Gran-a

RAPID ASSESSMENT FORM FOR AQUATIC HABITAT

Layout Version 1

Stantec

Project Samsung (GREP) Wind
Station # 1
Photos Taken D121, 0122, 0123
GPS Coordinates 17T 0587854/4753842
Descriptive Location crossing approximately 200 m South of Rt 3 @ house # 4260

Project # 161010646
Field Staff E. Malindzak, M. Kozak
Date 10-18-2010
Time 12:22

Water Quality
Dissolved Oxygen (mg/L) /
pH /
Conductivity (µS/cm) /
Water Temperature (°C) /
Air Temperature (°C) 11°C
Weather conditions in previous 24 hrs Sunny then cloudy, cool

Watercourse Dimensions & Morphology
Mean Watercourse Width /(m)
Maximum Pool Depth /(cm)
Mean Bankfull Width /(m)
Mean Water Depth /(cm)
% Riffle % Pool % Run % Flat
Evidence of eroding banks, Comments on bank stability channel incised d/s on adjacent property, no defined channel though there is evidence of flow

Substrate – Upstream (% cover)
/ Bedrock / Silt / Boulder / Clay / Cobble
/ Muck / Gravel / Marl / Sand / Detritus

Substrate – Downstream (% cover)
/ Bedrock / Silt / Boulder / Clay / Cobble
/ Muck / Gravel / Marl / Sand / Detritus

In-water Cover
Cover Types Present (circle): (Overhanging Vegetation) Undercut Banks Deep Pool (Vascular Plants)
Woody Debris Boulder Other

Riparian Zone
Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional)
Upstream 80%, early sucessional meadow
Downstream 60%, grass/meadow w/ agricuture (corn)
Adjacent Land Use
Upstream agriculture currently fallow
Downstream agriculture, corn + meadow

Fish Habitat Potential
Critical Habitat (spawning or nursery areas, groundwater upwellings)
Upstream none
Downstream none
Migratory Obstructions (seasonal, permanent)
Upstream at d/s property bourdry is piles of concrete/brick
Downstream culvert @ road crossing d/s is dry
Note any fish observations some pooled water on property D/S, isolated as culvert is dry

Other Habitat Notes, Incidental Wildlife Observations, etc. Dry not a waterbody no aquatic veg or defined channel

Field Notes Authored by E. Malindzak
Field Notes QA/QCed by M. Pomeroy

Gran-aa

RAPID ASSESSMENT FORM FOR AQUATIC HABITAT

Layout Version ____

Stantec

Project : Samsung (GREP) Wind
Station # CL-34
Photos Taken 7509, ~~8~~ 7510, 7511
GPS Coordinates 17T 0603302/4750311
Descriptive Location South of Haldiman 20 on South Cayuga Rd.

Project # 161010646
Field Staff E. Malinoski, E. Windhorst
Date Oct 28, 2010
Time 10:54, ~~2:00~~

Water Quality
Dissolved Oxygen (mg/L) ____ pH ____ Conductivity (µS/cm) ____
Water Temperature (°C) ____ Air Temperature (°C) 11°C, cloudy, windy
Weather conditions in previous 24 hrs Sunny, warm, windy

Watercourse Dimensions & Morphology
Mean Watercourse Width 0.20 (m) Maximum Pool Depth 0.5 ~~(cm)~~ m
Mean Bankfull Width 1.0 (m) Mean Water Depth 0.3 ~~(cm)~~
____% Riffle 80 % Pool 20 % Run ____% Flat
Evidence of eroding banks, Comments on bank stability none, considering recent rains and very little water in channel, this likely holds water briefly after rain and during spring snow melt.

Substrate – Upstream (% cover)

____Bedrock	____Silt	____Boulder	100 Clay	____Cobble
____Muck	____Gravel	____Marl	____Sand	____Detritus

Substrate – Downstream (% cover)

____Bedrock	____Silt	____Boulder	100 Clay	____Cobble
____Muck	____Gravel	____Marl	____Sand	____Detritus

In-water Cover
Cover Types Present (circle): Overhanging Vegetation, Undercut Banks, Woody Debris, Deep Pool, Boulder, Vascular Plants, Other Terrestrial

Riparian Zone
Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional)
Upstream 90%, terrestrial grasses
Downstream 75%, meadow ~~grs~~ sp.
Adjacent Land Use
Upstream agriculture (soy)
Downstream fallow field / meadow

Fish Habitat Potential
Critical Habitat (spawning or nursery areas, groundwater upwellings)
Upstream none
Downstream none
Migratory Obstructions (seasonal, permanent)
Upstream low flow
Downstream low flow
Note any fish observations none, culvert is perched ~7.5 cm @ d/s end, u/s is roadside ditch

Other Habitat Notes, Incidental Wildlife Observations, etc. ____

Field Notes Authored by E. Malinoski Field Notes QA/QCed by M. Pomeroy

Gran-b

RAPID ASSESSMENT FORM FOR AQUATIC HABITAT

Layout Version 1

Stantec

Project Samsung (GREP) Wind
Station # 2.3
Photos Taken #0134, 0135, 0136
GPS Coordinates 17T 0590472/4753859
Descriptive Location ~ 600 m SW of Hwy 3, closest turbine to Mohler Road on west side

Project # 161010646
Field Staff E. Malinczak, M. Kozak
Date 10-18-2010
Time 14:04

Water Quality
Dissolved Oxygen (mg/L) ____ pH ____ Conductivity (µS/cm) ____
Water Temperature (°C) ____ Air Temperature (°C) 12°C
Weather conditions in previous 24 hrs sunny then cloudy, cool

Watercourse Dimensions & Morphology
Mean Watercourse Width 0.5 (m) Maximum Pool Depth 15 (cm)
Mean Bankfull Width 2.5 (m) Mean Water Depth 7.5 (cm)
____% Riffle 100 % Pool ____% Run ____% Flat
Evidence of eroding banks, Comments on bank stability no visible flow, agricultural drain

Substrate – Upstream (% cover)

____ Bedrock	____ Silt	____ Boulder	50 Clay	____ Cobble	
50 Muck	____ Gravel	____ Marl	____ Sand	____ Detritus	

Substrate – Downstream (% cover)

____ Bedrock	____ Silt	____ Boulder	50 Clay	____ Cobble	
50 Muck	____ Gravel	____ Marl	____ Sand	____ Detritus	

In-water Cover
Cover Types Present (circle): Overhanging Vegetation, Undercut Banks, Woody Debris, Deep Pool, Boulder, (Vascular Plants), Other ____

Riparian Zone
Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional)
Upstream 30%, some meadow w/ winter wheat
Downstream 40%, " " " "
Adjacent Land Use
Upstream agriculture
Downstream agriculture, wood lot

Fish Habitat Potential
Critical Habitat (spawning or nursery areas, groundwater upwellings)
Upstream none
Downstream none
Migratory Obstructions (seasonal, permanent)
Upstream low flow
Downstream Low flow
Note any fish observations none

Other Habitat Notes, Incidental Wildlife Observations, etc. deer & raccoon tracks, possible ~~possible water course~~ not a waterbody. Waterbody occurs to the east of turbine & corridor but not in site except near tree line. Containg water but cracking in substrate indicates was dry recently.

Field Notes Authored by E. Malinczak
Field Notes QA/QCed by M. Pomeroy

Gran-b

RAPID ASSESSMENT FORM FOR AQUATIC HABITAT

Layout Version 1

Stantec

Project Samsung (GREP) Wind
Station # 1-2
Photos Taken 4 see 2.1 shots
GPS Coordinates 17T 0589811 | 4753869
Descriptive Location ~600 m south of Hwy 3

Project # 161010646
Field Staff E. Malinowski, M. Kozak
Date 10-18-2010
Time 13:32

Water Quality
Dissolved Oxygen (mg/L) 10.13 pH 8.45 Conductivity (µS/cm) 0
Water Temperature (°C) 13.54 Air Temperature (°C) 12 °C
Weather conditions in previous 24 hrs sunny then cloudy, cool

Watercourse Dimensions & Morphology
Mean Watercourse Width 10 x 15 (m) Maximum Pool Depth unk (cm)
Mean Bankfull Width / (m) Mean Water Depth unk (cm)
% Riffle 100 % Pool % Run % Flat
Evidence of eroding banks, Comments on bank stability pond in corn field

Substrate – Upstream (% cover)

Bedrock	Silt	Boulder	Clay	Cobble	
100 Muck	Gravel	Marl	Sand	Detritus	

Substrate – Downstream (% cover)

Bedrock	Silt	Boulder	50 Clay	Cobble	
50 Muck	Gravel	Marl	Sand	Detritus	

In-water Cover
Cover Types Present (circle): Overhanging Vegetation | Undercut Banks | Woody Debris | Deep Pool | Boulder | Vascular Plants | Other

Riparian Zone
Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional)
Upstream 10, Corn
Downstream 50, Soy
Adjacent Land Use
Upstream agriculture, corn
Downstream agriculture, soy

Fish Habitat Potential
Critical Habitat (spawning or nursery areas, groundwater upwellings)
Upstream none
Downstream none
Migratory Obstructions (seasonal, permanent)
Upstream low flow
Downstream low flow
Note any fish observations

Other Habitat Notes, Incidental Wildlife Observations, etc. deer, racoon, dog tracks, dead opossum. Shocked 280 seconds - no fish captured or observed - not a water body

Field Notes Authored by E. Malinowski Field Notes QA/QCed by M. Poweska

Gran-b

RAPID ASSESSMENT FORM FOR AQUATIC HABITAT

Layout Version 1

Stantec

Project Samsung (GREP) Wind — Project # 161010646
Station # 2.1 — Field Staff E. Matlinczak, M. Kozak
Photos Taken 0130, 0131, 0132, 0133 — Date 10-18-2010
GPS Coordinates 17T 0589799 / 4753977 — Time 13:09
Descriptive Location 500 m South of Hwy 3

Water Quality
Dissolved Oxygen (mg/L) / — pH / — Conductivity (µS/cm) /
Water Temperature (°C) / — Air Temperature (°C) 11°C
Weather conditions in previous 24 hrs Sunny then overcast, cool

Watercourse Dimensions & Morphology
Mean Watercourse Width / (m) — Maximum Pool Depth / (cm)
Mean Bankfull Width / (m) — Mean Water Depth / (cm)
% Riffle — % Pool — % Run — % Flat
Evidence of eroding banks, Comments on bank stability linear channel through agriculture (soy, corn) fields

Substrate – Upstream (% cover)

/ Bedrock	/ Silt	/ Boulder	/ Clay	/ Cobble
/ Muck	/ Gravel	/ Marl	/ Sand	/ Detritus

Substrate – Downstream (% cover)

Bedrock	Silt	Boulder	50 Clay	Cobble
50 Muck	Gravel	Marl	Sand	Detritus

In-water Cover
Cover Types Present (circle): Overhanging Vegetation, Undercut Banks, Woody Debris, Deep Pool, Boulder, (Vascular Plants), Other

Riparian Zone
Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional)
Upstream 30%, corn
Downstream 50%, soy
Adjacent Land Use
Upstream agriculture (corn)
Downstream agriculture (soy)

Fish Habitat Potential
Critical Habitat (spawning or nursery areas, groundwater upwellings)
Upstream none
Downstream none
Migratory Obstructions (seasonal, permanent)
Upstream low flow
Downstream low flow
Note any fish observations none

Other Habitat Notes, Incidental Wildlife Observations, etc. raccoon + deer tracks
Not a water body at this location, contains small (10 cm dia) puddles, likely from recent rains - not a Water Body

Field Notes Authored by E. Matlinczak — Field Notes QA/QCed by M. Pomeroy —

Gran-bb

RAPID ASSESSMENT FORM FOR AQUATIC HABITAT

Layout Version 1

Stantec

Project Samsung (GREP) Wind. Project # 161010646
Station # 32.0 Field Staff Edward Malindzak, M. Kozak
Photos Taken Date October 21 2010
GPS Coordinates 17T 0604782/4750664 Time 16:48
Descriptive Location 400m south of Haldimand Rd 20, west of Haldimand Rd. 50

Water Quality
Dissolved Oxygen (mg/L) 9.13 pH 7.92 Conductivity (µS/cm) 191
Water Temperature (°C) 9.58 Air Temperature (°C) 9°C
Weather conditions in previous 24 hrs sunny, cloudy, warm, cold, heavy rain, hail

Watercourse Dimensions & Morphology
Mean Watercourse Width 1.0 (m) Maximum Pool Depth 0.50 ~~(cm)~~ M
Mean Bankfull Width 4.0 (m) Mean Water Depth 0.40 ~~(cm)~~
5 % Riffle 75 % Pool 10 % Run 10 % Flat
Evidence of eroding banks, Comments on bank stability very slow moving agricultural drain, steep banks w/ signs of erosion where crop fields enter

Substrate – Upstream (% cover)

____ Bedrock	20 Silt	____ Boulder	80 Clay	____ Cobble	
____ Muck	____ Gravel	____ Marl	____ Sand	____ Detritus	

Substrate – Downstream (% cover)

____ Bedrock	20 Silt	____ Boulder	80 Clay	____ Cobble	
____ Muck	____ Gravel	____ Marl	____ Sand	____ Detritus	

In-water Cover
Cover Types Present (circle): Undercut Banks Deep Pool (Terrestrial) Vascular Plants
Overhanging Vegetation Woody Debris Boulder Other ____

Riparian Zone
Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional)
Upstream 50% meadow species, corn (goldenrod, asters, canary grass)
Downstream 50% meadow species, corn " " " "
Adjacent Land Use
Upstream agriculture (corn, clover)
Downstream agriculture (corn, soy)

Fish Habitat Potential
Critical Habitat (spawning or nursery areas, groundwater upwellings)
Upstream none
Downstream none
Migratory Obstructions (seasonal, permanent)
Upstream low flow
Downstream low flow
Note any fish observations none shocked for 175 seconds @ 3 60Hz/300V no fish captured or observed

Other Habitat Notes, Incidental Wildlife Observations, etc. channel is dominated by terrestrial species and is likely wet only after heavy rainfall and spring run-off.

Field Notes Authored by E. Malindzak Field Notes QA/QCed by M. Pomeroy

Gran-c

RAPID ASSESSMENT FORM FOR AQUATIC HABITAT

Layout Version 1

Stantec

Project Samsung (GREP) Wind
Station # 2.4
Photos Taken 0127, 0128, 0129
GPS Coordinates 17T 0590341 / 4754251
Descriptive Location approx. 350m South of Hwy 3, east of Decewsville Rd

Project # 161010646
Field Staff E. Malindzak, M. Kozak
Date 10-18 - 2010
Time 14:35

Water Quality
Dissolved Oxygen (mg/L) /
pH /
Conductivity (µS/cm) /
Water Temperature (°C) /
Air Temperature (°C) 12 °C
Weather conditions in previous 24 hrs sunny then cloudy, cool

Watercourse Dimensions & Morphology
Mean Watercourse Width /(m)
Maximum Pool Depth /(cm)
Mean Bankfull Width /(m)
Mean Water Depth /(cm)
/% Riffle /% Pool /% Run /% Flat
Evidence of eroding banks, Comments on bank stability

Substrate – Upstream (% cover)

/Bedrock	/Silt	/Boulder	/Clay	/Cobble
/Muck	/Gravel	/Marl	/Sand	/Detritus

Substrate – Downstream (% cover)

/Bedrock	/Silt	/Boulder	/Clay	/Cobble
/Muck	/Gravel	/Marl	/Sand	/Detritus

In-water Cover
Cover Types Present (circle): Overhanging Vegetation, Undercut Banks, Woody Debris, Deep Pool, Boulder, Vascular Plants, Other winter wheat

Riparian Zone
Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional)
Upstream
Downstream /
Adjacent Land Use
Upstream agriculture, wheat
Downstream agriculture, wheat

Fish Habitat Potential
Critical Habitat (spawning or nursery areas, groundwater upwellings)
Upstream none
Downstream none
Migratory Obstructions (seasonal, permanent)
Upstream low flow
Downstream low flow
Note any fish observations none, shallow depression in field,

Other Habitat Notes, Incidental Wildlife Observations, etc. not a waterbody

Field Notes Authored by E. Malindzak
Field Notes QA/QCed by M. Pomeroy

RAPID ASSESSMENT FORM FOR AQUATIC HABITAT

Layout Version ___

Stantec

Project: Samsung (GREP) Wind
Station # CL-29
Photos Taken 7489, 7490, 7491
GPS Coordinates 17T 0604773/4749014
Descriptive Location On Bains Road, approx. 1Km east of South Cayuga Road

Project # 161010646
Field Staff E. Malindzak, E. Windhorst
Date Oct. 27, 2010
Time 15:55 ~~2010~~

Water Quality

Dissolved Oxygen (mg/L) 5.47 pH 7.15 Conductivity (µS/cm) 149
Water Temperature (°C) 14.30 Air Temperature (°C) 17 oc
Weather conditions in previous 24 hrs cloudy, rain (heavy) wind, warm currently sunny & windy

Watercourse Dimensions & Morphology

Mean Watercourse Width 1.5 (m) Maximum Pool Depth 0.20 (~~cm~~ m)
Mean Bankfull Width 3.5 (m) Mean Water Depth 0.07 (~~cm~~)
___% Riffle ___% Pool ___% Run ___% Flat
Evidence of eroding banks, Comments on bank stability clearly conveys water from woodlot and roadside drains,

Substrate – Upstream (% cover)

___ Bedrock	___ Silt	___ Boulder	40 Clay	___ Cobble
___ Muck	___ Gravel	___ Marl	___ Sand	60 Detritus

Substrate – Downstream (% cover)

___ Bedrock	___ Silt	___ Boulder	~~40~~ 20 Clay	___ Cobble
20 Muck	___ Gravel	___ Marl	___ Sand	60 Detritus

In-water Cover

Cover Types Present (circle): Overhanging Vegetation, Undercut Banks, Woody Debris, Deep Pool, Boulder, ~~Vascular Plants~~, Other ___

Riparian Zone

Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional)
Upstream 95%, mature forest
Downstream 90%, canary grass & meadow sp.
Adjacent Land Use
Upstream woodlot
Downstream agriculture & residential

Fish Habitat Potential

Critical Habitat (spawning or nursery areas, groundwater upwellings)
Upstream none
Downstream potential flooded veg. for spring spawners
Migratory Obstructions (seasonal, permanent)
Upstream none
Downstream none
Note any fish observations none. Did not shock due to two very friendly Golden Retreivers wanting to play in water with us.

Other Habitat Notes, Incidental Wildlife Observations, etc. frogs

Field Notes Authored by E. Malindzak Field Notes QA/QCed by M. Pomeroy

RAPID ASSESSMENT FORM FOR AQUATIC HABITAT

Layout Version 1

Stantec

Project Samsung (GREP) Wind. Project # 161010646
Station # 2.5 Field Staff E. Malinczak, M. Kozak
Photos Taken 0124, 0125, 0126 Date 10-18 2010
GPS Coordinates 17T 0590217/4754642 Time 14:55
Descriptive Location ~200 m from South HWY 3, far west of site.

Water Quality
Dissolved Oxygen (mg/L) / pH / Conductivity (µS/cm) /
Water Temperature (°C) / Air Temperature (°C) 12°C
Weather conditions in previous 24 hrs sunny then cloudy, cool

Watercourse Dimensions & Morphology
Mean Watercourse Width / (m) Maximum Pool Depth / (cm)
Mean Bankfull Width / (m) Mean Water Depth / (cm)
% Riffle % Pool % Run % Flat
Evidence of eroding banks, Comments on bank stability no banks

Substrate – Upstream (% cover)
Bedrock 100 ~~Silt~~ Soil Boulder Clay Cobble
~~100~~ Muck Gravel Marl Sand Detritus

Substrate – Downstream (% cover)
Bedrock 100 ~~Silt~~ Soil Boulder Clay Cobble
~~100~~ Muck Gravel Marl Sand Detritus

In-water Cover
Cover Types Present (circle): Undercut Banks Deep Pool Vascular Plants
Overhanging Vegetation Woody Debris Boulder Other wheat

Riparian Zone
Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional)
Upstream 0%, wheat
Downstream 0%, wheat
Adjacent Land Use
Upstream agriculture, wheat
Downstream agriculture, wheat

Fish Habitat Potential
Critical Habitat (spawning or nursery areas, groundwater upwellings)
Upstream none
Downstream none
Migratory Obstructions (seasonal, permanent)
Upstream low flow
Downstream low flow
Note any fish observations intermittent, recently dry

Other Habitat Notes, Incidental Wildlife Observations, etc. not a waterbody

Field Notes Authored by E. Malinczak Field Notes QA/QCed by M. Pomeroy

RAPID ASSESSMENT FORM FOR AQUATIC HABITAT

Layout Version ____

Stantec

Project Samsung (GREP) Wind
Station # CL-26
Photos Taken 746, 747
GPS Coordinates UTM 0605646/4750111
Descriptive Location reach between Haldiman 20 and Haldunn Rd

Project # 161010646
Field Staff E. Malinoski, E. Windhorst
Date Oct. 27, 2010
Time 13:17 ~~2:010~~

Water Quality

Dissolved Oxygen (mg/L) ~~9.36~~ 7.84
pH ~~8.03~~ 8.03
Conductivity (µS/cm) 294
Water Temperature (°C) 14.13
Air Temperature (°C) 16°C
Weather conditions in previous 24 hrs cloudy, heavy rain, windy, currently sunny w/ high winds

Watercourse Dimensions & Morphology

Mean Watercourse Width 2.00 (m)
Maximum Pool Depth 0.90 ~~(cm)~~ M
Mean Bankfull Width 7.0 (m)
Mean Water Depth 0.40 ~~(cm)~~
____% Riffle ____% Pool ____% Run ____% Flat
Evidence of eroding banks, Comments on bank stability largely roadside drain at this location, though flows across private lands u/s + d/s.

