Water Bodies Assessment Field Collection Form

AECOM

General Information

Study Area: Jericho (Goshen) Bluewater **Land Parcel#** 2114 **Site ID:** D20-U/S

Date: Apr 26/12 **Start time:** 11:18 **End Time:** 11:49

Weather Conditions: overcast, light wind.

Field Crew: S. LOHNES, S. AITKEN

Field Notes By: S. LOHNES

Site Location

Roadside Surveys GOSHEN ALT 13 D20 KIRKTON RD east of Goshen L

UTM Co-ordinates (continue on page 3 if necessary)

Easting: 0452184	**Northing:** 4795767	**Description:** H_2O QUAL
Easting:	**Northing:**	**Description:**
Easting:	**Northing:**	**Description:**
Easting:	**Northing:**	**Description:**

Surrounding Landuse

Residential	☐	Meadow	☐
Agriculture	☑	Wetland	☐
Forest	☐	Livestock	☐
Other			

Description: adjacent hydro line

Type of Watercourse

Intermittent	☐	Channelized	☑
Permanent	☑	Natural Channel	☐
Ephemeral	☐		☐

Description: straightened channel, vegetation naturalizing

Notes: (include any inputs into the system i.e. tile drainage, seepages, overland flow)

tile drain a roadway drainage input @ road - R u/s.

Is any portion of the water body underground or not as mapped? Y / (N)

If Yes describe:

GPS Coordinate: Easting - **Northing -** **Description-**

Description of Land Topography Surrounding Water Body (rolling hills, sloping towards water body)

Slightly sloping from active agricultural field (crop) towards w/c. R u/s land flat - FOD adjacent hydro line.

In-Situ Water Quality

WT (°C): 10.29	**AT(°C):** 12°C
pH: 7.84	**Cond (s/cm):** 596
D.O. (mg/L) 13.02	

Water Clarity: Clear ☑ Turbid ☐

Water Colour: brown

Notes: water clear but coloured deeply taken near bridge

Ground Water and Seepage Indications

Watercress	☐	Bank Seepage	☐
Iron Staining	☐	None	☑
Bubbling	☐		☐
Other	☐		

Details:

Water Bodies Assessment Field Collection Form

Stream Morphology

Site Length (m): 2500m

Channel Dimensions

Mean Wetted Width (m):	2.2m	**Mean Wetted Depth (m):**	0.3m
Mean Bankfull Width (m):	5.0m	**Mean Bankfull Depth (m):**	1.0m
Mean Top of Bank Width (m):	8.5m	**Mean Top of Bank Depth (m):**	2.0m

Bank Stability:

	Stable	Slightly unstable	Moderately unstable	Unstable
Left Bank	☑	☐	☐	☐
Right Bank	☑	☐	☐	☐

Description: well vegetated, grasses/shrubs

Flow Description: (high or low flow conditions, stagnant, etc)

low flow, algal growth - mats floating

Habitat

Substrate (< = >)

Bo - Boulder
Co - Cobble
Gr - Gravel
Sa - Sand
Si - Silt
Cl - Clay
MK-Muck
DT-Detritus

Description

Si

Morphological Structure (%)

Pool	Riffle	Run	Flat
		100	

Notes: straightened channel w/ little morph. structure.

Instream Cover (%)

Other	Woody Debris	Boulders	Cobble	Aquatic Vegetation*	None	Undercut Banks
		5		90		Average Depth: (% Cover) /

Note: Low = 0 - 30% ; Moderate = 30 - 75%; High = 75 - 100%

***Aquatic Vegetation Species Present (algae, submergent, emergent etc.)**

aquatic submerged milfoil, attached/floating algae

Canopy Cover (% closed cover):

100-90%	☐	30-1%	☐
90-60%	☐	0%	☐
60-30%	☑		

Types of Cover (% cover)

Trees 10 Shrubs 30 Man-made structures
Grasses Herbaceous Other

Note: Low = 0 - 30%; Moderate = 30 - 60%; High = 60 - 100%

Notes: (vegetation species, types of structures)

willow shrubs, dogwood

Riparian Vegetation

Width of riparian vegetation: L u/s 5m R u/s > 10m

Description of vegetation commuity surrounding 30 m from watercourse:

dense shrubs riparian, active agriculture & FOD

Obstructions to Fish Passage

No Obstructions ☒ **Man-Made** ☐ **Natural** ☐ **Low Flow Barrier** ☐

Description of Barrier:

Height of Barrier (m)

GPS Coordinates:

Water Bodies Assessment Field Collection Form

AECOM | Date: Apr 26/2012 | Land Parcel/Site ID: D20 U/S GSH 21A |

Other General Comments Regarding the Study Area:

Channel moving slowly ~ well vegetated w/ sub veg & floating algae. Relatively good bank + riparian cover u/s and very little d/s. Downstream reach seems managed for veg growth (cut grass laneway + hay field). no riparian shrubs

Additional UTM Coordinates:

Photo log

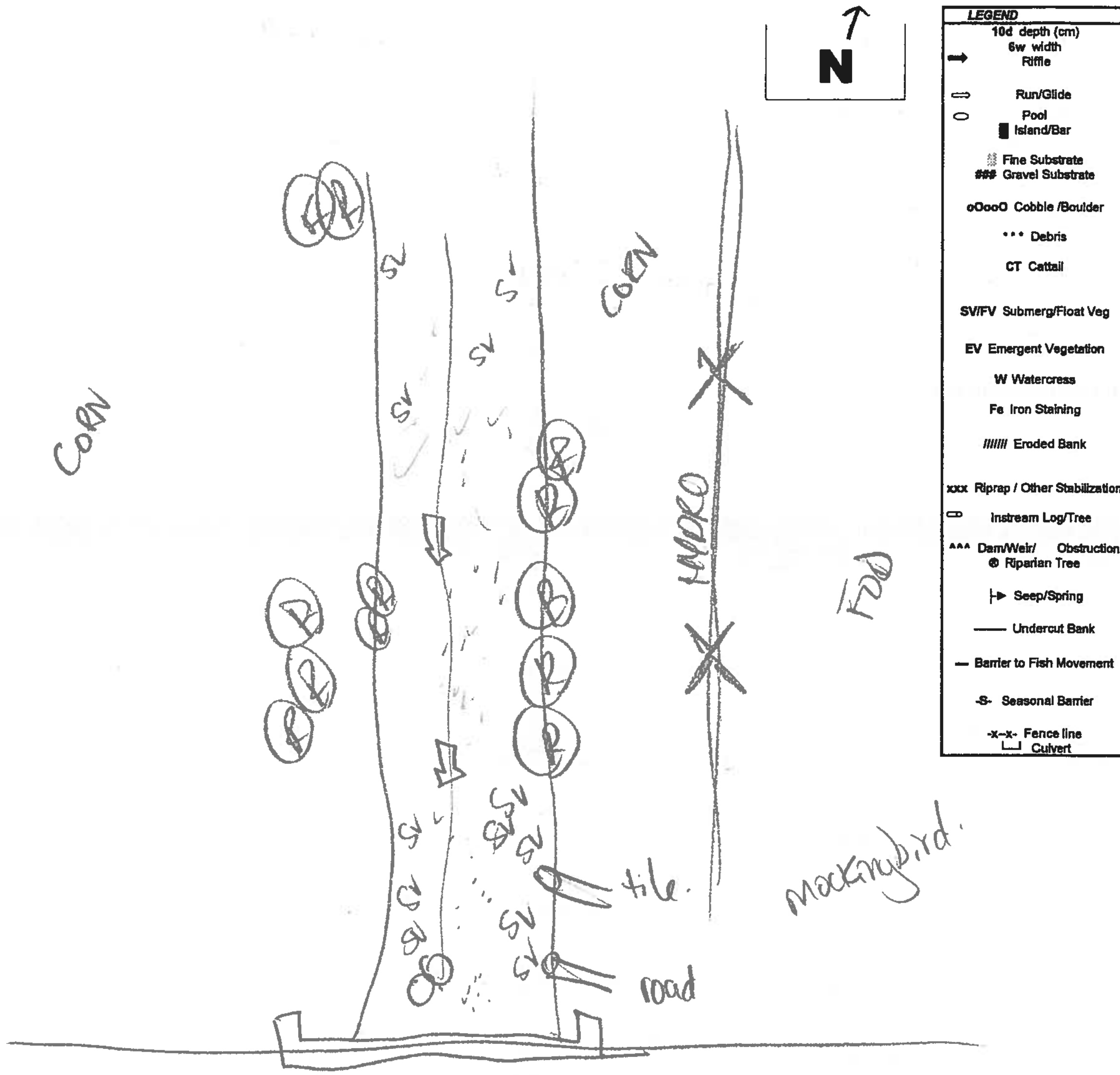
Picture #	Description	Picture #	Description
122	page		
123	substrate / veg.		
124	overview		
125	aquatic veg		
126	algae		
127	d/s. / canopy cover		
128	substrate / veg.	see D20 GSH 21A d/s	
129	looking d/s.		
130	emergent veg / algae		

Water Bodies Assessment Field Collection Form

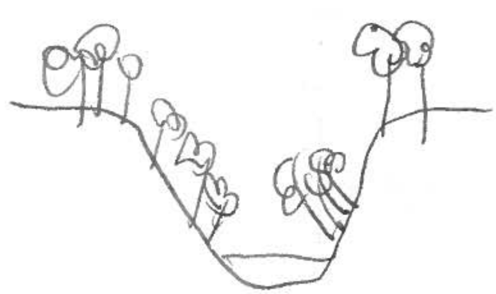
AECOM

Watercourse Sketch

Study Area: Jericho ~~Goshen~~ (circled: Goshen) Bluewater **Land Parcel#** GSH 2114 **Site ID** D20 W/S



Horizontal View of Channel



Initial QA/QC By: L. Bentley **Date:** May 4, 2012 **Technical QA/QC By:** NL **Date:** 8th May 2012

Project Number: 60155032

Water Bodies Assessment Field Collection Form

AECOM

General Information

Study Area: Jericho (Goshen) Bluewater **Land Parcel#** GSH2124 **Site ID:** D20 D/S

Date: APR 26 / 2012 **Start time:** 11:18 **End Time:** 11:49

Weather Conditions: Cloudy, light wind, 12°C

Field Crew: S.LOHNES S.AITKEN

Field Notes By: S.LOHNES

Site Location

GOSHEN, ALT 13 D20 KIRKTON RD east of Goshen Line

UTM Co-ordinates (continue on page 3 if necessary)

Easting:	0452184	**Northing:**	4795767	**Description:**	@ KIRKTON
Easting:		**Northing:**		**Description:**	
Easting:		**Northing:**		**Description:**	
Easting:		**Northing:**		**Description:**	

Surrounding Landuse

Residential	☐	Meadow	☐
Agriculture	☑	Wetland	☐
Forest	☑	Livestock	☐
Other			

Description: hay/natural. roadway drainage @ crossing.

Type of Watercourse

Intermittent	☐	Channelized	☑
Permanent	☑	Natural Channel	☐
Ephemeral	☐		☐

Description: straightened channel, generally wider than u/s.

Notes: (include any inputs into the system i.e. tile drainage, seepages, overland flow)

overland from sloping hayfield — roadway drainage.

Is any portion of the water body underground or not as mapped? Y / (N)

If Yes describe:

GPS Coordinate: Easting - **Northing -** **Description-**

Description of Land Topography Surrounding Water Body (rolling hills, sloping towards water body)

gently slopes from meadow/pasture towards w/c.

In-Situ Water Quality

WT (°C): 10.29 C	**AT(°C):** 12°C
pH: 7.84	**Cond (s/cm):** 596
D.O. (mg/L) 13.02	

Water Clarity: Clear ☑ Turbid ☐

Water Colour: brown

Notes:

Ground Water and Seepage Indicators

Watercress	☑	Bank Seepage	☐
Iron Staining	☐	None	☐
Bubbling	☐		☐
Other	☐		

Details: mats of watercress

Water Bodies Assessment Field Collection Form

Stream Morphology

Site Length (m): 250m

Channel Dimensions

Mean Wetted Width (m):	3.0m	**Mean Wetted Depth (m):**	0.4m
Mean Bankfull Width (m):	3.5m	**Mean Bankfull Depth (m):**	0.8m.
Mean Top of Bank Width (m):	7.0m	**Mean Top of Bank Depth (m):**	3.0m

Bank Stability:

	Stable	Slightly unstable	Moderately unstable	Unstable
Left Bank	☑	☐	☐	☐
Right Bank	☑	☐	☐	☐

Description: banks vegetated + stable

Flow Description: (high or low flow conditions, stagnant, etc)

low flow but visibly moving.

Habitat

Substrate (< = >)

Bo - Boulder
Co - Cobble
Gr - Gravel
Sa - Sand
Si - Silt
Cl - Clay
MK-Muck
DT-Detritus

Description

Si >> Bo.

Morphological Structure (%)

Pool	Riffle	Run	Flat
		100%	

Notes:

Instream Cover (%)

Other	Woody Debris	Boulders	Cobble	Aquatic Vegetation*	None	Undercut Banks
		5		70		Average Depth: (% Cover)

Note: Low = 0 - 30% ; Moderate = 30 - 75%; High = 75 - 100%

***Aquatic Vegetation Species Present (algae, submergent, emergent etc.)**

floating & attached algae blooms; watercress

Canopy Cover (% closed cover):

100-90%	☐	30-1%	☑
90-60%	☐	0%	☑
60-30%	☐		

Types of Cover (% cover)

Trees _____ Shrubs ✓ Man-made structures _____
Grasses _____ Herbaceous _____ Other _____

Note: Low = 0 - 30%; Moderate = 30 - 60%; High = 60 - 100%

Notes: (vegetation species, types of structures)

sparse small willow shrubs.

Riparian Vegetation

Width of riparian vegetation: L u/s 5m R u/s wooded

Description of vegetation commuity surrounding 30 m from watercourse:

FOD & hay field under hydro line.

Obstructions to Fish Passage

No Obstructions ☒ **Man-Made** ☐ **Natural** ☐ **Low Flow Barrier** ☐

Description of Barrier:

Height of Barrier (m)

GPS Coordinates:

Water Bodies Assessment Field Collection Form

AECOM | Date: APR 26/2012 | Land Parcel/Site ID: D20 D/S GSH 2124 |

Other General Comments Regarding the Study Area:

watercourse runs northwesterly under a hydro transmission line and is bordered on the east by deciduous forest and on the west by hay to the south and row crop to the north large mats of vegetation (watercress) slow the flow of water in the d/s reach, while the u/s reach is well shaded by overhanging shrubs + trees.

