON ☐ SUBMERGED ☐ FLOATING-LVD. ☐ GRAMINOID ☐ FORB ☐ LICHEN ☐ BRYOPHYTE ☐ DECIDUOUS ☐ CONIFEROUS ☐ MIXED	☐ LAKE ☐ POND ☐ RIVER ☐ STREAM ☐ MARSH ☐ SWAMP ☐ FEN ☐ BOG ☐ BARREN ☐ MEADOW ☐ PRAIRIE ☐ THICKET ☐ SAVANNAH ☐ WOODLAND ☐ FOREST ☐ PLANTATION
SITE ☐ OPEN WATER ☐ SHALLOW WATER ☐ SURFICIAL DEP. ☐ BEDROCK			**COVER** ☐ OPEN ☐ SHRUB ☐ TREED		

STAND DESCRIPTION:

	LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1	CANOPY	1	4	CARCOR >> FRAPENN
2	SUB-CANOPY	2	4	CARCOR < FRAPENN
3	UNDERSTOREY	3 4		
4	GRD. LAYER	7		?

HT CODES: 1 = >25 m 2 = 10<HT≤25 m 3 = 2<HT≤10 m 4 = 1<HT≤2 m 5 = 0.5<HT≤1 m 6 = 0.2<HT≤0.5 m 7 = HT<0.2 m

CVR CODES 0= NONE 1= 0% < CVR ≤ 10% 2= 10 < CVR ≤ 25% 3= 25 < CVR ≤ 60% 4= CVR > 60%

STAND COMPOSITION:						BA:
SIZE CLASS ANALYSIS:	A	< 10	A	10 - 24	O	25 - 50	A	> 50
STANDING SNAGS:	N	< 10	R	10 - 24	R	25 - 50	N	> 50
DEADFALL / LOGS:		< 10	O	10 - 24		25 - 50	N	> 50

ABUNDANCE CODES: N = NONE R = RARE O = OCCASIONAL A = ABUNDANT

COMM. AGE :		PIONEER		YOUNG		MID-AGE	X	MATURE		OLD GROWTH

SOIL ANALYSIS:

TEXTURE:	DEPTH TO MOTTLES / GLEY	g =	G=
MOISTURE:	DEPTH OF ORGANICS:		(cm)
HOMOGENEOUS / VARIABLE	DEPTH TO BEDROCK:		(cm)

COMMUNITY CLASSIFICATION:

COMMUNITY CLASS:	CODE:
COMMUNITY SERIES:	CODE:
ECOSITE:	CODE:
VEGETATION TYPE: F-M Shagbark Hickory Decid. Forest	CODE: FOD9-4
INCLUSION	CODE:
COMPLEX	CODE:

Notes: BRK - Transitions from Ag to Ag=Hickory to Hickory>Ag to Hickory=Or

ELC — PLANT SPECIES LIST

SITE:	GREP
POLYGON:	81-3
DATE:	8-APR-2011
SURVEYOR(S):	

LAYERS: 1 = CANOPY > 10m 2 = SUB-CANOPY 3 = UNDERSTOREY 4 = GROUND (GRD.) LAYER

ABUNDANCE CODES: R = RARE O = OCCASIONAL A = ABUNDANT D = DOMINANT

SPECIES CODE	LAYER 1	2	3	4	COLL.
CARCOR	A	A-A			
FRAPEN	A	A			
QUEMAC	R	R			
CORNUS			R		

SPECIES CODE	LAYER 1	2	3	4	COLL.
Dead forbs				D	
R.C. grass				R	

ELC
COMMUNITY DESCRIPTION & CLASSIFICATION

SITE:		POLYGON:	
SURVEYOR(S):	DATE:		UTME:
START:	END	UTMZ:	UTMN:

POLYGON DESCRIPTION

SYSTEM	SUBSTRATE	TOPOGRAPHIC FEATURE	HISTORY	PLANT FORM	COMMUNITY
☐ TERRESTRIAL ☐ WETLAND ☐ AQUATIC	☐ ORGANIC ☐ MINERAL SOIL ☐ PARENT MIN. ☐ ACIDIC BEDRK. ☐ BASIC BEDRK. ☐ CARB. BEDRK.	☐ LACUSTRINE ☐ RIVERINE ☐ BOTTOMLAND ☐ TERRACE ☐ VALLEY SLOPE ☐ TABLELAND ☐ ROLL. UPLAND ☐ CLIFF ☐ TALUS ☐ CREVICE / CAVE ☐ ALVAR ☐ ROCKLAND ☐ BEACH / BAR ☐ SAND DUNE ☐ BLUFF	☐ NATURAL ☐ CULTURAL	☐ PLANKTON ☐ SUBMERGED ☐ FLOATING-LVD. ☐ GRAMINOID ☐ FORB ☐ LICHEN ☐ BRYOPHYTE ☐ DECIDUOUS ☐ CONIFEROUS ☐ MIXED	☐ LAKE ☐ POND ☐ RIVER ☐ STREAM ☐ MARSH ☐ SWAMP ☐ FEN ☐ BOG ☐ BARREN ☐ MEADOW ☐ PRAIRIE ☐ THICKET ☐ SAVANNAH ☐ WOODLAND ☐ FOREST ☐ PLANTATION
SITE			**COVER**		
☐ OPEN WATER ☐ SHALLOW WATER ☐ SURFICIAL DEP. ☐ BEDROCK			☐ OPEN ☐ SHRUB ☐ TREED		

STAND DESCRIPTION:

LAYER		HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1	CANOPY			
2	SUB-CANOPY			
3	UNDERSTOREY			
4	GRD. LAYER			

HT CODES: 1 = >25 m 2 = 10<HT≤25 m 3 = 2<HT≤10 m 4 = 1<HT≤2 m 5 = 0.5<HT≤1 m 6 = 0.2<HT≤0.5 m 7 = HT<0.2 m
CVR CODES 0= NONE 1= 0% < CVR ≤ 10% 2= 10 < CVR ≤ 25% 3= 25 < CVR ≤ 60% 4= CVR > 60%

STAND COMPOSITION:	BA:

SIZE CLASS ANALYSIS:		< 10		10 - 24		25 - 50		> 50
STANDING SNAGS:		< 10		10 - 24		25 - 50		> 50
DEADFALL / LOGS:		< 10		10 - 24		25 - 50		> 50

ABUNDANCE CODES: N = NONE R = RARE O = OCCASIONAL A = ABUNDANT

COMM. AGE :		PIONEER		YOUNG		MID-AGE		MATURE		OLD GROWTH

SOIL ANALYSIS:

TEXTURE:	DEPTH TO MOTTLES / GLEY	g =	G=
MOISTURE:	DEPTH OF ORGANICS:		(cm)
HOMOGENEOUS / VARIABLE	DEPTH TO BEDROCK:		(cm)

COMMUNITYCLASSIFICATION:

COMMUNITY CLASS:	CODE:
COMMUNITY SERIES:	CODE:
ECOSITE:	CODE:
VEGETATION TYPE:	CODE:
INCLUSION	CODE:
COMPLEX	CODE:

Notes:

ELC
PLANT SPECIES LIST

SITE:	
POLYGON:	
DATE:	
SURVEYOR(S):	

LAYERS: 1 = CANOPY > 10m 2 = SUB-CANOPY 3 = UNDERSTOREY 4 = GROUND (GRD.) LAYER
ABUNDANCE CODES: R = RARE O = OCCASIONAL A = ABUNDANT D = DOMINANT

SPECIES CODE	LAYER 1	LAYER 2	LAYER 3	LAYER 4	COLL.	SPECIES CODE	LAYER 1	LAYER 2	LAYER 3	LAYER 4	COLL.

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February 2011
160960577

Stantec

Legend

- Study Area
- Zone of Investigation
- Constructable Area

Wind Project Location

- Proposed Turbine Location
- Access Road
- Overhead Collector Line
- Underground Collector Line

Solar Project Location

- Solar Lands

Transmission Line

- Overhead Transmission Line
- Underground Transmission Line
- Electrical Transmission Component

Existing Features

- Road
- Railway
- Abandoned Railway
- Transmission Line (MNR)
- Watercourse (MNR)
- Waterbody (MNR)
- 1 Natural Feature
- Vegetation Community (ELC)

Forest Communities (FO)
FOM 2-2 – Dry-fresh White Pine – Sugar Maple Mixed Forest
FOD – Deciduous Forest
FOD1-1 – Dry-fresh Red Oak Deciduous Forest
FOD2-1 – Dry-fresh Oak – Red Maple Deciduous Forest
FOD2-2 – Dry-fresh Oak – Hickory Deciduous Forest
FOD2-4 – Dry-fresh Oak – Hardwood Deciduous Forest
FOD 3-1 – Dry-fresh Poplar Deciduous Forest
FOD4-1 – Dry-fresh Beech Deciduous Forest
FOD4-2 – Dry-fresh White Ash Deciduous Forest
FOD5 – Dry-fresh Sugar Maple Deciduous Forest Ecosite
FOD5-1 – Dry-fresh Sugar Maple Deciduous Forest
FOD5-2 – Dry-fresh Sugar Maple – Beech Deciduous Forest
FOD5-3 – Dry-fresh Sugar Maple – Oak Deciduous Forest
FOD5-8 – Dry-fresh Sugar Maple – White Ash Deciduous Forest
FOD5-9 - Dry-fresh Sugar Maple–Red Maple Deciduous Forest
FOD5-11* - Dry-fresh Sugar Maple – Oak – Beech Deciduous Forest
FOD5-12* - Dry-fresh Sugar Maple – Hickory – Beech Deciduous Forest
FOD6-1 – Fresh-moist Sugar Maple – Lowland Ash Deciduous Forest
FOD6-5 – Fresh-moist Sugar Maple – Hardwood Deciduous Forest
FOD6-6* - Fresh-moist Sugar Maple – Hickory Deciduous Forest
FOD7-1 – Fresh – moist White Elm Lowland Deciduous Forest
FOD7-2 – Fresh-moist Ash Lowland Deciduous Forest
FOD9-1 – Fresh-moist Oak – Sugar Maple Deciduous Forest
FOD9-3 - Fresh-moist Bur Oak Deciduous Forest
FOD9-4 – Fresh-moist Shagbark Hickory Deciduous Forest
FOD9-6* - Fresh-moist Red Oak – Shagbark Hickory Deciduous Forest

Cultural Communities (CU)
CUP1-4 – Hybrid Poplar Deciduous Plantation
CUP2 – Mixed Plantation
CUP3-1 – Red Pine Coniferous Plantation
CUP3-2 – White Pine Coniferous Plantation
CUP3-12* - White Pine – White/Norway Spruce Coniferous Plantation
CUP3-13* - White Spruce Coniferous Plantation
CUM1 – Mineral Cultural Meadow
CUT1 – Mineral Cultural Thicket
CUT1-1 – Sumac Cultural Thicket
CUT1-4 – Gray Dogwood Cultural Thicket
CUT1-7 – European Buckthorn – Sweet Cherry Cultural thicket
CUW1 – Mineral Cultural Woodland
CUW1-1 – Red Cedar Mineral Cultural Woodland
CUW1-3* - Ash – Sumac Mineral Cultural Woodland
CUW1-4* - Green Ash Mineral Cultural Woodland
CUW1-5* – Norway Maple Mineral Cultural Woodland
CUW1-6* - White Elm Cultural Woodland
CUW1-7* - Red maple Mineral Cultural Woodland
CUW1-11* - White Pine Cultural Woodland

Swamp Communities (SW)
SWD – Deciduous Swamp
SWD1-1 – Swamp Oak Mineral Deciduous Swamp
SWD1-2 – Bur Oak Mineral Deciduous Swamp
SWD2-2 – Green Ash Mineral Deciduous Swamp
SWD2-3* - Ash – Hardwood Mineral Deciduous Swamp
SWD2-4* - Green Ash – Red Maple Mineral Deciduous Swamp
SWD3-1 – Red Maple Mineral Deciduous Swamp
SWD3-2 – Silver Maple Mineral Deciduous Swamp
SWD3-3 – Swamp Maple Mineral Deciduous Swamp
SWD4-1 – Willow Mineral Deciduous Swamp
SWD4-2 – White Elm Mineral Deciduous Swamp
SWD4-6* - Green Ash – Swamp Maple Mineral Deciduous Swamp
SWT – Thicket Swamp
SWT2 – Mineral Thicket Swamp
SWT2-4 – Buttonbush Mineral Thicket Swamp
SWT2-5 – Red Osier Dogwood Mineral Thicket Swamp
SWT2-6 – Silky Dogwood Mineral Thicket Swamp
SWT2-9 – Gray Dogwood Mineral Thicket Swamp
SWT2-13* - Willow – Dogwood Mineral Thicket Swamp
SWT2-14* - Winterberry – Buttonbush Mineral Thicket Swamp
SWT2-15* - Red Maple Mineral Thicket Swamp
SWT3-7 – Winterberry Organic Thicket Swamp

Marsh Communities (MA)
MAM2 – Mineral Meadow Marsh
MAM2-2 – Reed Canary Grass Mineral Meadow Marsh
MAM2-9 – Jewelweed Mineral Meadow Marsh
MAM2-10 – Forb Mineral Meadow Marsh
MAM2-11* - Forb – Graminoid Mineral Meadow Marsh
MAS2-1 – Cattail Mineral Shallow Marsh
MAS2-8 – Rice Cut-grass Mineral Shallow Marsh

Open Water (OA)
OA – Open Aquatic

Shallow Water (SA)
SAM1-2 – Duckweed Mixed Shallow Aquatic

HR – Hedgerow
D – Disturbed
Res - Residential

Notes

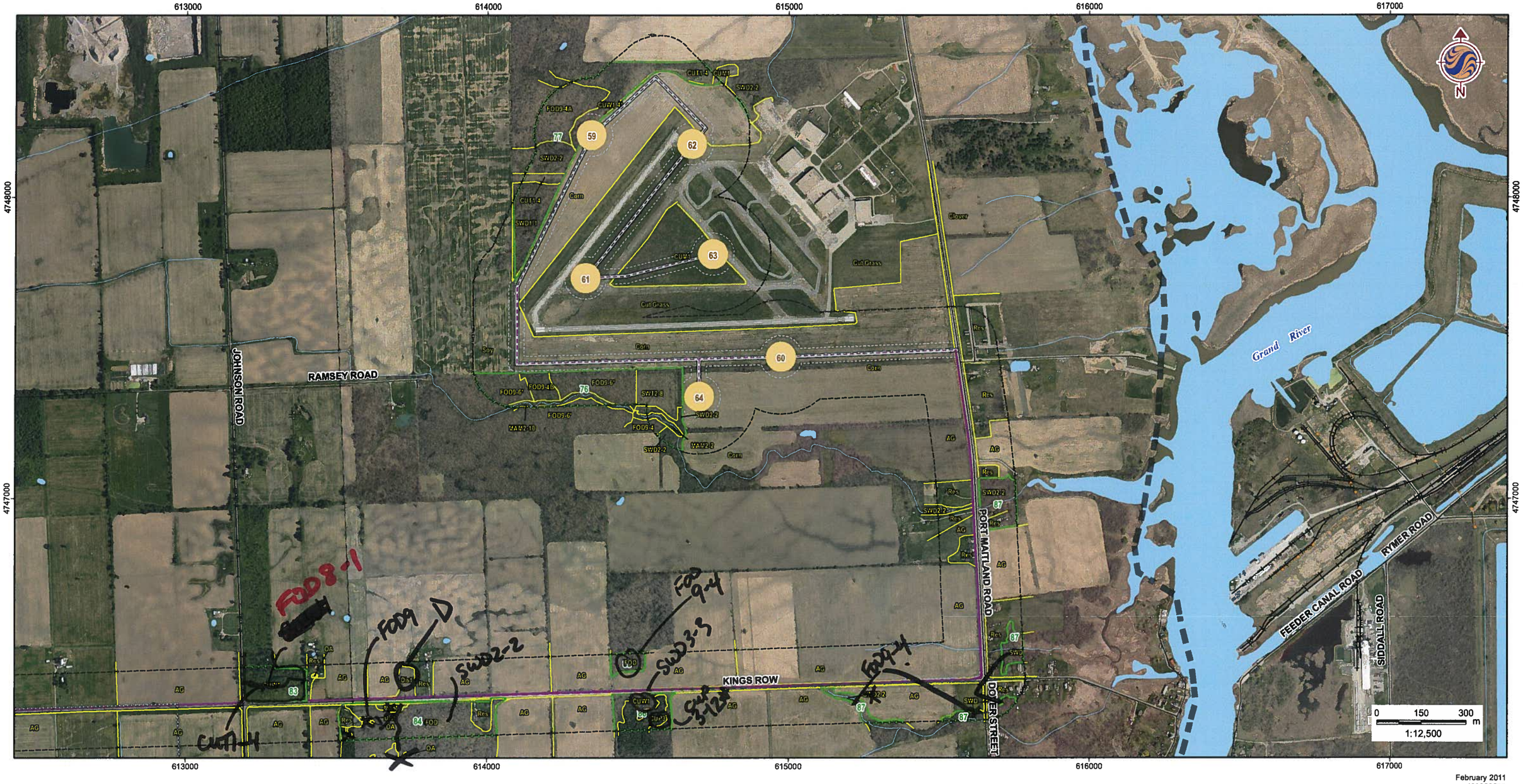
1. Coordinate System: UTM NAD 83 - Zone 17 (N).
2. Base features produced under license with the Ontario Ministry of Natural Resources © Queens Printer Ontario, 2011; © Samsung, 2011.
3. Image Source: © Terrapoint, 2011 - Imagery Date: July 2009; Grand River Conservation Authority © First Base Solutions, 2011 - Imagery Date: Spring 2006.