Substrate – Upstream (% cover)

____Bedrock ____Silt ____Boulder 100 Clay ____Cobble
____Muck ____Gravel ____Marl ____Sand ____Detritus

Substrate -- Downstream (% cover)

____Bedrock ____Silt ____Boulder 100 Clay ____Cobble
____Muck ____Gravel ____Marl ____Sand ____Detritus

In-water Cover

Cover Types Present (circle): ~~Undercut Banks~~ ~~Deep Pool~~ ~~Vascular Plants~~ ~~Overhanging Vegetation~~ ~~Woody Debris~~ Boulder Other____

Riparian Zone

Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional)
Upstream 60%, meadow sp, mature trees
Downstream 60%, meadow sp., mature trees

Adjacent Land Use
Upstream agriculture
Downstream agriculture.

Fish Habitat Potential

Critical Habitat (spawning or nursery areas, groundwater upwellings)
Upstream potential for small area of flooded veg. for spring spawners
Downstream

Migratory Obstructions (seasonal, permanent)
Upstream none
Downstream none

Note any fish observations Fished b/t Haldiman 20 and Haldunn Road for 287 Seconds @ 60 Hz/500V. Captured (1) green sunfish, Central mudminnow (1), 6 common shiner

Other Habitat Notes, Incidental Wildlife Observations, etc. watercourse overflowing bank/high water mark. Much higher than yesterday. Signs of significantly higher flows overnight, Flashy system

Field Notes Authored by E. Malinoski Field Notes QA/QCed by M. Pomeroy Page 10 of 95

Stantec Consulting Ltd - Electrofishing Record and Catch Results

Project Number 161010648 Station Number CL-26

Project Name Samsung (GREP) Wind Pass No. (if applicable) 1

Project manager Rob Nadolny Date (yyyymmdd): 20101027

Descriptive Location

UTM coordinates 06005646 easting 4750111 northing zone 17T

Fishing Method (circle one): (Backpack) Boat Unit Model/Make SR-12

Sampling Method (circle one): (even) habitat transect spot

Effort (Electrofishing Seconds): 287 Number of Netters: 1 Number of Anodes: 1

Settings

Frequency (Hz) 60 Voltage (volts) 500 Current (Amps) Power (Watts)

Station Information

Length of Stream Surveyed (m) 45 m

Station Characteristics: Width (m): Range 1.5-3.0 Average: 2.0

Depth (m): Range 0.3-0.9 Average: 0.40

Water Clarity/Colour: Cloudy, Brown Water Velocity if Measured (m/s): —

Temperature (°C) 14.13 Conductivity (uS/cm) 294

pH 8.03 Dissolved Oxygen (mg/L) 7.84

Catch Data

Species	Number of Fish	Species	Number of Fish
Green sunfish	(1)		
Central mud minnow	(1)		
Common shiner	(6)		

Fish Measurements on Separate Sheet? Y/(N)

Field Staff: E. Malindzak ☑

E. Malindzak ☐

Notes By:

(Station Diagram on Back)

RAPID ASSESSMENT FORM FOR AQUATIC HABITAT

Layout Version 1

Stantec

Project Samsung (GREP) Wind. Project # 161010646
Station # 35.0 Field Staff Edward Malindzak, J. Koch
Photos Taken 7559, 7560, 7561, ? Date October 22 2010
GPS Coordinates 17T 0607024/4751038 Time 13:36
Descriptive Location Approx 400m north of Holdimand Rd 20, 1 Km West of Aikens Rd.

Water Quality
Dissolved Oxygen (mg/L) 9.16 pH 7.16 Conductivity (µS/cm) 587
Water Temperature (°C) 9.21 Air Temperature (°C) 6
Weather conditions in previous 24 hrs

Watercourse Dimensions & Morphology
Mean Watercourse Width 2.5 (m) Maximum Pool Depth 0.50 (~~cm~~ m)
Mean Bankfull Width 4.5 (m) Mean Water Depth 0.30 (~~cm~~)
10 % Riffle 40 % Pool 25 % Run 25 % Flat
Evidence of eroding banks, Comments on bank stability twin culverts under "road". Appears water backs up behind road & flows over (erosion on D/S side)

Substrate – Upstream (% cover)
Bedrock Silt Boulder 100 Clay Cobble
Muck Gravel Marl Sand Detritus

Substrate – Downstream (% cover)
Bedrock Silt Boulder 100 Clay Cobble
Muck Gravel Marl Sand Detritus

In-water Cover
Cover Types Present (circle): (Undercut Banks) (Overhanging Vegetation) Woody Debris Deep Pool Boulder (Vascular Plants) Other

Riparian Zone
Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional)
Upstream 90%, Canary grass, one mature tree
Downstream 80%, cattails, canary grass, mature forest
Adjacent Land Use
Upstream agriculture (crop, pasture)
Downstream agriculture (crop)

Fish Habitat Potential
Critical Habitat (spawning or nursery areas, groundwater upwellings)
Upstream potential pike spawning, if inundation duration is long enough
Downstream " " " " " "
Migratory Obstructions (seasonal, permanent)
Upstream none
Downstream none
Note any fish observations (1) shad, (9) cyprinids (juvenile), Shocked for 127 seconds at 60 Hz/500V. Vegetation very dense away from twin culverts

Other Habitat Notes, Incidental Wildlife Observations, etc. Owner stated water breaches access road in spring of last few years, water levels drop 1-2 days later. WATER BODY

Field Notes Authored by E. Malindzak Field Notes QA/QCed by M. Pomeroy Page 12 of 95

Project Number 16101646

Date (yyyymmdd): 20101022

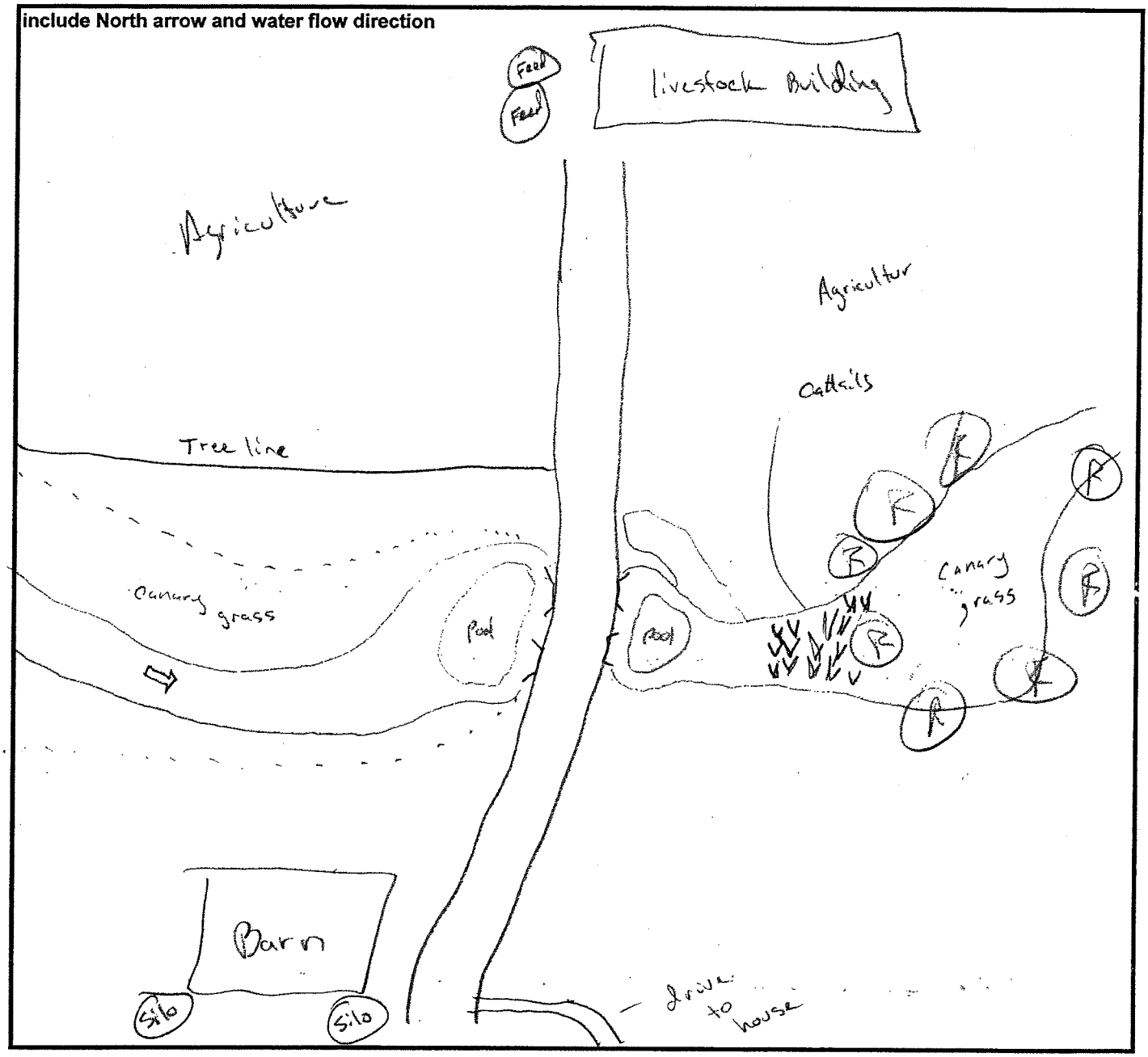
Waterbody Name unk

Station Number 35.0

Pass No. (if applicable) 1

Field Staff: E. Malindzak
J. Koch

include North arrow and water flow direction



NOTES: debris ~~re~~ very high on grass. Landowner states system is flashy, especially in past few years

Quality Control: This form is complete (✓ & legible ✓). QA/QC by: (signature) M. Powers

efish station diagram

Stantec

Stantec Consulting Ltd - Electrofishing Record and Catch Results

Project Number 161010646 | Station Number 35.0

Project Name Samsung (GREP) Wind | Pass No. (if applicable) 1

Project manager Rob Wadolny | Date (yyyymmdd): 20101022

Descriptive Location

UTM coordinates 17T 0607024 easting 4751038 northing zone

Fishing Method (circle one): (Backpack) Boat | Unit Model/Make SR-12

Sampling Method (circle one): (even) habitat transect spot

Effort (Electrofishing Seconds): 127 | Number of Netters: 1 | Number of Anodes: 1

Settings

Frequency (Hz) 60 | Voltage (volts) 500 | Current (Amps) | Power (Watts)

Station Information

Length of Stream Surveyed (m) 50 m

Station Characteristics: Width (m): Range 2-6 m Average: 2.5

Depth (m): Range 0.2-0.5 Average: 0.30

Water Clarity/Colour: brown/cloudy | Water Velocity if Measured (m/s):

Temperature (°C) 9.21 | Conductivity (uS/cm) 387

pH 7.76 | Dissolved Oxygen (mg/L) 9.16

Catch Data

Species	Number of Fish	Species	Number of Fish
Alosa Sp.	1		
Cyprinid	9 captured & juvenile		
	11 observed		

Fish Measurements on Separate Sheet? Y/(N)

Field Staff: E. Malindzak

J. Koch

Notes By:

(Station Diagram on Back)

Stantec

RAPID ASSESSMENT FORM FOR AQUATIC HABITAT

Layout Version 1

Project Samsung (GREP) Wind.
Station # 35.1
Photos Taken 7562, 7563, 7564
GPS Coordinates 17T 0607094 | 4751261
Descriptive Location Approx 650 m north of Haldimand Rd 20, 1 km west of Aikens Rd

Project # 161010646
Field Staff Edward Malindzak,
Date October 22 2010
Time 14:50

Water Quality

Dissolved Oxygen (mg/L) 6.91 pH 7.50 Conductivity (µS/cm) 392
Water Temperature (°C) 8.31 Air Temperature (°C) 8°C
Weather conditions in previous 24 hrs sunny, cloudy, cold, warm, windy, hail, heavy rain.

Watercourse Dimensions & Morphology

Mean Watercourse Width 2.5 (m) Maximum Pool Depth >1.0 m ~~(cm)~~
Mean Bankfull Width 5 (m) Mean Water Depth unk (cm)
___ % Riffle 80 % Pool 20 % Run ___ % Flat
Evidence of eroding banks, Comments on bank stability undercut banks & erosion at old dam site. Hard to determine location of channel w/ abundant water.

Substrate – Upstream (% cover)

___ Bedrock ___ Silt ___ Boulder 100 Clay ___ Cobble
___ Muck ___ Gravel ___ Marl ___ Sand ___ Detritus

Substrate – Downstream (% cover)

___ Bedrock ___ Silt ___ Boulder 100 Clay ___ Cobble
___ Muck ___ Gravel ___ Marl ___ Sand ___ Detritus

In-water Cover

Cover Types Present (circle): Undercut Banks Deep Pool Vascular Plants Overhanging Vegetation Woody Debris Boulder Other ___

Riparian Zone

Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional)
Upstream 90%, canary grass & mature forest
Downstream 85%, " " " "
Adjacent Land Use
Upstream agriculture
Downstream agriculture

Fish Habitat Potential

Critical Habitat (spawning or nursery areas, groundwater upwellings)
Upstream ~~no~~ potential pike spawning if area remains inundated
Downstream long enough.
Migratory Obstructions (seasonal, permanent)
Upstream low flow
Downstream low flow
Note any fish observations none. ~~Did not fish as maps indicate Mussel SAR may occur in this area.~~ erroneous.

Other Habitat Notes, Incidental Wildlife Observations, etc. old pond dam behind livestock building, could not see bottom due to cloudy water. Sudden drop off, not sure of depth. Long (100m) flooded veg pool occurs @ and below old dam structure WATERBODY

Field Notes Authored by E. Malindzak Field Notes QA/QCed by M. Pomeroy

RAPID ASSESSMENT FORM FOR AQUATIC HABITAT

Layout Version 1

Stantec

Project Samsung (GREP) Wind. Project # 160910646
Station # CL1.1 & CL1.2 Field Staff E. Malinoski, E. Windhorst
Photos Taken 0043, 0044, 0045, 0046, Date Oct 24 2010
GPS Coordinates 17T 0591324 / 4754548 Time 8:22
Descriptive Location Kohler Road, approx 600 m South of Hwy 3

Water Quality
Dissolved Oxygen (mg/L) / pH / Conductivity (µS/cm) /
Water Temperature (°C) / Air Temperature (°C) 10°C
Weather conditions in previous 24 hrs

Watercourse Dimensions & Morphology
Mean Watercourse Width / (m) Maximum Pool Depth / (cm)
Mean Bankfull Width / (m) Mean Water Depth / (cm)
% Riffle % Pool % Run % Flat
Evidence of eroding banks, Comments on bank stability little or no water, no defined channel

Substrate – Upstream (% cover)
Bedrock Silt Boulder 100 Clay Cobble
Muck Gravel Marl Sand Detritus

Substrate – Downstream (% cover)
Bedrock Silt Boulder 100 Clay Cobble
Muck Gravel Marl Sand Detritus

In-water Cover
Cover Types Present (circle): Overhanging Vegetation Undercut Banks Woody Debris Deep Pool Boulder Vascular Plants Other

Riparian Zone
Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional)
Upstream 10%, very little ~~veg~~ veg
Downstream 10% " "
Adjacent Land Use
Upstream agriculture
Downstream agriculture

Fish Habitat Potential
Critical Habitat (spawning or nursery areas, groundwater upwellings)
Upstream none
Downstream none
Migratory Obstructions (seasonal, permanent)
Upstream lack of channel / flow
Downstream "
Note any fish observations none, ephemeral, narrow flows during spring and after heavy rain. Took GPS @ 2nd from Hwy 3

Other Habitat Notes, Incidental Wildlife Observations, etc.

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RAPID ASSESSMENT FORM FOR AQUATIC HABITAT

Layout Version 1

Project Samsung (GREP) Wind. Project # 161010646
Station # 36.0 Field Staff Edward Malindzak,
Photos Taken 7566, 7567, Date October 22 2010
GPS Coordinates 17T 0607085/4749948 Time 15:23
Descriptive Location 600m South of Maldimand Rd 20, 1 km west of Aikens Rd.

Water Quality

Dissolved Oxygen (mg/L) 12.13 pH 8.09 Conductivity (µS/cm) 152
Water Temperature (°C) 10.60 Air Temperature (°C) /
Weather conditions in previous 24 hrs sunny, cloudy, warm, cool, windy, heavy rain, hail

Watercourse Dimensions & Morphology

Mean Watercourse Width 0.50 (m) Maximum Pool Depth ____ (cm)
Mean Bankfull Width 4.0 (m) Mean Water Depth 10 (cm)
____ % Riffle 50 % Pool 50 % Run ____ % Flat
Evidence of eroding banks, Comments on bank stability low laying area collecting run-off from surrounding agriculture fields

Substrate – Upstream (% cover)

____ Bedrock ____ Silt ____ Boulder 100 Clay ____ Cobble
____ Muck ____ Gravel ____ Marl ____ Sand ____ Detritus

Substrate – Downstream (% cover)

____ Bedrock ____ Silt ____ Boulder 100 Clay ____ Cobble
____ Muck ____ Gravel ____ Marl ____ Sand ____ Detritus

In-water Cover

Cover Types Present (circle): Undercut Banks Deep Pool Vascular Plants
Overhanging Vegetation Woody Debris Boulder Other ____

Riparian Zone

Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional)
Upstream 80%, meadow + canary grass
Downstream 80%, meadow + canary grass.
Adjacent Land Use
Upstream agriculture
Downstream agriculture

Fish Habitat Potential

Critical Habitat (spawning or nursery areas, groundwater upwellings)
Upstream possible pike spawning if low lying area remains
Downstream inundated long enough
Migratory Obstructions (seasonal, permanent)
Upstream low flow
Downstream low flow
Note any fish observations none, likely only contains water during periods of high run-off

Other Habitat Notes, Incidental Wildlife Observations, etc. deer tracks
WATER BODY

Field Notes Authored by E. Malindzak Field Notes QA/QCed by M. Pomeroy Page 17 of 95

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RAPID ASSESSMENT FORM FOR AQUATIC HABITAT

Layout Version 1

Project Samsung (GREP) Wind
Station # 34.3
Photos Taken 7558
GPS Coordinates 17T 0606265/4750048
Descriptive Location 250m South of Haldimand 20, 600 m east of Townline Road, Haia-Dunn

Project # 161010646
Field Staff Edward Malindzak, J Koch
Date October 22 2010
Time 12:49

Water Quality
Dissolved Oxygen (mg/L) / pH / Conductivity (µS/cm) /
Water Temperature (°C) / Air Temperature (°C) 7°C
Weather conditions in previous 24 hrs Sunny, cloudy, warm, cold, heavy Rain, hail wind

Watercourse Dimensions & Morphology
Mean Watercourse Width / (m) Maximum Pool Depth / (cm)
Mean Bankfull Width / (m) Mean Water Depth / (cm)
% Riffle % Pool % Run % Flat
Evidence of eroding banks, Comments on bank stability no water

Substrate – Upstream (% cover)

/ Bedrock	/ Silt	/ Boulder	/ Clay	/ Cobble
/ Muck	/ Gravel	/ Marl	/ Sand	/ Detritus

Substrate – Downstream (% cover)

/ Bedrock	/ Silt	/ Boulder	/ Clay	/ Cobble
/ Muck	/ Gravel	/ Marl	/ Sand	/ Detritus

In-water Cover
Cover Types Present (circle): Overhanging Vegetation, Undercut Banks, Woody Debris, Deep Pool, Boulder, (Vascular Plants), Other

Riparian Zone
Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional)
Upstream willow + canary grass
Downstream —
Adjacent Land Use
Upstream agriculture
Downstream —

Fish Habitat Potential
Critical Habitat (spawning or nursery areas, groundwater upwellings)
Upstream none
Downstream —
Migratory Obstructions (seasonal, permanent)
Upstream lack of water
Downstream —
Note any fish observations patch of canary grass + a willow on top of a rise. no water or evidence of standing/flowing water

Other Habitat Notes, Incidental Wildlife Observations, etc.

Field Notes Authored by E Malindzak Field Notes QA/QCed by M. Ponoray

Stantec

RAPID ASSESSMENT FORM FOR AQUATIC HABITAT

Layout Version 1

Project Samsung (GREP) Wind. Project # 161010646
Station # 34.2 Field Staff Edward Malindzak, J. Koch
Photos Taken 7553, 7554, 7555, 7556, 7557 Date October 22 2010
GPS Coordinates 17T 0666446 4749813 Time 12:00
Descriptive Location 600m south of Haldimand Rd 20, 600m east of Townline Road Hald-Dunn.