Additional UTM Coordinates:

Photo log

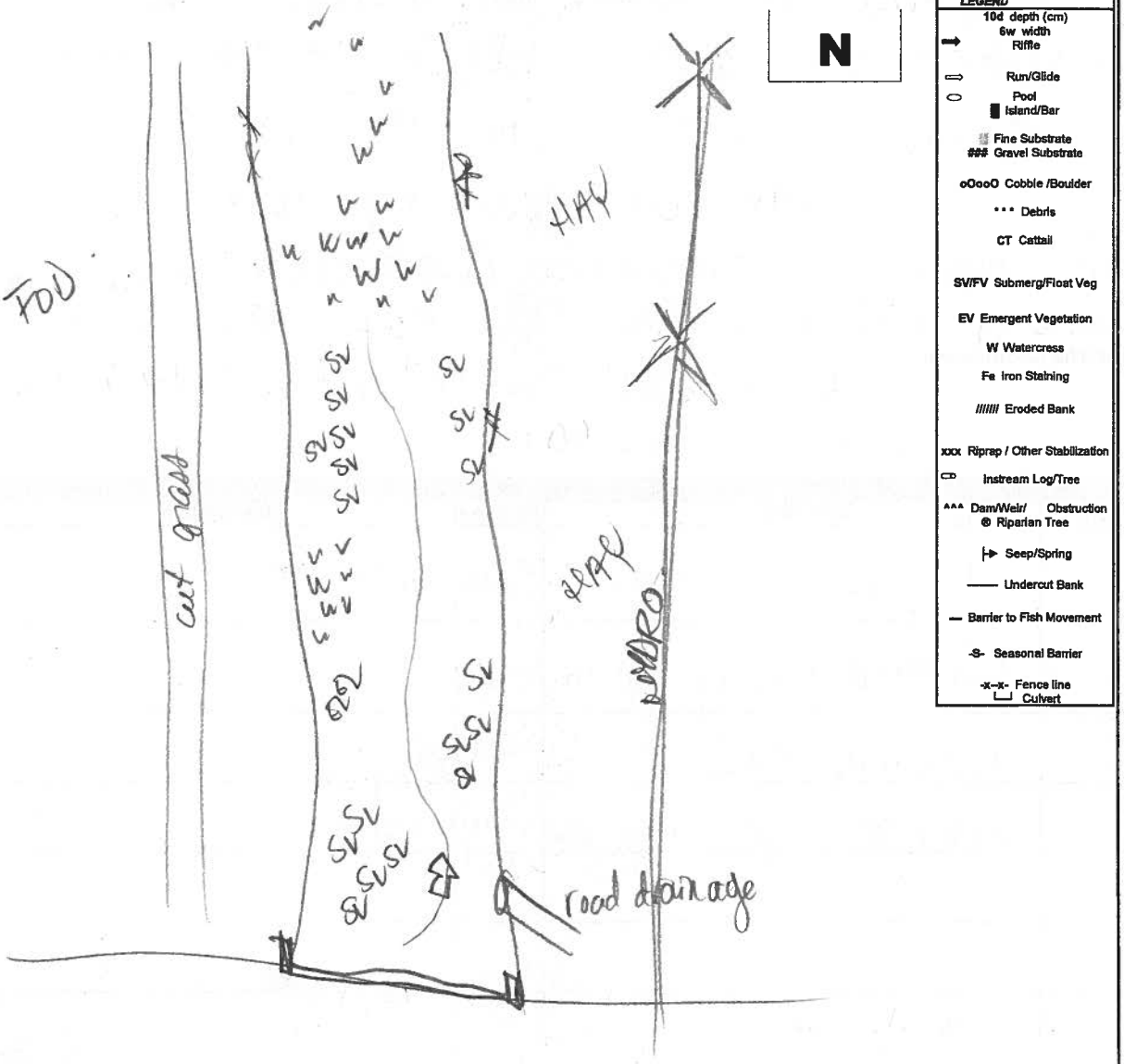
Picture #	Description	Picture #	Description
1	d/s canopy cover	(IMG 2907)	
2	substrate/veg	(IMG 2908)	
3	looking d/s	(IMG 2909)	
4	emergent veg + algae	(IMG 2910)	

Water Bodies Assessment Field Collection Form

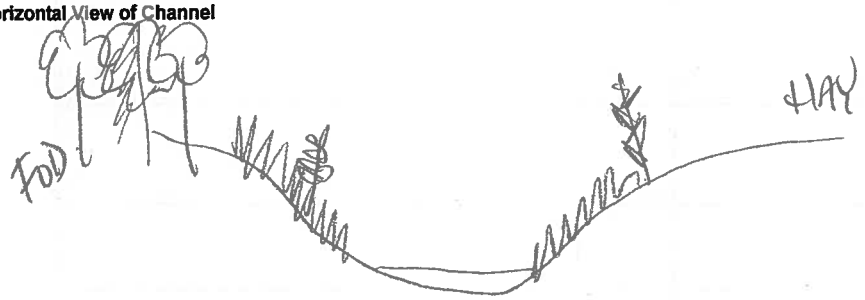
AECOM

Watercourse Sketch

Study Area: Jericho (Goshen) Bluewater **Land Parcel#** GSH 2124 **Site ID** D20 D/S.



Horizontal View of Channel



Initial QA/QC By: L. Bentley Date: May 4, 2012 Technical QA/QC By: NL Date: May 8th 2012

Water Bodies Assessment Field Collection Form

AECOM

General Information

Study Area: Jericho (Goshen) Bluewater **Land Parcel#** 2480/2867 **Site ID:** D23 North

Date: May 10 /12 **Start time:** 14:30 **End Time:** 15:15

Weather Conditions: Sunny, 12°C

Field Crew: C. Boros / J. Epp

Field Notes By: C. Boros

Site Location

Airport Line, North of Crediton

UTM Co-ordinates (continue on page 3 if necessary)

Easting:	459633	**Northing:**	4795751	**Description:**	D23N start
Easting:	459538	**Northing:**	4795448	**Description:**	D23N end
Easting:		**Northing:**		**Description:**	
Easting:		**Northing:**		**Description:**	

Surrounding Landuse

Residential	☒	Meadow	☐
Agriculture	☒	Wetland	☐
Forest	☐	Livestock	☐
Other			

Description: planted field - possibly Corn.

Type of Watercourse

Intermittent	☐	Channelized	☒
Permanent	☒	Natural Channel	☐
Ephemeral	☐	_____	☐

Description: Channelized

64 - 17
53

Notes: (include any inputs into the system i.e. tile drainage, seepages, overland flow)

tile drains observed throughout - 1 flowing

Is any portion of the water body underground or not as mapped? Y / (N)

If Yes describe:

/ / /

GPS Coordinate: Easting - **Northing -** **Description-**

Description of Land Topography Surrounding Water Body (rolling hills, sloping towards water body)

flat

In-Situ Water Quality

WT (°C):	20°C	**AT(°C):**	12°C
pH:	/	**Cond (s/cm):**	/
D.O. (mg/L)	/		

Water Clarity: Clear ☒ Turbid ☐

Water Colour: n/a

Notes: w/q meter not working

Ground Water and Seepage Indicators

Watercress	☐	Bank Seepage	☐
Iron Staining	☐	None	☐
Bubbling	☐	Water Speedwell	☒
Other	☐		

Details: completely mask the watercourse until it hits the road.

Water Bodies Assessment Field Collection Form

Stream Morphology

Site Length (m): 200m

Channel Dimensions

Mean Wetted Width (m):	0.9	**Mean Wetted Depth (m):**	0.11
Mean Bankfull Width (m):	1.3	**Mean Bankfull Depth (m):**	0.35
Mean Top of Bank Width (m):	3	**Mean Top of Bank Depth (m):**	1.75

Bank Stability:

	Stable	Slightly unstable	Moderately unstable	Unstable
Left Bank	☒	☐	☐	☐
Right Bank	☒	☐	☐	☐

Description: well vegetated

Flow Description: (high or low flow conditions, stagnant, etc)

no flow at start of watercourse, slow flow in ditch along road

Habitat

Substrate (< = >)

Bo - Boulder
Co - Cobble
Gr - Gravel
Sa - Sand
Si - Silt
Cl - Clay
MK-Muck
DT-Detritus

Description

Si=Cl=mk

Morphological Structure (%)			
Pool	**Riffle**	**Run**	**Flat**
5			95

Notes: 2 large pools at road culvert

Instream Cover (%) 95

Other	Woody Debris	Boulders	Cobble	Aquatic Vegetation*	None	Undercut Banks
/	1	4	/	90	/	Average Depth: / (% Cover)

Note: Low = 0 - 30% ; Moderate = 30 - 75%; High = 75 - 100%

***Aquatic Vegetation Species Present (algae, submergent, emergent etc.)**

water speedwell > algae (attached + filamentous) > grasses > pondweed

Canopy Cover (% closed cover):

100-90%	☐	**30-1%**	☒
90-60%	☐	**0%**	☐
60-30%	☐		

Types of Cover (% cover)

Trees _____ **Shrubs** 100 **Man-made structures** _____

Grasses _____ **Herbaceous** _____ **Other** _____

Note: Low = 0 - 30%; Moderate = 30 - 60%; High = 60 - 100%

Notes: (vegetation species, types of structures)

could not ID species

Riparian Vegetation

Width of riparian vegetation: <1m - grasses, herbaceous

Description of vegetation community surrounding 30 m from watercourse:

agri: crop fields + one small section of residential

Obstructions to Fish Passage

No Obstructions ☒ **Man-Made** ☐ **Natural** ☐ **Low Flow Barrier** ☐

Description of Barrier:

Height of Barrier (m) /

GPS Coordinates: /

Water Bodies Assessment Field Collection Form

AECOM | Date: May 10/12 | Land Parcel/Site ID: D23 north 2480/2867 |

Other/General Comments Regarding the Study Area:

- watercourse is most likely buried and then pops out north of house b/c mapping is accurate
- Chimney crayfish homes noted at start of watercourse
- schools of cyprinids observed along road side and pool at culvert

Watercourse straight channelized - water speedwell mats entire watercourse until it reaches the road. At start flowing and has high instream cover from algae, grasses, speedwell. Substrate silt/mk.

Additional UTM Coordinates:

Photo log

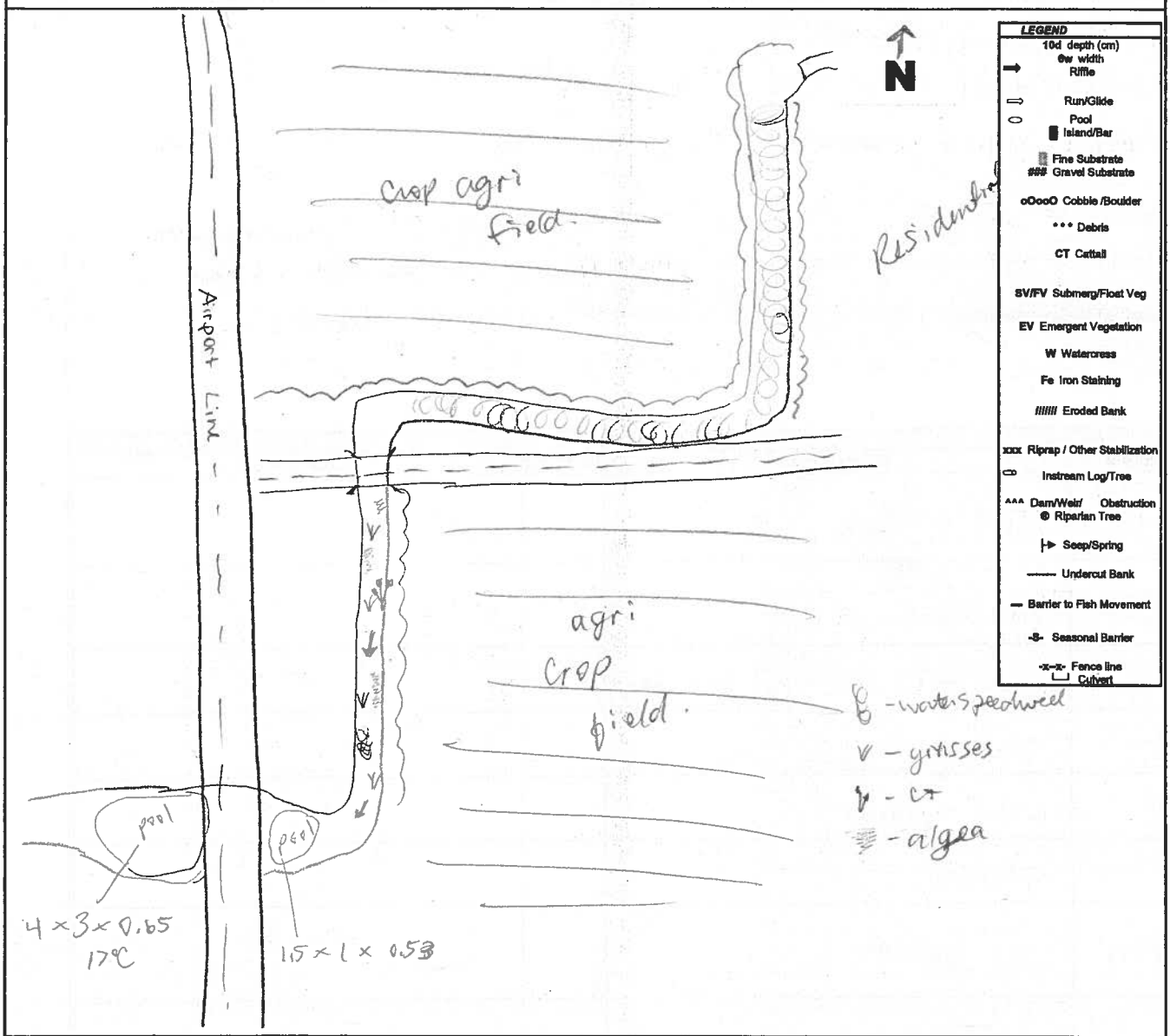
Picture #	Description	Picture #	Description
1-2	start of water course		
3	tile drain at start		
4	water course d/s of tile drain		
5-7	Chimney Crayfish homes		
8	water speedwell		
9-10	overview		
11-12	red Speedwell		
13-14	overview		
15	culvert to South side		
16-20	S side overview		
21-22	Culvert at road		
23-24	west side of Airport Ln.		

Water Bodies Assessment Field Collection Form

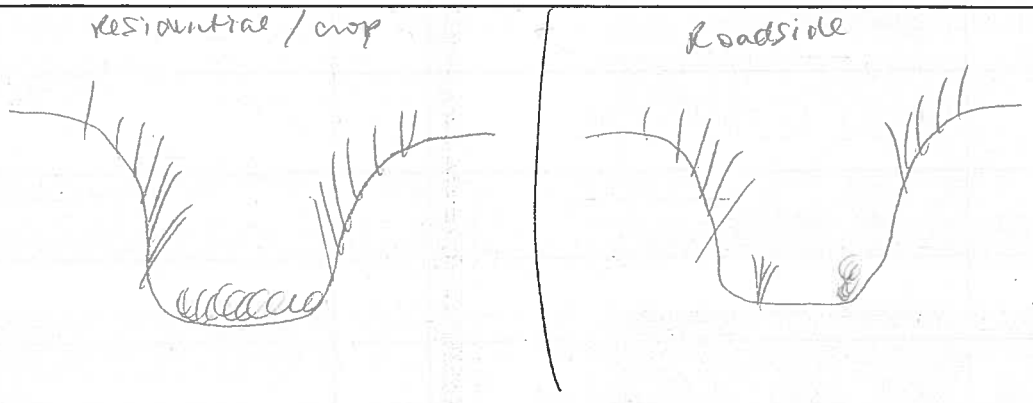
AECOM

Watercourse Sketch

Study Area: Jericho Goshen Bluewater **Land Parcel#** 2480/2867 **Site ID** D23 North



Horizontal View of Channel



Initial QA/QC By: L. Bentley Date: May 16, 2012 Technical QA/QC By: Date:

Water Bodies Assessment Field Collection Form

AECOM

ASA 2927

General Information

Study Area: Jericho (Goshen) Bluewater **Land Parcel#** GSH 2933/2927 **Site ID:** D23

Date: June 22/12 **Start time:** 12:30 **End Time:** 13:30

Weather Conditions: Sunny, 29°C

Field Crew: C. Boros, J. Epp

Field Notes By: C. Boros

Site Location

Crediton Ln + Airport Road.