Client/Project
SAMSUNG, PATTERN & KEPCO (SPK)
GRAND RENEWABLE ENERGY PARK

Figure No.
6.16

DRAFT

Title
ELC VEGETATION COMMUNITIES - W16



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February 2011
160960577

Stantec

Legend

- Study Area
- Zone of Investigation
- Constructable Area

Wind Project Location

- Proposed Turbine Location
- Access Road
- Overhead Collector Line
- Underground Collector Line

Solar Project Location

- Solar Lands

Transmission Line

- Overhead Transmission Line
- Underground Transmission Line
- Electrical Transmission Component

Existing Features

- Road
- Railway
- Abandoned Railway
- Transmission Line (MNR)
- Watercourse (MNR)
- Waterbody (MNR)
- 1 Natural Feature
- Vegetation Community (ELC)

+FOD9 - Fresh-moist Oak-Maple-Hickory Deciduous Forest / +FOD8-1: Fresh-moist Poplar Deciduous Forest

Forest Communities (FO)
FOM 2-2 – Dry-fresh White Pine – Sugar Maple Mixed Forest
FOD – Deciduous Forest
FOD1-1 – Dry-fresh Red Oak Deciduous Forest
FOD2-1 – Dry-fresh Oak – Red Maple Deciduous Forest
FOD2-2 – Dry-fresh Oak – Hickory Deciduous Forest
FOD2-4 – Dry-fresh Oak – Hardwood Deciduous Forest
FOD 3-1 – Dry-fresh Poplar Deciduous Forest
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FOD5 – Dry-fresh Sugar Maple Deciduous Forest Ecosite
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FOD5-2 – Dry-fresh Sugar Maple – Beech Deciduous Forest
FOD5-3 – Dry-fresh Sugar Maple – Oak Deciduous Forest
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Cultural Communities (CU)
CUP1-4 – Hybrid Poplar Deciduous Plantation
CUP2 – Mixed Plantation
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CUP3-2 – White Pine Coniferous Plantation
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CUT1-7 – European Buckthorn – Sweet Cherry Cultural thicket
CUW1 – Mineral Cultural Woodland
CUW1-1 – Red Cedar Mineral Cultural Woodland
CUW1-3* - Ash – Sumac Mineral Cultural Woodland
CUW1-4' - Green Ash Mineral Cultural Woodland
CUW1-5* - Norway Maple Mineral Cultural Woodland
CUW1-6* - White Elm Cultural Woodland
CUW1-7* - Red maple Mineral Cultural Woodland
CUW1-11' - White Pine Cultural Woodland

Swamp Communities (SW)
SWD – Deciduous Swamp
SWD1-1 – Swamp Oak Mineral Deciduous Swamp
SWD1-2 – Bur Oak Mineral Deciduous Swamp
SWD2-2 – Green Ash Mineral Deciduous Swamp
SWD2-3* - Ash – Hardwood Mineral Deciduous Swamp
SWD2-4* - Green Ash – Red Maple Mineral Deciduous Swamp
SWD3-1 – Red Maple Mineral Deciduous Swamp
SWD3-2 – Silver Maple Mineral Deciduous Swamp
SWD3-3 – Swamp Maple Mineral Deciduous Swamp
SWD4-1 – Willow Mineral Deciduous Swamp
SWD4-2 – White Elm Mineral Deciduous Swamp
SWD4-6* - Green Ash – Swamp Maple Mineral Deciduous Swamp
SWT – Thicket Swamp
SWT2 – Mineral Thicket Swamp
SWT2-4 – Buttonbush Mineral Thicket Swamp
SWT2-5 – Red Osier Dogwood Mineral Thicket Swamp
SWT2-6 – Silky Dogwood Mineral Thicket Swamp
SWT2-9 – Gray Dogwood Mineral Thicket Swamp
SWT2-13' - Willow – Dogwood Mineral Thicket Swamp
SWT2-14* - Winterberry – Buttonbush Mineral Thicket Swamp
SWT2-15* - Red Maple Mineral Thicket Swamp
SWT3-7 – Winterberry Organic Thicket Swamp

Marsh Communities (MA)
MAM2 – Mineral Meadow Marsh
MAM2-2 – Reed Canary Grass Mineral Meadow Marsh
MAM2-9 – Jewelweed Mineral Meadow Marsh
MAM2-10 – Forb Mineral Meadow Marsh
MAM2-11' - Forb – Graminoid Mineral Meadow Marsh
MAS2-1 – Cattail Mineral Shallow Marsh
MAS2-6 – Rice Cut-grass Mineral Shallow Marsh

Open Water (OA)
OA – Open Aquatic

Shallow Water (SA)
SAM1-2 – Duckweed Mixed Shallow Aquatic

HR – Hedgerow
D – Disturbed
Res - Residential

Notes

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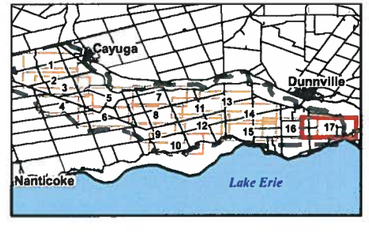

Client/Project
SAMSUNG, PATTERN & KEPCO (SPK)
GRAND RENEWABLE ENERGY PARK

Figure No.
6.17

DRAFT

Title
ELC VEGETATION COMMUNITIES - W17

ELC COMMUNITY DESCRIPTION & CLASSIFICATION

SITE:		POLYGON:	
SURVEYOR(S):	DATE:		UTME:
START:	END	UTMZ:	UTMN:

POLYGON DESCRIPTION

SYSTEM	SUBSTRATE	TOPOGRAPHIC FEATURE	HISTORY	PLANT FORM	COMMUNITY
☒ TERRESTRIAL ☐ WETLAND ☐ AQUATIC	☐ ORGANIC ☒ MINERAL SOIL ☐ PARENT MIN. ☐ ACIDIC BEDRK. ☐ BASIC BEDRK. ☐ CARB. BEDRK.	☐ LACUSTRINE ☐ RIVERINE ☐ BOTTOMLAND ☐ TERRACE ☐ VALLEY SLOPE ☒ TABLELAND ☐ ROLL. UPLAND ☐ CLIFF ☐ TALUS ☐ CREVICE / CAVE ☐ ALVAR ☐ ROCKLAND ☐ BEACH / BAR ☐ SAND DUNE ☐ BLUFF	☒ NATURAL ☒ CULTURAL	☐ PLANKTON ☐ SUBMERGED ☐ FLOATING-LVD. ☐ GRAMINOID ☐ FORB ☐ LICHEN ☐ BRYOPHYTE ☒ DECIDUOUS ☐ CONIFEROUS ☐ MIXED	☐ LAKE ☐ POND ☐ RIVER ☐ STREAM ☐ MARSH ☐ SWAMP ☐ FEN ☐ BOG ☐ BARREN ☐ MEADOW ☐ PRAIRIE ☐ THICKET ☐ SAVANNAH ☒ WOODLAND ☐ FOREST ☐ PLANTATION
SITE ☐ OPEN WATER ☐ SHALLOW WATER ☒ SURFICIAL DEP. ☐ BEDROCK			**COVER** ☐ OPEN ☐ SHRUB ☒ TREED		

STAND DESCRIPTION:

	LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1	CANOPY	2	3	ACER FRES
2	SUB-CANOPY	3	3	ACER FREE
3	UNDERSTOREY	4	4	CORRACE > CORSTOL
4	GRD. LAYER			

HT CODES: 1 = >25 m 2 = 10<HT<25 m 3 = 2<HT<10 m 4 = 1<HT<2 m 5 = 0.5<HT<1 m 6 = 0.2<HT<0.5 m 7 = HT<0.2 m
CVR CODES 0= NONE 1= 0% < CVR < 10% 2= 10 < CVR < 25% 3= 25 < CVR < 60% 4= CVR > 60%

STAND COMPOSITION:							BA:	
SIZE CLASS ANALYSIS:	A	< 10	R	10 - 24	N	25 - 50	N	> 50
STANDING SNAGS:		< 10		10 - 24		25 - 50		> 50
DEADFALL / LOGS:		< 10		10 - 24		25 - 50		> 50

ABUNDANCE CODES: N = NONE R = RARE O = OCCASIONAL A = ABUNDANT

COMM. AGE :		PIONEER	X	YOUNG	X	MID-AGE		MATURE		OLD GROWTH

SOIL ANALYSIS:

TEXTURE:	DEPTH TO MOTTLES / GLEY	g =	G=
MOISTURE:	DEPTH OF ORGANICS:		(cm)
HOMOGENEOUS / VARIABLE	DEPTH TO BEDROCK:		(cm)

COMMUNITYCLASSIFICATION:

COMMUNITY CLASS:		CODE:
COMMUNITY SERIES:		CODE:
ECOSITE:		CODE:
VEGETATION TYPE:	Cultural Woodland	CODE: CUW1
INCLUSION		CODE:
COMPLEX		CODE:

Notes:

NO ACCESS

- POSSIBLE WETLAND; COULD NOT DETERMINE AT TIME OF SURVEY

ELC PLANT SPECIES LIST

SITE: GREP

POLYGON: F82

DATE: 7-March-2011

SURVEYOR(S): JL + MS

LAYERS: 1 = CANOPY > 10m 2 = SUB-CANOPY 3 = UNDERSTOREY 4 = GROUND (GRD.) LAYER
ABUNDANCE CODES: R = RARE O = OCCASIONAL A = ABUNDANT D = DOMINANT

SPECIES CODE	LAYER 1	2	3	4	COLL.
ACER FRES +	A				
FRAPENN	OA				
CORRACE			O		
CORSTOL			O		

ELC
COMMUNITY DESCRIPTION & CLASSIFICATION

SITE:		POLYGON:	
SURVEYOR(S):	DATE:		UTME:
START:	END	UTMZ:	UTMN:

POLYGON DESCRIPTION

SYSTEM	SUBSTRATE	TOPOGRAPHIC FEATURE	HISTORY	PLANT FORM	COMMUNITY
☐ TERRESTRIAL ☐ WETLAND ☐ AQUATIC	☐ ORGANIC ☐ MINERAL SOIL ☐ PARENT MIN. ☐ ACIDIC BEDRK. ☐ BASIC BEDRK. ☐ CARB. BEDRK.	☐ LACUSTRINE ☐ RIVERINE ☐ BOTTOMLAND ☐ TERRACE ☐ VALLEY SLOPE ☐ TABLELAND ☐ ROLL. UPLAND ☐ CLIFF ☐ TALUS ☐ CREVICE / CAVE ☐ ALVAR ☐ ROCKLAND ☐ BEACH / BAR ☐ SAND DUNE ☐ BLUFF	☐ NATURAL ☐ CULTURAL **COVER** ☐ OPEN ☐ SHRUB ☐ TREED	☐ PLANKTON ☐ SUBMERGED ☐ FLOATING-LVD. ☐ GRAMINOID ☐ FORB ☐ LICHEN ☐ BRYOPHYTE ☐ DECIDUOUS ☐ CONIFEROUS ☐ MIXED	☐ LAKE ☐ POND ☐ RIVER ☐ STREAM ☐ MARSH ☐ SWAMP ☐ FEN ☐ BOG ☐ BARREN ☐ MEADOW ☐ PRAIRIE ☐ THICKET ☐ SAVANNAH ☐ WOODLAND ☐ FOREST ☐ PLANTATION
SITE ☐ OPEN WATER ☐ SHALLOW WATER ☐ SURFICIAL DEP. ☐ BEDROCK					

STAND DESCRIPTION:

	LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1	CANOPY			
2	SUB-CANOPY			
3	UNDERSTOREY			
4	GRD. LAYER			

HT CODES: 1 = >25 m 2 = 10<HT<25 m 3 = 2<HT<10 m 4 = 1<HT<2 m 5 = 0.5<HT<1 m 6 = 0.2<HT<0.5 m 7 = HT<0.2 m
CVR CODES 0= NONE 1= 0% < CVR < 10% 2= 10 < CVR < 25% 3= 25 < CVR < 60% 4= CVR > 60%

STAND COMPOSITION:				BA:
SIZE CLASS ANALYSIS:	< 10	10 - 24	25 - 50	> 50
STANDING SNAGS:	< 10	10 - 24	25 - 50	> 50
DEADFALL / LOGS:	< 10	10 - 24	25 - 50	> 50

ABUNDANCE CODES: N = NONE R = RARE O = OCCASIONAL A = ABUNDANT

COMM. AGE :	PIONEER	YOUNG	MID-AGE	MATURE	OLD GROWTH

SOIL ANALYSIS:

TEXTURE:	DEPTH TO MOTTLES / GLEY	g =	G=
MOISTURE:	DEPTH OF ORGANICS:		(cm)
HOMOGENEOUS / VARIABLE	DEPTH TO BEDROCK:		(cm)

COMMUNITYCLASSIFICATION:

COMMUNITY CLASS:	CODE:
COMMUNITY SERIES:	CODE:
ECOSITE:	CODE:
VEGETATION TYPE:	CODE:
INCLUSION	CODE:
COMPLEX	CODE:

Notes:

ELC
PLANT SPECIES LIST

SITE:	
POLYGON:	
DATE:	
SURVEYOR(S):	

LAYERS: 1 = CANOPY > 10m 2 = SUB-CANOPY 3 = UNDERSTOREY 4 = GROUND (GRD.) LAYER
ABUNDANCE CODES: R = RARE O = OCCASIONAL A = ABUNDANT D = DOMINANT

SPECIES CODE	LAYER 1	2	3	4	COLL.	SPECIES CODE	LAYER 1	2	3	4	COLL.

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ELC — COMMUNITY DESCRIPTION & CLASSIFICATION

SITE:		POLYGON: 83-1	
SURVEYOR(S):		DATE:	UTME:
START:	END	UTMZ:	UTMN:

POLYGON DESCRIPTION

SYSTEM	SUBSTRATE	TOPOGRAPHIC FEATURE	HISTORY	PLANT FORM	COMMUNITY
☒ TERRESTRIAL	☐ ORGANIC	☐ LACUSTRINE	☒ NATURAL	☐ PLANKTON	☐ LAKE
☐ WETLAND	☒ MINERAL SOIL	☐ RIVERINE,	☐ CULTURAL	☐ SUBMERGED	☐ POND
☐ AQUATIC	☐ PARENT MTN.	☐ BOTTOMLAND		☐ FLOATING-LVD.	☐ RIVER
	☐ ACIDIC BEDRK.	☐ TERRACE		☐ GRAMINOID	☐ STREAM
SITE	☐ BASIC BEDRK.	☐ VALLEY SLOPE	COVER	☐ FORB	☐ MARSH
	☐ CARB. BEDRK.	☒ TABLELAND		☐ LICHEN	☐ SWAMP
☐ OPEN WATER		☐ ROLL. UPLAND	☐ OPEN	☐ BRYOPHYTE	☐ FEN
☐ SHALLOW WATER		☐ CLIFF	☒ SHRUB	☒ DECIDUOUS	☐ BOG
☒ SURFICIAL DEP.		☐ TALUS	☐ TREED	☐ CONIFEROUS	☐ BARREN
☐ BEDROCK		☐ CREVICE / CAVE		☐ MIXED	☐ MEADOW
		☐ ALVAR			☐ PRAIRIE
		☐ ROCKLAND			☒ THICKET
		☐ BEACH / BAR			☐ SAVANNAH
		☐ SAND DUNE			☐ WOODLAND
		☐ BLUFF			☐ FOREST
					☐ PLANTATION

STAND DESCRIPTION:

	LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1	CANOPY	2	3	POPBALS > ULMAMER > SALIX
2	SUB-CANOPY			
3	UNDERSTOREY	4	3	CORNUS sp.
4	GRD. LAYER	5-7	4	Goldenrod = Teasel

HT CODES: 1 = >25 m 2 = 10<HT<25 m 3 = 2<HT<10 m 4 = 1<HT<2 m 5 = 0.5<HT<1 m 6 = 0.2<HT<0.5 m 7 = HT<0.2 m

CVR CODES: 0 = NONE 1 = 0% < CVR < 10% 2 = 10 < CVR < 25% 3 = 25 < CVR < 60% 4 = CVR > 60%

STAND COMPOSITION:			BA:

SIZE CLASS ANALYSIS:	O	< 10	O	10 - 24	R	25 - 50	N	> 50
STANDING SNAGS:		< 10		10 - 24		25 - 50		> 50
DEADFALL / LOGS:		< 10		10 - 24		25 - 50		> 50

ABUNDANCE CODES: N = NONE R = RARE O = OCCASIONAL A = ABUNDANT

COMM. AGE :		PIONEER		YOUNG	X	MID-AGE		MATURE		OLD GROWTH

SOIL ANALYSIS:

TEXTURE:	DEPTH TO MOTTLES / GLEY	g =	G=
MOISTURE:	DEPTH OF ORGANICS:		(cm)
HOMOGENEOUS / VARIABLE	DEPTH TO BEDROCK:		(cm)

COMMUNITYCLASSIFICATION:

COMMUNITY CLASS:	CODE:
COMMUNITY SERIES:	CODE:
ECOSITE:	CODE:
VEGETATION TYPE: Gray Dogwood Cultural Thicket	CODE: CUT1-4
INCLUSION	CODE:
COMPLEX	CODE:

Notes:

- Open canopy, from road
- SMALL POCKETS WOODLAND WERE INFREQUENTLY OBS.

ELC — PLANT SPECIES LIST

SITE: GREP	
POLYGON: F83	
DATE: 7-March-2011	
SURVEYOR(S): MS, JL	

LAYERS: 1 = CANOPY > 10m (07 min) 2 = SUB-CANOPY 3 = UNDERSTOREY 4 = GROUND (GRD.) LAYER

ABUNDANCE CODES: R = RARE O = OCCASIONAL A = ABUNDANT D = DOMINANT

SPECIES CODE	LAYER 1	2	3	4	COLL.
POPBALS	O				
Salix sp	R				
ULMAMER	R				
CORRACE			D-A		
COROTOL			O		

SPECIES CODE	LAYER 1	2	3	4	COLL.
Teasl				O	
Goldenrod				A	

ELC COMMUNITY DESCRIPTION & CLASSIFICATION

SITE:		POLYGON: 83-2	
SURVEYOR(S):	DATE:	UTME:	
START:	END	UTMZ:	UTMN:

POLYGON DESCRIPTION

SYSTEM	SUBSTRATE	TOPOGRAPHIC FEATURE	HISTORY	PLANT FORM	COMMUNITY
☒ TERRESTRIAL	☐ ORGANIC	☐ LACUSTRINE	☒ NATURAL	☐ PLANKTON	☐ LAKE
☐ WETLAND	☒ MINERAL SOIL	☐ RIVERINE	☐ CULTURAL	☐ SUBMERGED	☐ POND
☐ AQUATIC	☐ PARENT MIN.	☐ BOTTOMLAND		☐ FLOATING-LVD.	☐ RIVER
	☐ ACIDIC BEDRK.	☐ TERRACE		☐ GRAMINOID	☐ STREAM
SITE	☐ BASIC BEDRK.	☐ VALLEY SLOPE	COVER	☐ FORB	☐ MARSH
☐ OPEN WATER	☐ CARB. BEDRK.	☒ TABLELAND	☐ OPEN	☐ LICHEN	☐ SWAMP
☐ SHALLOW WATER		☐ ROLL UPLAND	☐ SHRUB	☐ BRYOPHYTE	☐ FEN
☒ SURFICIAL DEP.		☐ CLIFF	☒ TREED	☒ DECIDUOUS	☐ BOG
☐ BEDROCK		☐ TALUS		☐ CONIFEROUS	☐ BARREN
		☐ CREVICE / CAVE		☐ MIXED	☐ MEADOW
		☐ ALVAR			☐ PRAIRIE
		☐ ROCKLAND			☐ THICKET
		☐ BEACH / BAR			☐ SAVANNAH
		☐ SAND DUNE			☐ WOODLAND
		☐ BLUFF			☒ FOREST
					☐ PLANTATION

STAND DESCRIPTION:

	LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1	CANOPY	1	4	POPBALS, FRAPENN
2	SUB-CANOPY	2	4	"
3	UNDERSTOREY	4	4	CORRACE
4	GRD. LAYER			

HT CODES: 1 = >25 m 2 = 10<HT<25 m 3 = 2<HT<10 m 4 = 1<HT<2 m 5 = 0.5<HT<1 m 6 = 0.2<HT<0.5 m 7 = HT<0.2 m

CVR CODES 0 = NONE 1 = 0% < CVR < 10% 2 = 10 < CVR < 25% 3 = 25 < CVR < 60% 4 = CVR > 60%

STAND COMPOSITION:							BA:	
SIZE CLASS ANALYSIS:	A	< 10	A	10 - 24	R	25 - 50	M	> 50
STANDING SNAGS:		< 10		10 - 24		25 - 50		> 50
DEADFALL / LOGS:		< 10		10 - 24		25 - 50		> 50

ABUNDANCE CODES: N = NONE R = RARE O = OCCASIONAL A = ABUNDANT

COMM. AGE :		PIONEER		YOUNG	X	MID-AGE		MATURE		OLD GROWTH

SOIL ANALYSIS:

TEXTURE:	DEPTH TO MOTTLES / GLEY	g =	G=
MOISTURE:	DEPTH OF ORGANICS:		(cm)
HOMOGENEOUS / VARIABLE	DEPTH TO BEDROCK:		(cm)

COMMUNITYCLASSIFICATION:

COMMUNITY CLASS:		CODE:
COMMUNITY SERIES:		CODE:
ECOSITE:		CODE:
VEGETATION TYPE:		CODE:
FM POPLAR DECIDUOUS FOREST		FOD 8-1
INCLUSION		CODE:
COMPLEX		CODE:

Notes:

