



FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
STRATEGIC MONITORING PROGRAM FIELD SHEET

PAGE 1 OF 6

Data Qualified?
Yes / No

STORET Station Name:

RQ-2016-12-26-02

12/28/2016
WBID 3240A3



G2SD0020

Field ID

STORET
G2SD0020



STORET Station ID:

Zurich Canal at
Banjo Canal

Date:

(mm/dd/yyyy)

County: Lee

RQ -

ORG ID:

Longitude:

(Decimal Degrees)

(Decimal Degrees)

Receiving Body of Water:

Field ID:

Sampling Team Members					WQ Measurements	Sample Collection	Documentation	Preservation	Preservation Check
Corey Anderson					✓	✓			
Rosemary Murphy						✓	✓	✓	

Sampling Equipment		
☒ Sample Container	☐ Van Dorn	☐ Pole
☐ Carboy	☒ Syringe	
☐ Dipper	☐ Other	
Equipment ID		
Collection Method		
☐ Wading	☐ Via Boat	
☐ From Shore	☐ Canoe/Kayak	
☐ Other (note below)	☐ Electric Motor	
	☒ Gasoline Motor	

Water Level: Dry / Low / Normal / High / Flooded						Matrix: Fresh / Marine / DI				
Meter ID# YSR5		Photos: Yes / No		Tide Falling: Yes / No / NA						
Time Zone	Time	Sample Depth (m)	Total Depth (m)	DO (mg/L)	DO (%SAT)	pH	Salinity (ppt)	Secchi Disk (m)	Sp COND (µmhos/cm)	Temp. (C°)
EST	1111	0.3	1.8	6.5	77	7.8	-	1.5	661	23.6
CEN		1.3		6.1	72	7.7	-		661	23.4

Biological Samples Collected: None HA SCI LVS RPS LVI Other					
Parameter Suite	Parameter Methods	Preservation	Acid Lot#	Expiration	pH Check
Preserved Nutrients	☒ W-NH3 / ☒ W-NO2NO3 / ☒ W-TKN / ☒ W-TOC / ☒ W-S-A-TP	☒ Ice ☒ H2SO4			☒ <2
Metals	☐ W-ICPMS ☐ W-ICP	☐ Ice ☐ HNO2			☐ <2
Filtered Nutrients	☒ W-PO4-F ☒ Field Filtered 0.45 µm Filter	☒ Ice			
Chlorophyll	☒ CHLSUITE-W	☒ Ice			
Physical/Aggregate (Fresh)	☒ Alkalinity / ☒ W-F / ☒ W-TSS / ☒ TURBIDITY / ☒ W-CH-IC / ☒ W-COLOR / ☒ W-SO4-IC / ☒ W-TDS	☒ Ice			
Physical/Aggregate (Marine)	☐ Alkalinity / ☐ W-F / ☐ W-TSS / ☐ TURBIDITY	☐ Ice			
Macroinvertebrates	☐ MI-FW-QLDC	☐ Formalin			
Microbiology	☐ E Coli ☐ F Coli ☐ Entero ☐ QPCR	☐ Ice			
Periphyton	☐ ALGAE-ID	☐ Ice			
Pesticides	☐ W-PSNP-TQ ☐ W-AHERB-AA ☐ W-PYR-AA-R ☐ W-PC-AA-SF ☐ W-UHERB-AA ☐ W-GLYPH	☐ Ice ☐ Other			

Contains
1:1
Sulfuric Acid
SA-6209120
EXP: 07/27/17
Warning!
See SDS

Adhesive Sticker(s) Here
If Available

Notes:

RQ-2016-12-26-02
12/28/2016
WBID 3240A3
Zurich Canal at
Banjo Canal-DUP



G2SD0020-D

Field ID

STORET
G2SD0020



Dup time
1116
Blank time
12:50

RQ-2016-12-26-02

12/28/2016

Field Blank



G2SD122816-B

Field ID

STORET
Field Blank



Signature:

Date:

12-28-16

Field Parameters Entered into LIMS:

(Initials/Date)

Field Parameters QC in LIMS:

(Initials/Date)

Date Migrated to STORET:

(Initials/Date)

Field Sheets Scanned/Saved:

(Initials/Date)



FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
STRATEGIC MONITORING PROGRAM FIELD SHEET

PAGE 1 OF 1

Data Qualified?

Yes / No

STORET Station Name: _____

12/28/2016
WBID 2082B

YUCCAPEN

Field ID

Date: _____

(mm/dd/yyyy)

STORET Station ID: _____

Yucca Pen Creek @
Burnt Store Rd.