Water Quality
Dissolved Oxygen (mg/L) 8.42 pH 7.99 Conductivity (µS/cm) 133
Water Temperature (°C) 8.80 Air Temperature (°C) 7°C
Weather conditions in previous 24 hrs sunny, cloudy, heavy rain, hail, windy, cold, warm

Watercourse Dimensions & Morphology
Mean Watercourse Width_____(m) Maximum Pool Depth_____(cm)
Mean Bankfull Width_____(m) Mean Water Depth_____(cm)
_____% Riffle 100 % Pool _____% Run _____% Flat
Evidence of eroding banks, Comments on bank stability Large pools formed by farm machinery. D/s channel is braided w/ no defined channel (canary grass) U/s large low laying area also w/ canary grass (40m x 100m)

Substrate – Upstream (% cover)
_____Bedrock _____Silt _____Boulder _____Clay _____Cobble
_____Muck _____Gravel _____Marl _____Sand _____Detritus

Substrate – Downstream (% cover)
_____Bedrock _____Silt _____Boulder 100 Clay _____Cobble
_____Muck _____Gravel _____Marl _____Sand _____Detritus

In-water Cover
Cover Types Present (circle): Undercut Banks Deep Pool (Vascular Plants)
Overhanging Vegetation Woody Debris Boulder Other canary grass

Riparian Zone
Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional)
Upstream
Downstream 100%, canary grass
Adjacent Land Use
Upstream agriculture (corn, soy)
Downstream agriculture (soy)

Fish Habitat Potential
Critical Habitat (spawning or nursery areas, groundwater upwellings)
Upstream none
Downstream potential pike spawning in canary grass
Migratory Obstructions (seasonal, permanent)
Upstream low flow
Downstream low flow, agriculture operations
Note any fish observations none, Lots of standing water, likely due to heavy rains last 2 nights.

Other Habitat Notes, Incidental Wildlife Observations, etc. Wetted area w/canary grasses is large (~20m x 75m). Several small "channels" drain crops, with minimal amounts of water & planted through w/crops. Will not hold water and are typically dry.

Field Notes Authored by E. Malindzak Field Notes QA/QCed by M. Pomeroy

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RAPID ASSESSMENT FORM FOR AQUATIC HABITAT

Layout Version 1

Project Samsung (GREP) Wind
Station # CL 2.0
Photos Taken 0039, 0040, 0042
GPS Coordinates 059 1474 / 4754081 17T
Descriptive Location / Kohler Road, 1.2 Km South of Hwy 3

Project # 1610.10646
Field Staff Edward Malindzak, E. Windhorst
Date October 23 2010
Time 8:40

Water Quality

Dissolved Oxygen (mg/L) 5.61 pH 7.35 Conductivity (µS/cm) 255
Water Temperature (°C) 10.07 Air Temperature (°C) 10°C
Weather conditions in previous 24 hrs Cloudy, no rain, windy

Watercourse Dimensions & Morphology

Mean Watercourse Width 0.15 (m) Maximum Pool Depth 0.50 ~~(cm)~~ m
Mean Bankfull Width 3.0 (m) Mean Water Depth 0.15 ~~(cm)~~ m
10 % Riffle 40 % Pool 25 % Run 25 % Flat
Evidence of eroding banks, Comments on bank stability meandering channels. Cobble placed @ u/s end of culvert.

Substrate – Upstream (% cover)

Bedrock	Silt	Boulder	100 Clay	Cobble
Muck	Gravel	Marl	Sand	Detritus

Substrate – Downstream (% cover)

Bedrock	Silt	Boulder	100 Clay	Cobble
Muck	Gravel	Marl	Sand	Detritus

In-water Cover

Cover Types Present (circle): Overhanging Vegetation, ~~Undercut Banks~~, ~~Woody Debris~~, ~~Deep Pool~~, ~~Boulder~~, ~~Vascular Plants~~, Other canary grass

Riparian Zone

Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional)
Upstream 90%, canary grass, meadow sp.
Downstream 90%, " " , willows + shrubs further D/S
Adjacent Land Use
Upstream agriculture
Downstream agriculture (corn, pasture for horses)

Fish Habitat Potential

Critical Habitat (spawning or nursery areas, groundwater upwellings)
Upstream vegetation potential spawning habitat if inundated long enough
Downstream " "
Migratory Obstructions (seasonal, permanent)
Upstream None
Downstream none
Note any fish observations none, deep pool at culvert gets much shallower and narrower, likely very little water under normal conditions

Other Habitat Notes, Incidental Wildlife Observations, etc. Shocked for 38 seconds @ 60 Hz / 500 V with no fish captured or observed. Shocked u/s pool.

RAPID ASSESSMENT FORM FOR AQUATIC HABITAT

Layout Version 1

Stantec

Project Samsung (GREP) Wind. Project # 161010646
Station # 362 Field Staff Edward Malindzak,
Photos Taken 7569 7570, 7571, 7572, 7573 Date October 2010
GPS Coordinates 0607124, 4749603 Time 1541
Descriptive Location 900m south of Maldinard Rd 20, 1Km west of Aikens

Water Quality
Dissolved Oxygen (mg/L) 8.65 pH 7.78 Conductivity (µS/cm) 210
Water Temperature (°C) 9.78 Air Temperature (°C) 6°C
Weather conditions in previous 24 hrs Sunny, Cloudy, warm, cool, windy, heavy rain,

Watercourse Dimensions & Morphology outflow from pond & connecting Nail creek
Mean Watercourse Width 1.5 (m) Maximum Pool Depth 10.0 (cm)
Mean Bankfull Width 3.0 (m) Mean Water Depth 7.5 (cm)
____% Riffle 100 % Pool ____% Run ____% Flat
Evidence of eroding banks, Comments on bank stability very little evidence of flow very shallow and wide.

Substrate – ~~Upstream (% cover)~~ Pond

____ Bedrock	____ Silt	____ Boulder	30 Clay	____ Cobble
50 Muck	____ Gravel	____ Marl	____ Sand	20 Detritus

Substrate – Downstream ~~(% cover)~~ outflow & connecting creek

____ Bedrock	____ Silt	____ Boulder	50 Clay	____ Cobble
____ Muck	____ Gravel	____ Marl	____ Sand	50 Detritus

In-water Cover
Cover Types Present (circle): ~~Overhanging Vegetation~~ Undercut Banks Woody Debris Deep Pool Boulder (Vascular Plants) Other____

Riparian Zone
Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional)
~~Upstream~~ (Pond) 50%, meadow & water loving species (at woodlot) dogwood & canary grass
Downstream (Creek) 90%, Mature woodlot (Hardwoods)
Adjacent Land Use
Upstream (Pond) agriculture
Downstream (outflow & creek) woodlot (Hardwoods)

Fish Habitat Potential
Critical Habitat (spawning or nursery areas, groundwater upwellings)
Upstream none
Downstream none
Migratory Obstructions (seasonal, permanent)
Upstream low flow
Downstream low flow
Note any fish observations observed Brook Stickleback in pond & Tadpoles.

Other Habitat Notes, Incidental Wildlife Observations, etc. WATER BODY

Field Notes Authored by E. Malindzak Field Notes QA/QCed by M. Pomeroy

RAPID ASSESSMENT FORM FOR AQUATIC HABITAT

Layout Version 1

Stantec

Project Samsung (GREP) Wind. Project # 160910646
Station # 36.1 Field Staff Edward Malindzak,
Photos Taken 7568 Date October 22 2010
GPS Coordinates 0601093/4749677 Time 15:34
Descriptive Location 850m South of Haldimand Road 20, 1km west of Aikens Rd.

Water Quality
Dissolved Oxygen (mg/L) / pH / Conductivity (µS/cm) /
Water Temperature (°C) / Air Temperature (°C) 8°C
Weather conditions in previous 24 hrs sunny, cloudy, cool, warm, heavy rain, hail, windy

Watercourse Dimensions & Morphology
Mean Watercourse Width 8x25 (m) Maximum Pool Depth unk (cm)
Mean Bankfull Width — (m) Mean Water Depth (cm)
% Riffle % Pool % Run % Flat
Evidence of eroding banks, Comments on bank stability

Substrate – Upstream (% cover)
/ Bedrock / Silt / Boulder / Clay / Cobble
/ Muck / Gravel / Marl / Sand / Detritus

Substrate – Downstream (% cover)
/ Bedrock / Silt / Boulder / Clay / Cobble
/ Muck / Gravel / Marl / Sand / Detritus

In-water Cover
Cover Types Present (circle): Overhanging Vegetation, Undercut Banks, Woody Debris, Deep Pool, Boulder, Vascular Plants, Other

Riparian Zone
Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional)
Upstream 15%, meadow vegitation
Downstream —
Adjacent Land Use
Upstream agriculture
Downstream —

Fish Habitat Potential
Critical Habitat (spawning or nursery areas, groundwater upwellings)
Upstream none
Downstream —
Migratory Obstructions (seasonal, permanent)
Upstream not connected to anything
Downstream —
Note any fish observations none, This is an isolated pond, not connected to any in/out flow

Other Habitat Notes, Incidental Wildlife Observations, etc. NOT a Water Body

Field Notes Authored by E Malindzak Field Notes QA/QCed by M. Pomeroy

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RAPID ASSESSMENT FORM FOR AQUATIC HABITAT

Layout Version 1

Project Samsung (GREP) Wind
Station # CC-19
Photos Taken [0085, 0086, 0087] [7441, 7442]
GPS Coordinates 0595367/4750737
Descriptive Location Intersection of Richert Rd and Link Rd (northeast side)

Project # 161010646
Field Staff E. Malinoski, E. Windhorst
Date Oct 25, 2010
Time 15:27

Water Quality

Dissolved Oxygen (mg/L) 7.94 pH 7.79 Conductivity (µS/cm) 324
Water Temperature (°C) 14.55 Air Temperature (°C) 18°C
Weather conditions in previous 24 hrs cloudy, rain (wind)

Watercourse Dimensions & Morphology

Mean Watercourse Width 2.5 (m) Maximum Pool Depth 0.75 (cm)
Mean Bankfull Width 4.5 (m) Mean Water Depth 0.50 (cm)
____% Riffle 50 % Pool 50 % Run ____% Flat
Evidence of eroding banks, Comments on bank stability clear evidence of erosion D/S & D/S of concrete box culvert.

Substrate – Upstream (% cover)

____Bedrock ____Silt 30 Boulder 70 Clay ____Cobble
____Muck ____Gravel ____Marl ____Sand ____Detritus

Substrate – Downstream (% cover)

____Bedrock ____Silt ____Boulder 100 Clay ____Cobble
____Muck ____Gravel ____Marl ____Sand ____Detritus

In-water Cover

Cover Types Present (circle): ~~Overhanging Vegetation~~ Undercut Banks Deep Pool Vascular Plants
Woody Debris Boulder Other____

Riparian Zone

Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional)
Upstream 75%, mature trees & canary grass (trees only near culvert)
Downstream 75%, mature trees

Adjacent Land Use
Upstream agriculture
Downstream woodlot

Fish Habitat Potential

Critical Habitat (spawning or nursery areas, groundwater upwellings)
Upstream none
Downstream none

Migratory Obstructions (seasonal, permanent)
Upstream culvert @ grade or higher, may be obstruction
Downstream during low flow

Note any fish observations Shocked for 221 seconds @ 60 Hz/500 V. No fish captured or observed.

Other Habitat Notes, Incidental Wildlife Observations, etc. Water was very turbid and plentiful.

Field Notes Authored by E. Malinoski Field Notes QA/QCed by M. Pomeroy

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RAPID ASSESSMENT FORM FOR AQUATIC HABITAT

Layout Version 1

Project Samsung (GREP) Wind
Station # CL-2-19.1
Photos Taken 0088, 0089, 0090
GPS Coordinates
Descriptive Location Approx 300m ~~East~~ South of Link Rd on Richert Road

Project # 1610 10646
Field Staff E. Malinoski, E. Windhorst
Date Nov 12 2010
Time 11:29 am

Water Quality
Dissolved Oxygen (mg/L) N/A pH N/A Conductivity (µS/cm) N/A
Water Temperature (°C) N/A Air Temperature (°C)
Weather conditions in previous 24 hrs

Watercourse Dimensions & Morphology
Mean Watercourse Width (m) Maximum Pool Depth (cm)
Mean Bankfull Width (m) Mean Water Depth (cm)
% Riffle % Pool % Run % Flat
Evidence of eroding banks, Comments on bank stability

Substrate – Upstream (% cover)
Bedrock 100 ~~Silt~~ Soil Boulder Clay Cobble
Muck Gravel Marl Sand Detritus

Substrate – Downstream (% cover)
Bedrock 100 ~~Silt~~ Soil Boulder Clay Cobble
Muck Gravel Marl Sand Detritus

In-water Cover
Cover Types Present (circle): Undercut Banks Deep Pool Vascular Plants
Overhanging Vegetation Woody Debris Boulder Other

Riparian Zone
Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional)
Upstream 10, grass, early
Downstream
Adjacent Land Use
Upstream agriculture (crop)
Downstream agriculture (crop)

Fish Habitat Potential
Critical Habitat (spawning or nursery areas, groundwater upwellings)
Upstream None
Downstream none
Migratory Obstructions (seasonal, permanent)
Upstream low/no flow
Downstream low/no flow
Note any fish observations none

Other Habitat Notes, Incidental Wildlife Observations, etc. NOT a water body intermittent/ephemeral channel

Field Notes Authored by M Pomeroy Field Notes QA/QCed by M. Pomeroy

RAPID ASSESSMENT FORM FOR AQUATIC HABITAT

Layout Version 1

Stantec

Project Samsung (GREP) Wind
Station # CL-18
Photos Taken 0082, 0083, 0084
GPS Coordinates 17T 0595119/4750811
Descriptive Location 300m west of Richert Rd on ~~Rd~~ Link Rd.

Also 7438, 7439, 7440

Project # 161010646
Field Staff E. Malinoski, E. Windhorst
Date Oct. 25, 2010
Time 14:59

Water Quality
Dissolved Oxygen (mg/L) ____ pH ____ Conductivity (µS/cm) ____
Water Temperature (°C) ____ Air Temperature (°C) 18°C
Weather conditions in previous 24 hrs Cloudy, rain, windy

Watercourse Dimensions & Morphology
Mean Watercourse Width ____ (m) Maximum Pool Depth ____ (cm)
Mean Bankfull Width ____ (m) Mean Water Depth ____ (cm)
____% Riffle ____% Pool ____% Run ____% Flat
Evidence of eroding banks, Comments on bank stability erosion is apparent d/s near treeline. Cattle have unrestricted access

Substrate – Upstream (% cover)

____ Bedrock	____ Silt	____ Boulder	100 Clay	____ Cobble
____ Muck	____ Gravel	____ Marl	____ Sand	____ Detritus

Substrate – Downstream (% cover)

____ Bedrock	____ Silt	____ Boulder	100 Clay	____ Cobble
____ Muck	____ Gravel	____ Marl	____ Sand	____ Detritus

In-water Cover
Cover Types Present (circle): (Overhanging Vegetation) Undercut Banks Woody Debris Deep Pool Boulder (Vascular Plants) Other ____

Riparian Zone
Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional)
Upstream 100%, canary grass
Downstream 50%, canary grass
Adjacent Land Use
Upstream pasture (cattle)
Downstream " "

Fish Habitat Potential
Critical Habitat (spawning or nursery areas, groundwater upwellings)
Upstream potential flooded veg. for spring spawners
Downstream none
Migratory Obstructions (seasonal, permanent)
Upstream none observed
Downstream "
Note any fish observations none, Coveys water likely in Spring, very little accessable water @ time of visit.

Other Habitat Notes, Incidental Wildlife Observations, etc. ____

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RAPID ASSESSMENT FORM FOR AQUATIC HABITAT

Layout Version 1

Project Samsung (GREP) Wind. Project # 161010646
Station # CL-17 Field Staff E. Malinoski, E. Windhorst
Photos Taken [0080] [7437] Date Oct 25 2010
GPS Coordinates 17T 0594726/4751064 Time 14:44
Descriptive Location 600m west of Richert Rd on Link Rd

Water Quality
Dissolved Oxygen (mg/L) / pH / Conductivity (µS/cm) /
Water Temperature (°C) / Air Temperature (°C) 18°C
Weather conditions in previous 24 hrs cloudy, rain, wind

Watercourse Dimensions & Morphology (downstream of Road)
Mean Watercourse Width 1.5 (m) Maximum Pool Depth unk (cm)
Mean Bankfull Width 2.5 (m) Mean Water Depth ~0.20 (cm)
% Riffle 100 % Pool % Run % Flat
Evidence of eroding banks, Comments on bank stability could not find connectivity U/S. Some standing water in ditch, though veg too dense to shock

Substrate – Upstream (% cover)
/ Bedrock / Silt / Boulder / Clay / Cobble
/ Muck / Gravel Marl Sand / Detritus

Substrate – Downstream (% cover)
Bedrock Silt Boulder /00 Clay Cobble
Muck Gravel Marl Sand Detritus

In-water Cover
Cover Types Present (circle): Undercut Banks Deep Pool Vascular Plants
(Overhanging Vegetation) Woody Debris Boulder Other

Riparian Zone
Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional)
Upstream —
Downstream 15%, canary grass near road, then very little
Adjacent Land Use
Upstream —
Downstream active cattle pasture

Fish Habitat Potential
Critical Habitat (spawning or nursery areas, groundwater upwellings)
Upstream —
Downstream none
Migratory Obstructions (seasonal, permanent)
Upstream ~
Downstream none
Note any fish observations only shockable / YSI depth water was on private land w/ no access

Other Habitat Notes, Incidental Wildlife Observations, etc.

Field Notes Authored by E. Malinoski Field Notes QA/QCed by M. Pomeroy

RAPID ASSESSMENT FORM FOR AQUATIC HABITAT

Layout Version 1

Stantec

Project Samsung (GREP) Wind
Station # ~~TT~~ 13.1
Photos Taken 0084, 0085, 0086, 0087, 0088
GPS Coordinates 17T 0594279/4750862
Descriptive Location 200m south of Link Rd, 900m west of Richert Rd.

Project # 161010646
Field Staff Edward Malindzak,
Date October 19, 2010
Time 14:16

Water Quality
Dissolved Oxygen (mg/L) 15.4 pH 8.77 Conductivity (µS/cm) 432 } pond
Water Temperature (°C) 15.1 Air Temperature (°C) 11°C }
Weather conditions in previous 24 hrs cloudy, sunny, cool, windy

Watercourse Dimensions & Morphology
Mean Watercourse Width 0.5 (m) Maximum Pool Depth >0.5m (cm)
Mean Bankfull Width 2.0 (m) Mean Water Depth 10 (cm)
____% Riffle 100 % Pool ____% Run ____% Flat
Evidence of eroding banks, Comments on bank stability small stream with online pond (~8 m diameter). Pond is man-made

Substrate – Upstream (% cover)

____Bedrock	____Silt	____Boulder	100 Clay	____Cobble
~~100~~ Muck	____Gravel	____Marl	____Sand	____Detritus

Substrate – Downstream (% cover)

____Bedrock	____Silt	____Boulder	100 Clay	____Cobble
____Muck	____Gravel	____Marl	____Sand	____Detritus

In-water Cover
Cover Types Present (circle): ~~Overhanging Vegetation~~ Undercut Banks Woody Debris Deep Pool Boulder Vascular Plants Other____

Riparian Zone
Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional)
Upstream 90%, canary grass
Downstream 90%, canary grass
Adjacent Land Use
Upstream agriculture, equine + clover
Downstream agriculture, equine + clover

Fish Habitat Potential
Critical Habitat (spawning or nursery areas, groundwater upwellings)
Upstream none
Downstream potential pike spawning habitat
Migratory Obstructions (seasonal, permanent)
Upstream low flow
Downstream low flow
Note any fish observations Pond is 100% muck, no cover and no potential critical habitat

Other Habitat Notes, Incidental Wildlife Observations, etc. Horse farm, shocked pond @ 60 Hz / 300 V for 98 seconds, No fish captured or observed

Field Notes Authored by E. Malindzak Field Notes QA/QCed by M. Pomeroy

RAPID ASSESSMENT FORM FOR AQUATIC HABITAT

Layout Version ___

Stantec

Project: Samsung (GREP) Wind
Station # CL-28
Photos Taken 37486, 7487, 7488
GPS Coordinates 17T0606081/4750701
Descriptive Location 100m south of Haldiman Rd on Aikens Road @ new culvert.

Project # 161010646
Field Staff E. Malindzak, E. Windhorst
Date Oct 27, 2010
Time 14:50, ~~2010~~

Water Quality

Dissolved Oxygen (mg/L) 9.70
pH 7.52 (36)
Conductivity (µS/cm) 357
Water Temperature (°C) 15.93
Air Temperature (°C) 16°C
Weather conditions in previous 24 hrs Cloudy, heavy rain, warm, wind currently warm and windy.

Watercourse Dimensions & Morphology

Mean Watercourse Width 0.80 (m)
Maximum Pool Depth 0.30 m ~~(cm)~~
Mean Bankfull Width 2.5 (m)
Mean Water Depth 0.15 ~~(cm)~~
___% Riffle 100 % Pool ___% Run ___% Flat
Evidence of eroding banks, Comments on bank stability culvert appears new as straw bales are still present.