- OPEN PATCHES IN CANOPY

ELC PLANT SPECIES LIST

SITE:	GREP
POLYGON:	F83
DATE:	7-March-2011
SURVEYOR(S):	JL, MS

LAYERS: 1 = CANOPY > 10m 2 = SUB-CANOPY 3 = UNDERSTOREY 4 = GROUND (GRD.) LAYER

ABUNDANCE CODES: R = RARE O = OCCASIONAL A = ABUNDANT D = DOMINANT

SPECIES CODE	LAYER 1	2	3	4	COLL.	SPECIES CODE	LAYER 1	2	3	4	COLL.
POPBALS	O										
FRAPENN	O										
Manitoba Maple	R										
CORRACE			O								

ELC — COMMUNITY DESCRIPTION & CLASSIFICATION

SITE:		POLYGON: 84-2
SURVEYOR(S):	DATE:	UTME:
START: / END	UTMZ:	UTMN:

POLYGON DESCRIPTION

SYSTEM	SUBSTRATE	TOPOGRAPHIC FEATURE	HISTORY	PLANT FORM	COMMUNITY
☒ TERRESTRIAL ☐ WETLAND ☐ AQUATIC	☐ ORGANIC ☒ MINERAL SOIL ☐ PARENT MIN. ☐ ACIDIC BEDRK. ☐ BASIC BEDRK. ☐ CARB. BEDRK.	☐ LACUSTRINE ☐ RIVERINE ☐ BOTTOMLAND ☐ TERRACE ☐ VALLEY SLOPE ☒ TABLELAND ☐ ROLL. UPLAND ☐ CLIFF ☐ TALUS ☐ CREVICE / CAVE ☐ ALVAR ☐ ROCKLAND ☐ BEACH / BAR ☐ SAND DUNE ☐ BLUFF	☒ NATURAL ☐ CULTURAL	☐ PLANKTON ☐ SUBMERGED ☐ FLOATING-LVD. ☐ GRAMINOID ☐ FORB ☐ LICHEN ☐ BRYOPHYTE ☒ DECIDUOUS ☐ CONIFEROUS ☐ MIXED	☐ LAKE ☐ POND ☐ RIVER ☐ STREAM ☐ MARSH ☒ SWAMP ☐ FEN ☐ BOG ☐ BARREN ☐ MEADOW ☐ PRAIRIE ☐ THICKET ☐ SAVANNAH ☐ WOODLAND ☐ FOREST ☐ PLANTATION

SITE

☐ OPEN WATER
☐ SHALLOW WATER
☒ SURFICIAL DEP.
☐ BEDROCK

COVER

☐ OPEN
☐ SHRUB
☒ TREED

STAND DESCRIPTION:

	LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1	CANOPY	2	4	FRAPENN
2	SUB-CANOPY	—	—	
3	UNDERSTOREY	4	4	CORSTOL > RHACATH
4	GRD. LAYER			

HT CODES: 1 = >25 m 2 = 10<HT<25 m 3 = 2<HT<10 m 4 = 1<HT<2 m 5 = 0.5<HT<1 m 6 = 0.2<HT<0.5 m 7 = HT<0.2 m

CVR CODES: 0 = NONE 1 = 0% < CVR < 10% 2 = 10 < CVR < 25% 3 = 25 < CVR < 60% 4 = CVR > 60%

STAND COMPOSITION:			BA:

SIZE CLASS ANALYSIS:	A	< 10	O	10 - 24	N	25 - 50	N	> 50
STANDING SNAGS:		< 10		10 - 24		25 - 50		> 50
DEADFALL / LOGS:		< 10		10 - 24		25 - 50		> 50

ABUNDANCE CODES: N = NONE R = RARE O = OCCASIONAL A = ABUNDANT

COMM. AGE :		PIONEER	X	YOUNG		MID-AGE		MATURE		OLD GROWTH

SOIL ANALYSIS:

TEXTURE:	DEPTH TO MOTTLES / GLEY	g =	G=
MOISTURE:	DEPTH OF ORGANICS:		(cm)
HOMOGENEOUS / VARIABLE	DEPTH TO BEDROCK:		(cm)

COMMUNITYCLASSIFICATION:

		CODE:
COMMUNITY CLASS:		CODE:
COMMUNITY SERIES:		CODE:
ECOSITE:		CODE:
VEGETATION TYPE:	Green Ash Mineral Dec. Swamp	SWD2-2
INCLUSION		CODE:
COMPLEX		CODE:

Notes:

From road - NO ACCESS

ELC — PLANT SPECIES LIST

SITE:	GREP
POLYGON:	F84.
DATE:	7-March-2011
SURVEYOR(S):	JL, MS

Continued 2.

LAYERS: 1 = CANOPY > 10m 2 = SUB-CANOPY 3 = UNDERSTOREY 4 = GROUND (GRD.) LAYER

ABUNDANCE CODES: R = RARE O = OCCASIONAL A = ABUNDANT D = DOMINANT

SPECIES CODE	LAYER 1	2	3	4	COLL.
FRAPENN	A				
CORSTOL			D		
RHACATH			O		

SPECIES CODE	LAYER 1	2	3	4	COLL.

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ELC
COMMUNITY DESCRIPTION & CLASSIFICATION

SITE: | POLYGON: 84-1
SURVEYOR(S): | DATE: | UTME:
START: | END | UTMZ: | UTMN:

POLYGON DESCRIPTION

SYSTEM	SUBSTRATE	TOPOGRAPHIC FEATURE	HISTORY	PLANT FORM	COMMUNITY
☒ TERRESTRIAL ☐ WETLAND ☐ AQUATIC	☐ ORGANIC ☒ MINERAL SOIL ☐ PARENT MIN. ☐ ACIDIC BEDRK. ☐ BASIC BEDRK. ☐ CARB. BEDRK.	☐ LACUSTRINE ☐ RIVERINE ☐ BOTTOMLAND ☐ TERRACE ☐ VALLEY SLOPE ☒ TABLELAND ☐ ROLL UPLAND ☐ CLIFF ☐ TALUS ☐ CREVICE / CAVE ☐ ALVAR ☐ ROCKLAND ☐ BEACH / BAR ☐ SAND DUNE ☐ BLUFF	☒ NATURAL ☐ CULTURAL	☐ PLANKTON ☐ SUBMERGED ☐ FLOATING-LVD. ☐ GRAMINOID ☐ FORB ☐ LICHEN ☐ BRYOPHYTE ☒ DECIDUOUS ☐ CONIFEROUS ☐ MIXED	☐ LAKE ☐ POND ☐ RIVER ☐ STREAM ☐ MARSH ☐ SWAMP ☐ FEN ☐ BOG ☐ BARREN ☐ MEADOW ☐ PRAIRIE ☐ THICKET ☐ SAVANNAH ☐ WOODLAND ☒ FOREST ☐ PLANTATION

SITE	COVER
☐ OPEN WATER ☐ SHALLOW WATER ☒ SURFICIAL DEP. ☐ BEDROCK	☐ OPEN ☐ SHRUB ☒ TREED

STAND DESCRIPTION:

	LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1	CANOPY	1	4	Quercus > FRAPENN
2	SUB-CANOPY	2	4	
3	UNDERSTOREY			
4	GRD. LAYER			

HT CODES: 1 = >25 m 2 = 10<HT≤25 m 3 = 2<HT≤10 m 4 = 1<HT≤2 m 5 = 0.5<HT≤1 m 6 = 0.2<HT≤0.5 m 7 = HT≤0.2 m
CVR CODES 0= NONE 1= 0% < CVR ≤ 10% 2= 10 < CVR ≤ 25% 3= 25 < CVR ≤ 60% 4= CVR > 60%

STAND COMPOSITION: | BA:

SIZE CLASS ANALYSIS:	R	< 10	O	10 - 24	O	25 - 50	R	> 50
STANDING SNAGS:		< 10		10 - 24		25 - 50		> 50
DEADFALL / LOGS:		< 10		10 - 24		25 - 50		> 50

ABUNDANCE CODES: N = NONE R = RARE O = OCCASIONAL A = ABUNDANT

COMM. AGE :		PIONEER		YOUNG		MID-AGE	X	MATURE		OLD GROWTH

SOIL ANALYSIS:

TEXTURE:	DEPTH TO MOTTLES / GLEY	g =	G=
MOISTURE:	DEPTH OF ORGANICS:		(cm)
HOMOGENEOUS / VARIABLE	DEPTH TO BEDROCK:		(cm)

COMMUNITYCLASSIFICATION:

COMMUNITY CLASS:		CODE:
COMMUNITY SERIES:		CODE:
ECOSITE:		CODE:
VEGETATION TYPE:	Fresh-moist Oak-Maple-Hickory Deciduous Forest	CODE: FOD9
INCLUSION		CODE:
COMPLEX		CODE:

Notes:
Thinner canopy Oak-Ash community

NO ACCESS

ELC
PLANT SPECIES LIST

SITE: GREP
POLYGON: F84
DATE: 7 March - 2011
SURVEYOR(S): VL, MS

LAYERS: 1 = CANOPY > 10m 2 = SUB-CANOPY 3 = UNDERSTOREY 4 = GROUND (GRD.) LAYER
ABUNDANCE CODES: R = RARE O = OCCASIONAL A = ABUNDANT D = DOMINANT

SPECIES CODE	LAYER 1	2	3	4	COLL.
Quercus Sp.	A				
FRAPENN	A				
ACERSAT	O				
PINSTRO		R-O			

SPECIES CODE	LAYER 1	2	3	4	COLL.

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ELC — COMMUNITY DESCRIPTION & CLASSIFICATION

SITE:		POLYGON: 86-2
SURVEYOR(S):	DATE:	UTME:
START:	END	UTMZ:	UTMN:

POLYGON DESCRIPTION

SYSTEM	SUBSTRATE	TOPOGRAPHIC FEATURE	HISTORY	PLANT FORM	COMMUNITY
☐ TERRESTRIAL ☒ WETLAND ☐ AQUATIC	☐ ORGANIC ☒ MINERAL SOIL ☐ PARENT MIN. ☐ ACIDIC BEDRK. ☐ BASIC BEDRK. ☐ CARB. BEDRK.	☐ LACUSTRINE ☐ RIVERINE ☐ BOTTOMLAND ☐ TERRACE ☐ VALLEY SLOPE ☒ TABLELAND ☐ ROLL. UPLAND ☐ CLIFF ☐ TALUS ☐ CREVICE / CAVE ☐ ALVAR ☐ ROCKLAND ☐ BEACH / BAR ☐ SAND DUNE ☐ BLUFF	☒ NATURAL ☐ CULTURAL	☐ PLANKTON ☐ SUBMERGED ☐ FLOATING-LVD. ☐ GRAMINOID ☐ FORB ☐ LICHEN ☐ BRYOPHYTE ☒ DECIDUOUS ☐ CONIFEROUS ☐ MIXED	☐ LAKE ☐ POND ☐ RIVER ☐ STREAM ☐ MARSH ☒ SWAMP ☐ FEN ☐ BOG ☐ BARREN ☐ MEADOW ☐ PRAIRIE ☐ THICKET ☐ SAVANNAH ☐ WOODLAND ☐ FOREST ☐ PLANTATION

SITE	COVER
☐ OPEN WATER ☐ SHALLOW WATER ☒ SURFICIAL DEP. ☐ BEDROCK	☐ OPEN ☐ SHRUB ☒ TREED

STAND DESCRIPTION:

	LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1	CANOPY	1	2	ACERRU > FRAPENN
2	SUB-CANOPY	2	4	
3	UNDERSTOREY	4	4	CORORUGI
4	GRD. LAYER			

HT CODES: 1 = >25 m 2 = 10<HT≤25 m 3 = 2<HT≤10 m 4 = 1<HT≤2 m 5 = 0.5<HT≤1 m 6 = 0.2<HT≤0.5 m 7 = HT≤0.2 m

CVR CODES 0= NONE 1= 0% < CVR ≤ 10% 2= 10 < CVR ≤ 25% 3= 25 < CVR ≤ 60% 4= CVR > 60%

STAND COMPOSITION:			BA:				
SIZE CLASS ANALYSIS:	O	< 10	A	10 - 24	M	25 - 50	N	> 50
STANDING SNAGS:		< 10		10 - 24		25 - 50		> 50
DEADFALL / LOGS:		< 10		10 - 24		25 - 50		> 50

ABUNDANCE CODES: N = NONE R = RARE O = OCCASIONAL A = ABUNDANT

COMM. AGE :		PIONEER		YOUNG	X	MID-AGE		MATURE		OLD GROWTH

SOIL ANALYSIS:

TEXTURE:	DEPTH TO MOTTLES / GLEY	g =	G=
MOISTURE:	DEPTH OF ORGANICS:		(cm)
HOMOGENEOUS / VARIABLE	DEPTH TO BEDROCK:		(cm)

COMMUNITYCLASSIFICATION:

COMMUNITY CLASS:	CODE:
COMMUNITY SERIES:	CODE:
ECOSITE:	CODE:
VEGETATION TYPE: Swamp Maple Min. Dec. Swamp	CODE: SWD3-3
INCLUSION	CODE:
COMPLEX	CODE:

Notes:

No Access

ELC — PLANT SPECIES LIST

SITE: GREP	
POLYGON: Feature 86	
DATE: 7-March-2011	
SURVEYOR(S): MS + JI	

LAYERS: 1 = CANOPY > 10m 2 = SUB-CANOPY 3 = UNDERSTOREY 4 = GROUND (GRD.) LAYER

ABUNDANCE CODES: R = RARE O = OCCASIONAL A = ABUNDANT D = DOMINANT

SPECIES CODE	LAYER 1	2	3	4	COLL.
ACERRU	D	A			
FRAPENN	O				
CORORUGI			O		

SPECIES CODE	LAYER 1	2	3	4	COLL.

Page ..... of .....

ELC
COMMUNITY DESCRIPTION & CLASSIFICATION

SITE:		POLYGON:	
SURVEYOR(S):		DATE:	UTME:
START:	END	UTMZ:	UTMN:

POLYGON DESCRIPTION

SYSTEM	SUBSTRATE	TOPOGRAPHIC FEATURE	HISTORY	PLANT FORM	COMMUNITY
[X] TERRESTRIAL	[ ] ORGANIC	[ ] LACUSTRINE	[X] NATURAL	[ ] PLANKTON	[ ] LAKE
[ ] WETLAND	[X] MINERAL SOIL	[ ] RIVERINE	[ ] CULTURAL	[ ] SUBMERGED	[ ] POND
[ ] AQUATIC	[ ] PARENT MIN.	[ ] BOTTOMLAND		[ ] FLOATING-LVD.	[ ] RIVER
	[ ] ACIDIC BEDRK.	[ ] TERRACE		[ ] GRAMINOID	[ ] STREAM
SITE	[ ] BASIC BEDRK.	[ ] VALLEY SLOPE	COVER	[ ] FORB	[ ] MARSH
[ ] OPEN WATER	[ ] CARB. BEDRK.	[X] TABLELAND	[ ] OPEN	[ ] LICHEN	[ ] SWAMP
[ ] SHALLOW WATER		[ ] ROLL UPLAND	[ ] SHRUB	[ ] BRYOPHYTE	[ ] FEN
[X] SURFICIAL DEP.		[ ] CLIFF	[X] TREED	[X] DECIDUOUS	[ ] BOG
[ ] BEDROCK		[ ] TALUS		[ ] CONIFEROUS	[ ] BARREN
		[ ] CREVICE / CAVE		[ ] MIXED	[ ] MEADOW
		[ ] ALVAR			[ ] PRAIRIE
		[ ] ROCKLAND			[ ] THICKET
		[ ] BEACH / BAR			[ ] SAVANNAH
		[ ] SAND DUNE			[ ] WOODLAND
		[ ] BLUFF			[X] FOREST
					[ ] PLANTATION

STAND DESCRIPTION:

	LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1	CANOPY	1	4	CAROVAT ≥ QUERCUS sp. > FRAPENN
2	SUB-CANOPY	2	4	"
3	UNDERSTOREY			
4	GRD. LAYER			

HT CODES: 1 = >25 m 2 = 10<HT≤25 m 3 = 2<HT≤10 m 4 = 1<HT≤2 m 5 = 0.5<HT≤1 m 6 = 0.2<HT≤0.5 m 7 = HT≤0.2 m

CVR CODES 0= NONE 1= 0% < CVR ≤ 10% 2= 10 < CVR ≤ 25% 3= 25 < CVR ≤ 60% 4= CVR > 60%

STAND COMPOSITION:		BA:

SIZE CLASS ANALYSIS:	D	< 10	O	10 - 24	O	25 - 50	R	> 50
STANDING SNAGS:		< 10		10 - 24		25 - 50		> 50
DEADFALL / LOGS:		< 10		10 - 24		25 - 50		> 50

ABUNDANCE CODES: N = NONE R = RARE O = OCCASIONAL A = ABUNDANT

COMM. AGE :		PIONEER		YOUNG		MID-AGE	X	MATURE		OLD GROWTH

SOIL ANALYSIS:

TEXTURE:	DEPTH TO MOTTLES / GLEY	g =	G=
MOISTURE:	DEPTH OF ORGANICS:		(cm)
HOMOGENEOUS / VARIABLE	DEPTH TO BEDROCK:		(cm)

COMMUNITYCLASSIFICATION:

COMMUNITY CLASS:		CODE:
COMMUNITY SERIES:		CODE:
ECOSITE:		CODE:
VEGETATION TYPE:	F-Moist Shagbark Hickory Dec. Forest	CODE: FOD9-4
[ ] INCLUSION		CODE:
[ ] COMPLEX		CODE:

Notes: From road. - NO ACCESS

ELC
PLANT SPECIES LIST

SITE:	GREP
POLYGON:	F85
DATE:	7-March-2011
SURVEYOR(S):	JL + MS.

LAYERS: 1 = CANOPY > 10m 2 = SUB-CANOPY 3 = UNDERSTOREY 4 = GROUND (GRD.) LAYER

ABUNDANCE CODES: R = RARE O = OCCASIONAL A = ABUNDANT D = DOMINANT

SPECIES CODE	LAYER 1	2	3	4	COLL.
FRAPENN	O				
CAROVAT	~~D~~				
Quercus sp.	A				

SPECIES CODE	LAYER 1	2	3	4	COLL.