UTM Co-ordinates (continue on page 3 if necessary)

Easting:	459462	**Northing:**	4794864	**Description:**	D23WP
Easting:	459475	**Northing:**	4795113	**Description:**	D23END
Easting:		**Northing:**		**Description:**	
Easting:		**Northing:**		**Description:**	

Surrounding Landuse

Residential	☒	**Meadow**	☐
Agriculture	☒	**Wetland**	☐
Forest	☐	**Livestock**	☐
Other			

Description: agri field on East - soy
Residential on West

Type of Watercourse

Intermittent	☐	**Channelized**	☒
Permanent	☒	**Natural Channel**	☒
Ephemeral	☐		☐

Description: historically channelized but naturalizing

Notes: (include any inputs into the system i.e. tile drainage, seepages, overland flow)

Is any portion of the water body underground or not as mapped? Y / (N)
If Yes describe:

GPS Coordinate: Easting - / **Northing -** / **Description-** /

Description of Land Topography Surrounding Water Body (rolling hills, sloping towards water body)

Flat

In-Situ Water Quality

WT (°C):	19.6	**AT(°C):**	20°C
pH:	7.86	**Cond (µs/cm):**	670
D.O. (mg/L)	6.62		

Water Clarity: Clear ☒ Turbid ☐

Water Colour: n/a

Notes: small pool inside of Convergence area, width = 0.10m

Ground Water and Seepage Indicators

Watercress	☒	**Bank Seepage**	☐
Iron Staining	☐	**None**	☐
Bubbling	☐	Water Speedwell	☒
Other	☐		

Details: small clumps throughout

Water Bodies Assessment Field Collection Form

Stream Morphology

Site Length (m): 280m

Channel Dimensions

Mean Wetted Width (m):	1 m	Mean Wetted Depth (m):	0.12
Mean Bankfull Width (m):	1.2	Mean Bankfull Depth (m):	0.25
Mean Top of Bank Width (m):	3	Mean Top of Bank Depth (m):	2

Bank Stability:

	Stable	Slightly unstable	Moderately unstable	Unstable
Left Bank	☐	☒	☐	☐
Right Bank	☐	☒	☐	☐

Description: some evidence of erosion

Flow Description: (high or low flow conditions, stagnant, etc)

slow flow, moderate water level

Habitat

Substrate (< = >)

Bo - Boulder
Co - Cobble
Gr - Gravel
Sa - Sand
Si - Silt
Cl - Clay
MK-Muck
DT-Detritus

Description

Si = gr = Sa > Co

Morphological Structure (%)

Pool	Riffle	Run	Flat
10	15	10	65

Notes:

Instream Cover (%) 70

Other	Woody Debris	Boulders	Cobble	Aquatic Vegetation*	None	Undercut Banks
/	10	10	~~35~~	15	/	Average Depth: (% Cover) /

Note: Low = 0 - 30% ; Moderate = 30 - 75%; High = 75 - 100%

***Aquatic Vegetation Species Present (algae, submergent, emergent etc.)**

algea - attached > grasses

Canopy Cover (% closed cover):

100-90%	☐	30-1%	☐
90-60%	☒	0%	☐
60-30%	☐		

Types of Cover (% cover)

Trees 80 Shrubs 15 Man-made structures ____

Grasses 5 Herbaceous ____ Other ____

Note: Low = 0 - 30%; Moderate = 30 - 60%; High = 60 - 100%

Notes: (vegetation species, types of structures)

haw thorn, black walnut, dogwood

Riparian Vegetation

Width and Description of riparian vegetation:

LB - 23m - meadow w trees

RB - ~10m - meadow w trees

Overhanging Vegetation Present Y / N

% Overhanging Vegetation: 7

Description of Overhanging Vegetation:

some dogwood overhanging - covers entire stream width

Obstructions to Fish Passage

None Observed ☒ **Man-Made** ☐ **Natural** ☐ **Low Flow Barrier** ☐

Description of Barrier:

Height of Barrier (m)

GPS Coordinates:

Water Bodies Assessment Field Collection Form

AECOM | Date: June 22/12 | Land Parcel/Site ID: D23 – GSH2933/2927 |

Other General Comments Regarding the Study Area:

– minnows observed, stickleback

→ Main channel assessed Channelized stream that is naturalizing. Canopy cover dense due to large trees. small riffle, run, pool sections.

D23 Branch – previously surveyed east 100m → this visit confirmed west 100m is similar in nature & update other assessment field sheets.

Additional UTM Coordinates:

GrSH2928 → water course looks similar for 15m

AS A

Photo log

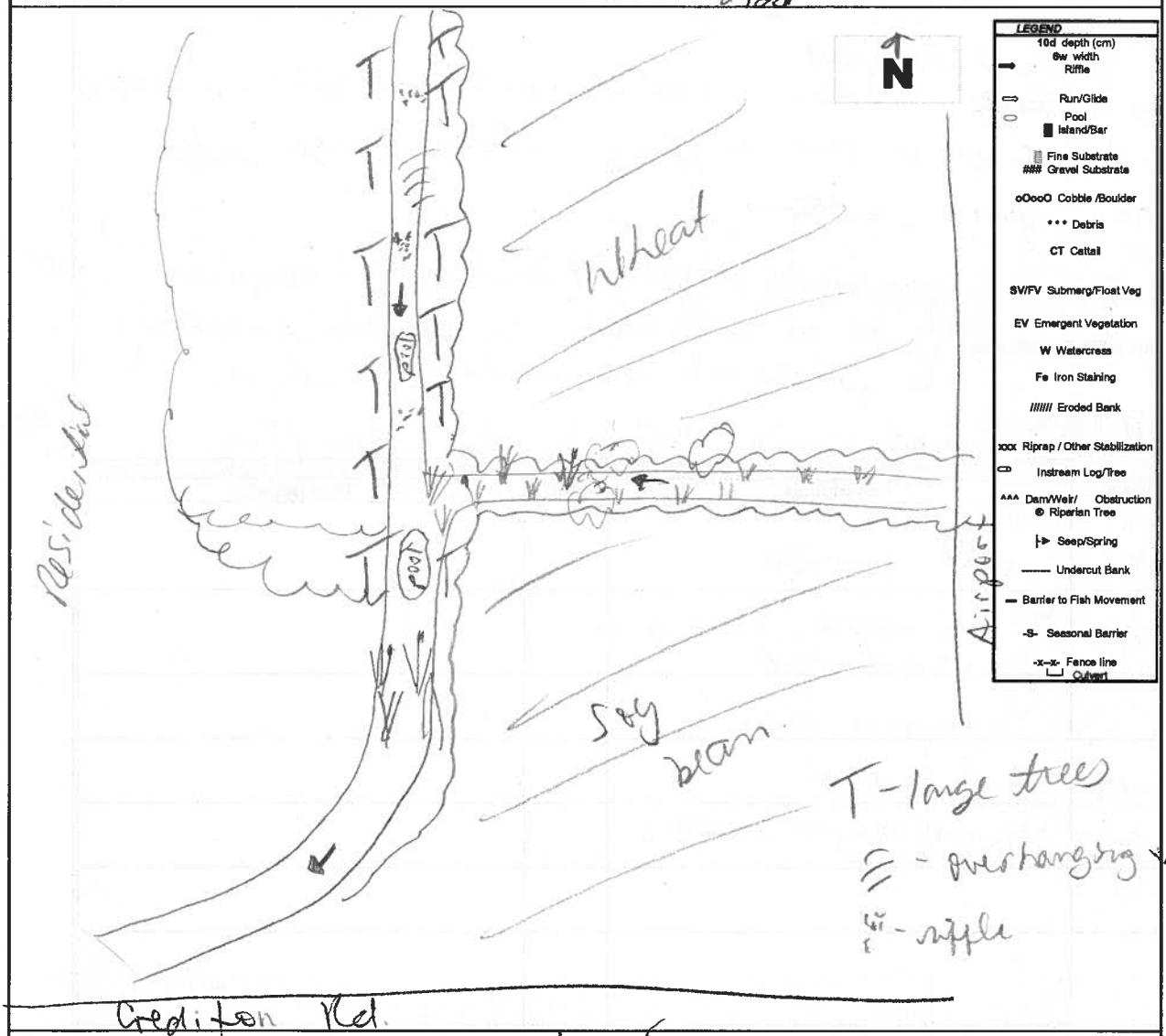
Picture #	Description	Picture #	Description
1a 1b	sheet site overview		
2-9	Channel overview starting from south end		
10	Convergence area		
11-14	east branch		
15-32	Channel overview walking to north branch		

Water Bodies Assessment Field Collection Form

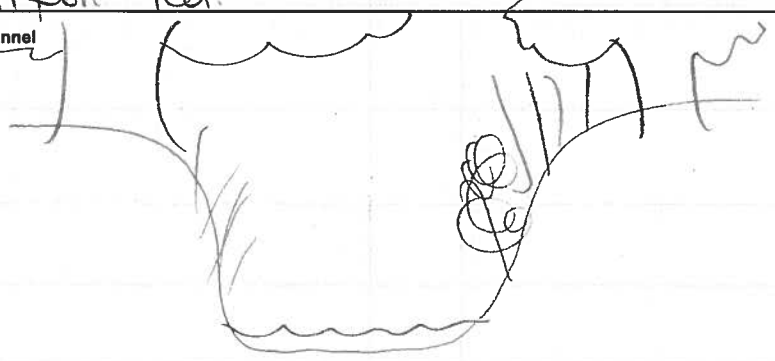
AECOM

Watercourse Sketch

Study Area: Jericho (Goshen) Bluewater GSH **Land Parcel#** 2933/2928 **Site ID** 1023



Horizontal View of Channel



Initial QA/QC By: L. Bentley Date: June 26, 2012 Technical QA/QC By: [signature] Date: July 10/12

Water Bodies Assessment Field Collection Form

AECOM

General Information

Study Area: Jericho (Goshen) Bluewater **Land Parcel#** GSH2927 **Site ID:** D23

Date: June 22/12 **Start time:** ~~13~~ 13:30 **End Time:** 13:45

Weather Conditions: Sunny, 20°C

Field Crew: C. Boros, J. Epp

Field Notes By: C. Boros

Site Location

East side of Airport Line, north of Creation Road

Roadside Survey

UTM Co-ordinates (continue on page 3 if necessary)

Easting:	459537	**Northing:**	4795449	**Description:**	D23 GSH2927
Easting:		**Northing:**		**Description:**	
Easting:		**Northing:**		**Description:**	
Easting:		**Northing:**		**Description:**	

Surrounding Landuse

Residential	☐	Meadow	☐
Agriculture	☒	Wetland	☐
Forest	☐	Livestock	☐
Other			

Description: Corn + soy bean

Type of Watercourse

Intermittent	☐	Channelized	☒
Permanent	☒	Natural Channel	☐
Ephemeral	☐		☐

Description: Straight

Notes: (include any inputs into the system i.e. tile drainage, seepages, overland flow)

None observed

Is any portion of the water body underground or not as mapped? Y / (N)

If Yes describe:

GPS Coordinate: Easting - **Northing -** **Description-**

Description of Land Topography Surrounding Water Body (rolling hills, sloping towards water body)

flat

In-Situ Water Quality

WT (°C):	**AT(°C):**
pH:	**Cond (s/cm):**
D.O. (mg/L)	

Water Clarity: Clear ☐ Turbid ☐

Water Colour:

Notes:

Ground Water and Seepage Indicators

Watercress	☐	Bank Seepage	☐
Iron Staining	☐	None	☐
Bubbling	☐		☐
Other	☐		

Details:

Water Bodies Assessment Field Collection Form

Stream Morphology

Site Length (m):

Channel Dimensions

Mean Wetted Width (m):		Mean Wetted Depth (m):	
Mean Bankfull Width (m):		Mean Bankfull Depth (m):	
Mean Top of Bank Width (m):		Mean Top of Bank Depth (m):	

Bank Stability:

	Stable	Slightly unstable	Moderately unstable	Unstable
Left Bank	☐	☐	☐	☐
Right Bank	☐	☐	☐	☐

Description:

Flow Description: (high or low flow conditions, stagnant, etc)

Habitat

Substrate (< = >)

Bo - Boulder
Co - Cobble
Gr - Gravel
Sa - Sand
Si - Silt
Cl - Clay
MK-Muck
DT-Detritus

Description

Notes:

Morphological Structure (%)			
Pool	Riffle	Run	Flat

Instream Cover (%)

Other	Woody Debris	Boulders	Cobble	Aquatic Vegetation*	None	Undercut Banks
						Average Depth: (% Cover)

Note: Low = 0 - 30% ; Moderate = 30 - 75%; High = 75 - 100%

***Aquatic Vegetation Species Present (algae, submergent, emergent etc.)**

Canopy Cover (% closed cover):

100-90% ☐ 30-1% ☐
90-60% ☐ 0% ☐
60-30% ☐

Types of Cover (% cover)

Trees _____ Shrubs _____ Man-made structures _____
Grasses _____ Herbaceous _____ Other _____

Note: Low = 0 - 30%; Moderate = 30 - 60%; High = 60 - 100%

Notes: (vegetation species, types of structures)

Riparian Vegetation

Width and Description of riparian vegetation: LB - RB -

Overhanging Vegetation Present Y / N **% Overhanging Vegetation:**

Description of Overhanging Vegetation:

Obstructions to Fish Passage

None Observed ☐ **Man-Made** ☐ **Natural** ☐ **Low Flow Barrier** ☐

Description of Barrier:

Height of Barrier (m)

GPS Coordinates:

Water Bodies Assessment Field Collection Form

AECOM Date: June 22nd Land Parcel/Site ID: D23-GSH2927

Other General Comments Regarding the Study Area:

All GSH 2867. Your details

Additional UTM Coordinates:

Photo log

Picture #	Description	Picture #	Description
1-3	East side.		
4-6	West side.		