Substrate – Upstream (% cover)

___ Bedrock	20 Silt	___ Boulder	30 Clay	___ Cobble
50 Muck	___ Gravel	___ Marl	___ Sand	___ Detritus

Substrate – Downstream (% cover)

___ Bedrock	20 Silt	___ Boulder	30 Clay	___ Cobble
50 Muck	___ Gravel	___ Marl	___ Sand	___ Detritus

In-water Cover

Cover Types Present (circle): (Overhanging Vegetation) Undercut Banks Deep Pool ~~Vascular Plants~~
Woody Debris Boulder Other Terrestrial

Riparian Zone

Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional)
Upstream 80%, meadow sp.
Downstream 30%, soy,
Adjacent Land Use
Upstream agriculture
Downstream agriculture (soy)

Fish Habitat Potential

Critical Habitat (spawning or nursery areas, groundwater upwellings)
Upstream none
Downstream none
Migratory Obstructions (seasonal, permanent)
Upstream none
Downstream low flow through agriculture field
Note any fish observations none, likely little or no water most of the time. Lacks connectivity to d/s.

Other Habitat Notes, Incidental Wildlife Observations, etc. tadpoles & frogs

Field Notes Authored by E. Malindzak
Field Notes QA/QCed by M. Pomeroy

Stantec

RAPID ASSESSMENT FORM FOR AQUATIC HABITAT

Layout Version ___

Project Samsvry. (GREP) Wind
Station # CL-27
Photos Taken 7482 7483 7484
GPS Coordinates 17T 0607745/4750760
Descriptive Location Haldimand Road 20, 600 m east of Aikens Rd

Project # 161010646
Field Staff E. Malindzak, E. Windhorst
Date Oct. 27, 2010
Time 14:28 ~~2010~~

Water Quality

Dissolved Oxygen (mg/L) /
pH /
Conductivity (µS/cm) /
Water Temperature (°C) /
Air Temperature (°C) 16°C
Weather conditions in previous 24 hrs cloudy, heavy rain, windy. Currently sunny & windy

Watercourse Dimensions & Morphology

Mean Watercourse Width 0.15 (m)
Maximum Pool Depth 0.05 ~~(cm)~~ m
Mean Bankfull Width 3.0 (m)
Mean Water Depth 0.05 ~~(cm)~~
___% Riffle 100 % Pool ___% Run ___% Flat
Evidence of eroding banks, Comments on bank stability no evidence of flow and very little water w/ dense veg.

Substrate – Upstream (% cover)

/ Bedrock / Silt / Boulder ~~95~~ / Clay ~~5~~ / Cobble
/ Muck / Gravel / Marl / Sand / Detritus

Substrate – Downstream (% cover)

___ Bedrock ___ Silt ___ Boulder 95 Clay 5 Cobble
___ Muck ___ Gravel ___ Marl ___ Sand ___ Detritus

In-water Cover

Cover Types Present (circle):
(Overhanging Vegetation) Undercut Banks Deep Pool (Vascular Plants)
Woody Debris Boulder Other ___

Riparian Zone

Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional)
Upstream — dry
Downstream 95% canary grass with small area of cattails
Adjacent Land Use
Upstream early successional meadow
Downstream agriculture

Fish Habitat Potential

Critical Habitat (spawning or nursery areas, groundwater upwellings)
Upstream —
Downstream potential flood veg for spring spawners
Migratory Obstructions (seasonal, permanent)
Upstream low flow
Downstream low flow
Note any fish observations none ephemeral system contains water only after heavy rain

Other Habitat Notes, Incidental Wildlife Observations, etc. ___

Field Notes Authored by E. Malindzak Field Notes QA/QCed by M. Pomeroy

RAPID ASSESSMENT FORM FOR AQUATIC HABITAT

Layout Version 1

Stantec

Project Samsung (GREP) Wind. Project # 160910646
Station # 13.0 Field Staff Edward Malindzak, Mo Kozak
Photos Taken 0081, 0082, 0083 Date October 19, 2010
GPS Coordinates 17T 0594076 / 4750367 Time 13:59
Descriptive Location 800m south of Link Rd., 900m west of Richert Rd.

Water Quality
Dissolved Oxygen (mg/L) / pH / Conductivity (µS/cm) /
Water Temperature (°C) / Air Temperature (°C) 10°C
Weather conditions in previous 24 hrs cloudy, sunny, cool, windy

Watercourse Dimensions & Morphology
Mean Watercourse Width 0.75 (m) Maximum Pool Depth 10 (cm)
Mean Bankfull Width 1.5 (m) Mean Water Depth 4 (cm)
% Riffle % Pool % Run % Flat
Evidence of eroding banks, Comments on bank stability hard to determine channel dimensions, very dense w/ canary grass

Substrate – Upstream (% cover)
Bedrock Silt Boulder 100 Clay Cobble
Muck Gravel Marl Sand Detritus

Substrate – Downstream (% cover)
Bedrock Silt Boulder 100 Clay Cobble
Muck Gravel Marl Sand Detritus

In-water Cover
Cover Types Present (circle): (Overhanging Vegetation) Undercut Banks Deep Pool (Vascular Plants)
Woody Debris Boulder Other

Riparian Zone
Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional)
Upstream 100%, canary grass
Downstream 100%, canary grass
Adjacent Land Use
Upstream agriculture, wheat clover
Downstream agriculture, wheat

Fish Habitat Potential
Critical Habitat (spawning or nursery areas, groundwater upwellings)
Upstream potential pike habitat
Downstream " " "
Migratory Obstructions (seasonal, permanent)
Upstream low flow
Downstream low flow
Note any fish observations likely conveys significant amounts of water in spring

Other Habitat Notes, Incidental Wildlife Observations, etc. none, likely a waterbody. Gas well b/w 13.0 & 13.1

Field Notes Authored by E. Malindzak Field Notes QA/QCed by M. Pomeroy

RAPID ASSESSMENT FORM FOR AQUATIC HABITAT

Layout Version 1

Stantec

Project Samsung (GREP) Wind. Project # 161010646
Station # 37.2 Field Staff Edward Malindzak,
Photos Taken 7592, 7593, 7594 Date October 22 2010
GPS Coordinates 17T 0607599 4749032 Time 17:49
Descriptive Location 400m north of Rainham Road, 550m west of Aikens Road

Water Quality
Dissolved Oxygen (mg/L) / pH / Conductivity (µS/cm) /
Water Temperature (°C) / Air Temperature (°C) /
Weather conditions in previous 24 hrs Recent heavy rain

Watercourse Dimensions & Morphology
Mean Watercourse Width 1.0 (m) Maximum Pool Depth 8 (cm)
Mean Bankfull Width 5.5 (m) Mean Water Depth 4 (cm)
20 % Riffle 60 % Pool — % Run 20 % Flat
Evidence of eroding banks, Comments on bank stability recently dug drain channel flows from back of private property to isolated woody area. Channel banks are slumping and all water drains into a hole (tile?)

Substrate – Upstream (% cover)
Bedrock Silt Boulder 100 Clay Cobble
Muck Gravel Marl Sand Detritus

Substrate – Downstream (% cover)
/ Bedrock / Silt / Boulder / Clay / Cobble
/ Muck / Gravel / Marl / Sand / Detritus

In-water Cover
Cover Types Present (circle): Overhanging Vegetation Undercut Banks Woody Debris Deep Pool Boulder Vascular Plants Other none totally Bare.

Riparian Zone
Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional)
Upstream none
Downstream —
Adjacent Land Use
Upstream agriculture
Downstream —

Fish Habitat Potential
Critical Habitat (spawning or nursery areas, groundwater upwellings)
Upstream none
Downstream —
Migratory Obstructions (seasonal, permanent)
Upstream absocence of connectivity
Downstream —
Note any fish observations Channel may allow fish to move U/S in high flows, All water flowed into a drain tile w/ none moving d/s through channel

Other Habitat Notes, Incidental Wildlife Observations, etc. was not fished due to potential presence of mussels. Water observed likely due to heavy rains last two ~~the~~ nights and this channel is likely dry most of the time.

Field Notes Authored by E. Malindzak Field Notes QA/QCed by M. Pomeroy

RAPID ASSESSMENT FORM FOR AQUATIC HABITAT

Layout Version 1

Stantec

Project Samsung (GREP) Wind. Project # 161010646
Station # 37.1 Field Staff Edward Malindzak,
Photos Taken 7587, 7588, 7589, 7590, 7591 Date October 27 2010
GPS Coordinates 17T 0607580/4749220 Time 17:28
Descriptive Location 600m north of Rainham Rd, 550m west of Aikens Rd.

Water Quality
Dissolved Oxygen (mg/L) / pH / Conductivity (µS/cm) /
Water Temperature (°C) / Air Temperature (°C) 9°C
Weather conditions in previous 24 hrs Sunny, warm, cloudy, cool, heavy rain, hail windy

Watercourse Dimensions & Morphology
Mean Watercourse Width 0.30 (m) Maximum Pool Depth 0.3 ~~(cm)~~ m
Mean Bankfull Width 3.0 (m) Mean Water Depth 0.07 ~~(cm)~~
30 % Riffle 30 % Pool 20 % Run 20 % Flat
Evidence of eroding banks, Comments on bank stability evidence of erosion and high flows. West side of tree area recently cleared of mature trees

Substrate – Upstream (% cover) ~ isolated woodlot

/ Bedrock	Silt	Boulder	/ Clay	Cobble
Muck	/ Gravel	/ Marl	Sand	/ Detritus

Substrate – Downstream (% cover)

Bedrock	Silt	Boulder	40 Clay	30 Cobble
Muck	30 Gravel	Marl	Sand	Detritus

In-water Cover
Cover Types Present (circle): Overhanging Vegetation, Undercut Banks, Woody Debris, Deep Pool, Boulder, Vascular Plants, Other floating and filimentous algea

Riparian Zone
Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional)
Upstream channel not visible, water contribution via drain tile
Downstream ~~40%~~, 5%, recently cleaned drain, no veg on south side
Adjacent Land Use
Upstream agriculture
Downstream agriculture

Fish Habitat Potential
Critical Habitat (spawning or nursery areas, groundwater upwellings)
Upstream none
Downstream none
Migratory Obstructions (seasonal, permanent)
Upstream low flow
Downstream low flow erroneous
Note any fish observations ~~none, did not shock due to SAR mussels on map~~ and lack of water. Presence of algea and seeps at isolated wooded area suggest continuously wet, though very minimal flow
Other Habitat Notes, Incidental Wildlife Observations, etc. Very little water. seeps are covered w/ dense algea, ~~tiny~~ Water Body

Field Notes Authored by E. Malindzak Field Notes QA/QCed by M. Pomeroy Page 32 of 95

RAPID ASSESSMENT FORM FOR AQUATIC HABITAT

Layout Version 1

Stantec

Project Samsung (GREP) Wind. Project # 160910646 not a Water Body
Station # 37.0 Field Staff Edward Malindzak,
Photos Taken 7585, 7586 Date October 22 2010
GPS Coordinates 17T 0607723/4749168 Time 17:17
Descriptive Location 400m west of Aikens Rd, 600m north of Rainham Rd.

Water Quality
Dissolved Oxygen (mg/L) / pH / Conductivity (µS/cm) /
Water Temperature (°C) / Air Temperature (°C) 10°C
Weather conditions in previous 24 hrs Sunny, warm, cloudy, cool, heavy rain, hail, wind

Watercourse Dimensions & Morphology
Mean Watercourse Width / (m) Maximum Pool Depth / (cm)
Mean Bankfull Width (m) Mean Water Depth / (cm)
% Riffle 100 % Pool % Run % Flat
Evidence of eroding banks, Comments on bank stability standing water in pocket of trees & terrestrial veg. Evidence of erosion though could not ID source of water other than surrounding lands. Assume erosion caused by drain tile

Substrate – Upstream (% cover)
Bedrock Silt Boulder 100 Clay Cobble
Muck Gravel Marl Sand Detritus

Substrate – Downstream (% cover)
/ Bedrock / Silt / Boulder / Clay / Cobble
/ Muck / Gravel / Marl / Sand / Detritus

In-water Cover
Cover Types Present (circle): Overhanging Vegetation, Undercut Banks, Woody Debris, Deep Pool, Boulder, Vascular Plants, Other

Riparian Zone
Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional)
Upstream 95%, mature fruit trees (apple?) and canary grass
Downstream —
Adjacent Land Use
Upstream agriculture (clover and others)
Downstream —

Fish Habitat Potential
Critical Habitat (spawning or nursery areas, groundwater upwellings)
Upstream none
Downstream —
Migratory Obstructions (seasonal, permanent)
Upstream lack of connection. Appears to contain water in quantity
Downstream — & velocity to cause erosion. No visable inflow or outflow
Note any fish observations none, could not define channel.

Other Habitat Notes, Incidental Wildlife Observations, etc.

Field Notes Authored by E. Malindzak Field Notes QA/QCed by M. Pomeroy

RAPID ASSESSMENT FORM FOR AQUATIC HABITAT

Layout Version ____

Stantec

Project 161010646
Station # 42.3
Photos Taken 17T 0609330/4749786 N2
GPS Coordinates 7463, 7464
Descriptive Location 200m east of Haldimand Rd 49, 900m north of Rainham Rd.

Project # Samsung (GREP) Wind
Field Staff E. Malindzak, E. Windhorst
Date Oct 26, 2010
Time 13:33 ~~2010~~

Water Quality
Dissolved Oxygen (mg/L) 2.50 pH 7.40 Conductivity (µS/cm) 214
Water Temperature (°C) 15.08 Air Temperature (°C) 18°C
Weather conditions in previous 24 hrs cloudy, rain, warm

Watercourse Dimensions & Morphology → outflow
Mean Watercourse Width ~~0.4~~ (m) Maximum Pool Depth 0.30 m ~~(cm)~~
Mean Bankfull Width 1.5 (m) Mean Water Depth 0.5 ~~(cm)~~
____% Riffle 100 % Pool ____% Run ____% Flat
Evidence of eroding banks, Comments on bank stability pond (man-made). Very turbid.

Substrate – ~~Upstream (% cover)~~ Pond outflow

____ Bedrock	____ Silt	____ Boulder	~~100~~ 70 Clay	____ Cobble
30 Muck	____ Gravel	____ Marl	____ Sand	____ Detritus

Substrate – Downstream (% cover)

/ Bedrock	/ Silt	/ Boulder	/ Clay	/ Cobble
/ Muck	/ Gravel	/ Marl	/ Sand	/ Detritus

In-water Cover
Cover Types Present (circle): (Overhanging Vegetation) Undercut Banks Deep Pool Vascular Plants
Woody Debris Boulder Other____

Riparian Zone
Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional)
Pond ~~Upstream~~ 15%, canary grass, hardwood trees
outflow ~~Downstream~~ ± 90%, hardwood forest
Adjacent Land Use
pond Upstream agriculture, woodlot
outflow Downstream ± woodlot

Fish Habitat Potential
Critical Habitat (spawning or nursery areas, groundwater upwellings)
Upstream none
Downstream none
Migratory Obstructions (seasonal, permanent)
Pond Upstream ~~lack of connection~~ connectivity limited
outflow Downstream ~ low flow
Note any fish observations pond and outflow channel. Pond is ~15x20 m, depth exceeds 1.0 m. Shocked pond for 382 seconds @ 60 Hz/600V. Captured Greensunfish (6 YOY), Central mudminnow (6), fathead minnow (4),
Other Habitat Notes, Incidental Wildlife Observations, etc. two turtles, deer & racoon tracks. Shocked pond only

Field Notes Authored by E. Malindzak Field Notes QA/QCed by M. Pomeroy

Stantec

Stantec Consulting Ltd - Electrofishing Record and Catch Results

Project Number 160010646
Station Number 42.3
Project Name Samsung (GREP) Wind
Pass No. (if applicable) 1
Project manager Rob Nadolny
Date (yyyymmdd): 20181026
Descriptive Location

UTM coordinates 0608330 easting 4749786 northing zone 17T

Fishing Method (circle one): (Backpack) Boat Unit Model/Make SR-12
Sampling Method (circle one): (even) habitat transect spot

Effort (Electrofishing Seconds): 382 Number of Netters: 1 Number of Anodes: 1

Settings
Frequency (Hz) 60 Voltage (volts) 600 Current (Amps) ____ Power (Watts) ____

Station Information
Length of Stream Surveyed (m) 25 shoreline of pond. Could not stock channel due to dense vegitation
Station Characteristics: Width (m): Range 15x20 Average: ~~0.40~~ > pond
Depth (m): Range >1.0 Average: 0.40

Water Clarity/Colour: turbid
Temperature (°C) 15.09
pH 7.40
Water Velocity if Measured (m/s): —
Conductivity (uS/cm) 214
Dissolved Oxygen (mg/L) 2.50

Catch Data

Species	Number of Fish	Species	Number of Fish
Green sunfish	6 YOY		
Central Mudminnow	6		
Fathead minnow	4		

Fish Measurements on Separate Sheet? Y/N

Field Staff: E. Malindzak
E Windhorst

☑ Notes By: ____

☐ ~~(Station Diagram on Back)~~

Stantec

RAPID ASSESSMENT FORM FOR AQUATIC HABITAT

Layout Version ____

Project 160101649 | Project # Samsung (GREP) Wind
Station # 42.2 | Field Staff E. Malindzak, E. Winhurst
Photos Taken 7461, 7462 | Date Oct 26, 2010
GPS Coordinates 17T 0608626/4749836 | Time 13:16 ~~2010~~
Descriptive Location 750m east of Aikens Rd, 1900m north of Rainham Rd.

Water Quality
Dissolved Oxygen (mg/L) / | pH / | Conductivity (µS/cm) /
Water Temperature (°C) / | Air Temperature (°C) 18°c
Weather conditions in previous 24 hrs windy, warm, rain, cloudy

Watercourse Dimensions & Morphology
Mean Watercourse Width 0.75 (m) | Maximum Pool Depth 0.20 (cm)
Mean Bankfull Width 1.5 (m) | Mean Water Depth 0.15 (cm)
____% Riffle 100 % Pool ____% Run ____% Flat
Evidence of eroding banks, Comments on bank stability shows evidence of erosion
Stream originates in field and flows into woodlot.

Substrate – Upstream (% cover) in field 100

____Bedrock	____Silt	____Boulder	~~90~~ Clay	____Cobble
____Muck	____Gravel	____Marl	____Sand	____Detritus

Substrate – Downstream (% cover) woodlot

____Bedrock	____Silt	____Boulder	____Clay	____Cobble
____Muck	____Gravel	____Marl	____Sand	100 Detritus (leaves)

In-water Cover
Cover Types Present (circle): ~~Overhanging Vegetation~~ Undercut Banks Woody Debris Deep Pool Boulder (Vascular Plants) Other____

Riparian Zone
Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional)
Upstream 0%, wheat
Downstream 80%, mature trees
Adjacent Land Use
Upstream agriculture
Downstream woodlot

Fish Habitat Potential
Critical Habitat (spawning or nursery areas, groundwater upwellings)
Upstream none
Downstream none
Migratory Obstructions (seasonal, permanent)
Upstream low flow
Downstream low flow
Note any fish observations none

Other Habitat Notes, Incidental Wildlife Observations, etc. ____

Field Notes Authored by E. Malindzak | Field Notes QA/QCed by M. Pomeroy | Page 36 of 95

RAPID ASSESSMENT FORM FOR AQUATIC HABITAT

Layout Version ____

Stantec

Project _____ 160101649
Station # 42.0
Photos Taken 7451, 7452, 7453
GPS Coordinates 17T 608529 / 4749737
Descriptive Location 450m east of Aikens Rd, 900m north of Rainham Rd.

Project # Samsung (GREP) Wind
Field Staff E. Malinowski, E. Windhorst
Date Oct 26, 2010
Time 11:35 ~~2010~~

Water Quality
Dissolved Oxygen (mg/L) 6.52 pH 7.78 Conductivity (µS/cm) 267
Water Temperature (°C) 14.14 Air Temperature (°C) 17°C
Weather conditions in previous 24 hrs cloudy, rain, windy + warm

> Pond

Watercourse Dimensions & Morphology
Mean Watercourse Width ___ (m)
Mean Bankfull Width ___ (m)
Maximum Pool Depth >1.0 ~~(cm)~~ m
Mean Water Depth 0.5 @ bank (cm)
___ % Riffle ___ % Pool ___ % Run ___ % Flat
Evidence of eroding banks, Comments on bank stability irregularly shaped man-made pond w/ several inputs and NO outflow

> Pond

Substrate – Upstream (% cover)

___ Bedrock	___ Silt	___ Boulder	70 Clay	___ Cobble
30 Muck	___ Gravel	___ Marl	___ Sand	___ Detritus

Substrate – Downstream (% cover)

___ Bedrock	___ Silt	___ Boulder	___ Clay	___ Cobble
___ Muck	___ Gravel	___ Marl	___ Sand	___ Detritus

In-water Cover
Cover Types Present (circle): (Overhanging Vegetation) Undercut Banks Deep Pool (Vascular Plants)
Woody Debris Boulder Other canary grass & terrestrial meadow sp.