ELC — COMMUNITY DESCRIPTION & CLASSIFICATION

SITE:		POLYGON: 86-1	
SURVEYOR(S):		DATE:	UTME:
START:	END	UTMZ:	UTMN:

POLYGON DESCRIPTION

SYSTEM	SUBSTRATE	TOPOGRAPHIC FEATURE	HISTORY	PLANT FORM	COMMUNITY
☒ TERRESTRIAL	☐ ORGANIC	☐ LACUSTRINE	☐ NATURAL	☐ PLANKTON	☐ LAKE
☐ WETLAND	☒ MINERAL SOIL	☐ RIVERINE	☒ CULTURAL	☐ SUBMERGED	☐ POND
☐ AQUATIC	☐ PARENT MIN.	☐ BOTTOMLAND		☐ FLOATING-LVD.	☐ RIVER
	☐ ACIDIC BEDRK.	☐ TERRACE		☐ GRAMINOID	☐ STREAM
SITE	☐ BASIC BEDRK.	☐ VALLEY SLOPE	COVER	☐ FORB	☐ MARSH
☐ OPEN WATER	☐ CARB. BEDRK.	☒ TABLELAND	☐ OPEN	☐ LICHEN	☐ SWAMP
☐ SHALLOW WATER		☐ ROLL. UPLAND	☐ SHRUB	☐ BRYOPHYTE	☐ FEN
☒ SURFICIAL DEP.		☐ CLIFF	☒ TREED	☐ DECIDUOUS	☐ BOG
☐ BEDROCK		☐ TALUS		☒ CONIFEROUS	☐ BARREN
		☐ CREVICE / CAVE		☐ MIXED	☐ MEADOW
		☐ ALVAR			☐ PRAIRIE
		☐ ROCKLAND			☐ THICKET
		☐ BEACH / BAR			☐ SAVANNAH
		☐ SAND DUNE			☐ WOODLAND
		☐ BLUFF			☐ FOREST
					☒ PLANTATION

STAND DESCRIPTION:

	LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1	CANOPY	1	4	PINSTR >> PICABIE
2	SUB-CANOPY	2	4	"
3	UNDERSTOREY			NO ACCESS
4	GRD. LAYER			

HT CODES: 1 = >25 m 2 = 10<HT<25 m 3 = 2<HT<10 m 4 = 1<HT<2 m 5 = 0.5<HT<1 m 6 = 0.2<HT<0.5 m 7 = HT<0.2 m

CVR CODES: 0 = NONE 1 = 0% < CVR < 10% 2 = 10 < CVR < 25% 3 = 25 < CVR < 60% 4 = CVR > 60%

STAND COMPOSITION:						BA:	
SIZE CLASS ANALYSIS:	O	< 10	A	10 - 24	N	25 - 50	N	> 50
STANDING SNAGS:		< 10		10 - 24		25 - 50		> 50
DEADFALL / LOGS:		< 10		10 - 24		25 - 50		> 50

ABUNDANCE CODES: N = NONE R = RARE O = OCCASIONAL A = ABUNDANT

COMM. AGE :		PIONEER		YOUNG	X	MID-AGE		MATURE		OLD GROWTH

SOIL ANALYSIS:

TEXTURE:	DEPTH TO MOTTLES / GLEY	g =	G=
MOISTURE:	DEPTH OF ORGANICS:		(cm)
HOMOGENEOUS / VARIABLE	DEPTH TO BEDROCK:		(cm)

COMMUNITY CLASSIFICATION:

		CODE:
COMMUNITY CLASS:		CODE:
COMMUNITY SERIES:		CODE:
ECOSITE:		CODE:
VEGETATION TYPE: White/Norway Spruce WHITE PINE CONIFER PLANTATION		CODE: Cul3-12*
INCLUSION		CODE:
COMPLEX		CODE:

Notes: FROM ROAD - NO ACCESS

ELC — PLANT SPECIES LIST

SITE:	GREP
POLYGON:	86 - Feature
DATE:	7 - March - 2011
SURVEYOR(S):	JK + MS

Community 1

LAYERS: 1 = CANOPY > 10m 2 = SUB-CANOPY 3 = UNDERSTOREY 4 = GROUND (GRD.) LAYER

ABUNDANCE CODES: R = RARE O = OCCASIONAL A = ABUNDANT D = DOMINANT

SPECIES CODE	LAYER 1	2	3	4	COLL.	SPECIES CODE	LAYER 1	2	3	4	COLL.
PICABIE	R-A										
PINSTRO	D										

ELC — COMMUNITY DESCRIPTION & CLASSIFICATION

SITE:		POLYGON:	
SURVEYOR(S):		DATE:	UTME:
START:	END	UTMZ:	UTMN:

POLYGON DESCRIPTION

SYSTEM	SUBSTRATE	TOPOGRAPHIC FEATURE	HISTORY	PLANT FORM	COMMUNITY
☒ TERRESTRIAL	☐ ORGANIC	☐ LACUSTRINE	☒ NATURAL	☐ PLANKTON	☐ LAKE
☐ WETLAND	☒ MINERAL SOIL	☐ RIVERINE,	☐ CULTURAL	☐ SUBMERGED	☐ POND
☐ AQUATIC	☐ PARENT MIN.	☐ BOTTOMLAND		☐ FLOATING-LVD.	☐ RIVER
	☐ ACIDIC BEDRK.	☐ TERRACE		☐ GRAMINOID	☐ STREAM
	☐ BASIC BEDRK.	☐ VALLEY SLOPE		☐ FORB	☐ MARSH
	☐ CARB. BEDRK.	☒ TABLELAND		☐ LICHEN	☐ SWAMP
SITE		☐ ROLL. UPLAND	COVER	☐ BRYOPHYTE	☐ FEN
☐ OPEN WATER		☐ CLIFF		☒ DECIDUOUS	☐ BOG
☐ SHALLOW WATER		☐ TALUS	☐ OPEN	☐ CONIFEROUS	☐ BARREN
☒ SURFICIAL DEP.		☐ CREVICE / CAVE	☐ SHRUB	☐ MIXED	☐ MEADOW
☐ BEDROCK		☐ ALVAR	☒ TREED		☐ PRAIRIE
		☐ ROCKLAND			☐ THICKET
		☐ BEACH / BAR			☐ SAVANNAH
		☐ SAND DUNE			☐ WOODLAND
		☐ BLUFF			☒ FOREST
					☐ PLANTATION

STAND DESCRIPTION:

	LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1	CANOPY	1	4	CAROVAT > ACERFREE > QUERCUS sp
2	SUB-CANOPY	2	4	"
3	UNDERSTOREY	4	4	Cornus sp.
4	GRD. LAYER			

HT CODES: 1 = >25 m 2 = 10<HT≤25 m 3 = 2<HT≤10 m 4 = 1<HT≤2 m 5 = 0.5<HT≤1 m 6 = 0.2<HT≤0.5 m 7 = HT≤0.2 m

CVR CODES 0= NONE 1= 0% < CVR ≤ 10% 2= 10 < CVR ≤ 25% 3= 25 < CVR ≤ 60% 4= CVR > 60%

STAND COMPOSITION:							BA:	
SIZE CLASS ANALYSIS:	A	< 10	O	10 - 24	O	25 - 50	N	> 50
STANDING SNAGS:		< 10		10 - 24		25 - 50		> 50
DEADFALL / LOGS:		< 10		10 - 24		25 - 50		> 50

ABUNDANCE CODES: N = NONE R = RARE O = OCCASIONAL A = ABUNDANT

COMM. AGE :		PIONEER		YOUNG	X	MID-AGE		MATURE		OLD GROWTH

SOIL ANALYSIS:

TEXTURE:	DEPTH TO MOTTLES / GLEY	g =	G=
MOISTURE:	DEPTH OF ORGANICS:		(cm)
HOMOGENEOUS / VARIABLE	DEPTH TO BEDROCK:		(cm)

COMMUNITYCLASSIFICATION:

COMMUNITY CLASS:	CODE:
COMMUNITY SERIES:	CODE:
ECOSITE:	CODE:
VEGETATION TYPE: Fresh-moist Shagbarkhickory Dec.	CODE: FOD9-4
INCLUSION	CODE:
COMPLEX	CODE:

Notes: Riparian wooded area
From roadside. (No Access)

ELC — PLANT SPECIES LIST

SITE: GREP

POLYGON: 87 - Feature

DATE: March 7, 2011

SURVEYOR(S): J.L + M.S.

LAYERS: 1 = CANOPY > 10m 2 = SUB-CANOPY 3 = UNDERSTOREY 4 = GROUND (GRD.) LAYER

ABUNDANCE CODES: R = RARE O = OCCASIONAL A = ABUNDANT D = DOMINANT

SPECIES CODE	LAYER 1	2	3	4	COLL.
CAROVAT	A				
QUE. sp.	O				
ACERFREE	O				
Cornus sp.			A		

SPECIES CODE	LAYER 1	2	3	4	COLL.

Page ..... of .....

Woodland Assessment complete 1 assessment for each woodland

Woodlot # (indicate on map) FOD9-4 (2); **Approximate age of stand** 50
North of Lakeshore Rd with Townline Rd to west
Are large (i.e. >40cmDBH and >25m tall) **trees present?** ☑ Y ☐ N ☐ Unknown – no access
If yes, approximate # present or % of stand 20
Location in stand (i.e. throughout, west side only, FOD2-6 only, etc.) throughout.

Are snags present? ☐ Y ☐ N ☑ Unknown – no access
If yes, provide characterization of number present, height and DBH of snags and indications of loose bark.

Potential Bat Maternity Roost Contains large, mature (i.e. >80 year old) snags or trees (living or dead) containing medium to large cavities. ☐ Y ☐ N ☑ Unknown – no access (if yes, describe in Table 2).

Cavities present? ☐ No ☐ Rare ☐ Occasional ☐ Abundant ☑ Unknown – no access

Table 2: Potential bat maternity roost features identified on site

Range of tree height	Range of tree DBH	Range of cavity heights	Cavity sizes small: small birds, medium= large woodpeckers, large= mammals Hollow?
Unknown			

Presence of large stick nests (i.e. raptor nests)? ☐ Y ☑ N ☐ Unknown – no access
If yes, UTM and describe tree type, height and position in tree, size of nest, species present: Although no access, distance from observation pt to feature would allow detection of large stick nests
Evidence of disturbance (i.e logging, roads, ATV use, trails, garbage)? ☐ Y ☐ N ☑ Unknown – no access
If yes, describe _____

Seeps / springs present? ☐ Y ☐ N ☑ Unknown – no access (if yes, describe in Table 3).

Table 3: Seep/spring identification

Seep/Spring #	UTM	Description	Surrounding Habitat
Unknown			

Vernal Pools Present? ☐ Y ☐ N ☑ Unknown – no access (if yes, describe in Table 4).

Table 4: Vernal pool identification

Vernal pool #	UTM	Depth of water	Size of pool (diameter)	Presence of emergent/submergent veg?	Presence of shrubs, logs at pond edge
Unknown					

Distance from feature to roadside observation pt. (apx 100m) prevented determination of presence/absence of bat maternity roosts, seeps & vernal pools. Absence of large stick nests was determined

Woodland Assessment complete 1 assessment for each woodland

Woodlot # (indicate on map) ~~FOD7-1~~ FOD9-4(3) (1) ; **Approximate age of stand** 40

North of Lakeshore Rd; east of Rd. 50

Are large (i.e. >40cmDBH and >25m tall) **trees present?** ☐ Y ☐ N ☑ Unknown – no access

If yes, approximate # present or % of stand _____

Location in stand (i.e. throughout, west side only, FOD2-6 only, etc.) _____

Are snags present? ☐ Y ☐ N ☑ Unknown – no access

If yes, provide characterization of number present, height and DBH of snags and indications of loose bark.

Potential Bat Maternity Roost Contains large, mature (i.e. >80 year old) snags or trees (living or dead) containing medium to large cavities. ☐ Y ☑ N ☐ Unknown – no access (if yes, describe in Table 2).

Cavities present? ☐ No ☐ Rare ☐ Occasional ☐ Abundant ☑ Unknown – no access

Table 2: Potential bat maternity roost features identified on site

Range of tree height	Range of tree DBH	Range of cavity heights	Cavity sizes small: small birds, medium= large woodpeckers, large= mammals Hollow?

Presence of large stick nests (i.e. raptor nests)? ☐ Y ☑ N ☐ Unknown – no access

If yes, UTM and describe tree type, height and position in tree, size of nest, species present: Feature close enough that stick nests would be seen if present

Evidence of disturbance (i.e logging, roads, ATV use, trails, garbage)? ☑ Y ☐ N ☐ Unknown – no access

If yes, describe Adjacent residences

Seeps / springs present? ☐ Y ☐ N ☑ Unknown – no access (if yes, describe in Table 3).

Table 3: Seep/spring identification

Seep/Spring #	UTM	Description	Surrounding Habitat

Vernal Pools Present? ☐ Y ☐ N ☑ Unknown – no access (if yes, describe in Table 4).

Table 4: Vernal pool identification

Vernal pool #	UTM	Depth of water	Size of pool (diameter)	Presence of emergent/submergent veg?	Presence of shrubs, logs at pond edge

Distance of feature to roadside observation pt. (apx 50m) allowed determination that large stick nests ~~were absent~~ & bat maternity roosts are absent but prevented determine whether seeps, vernal pools & snags are present or absent.

North of Lakeshore Rd. about 1.8 km ~~west~~ east of Townline Rd. Hald Dunn

ELC
COMMUNITY DESCRIPTION & CLASSIFICATION

SITE: ~~FOD 9-4(2)~~		POLYGON: FOD9-4(2)	
SURVEYOR(S): Don Graham	DATE: Apr. 7, 2011	UTMZ:	UTME: 606600
START: 1730	END: 1735		UTMN: ~~4762000~~ 4746200

POLYGON DESCRIPTION

SYSTEM	SUBSTRATE	TOPOGRAPHIC FEATURE	HISTORY	PLANT FORM	COMMUNITY
☑ TERRESTRIAL ☐ WETLAND ☐ AQUATIC	☐ ORGANIC ☐ MINERAL SOIL ☐ PARENT MIN. ☐ ACIDIC BEDRK. ☐ BASIC BEDRK. ☐ CARB. BEDRK.	☐ LACUSTRINE ☐ RIVERINE ☐ BOTTOMLAND ☐ TERRACE ☐ VALLEY SLOPE ☑ TABLELAND ☐ ROLL. UPLAND ☐ CLIFF ☐ TALUS ☐ CREVICE / CAVE ☐ ALVAR ☐ ROCKLAND ☐ BEACH / BAR ☐ SAND DUNE ☐ BLUFF	☑ NATURAL ☐ CULTURAL	☐ PLANKTON ☐ SUBMERGED ☐ FLOATING-LVD. ☐ GRAMINOID ☐ FORB ☐ LICHEN ☐ BRYOPHYTE ☑ DECIDUOUS ☐ CONIFEROUS ☐ MIXED	☐ LAKE ☐ POND ☐ RIVER ☐ STREAM ☐ MARSH ☐ SWAMP ☐ FEN ☐ BOG ☐ BARREN ☐ MEADOW ☐ PRAIRIE ☐ THICKET ☐ SAVANNAH ☐ WOODLAND ☑ FOREST ☐ PLANTATION
SITE			**COVER**		
☐ OPEN WATER ☐ SHALLOW WATER ☐ SURFICIAL DEP. ☐ BEDROCK			☐ OPEN ☐ SHRUB ☑ TREED		

STAND DESCRIPTION:

	LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1	CANOPY	15	60	Shagbark hickory = Green Ash
2	SUB-CANOPY			
3	UNDERSTOREY			
4	GRD. LAYER			

HT CODES: 1 = >25 m 2 = 10<HT·25 m 3 = 2<HT<10 m 4 = 1<HT·2 m 5 = 0.5<HT·1 m 6 = 0.2<HT·0.5 m 7 = HT<0.2 m
CVR CODES 0= NONE 1= 0% < CVR · 10% 2= 10 < CVR · 25% 3= 25 < CVR · 60% 4= CVR > 60%

STAND COMPOSITION:							BA:	
SIZE CLASS ANALYSIS:		< 10		10 - 24		25 - 50		> 50
STANDING SNAGS:		< 10		10 - 24		25 - 50		> 50
DEADFALL / LOGS:		< 10		10 - 24		25 - 50		> 50

ABUNDANCE CODES: N = NONE R = RARE O = OCCASIONAL A = ABUNDANT

COMM. AGE:		PIONEER		YOUNG		MID-AGE		MATURE		OLD GROWTH

SOIL ANALYSIS:

TEXTURE:	DEPTH TO MOTTLES / GLEY	g =	G=
MOISTURE:	DEPTH OF ORGANICS:		(cm)
HOMOGENEOUS / VARIABLE	DEPTH TO BEDROCK:		(cm)

COMMUNITY CLASSIFICATION:

COMMUNITY CLASS:	CODE:
COMMUNITY SERIES:	CODE:
ECOSITE:	CODE:
VEGETATION TYPE:	CODE:
INCLUSION	CODE:
COMPLEX	CODE:

Notes:

ELC
PLANT SPECIES LIST

SITE:	
POLYGON:	
DATE:	
SURVEYOR(S):	

LAYERS: 1 = CANOPY > 10m 2 = SUB-CANOPY 3 = UNDERSTOREY 4 = GROUND (GRD.) LAYER
ABUNDANCE CODES: R = RARE O = OCCASIONAL A = ABUNDANT D = DOMINANT

SPECIES CODE	LAYER 1	LAYER 2	LAYER 3	LAYER 4	COLL.	SPECIES CODE	LAYER 1	LAYER 2	LAYER 3	LAYER 4	COLL.

FOD 9-4(3)

Stantec Consulting Ltd.
70-1 Southgate Drive
Guelph, Ontario, Canada
N1G 4P5
Tel: (519) 836-6050
Fax: (519) 836-2493

Windfarm Wildlife Habitat Assessment

Project Number: ~~#~~ 161010646

Project Name: Grand Renewable Energy Wind

Date / Time: Apr 7, 2011 17^45-18^00

Field Personnel: Don Graham

Weather Conditions:	Temp:	Wind:	Cloud:	PPT:	PPT in last 24 hrs:
	12	1	50%	None	None.

Location (i.e. turbine #s/description) North of Lakeshore Rd, about 400m east of Road 50

Visual assessment (roadside – no access) ☑
Physical assessment (walk through feature) ☐

Extent of physical investigation of feature: ☐ Entire ☑ Partial (indicate on map)
limited to lakeshore Rd observation pts where visibility of feature was rather poor due to vegetation grown btwn feature and observation pt.

Reptile Hibernacula Features (i.e. features that would provide a route underground, including buried concrete or rock (e.g. foundations, bridge abutments or culverts with cracks/entry points, exposed rock crevices or inactive animal burrows))
Contains potential reptile hibernacula features? ☐ Y ☐ N ☑ Unknown – no access (if yes, describe in Table 1).

Bat Hibernacula Features (i.e. karst topography, abandoned mines or caves)
Contains potential bat hibernacula features? ☐ Y ☐ N ☑ Unknown – no access (if yes, describe in Table 1).

Table 1: Potential bat/reptile hibernacula features identified on site

UTM	Feature type	Photo #	Description	Spp. observed using feature

Species Observations List species and type of observation (indicate on map):
(CA = carcass; DP = distinctive parts; FE = feeding evidence; FY = eggs, nest; HO = house/den; OB = observed; SC = scat; SI = other sign; TK = track; VO = vocalization)

Birds	Mammals	Herps	Butterflies / Dragonflies	Other
i.e.) A: AMRO/VO				

Woodland Assessment complete 1 assessment for each woodland

Woodlot # (indicate on map) FOD9-4(3); **Approximate age of stand** 40
North of Lakeshore Rd; east of Rd 50
Are large (i.e. >40cmDBH and >25m tall) **trees present?** ☐ Y ☐ N ☑ Unknown – no access
If yes, approximate # present or % of stand _____
Location in stand (i.e. throughout, west side only, FOD2-6 only, etc.) _____

Are snags present? ☐ Y ☐ N ☑ Unknown – no access
If yes, provide characterization of number present, height and DBH of snags and indications of loose bark.

Potential Bat Maternity Roost Contains large, mature (i.e. >80 year old) snags or trees (living or dead) containing medium to large cavities. ☐ Y ☑ N ☐ Unknown – no access (if yes, describe in Table 2).

Cavities present? ☐ No ☐ Rare ☐ Occasional ☐ Abundant ☑ Unknown – no access

Table 2: Potential bat maternity roost features identified on site

Range of tree height	Range of tree DBH	Range of cavity heights	Cavity sizes small: small birds, medium= large woodpeckers, large= mammals Hollow?

Presence of large stick nests (i.e. raptor nests)? ☐ Y ☑ N ☐ Unknown – no access
If yes, UTM and describe tree type, height and position in tree, size of nest, species present: Feature close enough that stick nests would be seen if present.

Evidence of disturbance (i.e logging, roads, ATV use, trails, garbage)? ☑ Y ☐ N ☐ Unknown – no access
If yes, describe Likely intermittent travel through by nearby residents and dogs/cats

Seeps / springs present? ☐ Y ☐ N ☑ Unknown – no access (if yes, describe in Table 3).

Table 3: Seep/spring identification

Seep/Spring #	UTM	Description	Surrounding Habitat

Vernal Pools Present? ☐ Y ☐ N ☑ Unknown – no access (if yes, describe in Table 4).