Water Bodies Assessment Field Collection Form

AECOM

Watercourse Sketch

Study Area: Jericho (Goshen) Bluewater **Land Parcel#** GSH 2927 **Site ID** 003

N

LEGEND
- 10d depth (cm)
- 0w width
- Riffle
- Run/Glide
- Pool
- Island/Bar
- Fine Substrate
- ### Gravel Substrate
- oOooO Cobble /Boulder
- *** Debris
- CT Cattail
- SV/FV Submerg/Float Veg
- EV Emergent Vegetation
- W Watercress
- Fe Iron Staining
- ////// Eroded Bank
- xxx Riprap / Other Stabilization
- Instream Log/Tree
- ^^^ Dam/Weir/ Obstruction
- © Riparian Tree
- Seep/Spring
- Undercut Bank
- Barrier to Fish Movement
- -S- Seasonal Barrier
- -x-x- Fence line
- Culvert

Horizontal View of Channel

Initial QA/QC By: L. Bentley Date: June 26, 2012 Technical QA/QC By: [signature] Date: July 10/12

Water Bodies Assessment Field Collection Form

AECOM

General Information

Study Area: Jericho (Goshen) Bluewater **Land Parcel#** 2770 / 3130 **Site ID:** D26

Date: May 1 / 12 **Start time:** 14:45 **End Time:** 15:25

Weather Conditions: Cloudy

Field Crew: C. Boros, J. Harnden

Field Notes By: C. Boros

Site Location

Crediton Rd, East of McTaggart Line

UTM Co-ordinates (continue on page 3 if necessary)

Easting: 0466125	**Northing:** 4795748	**Description:** D26N - Start	
Easting: 0466040	**Northing:** 4795566	**Description:** D26S - End	
Easting:	**Northing:**	**Description:**	
Easting:	**Northing:**	**Description:**	

Surrounding Landuse

Residential	☐	Meadow	☐
Agriculture	☒	Wetland	☐
Forest	☐	Livestock	☐
Other			

Description: Crop fields

Type of Watercourse

Intermittent	☐	Channelized	☒
Permanent	☒	Natural Channel	☐
Ephemeral	☐		☐

Description: potentially maintained channel

Notes: (Include any inputs into the system i.e. tile drainage, seepages, overland flow)

tile drain inputs observed - v.s low flow

Is any portion of the water body underground or not as mapped? Y / (N)

If Yes describe:

GPS Coordinate: Easting - **Northing -** **Description-**

Description of Land Topography Surrounding Water Body (rolling hills, sloping towards water body)

flat

In-Situ Water Quality

WT (°C): 11.27	AT(°C): 17°C
pH: 7.92	Cond (µs/cm): 485
D.O. (mg/L) 15.9	

Water Clarity: Clear ☒ Turbid ☐

Water Colour: n/a

Notes: algae observed

Ground Water and Seepage Indicators

Watercress	☐	Bank Seepage	☐
Iron Staining	☐	None	☒
Bubbling	☐		☐
Other	☐		

Details:

Water Bodies Assessment Field Collection Form

Stream Morphology

Site Length (m): 120m

Channel Dimensions

Mean Wetted Width (m):	2.2	**Mean Wetted Depth (m):**	0.18
Mean Bankfull Width (m):	3.5	**Mean Bankfull Depth (m):**	0.9
Mean Top of Bank Width (m):	7	**Mean Top of Bank Depth (m):**	4

Bank Stability:

	Stable	Slightly unstable	Moderately unstable	Unstable
Left Bank	☐	☒	☐	☐
Right Bank	☐	☒	☐	☐

Description: exposed soils but no evidence of meandering

Flow Description: (high or low flow conditions, stagnant, etc)

slow flow, low gradient

Habitat

Substrate (< = >)

Bo - Boulder
Co - Cobble
Gr - Gravel
Sa - Sand
Si - Silt
Cl - Clay
MK-Muck
DT-Detritus

Description

Si, Cl >> gr

Morphological Structure (%)			
Pool	**Riffle**	**Run**	**Flat**
			100

Notes:

no meanders
→ a couple areas were deeper (ie small pools)

Instream Cover (%)

Other	Woody Debris	Boulders	Cobble	Aquatic Vegetation*	None	Undercut Banks
/	/	/	/	30%	/	Average Depth: (% Cover) /

Note: Low = 0 - 30% ; Moderate = 30 - 75%; High = 75 - 100%

***Aquatic Vegetation Species Present (algae, submergent, emergent etc.)**

algae (attached)/submergent veg.

Canopy Cover (% closed cover):

100-90%	☐	**30-1%**	☒
90-60%	☐	**0%**	☐
60-30%	☐		

Types of Cover (% cover)

Trees _____ **Shrubs** _____ **Man-made structures** _____
Grasses _____ **Herbaceous** _____ **Other** _____

Note: Low = 0 - 30%; Moderate = 30 - 60%; High = 60 - 100%

Notes: (vegetation species, types of structures)

2 shrubs noted on south side - very sparse coverage

Riparian Vegetation

Width of riparian vegetation: 1m

Description of vegetation commuity surrounding 30 m from watercourse: grasses

Obstructions to Fish Passage

No Obstructions ☒ **Man-Made** ☐ **Natural** ☐ **Low Flow Barrier** ☐

Description of Barrier:

Height of Barrier (m)

GPS Coordinates:

Water Bodies Assessment Field Collection Form

AECOM | Date: May 1 /12 | Land Parcel/Site ID: D2b GSH 2770/3130 |

Other General Comments Regarding the Study Area:

straight channelized stream, no canopy cover, low instream cover, soft bottom

- no bird nests observed under bridge
- redwinged blackbird + robin observed

Additional UTM Coordinates:

Photo log

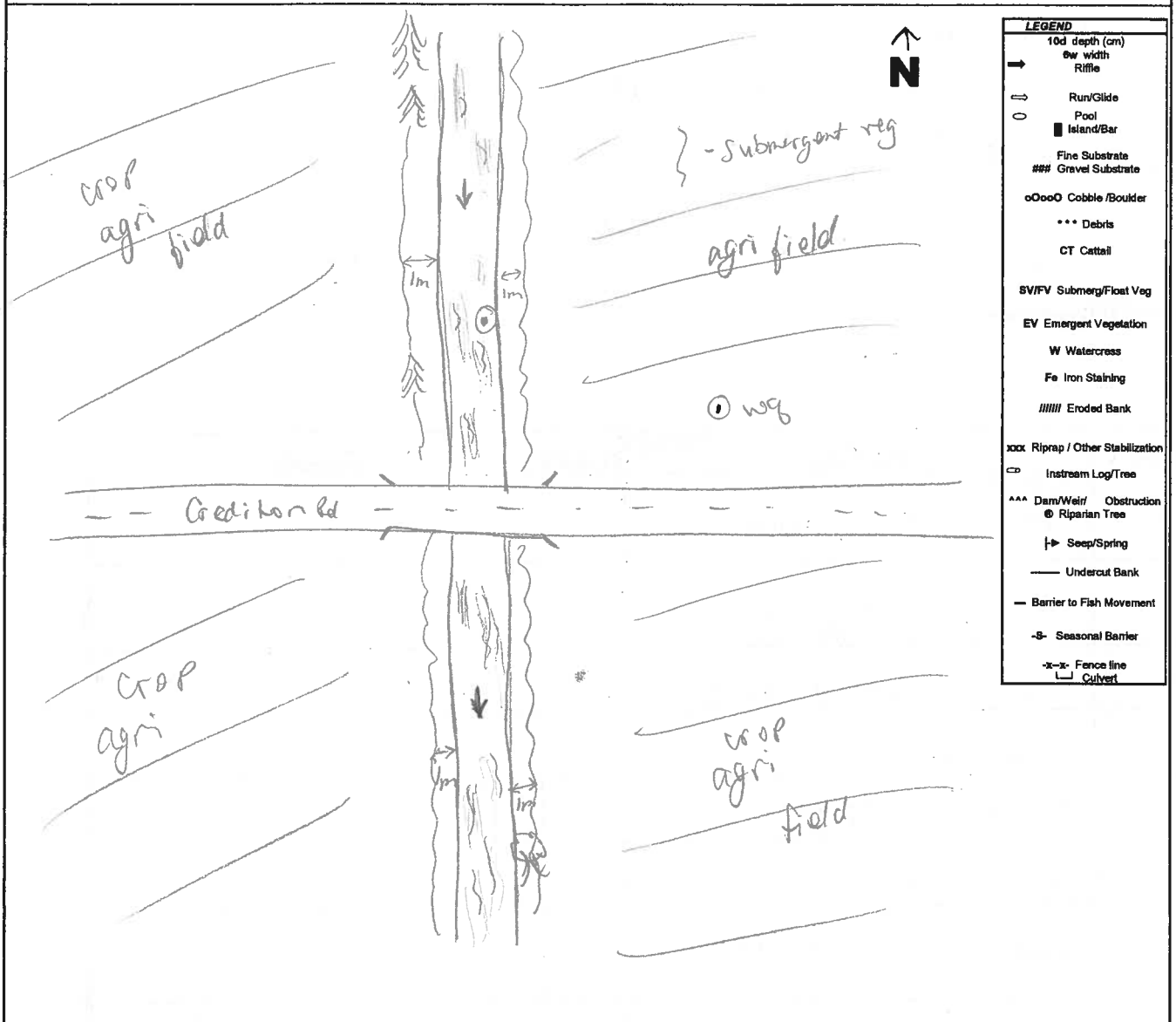
Picture #	Description	Picture #	Description
1a 1b	Sheet overview looking North		
2	overview looking South		
3	looking South to bridge		
4,5	Substrate		
6	Tile drain N side		
7,8	under bridge		
9	watercourse under bridge		
10	tile drain S side		
11	S side channel.		

Water Bodies Assessment Field Collection Form

AECOM

Watercourse Sketch

Study Area: Jericho (Goshen) Bluewater **Land Parcel#** 2770/3130 **Site ID** 026



Horizontal View of Channel

Initial QA/QC By: L. Bentley Date: May 8, 2012 Technical QA/QC By: Sathen Date: May 18/12

Water Bodies Assessment Field Collection Form

AECOM

General Information

Study Area: Jericho (Goshen) Bluewater **Land Parcel#** 2769 / 2768 **Site ID:** 027

Date: May 9 / 12 **Start time:** 14:10 **End Time:** 15:40

Weather Conditions: Cloudy, 14°C

Field Crew: C. Boros, J. Epp

Field Notes By: C. Boros

Site Location

Credition Rd, West of Hern Ln.

Roaside Survey for GSH 2768

UTM Co-ordinates (continue on page 3 if necessary)

Easting:	468 851	**Northing:**	4795971	**Description:**	027 start
Easting:	468380	**Northing:**	4796066	**Description:**	027 wq
Easting:	468699	**Northing:**	4796200	**Description:**	027 end
Easting:		**Northing:**		**Description:**	

Surrounding Landuse

Residential	☐	Meadow	☐
Agriculture	☒	Wetland	☐
Forest	☐	Livestock	☐
Other			

Description: ploughed fields

Type of Watercourse

Intermittent	☐	Channelized	☒
Permanent	☒	Natural Channel	☒
Ephemeral	☐	_____	☐

Description: - appears to be natural in forest area and naturalizing in channel adjacent to agri fields

Notes: (include any inputs into the system i.e. tile drainage, seepages, overland flow)

tile drain inputs observed - one flowing, 4 not

Is any portion of the water body underground or not as mapped? Y (N)

If Yes describe:

GPS Coordinate: Easting - **Northing -** **Description-**

Description of Land Topography Surrounding Water Body (rolling hills, sloping towards water body)

flat

In-Situ Water Quality

WT (°C):	16.90	**AT(°C):**	14
pH:	8.17	**Cond (μ s/cm):**	513
D.O. (mg/L)	23.69		

Water Clarity: Clear ☒ Turbid ☐

Water Colour: n/a

Notes: wq taken at edge of pool

Ground Water and Seepage Indicators

Watercress	☒	Bank Seepage	☐
Iron Staining	☐	None	☐
Bubbling	☐	_____	☐
Other	☐		

Details: Sporadic, no mats or clumps → stopped seeing it close to forest

Water Bodies Assessment Field Collection Form

Stream Morphology

Site Length (m): 300m

Channel Dimensions

Mean Wetted Width (m):	1m	**Mean Wetted Depth (m):**	0.18
Mean Bankfull Width (m):	2m	**Mean Bankfull Depth (m):**	0.60
Mean Top of Bank Width (m):	4	**Mean Top of Bank Depth (m):**	2.5

Bank Stability:

	Stable	Slightly unstable	Moderately unstable	Unstable
Left Bank	☐	☒	☐	☐
Right Bank	☐	☒	☐	☐

Description: evidence of old slumping (ie has happened in previous 3-5 years) but no evidence of new erosion or slumping. Banks well vegetated

Flow Description: (high or low flow conditions, stagnant, etc)

slow flow

Habitat

Substrate (< = >)

Bo - Boulder
Co - Cobble
Gr - Gravel
Sa - Sand
Si - Silt
Cl - Clay
MK-Muck
DT-Detritus

Description

Sa > gr F Co > sil. Cl.

Morphological Structure (%)			
Pool	**Riffle**	**Run**	**Flat**
10	~	~	90

Notes:

pools a result of debris jam
↳ waterfall/riffle area also present due to debris jam

Instream Cover (%) 90

Other	Woody Debris	Boulders	Cobble	Aquatic Vegetation*	None	Undercut Banks
	~~TP~~	1	15	75	1	Average Depth: (% Cover) 3

Note: Low = 0 - 30% ; Moderate = 30 - 75%; High = 75 - 100%

***Aquatic Vegetation Species Present (algae, submergent, emergent etc.)**

attached algea (submergent) >> grasses, rounded, filamentous algae, > watercress

Canopy Cover (% closed cover):

100-90%	☐	**30-1%**	☐
90-60%	☒	**0%**	☐
60-30%	☒		

Types of Cover (% cover)

Trees 70 **Shrubs** 20 **Man-made structures** _____
Grasses 10 **Herbaceous** _____ **Other** _____

Note: Low = 0 - 30%; Moderate = 30 - 60%; High = 60 - 100%

Notes: (vegetation species, types of structures)

Elms, dogwood, buckthorn

Riparian Vegetation

Width of riparian vegetation: 2m - grasses > trees > shrubs

Description of vegetation community surrounding 30 m from watercourse:

agri. field

Obstructions to Fish Passage

No Obstructions ☒ **Man-Made** ☐ **Natural** ☐ **Low Flow Barrier** ☐

Description of Barrier:

Height of Barrier (m)

GPS Coordinates:

Water Bodies Assessment Field Collection Form

AECOM | Date: May 9/12 | Land Parcel/Site ID: DD7 GSH 2769/2768 |

Other General Comments Regarding the Study Area:

- schools of minnow observed
- muskrat observed at wq station
- onsite survey for north side of watercourse, roadside south
- watercourse straight channelized with high instream cover (algae) and mod canopy cover (grasses, trees, shrubs). Substrate cobbly, gravelly sand. It starts to flow and meander more naturally as it enters and goes through the forest area - assessment not completed in forest

Additional UTM Coordinates:

Photo log

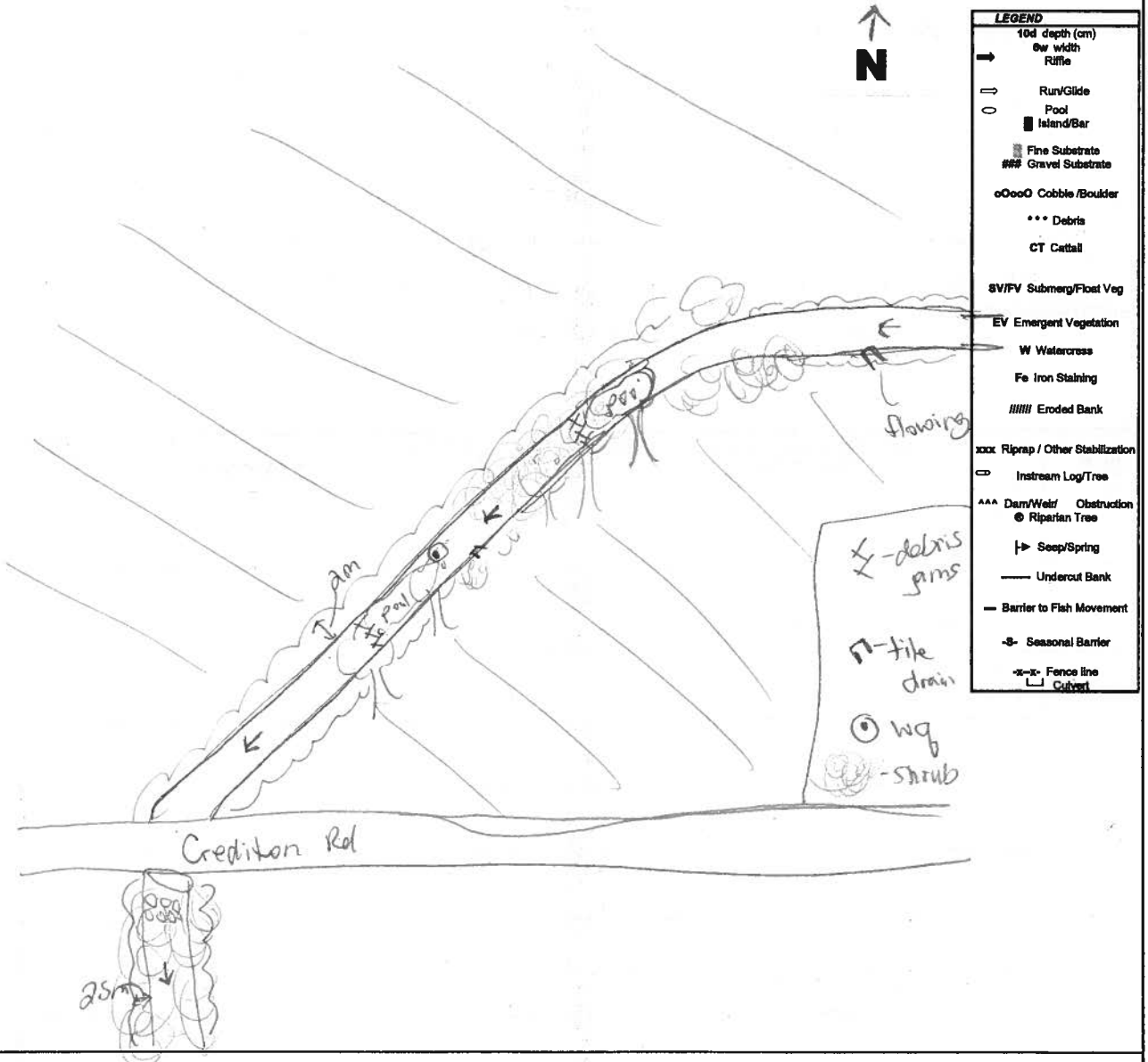
Picture #	Description	Picture #	Description
1a 1-3	Sheet Roadside survey downstream @ of culvert		
4	Site overview		
5	North Culvert @ up/s side		
6-9	Channel overview		
10	log jam		
11-18	Channel overview		
19-20	Channel entering forest area		