YUCCAPEN

Latitude: _____

(Decimal Degrees)

County: Lee

RQ - _____

ORG ID: _____

Longitude: _____

(Decimal Degrees)

Receiving Body of Water: _____

Field ID: _____

Sampling Team Members

Rosemary Murphy

Corey Anderson

WQ Measurements
Sample Collection
Documentation
Preservation
Preservation Check

X
X

Sampling Equipment

☐ Sample Container ☐ Van Dorn ☐ Pole
☐ Carboy ☐ Syringe
☐ Dipper ☐ Other _____

Equipment ID _____

Collection Method

☐ Wading ☐ Via Boat
☐ From Shore ☐ Canoe/Kayak
☐ Other (note below) ☐ Electric Motor
☐ Gasoline Motor

Water Level: Dry / Low / Normal / High / Flooded

Matrix: Fresh / Marine / DI

Meter ID# YSI 5

Photos: Yes / No

Tide Falling: Yes / No / NA

Time Zone	Time	Sample Depth (m)	Total Depth (m)	DO (mg/L)	DO (%SAT)	pH	Salinity (ppt)	Secchi Disk (m)	Sp COND (umhos/cm)	Temp. (C°)
EST	1225	0-3	0.6	5.0	60.1	7.3	-	0.6	824	22.9
CEN										

Biological Samples Collected: None HA SCI LVS RPS LVI Other _____

Parameter Suite	Parameter Methods	Preservation	Acid Lot#	Expiration	pH Check
Preserved Nutrients	☐ W-NH3 / W-NO2NO3 / W-TKN / W-TOC / W-S-A-TP	☐ Ice ☐ H2SO4			☐ <2
Metals	☐ W-ICPMS ☐ W-ICP	☐ Ice ☐ HNO2			☐ <2
Filtered Nutrients	☐ W-PO4-F ☐ Field Filtered 0.45 um Filter	☐ Ice			
Chlorophyll	☐ CHLSUITE-W	☐ Ice			
Physical/Aggregate (Fresh)	☐ Alkalinity / W-F / W-TSS / TURBIDITY / W-Cl-IC / W-COLOR / W-SO4-IC / W-TDS	☐ Ice			
Physical/Aggregate (Marine)	☐ Alkalinity / W-F / W-TSS / TURBIDITY	☐ Ice			
Macroinvertebrates	☐ MI-FW-QLDC	☐ Formalin			
Microbiology	☐ E Coli ☐ F Coli ☐ Entero ☐ QPCR	☐ Ice			
Periphyton	☐ ALGAE-ID	☐ Ice			
Pesticides	☐ W-PSNP-TQ ☐ W-AHERB-AA ☐ W-PYR-AA-R ☐ W-PC-AA-SF ☐ W-UHERB-AA ☐ W-GLYPH	☐ Ice ☐ Other			

Place Preservative Sticker(s) Here
(If Available)

Notes:

*Field Readings
Data not entered b/c
of qualified D.O.*

Place Label Here
(If Available)

Signature: _____

Date: 12-28-16

Field Parameters Entered into LIMS: _____
(Initials/Date)

Field Parameters QC in LIMS: _____
(Initials/Date)

Date Migrated to STORET: _____
(Initials/Date)

Field Sheets Scanned/Saved: _____
(Initials/Date)

AMPLE ID _____ ORG ID 21FLFTM
COUNTY Lee STORET # _____
DATE 12-28-16 TIME 1011
SITE NAME _____
FIELD ID/NAME _____ RECEIVING BODY OF WATER _____

LATITUDE _____
LONGITUDE _____
SAMPLING AC _____
12/28/2016
WBID 3240A3
Zurich Canal at
Banjo Canal