Table 4: Vernal pool identification

Vernal pool #	UTM	Depth of water	Size of pool (diameter)	Presence of emergent/submergent veg?	Presence of shrubs, logs at pond edge

Distance of feature to roadside observation pt. (apx. 50 m) allowed determination that large stick nests and bat maternity roosts are absent but prevented determining whether seeps, vernal pools & snags are present or absent.

Woodland Assessment complete 1 assessment for each woodland

Woodlot # (indicate on map) _____ ; **Approximate age of stand** _____

Are large (i.e. >40cmDBH and >25m tall) **trees present?** ☐ Y ☐ N ☐ Unknown – no access
If yes, approximate # present or % of stand _____
Location in stand (i.e. throughout, west side only, FOD2-6 only, etc.) _____

Are snags present? ☐ Y ☐ N ☐ Unknown – no access
If yes, provide characterization of number present, height and DBH of snags and indications of loose bark.

Potential Bat Maternity Roost Contains large, mature (i.e. >80 year old) snags or trees (living or dead) containing medium to large cavities. ☐ Y ☐ N ☐ Unknown – no access (if yes, describe in Table 2).

Cavities present? ☐ No ☐ Rare ☐ Occasional ☐ Abundant ☐ Unknown – no access

Table 2: Potential bat maternity roost features identified on site

Range of tree height	Range of tree DBH	Range of cavity heights	Cavity sizes small: small birds, medium= large woodpeckers, large= mammals Hollow?

Presence of large stick nests (i.e. raptor nests)? ☐ Y ☐ N ☐ Unknown – no access
If yes, UTM and describe tree type, height and position in tree, size of nest, species present: _____

Evidence of disturbance (i.e logging, roads, ATV use, trails, garbage)? ☐ Y ☐ N ☐ Unknown – no access
If yes, describe _____

Seeps / springs present? ☐ Y ☐ N ☐ Unknown – no access (if yes, describe in Table 3).

Table 3: Seep/spring identification

Seep/Spring #	UTM	Description	Surrounding Habitat

Vernal Pools Present? ☐ Y ☐ N ☐ Unknown – no access (if yes, describe in Table 4).

Table 4: Vernal pool identification

Vernal pool #	UTM	Depth of water	Size of pool (diameter)	Presence of emergent/submergent veg?	Presence of shrubs, logs at pond edge

North of Lakeshore Rd, about 400 m east of Road 50

ELC COMMUNITY DESCRIPTION & CLASSIFICATION

SITE:		POLYGON: FOD 9-4(3)	
SURVEYOR(S): Don Graham	DATE: Apr 7, 2011	UTME: 603000	
START: 1750 – 1758 END:		UTMZ:	UTMN: 4745 006

POLYGON DESCRIPTION

SYSTEM	SUBSTRATE	TOPOGRAPHIC FEATURE	HISTORY	PLANT FORM	COMMUNITY
[x] TERRESTRIAL ☐ WETLAND ☐ AQUATIC	☐ ORGANIC ☐ MINERAL SOIL ☐ PARENT MIN. ☐ ACIDIC BEDRK. ☐ BASIC BEDRK. ☐ CARB. BEDRK.	☐ LACUSTRINE ☐ RIVERINE ☐ BOTTOMLAND ☐ TERRACE [x] VALLEY SLOPE [x] TABLELAND ☐ ROLL. UPLAND ☐ CLIFF ☐ TALUS ☐ CREVICE / CAVE ☐ ALVAR ☐ ROCKLAND ☐ BEACH / BAR ☐ SAND DUNE ☐ BLUFF	[x] NATURAL ☐ CULTURAL	☐ PLANKTON ☐ SUBMERGED ☐ FLOATING-LVD. ☐ GRAMINOID ☐ FORB ☐ LICHEN ☐ BRYOPHYTE [x] DECIDUOUS ☐ CONIFEROUS ☐ MIXED	☐ LAKE ☐ POND ☐ RIVER ☐ STREAM ☐ MARSH ☐ SWAMP ☐ FEN ☐ BOG ☐ BARREN ☐ MEADOW ☐ PRAIRIE ☐ THICKET ☐ SAVANNAH [x] WOODLAND ☐ FOREST ☐ PLANTATION

SITE	COVER
☐ OPEN WATER ☐ SHALLOW WATER ☐ SURFICIAL DEP. ☐ BEDROCK	☐ OPEN ☐ SHRUB [x] TREED

STAND DESCRIPTION:

	LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1	CANOPY	15	60	Shagbark hickory = Green Ash
2	SUB-CANOPY			
3	UNDERSTOREY			
4	GRD. LAYER			

HT CODES: 1 = >25 m 2 = 10<HT≤25 m 3 = 2<HT≤10 m 4 = 1<HT≤2 m 5 = 0.5<HT≤1 m 6 = 0.2<HT≤0.5 m 7 = HT<0.2 m
CVR CODES: 0 = NONE 1 = 0% < CVR ≤ 10% 2 = 10 < CVR ≤ 25% 3 = 25 < CVR ≤ 60% 4 = CVR > 60%

STAND COMPOSITION:							BA:	
SIZE CLASS ANALYSIS:		< 10		10 - 24		25 - 50		> 50
STANDING SNAGS:		< 10		10 - 24		25 - 50		> 50
DEADFALL / LOGS:		< 10		10 - 24		25 - 50		> 50

ABUNDANCE CODES: N = NONE R = RARE O = OCCASIONAL A = ABUNDANT

COMM. AGE:		PIONEER		YOUNG		MID-AGE		MATURE		OLD GROWTH

SOIL ANALYSIS:

TEXTURE:	DEPTH TO MOTTLES / GLEY	g =	G=
MOISTURE:	DEPTH OF ORGANICS:		(cm)
HOMOGENEOUS / VARIABLE	DEPTH TO BEDROCK:		(cm)

COMMUNITY CLASSIFICATION:

COMMUNITY CLASS:	CODE:
COMMUNITY SERIES:	CODE:
ECOSITE:	CODE:
VEGETATION TYPE:	CODE:
INCLUSION	CODE:
COMPLEX	CODE:

Notes:

ELC PLANT SPECIES LIST

SITE:	
POLYGON:	
DATE:	
SURVEYOR(S):	

LAYERS: 1 = CANOPY > 10m 2 = SUB-CANOPY 3 = UNDERSTOREY 4 = GROUND (GRD.) LAYER
ABUNDANCE CODES: R = RARE O = OCCASIONAL A = ABUNDANT D = DOMINANT

SPECIES CODE	LAYER 1	2	3	4	COLL.	SPECIES CODE	LAYER 1	2	3	4	COLL.

FOD 9-4 (4)

Stantec Consulting Ltd.
70-1 Southgate Drive
Guelph, Ontario, Canada
N1G 4P5
Tel: (519) 836-6050
Fax: (519) 836-2493

Windfarm Wildlife Habitat Assessment

Project Number: 1610 10646

Project Name: Grand Renewable Energy Wind

Date / Time: Apr. 7, 2011; 18^00 - 18^15

Field Personnel: Don Graham

Weather Conditions:	Temp:	Wind:	Cloud:	PPT:	PPT in last 24 hrs:
	12	1	50%	None	None

Location (i.e. turbine #s/description) North of Lakeshore Rd, 150 m east of Rd. 50

Visual assessment (roadside – no access) ☑

Physical assessment (walk through feature) ☐

Extent of physical investigation of feature: ☐ Entire ☑ Partial (indicate on map)
Limited to observation from Lakeshore Rd about 30 m south of feature.

Reptile Hibernacula Features (i.e. features that would provide a route underground, including buried concrete or rock (e.g. foundations, bridge abutments or culverts with cracks/entry points, exposed rock crevices or inactive animal burrows))
Contains potential reptile hibernacula features? ☐ Y ☐ N ☑ Unknown – no access (if yes, describe in Table 1).

Bat Hibernacula Features (i.e. karst topography, abandoned mines or caves)
Contains potential bat hibernacula features? ☐ Y ☐ N ☑ Unknown – no access (if yes, describe in Table 1).

Table 1: Potential bat/reptile hibernacula features identified on site

UTM	Feature type	Photo #	Description	Spp. observed using feature

Species Observations List species and type of observation (indicate on map):
(CA = carcass; DP = distinctive parts; FE = feeding evidence; FY = eggs, nest; HO = house/den; OB = observed; SC = scat; SI = other sign; TK = track; VO = vocalization)

Birds	Mammals	Herps	Butterflies / Dragonflies	Other
i.e.) A: AMRO/VO				

Woodland Assessment complete 1 assessment for each woodland

Woodlot # (indicate on map) ~~FOD9-4(2)~~ FOD9-4(4); **Approximate age of stand** 40

North of lakeshore

Are large (i.e. >40cmDBH and >25m tall) **trees present?** ☐ Y ☑ N ☐ Unknown – no access

If yes, approximate # present or % of stand _____

Location in stand (i.e. throughout, west side only, FOD2-6 only, etc.) _____

Are snags present? ☐ Y ☐ N ☑ Unknown – no access

If yes, provide characterization of number present, height and DBH of snags and indications of loose bark.

Potential Bat Maternity Roost Contains large, mature (i.e. >80 year old) snags or trees (living or dead) containing medium to large cavities. ☐ Y ☑ N ☐ Unknown – no access (if yes, describe in Table 2).

Cavities present? ☐ No ☐ Rare ☐ Occasional ☐ Abundant ☑ Unknown – no access

Table 2: Potential bat maternity roost features identified on site

Range of tree height	Range of tree DBH	Range of cavity heights	Cavity sizes small: small birds, medium= large woodpeckers, large= mammals Hollow?

Presence of large stick nests (i.e. raptor nests)? ☐ Y ☑ N ☐ Unknown – no access

If yes, UTM and describe tree type, height and position in tree, size of nest, species present: _____

Evidence of disturbance (i.e logging, roads, ATV use, trails, garbage)? ☑ Y ☐ N ☐ Unknown – no access

If yes, describe Adjacent residences, driveways

Seeps / springs present? ☐ Y ☐ N ☑ Unknown – no access (if yes, describe in Table 3).

Table 3: Seep/spring identification

Seep/Spring #	UTM	Description	Surrounding Habitat

Vernal Pools Present? ☐ Y ☐ N ☑ Unknown – no access (if yes, describe in Table 4).

Table 4: Vernal pool identification

Vernal pool #	UTM	Depth of water	Size of pool (diameter)	Presence of emergent/submergent veg?	Presence of shrubs, logs at pond edge

Distance of feature to roadside observation pt (30 m) allowed determination that large stick nests & bat maternity roosts are absent but prevented determining whether seeps, vernal pools and snags are present or absent

Woodland Assessment complete 1 assessment for each woodland

Woodlot # (indicate on map) 68 ; **Approximate age of stand** 50

Are large (i.e. >40cmDBH and >25m tall) **trees present?** ☐ Y ☑ N ☐ Unknown – no access
If yes, approximate # present or % of stand _____
Location in stand (i.e. throughout, west side only, FOD2-6 only, etc.) _____

Are snags present? ☐ Y ☑ N ☐ Unknown – no access
If yes, provide characterization of number present, height and DBH of snags and indications of loose bark.

Potential Bat Maternity Roost Contains large, mature (i.e. >80 year old) snags or trees (living or dead) containing medium to large cavities. ☐ Y ☑ N ☐ Unknown – no access (if yes, describe in Table 2).

Cavities present? ☐ No ☑ Rare ☐ Occasional ☐ Abundant ☐ Unknown – no access

Table 2: Potential bat maternity roost features identified on site

Range of tree height	Range of tree DBH	Range of cavity heights	Cavity sizes small: small birds, medium= large woodpeckers, large= mammals Hollow?

Presence of large stick nests (i.e. raptor nests)? ☐ Y ☑ N ☐ Unknown – no access
If yes, UTM and describe tree type, height and position in tree, size of nest, species present: _____

Evidence of disturbance (i.e logging, roads, ATV use, trails, garbage)? ☑ Y ☐ N ☐ Unknown – no access
If yes, describe Selective cutting of canopy trees

Seeps / springs present? ☐ Y ☑ N ☐ Unknown – no access (if yes, describe in Table 3).

Table 3: Seep/spring identification

Seep/Spring #	UTM	Description	Surrounding Habitat

Vernal Pools Present? ☐ Y ☑ N ☐ Unknown – no access (if yes, describe in Table 4).

Table 4: Vernal pool identification

Vernal pool #	UTM	Depth of water	Size of pool (diameter)	Presence of emergent/submergent veg?	Presence of shrubs, logs at pond edge

North of Lakeshore Rd, 150m east of Road 50

ELC COMMUNITY DESCRIPTION & CLASSIFICATION

SITE:		POLYGON: FOD9-4(4)	
SURVEYOR(S): Don Gorbon	DATE: Apr. 7, 2011	UTME: 6028 50	
START: 18^{30} - 18^{10}	END:	UTMZ:	UTMN: 4745 000

POLYGON DESCRIPTION

SYSTEM	SUBSTRATE	TOPOGRAPHIC FEATURE	HISTORY	PLANT FORM	COMMUNITY
☑ TERRESTRIAL ☐ WETLAND ☐ AQUATIC	☐ ORGANIC ☐ MINERAL SOIL ☐ PARENT MIN. ☐ ACIDIC BEDRK. ☐ BASIC BEDRK. ☐ CARB. BEDRK.	☐ LACUSTRINE ☐ RIVERINE ☐ BOTTOMLAND ☐ TERRACE ☐ VALLEY SLOPE ☑ TABLELAND ☐ ROLL. UPLAND ☐ CLIFF ☐ TALUS ☐ CREVICE / CAVE ☐ ALVAR ☐ ROCKLAND ☐ BEACH / BAR ☐ SAND DUNE ☐ BLUFF	☑ NATURAL ☐ CULTURAL	☐ PLANKTON ☐ SUBMERGED ☐ FLOATING-LVD. ☐ GRAMINOID ☐ FORB ☐ LICHEN ☐ BRYOPHYTE ☑ DECIDUOUS ☐ CONIFEROUS ☐ MIXED	☐ LAKE ☐ POND ☐ RIVER ☐ STREAM ☐ MARSH ☐ SWAMP ☐ FEN ☐ BOG ☐ BARREN ☐ MEADOW ☐ PRAIRIE ☐ THICKET ☐ SAVANNAH ☐ WOODLAND ☑ FOREST ☐ PLANTATION

SITE	COVER
☐ OPEN WATER ☐ SHALLOW WATER ☐ SURFICIAL DEP. ☐ BEDROCK	☐ OPEN ☐ SHRUB ☑ TREED

STAND DESCRIPTION:

LAYER		HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1	CANOPY	15	60	Shagbark hickory = Green Ash
2	SUB-CANOPY			
3	UNDERSTOREY			
4	GRD. LAYER			

HT CODES: 1 = >25 m 2 = 10<HT-25 m 3 = 2<HT<10 m 4 = 1<HT-2 m 5 = 0.5<HT-1 m 6 = 0.2<HT-0.5 m 7 = HT<0.2 m
CVR CODES: 0 = NONE 1 = 0% < CVR ≤ 10% 2 = 10 < CVR ≤ 25% 3 = 25 < CVR ≤ 60% 4 = CVR > 60%

STAND COMPOSITION:				BA:
SIZE CLASS ANALYSIS:	< 10	10 - 24	25 - 50	> 50
STANDING SNAGS:	< 10	10 - 24	25 - 50	> 50
DEADFALL / LOGS:	< 10	10 - 24	25 - 50	> 50

ABUNDANCE CODES: N = NONE R = RARE O = OCCASIONAL A = ABUNDANT

COMM. AGE:	PIONEER	YOUNG	MID-AGE	MATURE	OLD GROWTH

SOIL ANALYSIS:

TEXTURE:	DEPTH TO MOTTLES / GLEY	g =	G=
MOISTURE:	DEPTH OF ORGANICS:		(cm)
HOMOGENEOUS / VARIABLE	DEPTH TO BEDROCK:		(cm)

COMMUNITY CLASSIFICATION:

COMMUNITY CLASS:	CODE:
COMMUNITY SERIES:	CODE:
ECOSITE:	CODE:
VEGETATION TYPE:	CODE:
INCLUSION	CODE:
COMPLEX	CODE:

Notes:

ELC PLANT SPECIES LIST

SITE:	
POLYGON:	
DATE:	
SURVEYOR(S):	

LAYERS: 1 = CANOPY > 10m 2 = SUB-CANOPY 3 = UNDERSTOREY 4 = GROUND (GRD.) LAYER
ABUNDANCE CODES: R = RARE O = OCCASIONAL A = ABUNDANT D = DOMINANT

SPECIES CODE	LAYER 1	2	3	4	COLL.	SPECIES CODE	LAYER 1	2	3	4	COLL.

Stantec Consulting Ltd.
70-1 Southgate Drive
Guelph, Ontario, Canada
N1G 4P5
Tel: (519) 836-6050
Fax: (519) 836-2493

Windfarm Wildlife Habitat Assessment

Project Number: 161010846

Project Name: Grand Renewable Energy Wind

Date / Time: Apr. 8, 2011 900 - 920

Field Personnel: Don Graham

Weather Conditions:	Temp:	Wind:	Cloud:	PPT:	PPT in last 24 hrs:
	15	1	20%	None	None

Location (i.e. turbine #s/description) West side of Rd. 49 to south of King's Rd

Visual assessment (roadside – no access) ☑
Physical assessment (walk through feature) ☐

Extent of physical investigation of feature: ☐ Entire ☑ Partial (indicate on map)
Limited to walking along Rd. 49 along north half of feature.

Reptile Hibernacula Features (i.e. features that would provide a route underground, including buried concrete or rock (e.g. foundations, bridge abutments or culverts with cracks/entry points, exposed rock crevices or inactive animal burrows))
Contains potential reptile hibernacula features? ☐ Y ☐ N ☑ Unknown – no access (if yes, describe in Table 1).

Bat Hibernacula Features (i.e. karst topography, abandoned mines or caves)
Contains potential bat hibernacula features? ☐ Y ☐ N ☑ Unknown – no access (if yes, describe in Table 1).

Table 1: Potential bat/reptile hibernacula features identified on site

UTM	Feature type	Photo #	Description	Spp. observed using feature

Species Observations List species and type of observation (indicate on map):
(CA = carcass; DP = distinctive parts; FE = feeding evidence; FY = eggs, nest; HO = house/den; OB = observed; SC = scat; SI = other sign; TK = track; VO = vocalization)

Birds	Mammals	Herps	Butterflies / Dragonflies	Other
i.e.) A: AMRO/VO				

Feature is on east side of Rd 49 to south of King's Row and is continuation of community to north which was earlier assessed as a FOD 9-6 community.

Woodland Assessment complete 1 assessment for each woodland

Woodlot # (indicate on map) FOD 9-6 ; **Approximate age of stand** 30

Are large (i.e. >40cmDBH and >25m tall) **trees present?** ☑ Y ☐ N ☐ Unknown – no access
If yes, approximate # present or % of stand 1%
Location in stand (i.e. throughout, west side only, FOD2-6 only, etc.) _____

Are snags present? ☑ Y ☐ N ☐ Unknown – no access
If yes, provide characterization of number present, height and DBH of snags and indications of loose bark.
Rarely present, 10-15m in height, 20 cm DBH, no loose bark

Potential Bat Maternity Roost Contains large, mature (i.e. >80 year old) snags or trees (living or dead) containing medium to large cavities. ☐ Y ☑ N ☐ Unknown – no access (if yes, describe in Table 2).

Cavities present? ☐ No ☑ Rare ☐ Occasional ☐ Abundant ☐ Unknown – no access

Table 2: Potential bat maternity roost features identified on site

Range of tree height	Range of tree DBH	Range of cavity heights	Cavity sizes small: small birds, medium= large woodpeckers, large= mammals Hollow?