Water Bodies Assessment Field Collection Form

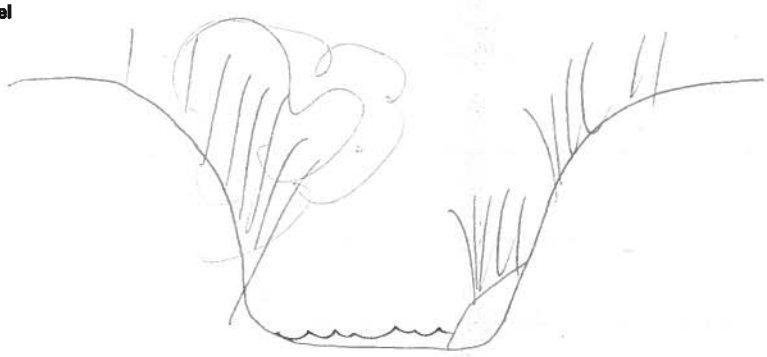
AECOM

Watercourse Sketch

Study Area: Jericho Goshen Bluewater **Land Parcel#** 2769 /2768 **Site ID** D27



Horizontal View of Channel



Initial QA/QC By: L Bentley Date: May 16, 202 Technical QA/QC By: [signature] Date: May 2, 12

Assessment of Non-Water Body
(update to mapping required)

AECOM

General Information

Study Area: Jericho (Goshen) Bluewater Land Parcel# 2623/3062 Site ID: D30

Date: May 9/12 Start time: 13:25 End Time: 13:30

Weather Conditions: Cloudy, 15°C

Field Crew: C. Boros, J. Epp

Field Notes By: C. Boros

Site Location

Dump Rd / Kirkton Rd. west of Plugtown Ln.

ASA 2623

UTM Co-ordinates

Easting:	473265	Northing:	4798758	Description:	Roadside
Easting:		Northing:		Description:	
Easting:		Northing:		Description:	
Easting:		Northing:		Description:	

Surrounding Landuse

Residential	☐	Meadow	☐
Agriculture	☒	Wetland	☐
Forest	☐	Livestock	☐
Other			

Description: ploughed fields

Ground Water and Seepage Indicators

Watercress	☐	Bank Seepage	☐
Iron Staining	☐	None	☒
Bubbling	☐		☐

Details:

Feature Description

Is the mapped water body any of the below:

1) a grassed waterway? Y (N)

2) Temporary channel for surface drainage, that can be tilled or driven through? Y (N)

3) Rock chutes or spillways? Y / (N)

4) Roadside ditches that are not connected or do not contain a permanent or intermittent stream? Y / (N)

5) Temporarily ponded ares that are normally farmed? Y / (N)

6) Artificial bodies of water intended for storage, treatment for farming purposes? Y / (N)

8) Any other:

Description: (i.e. length of change, if it reappears, if there is evidence of water)

Farmer ploughs field - no evidence of defined channel but depression area observed. Could be buried → 2 grates observed where watercourse should have been along roadside

- no water body present

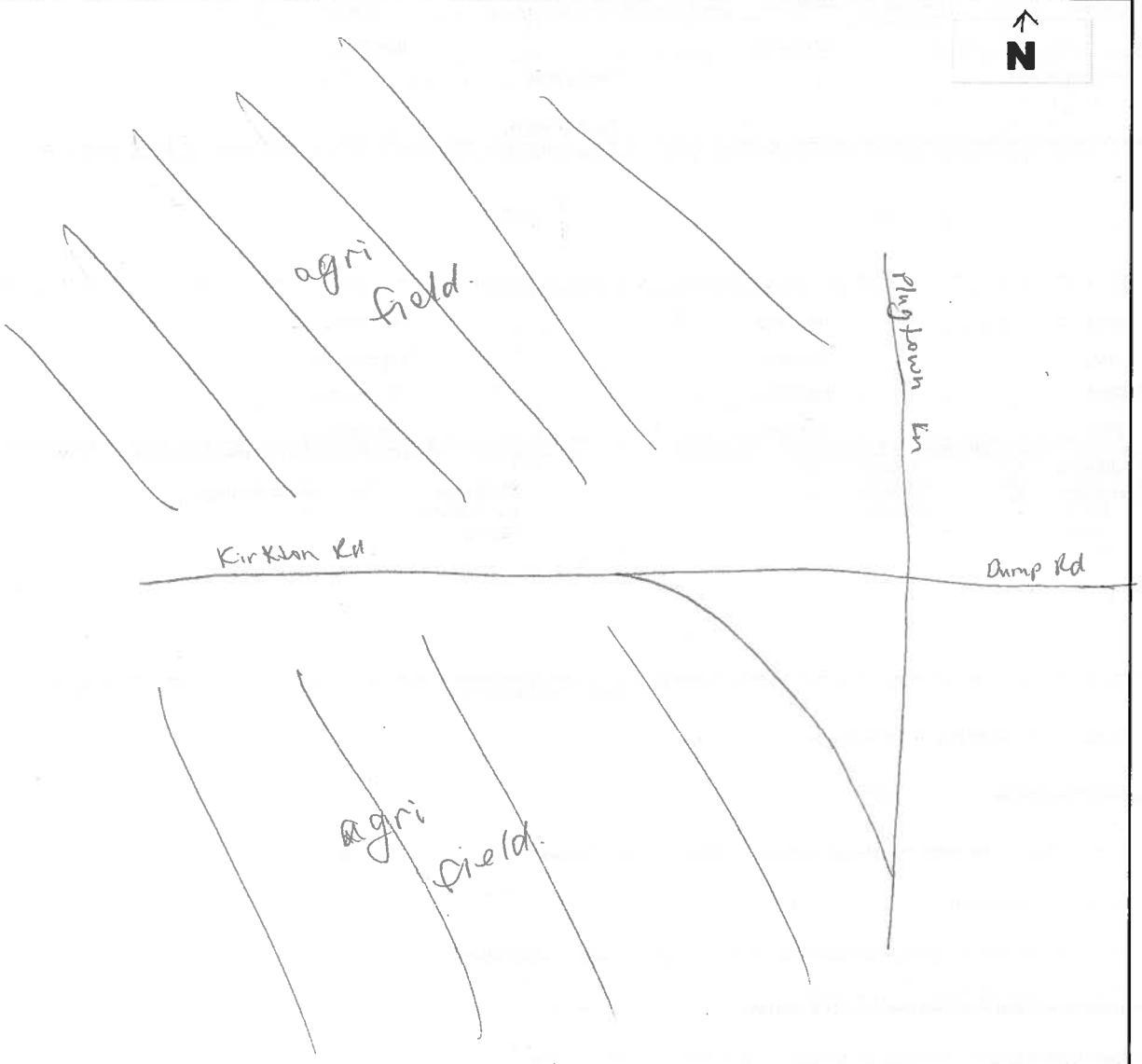
Photo log

Picture #	Description	Picture #	Description
~~1~~			
1 ~ 2	Overview		

Assessment of Non-Water Body
(update to mapping required)

AECOM Date: May 9/12 Land Parcel/Site ID: D30 GS#2623/3062

Site Sketch



- no watercourse observed.

Initial QA/QC: L Bentley May 16, 2012
Technical QA/QC: Scottkm Aug 8/12

Water Bodies Assessment Field Collection Form

AECOM

General Information

Study Area: Jericho (Goshen) Bluewater Land Parcel# 2958 / 2441 Site ID: BD31

Date: May 9 / 12 Start time: 12:00 End Time: 13:20

Weather Conditions: Cloudy, 13°C

Field Crew: C. Boros, J. Epp

Field Notes By: C. Boros

Site Location

Dump Rd. (Kirkton Rd) east Plugtown n Roadside Survey

UTM Co-ordinates (continue on page 3 if necessary)

Easting:	0473692	Northing:	4798821	Description:	Culvert at Road
Easting:		Northing:		Description:	
Easting:		Northing:		Description:	
Easting:		Northing:		Description:	

Surrounding Landuse

Residential	☐	Meadow	☐
Agriculture	☒	Wetland	☐
Forest	☐	Livestock	☐
Other			

Description: ploughed fields

Type of Watercourse

Intermittent	☐	Channelized	☒
Permanent	☒	Natural Channel	☐
Ephemeral	☐		☐

Description: straight

Notes: (include any inputs into the system i.e. tile drainage, seepages, overland flow)

None observed

Is any portion of the water body underground or not as mapped? Y / (N)

If Yes describe:

GPS Coordinate: Easting - Northing - Description-

Description of Land Topography Surrounding Water Body (rolling hills, sloping towards water body)

flat.

In-Situ Water Quality

WT (°C):	18.36	AT(°C):	13
pH:	8.18	Cond (µs/cm):	551
D.O. (mg/L)	30.11		

Water Clarity: Clear ☒ Turbid ☐

Water Colour: n/a

Notes: WQ at culvert

Ground Water and Seepage Indicators

Watercress	☐	Bank Seepage	☐
Iron Staining	☐	None	☒
Bubbling	☐		☐
Other	☐		

Details:

Water Bodies Assessment Field Collection Form

Stream Morphology

Site Length (m): 30m each side

Channel Dimensions

Mean Wetted Width (m):	1.5	**Mean Wetted Depth (m):**	0.15
Mean Bankfull Width (m):	2	**Mean Bankfull Depth (m):**	0.40
Mean Top of Bank Width (m):	6	**Mean Top of Bank Depth (m):**	3

Bank Stability:

	Stable	Slightly unstable	Moderately unstable	Unstable
Left Bank	☒	☐	☐	☐
Right Bank	☒	☐	☐	☐

Description: vegetated but some bare spots

Flow Description: (high or low flow conditions, stagnant, etc)

slow flow, low gradient

Habitat

Substrate (< = >)

Bo - Boulder
Co - Cobble
Gr - Gravel
Sa - Sand
Si - Silt
Cl - Clay
MK-Muck
DT-Detritus

Description

Si = Sa ≠ Cl > Co >> Bo

Morphological Structure (%)			
Pool	**Riffle**	**Run**	**Flat**
	5		95

Notes: riffle right at culvert - farmer dumped rocks in stream

Instream Cover (%) 50

Other	Woody Debris	Boulders	Cobble	Aquatic Vegetation*	None	Undercut Banks
✓	✓	2	18	40	✓	Average Depth: (% Cover) ✓

Note: Low = 0 - 30% ; Moderate = 30 - 75%; High = 75 - 100%

***Aquatic Vegetation Species Present (algae, submergent, emergent etc.)**

Submerged algea - attached / filimentus > floating algea

Canopy Cover (% closed cover):

100-90%	☐	**30-1%**	☒
90-60%	☐	**0%**	☐
60-30%	☐		

Types of Cover (% cover)

Trees | **Shrubs** 5 | **Man-made structures**

Grasses 95 | **Herbaceous** | **Other**

Note: Low = 0 - 30%; Moderate = 30 - 60%; High = 60 - 100%

Notes: (vegetation species, types of structures)

red osier dogwood

Riparian Vegetation

Width of riparian vegetation: North + south - grasses >>> shrubs

Description of vegetation community surrounding 30 m from watercourse:

agri field

Obstructions to Fish Passage

No Obstructions ☒ **Man-Made** ☐ **Natural** ☐ **Low Flow Barrier** ☐

Description of Barrier:

Height of Barrier (m)

GPS Coordinates:

Water Bodies Assessment Field Collection Form

AECOM | Date: May 9/12 | Land Parcel/Site ID: 031 2958/2441 |

Other General Comments Regarding the Study Area:

- fish observed - cyprinids (<10)
- frog observed

- watercourse surveyed by roadside - appears similar 20m up + down (5 but could not see substrate

Straight channelized stream, no cover, soft substrate

Additional UTM Coordinates:

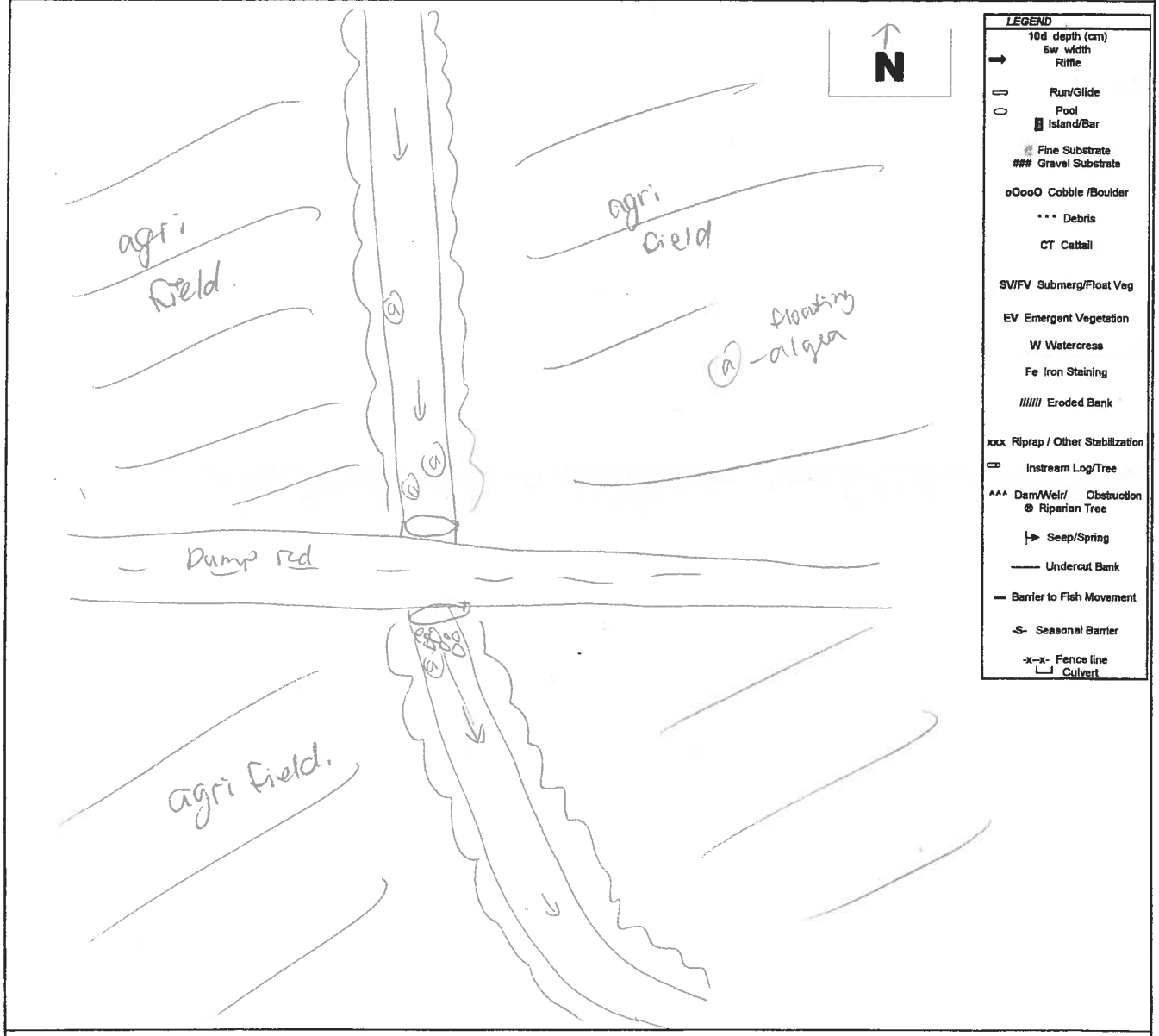
Photo Log

Picture #	Description	Picture #	Description
1a 1-3	Sheet North side		
4-5	South side		