Riparian Zone
Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional)
Upstream 30%, mature trees, dog woods, canary grass
Downstream —
Adjacent Land Use
Upstream agriculture, woodlot
Downstream —

Fish Habitat Potential
Critical Habitat (spawning or nursery areas, groundwater upwellings)
Upstream none, isolated pond w/ contribution from several field run-off "channels"
Downstream —
Migratory Obstructions (seasonal, permanent)
Upstream lack of connection, permanent
Downstream —
Note any fish observations none

Other Habitat Notes, Incidental Wildlife Observations, etc. Inflow channel and man-made pond are not on map. Channel was 0.4 m wide + 0.35 m deep on average. Pond likely retains water year round. Channel had dense grass. WATER BODY

Field Notes Authored by E. Malinowski
Field Notes QA/QCed by M. Pomeroy

Stantec

RAPID ASSESSMENT FORM FOR AQUATIC HABITAT

Layout Version 1

Project Samsung (GREP) Wind
Station # 42.1
Photos Taken 7454 → 7460
GPS Coordinates 17T 0608964 / 4749687
Descriptive Location

Project # 1610.10646
Field Staff E. Malindzak, E. Wingelhorst
Date Oct. 26 2010
Time 12:31

Water Quality

Dissolved Oxygen (mg/L) 1.60 pH 7.05 Conductivity (µS/cm) 966
Water Temperature (°C) 14.21 Air Temperature (°C) 17°C
Weather conditions in previous 24 hrs Cloudy, rain, wind, warm

Watercourse Dimensions & Morphology

Mean Watercourse Width / (m) Maximum Pool Depth 40 (cm)
Mean Bankfull Width (m) Mean Water Depth 0.30 (cm)
% Riffle 100 % Pool % Run % Flat
Evidence of eroding banks, Comments on bank stability This is a low spot that collects water from four directions, no outflow. Inflow comes from adjacent field, and woodlot.

Substrate – Upstream (% cover)

Bedrock	Silt	Boulder	20 Clay	Cobble
30 Muck	Gravel	Marl	Sand	50 Detritus

Substrate – Downstream (% cover)

/ Bedrock	/ Silt	/ Boulder	/ Clay	/ Cobble
/ Muck	/ Gravel	/ Marl	/ Sand	/ Detritus

In-water Cover

Cover Types Present (circle): (Vascular Plants) (Overhanging Vegetation) Undercut Banks Woody Debris Deep Pool Boulder Other

Riparian Zone

Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional)
Upstream 80% Cattails, meadow sp., Willow, canary grass, duck weed
Downstream —
Adjacent Land Use
Upstream agriculture
Downstream —

Fish Habitat Potential

Critical Habitat (spawning or nursery areas, groundwater upwellings)
Upstream none
Downstream —
Migratory Obstructions (seasonal, permanent)
Upstream lack of connection in any direction
Downstream —
Note any fish observations This low spot is partially (at least) man-made. Large cattail area in centre. Fished large cattail area and largest inflow.

Other Habitat Notes Incidental Wildlife Observations, etc. None.

Field Notes Authored by E. Malindzak Field Notes QA/QCed by M. Pomeroy

RAPID ASSESSMENT FORM FOR AQUATIC HABITAT

Layout Version ___

Stantec

Project: Samsung (GREP) Wind
Station # CL-24
Photos Taken 7472, 7473
GPS Coordinates 17T 0608193/4748170
Descriptive Location culvert on Aikens (Haldimand Rd 49), 600m South of Rainham Rd.

Project # 161010646
Field Staff E. Malinoski, E. Windhurst
Date ~~10~~ Oct 27, 2010
Time 11:06 ~~2010~~

Water Quality

Dissolved Oxygen (mg/L) 7.23 pH 7.41 Conductivity (µS/cm) 792
Water Temperature (°C) 13.18 Air Temperature (°C) ___
Weather conditions in previous 24 hrs cloudy, rain (heavy), windy, warm

Watercourse Dimensions & Morphology @ road culvert

Mean Watercourse Width 0.40 (m) Maximum Pool Depth 0.80 (cm)
Mean Bankfull Width 2.5 (m) Mean Water Depth 0.30 (cm)
___% Riffle 100 % Pool ___% Run ___% Flat
Evidence of eroding banks, Comments on bank stability contribution is mostly from roadside drains, however a small channa flows from adjacent agriculture field.

Substrate – Upstream (% cover)

___Bedrock ___Silt ___Boulder 100 Clay ___Cobble
___Muck ___Gravel ___Marl ___Sand ___Detritus

Substrate – Downstream (% cover)

___Bedrock ___Silt ___Boulder 100 Clay ___Cobble
___Muck ___Gravel ___Marl ___Sand ___Detritus

In-water Cover

Cover Types Present (circle): Overhanging Vegetation, Undercut Banks, Woody Debris, Deep Pool, Boulder, Vascular Plants, Other flooded terrestrial veg.

Riparian Zone

Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional)
Upstream 65% meadow veg & corn
Downstream 85%, canary grass & meadow sp.
Adjacent Land Use
Upstream agriculture (corn, clover)
Downstream agriculture (soy, clover)

Fish Habitat Potential

Critical Habitat (spawning or nursery areas, groundwater upwellings)
Upstream none
Downstream potential for flooded veg. for spring spawners
Migratory Obstructions (seasonal, permanent)
Upstream low flow
Downstream low flow
Note any fish observations 8 central mudminnow @ culvert on both sides of Road. Shocked for 56 seconds @ 60 Hz / 600 V.

Other Habitat Notes, Incidental Wildlife Observations, etc. frogs. This is likely holding water due to ~~recent~~ recent rains, though water likely stays around culvert year-round.

Field Notes Authored by E. Malinoski Field Notes QA/QCed by M. Pomeroy

Stantec Consulting Ltd - Electrofishing Record and Catch Results

Project Number 161010646
Station Number CL-24
Project Name Samsung (GREP) Wind
Pass No. (if applicable) 1
Project manager Rob Nadolny
Date (yyyymmdd): 20101027
Descriptive Location

UTM coordinates 0608193 easting 4748170 northing zone 17T

Fishing Method (circle one): (Backpack) Boat Unit Model/Make SR-12
Sampling Method (circle one): (even) habitat transect spot

Effort (Electrofishing Seconds): 56 Number of Netters: 1 Number of Anodes: 1

Settings

Frequency (Hz) 60 Voltage (volts) 600 Current (Amps) Power (Watts)

Station Information

Length of Stream Surveyed (m) 30 m

Station Characteristics:
Width (m): Range 0.30-0.45 Average: 0.40
Depth (m): Range 0.20-0.80 Average: 0.3

Water Clarity/Colour: Cloudy
Temperature (°C) 13.18
pH 7.41
Water Velocity if Measured (m/s): —
Conductivity (uS/cm) 792
Dissolved Oxygen (mg/L) 7.23

Catch Data

Species	Number of Fish	Species	Number of Fish
Central Mudminnow	(8)		

Fish Measurements on Separate Sheet? Y (N)

Field Staff: E. Malindzak
E. Windhorst

Notes By:

~~(Station Diagram on Back)~~

RAPID ASSESSMENT FORM FOR AQUATIC HABITAT

Layout Version ____

Stantec

Project: Samsung (GREP) Wind
Station # CL-23
Photos Taken 7965, 7966
GPS Coordinates 17T 060 8096 / 4750310
Descriptive Location ~~Atkins Rd.~~ Culvert on Aikens Rd 55m south of Haldimand Rd 20.

Project # 161010646
Field Staff E. Malinoski, E. Winthorst
Date Oct. 26/2010
Time 15:29 ~~2:010~~

Water Quality
Dissolved Oxygen (mg/L) 4.80 pH 7.44 Conductivity (µS/cm) 275
Water Temperature (°C) 16.20 Air Temperature (°C) 19°C
Weather conditions in previous 24 hrs cloudy, rain, wind, warm

Watercourse Dimensions & Morphology
Mean Watercourse Width 1.5 (m) Maximum Pool Depth 0.45 ~~(cm)~~ m
Mean Bankfull Width 5.5 (m) Mean Water Depth 0.30 ~~(cm)~~
15 % Riffle 45 % Pool 15 % Run 15 % Flat
Evidence of eroding banks, Comments on bank stability Most banks, exposed roots

Substrate – Upstream (% cover) at culvert

Bedrock	Silt	10 Boulder	90 Clay	Cobble
Muck	Gravel	Marl	Sand	Detritus

Substrate – Downstream (% cover)

Bedrock	Silt	10 Boulder	60 Clay	10 Cobble
Muck	10 Gravel	Marl	10 Sand	Detritus

In-water Cover
Cover Types Present (circle): Overhanging Vegetation, Undercut Banks, Woody Debris, Deep Pool, Boulder, Vascular Plants, Other ____

Riparian Zone
Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional)
Upstream 50%, grasses & mature trees
Downstream 70%, Mature trees
Adjacent Land Use
Upstream woodlot, agriculture
Downstream woodlot agriculture

Fish Habitat Potential
Critical Habitat (spawning or nursery areas, groundwater upwellings)
Upstream flooded veg for spring spawners
Downstream none
Migratory Obstructions (seasonal, permanent)
Upstream none
Downstream none
Note any fish observations ____

Other Habitat Notes, Incidental Wildlife Observations, etc. Water is high, above high water and above or at bank full

Field Notes Authored by E. Malinoski Field Notes QA/QCed by M. Pomeroy

Stantec

Stantec Consulting Ltd - Electrofishing Record and Catch Results

Project Number 161010646
Station Number CL-23
Project Name Samsung (GREP) Wind
Pass No. (if applicable) 1
Project manager Rob Nadolny
Date (yyyymmdd): 20101026
Descriptive Location Aikens Road, south of Haldimand 20

UTM coordinates 0608098 easting 4750310 northing zone 17T

Fishing Method (circle one): (Backpack) Boat Unit Model/Make SR-12
Sampling Method (circle one): (even) habitat transect spot

Effort (Electrofishing Seconds): 187 Number of Netters: 1 Number of Anodes: 1

Settings

Frequency (Hz) 60 Voltage (volts) 600 Current (Amps) _____ Power (Watts) _____

Station Information

Length of Stream Surveyed (m) 30 m

Station Characteristics:
Width (m): Range 1.0 - 2.5 Average: 1.5
Depth (m): Range 0.25 - 0.45 Average: 0.30

Water Clarity/Colour: Cloudy
Temperature (°C) 16.20
pH 7.44
Water Velocity if Measured (m/s): —
Conductivity (uS/cm) 275
Dissolved Oxygen (mg/L) 4.80

Catch Data

Species	Number of Fish	Species	Number of Fish
Central	Mudminnow (3)		
Common	Shiner (9) + 6 observed		
Green sunfish	(2) yoy/juvenile		

Fish Measurements on Separate Sheet? Y/N

Field Staff: E. Malindzak
E. Windhorst

Notes By: _____

~~(Station Diagram on Back)~~

RAPID ASSESSMENT FORM FOR AQUATIC HABITAT

Layout Version 1

Stantec

Project Samsung (GREP) Wind
Station # 15.0
Photos Taken 0078, 0079, 0080
GPS Coordinates 17T 0598605/4750564
Descriptive Location 750m South of Meadows' Rd, 450m east of Sutor Rd

Project # 161010646
Field Staff Edward Malindzak,
Date October 14, 2010
Time 17:14

Water Quality
Dissolved Oxygen (mg/L) ____ pH ____ Conductivity (µS/cm) ____
Water Temperature (°C) ____ Air Temperature (°C) 14°C
Weather conditions in previous 24 hrs cloudy, sunny, windy cool

Watercourse Dimensions & Morphology
Mean Watercourse Width ____ (m) Maximum Pool Depth ____ (cm)
Mean Bankfull Width ____ (m) Mean Water Depth ____ (cm)
____% Riffle ____% Pool ____% Run ____% Flat
Evidence of eroding banks, Comments on bank stability dry w/intermittant pools
grade is steep, likely contains flowing water briefly in spring and after significant rain

Substrate – Upstream (% cover)
____Bedrock ____Silt ____Boulder 100 Clay ____Cobble
____Muck ____Gravel ____Marl ____Sand ____Detritus

Substrate – Downstream (% cover)
____Bedrock ____Silt ____Boulder 100 Clay ____Cobble
____Muck ____Gravel ____Marl ____Sand ____Detritus

In-water Cover
Cover Types Present (circle): Overhanging Vegetation; Undercut Banks; Woody Debris; Deep Pool; Boulder; Vascular Plants; Other ____

Riparian Zone
Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional)
Upstream 85%, meadow & mature trees, then soy
Downstream 85%, Meadow species & canary grass
Adjacent Land Use
Upstream agriculture, ~~meadow & mature trees~~ Soy
Downstream agriculture, Soy

Fish Habitat Potential
Critical Habitat (spawning or nursery areas, groundwater upwellings)
Upstream none
Downstream none
Migratory Obstructions (seasonal, permanent)
Upstream ____
Downstream gradient/velocity, low flow
Note any fish observations none, contains defined channel ~30 cm wide D/S & ~100 m D/S). U/S shows erosion at culvert, deeply incised 2m wide and 1m deep.
Other Habitat Notes, Incidental Wildlife Observations, etc. Clearly conveys water but likey functions as indirect habitat due to grade
Small Pick-up truck blocking our exit.
829-2WB GMC Sonoma - Red

Field Notes Authored by E. Malindzak Field Notes QA/QCed by M. Pomeroy

RAPID ASSESSMENT FORM FOR AQUATIC HABITAT

Layout Version 1

Stantec

Project Samsung (GREP) Wind
Station # 18H
Photos Taken 4
GPS Coordinates 0600147, 4750068 (UTT)
Descriptive Location 400m north of Maldimahd Rd 20, 600 m west of Yaremy Rd.

Project # 161010646
Field Staff Edward Malindzak,
Date October 20 2010
Time 14:06

Water Quality
Dissolved Oxygen (mg/L) 4.62 pH 7.66 Conductivity (µS/cm) 138
Water Temperature (°C) 9.75 Air Temperature (°C) 9°c
Weather conditions in previous 24 hrs

Watercourse Dimensions & Morphology
Mean Watercourse Width 0.20 (m) Maximum Pool Depth 0.46 (cm)
Mean Bankfull Width ∞ (m) Mean Water Depth 0.20 (cm)
____% Riffle 100 % Pool ____% Run ____% Flat
Evidence of eroding banks, Comments on bank stability pool created by placing material for field access, Pool has drain tile outflow

Substrate – Upstream (% cover)
____Bedrock ____Silt ____Boulder 80 Clay ____Cobble
20 Muck ____Gravel ____Marl ____Sand ____Detritus

Substrate – Downstream (% cover) Dry
____Bedrock ____Silt ____Boulder ____Clay ____Cobble
____Muck ____Gravel ____Marl ____Sand ____Detritus

In-water Cover
Cover Types Present (circle): Overhanging Vegetation, Undercut Banks, Woody Debris, Deep Pool, Boulder, (Vascular Plants), Other____

Riparian Zone
Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional)
Upstream 75%, mature forest
Downstream 0%, agriculture (Harvested)
Adjacent Land Use
Upstream Wood lot
Downstream agriculture

Fish Habitat Potential
Critical Habitat (spawning or nursery areas, groundwater upwellings)
Upstream none
Downstream none
Migratory Obstructions (seasonal, permanent)
Upstream rubble pile placed in watercourse to allow
Downstream farm machinery to pass, permenant
Note any fish observations central mudminnow (3) in pool @ 60Hz/300V

Other Habitat Notes, Incidental Wildlife Observations, etc. Frogs in tire ruts and pool

Field Notes Authored by E. Malindzak Field Notes QA/QCed by M. Pomeroy

Stantec

Stantec Consulting Ltd - Electrofishing Record and Catch Results

Project Number 161010646
Station Number 18.4
Project Name Samsung (GREP) Wind
Pass No. (if applicable) 1
Project manager Rob Nadolny
Date (yyyymmdd): 20101020
Descriptive Location

UTM coordinates 0600147 easting 4750068 northing zone 17T

Fishing Method (circle one): (Backpack) Boat Unit Model/Make SR-12
Sampling Method (circle one): (even) habitat transect spot

Effort (Electrofishing Seconds): 27 Number of Netters: 1 Number of Anodes: 1

Settings
Frequency (Hz) 30 Voltage (volts) ~~60~~ 500 Current (Amps) Power (Watts)

Station Information
Length of Stream Surveyed (m) 10 m (entire pool)
Station Characteristics: Width (m): Range Average:
Depth (m): Range Average:

Water Clarity/Colour: brown
Temperature (°C) 9.75
pH 7.66
Water Velocity if Measured (m/s): —
Conductivity (uS/cm) 138
Dissolved Oxygen (mg/L) 4.62

Catch Data

Species	Number of Fish	Species	Number of Fish
Central Mudminnow	3		

Fish Measurements on Separate Sheet? Y/N

Field Staff: E. Malindzak
M. Kozak

Notes By:

~~(Station Diagram on Back)~~

RAPID ASSESSMENT FORM FOR AQUATIC HABITAT

Layout Version 1

Stantec

Project Samsung (GREP) Wind
Station # 18.3
Photos Taken 0071
GPS Coordinates 17T 0600324 / 4750207
Descriptive Location 300m & west of Yaremy Rd, 600m north of Haldimand Rd 20.

Project # 161010646
Field Staff Edward Malindzak, M. Kozak
Date October 20 2010
Time 13:19

Water Quality
Dissolved Oxygen (mg/L) / pH / Conductivity (µS/cm) /
Water Temperature (°C) / Air Temperature (°C) 10°C
Weather conditions in previous 24 hrs sunny, windy, cool

Watercourse Dimensions & Morphology
Mean Watercourse Width 0.75 (m)
Mean Bankfull Width 0.75 (m)
Maximum Pool Depth 4 cm ~~(cm)~~
Mean Water Depth 3 cm (cm)
% Riffle 100 % Pool % Run % Flat
Evidence of eroding banks, Comments on bank stability minor sign of erosion

Substrate – Upstream (% cover)

Bedrock	Silt	Boulder	50 Clay	Cobble
50 Muck	Gravel	Marl	Sand	Detritus

Substrate – Downstream (% cover)

/ Bedrock	/ Silt	/ Boulder	/ Clay	/ Cobble
/ Muck	/ Gravel	/ Marl	/ Sand	/ Detritus

In-water Cover
Cover Types Present (circle): Overhanging Vegetation, Undercut Banks, Woody Debris, Deep Pool, Boulder, Vascular Plants, Other soy

Riparian Zone
Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional)
Upstream 25%, soy
Downstream —
Adjacent Land Use
Upstream Agriculture
Downstream Agriculture

Fish Habitat Potential
Critical Habitat (spawning or nursery areas, groundwater upwellings)
Upstream none
Downstream none
Migratory Obstructions (seasonal, permanent)
Upstream low flow
Downstream low flow
Note any fish observations none, some algae & moss in/near water in minor amounts. Appears to drain adjacent field & wetland (18.2)

Other Habitat Notes, Incidental Wildlife Observations, etc. canine, racoon, and deer tracks.

Field Notes Authored by E. Malindzak
Field Notes QA/QCed by M. Pomeroy

RAPID ASSESSMENT FORM FOR AQUATIC HABITAT

Layout Version 1

Stantec

Project Samsung (GREP) Wind
Station # 18.2
Photos Taken 3
GPS Coordinates 0600169, 4950219
Descriptive Location 650m north of Haldimand Rd 20, 550m west of Yaremy Rd.