Presence of large stick nests (i.e. raptor nests)? ☐ Y ☑ N ☐ Unknown – no access
If yes, UTM and describe tree type, height and position in tree, size of nest, species present: _____

Evidence of disturbance (i.e logging, roads, ATV use, trails, garbage)? ☑ Y ☐ N ☐ Unknown – no access
If yes, describe Adjacent road and ditch

Seeps / springs present? ☐ Y ☑ N ☐ Unknown – no access (if yes, describe in Table 3).

Table 3: Seep/spring identification

Seep/Spring #	UTM	Description	Surrounding Habitat

Vernal Pools Present? ☐ Y ☑ N ☐ Unknown – no access (if yes, describe in Table 4).

Table 4: Vernal pool identification

Vernal pool #	UTM	Depth of water	Size of pool (diameter)	Presence of emergent/submergent veg?	Presence of shrubs, logs at pond edge

Although assessment was limited to roadside observation; proximity to feature allowed determination that potential but maternity roosts, large stick nests, seeps a

Woodland Assessment complete 1 assessment for each woodland

Woodlot # (indicate on map) _____ ; **Approximate age of stand** _____

Are large (i.e. >40cmDBH and >25m tall) **trees present?** ☐ Y ☐ N ☐ Unknown – no access
If yes, approximate # present or % of stand _____
Location in stand (i.e. throughout, west side only, FOD2-6 only, etc.) _____

Are snags present? ☐ Y ☐ N ☐ Unknown – no access
If yes, provide characterization of number present, height and DBH of snags and indications of loose bark.

Potential Bat Maternity Roost Contains large, mature (i.e. >80 year old) snags or trees (living or dead) containing medium to large cavities. ☐ Y ☐ N ☐ Unknown – no access (if yes, describe in Table 2).

Cavities present? ☐ No ☐ Rare ☐ Occasional ☐ Abundant ☐ Unknown – no access

Table 2: Potential bat maternity roost features identified on site

Range of tree height	Range of tree DBH	Range of cavity heights	Cavity sizes small: small birds, medium= large woodpeckers, large= mammals Hollow?

Presence of large stick nests (i.e. raptor nests)? ☐ Y ☐ N ☐ Unknown – no access
If yes, UTM and describe tree type, height and position in tree, size of nest, species present: _____

Evidence of disturbance (i.e logging, roads, ATV use, trails, garbage)? ☐ Y ☐ N ☐ Unknown – no access
If yes, describe _____

Seeps / springs present? ☐ Y ☐ N ☐ Unknown – no access (if yes, describe in Table 3).

Table 3: Seep/spring identification

Seep/Spring #	UTM	Description	Surrounding Habitat

Vernal Pools Present? ☐ Y ☐ N ☐ Unknown – no access (if yes, describe in Table 4).

Table 4: Vernal pool identification

Vernal pool #	UTM	Depth of water	Size of pool (diameter)	Presence of emergent/submergent veg?	Presence of shrubs, logs at pond edge

ELC — COMMUNITY DESCRIPTION & CLASSIFICATION

SITE: West side of Rd. 49 to South of King's Row | POLYGON: F009-6 (2)
SURVEYOR(S): Doug Graham | DATE: Apr. 8, 2011 | UTME:
START: 11 | END: | UTMZ: | UTMN:

POLYGON DESCRIPTION

SYSTEM	SUBSTRATE	TOPOGRAPHIC FEATURE	HISTORY	PLANT FORM	COMMUNITY
☑ TERRESTRIAL	☐ ORGANIC	☐ LACUSTRINE	☑ NATURAL	☐ PLANKTON	☐ LAKE
☐ WETLAND	☐ MINERAL SOIL	☐ RIVERINE	☐ CULTURAL	☐ SUBMERGED	☐ POND
☐ AQUATIC	☐ PARENT MIN.	☐ BOTTOMLAND		☐ FLOATING-LVD.	☐ RIVER
	☐ ACIDIC BEDRK.	☐ TERRACE		☐ GRAMINOID	☐ STREAM
	☐ BASIC BEDRK.	☐ VALLEY SLOPE		☐ FORB	☐ MARSH
	☐ CARB. BEDRK.	☑ TABLELAND		☐ LICHEN	☐ SWAMP
		☐ ROLL. UPLAND		☐ BRYOPHYTE	☐ FEN
		☐ CLIFF		☑ DECIDUOUS	☐ BOG
		☐ TALUS		☐ CONIFEROUS	☐ BARREN
		☐ CREVICE / CAVE		☐ MIXED	☐ MEADOW
		☐ ALVAR			☐ PRAIRIE
		☐ ROCKLAND			☐ THICKET
		☐ BEACH / BAR			☐ SAVANNAH
		☐ SAND DUNE			☐ WOODLAND
		☐ BLUFF			☑ FOREST
					☐ PLANTATION

SITE	COVER
☐ OPEN WATER	☐ OPEN
☐ SHALLOW WATER	☐ SHRUB
☐ SURFICIAL DEP.	☑ TREED
☐ BEDROCK	

F009-6

STAND DESCRIPTION:

	LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1	CANOPY	13-17	70%	Red oak = Red Ash > Shagbark hickory
2	SUB-CANOPY	8	30%	Red oak = Red ash > A. elm > ~~Bur~~ Bur Oak
3	UNDERSTOREY	2-4	20%	Rhacath > Apple
4	GRD. LAYER			

HT CODES: 1 = >25 m 2 = 10<HT<25 m 3 = 2<HT<10 m 4 = 1<HT<2 m 5 = 0.5<HT<1 m 6 = 0.2<HT<0.5 m 7 = HT<0.2 m
CVR CODES 0 = NONE 1 = 0% < CVR < 10% 2 = 10 < CVR < 25% 3 = 25 < CVR < 60% 4 = CVR > 60%

STAND COMPOSITION: | BA:

SIZE CLASS ANALYSIS:	< 10	10 - 24	25 - 50	> 50
STANDING SNAGS:	< 10	10 - 24	25 - 50	> 50
DEADFALL / LOGS:	< 10	10 - 24	25 - 50	> 50

ABUNDANCE CODES: N = NONE R = RARE O = OCCASIONAL A = ABUNDANT

COMM. AGE :	PIONEER	YOUNG	MID-AGE	MATURE	OLD GROWTH

SOIL ANALYSIS:

TEXTURE:	DEPTH TO MOTTLES / GLEY	g =	G=
MOISTURE:	DEPTH OF ORGANICS:		(cm)
HOMOGENEOUS / VARIABLE	DEPTH TO BEDROCK:		(cm)

COMMUNITYCLASSIFICATION:

COMMUNITY CLASS:	CODE:
COMMUNITY SERIES:	CODE:
ECOSITE:	CODE:
VEGETATION TYPE:	CODE:
INCLUSION	CODE:
COMPLEX	CODE:

Notes:

ELC — PLANT SPECIES LIST

SITE:
POLYGON:
DATE:
SURVEYOR(S):

LAYERS: 1 = CANOPY > 10m 2 = SUB-CANOPY 3 = UNDERSTOREY 4 = GROUND (GRD.) LAYER
ABUNDANCE CODES: R = RARE O = OCCASIONAL A = ABUNDANT D = DOMINANT

SPECIES CODE	LAYER 1	2	3	4	COLL.
Red Ash	A	.			
Red Oak	A	A			
Shagbark hickory	.				
E. Bassw	A	.			
Bur oak	.	.			
Red maple	.				
Ironwood		.			
Ulmaceae		.			
Fagaceae	.	.			
Apple		.			
Hawthorn sp					
Rhacath					

SPECIES CODE	LAYER 1	2	3	4	COLL.
Corstol					

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N1G 4P5
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Fax: (519) 836-2493

Windfarm Wildlife Habitat Assessment

Project Number: 161010646

Project Name: Grand Renewable Energy Wind

Date / Time: Apr 8, 2011 8:00 - 8:30

Field Personnel: Don Graham

Weather Conditions:	Temp:	Wind:	Cloud:	PPT:	PPT in last 24 hrs:
	12	1	25%	None	None

Location (i.e. turbine #s/description) Woodlot 68 – East of Turbine 2.

Visual assessment (roadside – no access) ☐
Physical assessment (walk through feature) ☑

Extent of physical investigation of feature: ☑ Entire ☐ Partial (indicate on map)

Reptile Hibernacula Features (i.e. features that would provide a route underground, including buried concrete or rock (e.g. foundations, bridge abutments or culverts with cracks/entry points, exposed rock crevices or inactive animal burrows))
Contains potential reptile hibernacula features? ☐ Y ☑ N ☐ Unknown – no access (if yes, describe in Table 1).

Bat Hibernacula Features (i.e. karst topography, abandoned mines or caves)
Contains potential bat hibernacula features? ☐ Y ☑ N ☐ Unknown – no access (if yes, describe in Table 1).

Table 1: Potential bat/reptile hibernacula features identified on site

UTM	Feature type	Photo #	Description	Spp. observed using feature

Species Observations List species and type of observation (indicate on map):
(CA = carcass; DP = distinctive parts; FE = feeding evidence; FY = eggs, nest; HO = house/den; OB = observed; SC = scat; SI = other sign; TK = track; VO = vocalization)

Birds	Mammals	Herps	Butterflies / Dragonflies	Other
i.e.) A: AMRO/VO EAPH (OB) WBNU (VO) AMRO (OB) GCKI (VO) DOWO (VO)				

Woodland Assessment complete 1 assessment for each woodland

Woodlot # (indicate on map) _____ ; **Approximate age of stand** _____

Are large (i.e. >40cmDBH and >25m tall) **trees present?** ☐ Y ☐ N ☐ Unknown – no access
If yes, approximate # present or % of stand _____
Location in stand (i.e. throughout, west side only, FOD2-6 only, etc.) _____

Are snags present? ☐ Y ☐ N ☐ Unknown – no access
If yes, provide characterization of number present, height and DBH of snags and indications of loose bark.

Potential Bat Maternity Roost Contains large, mature (i.e. >80 year old) snags or trees (living or dead) containing medium to large cavities. ☐ Y ☐ N ☐ Unknown – no access (if yes, describe in Table 2).

Cavities present? ☐ No ☐ Rare ☐ Occasional ☐ Abundant ☐ Unknown – no access

Table 2: Potential bat maternity roost features identified on site

Range of tree height	Range of tree DBH	Range of cavity heights	Cavity sizes small: small birds, medium= large woodpeckers, large= mammals Hollow?

Presence of large stick nests (i.e. raptor nests)? ☐ Y ☐ N ☐ Unknown – no access
If yes, UTM and describe tree type, height and position in tree, size of nest, species present: _____

Evidence of disturbance (i.e logging, roads, ATV use, trails, garbage)? ☐ Y ☐ N ☐ Unknown – no access
If yes, describe _____

Seeps / springs present? ☐ Y ☐ N ☐ Unknown – no access (if yes, describe in Table 3).

Table 3: Seep/spring identification

Seep/Spring #	UTM	Description	Surrounding Habitat

Vernal Pools Present? ☐ Y ☐ N ☐ Unknown – no access (if yes, describe in Table 4).

Table 4: Vernal pool identification

Vernal pool #	UTM	Depth of water	Size of pool (diameter)	Presence of emergent/submergent veg?	Presence of shrubs, logs at pond edge

Woodlot 68 - East of Turbine 2

Woodland Assessment complete 1 assessment for each woodland

Woodlot # (indicate on map) FOD9-4 ; **Approximate age of stand** 50

Are large (i.e. >40cmDBH and >25m tall) **trees present?** ☐ Y ☑ N ☐ Unknown – no access
If yes, approximate # present or % of stand _____
Location in stand (i.e. throughout, west side only, FOD2-6 only, etc.) _____

Are snags present? ☑ Y ☐ N ☐ Unknown – no access
If yes, provide characterization of number present, height and DBH of snags and indications of loose bark.
Rare, 5-20m, 20-30cm DBH, no loose bark

Potential Bat Maternity Roost Contains large, mature (i.e. >80 year old) snags or trees (living or dead) containing medium to large cavities. ☐ Y ☑ N ☐ Unknown – no access (if yes, describe in Table 2).

Cavities present? ☐ No ☑ Rare ☐ Occasional ☐ Abundant ☐ Unknown – no access

Table 2: Potential bat maternity roost features identified on site

Range of tree height	Range of tree DBH	Range of cavity heights	Cavity sizes small: small birds, medium= large woodpeckers, large= mammals Hollow?

Presence of large stick nests (i.e. raptor nests)? ☐ Y ☑ N ☐ Unknown – no access
If yes, UTM and describe tree type, height and position in tree, size of nest, species present: _____

Evidence of disturbance (i.e logging, roads, ATV use, trails, garbage)? ☑ Y ☐ N ☐ Unknown – no access
If yes, describe Selective logging in past, adjacent agriculture

Seeps / springs present? ☐ Y ☑ N ☐ Unknown – no access (if yes, describe in Table 3).

Table 3: Seep/spring identification

Seep/Spring #	UTM	Description	Surrounding Habitat

Vernal Pools Present? ☐ Y ☑ N ☐ Unknown – no access (if yes, describe in Table 4).

Table 4: Vernal pool identification

Vernal pool #	UTM	Depth of water	Size of pool (diameter)	Presence of emergent/submergent veg?	Presence of shrubs, logs at pond edge

F009-4

ELC COMMUNITY DESCRIPTION & CLASSIFICATION

SITE: Woodlot 68 - East of Turbine 2		POLYGON: # 2	
SURVEYOR(S): Don Graham	DATE: Apr 8 2011	UTME:	
START: 9 30	END: 10 30	UTMZ:	UTMN:

POLYGON DESCRIPTION

SYSTEM	SUBSTRATE	TOPOGRAPHIC FEATURE	HISTORY	PLANT FORM	COMMUNITY
☐ TERRESTRIAL ☐ WETLAND ☐ AQUATIC	☐ ORGANIC ☐ MINERAL SOIL ☐ PARENT MIN. ☐ ACIDIC BEDRK. ☐ BASIC BEDRK. ☐ CARB. BEDRK.	☐ LACUSTRINE ☐ RIVERINE ☐ BOTTOMLAND ☐ TERRACE ☐ VALLEY SLOPE ☐ TABLELAND ☐ ROLL. UPLAND ☐ CLIFF ☐ TALUS ☐ CREVICE / CAVE ☐ ALVAR ☐ ROCKLAND ☐ BEACH / BAR ☐ SAND DUNE ☐ BLUFF	☐ NATURAL ☐ CULTURAL	☐ PLANKTON ☐ SUBMERGED ☐ FLOATING-LVD. ☐ GRAMINOID ☐ FORB ☐ LICHEN ☐ BRYOPHYTE ☐ DECIDUOUS ☐ CONIFEROUS ☐ MIXED	☐ LAKE ☐ POND ☐ RIVER ☐ STREAM ☐ MARSH ☐ SWAMP ☐ FEN ☐ BOG ☐ BARREN ☐ MEADOW ☐ PRAIRIE ☐ THICKET ☐ SAVANNAH ☐ WOODLAND ☐ FOREST ☐ PLANTATION
SITE ☐ OPEN WATER ☐ SHALLOW WATER ☐ SURFICIAL DEP. ☐ BEDROCK			**COVER** ☐ OPEN ☐ SHRUB ☐ TREED		

STAND DESCRIPTION:

	LAYER	HT	CVR	SPECIES IN ORDER OF DECREASING DOMINANCE (>> MUCH GREATER THAN; > GREATER THAN; = ABOUT EQUAL TO)
1	CANOPY	20	70	Shagbark hickory >> S maple = Red Ash
2	SUB-CANOPY	3-8	40%	Ironwood > Red Oak = Red Ash > Chokecherry
3	UNDERSTOREY	0.5-2	10%	Red ash = Ironwood > Chokecherry > Shagbark hickory
4	GRD. LAYER			

HT CODES: 1 = >25 m 2 = 10<HT≤25 m 3 = 2<HT≤10 m 4 = 1<HT≤2 m 5 = 0.5<HT≤1 m 6 = 0.2<HT≤0.5 m 7 = HT<0.2 m
CVR CODES: 0= NONE 1= 0% < CVR ≤ 10% 2= 10 < CVR ≤ 25% 3= 25 < CVR ≤ 60% 4= CVR > 60%

STAND COMPOSITION:				BA:
SIZE CLASS ANALYSIS:	< 10	10 - 24	25 - 50	> 50
STANDING SNAGS:	< 10	10 - 24	25 - 50	> 50
DEADFALL / LOGS:	< 10	10 - 24	25 - 50	> 50

ABUNDANCE CODES: N = NONE R = RARE O = OCCASIONAL A = ABUNDANT

COMM. AGE:	PIONEER	YOUNG	MID-AGE	MATURE	OLD GROWTH

SOIL ANALYSIS:

TEXTURE:	DEPTH TO MOTTLES / GLEY	g =	G=
MOISTURE:	DEPTH OF ORGANICS:		(cm)
HOMOGENEOUS / VARIABLE	DEPTH TO BEDROCK:		(cm)

COMMUNITY CLASSIFICATION:

COMMUNITY CLASS:	CODE:
COMMUNITY SERIES:	CODE:
ECOSITE:	CODE:
VEGETATION TYPE:	CODE:
INCLUSION	CODE:
COMPLEX	CODE:

Notes:
EAPH (OB)
WBNU (VO)
AMRO (OB)
GCKI (VO)
DOWO (VO)

ELC PLANT SPECIES LIST

SITE:	
POLYGON:	
DATE:	
SURVEYOR(S):	

LAYERS: 1 = CANOPY > 10m 2 = SUB-CANOPY 3 = UNDERSTOREY 4 = GROUND (GRD.) LAYER
ABUNDANCE CODES: R = RARE O = OCCASIONAL A = ABUNDANT D = DOMINANT

SPECIES CODE	LAYER 1	2	3	4	COLL.
Shagbark hickory D					
Red Ash					
Red Oak					
White ash					
Tilamer					
Juneberry					
Blue beech					
Ironwood					
Chokecherry					
Rib lacu					
Rhacath					
Robocci					

SPECIES CODE	LAYER 1	2	3	4	COLL.
Fravi sp					
Red-stemmed moss					
Sedge red base					
Lg moss					
Herb robert					
Mosmat					
Geum sp					
Aster sp					

Stantec Consulting Ltd.
70-1 Southgate Drive
Guelph, Ontario, Canada
N1G 4P5
Tel: (519) 836-6050
Fax: (519) 836-2493

Windfarm Wildlife Habitat Assessment

Project Number: 161010646

Project Name: GREP (Haldimand Twp)

Date / Time: Apr. 7, 2011 930 - 1130

Field Personnel: Dan Graham - Melissa Straus

Weather Conditions:	Temp:	Wind:	Cloud:	PPT:	PPT in last 24 hrs:
	10	1	10% ~~50%~~	None	None

Location (i.e. turbine #s/description) 68 - vicinity of turbines 2, 4, 5 & 21

Visual assessment (roadside – no access) ☐
Physical assessment (walk through feature) ☑

Extent of physical investigation of feature: ☐ Entire ☑ Partial (indicate on map) (Figure 9)

Reptile Hibernacula Features (i.e. features that would provide a route underground, including buried concrete or rock (e.g. foundations, bridge abutments or culverts with cracks/entry points, exposed rock crevices or inactive animal burrows))
Contains potential reptile hibernacula features? ☐ Y ☑ N ☐ Unknown – no access (if yes, describe in Table 1).

Bat Hibernacula Features (i.e. karst topography, abandoned mines or caves)
Contains potential bat hibernacula features? ☐ Y ☑ N ☐ Unknown – no access (if yes, describe in Table 1).