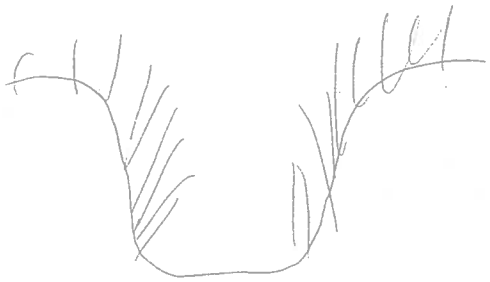
Water Bodies Assessment Field Collection Form

AECOM

Study Area: Jericho (Goshen) Bluewater **Land Parcel#** 2959 2441 **Site ID** b31



Horizontal View of Channel



Initial QA/QC By: L. Bentley Date: May 16, 2012 Technical QA/QC By: [illegible] Date: Aug 2/12

Water Bodies Assessment Field Collection Form

AECOM

General Information

Study Area: Jericho (Goshen) Bluewater **Land Parcel#** 2914/2587 **Site ID:** D32

Date: May 9/12 **Start time:** [redacted] 11:15 **End Time:** 12:30

Weather Conditions: Cloudy, 14°C

Field Crew: C. Boros, J. Epp

Field Notes By: C. Boros

Site Location

Dump Rd (Kirkton Rd) east of Plugtown Line

Roadside for GSH 2589 + 2441

UTM Co-ordinates (continue on page 3 if necessary)

Easting:	474888	**Northing:**	4749083	**Description:**	D32 start
Easting:		**Northing:**		**Description:**	
Easting:		**Northing:**		**Description:**	
Easting:		**Northing:**		**Description:**	

Surrounding Landuse

Residential	☐	Meadow	☐
Agriculture	☒	Wetland	☐
Forest	☒	Livestock	☐
Other			

Description: old corn field
deciduous forest

Type of Watercourse

Intermittent	☐	Channelized	☒
Permanent	☒	Natural Channel	☒
Ephemeral	☐	_____	☐

Description: appears to be naturalizing

Notes: (Include any inputs into the system i.e. tile drainage, seepages, overland flow)

~~[redacted]~~ one tile drain input - not flowing

Is any portion of the water body underground or not as mapped? Y / (N)

If Yes describe: /

GPS Coordinate: Easting - / **Northing -** / **Description-** /

Description of Land Topography Surrounding Water Body (rolling hills, sloping towards water body)

Slightly rolling

In-Situ Water Quality

WT (°C):	14.19	**AT(°C):**	15°C
pH:	6.64	**Cond (µs/cm):**	562
D.O. (mg/L)	17.33		

Water Clarity: Clear ☒ Turbid ☐

Water Colour: brown tinge

Notes: veg taken in flat area

Ground Water and Seepage Indicators

Watercress	☐	Bank Seepage	☐
Iron Staining	☐	None	☒
Bubbling	☐	_____	☐
Other	☐		

Details:

Water Bodies Assessment Field Collection Form

Stream Morphology

Site Length (m): walked 60m; total observed 100m

Channel Dimensions

Mean Wetted Width (m):	3.5	**Mean Wetted Depth (m):**	0.3
Mean Bankfull Width (m):	4.2	**Mean Bankfull Depth (m):**	0.65
Mean Top of Bank Width (m):	7	**Mean Top of Bank Depth (m):**	2

Bank Stability:

	Stable	Slightly unstable	Moderately unstable	Unstable
Left Bank	☐	☒	☐	☐
Right Bank	☐	☑	☐	☐

Description: slumping on north side up/s. → banks well veg by bridge.

Flow Description: (high or low flow conditions, stagnant, etc)

slow flow, low gradient

Habitat

Substrate (< = >)

Bo - Boulder
Co - Cobble
Gr - Gravel
Sa - Sand
Si - Silt
Cl - Clay
MK-Muck
DT-Detritus

Description

Co >>> bo > gr > si, sa

-> cobble completely covered in algea

Morphological Structure (%)			
Pool	Riffle	Run	Flat
10	10	10	70

Notes:

- narrow stretch riffle, run sequence
- large pool by bridge - max depth 0.42m

Instream Cover (%) 80

Other	Woody Debris	Boulders	Cobble	Aquatic Vegetation*	None	Undercut Banks
/	6	1	50	20	/	Average Depth: 0.17m (% Cover) 3

Note: Low = 0 - 30%; Moderate = 30 - 75%; High = 75 - 100%

***Aquatic Vegetation Species Present (algae, submergent, emergent etc.)**

attached algea (submergent) (on cobble) >> floating algea, water lily

Canopy Cover (% closed cover):

100-90%	☐	30-1%	☒ agri
90-60%	☒ forest	0%	☐
60-30%	☐		

Types of Cover (% cover)

Trees f 90 / a 90 Shrubs f 10 / Man-made structures

Grasses 10 agri Herbaceous Other

Note: Low = 0 - 30%; Moderate = 30 - 60%; High = 60 - 100%

Notes: (vegetation species, types of structures)

grasses, willow trees on agri side

Riparian Vegetation

Width of riparian vegetation: agri side 8m, forest west - 10m into >30 east - >30m

Description of vegetation community surrounding 30 m from watercourse:

agri - grasses, dogwood, 3 willow trees forest - deciduous (willows

Obstructions to Fish Passage

No Obstructions ☐ **Man-Made** ☐ **Natural** ☐ **Low Flow Barrier** ☐

Description of Barrier: none observed

Height of Barrier (m) /

GPS Coordinates: /

Water Bodies Assessment Field Collection Form

AECOM | Date: May 9/12 | Land Parcel/Site ID: D32 GSH2914 12587 |

Other General Comments Regarding the Study Area:

- fish observed - minnows (15), darter
- frog observed (green frog)
- crayfish observed in watercourse

→ onsite assessment completed for north side + roadside assessment completed for south side → watercourse similar on both sides

Additional UTM Coordinates:

Photo log

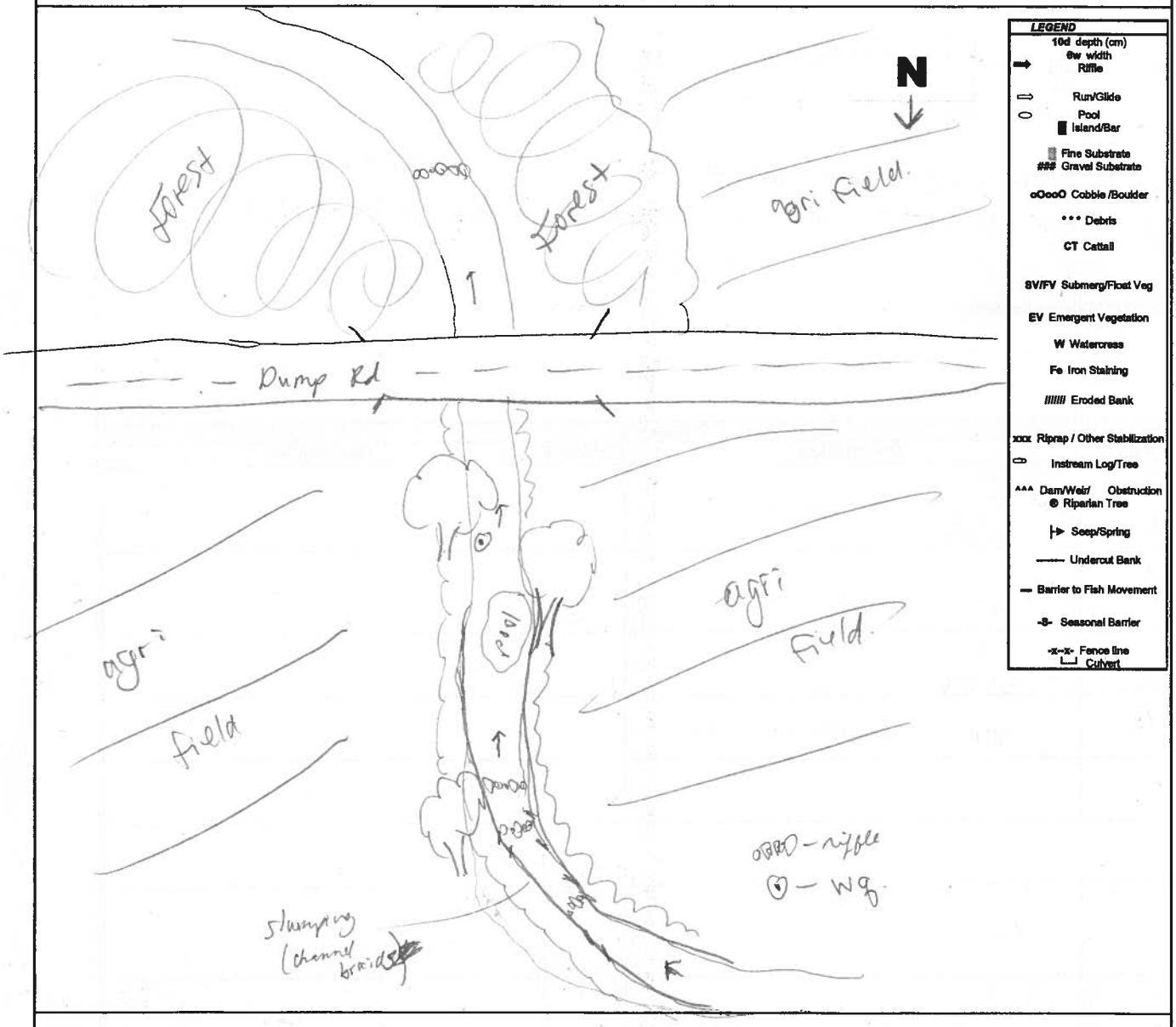
Picture #	Description	Picture #	Description
1a 1b	sheet Starting from road moving upstream		
7	20m up/s of start.		
8	Bridge		
9-11	looking downstream in forest		

Water Bodies Assessment Field Collection Form

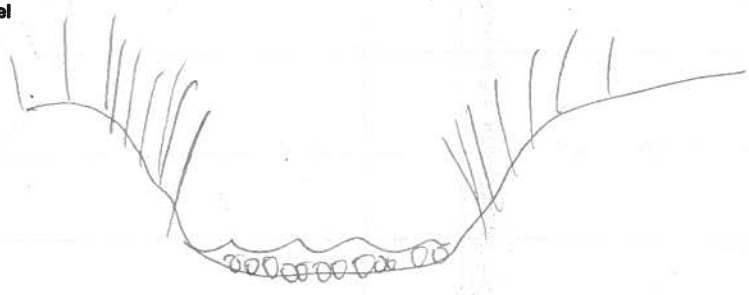
AECOM

Watercourse Sketch

Study Area: Jericho Goshen Bluewater **Land Parcel#** GSH 2914/2507 **Site ID** P32



Horizontal View of Channel



Initial QA/QC By: L. Bentley Date: May 16, 2012 Technical QA/QC By: [signature] Date: Aug 2/12

Water Bodies Assessment Field Collection Form

AECOM

General Information

Study Area: Jericho (Goshen) Bluewater **Land Parcel#** GSH 2588 **Site ID:** D32

Date: June 22/12 **Start time:** 8:40 **End Time:** 10:00

Weather Conditions: Sunny, 18°C

Field Crew: C. Boros, J. Epp

Field Notes By: C. Boros

Site Location

Dump Road, east of Kirkton

UTM Co-ordinates (continue on page 3 if necessary)

Easting:	475204	**Northing:**	4798812	**Description:**	D32 start
Easting:	475078	**Northing:**	4798868	**Description:**	D32 wpt
Easting:	475016	**Northing:**	4798886	**Description:**	D2588 end
Easting:	475198	**Northing:**	4798841	**Description:**	D32 mark

Surrounding Landuse

Residential	☐	Meadow	☒
Agriculture	☐	Wetland	☐
Forest	☒	Livestock	☐
Other			

Description: meadow, forest surrounding

Type of Watercourse

Intermittent	☐	Channelized	☐
Permanent	☒	Natural Channel	☒
Ephemeral	☐		☐

Description: large meanders

Notes: (include any inputs into the system i.e. tile drainage, seepages, overland flow)

none observed

Is any portion of the water body underground or not as mapped? Y / (N)

If Yes describe:

GPS Coordinate: Easting - / **Northing -** / **Description-**

Description of Land Topography Surrounding Water Body (rolling hills, sloping towards water body)

flat

In-Situ Water Quality

WT (°C):	21.1	**AT(°C):**	18
pH:	7.79	**Cond (µs/cm):**	572
D.O. (mg/L)	4.04		

Water Clarity: Clear ☒ Turbid ☐

Water Colour: n/a

Notes: taken in run, attached algea present

Ground Water and Seepage Indicators

Watercress	☐	Bank Seepage	☐
Iron Staining	☐	None	☒
Bubbling	☐		☐
Other	☐		

Details:

Water Bodies Assessment Field Collection Form

Stream Morphology

Site Length (m): 150m

Channel Dimensions

Mean Wetted Width (m):	3.5	Mean Wetted Depth (m):	0.23
Mean Bankfull Width (m):	4.7	Mean Bankfull Depth (m):	1.1
Mean Top of Bank Width (m):	—	Mean Top of Bank Depth (m):	—

Bank Stability:

	Stable	Slightly unstable	Moderately unstable	Unstable
Left Bank	☒	☐	☐	☐
Right Bank	☒	☐	☐	☐

Description: well vegetated

Flow Description: (high or low flow conditions, stagnant, etc)

mod flow, moderate water level

Habitat

Substrate (< = >)

Bo - Boulder
Co - Cobble
Gr - Gravel
Sa - Sand
Si - Silt
Cl - Clay
MK-Muck
DT-Detritus

Description

si = gr = sa > co > bo

Morphological Structure (%)

Pool	Riffle	Run	Flat
10	10	30	50

Notes: riffle run pool sequence present → 2 locations

Instream Cover (%) 85

Other	Woody Debris	Boulders	Cobble	Aquatic Vegetation*	None	Undercut Banks
	5	10	20	40		Average Depth: (% Cover) 10

Note: Low = 0 - 30% ; Moderate = 30 - 75%; High = 75 - 100%

***Aquatic Vegetation Species Present (algae, submergent, emergent etc.)**

algae - attached > pondweed, water lily, grasses.