RIPARIAN ZONE / STREAM FEATURES

PREDOMINANT LAND-USE IN WATERSHED (specify relative percent in each category): Forest/Natural ☐ Silviculture ☐ Field/Pasture ☐ Agricultural ☐ Residential ☒ Commercial ☐ Industry ☐ Other (Specify) ☐ <u>100</u>						Landscape Development Intensity Index (LDI) ☐	
Local Watershed Erosion (select one): ☐ None ☒ Slight ☐ Moderate ☐ Heavy						Typical Width (m) Depth (m)/Velocity (m/sec) Transect	
Local Watershed NPS Pollution: ☐ No evidence ☐ Slight ☒ Moderate ☐ Heavy						<u>20</u> m wide	
Width of Riparian Vegetation (m) on Each Buffer Side Left Bank: <u>1m</u> Right Bank: <u>1m</u>				Hydrologic Modification Score (per FT 3101) ☐		<u>0.01</u> m/s <u>0.01</u> m/s <u>0.01</u> m/s	
High Water Mark: <u>0.2</u> + <u>1.8</u> = <u>2.0</u> (m) (above present water level) (present depth) (above bed)				Artificially Impounded ☒ Yes ☐ No		<u>0.5</u> m deep <u>1.8</u> m deep <u>0.5</u> m deep	
Artificially ☐ No ☐ Mostly recovered, more sinuous Channelized: ☐ Some recovery ☒ Recent, severe				Canopy Cover % ☒ Open ☐ Lightly Shaded (11-45%) ☐ Heavily Shaded ☐ Moderate Shaded (46-80%)			

SEDIMENT / SUBSTRATE

Sediment Oils ☐ Absent ☐ Slight ☐ Moderate ☐ Profuse		Sediment Odors ☐ Normal ☐ Sewage ☐ Petroleum ☐ Chemical ☐ Anaerobic ☐ Other (Specify): <u>N/A</u>		Smothering of Substrates Sand Smothering: None ☒ Slight ☐ Moderate ☐ Severe ☐ Silt Smothering: None ☐ Slight ☒ Moderate ☐ Severe ☐ Algae Smothering: None ☐ Slight ☒ Moderate ☐ Severe ☐	
SUBSTRATE TYPE Assessment Tool: ☐ SCI ☒ RPS ☐ LVS ☐ LCI ☐ BioRecon Woody Debris (Snags) ☐ Undercut Banks / Roots ☐ Leaf Packs or Mat ☐ Aquatic Vegetation ☐ Rock or Shell Rubble ☐ Sand ☐ Mud / Muck / Silt ☐ Other ☐ Other ☐		WATER QUALITY Depth (M) Temp. (°C) pH (SU) D.O. (MG/L) D.O. Sat (%) Cond. (UMHO/CM) Salinity (PPT) SECCHI (M) Top: <u>0.3</u> Mid: Bottom: <u>1.3</u> Meter ID: <u>YS15</u> Water Odors: Normal ☒ Petroleum ☐ Sewage ☐ Chemical ☐ Other ☐ Water Sample Taken? ☒ Yes ☐ No Sample Preserved? ☒ Yes ☐ No Lot Number: Exp: Algae Sample Taken? ☐ Yes ☒ No Sample Preserved? ☐ Yes ☐ No Lot Number: Exp:		Water Surface Oils Normal ☒ Sheen ☐ Globs ☐ Slick ☐ Other ☐ Color Tannic ☐ Green (Algae) ☒ Clear ☐ Other (Specify) ☐ Clarity Clear ☐ Slightly Turbid ☒ Turbid ☐ Opaque ☐	
ABUNDANCE Not Obs. Rare Common Abundant Periphyton: ☐ ☒ ☐ ☐ Fish: ☐ ☐ ☒ ☐ Aquatic Plants: ☐ ☐ ☐ ☒ Iron/Sulfur Bacteria: ☒ ☐ ☐ ☐		System Type: Stream ☐ Lake ☐ Wetland ☐ Estuary ☐ Other(Specify) ☐ AMBIENT FIELD CONDITIONS / NOTES: ☒ The antecedent hydrologic conditions have been met to my best knowledge.			
SAMPLING TEAM <u>Corey Anderson, Rosemary Murphy</u>		SIGNATURE: <u>[Signature]</u>		DATE: <u>12-28-16</u>	

12/28/2016
WBID 3240A3Zurich Canal at
Banjo Canal

G2SD0020

Field ID

STORET
G2SD0020

0-25 Rapid Periphyton Survey Field Sheet

County:

Date:

Investigators:

STORET Station Number:

Transect (m)	Point 1=right 9=left	Algal Thickness Rank (N-6, X)	Estimated	Canopy Cover	Transect (m)	Point 1=right 9=left	Algal Thickness Rank (N-6, X)	Estimated	Canopy Cover	
0	1				60	1				
	2					2				
	3		X			3			X	
	4		yes			4			Y	
	5		Y			5		N	Y	0
	6		Y			6			Y	
	7		X			7			X	
	8					8				
	9					9				
10	1				70	1				
	2					2				
	3		X			3			X	
	4		Y			4			yes	
	5		Y			5		N	Y	0
	6		Y			6			Y	
	7		X			7			X	
	8					8				
	9					9				
20	1				80	1				
	2					2				
	3		X			3			X	
	4		Y			4			Y	
	5		Y			5		N	yes	0
	6		Y			6			Y	
	7		X			7			X	
	8					8				
	9					9				
30	1				90	1				
	2					2				
	3		X			3			X	
	4		Y			4			Y	
	5		Y			5		N	Y	0
	6		Y			6			Y	
	7		Y			7			X	
	8					8				
	9					9				
40	1				100	1				
	2					2				
	3		X			3			X	
	4		yes			4			yes	
	5		Y			5		N	Y	0
	6		Y			6			Y	
	7		X			7			X	
	8					8				
	9					9				
50	1					1				
	2					2				
	3		X			3				
	4		Y			4				
	5		Y			5				
	6		Y			6				
	7		X			7				
	8					8				
	9					9				

Secchi depth	1.5
Estimated?	

# points ranked 4-6	
total points assessed	
% points ranked 4-6	

Check accompanying data collected at same site/date.

Algal mat sample	
Linear Veg Survey	
Habitat Assessment	
SCI/Biorecon	
Water sample	

RQ-

Algal Thickness Rank

N	
N	rough, no algae, slimy, algae up to 1mm
3	>1mm - 6mm
4	>6mm - 20mm
5	>20mm - 10 cm
6	>10 cm

Record "N" and check "Estimated" for points deeper than the Secchi depth; algae are presumed absent. Check "Estimated" if thickness estimated for deep points which can be seen but not reached.

Record "X" for points shallower than Secchi depth for which substrate cannot be seen or reached with the hand. No estimated rank.

Record canopy cover as the number of small densiometer quadrants (out of 96) that HAVE canopy cover. Measure facing upstream at point 4, 5, or 6.

Collect algal mat sample following DEP SOP FS 7240 if the percentage of total sampled points with a thickness rank of 4, 5, or 6 is >20%.

12/28/2016
WBID 3240A3Zurich Canal at
Banjo Canal

Waterbody:

Date:

County:

Analyst:

Signature:

Comments:

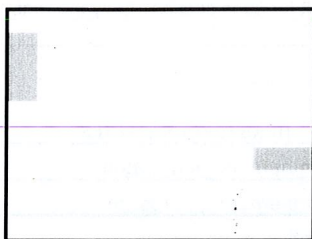
Instructions: Note taxa growing in the water with a checkmark if present, "D" if dominant, and "C" if codominant (dominance only if 1 m² of taxa present). Note in the boxes below if no dominant are selected, and note total macrophyte abundance rank for each section. Only the most common taxa are listed, so use blank spaces for additional taxa names.

HERBACEOUS SPECIES	Meter Mark										Specimen collected (check)	HERBACEOUS SPECIES	Meter Mark										Specimen collected (check)
	0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100			0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100	
Alternanthera philoxeroides	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		Micranthemum glomeratum											
Bacopa caroliniana												Micranthemum umbrosum											
Bacopa monnieri												Myriophyllum aquaticum											
Bidens mitis												Najas guadelupensis											
Boehmeria cylindrica												Nuphar luteum	✓	✓	✓	✓	✓		✓				
Centella asiatica												Orontium aquaticum											
Ceratophyllum demersum												Panicum hemitomon											
Chara												Panicum repens	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Cicuta maculata												Panicum rigidulum											
Cladium jamaicense												Pistia stratioides											
Colocasia esculenta												Polygonum glabra											
Commelina diffusa												Polygonum hydropiperoides											
Commelina virginica												Polygonum punctatum											
Crinum americanum												Pontedaria cordata											
Diodia virginiana												Potamogeton illinoensis											
Eichhornia crassipes												Ruellia simplex											
Eleocharis (wispy viviparous)												Sacciolepis striata											
Hydrilla verticillata												Sagittaria kurziana											
Hydrocotyle												Sagittaria lancifolia											
Hygrophila polysperma												Sagittaria latifolia											
Hymenocallis												Salvinia minima											
Lachnanthes caroliniana												Samolus parviflora											
Landoltia punctata												Saururus cernuus											
Lemna												Sparganium americanum											
Limnophila sessiflora												Typha	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Ludwigia leptocarpa octovalvis			✓									Vallisneria americana											
Ludwigia palustris												Zizania aquatica											
Ludwigia peruviana		✓	✓		✓	✓																	
Ludwigia repens																							
Luziola fluitans																							
If no Dominant or Co-Dominant were selected, indicate with "X"																							
Indicate % cover macrophytes per section																							
0-5% Macrophyte Coverage																							
>5 and ≤10% Macrophyte Coverage	✓	✓	✓	✓	✓	✓																	
>10 and ≤25% Macrophyte Coverage							✓																
>25 and ≤50% Macrophyte Coverage																							
> 50% Macrophyte Coverage																							

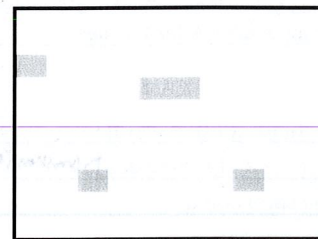
FDEP FORM FD 9000-32 LINEAR VEGETATION SURVEY FIELD SHEET

Percent Cover Categories for macrophytes in a 10 m segment of a stream 5 m wide

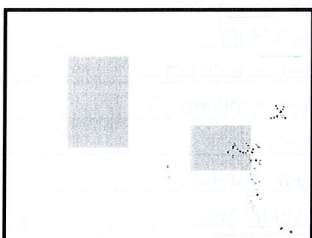
5% Macrophyte Coverage



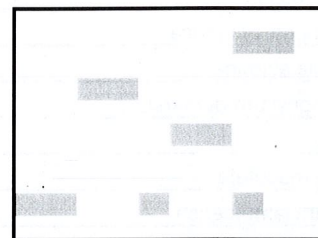
5% Macrophyte Coverage



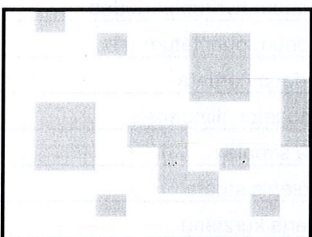
10% Macrophyte Coverage



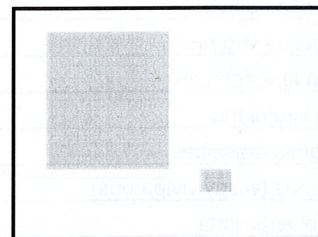
10% Macrophyte Coverage



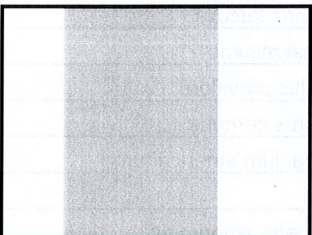
25% Macrophyte Coverage



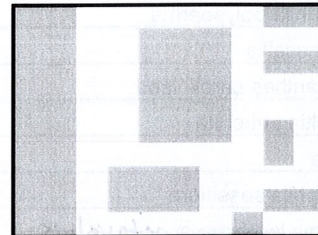
25% Macrophyte Coverage



50% Macrophyte Coverage



50% Macrophyte Coverage



12/28/2016
WBID 3240A3Zurich Canal at
Banjo Canal

9000-5 Stream/River Habitat Assessment Field Sheet

REMARKS:	STORET STATION NUMBER:	DATE (MM/DD/YY):	RECEIVING BODY OF WATER:
COUNTY: <u>Lee</u>	LOCATION:	FIELD ID/NAME:	