Table 1: Potential bat/reptile hibernacula features identified on site

UTM	Feature type	Photo #	Description	Spp. observed using feature

Species Observations List species and type of observation (indicate on map):
(CA = carcass; DP = distinctive parts; FE = feeding evidence; FY = eggs, nest; HO = house/den; OB = observed; SC = scat; SI = other sign; TK = track; VO = vocalization)

Birds	Mammals	Herps	Butterflies / Dragonflies	Other
i.e.) A: AMRO/VO AMRO - VO DOWO - VO RBWO - ~~OB~~ OB HAWO - VO NOFL - VO WBNU - ~~OB~~ OB BRCR - VO SOSP - VO		Spotted ~~Sourtail~~ Salamander Toad		

BCCH - ~~OB~~ OB
PIWO - SI
TUTI - VO

Woodland Assessment complete 1 assessment for each woodland

Woodlot # (indicate on map) 68 ; **Approximate age of stand** 40

Are large (i.e. >40cmDBH and >25m tall) **trees present?** ☑ Y ☐ N ☐ Unknown – no access
If yes, approximate # present or % of stand <5%
Location in stand (i.e. throughout, west side only, FOD2-6 only, etc.) throughout

Are snags present? ☑ Y ☐ N ☐ Unknown – no access
If yes, provide characterization of number present, height and DBH of snags and indications of loose bark.
10-30cm dbh; 5-15m in height; 1% of trees
None seen with loose bark

Potential Bat Maternity Roost Contains large, mature (i.e. >80 year old) snags or trees (living or dead) containing medium to large cavities. ☐ Y ☑ N ☐ Unknown – no access (if yes, describe in Table 2).

Cavities present? ☐ No ☐ Rare ☑ Occasional ☐ Abundant ☐ Unknown – no access

Table 2: Potential bat maternity roost features identified on site – None

Range of tree height	Range of tree DBH	Range of cavity heights	Cavity sizes small: small birds, medium= large woodpeckers, large= mammals Hollow?

Presence of large stick nests (i.e. raptor nests)? ☐ Y ☑ N ☐ Unknown – no access
If yes, UTM and describe tree type, height and position in tree, size of nest, species present: _____

Evidence of disturbance (i.e logging, roads, ATV use, trails, garbage)? ☑ Y ☐ N ☐ Unknown – no access
If yes, describe ATV trails, garbage

Seeps / springs present? ☐ Y ☑ N ☐ Unknown – no access (if yes, describe in Table 3).

Table 3: Seep/spring identification

Seep/Spring #	UTM	Description	Surrounding Habitat

Vernal Pools Present? ☑ Y ☐ N ☐ Unknown – no access (if yes, describe in Table 4).

Table 4: Vernal pool identification

Vernal pool #	UTM	Depth of water	Size of pool (diameter)	Presence of emergent/submergent veg?	Presence of shrubs, logs at pond edge

Stantec Consulting Ltd.
70-1 Southgate Drive
Guelph, Ontario, Canada
N1G 4P5
Tel: (519) 836-6050
Fax: (519) 836-2493

Windfarm Wildlife Habitat Assessment

Project Number: 161010646

Project Name: Grand Renewable

Date / Time: Apr 7 1130 - 130

Field Personnel: Don Graham & Melissa Straus

Weather Conditions:	Temp:	Wind:	Cloud:	PPT:	PPT in last 24 hrs:
	10	1	80%	None	None

Location (i.e. turbine #s/description) 69

Visual assessment (roadside – no access) ☐
Physical assessment (walk through feature) ☑

Extent of physical investigation of feature: ☑ Entire ☐ Partial (indicate on map)

Reptile Hibernacula Features (i.e. features that would provide a route underground, including buried concrete or rock (e.g. foundations, bridge abutments or culverts with cracks/entry points, exposed rock crevices or inactive animal burrows))
Contains potential reptile hibernacula features? ☐ Y ☑ N ☐ Unknown – no access (if yes, describe in Table 1).

Bat Hibernacula Features (i.e. karst topography, abandoned mines or caves)
Contains potential bat hibernacula features? ☐ Y ☑ N ☐ Unknown – no access (if yes, describe in Table 1).

Table 1: Potential bat/reptile hibernacula features identified on site

UTM	Feature type	Photo #	Description	Spp. observed using feature

Species Observations List species and type of observation (indicate on map):
(CA = carcass; DP = distinctive parts; FE = feeding evidence; FY = eggs, nest; HO = house/den; OB = observed; SC = scat; SI = other sign; TK = track; VO = vocalization)

Birds	Mammals	Herps	Butterflies / Dragonflies	Other
i.e.) A: AMRO/VO AMRO - VO SOSP - VO FOSP - VO BRCR - VO GCKI - OB AMCR - VO WLWR - VO RTHA - OB	Vole sp. - OB Gray Squirrel - OB Deer - skeleton	Chorus Frogs - VO Location on map NLFR - VO Spotted ~~Sandpiper~~ - trap Salamander JE / hybrid - trap		

YBSA - OB
AMWO - OB
COGR - OB
RWBL - OB
BHCO - VO
BCCH - VO
PIWO - FE

Woodland Assessment complete 1 assessment for each woodland

Woodlot # (indicate on map) 69 ; **Approximate age of stand** 60

Are large (i.e. >40cmDBH and >25m tall) **trees present?** ☐ Y ☐ N ☐ Unknown – no access
If yes, approximate # present or % of stand _____
Location in stand (i.e. throughout, west side only, FOD2-6 only, etc.) _____

Are snags present? ☐ Y ☐ N ☐ Unknown – no access
If yes, provide characterization of number present, height and DBH of snags and indications of loose bark.

Potential Bat Maternity Roost Contains large, mature (i.e. >80 year old) snags or trees (living or dead) containing medium to large cavities. ☐ Y ☐ N ☐ Unknown – no access (if yes, describe in Table 2).

Cavities present? ☐ No ☐ Rare ☐ Occasional ☐ Abundant ☐ Unknown – no access

Table 2: Potential bat maternity roost features identified on site

Range of tree height	Range of tree DBH	Range of cavity heights	Cavity sizes small: small birds, medium= large woodpeckers, large= mammals Hollow?

Presence of large stick nests (i.e. raptor nests)? ☐ Y ☐ N ☐ Unknown – no access
If yes, UTM and describe tree type, height and position in tree, size of nest, species present: _____

Evidence of disturbance (i.e logging, roads, ATV use, trails, garbage)? ☐ Y ☐ N ☐ Unknown – no access
If yes, describe _____

Seeps / springs present? ☐ Y ☐ N ☐ Unknown – no access (if yes, describe in Table 3).

Table 3: Seep/spring identification

Seep/Spring #	UTM	Description	Surrounding Habitat

Vernal Pools Present? ☐ Y ☐ N ☐ Unknown – no access (if yes, describe in Table 4).

Table 4: Vernal pool identification

Vernal pool #	UTM	Depth of water	Size of pool (diameter)	Presence of emergent/submergent veg?	Presence of shrubs, logs at pond edge

Stantec Consulting Ltd.
70-1 Southgate Drive
Guelph, Ontario, Canada
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Tel: (519) 836-6050
Fax: (519) 836-2493

Windfarm Wildlife Habitat Assessment

Project Number: 161010646

Project Name: GREP (Haldimand Twp)

Date / Time: Apr. 7, 2011 14:30 - 16:30

Field Personnel: Dan Graham & Melissa Straus

Weather Conditions:	Temp:	Wind:	Cloud:	PPT:	PPT in last 24 hrs:
	10	1	10%	None	None.

Location (i.e. turbine #s/description) 32

Visual assessment (roadside – no access) ☐
Physical assessment (walk through feature) ☑

Extent of physical investigation of feature: ☐ Entire ☑ Partial (indicate on map)

Reptile Hibernacula Features (i.e. features that would provide a route underground, including buried concrete or rock (e.g. foundations, bridge abutments or culverts with cracks/entry points, exposed rock crevices or inactive animal burrows))
Contains potential reptile hibernacula features? ☐ Y ☑ N ☐ Unknown – no access (if yes, describe in Table 1).

Bat Hibernacula Features (i.e. karst topography, abandoned mines or caves)
Contains potential bat hibernacula features? ☐ Y ☑ N ☐ Unknown – no access (if yes, describe in Table 1).

Table 1: Potential bat/reptile hibernacula features identified on site

UTM	Feature type	Photo #	Description	Spp. observed using feature

Species Observations List species and type of observation (indicate on map):
(CA = carcass; DP = distinctive parts; FE = feeding evidence; FY = eggs, nest; HO = house/den; OB = observed; SC = scat; SI = other sign; TK = track; VO = vocalization)

Birds	Mammals	Herps	Butterflies / Dragonflies	Other
i.e.) A: AMRO/VO Rusty Blackbird - thicket swamp just south of Meadow Rd RBWO - VO PIWO - VO WSWO - OB	deer - TK raccoon - TK	Chorus frogs - widespread in thicket swamp south of Meadow Rd. - VO Wood Frog in east portion of thicket swamp - NO		

Woodland Assessment complete 1 assessment for each woodland

Woodlot # (indicate on map) _____ ; **Approximate age of stand** _____

Are large (i.e. >40cmDBH and >25m tall) **trees present?** ☐ Y ☐ N ☐ Unknown – no access
If yes, approximate # present or % of stand _____
Location in stand (i.e. throughout, west side only, FOD2-6 only, etc.) _____

Are snags present? ☐ Y ☐ N ☐ Unknown – no access
If yes, provide characterization of number present, height and DBH of snags and indications of loose bark.

Potential Bat Maternity Roost Contains large, mature (i.e. >80 year old) snags or trees (living or dead) containing medium to large cavities. ☐ Y ☐ N ☐ Unknown – no access (if yes, describe in Table 2).

Cavities present? ☐ No ☐ Rare ☐ Occasional ☐ Abundant ☐ Unknown – no access

Table 2: Potential bat maternity roost features identified on site

Range of tree height	Range of tree DBH	Range of cavity heights	Cavity sizes small: small birds, medium= large woodpeckers, large= mammals Hollow?

Presence of large stick nests (i.e. raptor nests)? ☐ Y ☐ N ☐ Unknown – no access
If yes, UTM and describe tree type, height and position in tree, size of nest, species present: _____

Evidence of disturbance (i.e logging, roads, ATV use, trails, garbage)? ☐ Y ☐ N ☐ Unknown – no access
If yes, describe _____

Seeps / springs present? ☐ Y ☐ N ☐ Unknown – no access (if yes, describe in Table 3).

Table 3: Seep/spring identification

Seep/Spring #	UTM	Description	Surrounding Habitat

Vernal Pools Present? ☐ Y ☐ N ☐ Unknown – no access (if yes, describe in Table 4).

Table 4: Vernal pool identification

Vernal pool #	UTM	Depth of water	Size of pool (diameter)	Presence of emergent/submergent veg?	Presence of shrubs, logs at pond edge

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February 2011
160960577

Stantec

Legend

- Study Area
- Zone of Investigation
- Constructable Area

Wind Project Location

- Proposed Turbine Location
- Access Road
- Overhead Collector Line
- Underground Collector Line

Solar Project Location

- Solar Lands

Transmission Line

- Overhead Transmission Line
- Underground Transmission Line
- Electrical Transmission Component

Existing Features

- Road
- Railway
- Abandoned Railway
- Transmission Line (MNR)
- Watercourse (MNR)
- Waterbody (MNR)
- Natural Feature
- Vegetation Community (ELC)

Forest Communities (FO)
FOM 2-2 – Dry-fresh White Pine – Sugar Maple Mixed Forest
FOD – Deciduous Forest
FOD1-1 – Dry-fresh Red Oak Deciduous Forest
FOD2-1 – Dry-fresh Oak – Red Maple Deciduous Forest
FOD2-2 – Dry-fresh Oak – Hickory Deciduous Forest
FOD2-4 – Dry-fresh Oak – Hardwood Deciduous Forest
FOD 3-1 – Dry-fresh Poplar Deciduous Forest
FOD4-1 – Dry-fresh Beech Deciduous Forest
FOD4-2 – Dry-fresh White Ash Deciduous Forest
FOD5 – Dry-fresh Sugar Maple Deciduous Forest Ecosite
FOD5-1 – Dry-fresh Sugar Maple Deciduous Forest
FOD5-2 – Dry-fresh Sugar Maple – Beech Deciduous Forest
FOD5-3 – Dry-fresh Sugar Maple – Oak Deciduous Forest
FOD5-6 – Dry-fresh Sugar Maple – White Ash Deciduous Forest
FOD5-9 – Dry-fresh Sugar Maple-Red Maple Deciduous Forest
FOD5-11* - Dry-fresh Sugar Maple – Oak – Beech Deciduous Forest
FOD5-12* - Dry-fresh Sugar Maple – Hickory – Beech Deciduous Forest
FOD6-1 – Fresh-moist Sugar Maple – Lowland Ash Deciduous Forest
FOD6-5 – Fresh-moist Sugar Maple – Hardwood Deciduous Forest
FOD6-6* - Fresh-moist Sugar Maple – Hickory Deciduous Forest
FOD7-1 – Fresh – moist White Elm Lowland Deciduous Forest
FOD7-2 – Fresh-moist Ash Lowland Deciduous Forest
FOD9-1 – Fresh-moist Oak – Sugar Maple Deciduous Forest
FOD9-3 – Fresh-moist Bur Oak Deciduous Forest
FOD9-4 – Fresh-moist Shagbark Hickory Deciduous Forest
FOD9-6* - Fresh-moist Red Oak – Shagbark Hickory Deciduous Forest

Cultural Communities (CU)
CUP1-4 – Hybrid Poplar Deciduous Plantation
CUP2 – Mixed Plantation
CUP3-1 – Red Pine Coniferous Plantation
CUP3-2 – White Pine Coniferous Plantation
CUP3-12* - White Pine – White/Norway Spruce Coniferous Plantation
CUP3-13* - White Spruce Coniferous Plantation
CUM1 – Mineral Cultural Meadow
CUT1 – Mineral Cultural Thicket
CUT1-1 – Sumac Cultural Thicket
CUT1-4 – Gray Dogwood Cultural Thicket
CUT1-7 – European Buckthorn – Sweet Cherry Cultural thicket
CUW1 – Mineral Cultural Woodland
CUW1-1 – Red Cedar Mineral Cultural Woodland
CUW1-3* - Ash – Sumac Mineral Cultural Woodland
CUW1-4* - Green Ash Mineral Cultural Woodland
CUW1-5* – Norway Maple Mineral Cultural Woodland
CUW1-6* - White Elm Cultural Woodland
CUW1-7* - Red maple Mineral Cultural Woodland
CUW1-11* - White Pine Cultural Woodland

Swamp Communities (SW)
SWD – Deciduous Swamp
SWD1-1 – Swamp Oak Mineral Deciduous Swamp
SWD1-2 – Bur Oak Mineral Deciduous Swamp
SWD2-2 – Green Ash Mineral Deciduous Swamp
SWD2-3* - Ash – Hardwood Mineral Deciduous Swamp
SWD2-4* - Green Ash – Red Maple Mineral Deciduous Swamp
SWD3-1 – Red Maple Mineral Deciduous Swamp
SWD3-2 – Silver Maple Mineral Deciduous Swamp
SWD3-3 – Swamp Maple Mineral Deciduous Swamp
SWD4-1 – Willow Mineral Deciduous Swamp
SWD4-2 – White Elm Mineral Deciduous Swamp
SWD4-6* - Green Ash – Swamp Maple Mineral Deciduous Swamp
SWT – Thicket Swamp
SWT2 – Mineral Thicket Swamp
SWT2-4 – Buttonbush Mineral Thicket Swamp
SWT2-5 – Red Osier Dogwood Mineral Thicket Swamp
SWT2-6 – Silky Dogwood Mineral Thicket Swamp
SWT2-9 – Gray Dogwood Mineral Thicket Swamp
SWT2-13* - Willow – Dogwood Mineral Thicket Swamp
SWT2-14* - Winterberry – Buttonbush Mineral Thicket Swamp
SWT2-15* - Red Maple Mineral Thicket Swamp
SWT3-7 – Winterberry Organic Thicket Swamp

Marsh Communities (MA)
MAM2 – Mineral Meadow Marsh
MAM2-2 – Reed Canary Grass Mineral Meadow Marsh
MAM2-8 – Jewelweed Mineral Meadow Marsh
MAM2-10 – Forb Mineral Meadow Marsh
MAM2-11* - Forb – Graminoid Mineral Meadow Marsh
MAS2-1 – Cattail Mineral Shallow Marsh
MAS2-8 – Rice Cut-grass Mineral Shallow Marsh

Open Water (OA)
OA – Open Aquatic

Shallow Water (SA)
SAM1-2 – Duckweed Mixed Shallow Aquatic

HR – Hedgerow
D – Disturbed
Res – Residential

Notes

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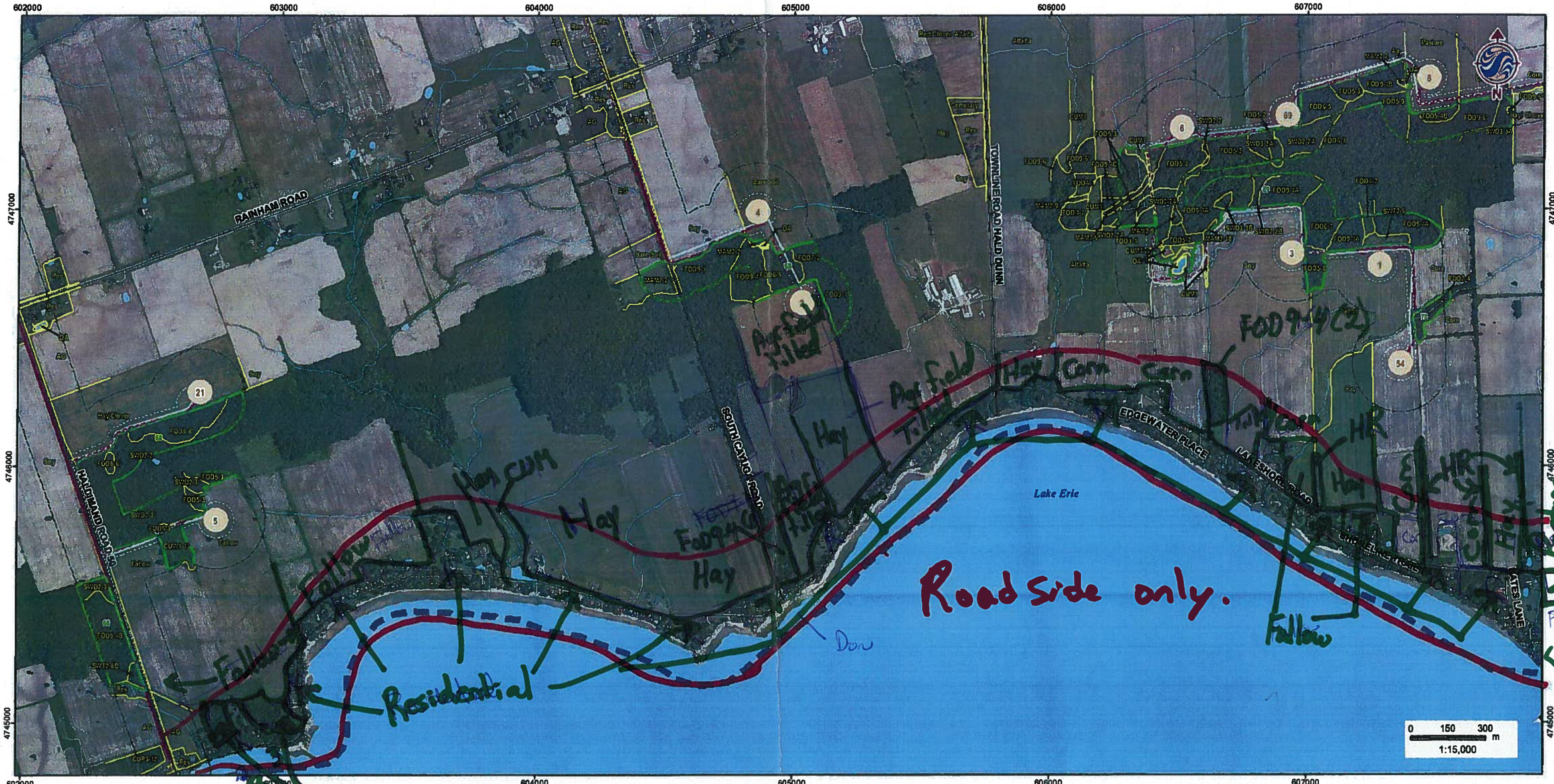
Client/Project
SAMSUNG, PATTERN & KEPCO (SPK) GRAND RENEWABLE ENERGY PARK

Figure No.
6.11

DRAFT

Title
ELC VEGETATION COMMUNITIES - W11



March 2011
160960577

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Stantec

Legend

- Study Area
- Zone of Investigation
- Constructable Area

Wind Project Location

- Proposed Turbine Location
- Access Roads
- Overhead Collector Line
- Underground Collector Line

Solar Project Location

- Solar Lands

Transmission Line

- Overhead Transmission Line
- Underground Transmission Line
- Electrical Transmission Component

Existing Features

- Road
- Railway
- Abandoned Railway
- Transmission Line (MNR)
- Watercourse (MNR)
- Waterbody (MNR)
- Natural Feature
- Vegetation Community (ELC)

Forest Communities (FO)
FOM 2-2 – Dry-fresh White Pine – Sugar Maple Mixed Forest
FOD – Deciduous Forest
FOD1-1 – Dry-fresh Red Oak Deciduous Forest
FOD2-1 – Dry-fresh Oak – Red Maple Deciduous Forest
FOD2-2 – Dry-fresh Oak – Hickory Deciduous Forest
FOD2-4 – Dry-fresh Oak – Hardwood Deciduous Forest
FOD 3-1 – Dry-fresh Poplar Deciduous Forest
FOD4-1 – Dry-fresh Beech Deciduous Forest
FOD4-2 – Dry-fresh White Ash Deciduous Forest
FOD5 – Dry-fresh Sugar Maple Deciduous Forest Ecosite
FOD5-1 – Dry-fresh Sugar Maple Deciduous Forest
FOD5-2 – Dry-fresh Sugar Maple – Beech Deciduous Forest
FOD5-3 – Dry-fresh Sugar Maple – Oak Deciduous Forest
FOD5-5 – Dry-fresh Sugar Maple – White Ash Deciduous Forest
FOD5-9 - Dry-fresh Sugar Maple-Red Maple Deciduous Forest
FOD5-11* - Dry-fresh Sugar Maple – Oak – Beech Deciduous Forest
FOD5-12* - Dry-fresh Sugar Maple – Hickory – Beech Deciduous Forest
FOD6-1 – Fresh-moist Sugar Maple – Lowland Ash Deciduous Forest
FOD6-5 – Fresh-moist Sugar Maple – Hardwood Deciduous Forest
FOD6-6* - Fresh-moist Sugar Maple – Hickory Deciduous Forest
FOD7-1 – Fresh – moist White Elm Lowland Deciduous Forest
FOD7-2 – Fresh-moist Ash Lowland Deciduous Forest
FOD9-1 – Fresh-moist Oak – Sugar Maple Deciduous Forest
FOD9-3 - Fresh-moist Bur Oak Deciduous Forest
FOD9-4 – Fresh-moist Shagbark Hickory Deciduous Forest
FOD9-6* - Fresh-moist Red Oak – Shagbark Hickory Deciduous Forest

Cultural Communities (CU)
CUP1-4 – Hybrid Poplar Deciduous Plantation
CUP2 – Mixed Plantation
CUP3-1 – Red Pine Coniferous Plantation
CUP3-2 – White Pine Coniferous Plantation
CUP3-12* - White Pine – White/Norway Spruce Coniferous Plantation
CUP3-13* - White Spruce Coniferous Plantation
CUM1 – Mineral Cultural Meadow
CUT 1 – Mineral Cultural Thicket
CUT 1-1 – Sumac Cultural Thicket
CUT 1-4 – Gray Dogwood Cultural Thicket
CUT 1-7 – European Buckthorn – Sweet Cherry Cultural thicket
CUW1 – Mineral Cultural Woodland
CUW1-1 – Red Cedar Mineral Cultural Woodland
CUW1-3* - Ash – Sumac Mineral Cultural Woodland
CUW1-4* - Green Ash Mineral Cultural Woodland
CUW1-5* - Norway Maple Mineral Cultural Woodland
CUW1-6* - White Elm Cultural Woodland
CUW1-7* - Red maple Mineral Cultural Woodland
CUW1-11* - White Pine Cultural Woodland

Swamp Communities (SW)
SWD – Deciduous Swamp
SWD1-1 – Swamp Oak Mineral Deciduous Swamp
SWD1-2 – Bur Oak Mineral Deciduous Swamp
SWD2-2 – Green Ash Mineral Deciduous Swamp
SWD2-3* - Ash – Hardwood Mineral Deciduous Swamp
SWD2-4* - Green Ash – Red Maple Mineral Deciduous Swamp
SWD3-1 – Red Maple Mineral Deciduous Swamp
SWD3-2 – Silver Maple Mineral Deciduous Swamp
SWD3-3 – Swamp Maple Mineral Deciduous Swamp
SWD4-1 – Willow Mineral Deciduous Swamp
SWD4-2 – White Elm Mineral Deciduous Swamp
SWD4-6* - Green Ash – Swamp Maple Mineral Deciduous Swamp
SWT – Thicket Swamp
SWT2 – Mineral Thicket Swamp
SWT2-4 – Buttonbush Mineral Thicket Swamp
SWT2-5 – Red Osier Dogwood Mineral Thicket Swamp
SWT2-8 – Silky Dogwood Mineral Thicket Swamp
SWT2-9 – Gray Dogwood Mineral Thicket Swamp
SWT2-13* - Willow – Dogwood Mineral Thicket Swamp
SWT2-14* - Winterberry – Buttonbush Mineral Thicket Swamp
SWT2-15* - Red Maple Mineral Thicket Swamp
SWT3-7 – Winterberry Organic Thicket Swamp

Marsh Communities (MA)
MAM2 – Mineral Meadow Marsh
MAM2-2 – Reed Canary Grass Mineral Meadow Marsh
MAM2-9 – Jewelweed Mineral Meadow Marsh
MAM2-10 – Forb Mineral Meadow Marsh
MAM2-11* - Forb – Graminoid Mineral Meadow Marsh
MAS2-1 – Cattail Mineral Shallow Marsh
MAS2-8 – Rice Cut-grass Mineral Shallow Marsh

Open Water (OA)
OA – Open Aquatic

Shallow Water (SA)
SAM1-2 – Duckweed Mixed Shallow Aquatic

HR – Hedgerow
D – Disturbed
Res - Residential

Notes

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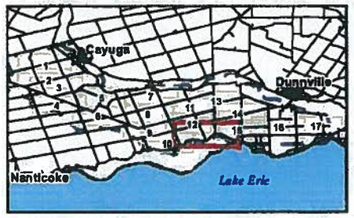


Client/Project
SAMSUNG, PATTERN & KEPCO (SPK)
GRAND RENEWABLE ENERGY PARK

Figure No.
DRAFT

Title
ELC VEGETATION COMMUNITIES -
Natural Features
FOD9-4 (1, 2, 3, 4)

F009-4(2)

Stantec Consulting Ltd.
70-1 Southgate Drive
Guelph, Ontario, Canada
N1G 4P5
Tel: (519) 836-6050
Fax: (519) 836-2493

Windfarm Wildlife Habitat Assessment

Project Number: 1610 10646

Project Name: Grand Renewable Energy Wind

Date / Time: Apr 7, 2011 18[15] - 19[20]

Field Personnel: Don Graham

Weather Conditions:	Temp:	Wind:	Cloud:	PPT:	PPT in last 24 hrs:
	12	1	50%	None	None

Location (i.e. turbine #s/description) North of Lakeshore Rd, about 1 km east of Townline Rd

Visual assessment (roadside – no access) ☑

Physical assessment (walk through feature) ☐

Extent of physical investigation of feature: ☐ Entire ☑ Partial (indicate on map)
Observation from lakeshore Rd at pt about 100m SW of feature where view of feature was clear.

Reptile Hibernacula Features (i.e. features that would provide a route underground, including buried concrete or rock (e.g. foundations, bridge abutments or culverts with cracks/entry points, exposed rock crevices or inactive animal burrows))
Contains potential reptile hibernacula features? ☐ Y ☐ N ☑ Unknown – no access (if yes, describe in Table 1).

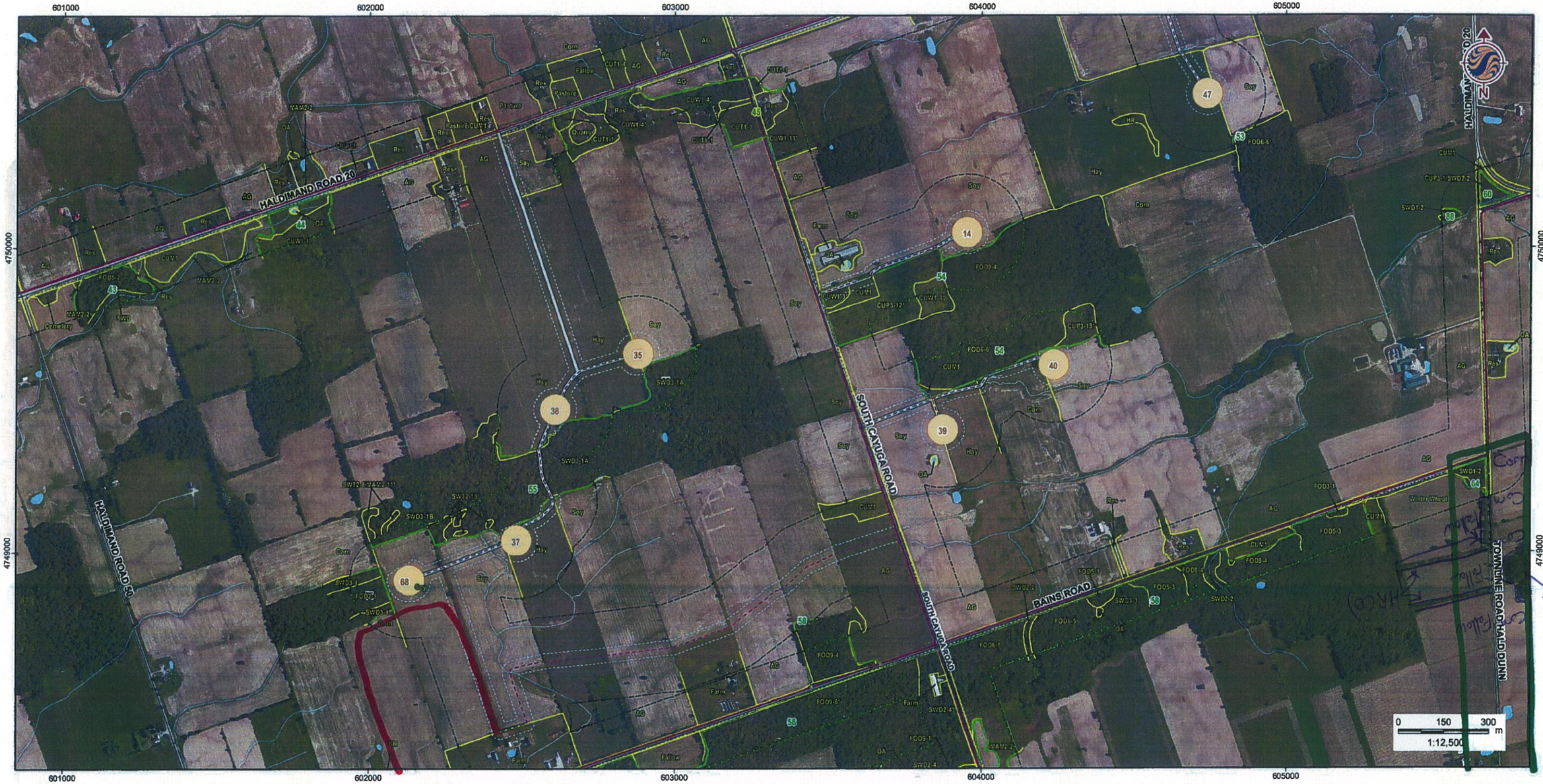
Bat Hibernacula Features (i.e. karst topography, abandoned mines or caves)
Contains potential bat hibernacula features? ☐ Y ☐ N ☑ Unknown – no access (if yes, describe in Table 1).

Table 1: Potential bat/reptile hibernacula features identified on site

UTM	Feature type	Photo #	Description	Spp. observed using feature

Species Observations List species and type of observation (indicate on map):
(CA = carcass; DP = distinctive parts; FE = feeding evidence; FY = eggs, nest; HO = house/den; OB = observed; SC = scat; SI = other sign; TK = track; VO = vocalization)

Birds	Mammals	Herps	Butterflies / Dragonflies	Other
i.e.) A: AMRO/VO				



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February 2011
160960577

Stantec

Legend

- Study Area
- Zone of Investigation
- Constructable Area

Wind Project Location

- Proposed Turbine Location
- Access Road
- Overhead Collector Line
- Underground Collector Line

Solar Project Location

- Solar Lands

Transmission Line

- Overhead Transmission Line
- Underground Transmission Line
- Electrical Transmission Component

Existing Features

- Road
- Railway
- Abandoned Railway
- Transmission Line (MNR)
- Watercourse (MNR)
- Waterbody (MNR)
- Natural Feature
- Vegetation Community (ELC)

Forest Communities (FO)
FOM 2-2 – Dry-fresh White Pine – Sugar Maple Mixed Forest
FOD – Deciduous Forest
FOD1-1 – Dry-fresh Red Oak Deciduous Forest
FOD2-1 – Dry-fresh Oak – Red Maple Deciduous Forest
FOD2-2 – Dry-fresh Oak – Hickory Deciduous Forest
FOD2-4 – Dry-fresh Oak – Hardwood Deciduous Forest
FOD 3-1 – Dry-fresh Poplar Deciduous Forest
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CUP1-4 – Hybrid Poplar Deciduous Plantation
CUP2 – Mixed Plantation
CUP3-1 – Red Pine Coniferous Plantation
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CUM1 – Mineral Cultural Meadow
CUT1 – Mineral Cultural Thicket
CUT1-1 – Sumac Cultural Thicket
CUT1-4 – Gray Dogwood Cultural Thicket
CUT1-7 – European Buckthorn – Sweet Cherry Cultural thicket
CUW1 – Mineral Cultural Woodland
CUW1-1 – Red Cedar Mineral Cultural Woodland
CUW1-3* - Ash – Sumac Mineral Cultural Woodland
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SWD3-3 – Swamp Maple Mineral Deciduous Swamp
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SWT – Thicket Swamp
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Client/Project
SAMSUNG, PATTERN & KEPCO (SPK)
GRAND RENEWABLE ENERGY PARK

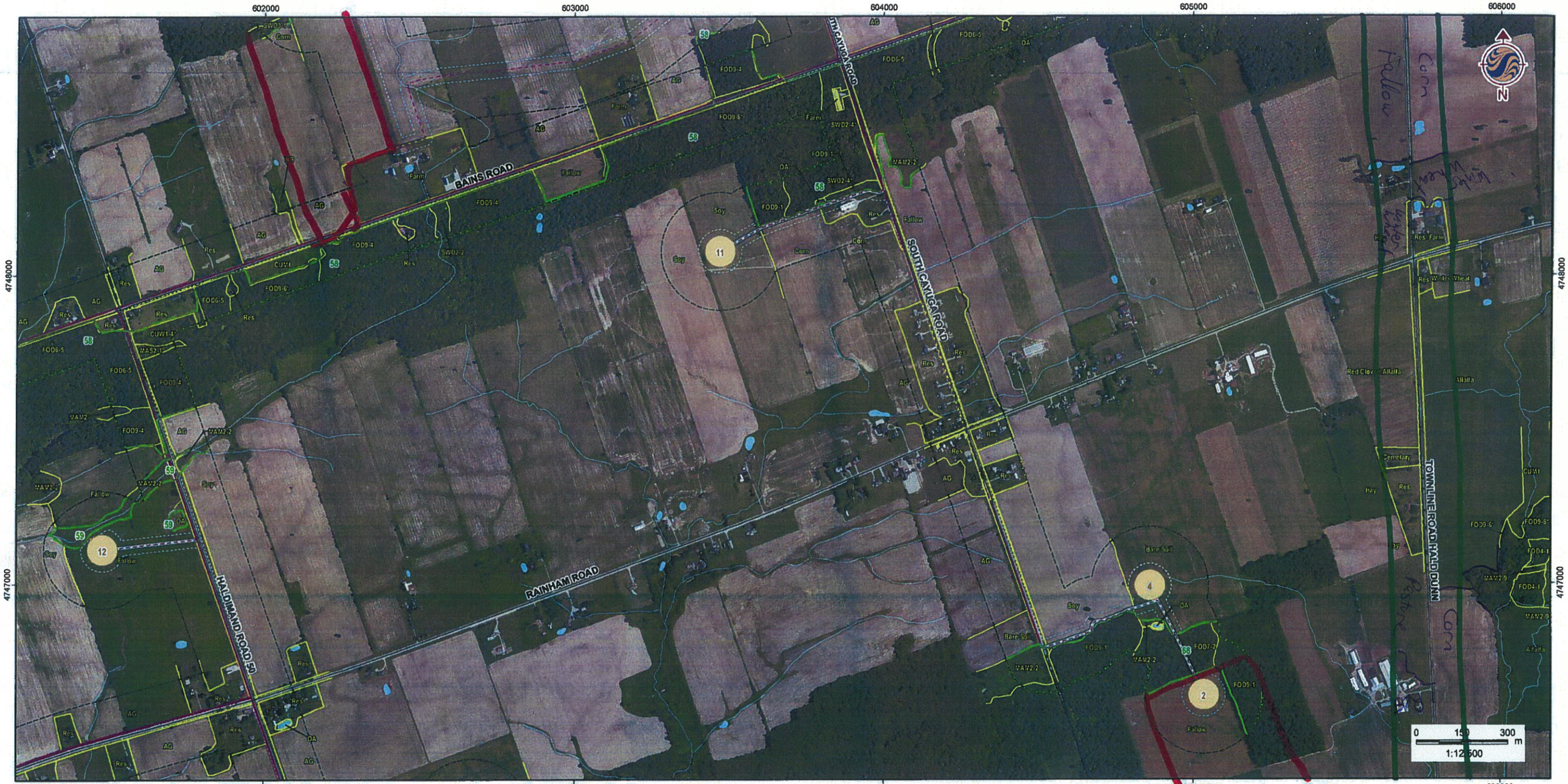
Figure No.
6.11

DRAFT

Title
ELC VEGETATION COMMUNITIES - W11

ELC both sides of Townline Rd. Hald Dunn from Bains Rd. to Lake Erie.

FOD9-4



February 2011
160960577

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Stantec

Legend

- Study Area
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Wind Project Location

- Proposed Turbine Location
- Access Road
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MAM2-10 – Forb Mineral Meadow Marsh
MAM2-11* - Forb – Graminoid Mineral Meadow Marsh
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Open Water (OA)
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Shallow Water (SA)
SAM1-2 – Duckweed Mixed Shallow Aquatic

HR – Hedgerow
D – Disturbed
Res - Residential

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Client/Project
SAMSUNG, PATTERN & KEPCO (SPK) GRAND RENEWABLE ENERGY PARK

Figure No.
6.12

DRAFT

Title
ELC VEGETATION COMMUNITIES - W12