Canopy Cover (% closed cover):

100-90%	☐	30-1%	☐
90-60%	☐	0%	☐
60-30%	☒		

Types of Cover (% cover)

Trees 85 Shrubs 5 Man-made structures ____

Grasses 10 Herbaceous ____ Other ____

Note: Low = 0 - 30%; Moderate = 30 - 60%; High = 60 - 100%

Notes: (vegetation species, types of structures)

Basswood, ash, dogwood, willow

Riparian Vegetation

Width and Description of riparian vegetation: LB - 10m - forest RB - 10m - forest

Overhanging Vegetation Present Y / (N)

% Overhanging Vegetation:

Description of Overhanging Vegetation:

Obstructions to Fish Passage

None Observed ☒ **Man-Made** ☐ **Natural** ☐ **Low Flow Barrier** ☐

Description of Barrier:

Height of Barrier (m)

GPS Coordinates:

Water Bodies Assessment Field Collection Form

AECOM Date: June 22/12 Land Parcel/Site ID: D32 GSH2588

Other General Comments Regarding the Study Area:

- cyprinids (~50), darter, yoy (~10)
- live mussel → giant floater.

Watercourse natural meandering system - moderate size. downstream cover high + diverse. Substrate mix of sand, gravel & silt. Canopy cover moderate - no overhanging shrubs.

Additional UTM Coordinates:

Photo log

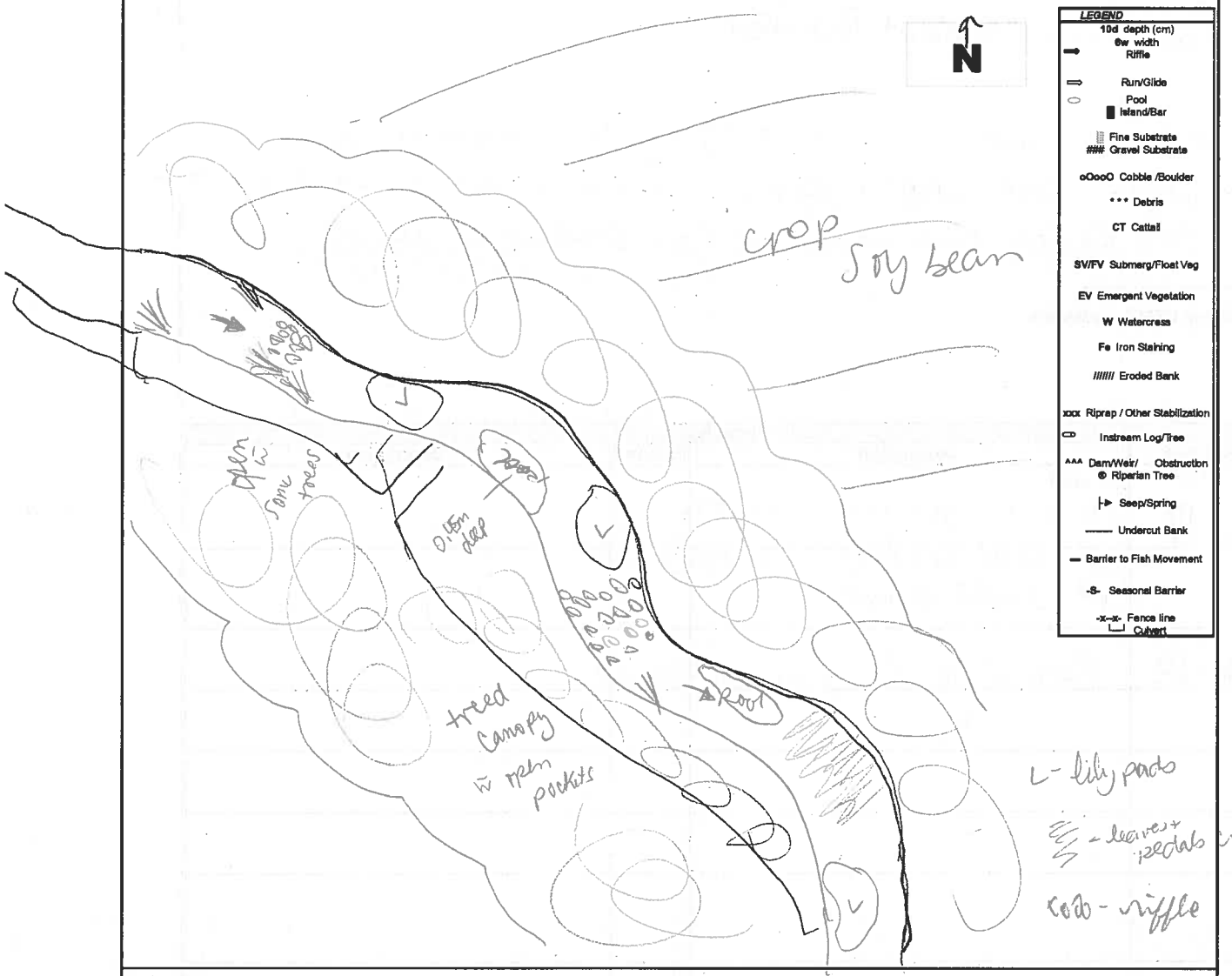
Picture #	Description	Picture #	Description
1a	sheet		
15-19	Channel overview starting at north walking + ending at south property line		
18-19	Rock pile 8m from watercourse		

Water Bodies Assessment Field Collection Form

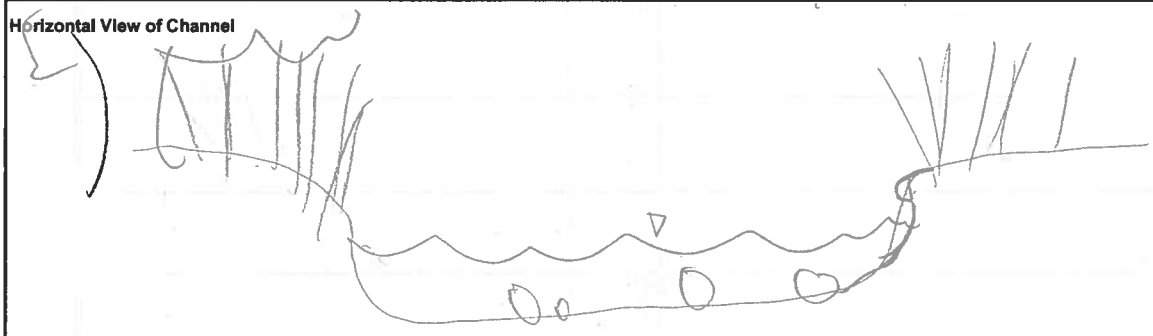
AECOM

Watercourse Sketch

Study Area: Jericho (Goshen) Bluewater **Land Parcel#** GSH2588 **Site ID** 8& D32



Horizontal View of Channel



Initial QA/QC By: L. Bentley Date: June 26/12 Technical QA/QC By: [illegible] Date: July 9/12

Water Bodies Assessment Field Collection Form

AECOM

General Information

Study Area: Jericho (Goshen) Bluewater Land Parcel# [redacted] RON (near GSHT 3130) Site ID: [redacted] D35

Date: June 13/12 Start time: 11:10 End Time: 12:05

Weather Conditions: Sunny 12°C

Field Crew: C. Boros, J. Epp

Field Notes By: C. Boros

Site Location

Crediton Rd + McTaggart Ln

UTM Co-ordinates (continue on page 3 if necessary)

Easting:	465770	Northing:	4795608	Description:	McT start
Easting:	465754	Northing:	4795730	Description:	McT, veg
Easting:	~~[redacted]~~	Northing:	~~[redacted]~~	Description:	~~McT end~~
Easting:	465635	Northing:	4796488	Description:	McT end

Surrounding Landuse

Residential	☐	Meadow	☐
Agriculture	☒	Wetland	☐
Forest	☐	Livestock	☐
Other	x		

Description:

roadside - west
East - corn field

Type of Watercourse

Intermittent	☐	Channelized	☒
Permanent	☒	Natural Channel	☐
Ephemeral	☐	_____	☐

Description:

straight ditch

Notes: (include any inputs into the system i.e. tile drainage, seepages, overland flow)

Tile drains observed - not flowing

Is any portion of the water body underground or not as mapped? Y / (N)

If Yes describe:

GPS Coordinate: Easting - / Northing - / Description- /

Description of Land Topography Surrounding Water Body (rolling hills, sloping towards water body)

flat

In-Situ Water Quality

WT (°C):	15.4	AT(°C):	12 °C
pH:	6.93	Cond (µs/cm):	592
D.O. (mg/L)	0.70		

Water Clarity: Clear ☒ Turbid ☐

Water Colour: n/a

Notes: water stagnant, Littercress mat
w depth ~ 0.17m

Ground Water and Seepage Indicators

Watercress	☒	Bank Seepage	☐
Iron Staining	☐	None	☐
Bubbling	☐	Bittercress	☒
Other	☐	water Speedwell x	

Details:

large mats of bittercress throughout
- small clumps of WC + speedwell

Water Bodies Assessment Field Collection Form

Stream Morphology

Site Length (m): ~~1200~~ 50m

Channel Dimensions

Mean Wetted Width (m):	1.5	Mean Wetted Depth (m):	0.17
Mean Bankfull Width (m):	2.5	Mean Bankfull Depth (m):	0.95
Mean Top of Bank Width (m):	5	Mean Top of Bank Depth (m):	2.5

Bank Stability:

	Stable	Slightly unstable	Moderately unstable	Unstable
Left Bank	☒	☐	☐	☐
Right Bank	☒	☐	☐	☐

Description: well vegetated

Flow Description: (high or low flow conditions, stagnant, etc)

stagnant

Habitat

Substrate (< = >)

Bo - Boulder
Co - Cobble
Gr - Gravel
Sa - Sand
Si - Silt
Cl - Clay
MK-Muck
DT-Detritus

Description

MK > Si = Cl = Sa

Morphological Structure (%)

Pool	Riffle	Run	Flat
/	/	/	100

Notes: Straight.

Instream Cover (%) 90

Other	Woody Debris	Boulders	Cobble	Aquatic Vegetation*	None	Undercut Banks
/	/	/	/	90	/	Average Depth: / (% Cover)

Note: Low = 0 - 30% ; Moderate = 30 - 75%; High = 75 - 100%

***Aquatic Vegetation Species Present (algae, submergent, emergent etc.)**

water bittercress >>> grasses, cattail > duckweed, water plantain

Canopy Cover (% closed cover):

100-90%	☐	30-1%	☒
90-60%	☐	0%	☐
60-30%	☐		

Types of Cover (% cover)

Trees ____ Shrubs ____ Man-made structures ____
Grasses 100 Herbaceous ____ Other ____

Note: Low = 0 - 30%; Moderate = 30 - 60%; High = 60 - 100%

Notes: (vegetation species, types of structures)

grasses

Riparian Vegetation

Width and Description of riparian vegetation:

LB - 1.5m - tree rows + grass

RB - 1m - grasses (Common reed - dominant)

Overhanging Vegetation Present Y / (N)

% Overhanging Vegetation:

Description of Overhanging Vegetation:

Obstructions to Fish Passage

None Observed ☒ **Man-Made** ☐ **Natural** ☐ **Low Flow Barrier** ☐

Description of Barrier:

Height of Barrier (m)

GPS Coordinates:

Water Bodies Assessment Field Collection Form

AECOM | Date: June 13/12 | Land Parcel/Site ID: (GSH 3130) D35-ROW |

Other General Comments Regarding the Study Area:

Watercourse runs as road side ditch - it is straigat and channelized. There is no water flow → high instream cover due to bitterness matting large portion of reach. Substrate mucky + soft. Very little canopy cover

Additional UTM Coordinates:

Photo log

Picture #	Description	Picture #	Description
1a 1b	Sheet overview - South of Creaiton		
2-12	GSH #2381		
13-23	GSH #2435		
24-31	GSH #2432		

Water Bodies Assessment Field Collection Form

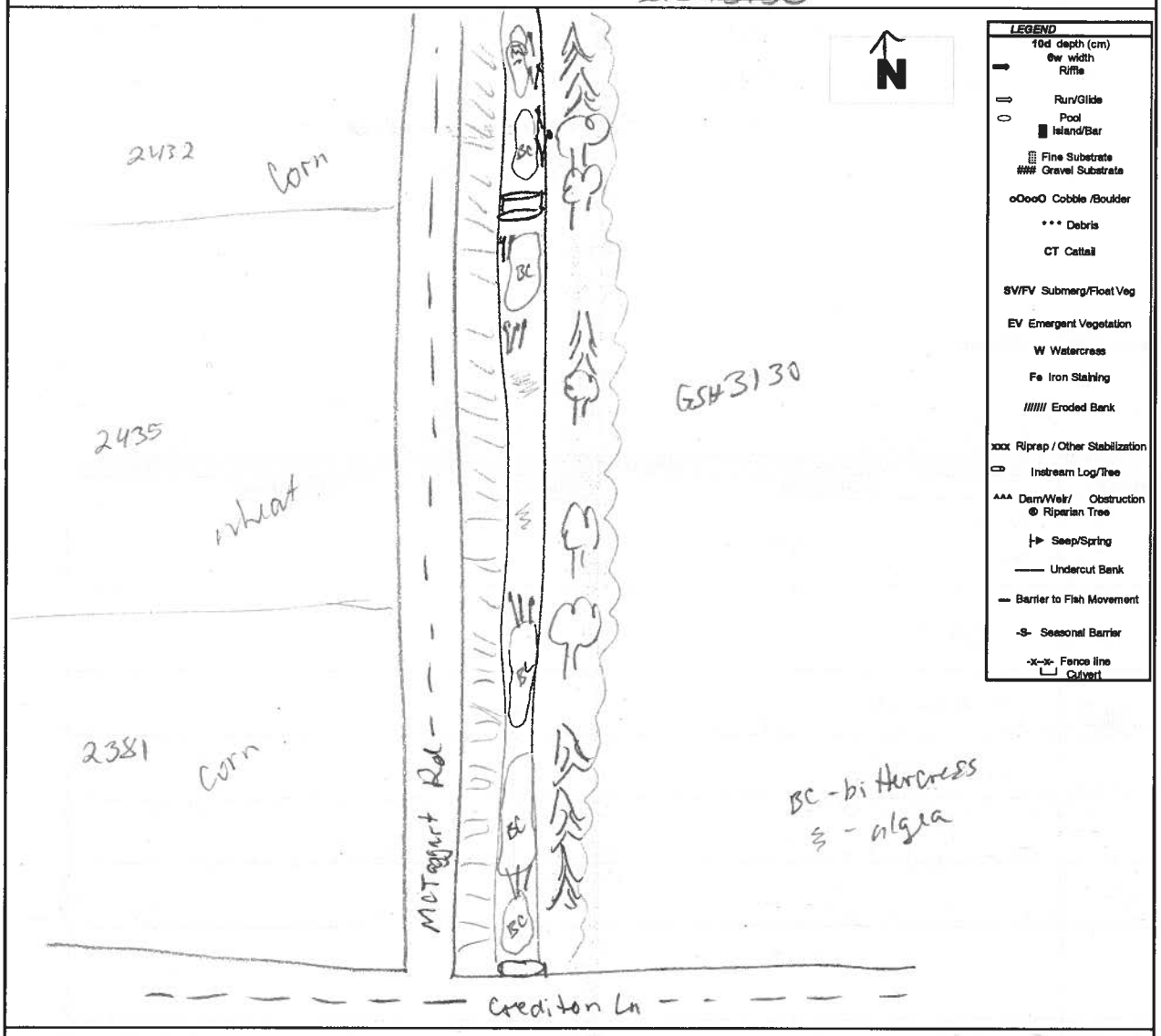
AECOM

Page 4 of 4

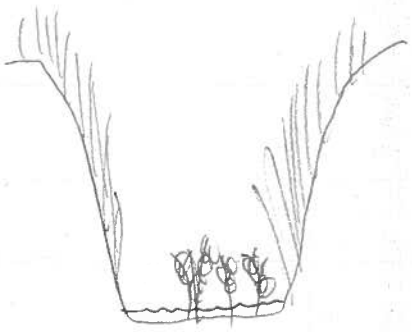
Clear (GSH3130)

Watercourse Sketch

Study Area: Jericho Goshen Bluewater **Land Parcel#** [redacted] **Site ID** D35-ROW



Horizontal View of Channel



Initial QA/QC By: L. Bentley Date: June 26, 2012 Technical QA/QC By: [signature] Date: July 9/12

Project Number: 60155032

Water Bodies Assessment Field Collection Form

AECOM

General Information

Study Area: Jericho (Goshen) Bluewater Land Parcel# 2770/330 Site ID: D35

Date: May 1/12 Start time: 15:30 End Time: 16:05

Weather Conditions: Cloudy

Field Crew: C. Boros, J. Harnden

Field Notes By: C. Boros

Site Location

intersection (East side) Crediton Rd, McTaggart Ln.