Project # 161010646
Field Staff Edward Malindzak, M. Kozak
Date October 20 2010
Time 13:27

Water Quality
Dissolved Oxygen (mg/L) 10.04 pH 7.75 Conductivity (µS/cm) 291
Water Temperature (°C) 14.00 Air Temperature (°C) 10°C
Weather conditions in previous 24 hrs rain, cloud, cool

Watercourse Dimensions & Morphology
Mean Watercourse Width ___ (m)
Mean Bankfull Width ___ (m)
Maximum Pool Depth 0.75 ~~(cm)~~ m
Mean Water Depth 0.5 ~~(cm)~~
___% Riffle 100 % Pool ___% Run ___% Flat
Evidence of eroding banks, Comments on bank stability ___

Substrate – Upstream (% cover)

___ Bedrock	___ Silt	___ Boulder	~~30~~ Clay	___ Cobble
50 Muck	___ Gravel	___ Marl	___ Sand	~~20~~ 50 Detritus

Substrate – Downstream (% cover)

/ Bedrock	/ Silt	/ Boulder	/ Clay	/ Cobble
/ Muck	/ Gravel	/ Marl	/ Sand	/ Detritus

In-water Cover
Cover Types Present (circle): Overhanging Vegetation; Undercut Banks; Woody Debris; Deep Pool; Boulder; ~~Vascular Plants~~; Other cattails, milfoil, duckweed

Riparian Zone
Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional)
Upstream 30%, cattails and canary grass
Downstream —
Adjacent Land Use
Upstream Agriculture (clover)
Downstream —

Fish Habitat Potential
Critical Habitat (spawning or nursery areas, groundwater upwellings)
Upstream none
Downstream —
Migratory Obstructions (seasonal, permanent)
Upstream ~~two~~ no connection except during periods of high overland flow
Downstream —
Note any fish observations Shocked for 218 seconds. Captured 17 Central Mudminnow and observed many more. Did not observe any other species

Other Habitat Notes, Incidental Wildlife Observations, etc. Field mouse/Vole
Wetted areas appear to convey water overland. No channel and contains terrestrial vegetation (likely very seasonal)

Field Notes Authored by E. Malindzak Field Notes QA/QCed by M. Pomeroy

Stantec

Stantec Consulting Ltd - Electrofishing Record and Catch Results

Project Number 161010646 | Station Number 18.2

Project Name Samsung (GREP) Wind | Pass No. (if applicable) 1

Project manager Rob Nadolny | Date (yyyymmdd): 20101020

Descriptive Location

UTM coordinates 0600169 easting 4750219 northing zone 17T

Fishing Method (circle one): (Backpack) Boat | Unit Model/Make SR-12

Sampling Method (circle one): even (habitat) transect spot

Effort (Electrofishing Seconds): 218 | Number of Netters: 1 | Number of Anodes: 1

Settings

Frequency (Hz) 60 | Voltage (volts) 500 | Current (Amps) | Power (Watts)

Station Information

Length of Stream Surveyed (m) 30 m of in-water shocking

Station Characteristics: Width (m): Range 50x70 Average: —

Depth (m): Range 0.25 - 0.75 Average: 0.5

Water Clarity/Colour: Fairly Clear | Water Velocity if Measured (m/s): —

Temperature (°C) 14.00 | Conductivity (uS/cm) 291

pH 7.75 | Dissolved Oxygen (mg/L) 10.04

Catch Data

Species	Number of Fish	Species	Number of Fish
Central Mudminnow	17		

Fish Measurements on Separate Sheet? Y/N

Field Staff: E. Malindzak, M. Kozak

Notes By:

(Station Diagram on Back)

RAPID ASSESSMENT FORM FOR AQUATIC HABITAT

Layout Version 1

Stantec

Project Samsung (GREP) Wind
Station # 18.1
Photos Taken 3
GPS Coordinates 17T 0600099/4750462
Descriptive Location 700m north of Haldimand Rd 20, 500m west of Jaremy Rd.

Project # 161010646
Field Staff Edward Malindzak,
Date October 20 2010
Time 12:44

Water Quality
Dissolved Oxygen (mg/L) 2.06 pH 7.59 Conductivity (µS/cm) 62
Water Temperature (°C) 12.76 Air Temperature (°C) /
Weather conditions in previous 24 hrs cool, rain

Watercourse Dimensions & Morphology
Mean Watercourse Width / (m) Maximum Pool Depth 0.30 (cm)
Mean Bankfull Width / (m) Mean Water Depth — (cm)
% Riffle 100 % Pool % Run % Flat
Evidence of eroding banks, Comments on bank stability wetted area east of 18.0

Substrate – Upstream (% cover)

Bedrock	Silt	Boulder	Clay	Cobble
100 Muck	Gravel	Marl	Sand	Detritus

Substrate – Downstream (% cover)

Bedrock	Silt	Boulder	Clay	Cobble
Muck	Gravel	Marl	Sand	Detritus

In-water Cover
Cover Types Present (circle): Overhanging Vegetation, Undercut Banks, Woody Debris, Deep Pool, Boulder, Vascular Plants, Other cattails duckweed

Riparian Zone
Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional)
Upstream 30, shrubs & small trees
Downstream —
Adjacent Land Use
Upstream agriculture, woodlot
Downstream —

Fish Habitat Potential
Critical Habitat (spawning or nursery areas, groundwater upwellings)
Upstream none
Downstream ~~none~~
Migratory Obstructions (seasonal, permanent)
Upstream no connection
Downstream —
Note any fish observations Shocked for 140 sec. @ 500V/60 Hz. No fish captured or observed.

Other Habitat Notes, Incidental Wildlife Observations, etc. water from here may contribute to water @ 18.0, no visable connection. Fog frogs and ~~or~~ leeches are abundant. See map for notes on wetted areas.

Field Notes Authored by E. Malindzak Field Notes QA/QCed by M. Porteous

Stantec

Stantec Consulting Ltd - Electrofishing Record and Catch Results

Project Number 161010646
Station Number 18.1
Project Name Samsung (GRED) Wind
Pass No. (if applicable) 1
Project manager Rob Nadolny
Date (yyyymmdd): 20101020
Descriptive Location

UTM coordinates 0600099 easting 4750462 northing zone 17T

Fishing Method (circle one): ~~Backpack~~ Boat Unit Model/Make SR-12
Sampling Method (circle one): (even) habitat transect spot

Effort (Electrofishing Seconds): 140 Number of Netters: 1 Number of Anodes: 1

Settings

Frequency (Hz) 60 Voltage (volts) 300 Current (Amps) _____ Power (Watts) _____

Station Information

Length of Stream Surveyed (m) pond/wetland
Station Characteristics: Width (m): Range ~~0.5-0.50~~ Average: ~~0.30~~
Depth (m): Range 0.05-0.50 Average: 0.30

Water Clarity/Colour: muck, visibility nil Water Velocity if Measured (m/s): —
Temperature (°C) 12.76 Conductivity (uS/cm) 62
pH 7.59 Dissolved Oxygen (mg/L) 2.06

Catch Data

Species	Number of Fish	Species	Number of Fish
	No fish captured or observed		

Fish Measurements on Separate Sheet? Y (N)

Field Staff: E. Malindzak
M. Kozak

Notes By: _____

☑ ☐ ~~(Station Diagram on Back)~~

RAPID ASSESSMENT FORM FOR AQUATIC HABITAT

Layout Version 1

Stantec

Project Samsung (GREP) Wind. Project # 161010646
Station # 18.0 Field Staff Edward Malindzak, M. Kozak
Photos Taken 4 Date October 20 2010
GPS Coordinates 17T 0600091/4750442 Time 12:38
Descriptive Location 700m north of Haldimand Rd 20, 500m west of Yaremy Rd

Water Quality
Dissolved Oxygen (mg/L) — pH — Conductivity (µS/cm) —
Water Temperature (°C) — Air Temperature (°C) 8°c
Weather conditions in previous 24 hrs sunny, windy, cool

Watercourse Dimensions & Morphology
Mean Watercourse Width — (m) Maximum Pool Depth 5 (cm)
Mean Bankfull Width — (m) Mean Water Depth 5 (cm)
— % Riffle 100 % Pool — % Run — % Flat
Evidence of eroding banks, Comments on bank stability a wet spot in the middle of a clover field, has un-harvested crops, no aquatic species

Substrate – Upstream (% cover)
— Bedrock — Silt — Boulder 100 Clay — Cobble
— Muck — Gravel — Marl — Sand — Detritus

Substrate – Downstream (% cover)
— Bedrock — Silt — Boulder — Clay — Cobble
— Muck — Gravel — Marl — Sand — Detritus

In-water Cover
Cover Types Present (circle): Overhanging Vegetation, Undercut Banks, Woody Debris, Deep Pool, Boulder, Vascular Plants - Terrestrial, Other —

Riparian Zone
Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional)
Upstream 40%, unharvested crop
Downstream —
Adjacent Land Use
Upstream agriculture
Downstream —

Fish Habitat Potential
Critical Habitat (spawning or nursery areas, groundwater upwellings)
Upstream none
Downstream —
Migratory Obstructions (seasonal, permanent)
Upstream not connected
Downstream —
Note any fish observations none, a wetted area occurs ~75 m north of this location, contains cattails (dense) w/very little standing water

Other Habitat Notes, Incidental Wildlife Observations, etc. Too shallow to shock

Field Notes Authored by E. Malindzak Field Notes QA/QCed by M. Pomeroy

RAPID ASSESSMENT FORM FOR AQUATIC HABITAT

Layout Version 1

Stantec

Channel Not present - no photos

Project Samsung (GREP) Wind
Station # A10
Photos Taken 1
GPS Coordinates 0559723, 4748562
Descriptive Location 900m east of Sutor Rd, 750m south of Haldimand Road 20

Project # 161010646
Field Staff Edward Malindzak, M. Kozak
Date October 20 2010
Time 15:02

Water Quality
Dissolved Oxygen (mg/L) /
pH /
Conductivity (µS/cm) /
Water Temperature (°C) /
Air Temperature (°C) 10°C
Weather conditions in previous 24 hrs sunny, cool, windy

Watercourse Dimensions & Morphology
Mean Watercourse Width /(m)
Mean Bankfull Width /(m)
Maximum Pool Depth /(cm)
Mean Water Depth /(cm)
/ % Riffle / % Pool / % Run / % Flat
Evidence of eroding banks, Comments on bank stability no evidence of channel, flowing water, or overland flow. As

Substrate – Upstream (% cover)
/ Bedrock / Silt / Boulder / Clay / Cobble
/ Muck / Gravel / Marl / Sand / Detritus

Substrate – Downstream (% cover)
/ Bedrock / Silt / Boulder / Clay / Cobble
/ Muck / Gravel / Marl / Sand / Detritus

In-water Cover
Cover Types Present (circle): Overhanging Vegetation, Undercut Banks, Woody Debris, Deep Pool, Boulder, Vascular Plants, Other

Riparian Zone
Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional)
Upstream
Downstream /
Adjacent Land Use
Upstream
Downstream /

Fish Habitat Potential
Critical Habitat (spawning or nursery areas, groundwater upwellings)
Upstream
Downstream /
Migratory Obstructions (seasonal, permanent)
Upstream
Downstream /
Note any fish observations

Other Habitat Notes, Incidental Wildlife Observations, etc. this is featureless terrain, no evidence of water courses. Not fish habitat, waterbodies is an agriculture field w/ soy.

Field Notes Authored by E. Malindzak
Field Notes QA/QCed by M. Pomeroy

RAPID ASSESSMENT FORM FOR AQUATIC HABITAT

Layout Version 2

Stantec

Project Samsung (GREP) | Project # 160106466
Station # CL 37 | Field Staff M. Pomeroy, D. Williams
Photos Taken 0039, 0040, 0041, 0042 | Date Nov 8 2010
GPS Coordinates 0601858 4750970 | Time 10:30 am, 2010
Descriptive Location approx 1 km west of Haldimand Rd 50 on Haldimand Rd 20

Water Quality
Dissolved Oxygen (mg/L) 10.20 | pH 7.39 | Conductivity (µS/cm) 650
Water Temperature (°C) 3.60 | Air Temperature (°C) _____
Weather conditions in previous 24 hrs cool, clear

Watercourse Dimensions & Morphology
Mean Watercourse Width 1.5 (m) | Maximum Pool Depth 0.75 (cm)
Mean Bankfull Width 2.0 (m) | Mean Water Depth 0.30 (cm)
_____% Riffle | _____% Pool | 100 % Run | _____% Flat
Evidence of eroding banks, Comments on bank stability undercut banks, heavily vegetated

Substrate – Upstream (% cover)

_____ Bedrock	80 Silt	_____ Boulder	20 Clay	_____ Cobble
_____ Muck	_____ Gravel	_____ Marl	_____ Sand	_____ Detritus

Substrate – Downstream (% cover)

_____ Bedrock	80 Silt	_____ Boulder	20 Clay	_____ Cobble
_____ Muck	_____ Gravel	_____ Marl	_____ Sand	_____ Detritus

In-water Cover
Cover Types Present (circle): (Undercut Banks) (Deep Pool) (Vascular Plants) (Overhanging Vegetation) (Woody Debris) Boulder Other _____

Riparian Zone
Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional)
Upstream 20%, grass, early
Downstream 20%, grass, early
Adjacent Land Use
Upstream meadow, ag field
Downstream meadow, ag field

Fish Habitat Potential
Critical Habitat (spawning or nursery areas, groundwater upwellings)
Upstream none
Downstream none
Migratory Obstructions (seasonal, permanent)
Upstream none
Downstream none
Note any fish observations none

Other Habitat Notes, Incidental Wildlife Observations, etc. algae

Field Notes Authored by M. Pomeroy | Field Notes QA/QCed by M. Pomeroy |

RAPID ASSESSMENT FORM FOR AQUATIC HABITAT

Layout Version 1

Stantec

not a Water Body

Project Samsung (GREP) Wind. Project # 161010646
Station # 11.0 Field Staff Edward Malindzak, M. Kozak
Photos Taken 7616, 7617, 7618, 7619, 7620 Date October 19 2010
GPS Coordinates 17T 0594103 / 4749463 Time 12:47
Descriptive Location ~200 m north of Haldiman Road 20, near intersection w/ conc 5. Field map 6

Water Quality
Dissolved Oxygen (mg/L) / pH / Conductivity (µS/cm) /
Water Temperature (°C) / Air Temperature (°C) 10°C
Weather conditions in previous 24 hrs cloudy, sunny, cool, windy

Watercourse Dimensions & Morphology
Mean Watercourse Width 0.40 (m) Maximum Pool Depth 30 (cm)
Mean Bankfull Width 0.40 (m) Mean Water Depth 5 (cm)
% Riffle 100 % Pool % Run % Flat
Evidence of eroding banks, Comments on bank stability "channel" meanders through Soy Field

Substrate – Upstream (% cover)

Bedrock	10 Silt	Boulder	90 Clay	Cobble	
Muck	Gravel	Marl	Sand	Detritus	

Substrate – Downstream (% cover)

Bedrock	10 Silt	Boulder	90 Clay	Cobble	
Muck	Gravel	Marl	Sand	Detritus	

In-water Cover
Cover Types Present (circle): (Overhanging Vegetation) Undercut Banks Deep Pool Vascular Plants
Woody Debris Boulder Other algae

Riparian Zone
Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional)
Upstream 50% Soy
Downstream 80% Soy
Adjacent Land Use
Upstream agriculture
Downstream agriculture

Fish Habitat Potential
Critical Habitat (spawning or nursery areas, groundwater upwellings)
Upstream none
Downstream none
Migratory Obstructions (seasonal, permanent)
Upstream perched culvert, low flow
Downstream "
Note any fish observations none, this is only pools around culvert intermittant flow, likely in spring and high precip.

Other Habitat Notes, Incidental Wildlife Observations, etc. mouse, frog

Field Notes Authored by E. Malindzak Field Notes QA/QCed by M. Pomeroy

Stantec

RAPID ASSESSMENT FORM FOR AQUATIC HABITAT

Layout Version 1

Project Samsung (GREP) Wind. Project # 161010646
Station # 17.0 Field Staff Edward Malindzak, M. Kozak
Photos Taken 0068, 0069, 0070 Date October 20 2010
GPS Coordinates 17T 0661638/4751212 Time 9:44 am
Descriptive Location 600m South of Meadows Rd., 1.4 km east of Yaremy Rd.

Water Quality
Dissolved Oxygen (mg/L) 7.34 pH 7.78 Conductivity (µS/cm) 316
Water Temperature (°C) 7.55 Air Temperature (°C) _____
Weather conditions in previous 24 hrs _____

Watercourse Dimensions & Morphology
Mean Watercourse Width 1.0 (m) Maximum Pool Depth 0.75 (cm)
Mean Bankfull Width 7 (m) Mean Water Depth 0.075 (cm)
20 % Riffle 40 % Pool 20 % Run 20 % Flat
Evidence of eroding banks, Comments on bank stability Bankfull depth 1.5-2m conveys large volume of water in spring (supported by anecdotal info)

Substrate – Upstream (% cover)

___	Bedrock	10	Silt	5	Boulder	35	Clay	20	Cobble
___	Muck	25	Gravel	___	Marl	___	Sand	5	Detritus

Substrate – Downstream (% cover)

___	Bedrock	10	Silt	5	Boulder	35	Clay	20	Cobble
___	Muck	25	Gravel	___	Marl	___	Sand	5	Detritus

In-water Cover
Cover Types Present (circle): ~~Undercut Banks~~ Deep Pool Vascular Plants
Overhanging Vegetation Woody Debris Boulder Other _____

Riparian Zone
Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional)
Upstream 65%, mature forest (red oak, maple, wild cherry, Beech)
Downstream 65%, mature forest " " " "
Adjacent Land Use
Upstream woodlot
Downstream woodlot

Fish Habitat Potential
Critical Habitat (spawning or nursery areas, groundwater upwellings)
Upstream: gravel deposits
Downstream gravel deposits
Migratory Obstructions (seasonal, permanent)
Upstream ~~none~~ low flow
Downstream low flow
Note any fish observations local homeowner says all watercourses at this site are heavily flooded in spring, lasting a few days. land owner also states Pike are common in spring.
Other Habitat Notes, Incidental Wildlife Observations, etc. _____

Field Notes Authored by E. Malindzak Field Notes QA/QCed by M. Pomeroy

Stantec

Stantec Consulting Ltd - Electrofishing Record and Catch Results

Project Number 161010646 Station Number 170

Project Name Samsung (GREP) Wind Pass No. (if applicable) 1

Project manager Rob Wodolny Date (yyyymmdd): 20101020

Descriptive Location

UTM coordinates 17T 0601680 / ~~easting~~ 4751217 northing zone

Fishing Method (circle one): (Backpack) Boat Unit Model/Make

Sampling Method (circle one): (even) habitat transect spot

Effort (Electrofishing Seconds): 212 Number of Netters: 1 Number of Anodes: 1

Settings

Frequency (Hz) 60 Voltage (volts) 500 Current (Amps) Power (Watts)

Station Information

Length of Stream Surveyed (m) ~100 m

Station Characteristics: Width (m): Range ~~0.75~~ 0.5 Average: 1.0

Depth (m): Range 0.10 - 0.50 Average: 0.20

Water Clarity/Colour: ~~Cle~~ clear Water Velocity if Measured (m/s):

Temperature (°C) Conductivity (uS/cm)

pH Dissolved Oxygen (mg/L)

Catch Data

Species	Number of Fish	Species	Number of Fish
Centrarchid	9		
Common Shiner	5		

Fish Measurements on Separate Sheet? Y/N

Field Staff: E. Malikzah

M. Kozak

Notes By:

☐

~~(Station Diagram on Back)~~

Project Number 1610646

Date (yyyymmdd): 20101020

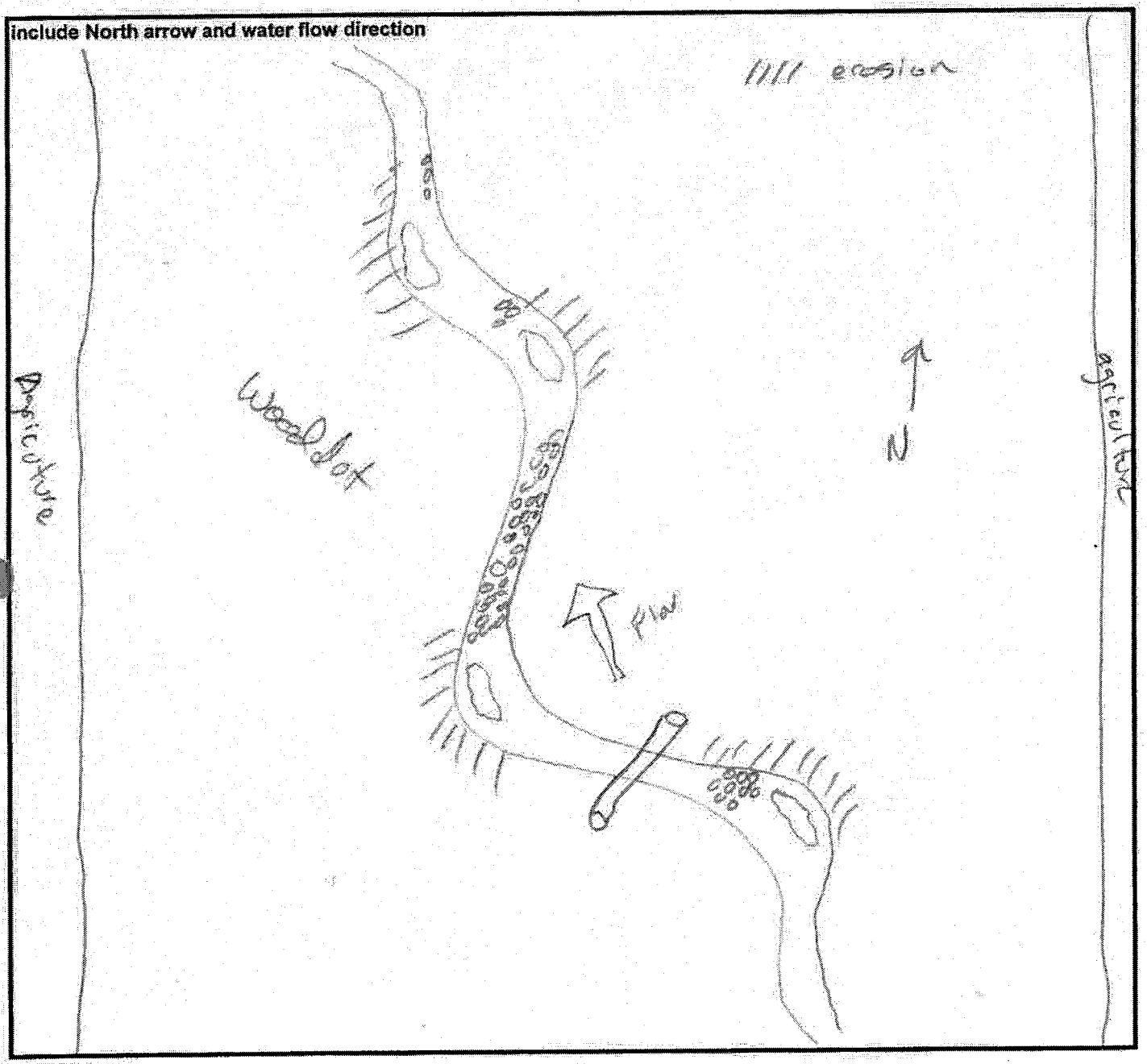
Waterbody Name unk

Station Number 17.0

Pass No. (if applicable) 1

Field Staff: E. Mladenka, M. Kozak

include North arrow and water flow direction



NOTES: nice natural system w/ meanders, to erosion is very common Anecdotal info indicates historically held pike In water ~~da~~ visibility was complicated by layer of recently fallen leaves

Quality Control: This form is complete (X) & legible (X). QA/QC by: (signature) Mark Pevenny

RAPID ASSESSMENT FORM FOR AQUATIC HABITAT

Layout Version 1

Stantec

Project Samsung (GREP) Wind
Station # 121
Photos Taken 20065, 20060, 20067
GPS Coordinates 17T 0601792/4751648
Descriptive Location 300m South of Meadows Rd, 1.3 km east of Yaremy Rd

Project # 161010646
Field Staff Edward Malindzak,
Date October 20 2010
Time 11:10

Water Quality
Dissolved Oxygen (mg/L) / pH / Conductivity (µS/cm) /
Water Temperature (°C) / Air Temperature (°C) 7°C
Weather conditions in previous 24 hrs sunny, cool, windy

Watercourse Dimensions & Morphology
Mean Watercourse Width 0.6 (m) Maximum Pool Depth / (cm)
Mean Bankfull Width undefined (m) Mean Water Depth / (cm)
% Riffle % Pool % Run % Flat
Evidence of eroding banks, Comments on bank stability this was dry but muddy

Substrate – Upstream (% cover)
Bedrock Silt Boulder 100 Clay/Mud Cobble
Muck Gravel Marl Sand Detritus

Substrate – Downstream (% cover)
Bedrock Silt Boulder 100 Clay/Mud Cobble
Muck Gravel Marl Sand Detritus

In-water Cover
Cover Types Present (circle): Undercut Banks Deep Pool Vascular Plants
Overhanging Vegetation Woody Debris Boulder Other none

Riparian Zone
Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional)
Upstream 50%, soy, mature
Downstream 50%, soy, mature
Adjacent Land Use
Upstream agriculture, soy
Downstream agriculture, soy

Fish Habitat Potential
Critical Habitat (spawning or nursery areas, groundwater upwellings)
Upstream none
Downstream none
Migratory Obstructions (seasonal, permanent)
Upstream low flow
Downstream low flow
Note any fish observations clearly conveys water, likely over a short period of time, not fish habitat (no contribution d/s)

Other Habitat Notes, Incidental Wildlife Observations, etc. many deer tracks & raccoon

Field Notes Authored by E. Malindzak Field Notes QA/QCed by Mark Powell

RAPID ASSESSMENT FORM FOR AQUATIC HABITAT

Layout Version 1

Stantec

Project Samsung (GREP) Wind
Station # 17.2
Photos Taken 0062, 0063, 0064
GPS Coordinates 17T 0601742/4751857
Descriptive Location 20 m south of meadow road, where water coarse crosses road

Project # 161010646
Field Staff Edward Malindzak, Mark Kozak
Date October 20 2010
Time 11:24

Water Quality
Dissolved Oxygen (mg/L) 10.93 pH 8.08 Conductivity (µS/cm) 211
Water Temperature (°C) 9.60 Air Temperature (°C) 7°C
Weather conditions in previous 24 hrs sunny, cool, windy

Watercourse Dimensions & Morphology
Mean Watercourse Width 1.0 (m) Maximum Pool Depth 0.40 (cm)
Mean Bankfull Width 3.5 (m) Mean Water Depth 0.25 (cm)
____% Riffle 90 % Pool 10 % Run ____% Flat
Evidence of eroding banks, Comments on bank stability Densley vegitated, could only shock at field access culvert.

Substrate – Upstream (% cover)

____ Bedrock	____ Silt	____ Boulder	30 Clay	____ Cobble
70 Muck	____ Gravel	____ Marl	____ Sand	____ Detritus

Substrate – Downstream (% cover)

____ Bedrock	____ Silt	____ Boulder	30 Clay	____ Cobble
70 Muck	____ Gravel	____ Marl	____ Sand	____ Detritus

In-water Cover
Cover Types Present (circle):
Overhanging Vegetation (circled) Undercut Banks Woody Debris (circled) Deep Pool Boulder Vascular Plants (circled) Other cattails canary grass

Riparian Zone
Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional)
Upstream 95%, cattails, canary grass, meadow species, willow
Downstream 95%, " " " "
Adjacent Land Use
Upstream agriculture (soy)
Downstream agriculture (soy)

Fish Habitat Potential
Critical Habitat (spawning or nursery areas, groundwater upwellings)
Upstream in-stream veg potential for pike
Downstream "
Migratory Obstructions (seasonal, permanent)
Upstream low flow possibly
Downstream "
Note any fish observations 2 common shiner, 3 Central Mudminnow

Other Habitat Notes, Incidental Wildlife Observations, etc. ____

Field Notes Authored by E. Malindzak Field Notes QA/QCed by Mark Kozak

Stantec

Stantec Consulting Ltd - Electrofishing Record and Catch Results

Project Number 160101646
Station Number 17.2
Project Name Samsung (GREP) - Wind
Pass No. (if applicable) 1
Project manager Rob Wadolowski
Date (yyyymmdd): 20101020
Descriptive Location
UTM coordinates 0601742/4751857 easting ____ northing zone 17T

Fishing Method (circle one): (Backpack) Boat Unit Model/Make
Sampling Method (circle one): (even) habitat transect spot

Effort (Electrofishing Seconds): 97 Number of Netters: 1 Number of Anodes: 1

Settings
Frequency (Hz) 60 Voltage (volts) 500 Current (Amps) Power (Watts)

Station Information
Length of Stream Surveyed (m) 30 m
Station Characteristics: Width (m): Range 0.80 - 1.40 Average: 1.0
Depth (m): Range 0.20 - 0.40 Average: 0.25

Water Clarity/Colour: Clear
Temperature (°C) 9.6
pH 8.08
Water Velocity if Measured (m/s): ~
Conductivity (uS/cm) 211
Dissolved Oxygen (mg/L) 10.93

Catch Data

Species	Number of Fish	Species	Number of Fish
Central Mudminnow	2		
Common Shiner	3		

Fish Measurements on Separate Sheet? Y/N

Field Staff: E. Malindzak
M Kozak

Notes By:

~~(Station Diagram on Back)~~

Stantec

RAPID ASSESSMENT FORM FOR AQUATIC HABITAT

Layout Version 1

Project Samsung (GREP) Wind. Project # 161010646
Station # 33.1 Field Staff Edward Malindzak, J. Koch
Photos Taken 0095, 0096, 0097 Date October 22 2010
GPS Coordinates UTM 17T 0602348, 4748957 Time 9:51
Descriptive Location 1.2 Km east of Haldimand Rd 50, 1.4 Km southeast Haldimand Rd 20

Water Quality - too shallow
Dissolved Oxygen (mg/L) / pH / Conductivity (µS/cm) /
Water Temperature (°C) / Air Temperature (°C) 7°C
Weather conditions in previous 24 hrs Sunny, cloudy, cold, warm, heavy rain, Hail

Watercourse Dimensions & Morphology
Mean Watercourse Width 0.15 (m) Maximum Pool Depth 15 (cm)
Mean Bankfull Width 2m-00 (m) Mean Water Depth 5 (cm)
/ % Riffle 40 % Pool 30 % Run 30 % Flat
Evidence of eroding banks, Comments on bank stability this drains flooded agriculture field u/s. Channel shows it conveys water but lacks any in-stream features. Likely contains water in spring and after heavy rain (like past 2 nights).

Substrate – Upstream (% cover) Tree line
___ Bedrock ___ Silt ___ Boulder 95 ~~100~~ Clay ___ Cobble
___ Muck ___ Gravel ___ Marl ___ Sand 5 Detritus

Substrate – Downstream (% cover) agriculture field
___ Bedrock ___ Silt ___ Boulder 95 ~~100~~ Clay ___ Cobble
___ Muck ___ Gravel ___ Marl ___ Sand 5 Detritus

In-water Cover
Cover Types Present (circle): Overhanging Vegetation, Undercut Banks, Woody Debris, Deep Pool, Boulder, Vascular Plants, Other soy
1% tree line

Riparian Zone
Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional)
Upstream 30%, meadow species, ground trees, crops (soy)
Downstream 30%, crop (soy)
Adjacent Land Use
Upstream Agriculture (soy)
Downstream " "

Fish Habitat Potential
Critical Habitat (spawning or nursery areas, groundwater upwellings)
Upstream none
Downstream none
Migratory Obstructions (seasonal, permanent)
Upstream low flow
Downstream low flow
Note any fish observations Shocked for 54 seconds @ 60 Hz / 500 V
No fish captured or observed.

Other Habitat Notes, Incidental Wildlife Observations, etc.

Field Notes Authored by E. Malindzak Field Notes QA/QCed by Mark Pomeroy

Stantec

RAPID ASSESSMENT FORM FOR AQUATIC HABITAT

Layout Version ___

Project: Samsung (GREP) Wind
Station # CL-35
Photos Taken 7512, 7513, 7514, 7515
GPS Coordinates 17T 0603592/4749533
Descriptive Location b/t Bains Road & Haldimand 70 on South Cayuga Rd.

Project # 161010646
Field Staff E. Malindzak, E. Windhorst
Date Oct. 28, 2010
Time 11:09, ~~2010~~

Water Quality

Dissolved Oxygen (mg/L) 10.42 pH 7.61 Conductivity (µS/cm) 220
Water Temperature (°C) 10.65 Air Temperature (°C) 11°C
Weather conditions in previous 24 hrs Sunny, cool

Watercourse Dimensions & Morphology

Mean Watercourse Width 0.40 (m) Maximum Pool Depth 1.5 ~~(cm)~~ m
Mean Bankfull Width 3.0 (m) Mean Water Depth 0.05 (cm)
___% Riffle 90 % Pool 10 % Run ___% Flat
Evidence of eroding banks, Comments on bank stability very deep pool at culvert outflow, clear overhanging banks and slumping visable

Substrate – Upstream (% cover)

___Bedrock	___Silt	___Boulder	100 Clay	___Cobble
___Muck	___Gravel	___Marl	___Sand	___Detritus

Substrate – Downstream (% cover)

___Bedrock	___Silt	___Boulder	100 Clay	___Cobble
___Muck	___Gravel	___Marl	___Sand	___Detritus

In-water Cover

Cover Types Present (circle): (Overhanging Vegetation) (Undercut Banks) Woody Debris (Deep Pool) Boulder Vascular Plants Other terrestrial veg.

Riparian Zone

Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional)
Upstream 60%, grasses & soy
Downstream 70%, meadow sp, grasses (minor)

Adjacent Land Use
Upstream agriculture (soy)
Downstream agriculture (soy)

Fish Habitat Potential

Critical Habitat (spawning or nursery areas, groundwater upwellings)
Upstream none
Downstream none

Migratory Obstructions (seasonal, permanent)
Upstream perched culvert
Downstream low flow

Note any fish observations shocked for 38 seconds @ plunge pool for @ 60 Hz and 700 V. Captured (1) bluntnose minnow and 3 fathead minnows

Other Habitat Notes, Incidental Wildlife Observations, etc. ___

Field Notes Authored by E. Malindzak Field Notes QA/QCed by Mark Penney

Stantec Consulting Ltd - Electrofishing Record and Catch Results

Project Number 161010646 Station Number CL-35

Project Name Samsung (GREP) Wind. Pass No. (if applicable) 1

Project manager Rob Nadolny Date (yyyymmdd): 20101028

Descriptive Location

UTM coordinates 0603592 easting 4749533 northing zone 17T

Fishing Method (circle one): ~~Backpack~~ Boat Unit Model/Make SR-12

Sampling Method (circle one): ~~even~~ habitat transect spot

Effort (Electrofishing Seconds): 38 Number of Netters: 1 Number of Anodes: 1

Settings

Frequency (Hz) 60 Voltage (volts) 700 Current (Amps) ____ Power (Watts) ____

Station Information

Length of Stream Surveyed (m) 3x3 m pool

Station Characteristics: Width (m): Range — Average: —

Depth (m): ~~Range~~ max 1.5m Average: —

Water Clarity/Colour: Cloudy Water Velocity if Measured (m/s): —

Temperature (°C) 10.65 Conductivity (uS/cm) 270

pH 7.61 Dissolved Oxygen (mg/L) 10.42

Catch Data

Species	Number of Fish	Species	Number of Fish
Bluntnose minnow	(1)		
fathead minnow	(8)		

Fish Measurements on Separate Sheet? Y ~~N~~

Field Staff: E. Malindzak ☑ Notes By: ____

E. Windhorst ☐

~~(Station Diagram on Back)~~

RAPID ASSESSMENT FORM FOR AQUATIC HABITAT

Layout Version 1

Stantec

Project Samsung (GREP) Wind — Project # 161010646
Station # 30.8 — Field Staff Edward Malindzak,
Photos Taken 7578, 7579, 7580 — Date October 21 2010
GPS Coordinates 17T 0603844 4749315 — Time 15:08
Descriptive Location 160m east of South Cayuga Rd, 600 m north of Bains Rd.

Water Quality
Dissolved Oxygen (mg/L) 9.08 — pH 8.21 — Conductivity (µS/cm) 317
Water Temperature (°C) 11.35 — Air Temperature (°C) /
Weather conditions in previous 24 hrs sunny, windy, warm, cold, Heavy rain, hail (variable)

Watercourse Dimensions & Morphology
Mean Watercourse Width 10m dia (m) — Maximum Pool Depth 70.5 m ~~(cm)~~
Mean Bankfull Width — (m) — Mean Water Depth — ~~(cm)~~
— % Riffle 100 % Pool — % Run — % Flat
Evidence of eroding banks, Comments on bank stability man-made pond in middle of agriculture field (soy) outlet is standpipe, no inlet.

Substrate – Upstream (% cover) pond

— Bedrock	— Silt	— Boulder	40 Clay	— Cobble	
— Muck	— Gravel	— Marl	— Sand	60 Detritus	

Substrate – Downstream (% cover)

/ Bedrock	/ Silt	/ Boulder	/ Clay	/ Cobble	
/ Muck	/ Gravel	/ Marl	/ Sand	/ Detritus	

In-water Cover
Cover Types Present (circle): Overhanging Vegetation, Undercut Banks, Woody Debris, (Deep Pool), Boulder, (Vascular Plants), Other mosses, floating algae, filimentous algae, coontail(?)

Riparian Zone
Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional)
Upstream 30%, willow
Downstream —
Adjacent Land Use
Upstream Agriculture (soy)
Downstream —

Fish Habitat Potential
Critical Habitat (spawning or nursery areas, groundwater upwellings)
Upstream none
Downstream —
Migratory Obstructions (seasonal, permanent)
Upstream no connectivity, isolated pond
Downstream —
Note any fish observations none, ~~lots~~

Other Habitat Notes, Incidental Wildlife Observations, etc. lots of tadpoles

Field Notes Authored by E. Malindzak — Field Notes QA/QCed by Mark Pomeroy

RAPID ASSESSMENT FORM FOR AQUATIC HABITAT

Layout Version 1

Stantec

Project Samsung (GREP) Wind — Project # 161010646
Station # CL-6 — Field Staff E. Malindzak, E. Windhorst
Photos Taken 0056, 0057, 0060 — Date Oct 23, 2010
GPS Coordinates 17T 0590007/4782690 — Time 10:03
Descriptive Location Irish Line, 500m east of Little Rd

Water Quality
Dissolved Oxygen (mg/L) 7.72 — pH 7.61 — Conductivity (µS/cm) 351
Water Temperature (°C) 11.54 — Air Temperature (°C) /
Weather conditions in previous 24 hrs cloudy, rain

Watercourse Dimensions & Morphology → could not see → no access
Mean Watercourse Width — (m) — Maximum Pool Depth 25 (cm)
Mean Bankfull Width — (m) — Mean Water Depth unk (cm)
% Riffle — % Pool — % Run — % Flat
Evidence of eroding banks, Comments on bank stability Ub is roadside ditch, D/S a pool @ culvert outlet and into dense veg.

Substrate – Upstream (% cover)

Bedrock	Silt	Boulder	~~40~~ ~~100~~ Clay	~~10~~ Cobble
Muck	Gravel	Marl	Sand	Detritus

Substrate – Downstream (% cover)

Bedrock	Silt	Boulder	90 Clay	10 Cobble
Muck	Gravel	Marl	Sand	Detritus

In-water Cover
Cover Types Present (circle): ~~Overhanging Vegetation~~ Undercut Banks Woody Debris Deep Pool Boulder Vascular Plants Other

Riparian Zone
Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional)
Upstream 80% meadow + hardwood
Downstream 100% meadow + crops (corn)
Adjacent Land Use
Upstream agriculture
Downstream agriculture

Fish Habitat Potential
Critical Habitat (spawning or nursery areas, groundwater upwellings)
Upstream none
Downstream none
Migratory Obstructions (seasonal, permanent)
Upstream low flow
Downstream " "
Note any fish observations none, fished pool @ outlet for 25 seconds @ 60Hz/500V with no fish captured or observed.

Other Habitat Notes, Incidental Wildlife Observations, etc. contains little water and is likely dry except after rain and in spring.

Field Notes Authored by E. Malindzak — Field Notes QA/QCed by Mark Pomeroy

RAPID ASSESSMENT FORM FOR AQUATIC HABITAT

Layout Version 1

Stantec

Project Samsung (GREP) Wind. Project # 161010646
Station # 9.3 Field Staff E. Malinowski, M. Kozak
Photos Taken D104, D105, D106 Date 10-19-2010
GPS Coordinates 17T 0590951/4952750 Time 11:41
Descriptive Location south of Irish Line (~200 m), ~1.1 Km west of Kohler Rd

Water Quality
Dissolved Oxygen (mg/L) ____ pH ____ Conductivity (µS/cm) ____
Water Temperature (°C) ____ Air Temperature (°C) 9°C
Weather conditions in previous 24 hrs sunny, cloudy, cool

Watercourse Dimensions & Morphology
Mean Watercourse Width 1.0 (m) Maximum Pool Depth 30 20 (cm)
Mean Bankfull Width 2.0 (m) Mean Water Depth 15 (cm)
____% Riffle 100 % Pool ____% Run ____% Flat
Evidence of eroding banks, Comments on bank stability maintained linear drain

Substrate – Upstream (% cover)
____Bedrock 10 Silt ____Boulder 90 Clay ____Cobble
____Muck ____Gravel ____Marl ____Sand ____Detritus

Substrate – Downstream (% cover)
____Bedrock 10 Silt ____Boulder 90 Clay ____Cobble
____Muck ____Gravel ____Marl ____Sand ____Detritus

In-water Cover
Cover Types Present (circle): Overhanging Vegetation, Undercut Banks, Woody Debris, Deep Pool, Boulder, Vascular Plants, Other filimentous algea

Riparian Zone
Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional)
Upstream 20, soy
Downstream 20, soy
Adjacent Land Use
Upstream agriculture, soy
Downstream agriculture, soy

Fish Habitat Potential
Critical Habitat (spawning or nursery areas, groundwater upwellings)
Upstream none
Downstream none
Migratory Obstructions (seasonal, permanent)
Upstream low flow, possible difficulties from recently constructed pond.
Downstream low flow
Note any fish observations none

Other Habitat Notes, Incidental Wildlife Observations, etc. ____

Field Notes Authored by E. Malinowski Field Notes QA/QCed by M. Pomeroy

Stantec

RAPID ASSESSMENT FORM FOR AQUATIC HABITAT

Layout Version 1 not a Water Body

Project Samsung (GREP) Wind.
Station # 9.1
Photos Taken 012, 013, 014
GPS Coordinates 17T 0590789/4752719
Descriptive Location 200m South of Irish Line, 1.3 km west of Kohler Rd.

Project # 161010646
Field Staff E. Malindzak, M. Kozak
Date 10-19-2010
Time 11:18

Water Quality
Dissolved Oxygen (mg/L) /
pH /
Conductivity (µS/cm) /
Water Temperature (°C) /
Air Temperature (°C) /
Weather conditions in previous 24 hrs cool, sunny

Watercourse Dimensions & Morphology
Mean Watercourse Width 0.50 (m)
Mean Bankfull Width 3.0 (m)
Maximum Pool Depth 36 (cm)
Mean Water Depth 10 (cm)
___ % Riffle 60 % Pool 40 % Run ___ % Flat
Evidence of eroding banks, Comments on bank stability none

Substrate – Upstream (% cover)
___ Bedrock 20 Silt ___ Boulder 50 Clay ___ Cobble
___ Muck 30 Gravel ___ Marl ___ Sand ___ Detritus

Substrate – Downstream (% cover)
___ Bedrock 20 Silt ___ Boulder 50 Clay ___ Cobble
___ Muck 30 Gravel ___ Marl ___ Sand ___ Detritus

In-water Cover
Cover Types Present (circle): Undercut Banks, Deep Pool, Vascular Plants, Overhanging Vegetation, Woody Debris, Boulder, Other ~~watercress~~?

Riparian Zone
Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional)
Upstream 5%, manicured lawn
Downstream 40%, Soy (mature)
Adjacent Land Use
Upstream Residential
Downstream agriculture

Fish Habitat Potential
Critical Habitat (spawning or nursery areas, groundwater upwellings)
Upstream ~~possible watercress~~ Checked, NOT WC
Downstream none
Migratory Obstructions (seasonal, permanent)
Upstream low flow
Downstream low flow
Note any fish observations none

Other Habitat Notes, Incidental Wildlife Observations, etc. breed dogs (Chows and Collies), spoke w/ land owner and daughter

Field Notes Authored by E. Malindzak
Field Notes QA/QCed by Mark Prinzing

RAPID ASSESSMENT FORM FOR AQUATIC HABITAT

Layout Version 1

Stantec

Project Samsung (GREP) Wind
Station # 8.1
Photos Taken # 115, 116, 117
GPS Coordinates 17T 0590389 4752660
Descriptive Location Watercourse that crosses driveway and will be crossed by access Rd. Approximately 100 m South of Irish line

Project # 161010646
Field Staff E. Malinowski, M. Kozak
Date 10-19-2010
Time 10:52

Water Quality
Dissolved Oxygen (mg/L) 10.40
pH 7.64
Conductivity (µS/cm) 747
Water Temperature (°C) 9.2
Air Temperature (°C) 9
Weather conditions in previous 24 hrs overcast, no precip

Watercourse Dimensions & Morphology
Mean Watercourse Width 1.5 (m)
Maximum Pool Depth 30 (cm)
Mean Bankfull Width 4.5 (m)
Mean Water Depth 10 (cm)
____ % Riffle ____ % Pool ____ % Run ____ % Flat
Evidence of eroding banks, Comments on bank stability Fairly linear w/ grass and meadow species buffer.

Substrate – Upstream (% cover)
____ Bedrock ____ Silt ____ Boulder 100 Clay ____ Cobble
____ Muck ____ Gravel ____ Marl ____ Sand ____ Detritus

Substrate – Downstream (% cover) No access
____ Bedrock ____ Silt ____ Boulder ____ Clay ____ Cobble
____ Muck ____ Gravel ____ Marl ____ Sand ____ Detritus

In-water Cover
Cover Types Present (circle): Undercut Banks, Deep Pool, Vascular Plants, Overhanging Vegetation, Woody Debris, Boulder, Other ____

Riparian Zone
Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional)
Upstream 75%
Downstream ~~no access~~ ~60%, meadow species
Adjacent Land Use
Upstream agriculture (soy)
Downstream agriculture

Fish Habitat Potential
Critical Habitat (spawning or nursery areas, groundwater upwellings)
Upstream none
Downstream none
Migratory Obstructions (seasonal, permanent)
Upstream low flow
Downstream low flow
Note any fish observations none

Other Habitat Notes, Incidental Wildlife Observations, etc. Electrofished for 179 seconds no fish captured or observed @ 60 Hz and 300 V

Field Notes Authored by E. Malinowski
Field Notes QA/QCed by Mark Powers

RAPID ASSESSMENT FORM FOR AQUATIC HABITAT

Layout Version 1

Stantec

Project Samsung (GREP) Wind
Station # S.0
Photos Taken 118-119, 120
GPS Coordinates 17T0590590/4752142
Descriptive Location 750 m south of Irish Line, 1.716km west of Kohler Rd

Project # 161010646
Field Staff E. Malindzak, M, Kozak
Date 10-19-2010
Time 10:26

Water Quality
Dissolved Oxygen (mg/L) 11.5 pH 7.44 Conductivity (µS/cm) 620
Water Temperature (°C) 9.1 Air Temperature (°C) 9
Weather conditions in previous 24 hrs overcast, no precip

Watercourse Dimensions & Morphology
Mean Watercourse Width 0.5 (m) Maximum Pool Depth ____ (cm)
Mean Bankfull Width 3.0 (m) Mean Water Depth 10 (cm)
____% Riffle 100 % Pool ____% Run ____% Flat
Evidence of eroding banks, Comments on bank stability largely linear channel w/ farm machinery driving through

Substrate – Upstream (% cover)

____ Bedrock	10 Silt	____ Boulder	80 Clay	____ Cobble	
10 Muck	____ Gravel	____ Marl	____ Sand	____ Detritus	

Substrate – Downstream (% cover) No access

____ Bedrock	____ Silt	____ Boulder	____ Clay	____ Cobble	
____ Muck	____ Gravel	____ Marl	____ Sand	____ Detritus	

In-water Cover
Cover Types Present (circle): (Overhanging Vegetation) Undercut Banks Woody Debris Deep Pool (Vascular Plants) Boulder Other ____

Riparian Zone
Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional)
Upstream 50%, meadow species + canary grass
Downstream 30%, canary grass + crops
Adjacent Land Use
Upstream agriculture (clover and formerly soy)
Downstream agriculture (unk)

Fish Habitat Potential
Critical Habitat (spawning or nursery areas, groundwater upwellings)
Upstream none
Downstream none observed, no access
Migratory Obstructions (seasonal, permanent)
Upstream low flow
Downstream low flow
Note any fish observations instream veg include aquatic plants + filamentous algae

Other Habitat Notes, Incidental Wildlife Observations, etc. no fish captured or observed. Electrofished @ 60 Hz / 300 V for 127 sec.

Field Notes Authored by E. Malindzak Field Notes QA/QCed by Mark Pomeroy

RAPID ASSESSMENT FORM FOR AQUATIC HABITAT

Layout Version 1

Stantec

Project Samsung (GREP) Wind. Project # 161010646
Station # CL-7.0 Field Staff E. Malindzak
Photos Taken 0062, 0063, 0064 Date Oct 23 2010
GPS Coordinates UTT 592117/4752773 Time 10:45
Descriptive Location Kohler Road, 600m south of Irish Line

Water Quality
Dissolved Oxygen (mg/L) 8.25 pH 7.31 Conductivity (µS/cm) 601
Water Temperature (°C) 10.52 Air Temperature (°C) 13°C
Weather conditions in previous 24 hrs mix cloudy

Watercourse Dimensions & Morphology
Mean Watercourse Width 1.0 (m) Maximum Pool Depth 0.25 ~~(cm)~~ m
Mean Bankfull Width 5.5 (m) Mean Water Depth 0.15 ~~(cm)~~
30 % Riffle 25 % Pool 30 % Run 15 % Flat
Evidence of eroding banks, Comments on bank stability evidence of erosion in undercut banks. Open bottom box culvert

Substrate – Upstream (% cover) dense veg. prevents further observations @ culvert

	Bedrock		Silt		Boulder		Clay	100	Cobble
	Muck	~~70~~	Gravel		Marl		Sand		Detritus

Substrate – Downstream (% cover)

	Bedrock		Silt	25	Boulder		Clay	30	Cobble
	Muck	20	Gravel		Marl	10	Sand	15	Detritus

In-water Cover
Cover Types Present (circle): Overhanging Vegetation, Undercut Banks, Woody Debris, Deep Pool, Boulder, Vascular Plants, Other vehical

Riparian Zone
Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional)
Upstream 90%, canary grass
Downstream 80%, mature forest
Adjacent Land Use
Upstream wet low laying area
Downstream woodlot w/ adjacent agriculture field

Fish Habitat Potential
Critical Habitat (spawning or nursery areas, groundwater upwellings)
Upstream springtime flooded veg.
Downstream coarse substrates
Migratory Obstructions (seasonal, permanent)
Upstream none observed
Downstream " "
Note any fish observations none fished for 27 seconds @ culvert outlet @ 60 Hz/500 V. No fish captured or observed

Other Habitat Notes, Incidental Wildlife Observations, etc.

Field Notes Authored by E. Malindzak Field Notes QA/QCed by Mark Powers

Stantec

RAPID ASSESSMENT FORM FOR AQUATIC HABITAT

Layout Version 1

Project Samsung (GREP) Wind.
Station # 6.0
Photos Taken 0107, 0108, 0109
GPS Coordinates 0591268, 4752[illegible]
Descriptive Location Gps taken at field access culvert. 900m South of Irish Line, 1.1 km west of Kohler Rd.

Project # 161010646
Field Staff E. Malindzak, M. Kozak
Date 10-19-2010
Time 8:30

Water Quality
Dissolved Oxygen (mg/L) 8.09 pH 7.71 Conductivity (µS/cm) 514
Water Temperature (°C) 7.83 Air Temperature (°C) 7°C
Weather conditions in previous 24 hrs Cloudy, Sunny

Watercourse Dimensions & Morphology
Mean Watercourse Width 1 (m) Maximum Pool Depth 0.40 m ~~(cm)~~
Mean Bankfull Width 3.5 (m) Mean Water Depth 0.15 m ~~(cm)~~
___ % Riffle 100 % Pool ___ % Run ___ % Flat
Evidence of eroding banks, Comments on bank stability fairly linear w/ some meander no evidence of flowing water, though deeper pools occur at ends of culvert

Substrate – Upstream (% cover)
___ Bedrock 10 Silt ___ Boulder 90 Clay ___ Cobble
___ Muck ___ Gravel ___ Marl ___ Sand ___ Detritus

Substrate – Downstream (% cover)
___ Bedrock 10 Silt ___ Boulder 90 Clay ___ Cobble
~~10~~ Muck ___ Gravel ___ Marl ___ Sand ___ Detritus

In-water Cover
Cover Types Present (circle): Overhanging Vegetation, Undercut Banks, Woody Debris, Deep Pool, Boulder, Vascular Plants, Other filimentous algea

Riparian Zone
Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional)
Upstream 50%, sedges & grasses
Downstream 50%, sedges & grasses
Adjacent Land Use
Upstream agriculture (corn)
Downstream agriculture (soy)

Fish Habitat Potential
Critical Habitat (spawning or nursery areas, groundwater upwellings)
Upstream none
Downstream none
Migratory Obstructions (seasonal, permanent)
Upstream low flow
Downstream low flow
Note any fish observations ~ 30 m d/s of culvert, channel becomes wide and shallow with aquatic veg + algea. Tracks of turkey, deer, raccoon, canine & u/s

Other Habitat Notes, Incidental Wildlife Observations, etc. Shocked @ 60 Hz / 300 V no fish captured or observed. Small trib joins about 100 m u/s. Flows through ag. field w/ no defined channel. (likely intermittant) Main channel is likely permanent

Field Notes Authored by E. Malindzak Field Notes QA/QCed by Mark Pomeroy

Stantec

RAPID ASSESSMENT FORM FOR AQUATIC HABITAT

Layout Version 1

Project Samsung (GREP) Wind. Project # 161010646
Station # 90 CL-90 Field Staff E. Malinoski, E. Windhorst
Photos Taken #0068, 0069, 0070 Date Oct 23 2010
GPS Coordinates 0592354/4751999 Time 15:01
Descriptive Location Kohler Rd, 700 m north of Link Rd.

Water Quality
Dissolved Oxygen (mg/L) 9.41 pH 7.84 Conductivity (µS/cm) 623
Water Temperature (°C) 13.81 Air Temperature (°C) 14°C
Weather conditions in previous 24 hrs cloudy and rain

Watercourse Dimensions & Morphology
Mean Watercourse Width 1.75 (m) Maximum Pool Depth 1.5 ~~(cm)~~ m
Mean Bankfull Width 3.0 (m) Mean Water Depth 0.75 (cm)
____% Riffle 70 % Pool 30 % Run ____% Flat
Evidence of eroding banks, Comments on bank stability undercut banks, canopy large amount of water.

Substrate – Upstream (% cover)
____Bedrock ____Silt ____Boulder 60 Clay 10 Cobble
____Muck 30 Gravel ____Marl ____Sand ____Detritus

Substrate – Downstream (% cover)
____Bedrock ____Silt ____Boulder 50 Clay 5 Cobble
____Muck 35 Gravel ____Marl ____Sand ____Detritus

In-water Cover
Cover Types Present (circle): (Undercut Banks) (Deep Pool) Vascular Plants
(Overhanging Vegetation) (Woody Debris) Boulder Other____

Riparian Zone
Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional)
Upstream 40%, mature trees + canary grass
Downstream 60%, canary grass
Adjacent Land Use
Upstream woodlot + residential
Downstream agriculture (soy, sheep pasture)

Fish Habitat Potential
Critical Habitat (spawning or nursery areas, groundwater upwellings)
Upstream flooded grasses may be important in spring
Downstream " " " " "
Migratory Obstructions (seasonal, permanent)
Upstream none
Downstream none
Note any fish observations This is likely permanent. Shocked for 127 seconds @ 60 Hz / 300 V. Caught 19 Green Sunfish and 5 Fathead minnows

Other Habitat Notes, Incidental Wildlife Observations, etc.

Field Notes Authored by E. Malinoski Field Notes QA/QCed by Mark Pomeroy

Stantec Consulting Ltd - Electrofishing Record and Catch Results

Project Number ~~161010646~~ 161010646 Station Number CL-10

Project Name Samsung (GREP) Wind Pass No. (if applicable) 1

Project manager Rob Wadsley Date (yyyymmdd): 20101025

Descriptive Location

UTM coordinates 0592354 easting 4751999 northing zone 17T

Fishing Method (circle one): (Backpack) Boat Unit Model/Make SR-12

Sampling Method (circle one): even habitat transect spot

Effort (Electrofishing Seconds): 127 Number of Netters: 1 Number of Anodes: 1

Settings

Frequency (Hz) 60 Voltage (volts) 500 Current (Amps) _____ Power (Watts) _____

Station Information

Length of Stream Surveyed (m) 25m

Station Characteristics: Width (m): Range 0.75-2.5 Average: 1.75

Depth (m): Range 0.30-1.5 Average: 0.75

Water Clarity/Colour: Brown/turbid Water Velocity if Measured (m/s): —

Temperature (°C) 13.81 Conductivity (uS/cm) 623

pH 7.84 Dissolved Oxygen (mg/L) 9.41

Catch Data

Species	Number of Fish	Species	Number of Fish
Green Sunfish	19		
Fathead Minnow	5		

Fish Measurements on Separate Sheet? Y/N

Field Staff: E. Malinoski

E. Windhorst

Notes By: _____

~~(Station Diagram on Back)~~

RAPID ASSESSMENT FORM FOR AQUATIC HABITAT

Layout Version 1

Stantec

Project Samsung (GREP) Wind — Project # 160910646
Station # CL-10 — Field Staff E. Malinczak, E. Windhorst
Photos Taken 0071, 0072, 0073 — Date Oct. 24/2010
GPS Coordinates UTT 0592430/4751837 — Time 9:11
Descriptive Location Kohler Rd, 500m north of Link Rd

Water Quality
Dissolved Oxygen (mg/L) / — pH / — Conductivity (µS/cm) /
Water Temperature (°C) / — Air Temperature (°C) 14
Weather conditions in previous 24 hrs cloudy, rain, breezy

Watercourse Dimensions & Morphology
Mean Watercourse Width 0.50 (m) — Maximum Pool Depth 0.50 m (~~cm~~)
Mean Bankfull Width 2.5 (m) — Mean Water Depth 0.05 m (~~cm~~)
20 % Riffle — 30 % Pool — 30 % Run — 20 % Flat
Evidence of eroding banks, Comments on bank stability abundant signs of erosion u/s @ culvert and immediately d/s.

Substrate – Upstream (% cover)
_ Bedrock — _ Silt — _ Boulder — 100 Clay — _ Cobble
_ Muck — _ Gravel — _ Marl — _ Sand — _ Detritus

Substrate – Downstream (% cover)
_ Bedrock — _ Silt — _ Boulder — 40 Clay — 30 Cobble
_ Muck — 30 Gravel — _ Marl — _ Sand — _ Detritus

In-water Cover
Cover Types Present (circle): (Overhanging Vegetation) Undercut Banks Woody Debris (Deep Pool) Boulder Vascular Plants Other

Riparian Zone
Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional)
Upstream 30% soy, canary grass @ culvert
Downstream 80% canary grass, mature trees
Adjacent Land Use
Upstream agriculture (soy)
Downstream woodlot, residential (manicured lawn)

Fish Habitat Potential
Critical Habitat (spawning or nursery areas, groundwater upwellings)
Upstream none
Downstream none
Migratory Obstructions (seasonal, permanent)
Upstream water appears to flow around/under culvert, low flow
Downstream low flow
Note any fish observations this is a minor feature that is likely dry most of the time. Contains water due to rain last 4 days

Other Habitat Notes, Incidental Wildlife Observations, etc. Did not shock because only pool deep enough appears to be on private property (no access)

Field Notes Authored by E. Malinczak — Field Notes QA/QCed by Mark Pomeroy

Stantec

RAPID ASSESSMENT FORM FOR AQUATIC HABITAT

Layout Version 1

Project Samsung (GREP) Wind
Station # CL-12
Photos Taken 0074, 0075, 0076
GPS Coordinates 17T 0592492/4751598
Descriptive Location ~~26~~ Kohler Rd, 200m' north of Link Rd

Project # 161010646
Field Staff E. Malindzak, E. Windhorst
Date Oct. ~~24~~ 24 2010
Time 9:31 am

Water Quality

Dissolved Oxygen (mg/L) 6.96 pH 7.70 Conductivity (µS/cm) ~~7.4~~ 743
Water Temperature (°C) 13.10 Air Temperature (°C) /
Weather conditions in previous 24 hrs Cloudy, warm, rain, windy

Watercourse Dimensions & Morphology

Mean Watercourse Width unk (m) Maximum Pool Depth 0.6 m (cm)
Mean Bankfull Width 3.0 - 15.0 (m) Mean Water Depth 0.2 m (cm)
___ % Riffle 90 % Pool 10 % Run ___ % Flat
Evidence of eroding banks, Comments on bank stability no clearly defined channel in road row. Appears more defined u/s + D/S, though visibility obscured by dense veg. Water likely due to rain last four days.

Substrate – Upstream (% cover)

___ Bedrock ___ Silt ___ Boulder 100 Clay ___ Cobble
___ Muck ___ Gravel ___ Marl ___ Sand ___ Detritus

Substrate – Downstream (% cover)

___ Bedrock ___ Silt ___ Boulder 100 Clay ___ Cobble
___ Muck ___ Gravel ___ Marl ___ Sand ___ Detritus

In-water Cover

Cover Types Present (circle): Undercut Banks Deep Pool ~~Vascular Plants~~
Overhanging Vegetation Woody Debris Boulder Other ___

Riparian Zone

Riparian Cover (% of watercourse shaded, dominant vegetation, mature or early successional)
Upstream 90%, Canary grass
Downstream 90%, " "
Adjacent Land Use
Upstream agriculture (soy), residential
Downstream agriculture, residential

Fish Habitat Potential

Critical Habitat (spawning or nursery areas, groundwater upwellings)
Upstream ~~low~~ none
Downstream large low laying area w/ abundant grasses for spring spawners
Migratory Obstructions (seasonal, permanent)
Upstream low flow
Downstream low flow
Note any fish observations Shocked for 177 seconds (u/s + D/S) @ 60 Hz/300 V caught (1) green sunfish (2) common shiner

Other Habitat Notes, Incidental Wildlife Observations, etc. Cattails @ both ends of culvert suggest culvert wet significant amount of time. Turbidity and amount of water made ID-ing channel characteristics difficult.

Field Notes Authored by E. Malindzak Field Notes QA/QCed by Mark Pomeroy

Stantec

Stantec Consulting Ltd - Electrofishing Record and Catch Results

Project Number 161010646

Station Number CL-12

Project Name Samsung (GREP) Wind

Pass No. (if applicable) 1

Project manager Rob Nadoby

Date (yyyymmdd): 20101025

Descriptive Location

UTM coordinates 0592492 easting 4751598 northing zone 17T

Fishing Method (circle one): Backpack Boat Unit Model/Make SR-12

Sampling Method (circle one): even habitat transect spot

Effort (Electrofishing Seconds): 197 Number of Netters: 1 Number of Anodes: 1

Settings

Frequency (Hz) 60 Voltage (volts) 500 Current (Amps) Power (Watts)

Station Information

Length of Stream Surveyed (m) 20 m

Station Characteristics: Width (m): Range 0.75 - 3.0 Average: unk

Depth (m): Range 0.15 - 0.6 Average: 0.20

Water Clarity/Colour: brown, very turbid

Water Velocity if Measured (m/s): —

Temperature (°C) 13.10

Conductivity (µS/cm) 743

pH 7.70

Dissolved Oxygen (mg/L) 6.96

Catch Data

Species	Number of Fish	Species	Number of Fish
Green Sunfish	(1)		
Common Shiner	(2)		

Fish Measurements on Separate Sheet? Y/N

Field Staff: E. Malindzak

E. Windhorst

Notes By:

~~(Station Diagram on Back)~~