Habitat Parameter	Optimal	Suboptimal	Marginal	Poor
Primary Habitat Components	Four or more major productive habitats present [snags, tree roots, aquatic vegetation, leaf packs (partially decayed), rock]	Three major productive habitats present. Adequate habitat. Some substrates may be new fall (fresh leaves or snags)	Two major productive habitats present. Less than desirable habitat, frequently disturbed or removed	One or less major productive habitat. Lack of habitat is obvious, substrates unstable or smothered
Substrate Diversity <u>5</u>	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	<u>5</u> 4 3 2 1
Substrate Availability <u>6</u>	Greater than 30% major productive habitat present at site 20 19 18 17 16	16% to 30% major productive habitat, by aerial extent 15 14 13 12 11	6% to 15% major productive habitat 10 9 <u>8</u> 7 6	Less than 5% major productive habitat 5 4 3 2 1
Water Velocity <u>2</u>	Max. observed at typical transect: > 0.25 m/sec. But < 1 m/sec ≥0.33 0.31 0.29 0.27 >0.25 20 19 18 17 16	Max. observed at typical transect: >0.1 to 0.25 m/sec 0.25 0.21 0.17 0.13 >0.1 15 14 13 12 11	Max. observed at typical transect: 0.05 to 0.1 m/sec 0.1 0.09 0.07 0.06 0.05 10 9 8 7 6	Max. observed at typical transect: <0.05 m/sec; or spate occurring: > 1 m/sec <0.05 0.04 0.03 0.01 <0.01 5 4 3 <u>2</u> 1
Habitat Dotted Primary Score <u>19</u>	Adequate number of stable pools (1-2 per 12 times width) and <25% of habitats affected by sand, silt, or algae. 20 19 18 17 16	Adequate number of stable pools (1-2 per 12 times width) and >25% of habitats affected by sand, silt, or algae. 15 14 13 12 11	Does not have required number of stable pools (1-2 per 12 x width) and/or has shallow pools (<2 x prevailing depth). 10 9 8 7 6	Stable pools are absent. Most habitats affected by sand, silt, or algae accumulation. 5 <u>4</u> 3 2 1
Secondary Habitat Components	Expected sinuosity given the stream width. No evidence of dredging or artificial straightening. No spoil banks.	Good sinuosity within old channelized area. Evidence of dredging in the past (>25 yrs) but mostly recovered.	Straightened with trapezoidal cross section, but has a small degree of sinuosity developed within channelized area.	Straightened or engineered by dredging, has trapezoidal or box cut cross section, lacks required pools. May have spoil banks.
Artificial Channelization <u>2</u>	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 <u>2</u> 1
Bank Stability Right Bank <u>4</u> Left Bank <u>4</u>	Bankfull > 60% of bank height. Slope of bank ≤ 60° from bankfull to top of bank. Bankfull is within or above the root zone with few raw, eroded areas. 10 9	Only meets 2 of the 3 requirements for optimal bank stability. 8 7 6	Only meets 1 of the 3 requirements for optimal bank stability. <u>5</u> <u>4</u>	Bankfull < 60% of bank height. Slope of bank > 60°. Bankfull is below the root zone with raw, eroded areas. 3 2 1
Riparian Buffer Zone Width Right Bank <u>2</u> Left Bank <u>2</u>	Width of vegetation greater than 18 m 10 9	Width of vegetation >12 to 18m 8 7 6	Width of vegetation 6 to 12 m. human activities close to system 5 4	Less than 6 m of buffer zone due to intensive human activities <u>3</u> <u>2</u> 1
Riparian Zone Vegetation Quality Right Bank <u>3</u> Left Bank <u>3</u> Secondary Score <u>20</u>	Over 80% of riparian surfaces consist of normal, expected plant community for given sunlight & habitat conditions (e.g., native plants; tree, shrub, and forbs represented, if appropriate). Minimal disturbance. 10 9	>50% to 80% of riparian zone is undisturbed (normal, expected plant community for given sunlight & habitat conditions). Some disruption in community observed. 8 7 6	25% to 50% of riparian zone is undisturbed (normal, expected plant community for given sunlight & habitat conditions). Disruption obvious. 5 4	Less than 25% of riparian zone is undisturbed (normal, expected plant community for given sunlight & habitat conditions). <u>3</u> 2 1

39

TOTAL SCORE

Date: <u>12-28-16</u>	Analyst: <u>Corey Anderson</u>	Signature: <u>[Signature]</u>
-----------------------	--------------------------------	-------------------------------

12/28/2016

WBID 3240A3

Zurich Canal at
Banjo Canal

G2SD0020

Field ID

G2SD0020

Date:

Sampler:

Rosemary Murphy

100 m: Latitude

Longitude

0 m: Latitude

Longitude

Substrates: Code key, draw
proportionate habitat abundance.

%



Snags



Roots/undercut banks



Leaf Packs (or mats)



Aquatic Macrophytes



veg

10%



Pools

total # observed = 0

range expected = 0

Average width 20 m

Average depth 1.8 m

Velocity measured at 01 meter mark.

WQ & chemistry taken at 0 meter mark.

Habitat Smothering:

Note areas (on map) where sand or silt is
smothering substrates, limiting habitability.

Bank Stability:

Note areas (on map) with unstable, eroding
banks.

Riparian Buffer Width:

Note areas (on map) where natural vegetation
is altered or eliminated.

Plants observed / other notes:

$$V = \frac{245}{2500} \times 100 =$$

$$S = \frac{4}{7500} \text{ m/sec}$$

Left
Bank

Downstream

20m

Length of grid represents 100 m of stream (not linear meters).
(Horizontal scale is double vertical scale, draw proportionately).