UTM Co-ordinates (continue on page 3 if necessary)

Easting:	0465760	Northing:	4795667	Description:	D35 N
Easting:	0465774	Northing:	4795528	Description:	D35 S
Easting:		Northing:		Description:	
Easting:		Northing:		Description:	

Surrounding Landuse

Residential	☐	Meadow	☐
Agriculture	☒	Wetland	☐
Forest	☐	Livestock	☐
Other			

Description: roadside

Type of Watercourse

Intermittent	☐	Channelized	☒
Permanent	☒	Natural Channel	☐
Ephemeral	☐	_____	☐

Description: starting to naturalize

Notes: (include any inputs into the system i.e. tile drainage, seepages, overland flow)

tile drains observed - not flowing

Is any portion of the water body underground or not as mapped? Y (N)

If Yes describe:

GPS Coordinate: Easting - Northing - Description-

Description of Land Topography Surrounding Water Body (rolling hills, sloping towards water body)

flat

In-Situ Water Quality

WT (°C):	11.29	AT(°C):	13
pH:	7.65	Cond (µs/cm):	513
D.O. (mg/L)	13.83		

Water Clarity: Clear ☒ Turbid ☐

Water Colour: n/a

Notes: algae observed

Ground Water and Seepage Indicators

Watercress	☒	Bank Seepage	☐
Iron Staining	☐	None	☐
Bubbling	☐	_____	☐
Other	☐		

Details: mats observed on N side - multiple

Water Speedwell

Water Bodies Assessment Field Collection Form

Stream Morphology

Site Length (m): 120m

Channel Dimensions

Mean Wetted Width (m):	1.9	**Mean Wetted Depth (m):**	0.195
Mean Bankfull Width (m):	2.5	**Mean Bankfull Depth (m):**	0.5
Mean Top of Bank Width (m):	4.5	**Mean Top of Bank Depth (m):**	2.5

Bank Stability:

	Stable	Slightly unstable	Moderately unstable	Unstable
Left Bank	☒	☐	☐	☐
Right Bank	☒	☐	☐	☐

Description: veg banks

Flow Description: (high or low flow conditions, stagnant, etc)

visible only in 2 spots, v.v. slow, low gradient

Habitat

Substrate (< = >)

Bo - Boulder
Co - Cobble
Gr - Gravel
Sa - Sand
Si - Silt
Cl - Clay
MK-Muck
DT-Detritus

Description

Si, Cl

Morphological Structure (%)

Pool	Riffle	Run	Flat
			100

Notes: ~~meanders~~

Instream Cover (%)

Other	Woody Debris	Boulders	Cobble	Aquatic Vegetation*	None	Undercut Banks
10 culvert	~	~	~	70	/	Average Depth: (% Cover) /

Note: Low = 0 - 30%; Moderate = 30 - 75%; High = 75 - 100%

***Aquatic Vegetation Species Present (algae, submergent, emergent etc.)**

algea, watercress, grasses, cattails

Canopy Cover (% closed cover):

100-90%	☐	**30-1%**	☒
90-60%	☐	**0%**	☐
60-30%	☐		

Types of Cover (% cover)

Trees		**Shrubs**	20	**Man-made structures**	10
Grasses	70	**Herbaceous**		**Other**	

Note: Low = 0 - 30%; Moderate = 30 - 60%; High = 60 - 100%

Notes: (vegetation species, types of structures)

bank grasses, cattails, shrubs, culvert

Riparian Vegetation

Width of riparian vegetation: 15m

Description of vegetation commuity surrounding 30 m from watercourse: grasses, tree row, agri field.

Obstructions to Fish Passage

No Obstructions ☒ **Man-Made** ☐ **Natural** ☐ **Low Flow Barrier** ☐

Description of Barrier:

Height of Barrier (m)

GPS Coordinates:

Water Bodies Assessment Field Collection Form

D35

AECOM | Date: May 1 /12 | Land Parcel/Site ID: GSH 2770/3130 | Page 3 of 4

Other General Comments Regarding the Study Area:

- Straight channelized waterourse, roadside ditch, low canopy algea blooms, watercress mats, cattail clumps throughout
- Soft bottom → algea covered

→ 50m upstream + downstream from study area similar

Additional UTM Coordinates:

Photo log

Picture #	Description	Picture #	Description
1a 1b	sheet overview looking N		
2	overview looking S		
3	Culvert N side		
4-5	channel N side.		
6	culvert south side		
7	~~Ditch~~ channel S side		

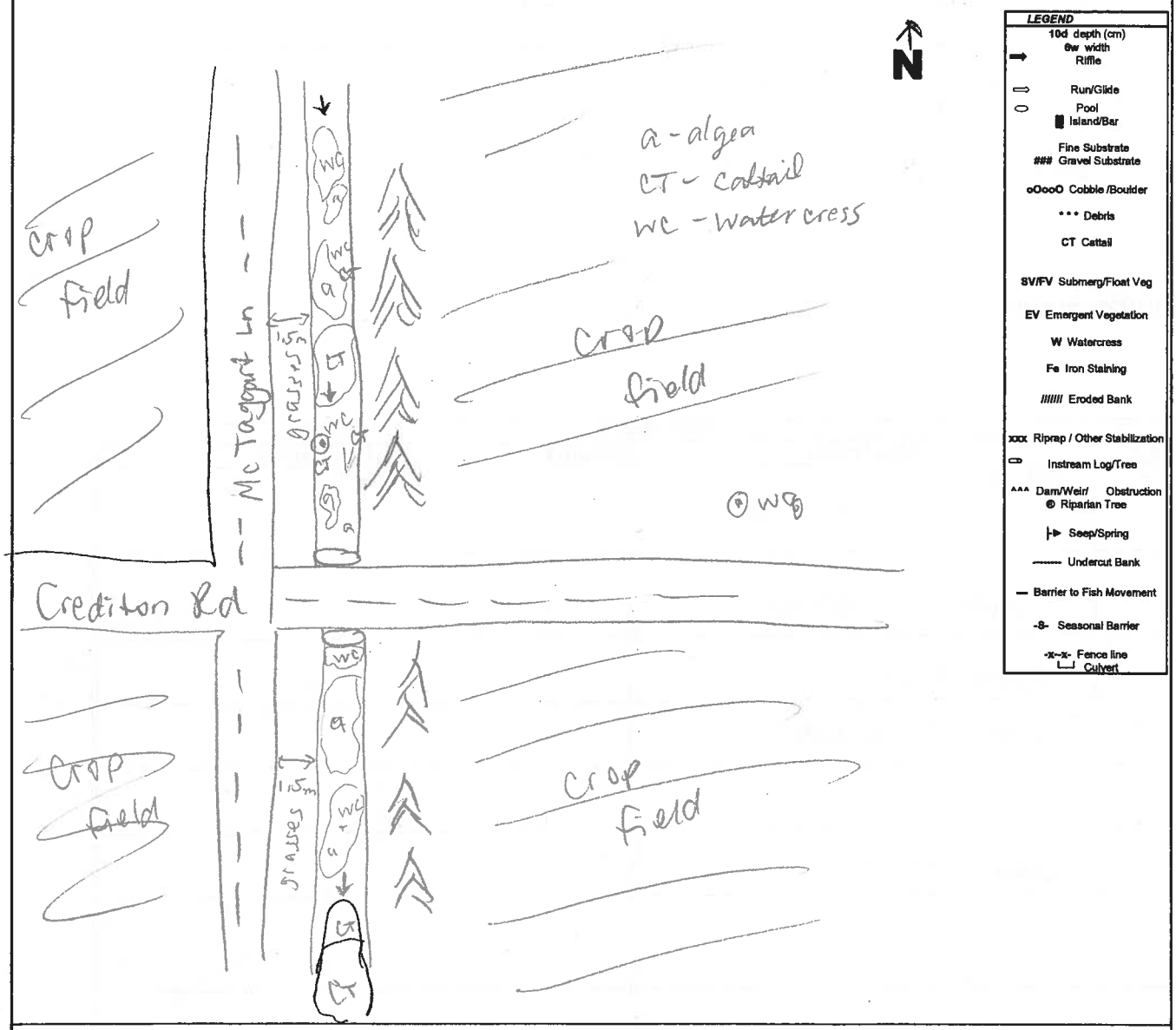
Project Number: 60155032

Water Bodies Assessment Field Collection Form

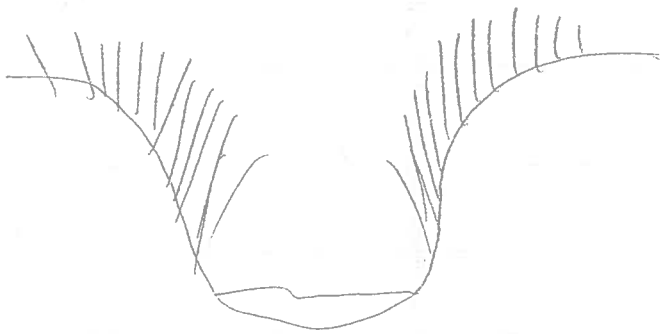
AECOM

Watercourse Sketch

Study Area: Jericho (Goshen) Bluewater **Land Parcel#** 2770/3130 **Site ID** D35



Horizontal View of Channel



Initial QA/QC By: L. Bentley Date: May 8, 2012 Technical QA/QC By: SHatken Date: May 18/12

Water Bodies Assessment Field Collection Form

AECOM

General Information

Study Area: Jericho (Goshen) Bluewater **Land Parcel#** GSH2717 **Site ID:** 036

Date: June 13/12 **Start time:** 8:35 **End Time:** 9:40

Weather Conditions: Sunny 10°C

Field Crew: C. Boros, J. Epp

Field Notes By: C. Boros

Site Location

Ausable Line, South of Kirkton Rd.

UTM Co-ordinates (continue on page 3 if necessary)

Easting:	457166	**Northing:**	4795011	**Description:**	D36 WC
Easting:	457131	**Northing:**	4794882	**Description:**	D36 Snake (end)
Easting:		**Northing:**		**Description:**	
Easting:		**Northing:**		**Description:**	

Surrounding Landuse

Residential	☐	Meadow	☐
Agriculture	☐	Wetland	☐
Forest	☒	Livestock	☐
Other			

Description: Watercourse w/in forest corridor

Type of Watercourse

Intermittent	☐	Channelized	☐
Permanent	☒	Natural Channel	☒
Ephemeral	☐		☐

Description: Ausable River

Notes: (include any inputs into the system i.e. tile drainage, seepages, overland flow)

None Observed

Is any portion of the water body underground or not as mapped? Y / (N)

If Yes describe:

GPS Coordinate: Easting - / **Northing -** / **Description-** /

Description of Land Topography Surrounding Water Body (rolling hills, sloping towards water body)

in a slightly sloping valley

In-Situ Water Quality

WT (°C):	20.2	**AT(°C):**	10°C
pH:	7.49	**Cond (µs/cm):**	553
D.O. (mg/L)	3.95		

Water Clarity: Clear ☐ Turbid ☒

Water Colour: brown

Notes: Taken at bank edge.

Ground Water and Seepage Indicators

Watercress	☐	Bank Seepage	☐
Iron Staining	☐	None	☒
Bubbling	☐		☐
Other	☐		

Details:

Water Bodies Assessment Field Collection Form

Stream Morphology

Site Length (m): 150m — not wadeable. Could not determine

Channel Dimensions

Mean Wetted Width (m):	7m	**Mean Wetted Depth (m):**	CND
Mean Bankfull Width (m):	8.25	**Mean Bankfull Depth (m):**	CND
Mean Top of Bank Width (m):	15m	**Mean Top of Bank Depth (m):**	CND

Bank Stability:

	Stable	Slightly unstable	Moderately unstable	Unstable
Left Bank	☒	☐	☐	☐
Right Bank	☒	☐	☐	☐

Description: did not see erosion

Flow Description: (high or low flow conditions, stagnant, etc)

slow flow, moderate WL

Habitat

Substrate (< = >)

Bo - Boulder
Co - Cobble
Gr - Gravel
Sa - Sand
Si - Silt
Cl - Clay
MK-Muck
DT-Detritus

Description

Si = Cl = Sa > MK

Morphological Structure (%)			
Pool	**Riffle**	**Run**	**Flat**
/	/	/	100

Notes: deep water

Instream Cover (%) 2

Other	Woody Debris	Boulders	Cobble	Aquatic Vegetation*	None	Undercut Banks
	2	?	?	?		Average Depth: 0.30m (% Cover) 10

Note: Low = 0 - 30% ; Moderate = 30 - 75%; High = 75 - 100%

***Aquatic Vegetation Species Present (algae, submergent, emergent etc.)**

*hard to assess due to turbidity

Canopy Cover (% closed cover):

100-90%	☐	**30-1%**	☐
90-60%	☐	**0%**	☐
60-30%	☒		

Types of Cover (% cover)

Trees 70 **Shrubs** 30 **Man-made structures** _____
Grasses _____ **Herbaceous** _____ **Other** _____

Note: Low = 0 - 30%; Moderate = 30 - 60%; High = 60 - 100%

Notes: (vegetation species, types of structures)

willow

Riparian Vegetation

Width and Description of riparian vegetation: LB - 7 - 15m meadow, forest RB - 15m - forest

Overhanging Vegetation Present Y / N **% Overhanging Vegetation:** 10

Description of Overhanging Vegetation:

willow + dogwood line the banks + overhang but not very far in (average 1m)

Obstructions to Fish Passage

None Observed ☒ **Man-Made** ☐ **Natural** ☐ **Low Flow Barrier** ☐

Description of Barrier:

Height of Barrier (m)

GPS Coordinates: