

**Water Bodies Assessment Field Collection Form**

Stream Morphology						
Site Length (m): <u>150m</u>			Bank Stability:			
Channel Dimensions			Stable	Slightly unstable	Moderately unstable	Unstable
Mean Wetted Width (m): <u>0.35</u>	Mean Wetted Depth (m): <u>0.05</u>	Left Bank <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>				
Mean Bankfull Width (m): <u>0.45</u>	Mean Bankfull Depth (m): <u>0.07</u>	Right Bank <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>				
Mean Top of Bank Width (m): <u>/</u>	Mean Top of Bank Depth (m): <u>/</u>	Description: <u>channel not incised</u>				
Flow Description: (high or low flow conditions, stagnant, etc) <u>moderate flow</u>						
Habitat						
Substrate (<=>)			Morphological Structure (%)			
Description			Pool	Riffle	Run	Flat
Bo - Boulder Co - Cobble Gr - Gravel Sa - Sand Si - Silt Cl - Clay MK - Muck DT - Detritus			Notes: <u>fairly straight</u>			
<u>Sa &gt; Si, Cl, organics</u>						
Instream Cover (%) <u>10</u>						
Other	Woody Debris	Boulders	Cobble	Aquatic Vegetation*	None	Undercut Banks
<u>/</u>	<u>10</u>	<u>/</u>	<u>/</u>	<u>/</u>	<u>/</u>	Average Depth: (% Cover) <u>/</u>
Note: Low = 0 - 30%; Moderate = 30 - 75%; High = 75 - 100%						
*Aquatic Vegetation Species Present (algae, submergent, emergent etc.)						
Canopy Cover (% closed cover):			Types of Cover (% cover)			
100-90%	<input checked="" type="checkbox"/>	30-1%	<input type="checkbox"/>	Trees <u>70</u>	Shrubs	Man-made structures
90-60%	<input type="checkbox"/>	0%	<input type="checkbox"/>	Grasses	Herbaceous <u>30</u>	Other
60-30%	<input type="checkbox"/>					
Note: Low = 0 - 30%; Moderate = 30 - 60%; High = 60 - 100%						
Notes: (vegetation species, types of structures) <u>deciduous trees, Skunk cabbage.</u>						
Riparian Vegetation			Riparian Vegetation			
Width and Description of riparian vegetation:	LB - <u>&gt;6m forest</u>		RB - <u>&gt;6m forest.</u>			
Overhanging Vegetation Present <u>Y/N</u>			% Overhanging Vegetation:			
Description of Overhanging Vegetation:						
Obstructions to Fish Passage						
None Observed	<input type="checkbox"/>	Man-Made	<input type="checkbox"/>	Natural	<input type="checkbox"/>	Low Flow Barrier <input checked="" type="checkbox"/>
Description of Barrier: <u>water level was very low.</u>						
Height of Barrier (m)			GPS Coordinates:			

Water Bodies Assessment Field Collection Form

AECOM

Date: June 12/12

Land Parcel/Site ID: BOR 2103  
R2.70 Page 3 of 4

Other General Comments Regarding the Study Area:

Watercourse begins at seep and flow down to converge with R2.54. The watercourse was shallow and had an extremely sandy bottom. The channel runs through a larger wetland channel, that is very moist and covered in skunk cabbage, and then up the slope is deciduous forest.

Additional UTM Coordinates:

with R2.54

Photo log			
Picture #	Description	Picture #	Description
2-3	overview		
8-11	seep		

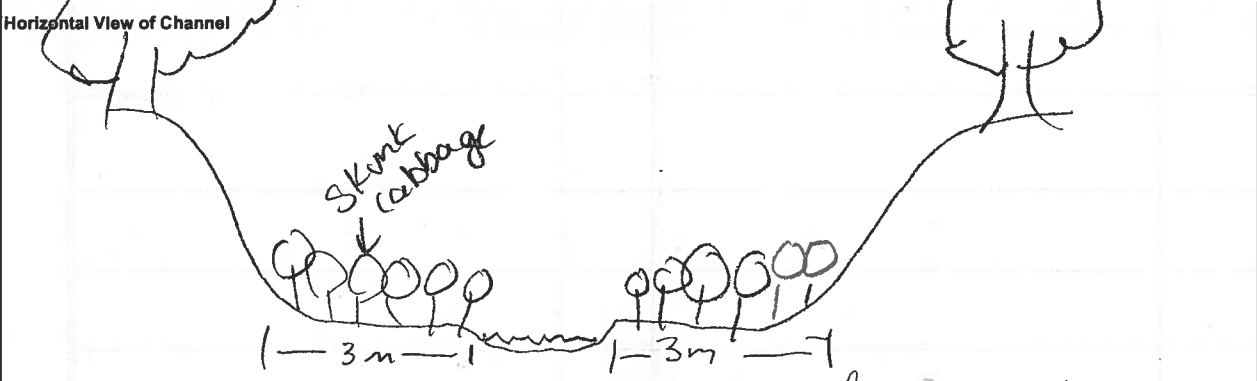
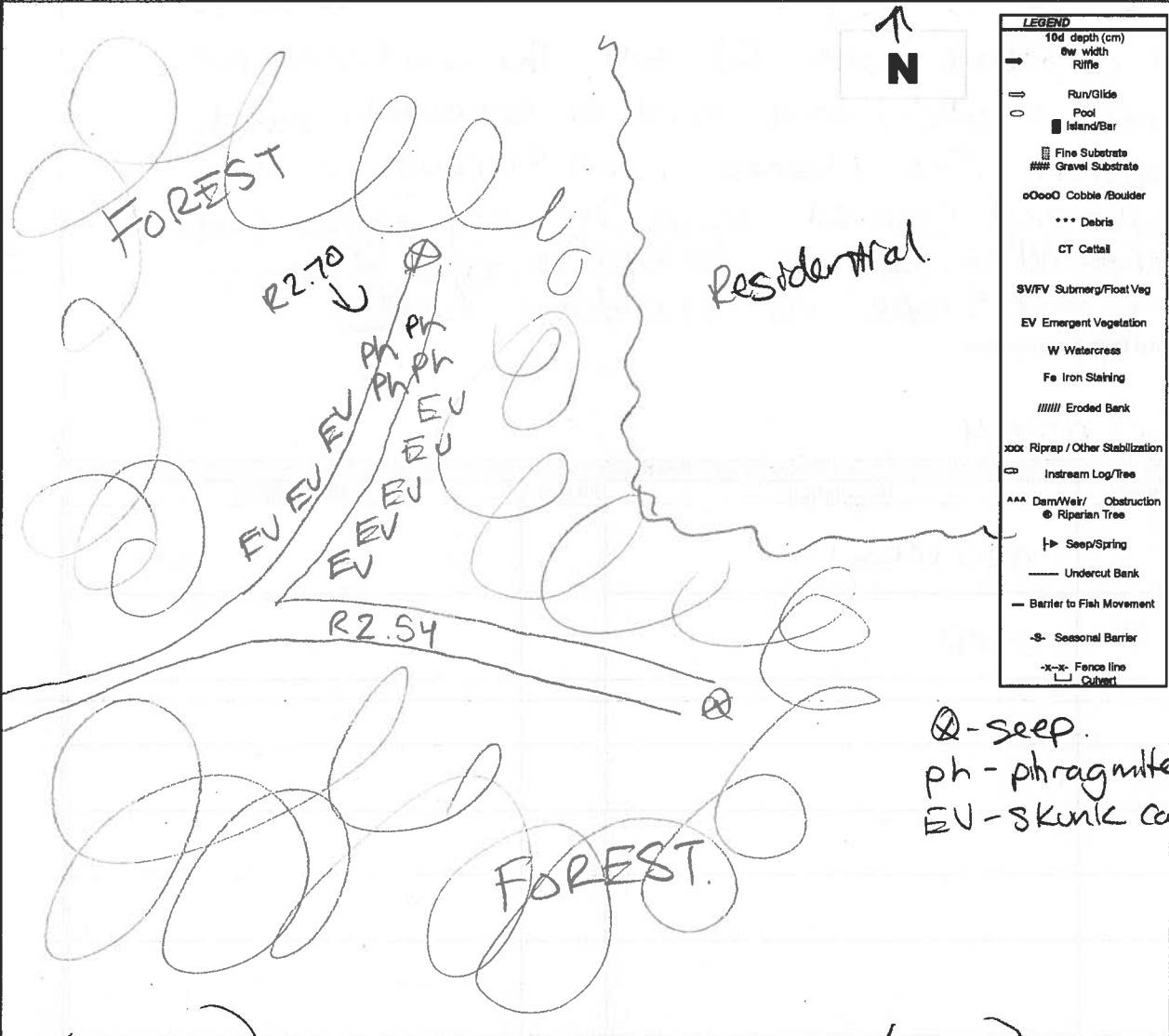
Water Bodies Assessment Field Collection Form

AECOM

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Watercourse Sketch

Study Area: Jericho Goshen Bluewater Land Parcel# June 12/17 Site ID R2.70



Initial QA/QC By: L Bentley Date: June 29, 2012 Technical QA/QC By: [Signature] Date: July 10/12

Water Bodies Assessment Field Collection Form

<b>AECOM</b>		Page 1 of 4	
<b>General Information</b>			
Study Area: <u>Jericho</u> Goshen Bluewater		Land Parcel# <u>BOR1103</u>	Site ID: <u>R2.40 SBOR1103</u> <i>CSoc</i>
Date: <u>May 16/12</u>		Start time: <u>15:10</u>	End Time: <u>15:30</u>
Weather Conditions: <u>14°C Sunny</u>		Field Crew: <u>5 Lonnes JEpp</u> Field Notes By: <u>J.Epp</u>	
<b>Site Location</b>			
<u>South of Eighmfield, west of Sylvan</u>			
<b>UTM Co-ordinates (continue on page 3 if necessary)</b>			
Easting: <u>436088</u>	Northing: <u>4777819</u>	Description:	
Easting:	Northing:	Description:	
Easting:	Northing:	Description:	
Easting:	Northing:	Description:	
<b>Surrounding Landuse</b>		<b>Type of Watercourse</b>	
Residential <input type="checkbox"/>	Meadow <input type="checkbox"/>	Intermittent <input type="checkbox"/>	Channelized <input type="checkbox"/>
Agriculture <input type="checkbox"/>	Wetland <input type="checkbox"/>	Permanent <input checked="" type="checkbox"/>	Natural Channel <input checked="" type="checkbox"/>
Forest <input checked="" type="checkbox"/>	Livestock <input type="checkbox"/>	Ephemeral <input type="checkbox"/>	
Other <input type="checkbox"/>			
Description: <u>Mixed Forest</u>		Description: <u>meandering, vegetated banks in forest</u>	
Notes: (include any inputs into the system i.e. tile drainage, seepages, overland flow)			
<u>none seen</u>			
Is any portion of the water body underground or not as mapped? Y / <input checked="" type="radio"/>			
If Yes describe:			
GPS Coordinate: Easting -		Northing - Description-	
<b>Description of Land Topography Surrounding Water Body (rolling hills, sloping towards water body)</b>			
<u>sloping towards water body, water course in a valley.</u>			
<b>In-Situ Water Quality</b>		<b>Ground Water and Seepage Indicators</b>	
WT (°C):	AT (°C): <u>16</u>	Watercress <input type="checkbox"/>	Bank Seepage <input type="checkbox"/>
pH:	Cond ( s/cm):	Iron Staining <input type="checkbox"/>	None seen <input checked="" type="checkbox"/>
D.O. (mg/L)		Bubbling <input type="checkbox"/>	
Water Clarity: Clear <input type="checkbox"/> Turbid <input checked="" type="checkbox"/>		Other <input type="checkbox"/>	
Water Colour: <u>Brown</u>		Details:	
Notes: <u>no wq taken, ASA</u>			

ASA

**Water Bodies Assessment Field Collection Form**

Stream Morphology																				
Site Length (m): <u>50m</u>			Bank Stability:																	
Channel Dimensions			<table style="width:100%; text-align: center;"> <tr> <td></td> <td>Stable</td> <td>Slightly unstable</td> <td>Moderately unstable</td> <td>Unstable</td> </tr> <tr> <td>Left Bank</td> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td>Right Bank</td> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> </table>				Stable	Slightly unstable	Moderately unstable	Unstable	Left Bank	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Right Bank	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Stable	Slightly unstable	Moderately unstable	Unstable																
Left Bank	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>																
Right Bank	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>																
Mean Wetted Width (m): <u>4m</u>	Mean Wetted Depth (m): <u>ASA</u>	Description: <u>no signs of erosion or slumping seen.</u>																		
Mean Bankfull Width (m): <u>4.5m</u>	Mean Bankfull Depth (m): <u>↓</u>																			
Mean Top of Bank Width (m): <u>&gt;30m</u>	Mean Top of Bank Depth (m): <u>↓</u>																			
Flow Description: (high or low flow conditions, stagnant, etc) <u>low flow, <del>stagnant</del> high volume.</u>																				
Habitat																				
Substrate (<=>)		Description		Morphological Structure (%)																
Bo - Boulder Co - Cobble Gr - Gravel Sa - Sand Si - Silt Cl - Clay MK - Muck DT - Detritus		<u>ASA</u>		<table border="1" style="width:100%; text-align: center;"> <tr> <th>Pool</th> <th>Riffle</th> <th>Run</th> <th>Flat</th> </tr> <tr> <td></td> <td></td> <td></td> <td><u>100</u></td> </tr> </table>		Pool	Riffle	Run	Flat				<u>100</u>							
Pool	Riffle	Run	Flat																	
			<u>100</u>																	
				Notes: <u>low flow, high volume</u>																
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.) <u>Turbid conditions ASA</u>																				
Canopy Cover (% closed cover):			Types of Cover (% cover)																	
100-90%	<input type="checkbox"/>	30-1%	<input checked="" type="checkbox"/>	Trees <u>100</u>	Shrubs _____															
90-60%	<input type="checkbox"/>	0%	<input type="checkbox"/>	Grasses _____	Herbaceous _____															
60-30%	<input type="checkbox"/>				Man-made structures _____ Other _____															
Note: Low = 0 - 30%; Moderate = 30 - 60%; High = 60 - 100%																				
Notes: (vegetation species, types of structures) <u>couldn't tell, but hardwood trees.</u>																				
Riparian Vegetation																				
Width and Description of riparian vegetation:		LB - <u>&gt; 200m</u>	RB - <u>&gt; 160m</u>																	
Overhanging Vegetation Present <u>0</u> / N		% Overhanging Vegetation: <u>5%</u>																		
Description of Overhanging Vegetation:		<u>grasses</u>																		
Obstructions to Fish Passage																				
None Observed	<input checked="" type="checkbox"/>	Man-Made	<input type="checkbox"/>	Natural	<input type="checkbox"/>															
				Low Flow Barrier	<input type="checkbox"/>															
Description of Barrier:																				
Height of Barrier (m)			GPS Coordinates:																	

Water Bodies Assessment Field Collection Form

AECOM

Date: May 16/12

Land Parcel/Site ID: R2.40 (South)  
- BOR 1103

Page 3 of 4

Other General Comments Regarding the Study Area:

Couldn't see alot, the water was very turbid. Natural channel in mixed forest, meandering stream. Very low flow, but high volume of water.

Additional UTM Coordinates:

Photo log

Picture #	Description	Picture #	Description
1	sheet		
2	veg comm.		
3	channel		
4	veg-community		

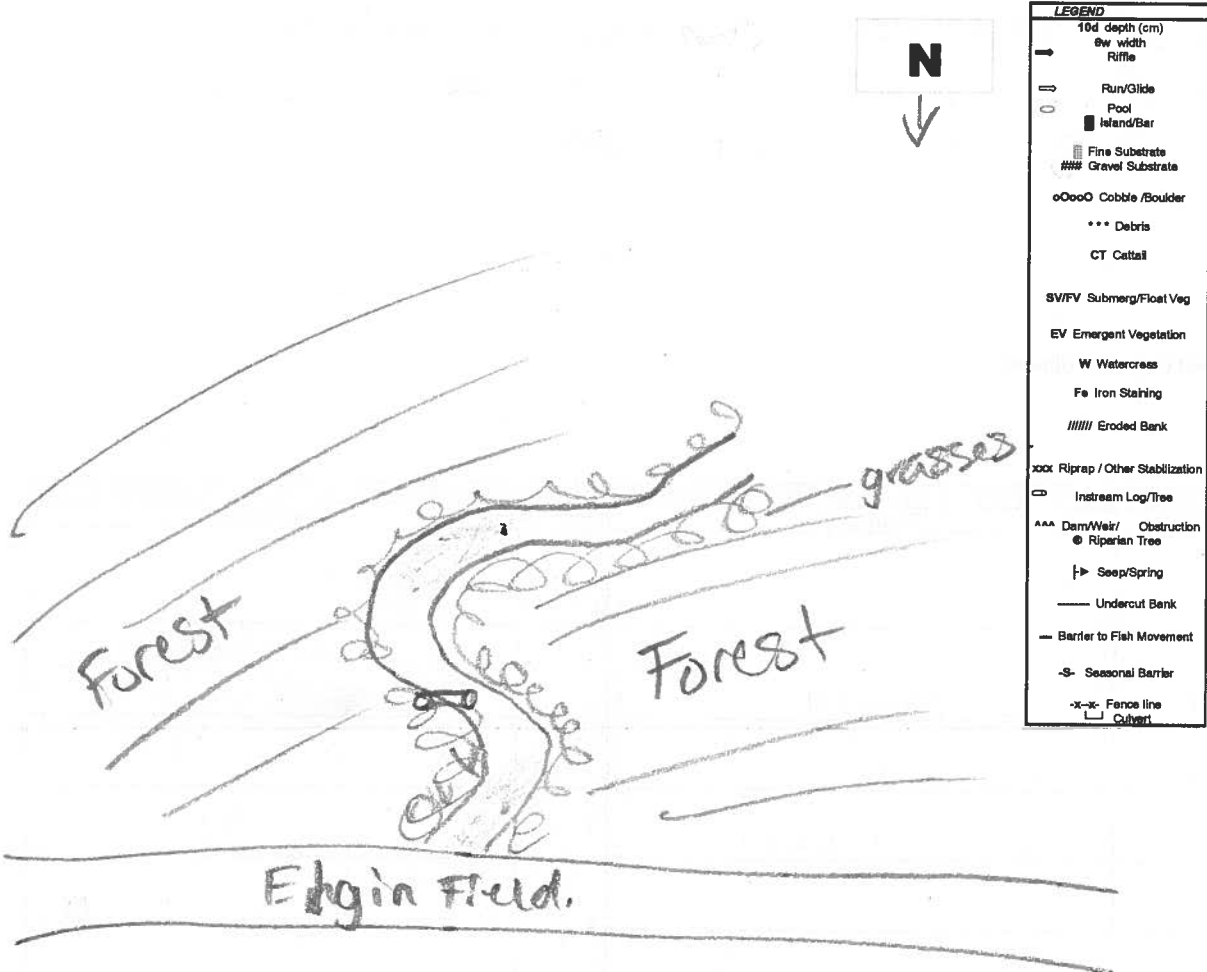
Water Bodies Assessment Field Collection Form

AECOM

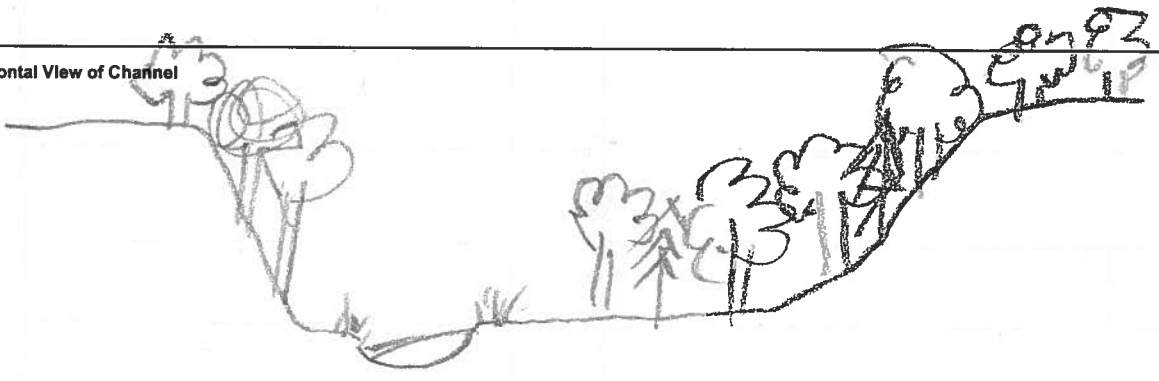
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Watercourse Sketch

Study Area: Jericho Goshen Bluewater Land Parcel# BOR 1103 Site ID R2.40 - BOR 1103



Horizontal View of Channel



Initial QA/QC By: L. Bentley

Date: May 22, 2012

Technical QA/QC By: J. Luthin Date: Jun 11/12

Water Bodies Assessment Field Collection Form

AECOM

Page 1 of 4

General Information

Study Area: Jericho Goshen Bluewater Land Parcel# BOR1571 Site ID: R2, 40 BOR1571

ASA  
roadside

Date: MAY 16 / 2012 Start time: 15:10 PM End Time: 15:25 PM

Weather Conditions:

Sunny, 14°C

Field Crew: S. LOHNER J. EFF

Field Notes By: S. LOHNER

Site Location

north off Elginfield Rd, west of Sylvan Rd.

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

Easting: 0436087 Northing: 4977831 Description: roadside

Easting: Northing: Description:

Easting: Northing: Description:

Easting: Northing: Description:

Surrounding Landuse

- Residential
- Agriculture
- Forest
- Other
- Meadow
- Wetland
- Livestock

Description:

Type of Watercourse

- Intermittent
- Permanent
- Ephemeral
- Channelized
- Natural Channel

Description:

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

unknown

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

GPS Coordinate: Easting - Northing - Description -

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

forested ravine then wide floodplain.

In-Situ Water Quality

WT (°C): AT (°C): 14°C  
 pH: Cond ( s/cm):  
 D.O. (mg/L)  
 Water Clarity: Clear  Turbid

Water Colour:

ASA

Notes:

Ground Water and Seepage Indicators

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

Details:

none observed.



**Water Bodies Assessment Field Collection Form**

Stream Morphology													
Site Length (m): <u>50m (visible)</u>			Bank Stability:										
Channel Dimensions			ASA										
Mean Wetted Width (m): <u>5.0m</u>	Mean Wetted Depth (m):		Stable	Slightly unstable	Moderately unstable								
Mean Bankfull Width (m): <u>6.0m</u>	Mean Bankfull Depth (m):		Left Bank <input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>								
Mean Top of Bank Width (m): <u>&gt;30m</u>	Mean Top of Bank Depth (m):		Right Bank <input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>								
Flow Description: (high or low flow conditions, stagnant, etc)			Description: <u>natural channel.</u>										
<u>low flow, high volume</u>													
Habitat													
Substrate (<=>)		Description		Morphological Structure (%)									
Bo - Boulder Co - Cobble Gr - Gravel Sa - Sand Si - Silt Cl - Clay MK - Muck DT - Detritus		<u>unk (ASA)</u>		<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>Pool</th> <th>Riffle</th> <th>Run</th> <th>Flat</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td></td> <td align="center">100</td> </tr> </tbody> </table>		Pool	Riffle	Run	Flat				100
Pool	Riffle	Run	Flat										
			100										
				Notes: <u>flow not visible.</u>									
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.)													
<u>unknown (ASA)</u>													
Canopy Cover (% closed cover):			Types of Cover (% cover)										
100-90% <input type="checkbox"/>	30-1% <input checked="" type="checkbox"/>		Trees <u>5</u>	Shrubs <u>10</u>	Man-made structures								
90-60% <input type="checkbox"/>	0% <input type="checkbox"/>		Grasses <u>5</u>	Herbaceous	Other								
60-30% <input type="checkbox"/>													
Note: Low = 0 - 30%; Moderate = 30 - 60%; High = 60 - 100%													
Notes: (vegetation species, types of structures)													
<u>ash, red osier dogwood, grasses</u>													
Riparian Vegetation													
Width and Description of riparian vegetation:	LB - <u>&gt;30 forest ravine/floodplain</u>	RB - <u>&gt;30 forest ravine/floodplain</u>											
Overhanging Vegetation Present <input checked="" type="checkbox"/> N	% Overhanging Vegetation: <u>35%</u>												
Description of Overhanging Vegetation: <u>grasses</u>													
Obstructions to Fish Passage													
None Observed <input checked="" type="checkbox"/>	Man-Made <input type="checkbox"/>	Natural <input type="checkbox"/>	Low Flow Barrier <input type="checkbox"/>										
Description of Barrier: <u>none observed.</u>													
Height of Barrier (m)			GPS Coordinates:										

Water Bodies Assessment Field Collection Form

AECOM

Date: MAY 16/12

Land Parcel/Site ID: R240

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BOR 1571

Other General Comments Regarding the Study Area:

- natural channel w/ wide floodplain and riparian native forest community.
- some backwater areas north of culvert w emergent veg
- overhanging shrubs + grasses along

Additional UTM Coordinates:

entire length visible.

- turbid conditions - cannot assess substrate

Photo log

Picture #	Description	Picture #	Description
1	Sheet		
2	roadside overview		
3	looking @ channel		
4	adjacent veg comm.		
5	" "		

Water Bodies Assessment Field Collection Form

AECOM

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Watercourse Sketch

Study Area:

Jericho

Goshen

Bluewater

Land Parcel#

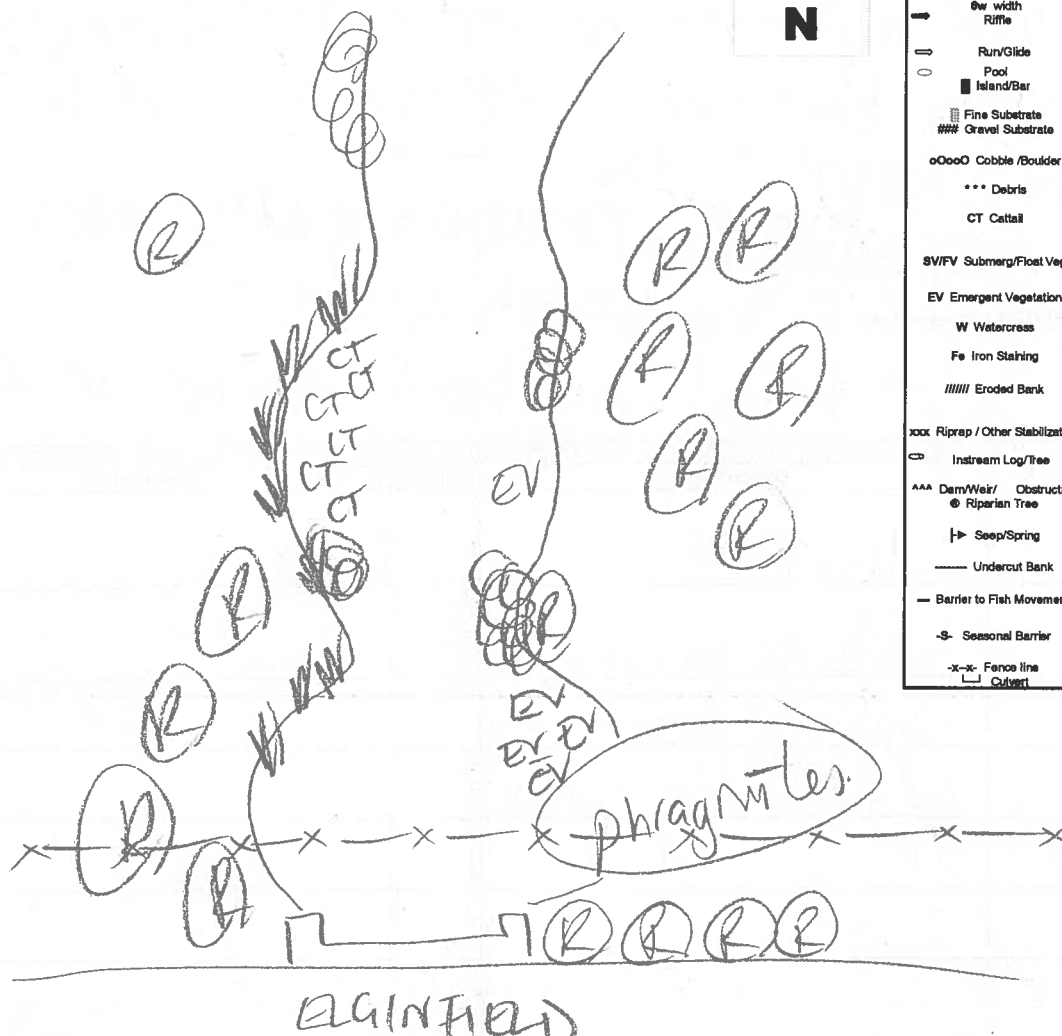
60R1571

Site ID

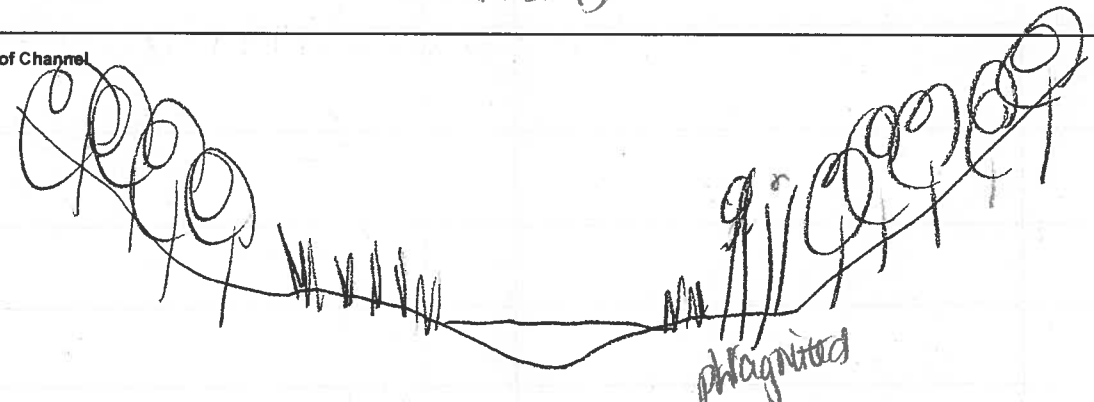
R240

LEGEND

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



Horizontal View of Channel



Initial QA/QC By:

L. Bentley

Date:

May 22 2002

Technical QA/QC By:

John Yu 11/12

Date:

Water Bodies Assessment Field Collection Form

**AECOM**

General Information

Study Area: Jericho Goshen Bluewater Land Parcel# BOR1958/1B5AA Site ID: R2.72-BOR1958/1B5AA  
 Date: MAY 18/10 Start time: 15:35 PM End Time: 16:10 PM

Weather Conditions:

Sunny, 14°C, windy

Field Crew: S. LOMNES J. EPP

Field Notes By: S. LOMNES

ASA on 1B5AA

Site Location

north of Elginfield Rd, 120 m west of Sylvan

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

Easting: <u>436300</u>	Northing: <u>4777898</u>	Description: <u>START (comes from underground)</u>
Easting: <u>436257</u>	Northing: <u>4777919</u>	Description: <u>H2O Chem.</u>
Easting: <u>436240</u>	Northing: <u>4777944</u>	Description: <u>end of reach.</u>
Easting:	Northing:	Description:

Surrounding Landuse

Residential  Meadow   
 Agriculture  Wetland   
 Forest  Livestock   
 Other

Description:

Forest riparian then inactive pasture + Residential

Type of Watercourse

Intermittent  Channelized   
 Permanent  Natural Channel   
 Ephemeral

Description:

from outlet, channel is natural.

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:

see north waterbody from aerial map

GPS Coordinate: Easting - Northing - Description -

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

rolling hills

In-Situ Water Quality

WT (°C): 14.5°C AT (°C): 14°C  
 pH: 8.09 Cond (s/cm): 707  
 D.O. (mg/L): 6.90  
 Water Clarity: Clear  Turbid

Water Colour: and colourless

Notes:

Ground Water and Seepage Indicators

Watercress  Bank Seepage   
 Iron Staining  None   
 Bubbling    
 Other

Details:

watercress @ culvert outlet / start of reach

**Water Bodies Assessment Field Collection Form**

Stream Morphology							
Site Length (m): <i>60 m above ground</i>			Bank Stability:				
Channel Dimensions			Stable	Slightly unstable	Moderately unstable	Unstable	
Mean Wetted Width (m): <i>0.4m</i>	Mean Wetted Depth (m): <i>0.10m</i>	Left Bank	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Mean Bankfull Width (m): <i>0.6m</i>	Mean Bankfull Depth (m): <i>0.15m</i>	Right Bank	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Mean Top of Bank Width (m): <i>8.0m</i>	Mean Top of Bank Depth (m):	Description: <i>stable, vegetated</i>					
Flow Description: (high or low flow conditions, stagnant, etc)							
<i>moderate flow, low volume</i>							
Habitat							
Substrate (<=>)		Description		Morphological Structure (%)			
Bo - Boulder	Co - Cobble	Gr - Gravel	Sa - Sand	Si - Silt	Cl - Clay		
MK - Muck	DT - Detritus	<i>Si + Sa -&gt; Gr</i>		Notes: <i>rms-</i>			
				Pool	Riffle	Run	Flat
						<i>100</i>	
Instream Cover (%)							
Other	Woody Debris	Boulders	Cobble	Aquatic Vegetation*	None	Undercut Banks	
				<i>35</i>		Average Depth: (% Cover)	
Note: Low = 0 - 30%; Moderate = 30 - 75%; High = 75 - 100%							
*Aquatic Vegetation Species Present (algae, submergent, emergent etc.)							
<i>algae, water cress</i>							
Canopy Cover (% closed cover):			Types of Cover (% cover)				
100-90%	<input type="checkbox"/>	30-1%	<input type="checkbox"/>	Trees <i>35</i>	Shrubs	Man-made structures	
90-60%	<input type="checkbox"/>	0%	<input type="checkbox"/>	Grasses	Herbaceous	Other	
60-30%	<input checked="" type="checkbox"/>						
Note: Low = 0 - 30%; Moderate = 30 - 60%; High = 60 - 100%							
Notes: (vegetation species, types of structures)							
<i>ash</i>							
Riparian Vegetation							
Width and Description of riparian vegetation:	LB - <i>floodplain w/ herbaceous sp + matted</i>	RB - <i>&lt; 2m some mature trees + grasses</i>					
Overhanging Vegetation Present <input checked="" type="checkbox"/> N	% Overhanging Vegetation:		<i>Canada alumina, penweed.</i>				
Description of Overhanging Vegetation: <i>grasses + herbaceous wetland plants</i>							
Obstructions to Fish Passage							
None Observed <input checked="" type="checkbox"/>	Man-Made <input type="checkbox"/>	Natural <input type="checkbox"/>	Low Flow Barrier <input type="checkbox"/>				
Description of Barrier:							
Height of Barrier (m)			GPS Coordinates:				

Water Bodies Assessment Field Collection Form

AECOM

Date: May 16/12

Land Parcel/Site ID:

R2.72-  
BOR 1958/1857A

Page 3 of 4

Other General Comments Regarding the Study Area:

w/c comes under road, then is tiled to pass under adjacent pasture. It outlets on residential property + flows as a wide floodplain marshy area w/ moderate gradient

Additional UTM Coordinates:

Photo log			
Picture #	Description	Picture #	Description
1	Sheet	13	tile inlet
2	tile outlet	14	culvert under road
3	aq. veg / watercress		
4	overview d/s		
5	Shallow channel		
6	view looking u/s		
7	looking d/s		
8	Shaded channel		
9	ASA looking d/s		
10	pond (ASA)		
11	roadway tile inlet		
12	wet depression (tile inlet)		

Water Bodies Assessment Field Collection Form

AECOM

Page 4 of 4

Watercourse Sketch

Study Area:

Jericho

Goshen

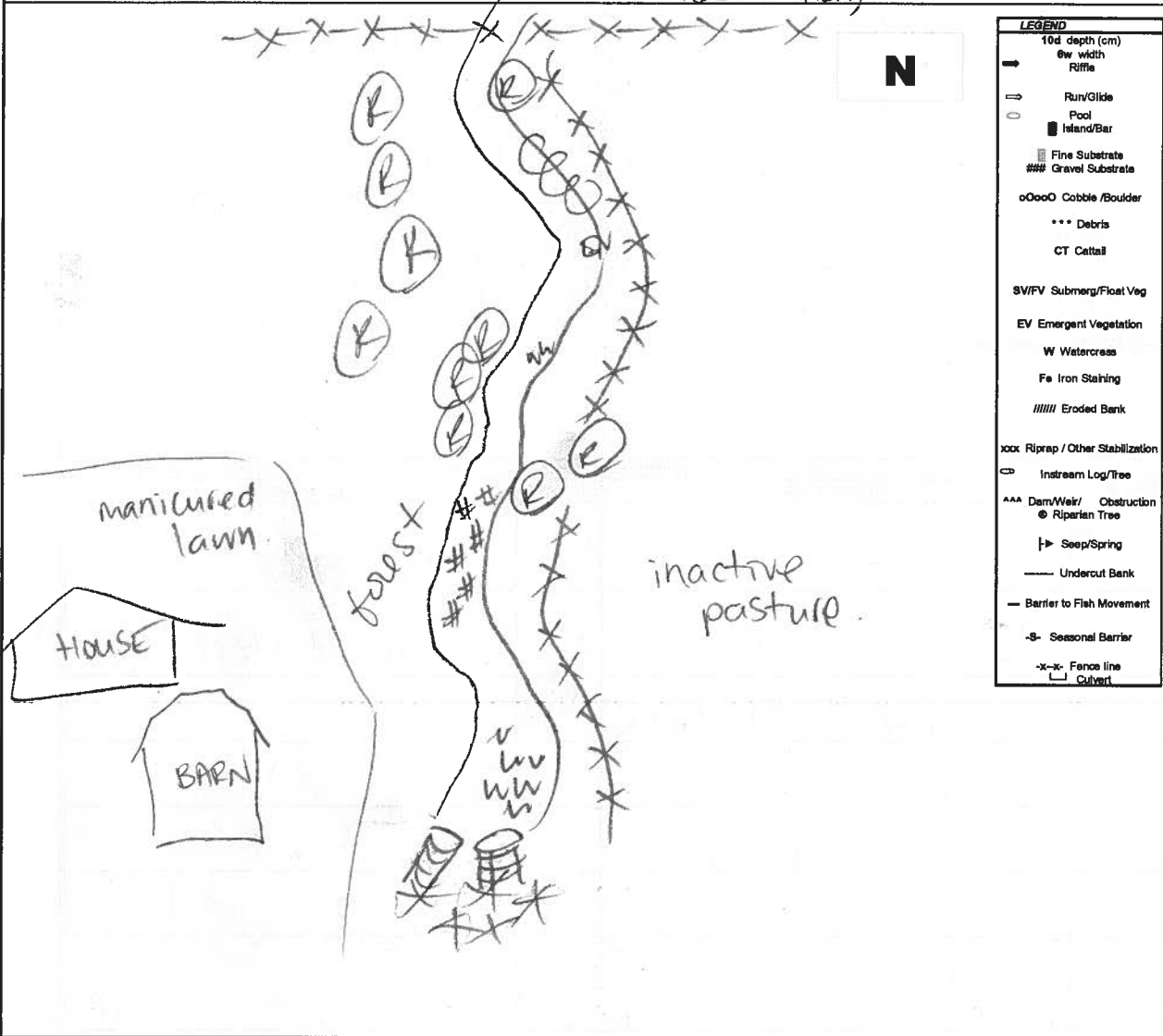
Bluewater

Land Parcel#

BOR 195B/  
1859A (ASA)

Site ID

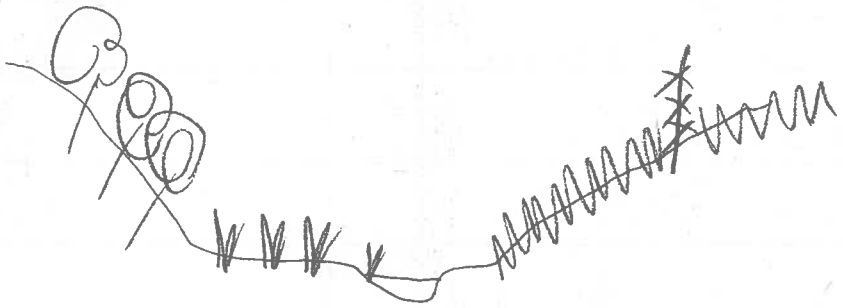
R2.72



**LEGEND**

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

Horizontal View of Channel



Initial QA/QC By: *L. Bernier*

Date: *May 22, 2012*

Technical QA/QC By: *Jutta* Date: *June 11/12*

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

<b>AECOM</b>		Page 1 of 2	
<b>General Information</b>			
Study Area: <u>Jericho</u> Goshen Bluewater	Land Parcel# <u>BOR 1958</u>	Site ID: <u>R2.72-BOR1958/1854A</u>	
Date: <u>MAY 16/12</u>	Start time: <u>5:35 PM</u>	End Time: <u>16:10 PM</u>	
Weather Conditions: <u>Sunny, 14°C, windy</u>	Field Crew: <u>S. LOHNES J. EPP</u>	Field Notes By: <u>S. LOHNES</u>	
<b>Site Location</b>			
<u>north of Elginfield Rd, 100 m west of Sylvan</u>			
<b>UTM Co-ordinates</b>			
Easting: <u>436300</u>	Northing: <u>4777898</u>	Description: <u>tile outlet</u>	
Easting: _____	Northing: _____	Description: _____	
Easting: _____	Northing: _____	Description: _____	
Easting: _____	Northing: _____	Description: _____	
<b>Surrounding Landuse</b>		<b>Ground Water and Seepage Indicators</b>	
Residential <input type="checkbox"/>	Meadow <input type="checkbox"/>	Watercress <input type="checkbox"/>	Bank Seepage <input type="checkbox"/>
Agriculture <input checked="" type="checkbox"/>	Wetland <input type="checkbox"/>	Iron Staining <input type="checkbox"/>	None <input checked="" type="checkbox"/>
Forest <input type="checkbox"/>	Livestock <input checked="" type="checkbox"/>	Bubbling <input type="checkbox"/>	
Other <input type="checkbox"/>			
Description: <u>inactive pasture, residence adjacent</u>		Details: <u>none observed.</u>	
<b>Feature Description</b>			
Is the mapped water body any of the below:			
1) a grassed waterway?	Y / <u>N</u>		
2) Temporary channel for surface drainage, that can be tilled or driven through?	Y / <u>N</u>		
3) Rock chutes or spillways?	Y / <u>N</u>		
4) Roadside ditches that are not connected or do not contain a permanent or intermittent stream?	Y / <u>N</u>		
5) Temporarily ponded areas that are normally farmed?	Y / <u>N</u>		
6) Artificial bodies of water intended for storage, treatment for farming purposes?	Y / <u>N</u>		
8) Any other:	<u>section of 2.72 is tiled and runs underground.</u>		
Description: (i.e. length of change, if it reappears, if there is evidence of water)			
<u>R2.72 passes under Elginfield road then is tiled under BOR 1958 where it is pasture. Outlet reappears @ edge of pasture.</u>			
<b>Photo log</b>			
Picture #	Description	Picture #	Description
<u>—</u>	<u>see R2.72-BOR 1958</u>		



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

AECOM

Date:

MAY 16/12

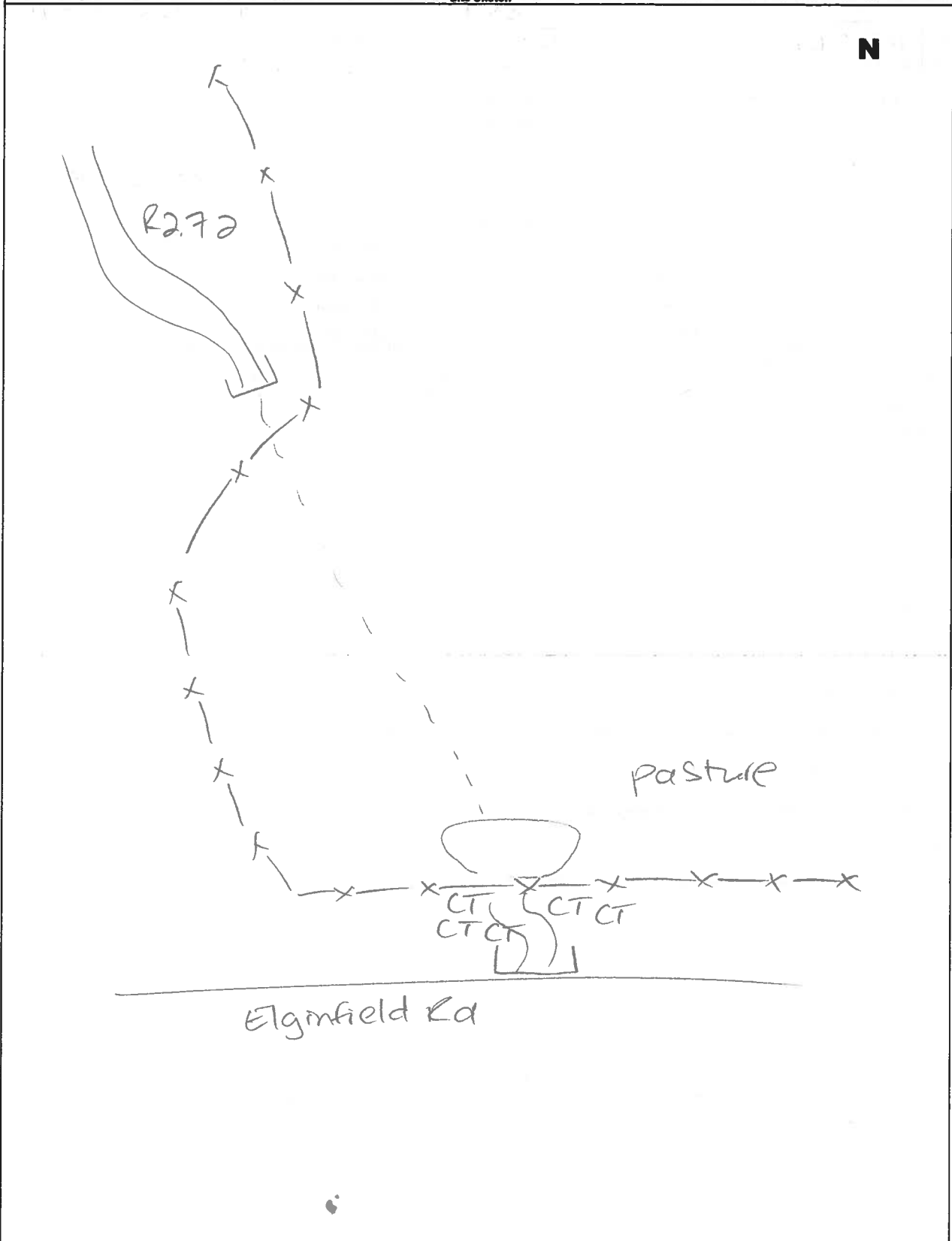
Land Parcel/Site ID:

BOR1958

R2.72

Page 2 of 2

Site Sketch



Initial QAVOC: L. Bentley Oct 25/12

Saunders Oct 2/12

Water Bodies Assessment Field Collection Form

AECOM

General Information BOR

Study Area: Jericho Goshen Bluewater Land Parcel# 1733/1389/2177 Site ID: R2.72

Date: May 30/12 Start time: 8:20 1453/1130 End Time: 10:30

Weather Conditions: Sunny, 15°C  
Field Crew: C. Barros, A. Arsenault  
Field Notes By: C. Barros

Site Location

Sylvan Rd., South of Elginfield Rd.

ASA For 1676

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

Easting: 0436310 Northing: 4777781 Description: Bor 1453 → @ w of fish barrier.

Easting: 0436345 Northing: 4777685 Description: Bor 1453 R2.72 w of pond.

Easting: Northing: Description:

Easting: Northing: Description:

Surrounding Landuse

Residential  Meadow   
Agriculture  Wetland   
Forest  Livestock   
Other

Type of Watercourse

Intermittent  Channelized   
Permanent  Natural Channel   
Ephemeral

Description: watercourse flows through residential properties + areas of forest

Description: 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?  N

If Yes describe: Ponds present on Bor 1453

GPS Coordinate: Easting - 0436310 Northing - 4777781 Description - @ dam

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

Slightly hilly

In-Situ Water Quality

WT (°C): 15.66 AT (°C): 20°C  
pH: 6.07 Cond (µs/cm): 404  
D.O. (mg/L): 10.66  
Water Clarity: Clear  Turbid

Water Colour:

Notes: Wg taken in water 0.07 m

Ground Water and Seepage Indicators

Watercress  Bank Seepage   
Iron Staining  None   
Bubbling    
Other

Details:

None observed west of Sylvan  
Creeping Jenny observed on Bor 1136 → potential seep area

**Water Bodies Assessment Field Collection Form**

Stream Morphology						
Site Length (m): <i>200m</i>			Bank Stability:			
Channel Dimensions			Stable	Slightly unstable	Moderately unstable	Unstable
Mean Wetted Width (m): <i>0.6</i>	Mean Wetted Depth (m): <i>0.07</i>	Left Bank <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>				
Mean Bankfull Width (m): <i>0.75</i>	Mean Bankfull Depth (m): <i>0.25</i>	Right Bank <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>				
Mean Top of Bank Width (m): <i>0.75</i>	Mean Top of Bank Depth (m): <i>0.25</i>	Description: <i>well vegetated</i>				
Flow Description: (high or low flow conditions, stagnant, etc) <i>low water level, moderate flow</i>						
Habitat						
Substrate (<=>)		Description		Morphological Structure (%)		
Bo - Boulder Co - Cobble Gr - Gravel Sa - Sand Si - Silt Cl - Clay MK - Muck DT - Detritus	<i>sa &gt;&gt; si, cl &gt; gr</i>		Pool	Riffle	Run	Flat
			<i>/</i>	<i>/</i>	<i>/</i>	<i>100</i>
			Notes: <i>set slightly meanders</i>			
Instream Cover (%) <i>30</i>						
Other	Woody Debrts	Boulders	Cobble	Aquatic Vegetation*	None	Undercut Banks
<i>/</i>	<i>/</i>	<i>/</i>	<i>/</i>	<i>20</i>	<i>/</i>	Average Depth: <i>0.05</i> (% Cover) <i>10</i>
Note: Low = 0 - 30%; Moderate = 30 - 75%; High = 75 - 100%						
*Aquatic Vegetation Species Present (algae, submergent, emergent etc.) <i>Cattail &gt; irises, grasses</i>						
Canopy Cover (% closed cover):			Types of Cover (% cover)			
100-90% <input type="checkbox"/>	30-1% <input type="checkbox"/>	Trees <i>40</i>	Shrubs <i>40</i>	Man-made structures		
90-60% <input checked="" type="checkbox"/>	0% <input type="checkbox"/>	Grasses	Herbaceous <i>20</i>	Other		
60-30% <input type="checkbox"/>						
Note: Low = 0 - 30%; Moderate = 30 - 60%; High = 60 - 100%						
Notes: (vegetation species, types of structures) <i>dogwood, <del>...</del>, irises, willow, cattail, maple</i>						
Riparian Vegetation						
Width and Description of riparian vegetation: LB - <i>&lt;0.5 - 15m</i>			RB - <i>20.5m - 30m</i>			
Overhanging Vegetation Present <input checked="" type="checkbox"/> N			% Overhanging Vegetation: <i>20</i>			
Description of Overhanging Vegetation: <i>In the forest areas some dogwood + willow, in wetland areas cattail + grasses</i>						
Obstructions to Fish Passage						
None Observed <input type="checkbox"/>	Man-Made <input checked="" type="checkbox"/>	Natural <input type="checkbox"/>	Low Flow Barrier <input type="checkbox"/>			
Description of Barrier: <i>stream is dammed via BOR 1453</i>						
Height of Barrier (m) <i>0.5</i>			GPS Coordinates: <i>BOR 1453 points</i>			

Water Bodies Assessment Field Collection Form

AECOM

Date: May 30/12

Land Parcel/Site ID: R2, Z2  
BOR 1733/1389/2157/1453/1136

Page 3 of 4

Other General Comments Regarding the Study Area:

BOR 1733 - Landowner says - green frogs, spring peepers, milksnake

Moving south ~~to~~ to north → As it passes Sylvan rd it is channelized through BOR 1676 (no impaction) as it enters BOR 1733 it flows through wetland area (cattails + irises) → it appears to continue flowing through wetland marsh near utility property BOR 1453. It enters a forest area then becomes dammed. As it flows over the dam the water level is low. A culvert connecting the stream across the

Additional UTM Coordinates:

Street was flowing on 1453 but ~~it~~ did not re-appear on BOR 1458 the watercourse

\* Investigation on BOR 1136 revealed a potential seep area. The area was very indicative of

Photo log			
Picture #	Description	Picture #	Description
1a	Sheet		
1b-4	BOR 1733		
5-6	BOR <del>1733</del> 1676		
7-9	BOR 1733-1389		
10-11	from road looking at BOR 1453		
12-13	Culvert under Elginfield		
14-16	Pond + dam		
17-19	South portion of BOR 1453		
20-21	upstream of pond		
22	BOR 1958		
23	BOR 1136 from road		
24-33	Seep area		

Spring common  
↓  
Creeping Jo  
~~...~~  
present in mats  
↓  
no defined channels  
braided + shall

Natural

# Water Bodies Assessment Field Collection Form

**AECOM**

Page 4 of 4

**Watercourse Sketch**

Study Area:

Jericho

Goshen

Bluewater

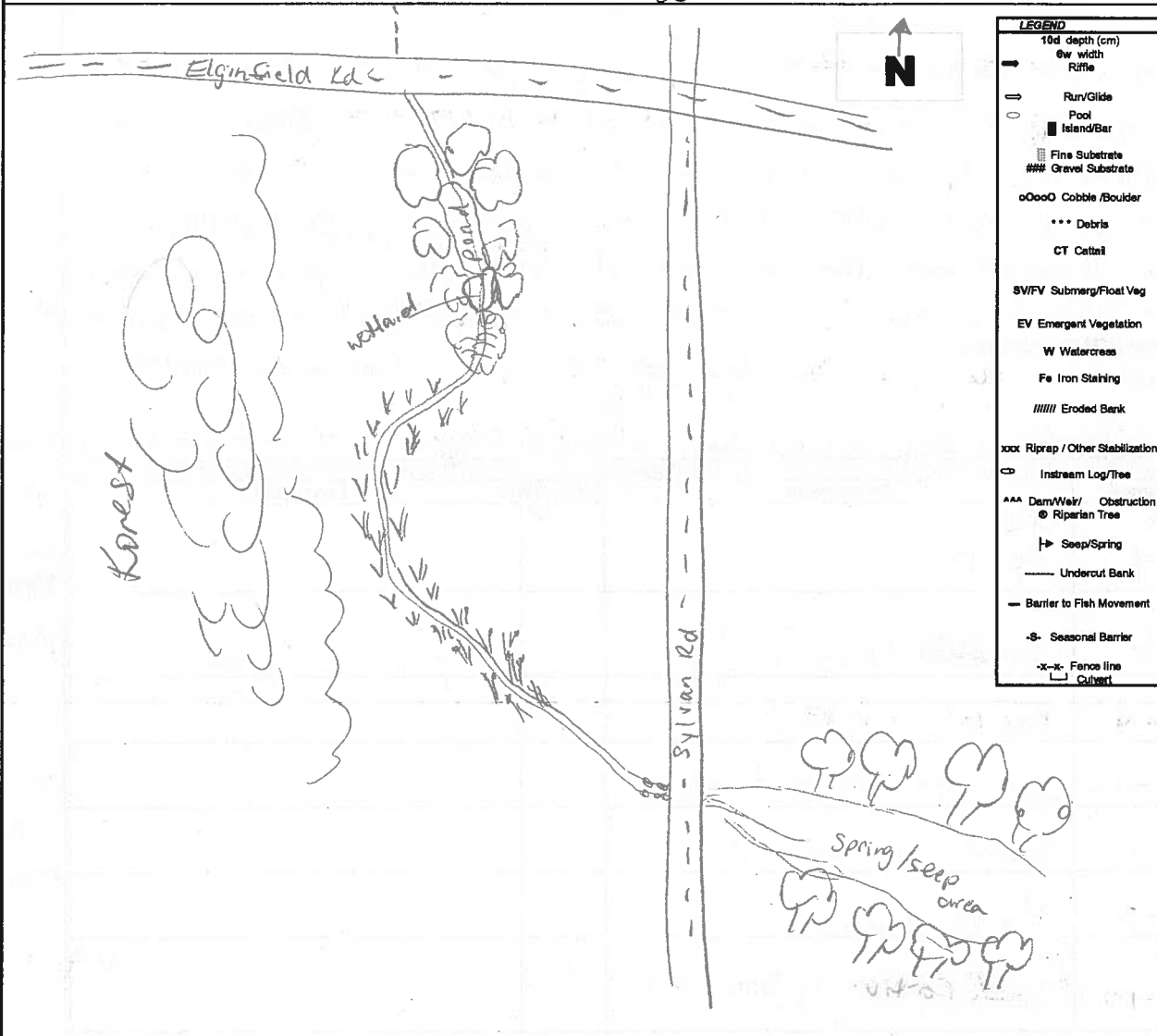
Land Parcel#

BOR 1733/1389/  
2177/1453/

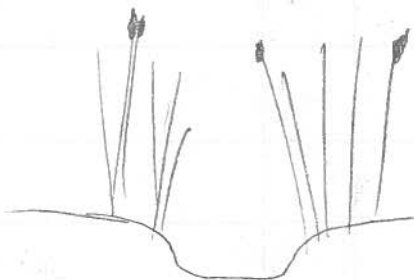
Site ID

R2.72

1136



**Horizontal View of Channel**



Initial QA/QC By:

Bentley

Date: June 9, 2012

Technical QA/QC By:

Stutka

Date: Oct 2/12

Water Bodies Assessment Field Collection Form

AECOM

General Information

Study Area: Jericho Goshen Bluewater Land Parcel# Ser 3747 Site ID: R2.51  
 Date: June 1 / 12 Start time: 8:30 End Time: 11:00  
 Weather Conditions: Rain 12°C Field Crew: SDAVACHE SHARDING  
 Field Notes By: SDAVACHE

Site Location

East of Arkona Rd  
 South of Olefin Field

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

Easting: 433430	Northing: 4777659	Description: R2.51ST
Easting: 433591	Northing: 4777742	Description: R2.51A
Easting: 433903	Northing: 4777856	Description: R2.51END
Easting: 433681	Northing: 4777699	Description: R2.66B

Surrounding Landuse

Residential  Meadow   
 Agriculture  Wetland   
 Forest  Livestock   
 Other

Type of Watercourse

Intermittent  Channelized   
 Permanent  Natural Channel   
 Ephemeral

Description:

Description:

— Deep valley

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

- Side channel valley, Dry, R/B - (R2.51ST)
- Side valley on L/B without channel - R2.66
- Side valley on L/B without channel - R2.58

Is any portion of the water body underground or not as mapped?  
 If Yes describe:

GPS Coordinate: Easting - Northing - Description -

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

Rolling hills, sloping

In-Situ Water Quality

WT (°C): — AT (°C): —  
 pH: — Cond ( s/cm): —  
 D.O. (mg/L): —  
 Water Clarity: Clear  Turbid

Ground Water and Seepage Indicators

Watercress  Bank Seepage   
 Iron Staining  None   
 Bubbling   
 Other

Details:

Water Colour: Brown

Notes:

Not enough water

**Water Bodies Assessment Field Collection Form**

Stream Morphology							
Site Length (m): 600m			Bank Stability:				
Channel Dimensions			Stable	Slightly unstable	Moderately unstable	Unstable	
Mean Wetted Width (m): 0.20	Mean Wetted Depth (m): 0.02	Left Bank	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Mean Bankfull Width (m): 2.00	Mean Bankfull Depth (m): 0.60	Right Bank	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Mean Top of Bank Width (m): >20	Mean Top of Bank Depth (m): >10	Description: eroded lightly in some sections					
Flow Description: (high or low flow conditions, stagnant, etc) Low Flow							
Habitat							
Substrate (<=>) Bo - Boulder Co - Cobble Gr - Gravel Sa - Sand Si - Silt Cl - Clay MK - Muck DT - Detritus			Morphological Structure (%)				
Description Si > Gr > Co > Bo			Pool	Riffle	Run	Flat	
				50	50		
			Notes:				
Instream Cover (%)							
Other	Woody Debris	Boulders	Cobble	Aquatic Vegetation*	None	Undercut Banks	
	5	5	5			Average Depth: (% Cover)	
Note: Low = 0 - 30%; Moderate = 30 - 75%; High = 75 - 100%							
*Aquatic Vegetation Species Present (algae, submergent, emergent etc.) None							
Canopy Cover (% closed cover):			Types of Cover (% cover)				
100-90%	<input checked="" type="checkbox"/>	30-1%	<input type="checkbox"/>	Trees 90	Shrubs	Man-made structures	
90-60%	<input type="checkbox"/>	0%	<input type="checkbox"/>	Grasses	Herbaceous	Other	
60-30%	<input type="checkbox"/>						
Note: Low = 0 - 30%; Moderate = 30 - 60%; High = 60 - 100%							
Notes: (vegetation species, types of structures) Maple Sugar, ASH							
Riparian Vegetation							
Width of riparian vegetation: none, Forest habitat							
Description of vegetation community surrounding 30 m from watercourse: Forest Plants only							
Obstructions to Fish Passage							
No Obstructions	<input checked="" type="checkbox"/>	Man-Made	<input type="checkbox"/>	Natural	<input type="checkbox"/>	Low Flow Barrier	<input type="checkbox"/>
Description of Barrier:							
Height of Barrier (m)			GPS Coordinates:				

Water Bodies Assessment Field Collection Form

AECOM

Date: June 1 / 12

Land Parcel/Site ID:

JER 3747

Page 3 of 4  
R2.51

Other General Comments Regarding the Study Area:

- across @ Wetland From R2.51A TO the road Elgin Field.
- > Most of deer tracks, Observed Raccoon.
- > Not Find Any culvert under the road
- > Wetland vegetation: willow shrubs, Carex sp. CATTAILS, Horsetails, Sensitive fern, Slender white Aster, Northern blue flags.

Additional UTM Coordinates:

Photo log

Picture #	Description	Picture #	Description
1205	U/S From R2.51ST		
1206	D/S From R2.51ST		
1207	Side valley From (R2.51ST) ON R/B		
1208	Facing North		
1209	Facing north From (R2.51A) -> wetland		
1210	Facing south From (R2.66B)		
1217	Rock wall close Elginfield Rd		
1218	Road Drainage From Elginfield		



Water Bodies Assessment Field Collection Form

AECOM

Page 1 of 4

General Information

Study Area: Jericho Goshen Bluewater Land Parcel# SER 3287 Site ID: R2.178

Date: 24 MAY 2018 Start time: 11:20 End Time: 13:10

Weather Conditions: SUNNY DAY 20°C Field Crew: S. AITKEN, S. DARAICHE  
Field Notes By: S. DARAICHE

Site Location

ON the east of ARKONAVD, And Right on EAST OF #87 turbine - IN Forest

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

Easting: 433287 Northing: 4771303 Description: R2.178 END

Easting: 433277 Northing: 4771230 Description: R2.178 ST

Easting: Northing: Description:

Easting: Northing: Description:

Surrounding Landuse  
Residential   
Agriculture   
Forest   
Other   
Meadow   
Wetland   
Livestock

Type of Watercourse  
Intermittent   
Permanent   
Ephemeral   
Channelized   
Natural Channel

Description: Flow ~~in~~ the Forest through

Description: MEANDER SMALL SIZE

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

NONE

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

If Yes describe:

no channel in agriculture field

GPS Coordinate: Easting - Northing - Description- R2.178

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

Rolling in ~~the~~ the Forest through

In-Situ Water Quality

WT (°C): 24.3 AT (°C): 29  
pH: 8.35 Cond (µs/cm): 642  
D.O. (mg/L): 5.5

Water Clarity: Clear  Turbid

Water Colour: Grey light

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): <u>~150</u>			Bank Stability:																				
Channel Dimensions			<table style="width:100%; border-collapse: collapse;"> <tr> <td style="width:15%;"></td> <td style="width:15%; text-align: center;">Stable</td> <td style="width:15%; text-align: center;">Slightly unstable</td> <td style="width:15%; text-align: center;">Moderately unstable</td> <td style="width:15%; text-align: center;">Unstable</td> <td></td> </tr> <tr> <td>Left Bank</td> <td align="center"><input checked="" type="checkbox"/></td> <td align="center"><input type="checkbox"/></td> <td align="center"><input type="checkbox"/></td> <td align="center"><input type="checkbox"/></td> <td></td> </tr> <tr> <td>Right Bank</td> <td align="center"><input checked="" type="checkbox"/></td> <td align="center"><input type="checkbox"/></td> <td align="center"><input type="checkbox"/></td> <td align="center"><input type="checkbox"/></td> <td></td> </tr> </table>				Stable	Slightly unstable	Moderately unstable	Unstable		Left Bank	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		Right Bank	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Stable	Slightly unstable	Moderately unstable	Unstable																			
Left Bank	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>																			
Right Bank	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>																			
Mean Wetted Width (m): <u>0.50</u>	Mean Wetted Depth (m): <u>0.10</u>	Description:																					
Mean Bankfull Width (m): <u>1.50</u>	Mean Bankfull Depth (m): <u>0.25</u>																						
Mean Top of Bank Width (m): <u>—</u>	Mean Top of Bank Depth (m): <u>—</u>																						
Flow Description: (high or low flow conditions, stagnant, etc)																							
<u>low flow with stagnant portion (50-50%)</u>																							
Habitat																							
Substrate (<=>)			Morphological Structure (%)																				
Description Bo - Boulder Co - Cobble Gr - Gravel Sa - Sand Si - Silt Cl - Clay MK - Muck DT - Detritus			<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th>Pool</th> <th>Riffle</th> <th>Run</th> <th>Flat</th> </tr> <tr> <td></td> <td align="center"><u>50</u></td> <td align="center"><u>50</u></td> <td></td> </tr> </table>			Pool	Riffle	Run	Flat		<u>50</u>	<u>50</u>											
			Pool	Riffle	Run	Flat																	
	<u>50</u>	<u>50</u>																					
<u>Si &gt; Gr &gt; Co</u>			Notes:																				
Instream Cover (%)																							
Other	Woody Debris	Boulders	Cobble	Aquatic Vegetation*	None	Undercut Banks																	
	<u>10</u>					Average Depth: (% Cover) <u>—</u>																	
Note: Low = 0 - 30%; Moderate = 30 - 75%; High = 75 - 100%																							
*Aquatic Vegetation Species Present (algae, submergent, emergent etc.)																							
<u>Floating <del>algae</del> algae</u>																							
Canopy Cover (% closed cover):			Types of Cover (% cover)																				
100-90%	<input type="checkbox"/>	30-1%	<input type="checkbox"/>	Trees <u>60</u>	Shrubs <u>20</u>	Man-made structures																	
90-60%	<input checked="" type="checkbox"/>	0%	<input type="checkbox"/>	Grasses <u>10</u>	Herbaceous <u>10</u>	Other																	
60-30%	<input type="checkbox"/>																						
Note: Low = 0 - 30%; Moderate = 30 - 60%; High = 60 - 100%																							
Notes: (vegetation species, types of structures)																							
<u>(Frêne) black or Red + trees + grassberry + Hawthorn</u>																							
Riparian Vegetation																							
Width and Description of riparian vegetation:			Riparian Vegetation																				
LB - <u>&gt; 5m</u>			RB - <u>&gt; 5m</u>																				
<u>Flat riparian Forest</u>																							
Overhanging Vegetation Present <u>Y/N</u>			% Overhanging Vegetation: <u>15%</u>																				
Description of Overhanging Vegetation:																							
<u>grass</u>																							
Obstructions to Fish Passage																							
None Observed	<input type="checkbox"/>	Man-Made	<input type="checkbox"/>	Natural	<input type="checkbox"/>	Low Flow Barrier	<input checked="" type="checkbox"/>																
Description of Barrier: <u>Dry sections</u>																							
Height of Barrier (m)			GPS Coordinates:																				

Water Bodies Assessment Field Collection Form

AECOM

Date: 24 May 2012

Land Parcel/Site ID: JER 3287 / R2.178 Page 3 of 4

Other General Comments Regarding the Study Area:

x low Flow stream ~~have~~ <sup>through</sup> the Forest  
 with meanders and small dry section  
 x have a small spot of WETLAND  
 x channel is only in forest, section in  
 field buried

Additional UTM Coordinates:

Photo log			
Picture #	Description	Picture #	Description
32	View U/S by R2.178		
33	WL D/S toward		
34	(Frêne) ?? Black Oak Red		
35	Drain Pipe and Start		
36	D/S From the Start		

Water Bodies Assessment Field Collection Form

AECOM

Page 4 of 4

Watercourse Sketch

Study Area:

Jericho

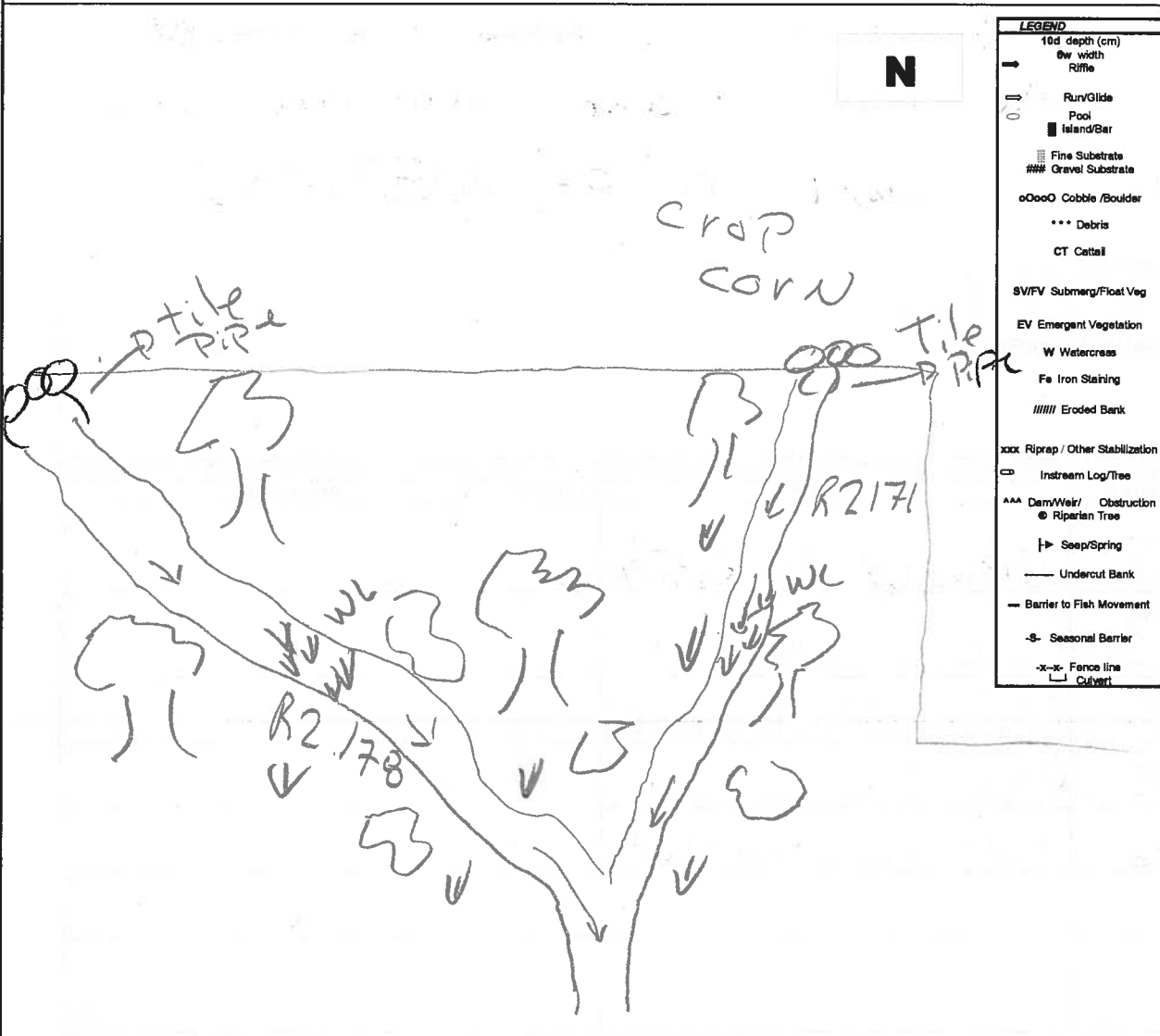
Goshen

Bluewater

Land Parcel#

JER3287 SITE ID

R2.178



Horizontal View of Channel



Initial QA/QC By: L. Bernier

Date: May 30, 2012

Technical QA/QC By: NZ

Date: June 2012

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

**AECOM**

**General Information**

Study Area: Jericho Goshen Bluewater Land Parcel# JER 3287 Site ID: RR.178  
 Date: May 24/12 Start time: 11:20 End Time: 11:30  
 Weather Conditions: Sunny 29°C Field Crew: S. Altun, S. Daraiche  
 Field Notes By: S. Daraiche

**Site Location**

on the East of Arkona Rd and right on east of #87 turbine in forest

**UTM Co-ordinates**

Easting: _____	Northing: _____	Description: _____
Easting: _____	Northing: _____	Description: _____
Easting: _____	Northing: _____	Description: _____
Easting: _____	Northing: _____	Description: _____

**Surrounding Landuse**

Residential <input type="checkbox"/>	Meadow <input type="checkbox"/>
Agriculture <input checked="" type="checkbox"/>	Wetland <input type="checkbox"/>
Forest <input type="checkbox"/>	Livestock <input type="checkbox"/>
Other <input type="checkbox"/>	

Description:

Corn

**Ground Water and Seepage Indicators**

Watercress <input type="checkbox"/>	Bank Seepage <input type="checkbox"/>
Iron Staining <input type="checkbox"/>	None <input checked="" type="checkbox"/>
Bubbling <input type="checkbox"/>	

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 area 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)

Watercourse is buried in agricultural field

**Photo log**

Picture #	Description	Picture #	Description

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

RR.178

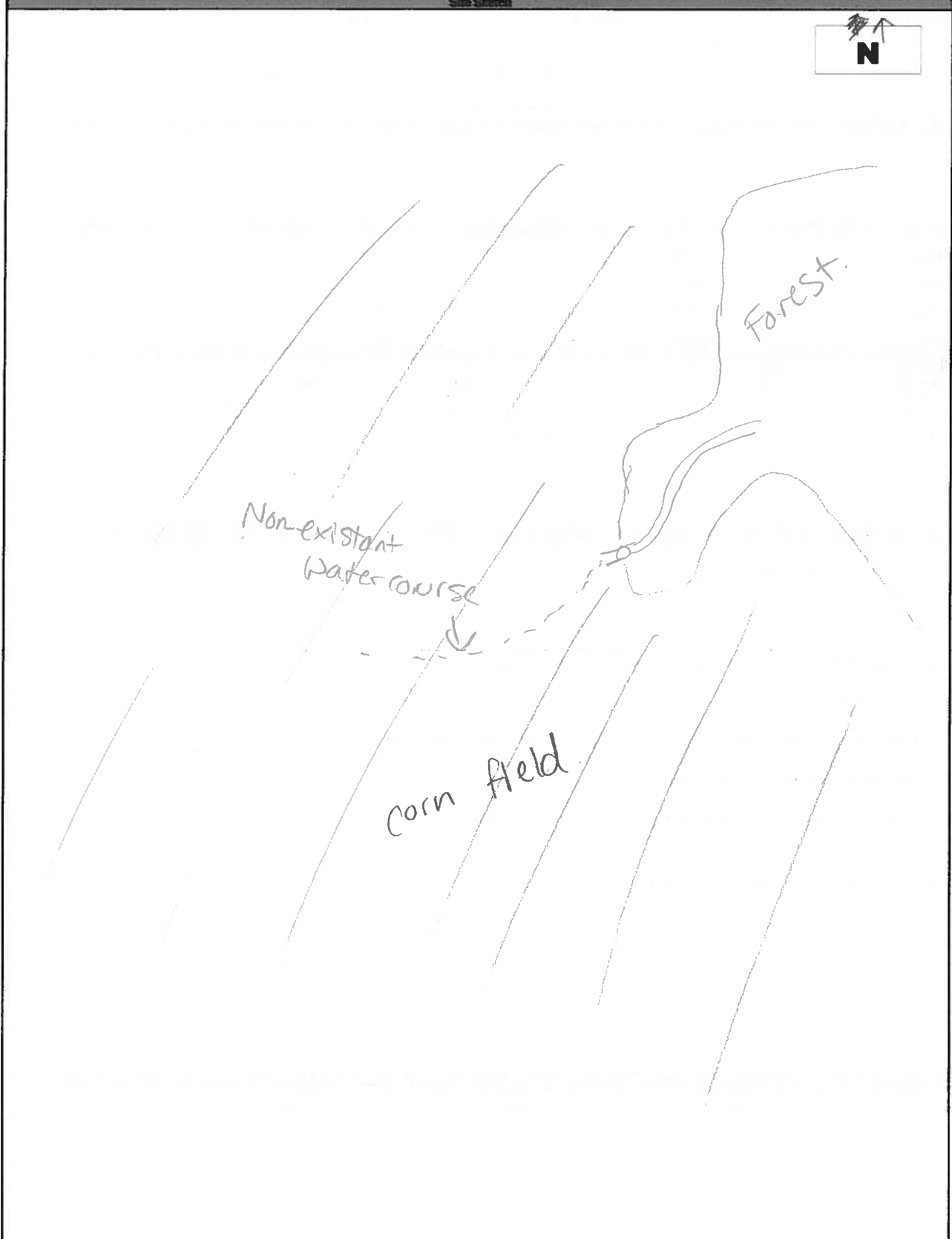
AECOM

Date: May 24/12

Land Parcel/Site ID: JER 3287

Page 2 of 2

Site Sketch



Initial SA/ACL Bentley Oct. 25/12

ASme.

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

<b>AECOM</b>		Page 1 of 2	
<b>General Information</b>			
Study Area:	Jericho	Goshen	Bluewater
Land Parcel#	JER3287		Site ID: R2,193
Date:	MAY 24/12	Start time:	12530
		End Time:	13410
Weather Conditions:	SUNNY DAY 29°C		Field Crew: S. AITKEN - S. DAVAICHE
			Field Notes By: S. DAVAICHE
<b>Site Location</b>			
ON the EAST OF <del>ARKORA</del> road Arkora			
<b>UTM Co-ordinates</b> none taken			
Eastings:	Northings:	Description:	
Eastings:	Northings:	Description:	
Eastings:	Northings:	Description:	
Eastings:	Northings:	Description:	
<b>Surrounding Landuse</b>		<b>Ground Water and Seepage Indicators</b>	
Residential <input type="checkbox"/>	Meadow <input type="checkbox"/>	Watercress <input type="checkbox"/>	Bank Seepage <input type="checkbox"/>
Agriculture <input checked="" type="checkbox"/>	Wetland <input type="checkbox"/>	Iron Staining <input type="checkbox"/>	None <input checked="" type="checkbox"/>
Forest <input type="checkbox"/>	Livestock <input type="checkbox"/>	Bubbling <input type="checkbox"/>	
Other <input type="checkbox"/>			
Description:		Details:	
CROP - CORN			
<b>Feature Description</b>			
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?		<input checked="" type="radio"/> 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 areas 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)			
channel doesn't exist, tilled, no surface feature, only a small depression			
<b>Photo log</b>			
Picture #	Description	Picture #	Description
45	Depression Face South		
46	CORN Field Face West		

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

AECOM

Date: 24/MAY/2012

Land Parcel/Site ID:

JER 3287/R2.193 Page 2 of 2

Site Sketch



Arkona rd

CORN

JER 3287

NO SURFACE WATER

R2.193

CORN

Initial QA/QC: L. Bentley May 30, 2012  
N.E. Done 2012



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

**AECOM**

**General Information**

Study Area: Jericho Goshen Bluewater Land Parcel# 3286/3287 Site ID: R2141

Date: May 24/12 Start time: 11:10 End Time: 11:15

Weather Conditions: Sunny, 20°C Field Crew: S. Aiken, S. Darache  
Field Notes By: S Aiken

**ASA**

fence line for 3286

**Site Location**

On the east of Arkana road

**UTM Co-ordinates**

Eastings: _____	Northing: _____	Description: <u>None</u>
Eastings: _____	Northing: _____	Description: <u>See the</u>
Eastings: _____	Northing: _____	Description: <u>map</u>
Eastings: _____	Northing: _____	Description: _____

**Surrounding Landuse**

Residential <input type="checkbox"/>	Meadow <input type="checkbox"/>
Agriculture <input checked="" type="checkbox"/>	Wetland <input type="checkbox"/>
Forest <input type="checkbox"/>	Livestock <input type="checkbox"/>
Other <input type="checkbox"/>	

Description: corn field

**Ground Water and Seepage Indicators**

Watercress <input type="checkbox"/>	Bank Seepage <input type="checkbox"/>
Iron Staining <input type="checkbox"/>	None <input checked="" type="checkbox"/>
Bubbling <input type="checkbox"/>	

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 areas 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)

channel does not exist, tile drained, depression in field

**Photo log**

Picture #	Description	Picture #	Description
<u>25</u>	<u>overview of field</u>		
<u>26</u>	<u>"</u>		
<u>27</u>	<u>" entry in front</u>		

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

3287 /

AECOM

Date:

25 MAY 2012

and Parcel/Site ID:

JER 3286 / R2.141

Page 2 of 2

Site Sketch



JER 3286

Depression observed

ARKONA Rd.

JER 3287

Initial QA/QC: L. Bentley May 30, 2012

NL 7th June 2012

Water Bodies Assessment Field Collection Form

AECOM

General Information

Study Area: Jericho Goshen Bluewater Land Parcel# Row Site ID: R2.2  
 Date: June 12/12 Start time: 11:25 End Time: 12:30  
 Weather Conditions: Cloudy, 25°C Field Crew: C. Boros, J. Epp  
 Field Notes By: C. Boros

Site Location

Elgin field Rd.

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

Easting: <u>434181</u>	Northing: <u>4777920</u>	Description: <u>R2.2 shell</u>
Easting: <u>434323</u>	Northing: <u>4777809</u>	Description: <u>R2.2wg</u>
Easting: _____	Northing: _____	Description: _____
Easting: _____	Northing: _____	Description: _____

Surrounding Landuse Residential <input type="checkbox"/> Meadow <input type="checkbox"/> Agriculture <input checked="" type="checkbox"/> Wetland <input type="checkbox"/> Forest <input checked="" type="checkbox"/> Livestock <input type="checkbox"/> Other _____		Type of Watercourse Intermittent <input type="checkbox"/> Channelized <input type="checkbox"/> Permanent <input checked="" type="checkbox"/> Natural Channel <input checked="" type="checkbox"/> Ephemeral <input type="checkbox"/> _____	
Description: <u>Forest surrounding 3 quarters (NW, NE, SE) → SW corner soy bean</u>		Description: <u>Ansuable River</u>	

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

In-Situ Water Quality WT (°C): <u>23.5</u> AT (°C): <u>25</u> pH: <u>7.91</u> Cond (µs/cm): <u>540</u> D.O. (mg/L) <u>5.45</u> Water Clarity: Clear <input type="checkbox"/> Turbid <input checked="" type="checkbox"/> Water Colour: <u>brownish green</u> Notes: <u>up/s side of bridge.</u>		Ground Water and Seepage Indicators Watercress <input type="checkbox"/> Bank Seepage <input type="checkbox"/> Iron Staining <input type="checkbox"/> None <input checked="" type="checkbox"/> Bubbling <input type="checkbox"/> _____ <input type="checkbox"/> Other <input type="checkbox"/> _____ Details: _____	
--	--	---	--

**Water Bodies Assessment Field Collection Form**

Stream Morphology							
Site Length (m): <i>~200m</i>			Bank Stability:				
Channel Dimensions			Stable	Slightly unstable	Moderately unstable	Unstable	
Mean Wetted Width (m): <i>~12</i>	Mean Wetted Depth (m): <i>/</i>		Left Bank <input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Mean Bankfull Width (m): <i>~14</i>	Mean Bankfull Depth (m): <i>/</i>		Right Bank <input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Mean Top of Bank Width (m): <i>~25</i>	Mean Top of Bank Depth (m):		Description: <i>no evidence of erosion</i>				
Flow Description: (high or low flow conditions, stagnant, etc)							
<i>moderate flow</i>							
Habitat							
Substrate (<=>)			Morphological Structure (%)				
Bo - Boulder	Description		Pool	Riffle	Run	Flat	
Co - Cobble			<i>2</i>	<i>3</i>		<i>95</i>	
Gr - Gravel	<i>Sa = Si = Cl = Gr</i>		Notes: <i>large riffle under bridge</i>				
Sa - Sand							
Si - Silt							
Cl - Clay							
MK - Muck							
DT - Detritus							
Instream Cover (%)							
Other	Woody Debris	Boulders	Cobble	Aquatic Vegetation*	None	Undercut Banks	
<i>/</i>	<i>7</i>	<i>2</i>	<i>2</i>	<i>/</i>	<i>/</i>	Average Depth: <i>/</i>	
Note: Low = 0 - 30%; Moderate = 30 - 75%; High = 75 - 100%							
*Aquatic Vegetation Species Present (algae, submergent, emergent etc.) <i>*hard to assess due to water turbidity.</i>							
Canopy Cover (% closed cover):			Types of Cover (% cover)				
100-90%	<input type="checkbox"/>	<i>30-1%</i>	<input checked="" type="checkbox"/>	Trees <i>10</i>	Shrubs <i>80</i>	Man-made structures	
90-60%	<input type="checkbox"/>	0%	<input type="checkbox"/>	Grasses <i>10</i>	Herbaceous	Other	
60-30%	<input type="checkbox"/>						
Note: Low = 0 - 30%; Moderate = 30 - 60%; High = 60 - 100%							
Notes: (vegetation species, types of structures)							
<i>dogwood</i>							
Riparian Vegetation							
Width and Description of riparian vegetation:	LB - <i>&gt;20m - meadow then forest</i>	RB - <i>6 - &gt;20m - meadow then forest</i>					
Overhanging Vegetation Present	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	% Overhanging Vegetation:					
Description of Overhanging Vegetation:							
Obstructions to Fish Passage							
None Observed	<input checked="" type="checkbox"/>	Man-Made	<input type="checkbox"/>	Natural	<input type="checkbox"/>	Low Flow Barrier	<input type="checkbox"/>
Description of Barrier:							
Height of Barrier (m)			GPS Coordinates:				

Water Bodies Assessment Field Collection Form

AECOM

Date: June 12/12

Land Parcel/Site ID: R2.2 - ROW Page 3 of 4

Other General Comments Regarding the Study Area:

3 Ridge + Fluted shell  
 & ~~common~~ mussel shells found  
 Plain Pocketbook  
 school of YOY  
 leopard frog

Large natural watercourse that had moderate flow at time of investigation. Water was turbid making it hard to assess instream cover. Substrate was a mix of sand, silt + clay.

Additional UTM Coordinates:

→ good mussel habitat found in sandbar area just downstream of bridge.

Photo log

Picture #	Description	Picture #	Description
1a	sheet		
6-3	dnw/s overview		
4	sand bar		
5	under bridge - looking up/s		
6-11a	mussel shells		
10-12	dnw/s section		
12-14	mussel shells		
15	up/s (sw corner)		
16-18	up/s of bridge		
19	up/s looking dnw/s at bridge		
20	looking up/s.		

Water Bodies Assessment Field Collection Form

AECOM

Page 4 of 4

Watercourse Sketch

Study Area:

Jericho

Goshen

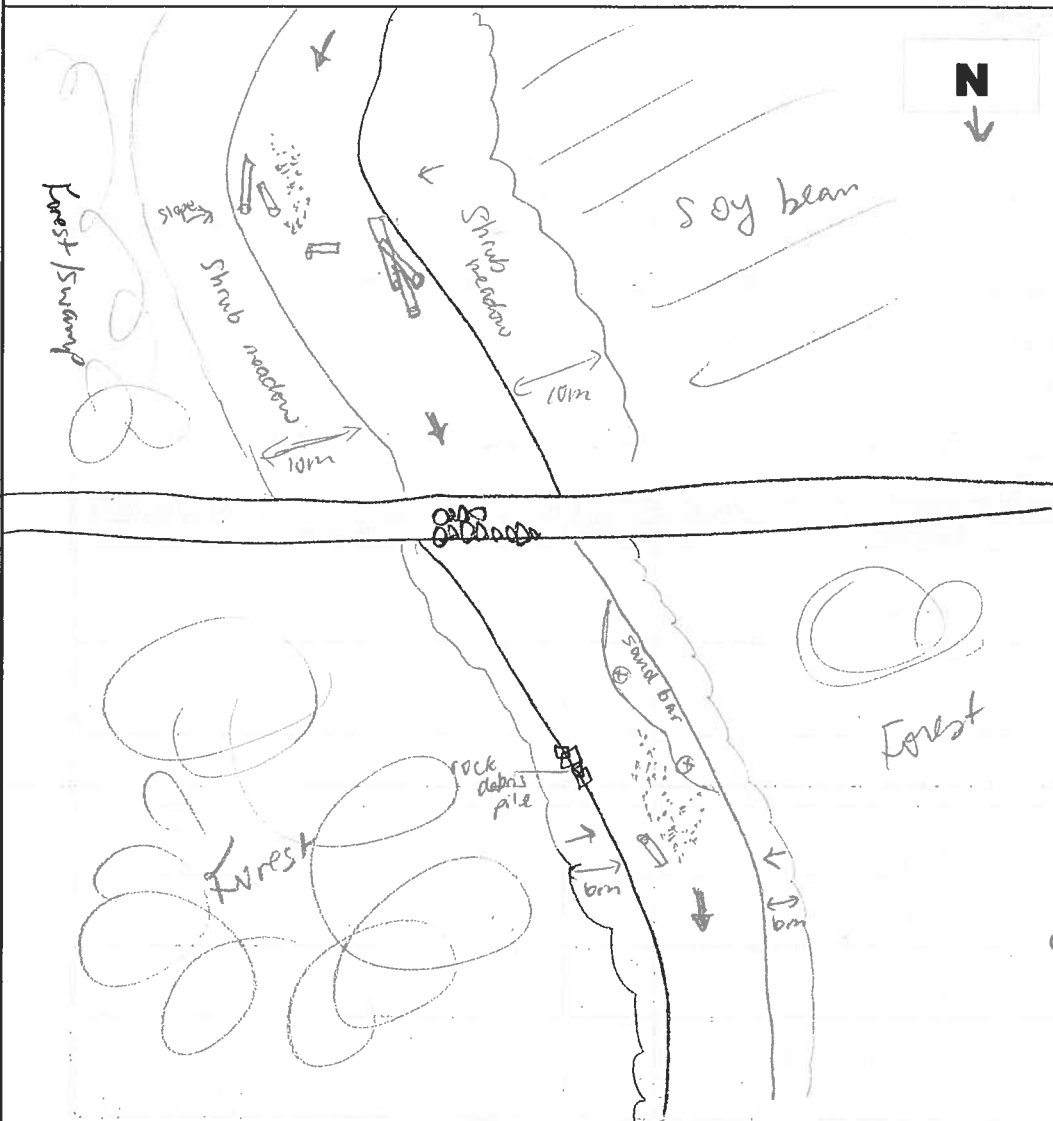
Bluewater

Land Parcel#

low

Site ID

rd. 2

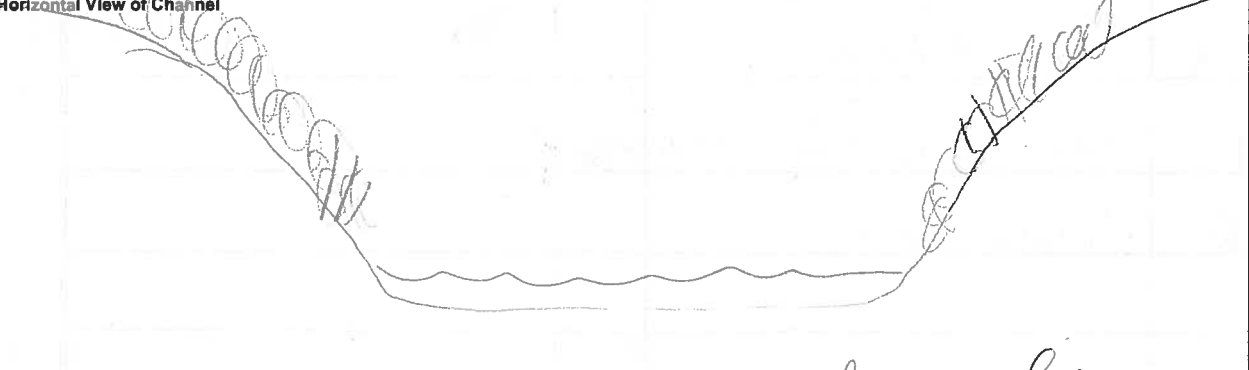


**LEGEND**

- 10d depth (cm)
- 0w width
- Rifle
- Run/Glide
- Pool
- Island/Bar
- Fine Substrate
- Gravel Substrate
- Cobble/Boulder
- Debris
- CT Cattail
- SV/FV Submerg/Float Veg
- EV Emergent Vegetation
- W Watercross
- Fe Iron Staking
- Eroded Bank
- Riprap / Other Stabilization
- Instream Log/Tree
- Dam/Weir/ Obstruction
- Riparian Tree
- Seep/Spring
- Undercut Bank
- Barrier to Fish Movement
- Seasonal Barrier
- Fence line
- Culvert

- gravel bar  
 000 - riffle  
 ⊗ - mussel shells

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# JER3749 Site ID: R2.73\_JER3749  
 Date: MAY 11/2010 Start time: 11:54 End Time: 12:45  
 Weather Conditions: Sunny, 20°C Field Crew: SLOTTES C. HARKING  
 Field Notes By: SLOTTES

Site Location

east of Arkona Rd, south of Elginfield.

UTM Co-ordinates (continue on page 2 if necessary)

Easting: <u>0433597</u>	Northing: <u>4776791</u>	Description: <u>START (HEADWATER)</u>
Easting: <u>0433638</u>	Northing: <u>4776850</u>	Description: <u>H<sub>2</sub>O CHEM. (@ file</u>
Easting: <u>0433822</u>	Northing: <u>4776686</u>	Description: <u>end - joms</u>
Easting:	Northing:	Description: <u>R2.67</u>

(@ file dram input)

Surrounding Landuse

Type of Watercourse

Residential <input type="checkbox"/>	Meadow <input type="checkbox"/>	Intermittent <input checked="" type="checkbox"/>	Channelized <input type="checkbox"/>
Agriculture <input checked="" type="checkbox"/>	Wetland <input type="checkbox"/>	Permanent <input checked="" type="checkbox"/>	Natural Channel <input checked="" type="checkbox"/>
Forest <input checked="" type="checkbox"/>	Livestock <input type="checkbox"/>	Ephemeral <input type="checkbox"/>	
Other <input type="checkbox"/>			

Description: small forest patch

Description: headwater area w/ bank seepage + defined channel

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

bank seepages, some drainage channels - natural.

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)

steep valley

In-Situ Water Quality

Ground Water and Seepage Indicators

WT (°C): <u>13.8</u>	AT (°C): <u>23°C</u>	Watercress <input type="checkbox"/>	Bank Seepage <input checked="" type="checkbox"/>
pH: <u>8.14</u>	Cond ( s/cm): <u>572</u>	Iron Staining <input type="checkbox"/>	None <input type="checkbox"/>
D.O. (mg/L) <u>6.53</u>		Bubbling <input type="checkbox"/>	<input type="checkbox"/>
Water Clarity: Clear <input checked="" type="checkbox"/> Turbid <input type="checkbox"/>		Other <input type="checkbox"/>	

Water Colour: colourless

Details: @ start of w/c banks are wet, seeping

Notes: in forest

Water Bodies Assessment Field Collection Form

Site Length (m): 360m		Bank Stability:	
Channel Dimensions		Stable	Slightly unstable
Mean Wetted Width (m): 0.90m	Mean Wetted Depth (m): 0.05m	Left Bank <input checked="" type="checkbox"/>	Unstable <input type="checkbox"/>
Mean Bankfull Width (m): 3.0m	Mean Bankfull Depth (m): 0.80m	Right Bank <input checked="" type="checkbox"/>	Moderately unstable <input type="checkbox"/>
Mean Top of Bank Width (m): 10.0m	Mean Top of Bank Depth (m): 3.0m	Description: vegetated	
Flow Description: (high or low flow conditions, stagnant, etc)			
moderate flow, moderate gradient then steep			

Substrate (< = >) Bo - Boulder Co - Cobble Gr - Gravel Sa - Sand Si - Silt Cl - Clay MK - Muck DT - Detritus	Description Co >> Sa + Gr > DT	Morphological Structure (%)			
		Pool	Riffle	Run	Flat
			80	20	
		Notes: flows down steep gradient over cobble			

Instream Cover (%)						
Other detritus	Woody Debris	Boulders	Cobble	Aquatic Vegetation*	None	Undercut Banks
1%	5		90			Average Depth: (% Cover)

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

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

cobble + woody debris, some detritus

Canopy Cover (% closed cover):				Types of Cover (% cover)		
100-90%	<input checked="" type="checkbox"/>	30-1%	<input type="checkbox"/>	Trees	Shrubs	Man-made structures
90-60%	<input type="checkbox"/>	0%	<input type="checkbox"/>	Grasses 100	Herbaceous	Other
60-30%	<input type="checkbox"/>					

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

Notes: (vegetation species, types of structures)

beech, sugar maple, walnut,

Riparian Vegetation	
Width of riparian vegetation:	forest > 50m
Description of vegetation community surrounding 30 m from watercourse:	forest

Obstructions to Fish Passage							
No Obstructions	<input checked="" type="checkbox"/>	Man-Made	<input type="checkbox"/>	Natural	<input type="checkbox"/>	Low Flow Barrier	<input type="checkbox"/>
Description of Barrier:	none observed						
Height of Barrier (m)	GPS Coordinates:						



Water Bodies Assessment Field Collection Form

AECOM

Date: MAY 11/12

Land Parcel/Site ID: R 2.73-JR 3749 Page 3 of 4

Other General Comments Regarding the Study Area:

- water course began as headwater, with seepage from banks + collection from agricultural land.
- flows down moderate gradient over cobble, with some detritus
- completely shaded, the water course bends and meanders through steep valley land before joining R 2.67
- riffles over cobble substrate + woody debris through valley

Additional UTM Coordinates:

Picture #	Description	Picture #	Description
1	Sheet	15	buried tile pipe (rece <sup>PT</sup>
2	headwater area	16	" "
3	facing southwest	17	H <sub>2</sub> O chem
4	depression	18-38	overview
5	wetland plants	<del>39</del>	looking u/s @ R 2.67
6	start of channel	<del>40</del>	R 2.67 facing south
7	seep	<del>41</del>	R 2.67 facing NE
8	facing NE		
9	facing SW		
10	substrate		
11-12	input		
13-14	overview		

Water Bodies Assessment Field Collection Form

AECOM

Page 4 of 4

Study Area:

Jéricho

Goshen

Bluewater

Land Parcel#

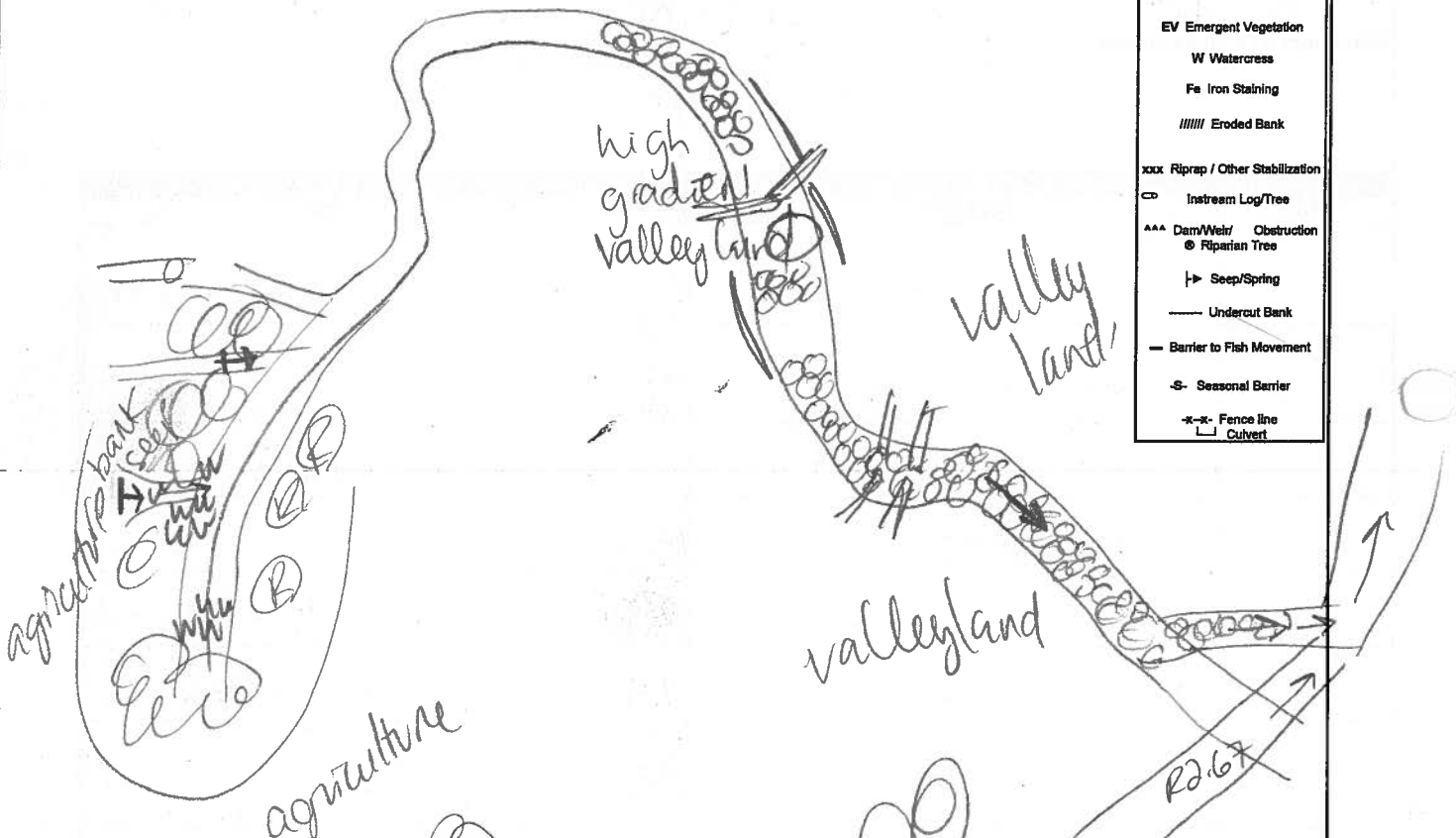
3749

Site ID

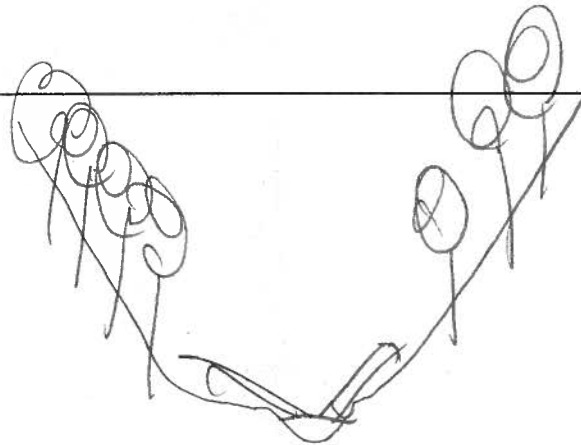
22-9305R3749



LEGEND	
10d depth (cm)	→
Sw width	○
Rifle	○
Run/Glide	○
Pool	○
Island/Bar	■
Fine Substrate	□
Gravel Substrate	###
Cobble/Boulder	oOoO
Debris	***
Cattail	CT
Submerg/Floater Veg	SV/FV
Emergent Vegetation	EV
Watercress	W
Iron Staining	Fe
Eroded Bank	
Riprap / Other Stabilization	xxx
Instream Log/Tree	⊖
Dam/Weir/ Obstruction	AAA
Riparian Tree	⊙
Seep/Spring	↳
Undercut Bank	—
Barrier to Fish Movement	-
Seasonal Barrier	-S-
Fence line	-x-x-
Culvert	⌊



Horizontal View of Channel



Initial QA/QC By: L. Bentley

Date: May 16, 2012

Technical QA/QC By: Sluiter

Date: July 19, 12

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

**AECOM**

**General information**

Study Area: Jericho Goshen Bluewater Land Parcel# 1059/4376 Site ID: R2.X and R2.87

Date: May 15 / 12 Start time: 16:00 End Time: 16:10

**Weather Conditions:**

Sunny, 24°C

Field Crew: C. Beros, A. Arsonant

Field Notes By: C. Beros

**Site Location**

Arkona Rd, South of Farmers Ln

*ASA on  
4376*

**UTM Co-ordinates**

Easting: 0483159 Northing: 4775335 Description: R2.X start

Easting: 0483171 Northing: 4775335 Description: R2.X end

Easting: \_\_\_\_\_ Northing: \_\_\_\_\_ Description: \_\_\_\_\_

Easting: \_\_\_\_\_ Northing: \_\_\_\_\_ Description: \_\_\_\_\_

**Surrounding Landuse**

Residential  Meadow   
 Agriculture  Wetland   
 Forest  Livestock   
 Other

Description: wheat field + pasture

**Ground Water and Seepage indicators**

Watercross  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 areas 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)

**Photo log**

Picture #	Description	Picture #	Description
<u>1,2</u>	<u>overview 2x</u>		
<u>4</u>	<u>2.87 overview</u>		

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

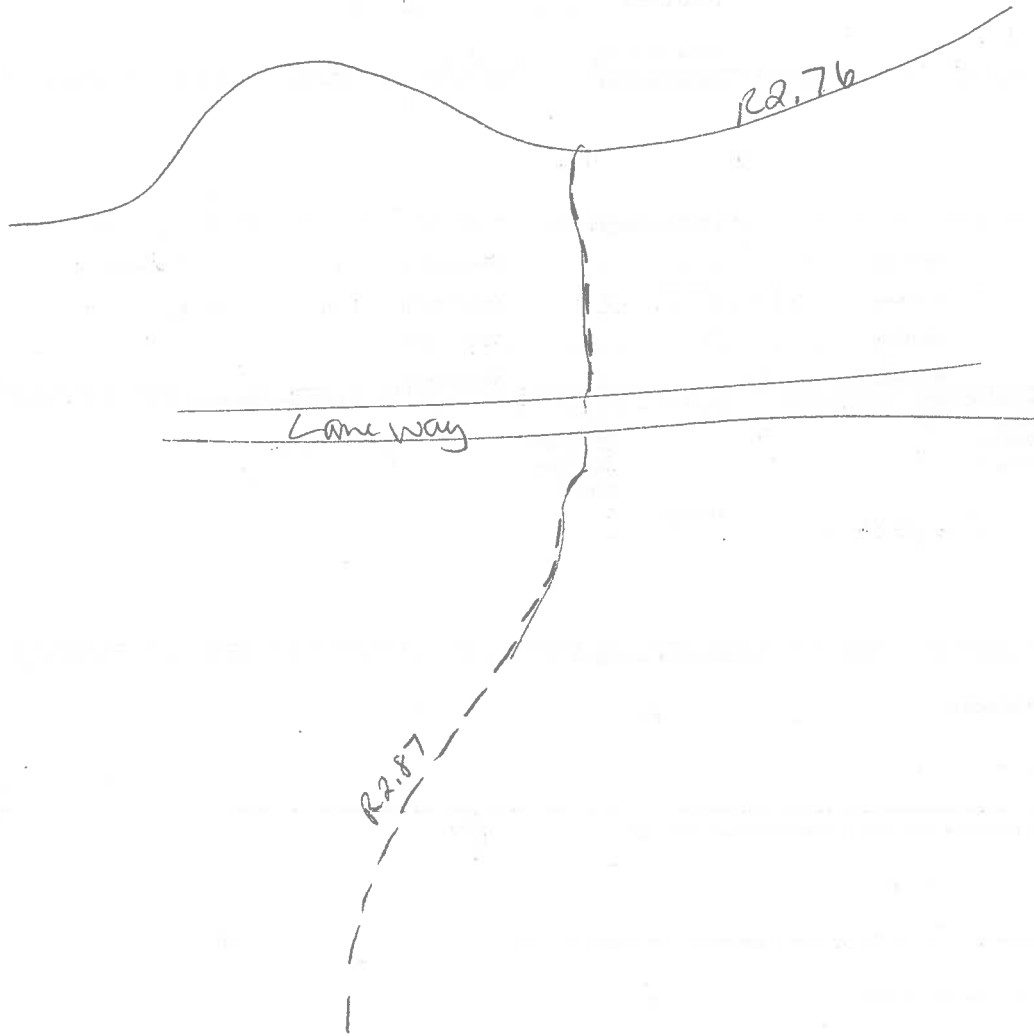
AECOM

Date: May 15/12

Land Parcel/Site ID: JER 1059 R2.87

Page 2 of 2

Site Sketch



Initial QA/QC: Libentley May 22/12

S. Atkin May 29/12

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

**AECOM**

Page 1 of 2

**General Information**

Study Area: Jericho Goshen Bluewater Land Parcel# JER 1059/4370 Site ID: R2.X and R2.93  
 Date: May 15/12 Start time: 16:00 End Time: 16:10

Weather Conditions: Sunny, 24°C Field Crew: C. Beres, A. Arsenault  
 Field Notes By: C. Beres

**Site Location**

Arkona Rd, South of Farmers Ln

**UTM Co-ordinates**

Easting: 0433159 Northing: 4775335 Description: R2.X → Start  
 Easting: 0433171 Northing: 4775234 Description: R2.X end  
 Easting: \_\_\_\_\_ Northing: \_\_\_\_\_ Description: \_\_\_\_\_  
 Easting: \_\_\_\_\_ Northing: \_\_\_\_\_ Description: \_\_\_\_\_

**Surrounding Landuse**

Residential  Meadow   
 Agriculture  Wetland   
 Forest  Livestock   
 Other

**Ground Water and Seepage Indicators**

Watercress  Bank Seepage   
 Iron Staining  None   
 Bubbling

Description: Wheat field + pasture

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 areas 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)

**Photo log**

Picture #	Description	Picture #	Description
<u>1, 2</u>	<u>R2.X overview</u>		
<u>6</u>	<u>2.93</u>		

ASA for 4370

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

AECOM

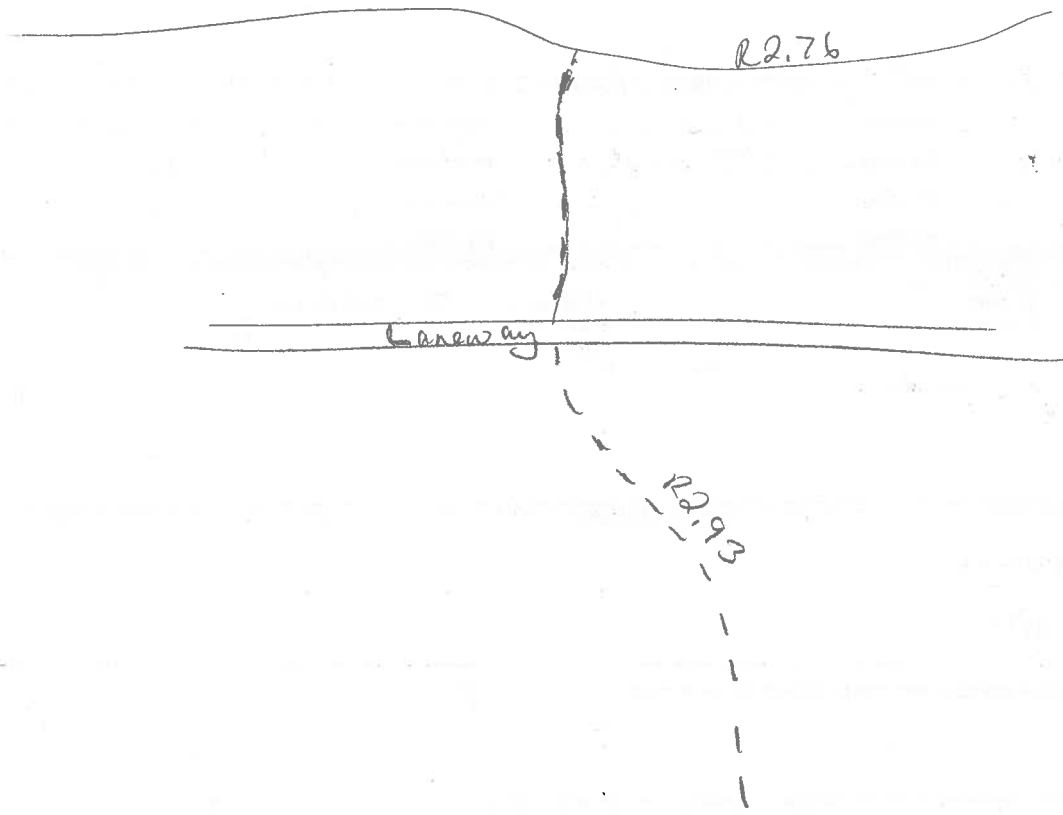
Date: May 15/12

Land Parcel/Site ID: JER 1059 R2.93

Page 2 of 2

Site Sketch

N



11741  
A/QC: L. Bentley May 22, 2012

Technical QA/QC: S. Atkin  
May 29/12

Property ID: 5ER 1459 - Swale #1 Date: May 15 12

Property Access: yes Start Time: 15:20

End Time: 15:25

Field Investigators: CB AA Weather: Sunny 24°C

**Terrestrial Feature Present:** No  Yes

Provide brief description of observations (i.e. hedgerow, treerow, woodlot, valleylands, deciduous vs coniferous, crop)

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**Photograph Numbers:** \_\_\_\_\_

**Aquatic Feature Present:** No  Yes

Provide brief description (i.e. drainage ditch, watercourse, intermittent, permanent)

grassed waterway

↳ intermittent overland flow

\_\_\_\_\_

**Photograph Numbers:** 1, 2





Water Bodies Assessment Field Collection Form

**AECOM**

**General Information**

Study Area: Jericho Goshen Bluewater Land Parcel# 105910000 Site ID: R2.76  
 Date: May 15/12 Start time: 14:30 End Time: 16:10

Weather Conditions: Sunny 24°C Field Crew: CiBaros, R. Arsenault  
 Field Notes By: CiBaros

**Site Location**

Arkona Rd, south of Farmers Ln

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

Easting: 0432863 Northing: 4775449 Description: R2.76 start  
 Easting: 0432943 Northing: 4775313 Description: R2.76 inter  
 Easting: 0433571 Northing: 4775396 Description: R2.76 wq  
 Easting: 0433678 Northing: 4775414 Description: JER R2.76 end

**Surrounding Landuse**

Residential  Meadow   
 Agriculture  Wetland   
 Forest  Livestock   
 Other

**Type of Watercourse**

Intermittent  Channelized  a  
 Permanent  Natural Channel  f  
 Ephemeral

Description: watercourse flows through agric fields into forest

Description: See next page →

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

tile drain inputs observed by fields - flowing iron staining in forest.

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

If Yes describe:

Watercourse buried starting at JER 3277 for ~15m until it pops out  
Start GPS points inter GPS points

GPS Coordinate: Easting - 0432863 Northing - 4775449 Description - R2.76 start

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

rolling

**In-Situ Water Quality**

WT (°C): 19.28 AT (°C): 24  
 pH: 6.09 Cond (µs/cm): 565  
 D.O. (mg/L): 14.05  
 Water Clarity: Clear  Turbid

Water Colour: n/a

Notes: Chem taken in forest

**Ground Water and Seepage Indicators**

Watercress  Bank Seepage   
 Iron Staining  None   
 Bubbling  water speedwell   
 Other

Details:

2 observations of iron staining → speedwell sporadic + throughout

**Water Bodies Assessment Field Collection Form**

Stream Morphology																	
Site Length (m): 600m			Bank Stability:														
Channel Dimensions <sup>a</sup>   <sup>f</sup>			<table style="width:100%; text-align: center;"> <tr> <td>Stable</td> <td>Slightly unstable</td> <td>Moderately unstable</td> <td>Unstable</td> </tr> <tr> <td>Left Bank</td> <td><input type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td>Right Bank</td> <td><input type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> </table>			Stable	Slightly unstable	Moderately unstable	Unstable	Left Bank	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Right Bank	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Stable	Slightly unstable	Moderately unstable	Unstable														
Left Bank	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>														
Right Bank	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>														
Mean Wetted Width (m): 0.7   1.5	Mean Wetted Depth (m): 0.15   0.2		Description: slumping in agri field; erosion in forest														
Mean Bankfull Width (m): 2   1.8	Mean Bankfull Depth (m): 0.3   0.35																
Mean Top of Bank Width (m): 3   3.5	Mean Top of Bank Depth (m): 2   1.5		Flow Description: (high or low flow conditions, stagnant, etc)														
Habitat																	
Substrate (<=>)			Morphological Structure (%)														
Description agr = cl, mk, sand, gr forest cl, sa, gr, co, mk DT-Detritus			<table border="1" style="width:100%; text-align: center;"> <tr> <th>Pool</th> <th>Riffle</th> <th>Run</th> <th>Flat</th> </tr> <tr> <td>20</td> <td>10</td> <td>10</td> <td>60</td> </tr> </table>			Pool	Riffle	Run	Flat	20	10	10	60				
Pool	Riffle	Run	Flat														
20	10	10	60														
Instream Cover (%) a=85 f=90			Notes: - sl. meandering in agri fields → slumping of grass tufts → large meanders in forest														
Other	Woody Debris	Boulders	Cobble	Aquatic Vegetation*	None												
—	15	—	5	75	—												
Average Depth: 0.10m			Undercut Banks a   f														
(% Cover) 5			0.5m														
Note: Low = 0 - 30%; Moderate = 30 - 75%; High = 75 - 100% 55%																	
*Aquatic Vegetation Species Present (algae, submergent, emergent etc.)																	
a = grasses > algae (attached)      f = algae attached > algae blooms																	
Canopy Cover (% closed cover):			Types of Cover (% cover)														
100-90%	<input checked="" type="checkbox"/> f	30-1%	<input checked="" type="checkbox"/> a	Trees f=100	Shrubs a=10												
90-60%	<input type="checkbox"/>	0%	<input type="checkbox"/>	Grasses 90	Herbaceous												
60-30%	<input type="checkbox"/>				Man-made structures												
Note: Low = 0 - 30%; Moderate = 30 - 60%; High = 60 - 100%																	
Notes: (vegetation species, types of structures)																	
Beech, maple, elms - deciduous forest																	
Riparian Vegetation																	
Width and Description of riparian vegetation:			Width and Description of riparian vegetation:														
LB - f = >15m → trees a = 1m grasses			RB - f = >15m → trees a = 1m grasses														
Overhanging Vegetation Present <input checked="" type="checkbox"/> N			% Overhanging Vegetation: 25 ⇒ agri														
Description of Overhanging Vegetation: grasses																	
Obstructions to Fish Passage																	
None Observed <input checked="" type="checkbox"/>	Man-Made <input checked="" type="checkbox"/>	Natural <input type="checkbox"/>	Low Flow Barrier <input type="checkbox"/>														
Description of Barrier: culvert at beginning perched → into buried watercourse																	
Height of Barrier (m): 0.40		GPS Coordinates: 0432943 4775313 GPS - R2.76 inter															

Water Bodies Assessment Field Collection Form

AECOM

Date: M Aug 15 / 12

Land Parcel/Site ID: JER 1059  
R2.76

Page 3 of 4

Other General Comments Regarding the Study Area:

Watercourse begins buried then pops out and flows through agri (crop/wheat, and pasture) in channelized form only slightly meandering through grass tufts. Channel is grass choked. The water then flows into forest area where there are large meanders, moderate erosion, ~~erosion~~ and undercut banks. Some was a wetland in nature. It is a natural feature in the forest.

→ frogs observed - leopard  
Additional UTM Coordinates:

→ easy to walk through forest - little to no thicket.

Photo log

Picture #	Description	Picture #	Description
1	Looking at JER 3277		
2-3	Start of R2.76 -		
4	Buried watercourse pops up		
5-12	watercourse overview		
13-20	⇒ R2.87 and R2.93		
21-25	Channel overview		
26-31	⇒ Swales		
32-47	Channel overview		
48-49	end of site - post property line		

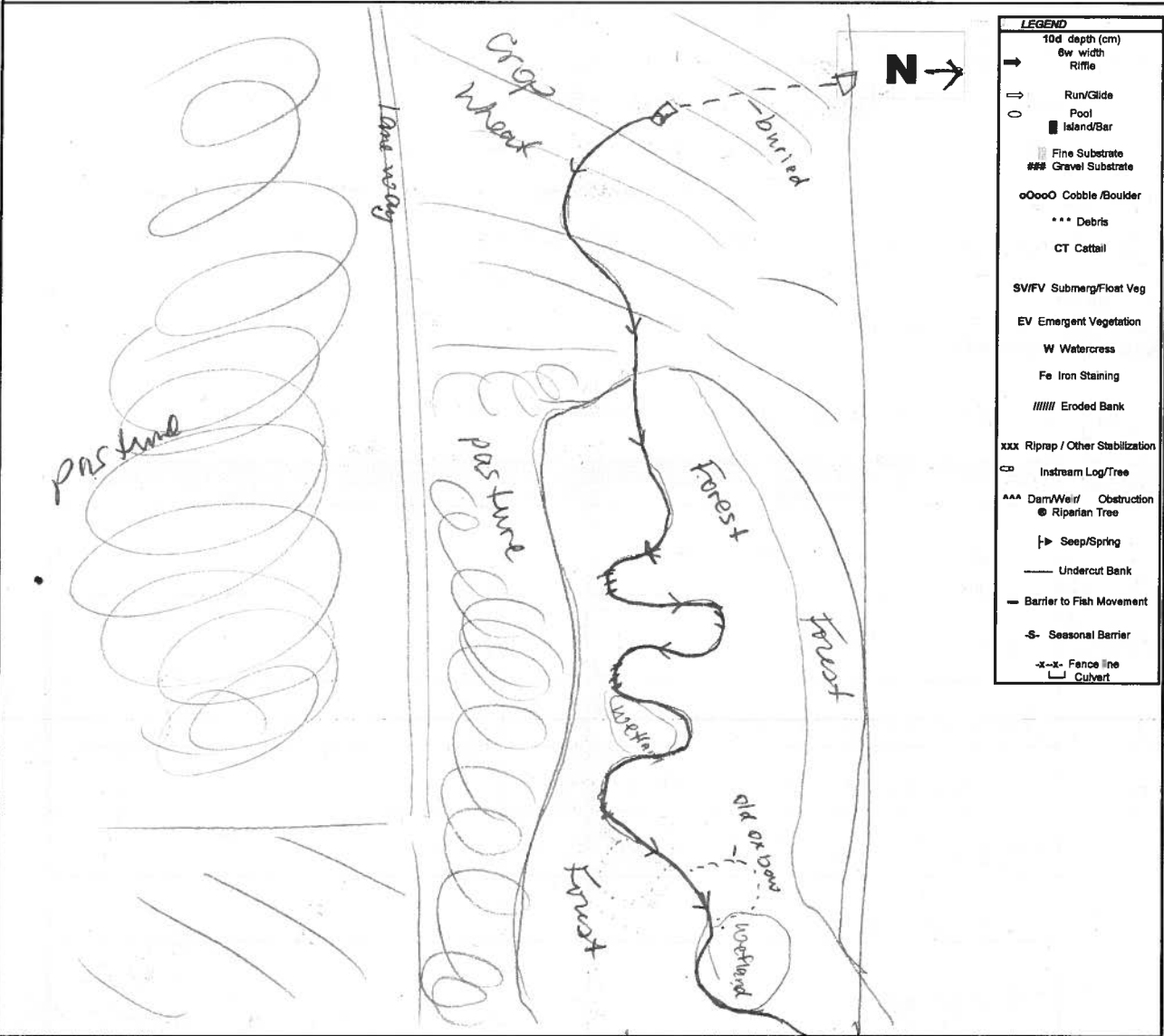
Water Bodies Assessment Field Collection Form

AECOM

Page 4 of 4

Watercourse Sketch

Study Area: Jericho Goshen Bluewater Land Parcel# JER 1059 Site ID R2.76



Horizontal View of Channel



Initial QA/QC By: L Bentley

Date: May 22, 2012

Technical QA/QC By: Autken

Date: May 29, 2012

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

**AECOM**

**General Information**

Study Area: Jericho Goshen Bluewater Land Parcel# 1059/3277 Site ID: R2.76  
 Date: May 15/12 Start time: 14:30 End Time: 14:40  
 Weather Conditions: Sunny 24°C Field Crew: C. Boros, A. Arsenault  
 Field Notes By: C. Boros

**Site Location**

Arkona Rd, South of Farmers Line

**UTM Co-ordinates**

Easting: _____	Northing: _____	Description: _____
Easting: _____	Northing: _____	Description: _____
Easting: _____	Northing: _____	Description: _____
Easting: _____	Northing: _____	Description: _____

**Surrounding Landuse**

Residential	<input type="checkbox"/>	Meadow	<input type="checkbox"/>
Agriculture	<input checked="" type="checkbox"/>	Wetland	<input type="checkbox"/>
Forest	<input type="checkbox"/>	Livestock	<input type="checkbox"/>
Other			

**Ground Water and Seepage Indicators**

Watercress	<input type="checkbox"/>	Bank Seepage	<input type="checkbox"/>
Iron Staining	<input type="checkbox"/>	None	<input checked="" type="checkbox"/>
Bubbling	<input type="checkbox"/>		<input type="checkbox"/>

Description:

wheat

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 area 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)

Watercourse is buried through small section (~60m) in wheat field.

**Photo log**

Picture #	Description	Picture #	Description
<u>1</u>	<u>JER 3277</u>		
<u>2-3</u>	<u>start of R2.76</u>		

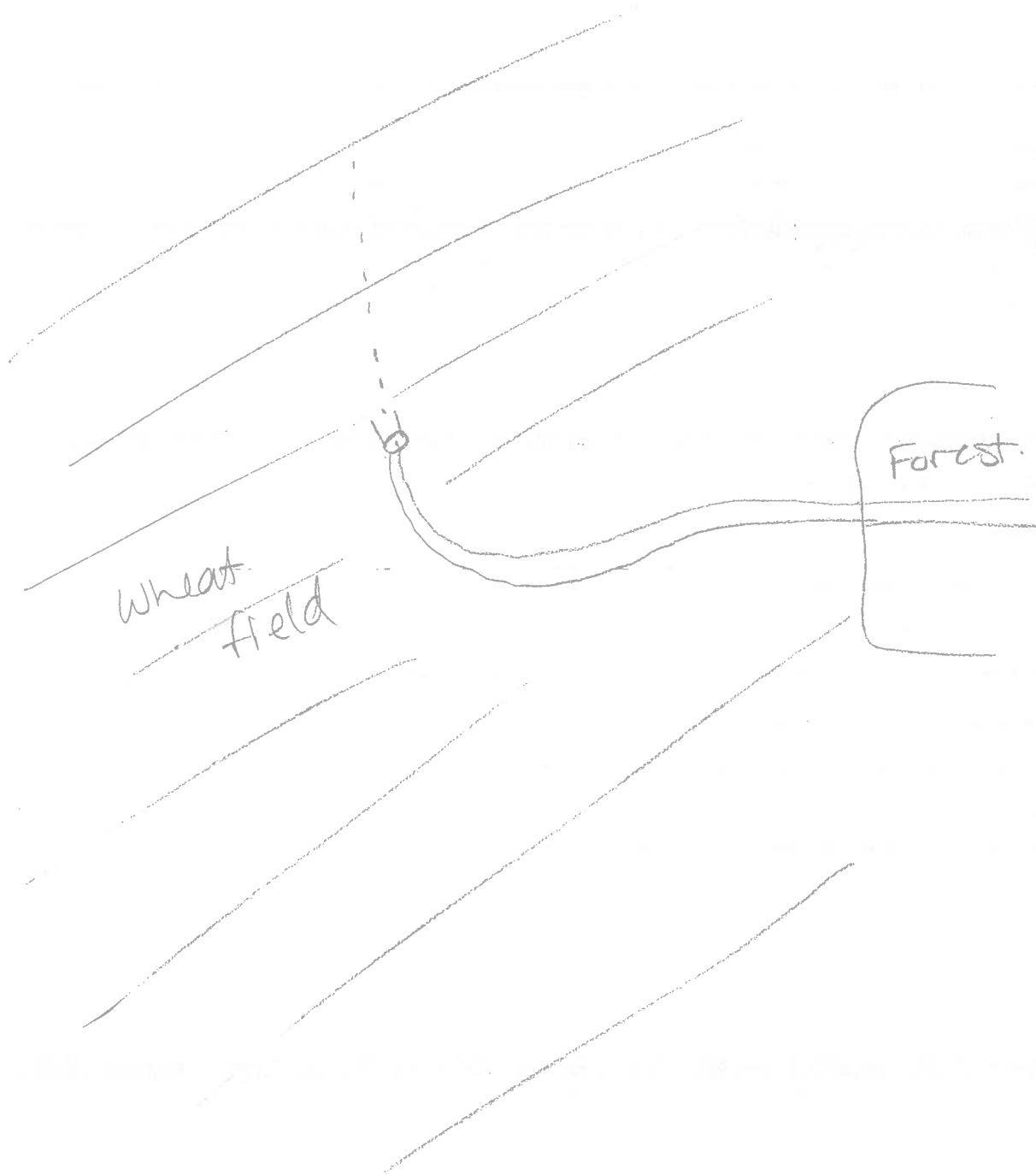
Assessment of Non-Water Body  
(update to mapping required)

AECOM

Date: May 15/12

Land Parcel/Site ID: JER 1059/3277 R2.78 Page 2 of 2

Site Sketch



Initial QA/QC: L Bentley Oct. 25/12  
Jankin Oct 2/12

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

**AECOM**

**General Information**

Study Area: Jericho Goshen Bluewater Land Parcel# 3623 Site ID: R294

Date: May 24/12 Start time: 10:20 End Time: 10:34

Weather Conditions: Sunny 24°C Field Crew: S. AITKEN - S. DARACHE  
Field Notes By: S. DARACHE

**Site Location**

located west of Arkona Road south of Cedar Point Rd. ASA for JER 3622+3621

**UTM Co-ordinates**

Easting: \_\_\_\_\_ Northing: \_\_\_\_\_ Description: see the map  
Easting: \_\_\_\_\_ Northing: \_\_\_\_\_ Description: \_\_\_\_\_  
Easting: \_\_\_\_\_ Northing: \_\_\_\_\_ Description: \_\_\_\_\_  
Easting: \_\_\_\_\_ Northing: \_\_\_\_\_ Description: \_\_\_\_\_

**Surrounding Landuse**

Residential  Meadow   
Agriculture  Wetland   
Forest  Livestock   
Other

**Ground Water and Seepage Indicators**

Watercress  Bank Seepage   
Iron Staining  None   
Bubbling

Description: old corn field - previous year.

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 areas 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)

Appears to be tilled no surface feature observed

**Photo log**

Picture #	Description	Picture #	Description
<u>19</u>	<u>view of field</u>		

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

AECOM

Date: 24 May 2012 Land Parcel/Site ID: SER ~~3623~~ - SER 3623/R2.99 Page 2 of 2

Site Sketch



Cedar PT

Ditch  
Alkana Rd

3623

3623

Initial @A/OC: L Bentley May 30, 2012

NL. 7<sup>th</sup> June 2012



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

**AECOM**

Page 1 of 2

**General Information**

Study Area: Jericho Goshen Bluewater Land Parcel# 3279 Site ID: R294  
 Date: May 24/12 Start time: 10:20 End Time: 10:34  
 Weather Conditions: Sunny 24°C Field Crew: S. Aitken, S. Baraiche  
 Field Notes By: S. Aitken

**Site Location**

east of Arkona Road South of Cedar Point Rd

**UTM Co-ordinates**

Easting: \_\_\_\_\_ Northing: \_\_\_\_\_ Description: See the map  
 Easting: \_\_\_\_\_ Northing: \_\_\_\_\_ Description: \_\_\_\_\_  
 Easting: \_\_\_\_\_ Northing: \_\_\_\_\_ Description: \_\_\_\_\_  
 Easting: \_\_\_\_\_ Northing: \_\_\_\_\_ Description: \_\_\_\_\_

**Surrounding Landuse**

Residential  Meadow   
 Agriculture  Wetland   
 Forest  Livestock   
 Other \_\_\_\_\_

**Ground Water and Seepage Indicators**

Watercress  Bank Seepage   
 Iron Staining  None   
 Bubbling  \_\_\_\_\_

Description: Corn field

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 areas 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)

Channel appears to be tilled no surface feature, depression in field of old channel may convey surface flow during rain events or spring freshette

**Photo log**

Picture #	Description	Picture #	Description
<u>24</u>	<u>drain + depression in field</u>		

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

AECOM

Date: May 24/12

Land Parcel/Site ID: R2.94-JER 3279

Page 2 of 2

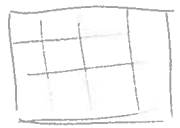
Site Sketch



Pedar Point

Arkona Rd

ditch



ditch

Slight depression  
in corn  
field

Initial QA/QC: L. Bentley May 30, 2012

NZ 7th June 2012.

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

**AECOM**

Page 1 of 2

**General Information**

Study Area: Jericho Goshen Bluewater Land Parcel# 3621 Site ID: R2.94  
 Date: May 24/12 Start time: 10:20 End Time: 10:34  
 Weather Conditions: Sunny 24c Field Crew: S. Attkin, S. Darache  
 Field Notes By: S. Attkin

**ASA**

**Site Location**

West of Arkona Rd south of Cedar Point Rd

**UTM Co-ordinates**

Easting: \_\_\_\_\_ Northing: \_\_\_\_\_ Description: See the map  
 Easting: \_\_\_\_\_ Northing: \_\_\_\_\_ Description: \_\_\_\_\_  
 Easting: \_\_\_\_\_ Northing: \_\_\_\_\_ Description: \_\_\_\_\_  
 Easting: \_\_\_\_\_ Northing: \_\_\_\_\_ Description: \_\_\_\_\_

**Surrounding Landuse**

Residential  Meadow   
 Agriculture  Wetland   
 Forest  Livestock   
 Other

**Ground Water and Seepage Indicators**

Watercress  Bank Seepage   
 Iron Staining  None   
 Bubbling

Description: old corn field

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 areas 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)

channel is roadside ditch, dry at time of investigation  
drain observed  
phragmites observed in ditch

**Photo log**

Picture #	Description	Picture #	Description
<u>22</u>	<u>view of ditch</u>		
<u>23</u>	<u>view of drain</u>		

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

AECOM

Date:

May 24/12

Land Parcel/Site ID:

JFR3621 - R2.94

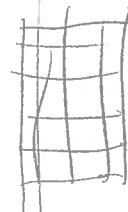
Page 2 of 2

Site Sketch



Cedar Point

ditch



ditch



Arkona Rd

Initial QA/QC: L. Bentley May 30, 2012

M. St. June 2012

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

**AECOM**

Page 1 of 2

**General Information**

Study Area: Jericho Goshen Bluewater Land Parcel# 3022 Site ID: R2.94  
 Date: May 24/12 Start time: 10:20 End Time: 10:34

Weather Conditions: Sunny 24°C Field Crew: S. Aitken, S. Daraiche  
 Field Notes By: S. Aitken

**Site Location**

West of Arkona Rd, south of Cedar Point Rd

**UTM Co-ordinates**

Easting: \_\_\_\_\_ Northing: \_\_\_\_\_ Description: See the map  
 Easting: \_\_\_\_\_ Northing: \_\_\_\_\_ Description: For the  
 Easting: \_\_\_\_\_ Northing: \_\_\_\_\_ Description: sections  
 Easting: \_\_\_\_\_ Northing: \_\_\_\_\_ Description: \_\_\_\_\_

Surrounding Landuse		Ground Water and Seepage Indicators	
Residential <input type="checkbox"/>	Meadow <input type="checkbox"/>	Watercress <input type="checkbox"/>	Bank Seepage <input type="checkbox"/>
Agriculture <input checked="" type="checkbox"/>	Wetland <input type="checkbox"/>	Iron Staining <input type="checkbox"/>	None <input checked="" type="checkbox"/>
Forest <input type="checkbox"/>	Livestock <input type="checkbox"/>	Bubbling <input type="checkbox"/>	
Other <input type="checkbox"/>			
Description: _____		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 areas 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)

channel does not exist, roadside ditch is dry and all grass. May convey surface water flow during rain events + spring freshette culverts observed under driveway.

**Photo log**

Picture #	Description	Picture #	Description
<u>20</u>	<u>facing south</u>		
<u>21</u>	<u>facing north</u>		

ASA

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

AECOM

Date:

May 24/12

Land Parcel/Site ID:

JKR3622 - R2.94

Page 2 of 2

Site Sketch

N

Road Side Ditch

Ar Kona Rd

Solar panel

Initial QA/QC: L. Bentley May 30, 2012 NR 7<sup>th</sup> June 2012

**Water Bodies Assessment Field Collection Form**

**AECOM**

**General Information**

Study Area: Jericho Goshen Bluewater Land Parcel# 2619/2615 Site ID: B2.281  
 Date: May 23/12 Start time: 14:45 End Time: 15:38  
 Weather Conditions: Sunny ~23°C Field Crew: S. Aitken, S. Darajiche  
 Field Notes By: S. Aitken

**Site Location**

located along Birnam Road, north & south assessment

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

Easting: <u>04</u>	Northing:	Description: <u>R2281 ST</u>
Easting: <u>0429714</u>	Northing: <u>4767166</u>	Description: <u>Barrier</u>
Easting: <u>0429778</u>	Northing: <u>4767283</u>	Description: <u>R2291 End</u>
Easting:	Northing:	Description:

**Surrounding Landuse**

Residential <input type="checkbox"/>	Meadow <input type="checkbox"/>
Agriculture <input checked="" type="checkbox"/>	Wetland <input type="checkbox"/>
Forest <input type="checkbox"/>	Livestock <input type="checkbox"/>
Other <input type="checkbox"/>	

**Type of Watercourse**

Intermittent <input type="checkbox"/>	Channelized <input checked="" type="checkbox"/>
Permanent <input checked="" type="checkbox"/>	Natural Channel <input type="checkbox"/>
Ephemeral <input type="checkbox"/>	

**Description:**

crop - fallow

**Description:**

runs parrallel to Birnam on South side.

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

tile drain - flowing, large CSP culvert along RB on north side

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, ditch flows in from east. on both north & south side, rills observed on north side

**In-Situ Water Quality**

WT (°C): <u>27.8</u>	AT (°C): <u>25.2</u>
pH: <u>8.33</u>	Cond (µs/cm): <u>510</u>
D.O. (mg/L) <u>8.97</u>	

Water Clarity: Clear  Turbid

Water Colour: no colour

**Notes:**

water smells.  
- filamentous algae throughout reach

**Ground Water and Seepage Indicators**

Watercress <input type="checkbox"/>	Bank Seepage <input type="checkbox"/>
Iron Staining <input type="checkbox"/>	None <input checked="" type="checkbox"/>
Bubbling <input type="checkbox"/>	
Other <input type="checkbox"/>	

**Details:**

**Water Bodies Assessment Field Collection Form**

Stream Morphology									
Site Length (m): ~ 280 m			Bank Stability:						
Channel Dimensions			Stable	Slightly unstable	Moderately unstable	Unstable			
Mean Wetted Width (m): 1.30	Mean Wetted Depth (m): 0.10	Left Bank	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
Mean Bankfull Width (m): 2.10	Mean Bankfull Depth (m): 0.60	Right Bank	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
Mean Top of Bank Width (m): 6.50	Mean Top of Bank Depth (m): 4.00	Description: steep but well vegetated							
Flow Description: (high or low flow conditions, stagnant, etc) low flow conditions, fairly stagnant on north side flowing on south									
Habitat									
Substrate (<=>)		Description		Morphological Structure (%)					
Bo - Boulder		Si > DT <		Pool	Riffle	Run	Flat		
Co - Cobble				10		90			
Gr - Gravel				Notes: pool at DIS culvert					
Sa - Sand									
Si - Silt									
Cl - Clay									
MK - Muck									
DT - Detritus									
Instream Cover (%)									
Other	Woody Debris	Boulders	Cobble	Aquatic Vegetation*	None	Undercut Banks			
	/	/	/	80		Average Depth: (% Cover) /			
Note: Low = 0 - 30%; Moderate = 30 - 75%; High = 75 - 100%									
*Aquatic Vegetation Species Present (algae, submergent, emergent etc) emergent grasses, cattails, floating + filamentous algae									
Canopy Cover (% closed cover):			Types of Cover (% cover)						
100-90%	<input type="checkbox"/>	30-1%	<input checked="" type="checkbox"/>	Trees	15	Shrubs	20	Man-made structures	
90-60%	<input type="checkbox"/>	0%	<input type="checkbox"/>	Grasses	20	Herbaceous	20	Other	
60-30%	<input type="checkbox"/>								
Note: Low = 0 - 30%; Moderate = 30 - 60%; High = 60 - 100%									
Notes: (vegetation species, types of structures) deciduous canopy, willow shrubs, grasses + herbaceous									
Riparian Vegetation									
Width and Description of riparian vegetation:	LB - 5m	cultural meadow		RB - 5m	cultural meadow → crop				
Overhanging Vegetation Present	<input checked="" type="checkbox"/> N	% Overhanging Vegetation: 30%							
Description of Overhanging Vegetation:	grasses overhanging channel								
Obstructions to Fish Passage									
None Observed	<input checked="" type="checkbox"/>	Man-Made	<input type="checkbox"/>	Natural	<input type="checkbox"/>	Low Flow Barrier	<input checked="" type="checkbox"/>		
Description of Barrier:	low flow barrier on north side, rocks put in place, 2 structures ~ 30 m apart								
Height of Barrier (m)	GPS Coordinates: 0429714 4767166								



Water Bodies Assessment Field Collection Form

AECOM

Date: May 23/12

Land Parcel/Site ID: R2.281  
2619/2615

Page 3 of 4

Other General Comments Regarding the Study Area:

- cyprinids observed
- Several green frogs observed and heard
- rock lined area
- Straightend, uniform agricultural channel, runs parallel to road on South side
- two rock structures created as potential Sediment trap or to slow water down

Additional UTM Coordinates:

Photo log			
Picture #	Description	Picture #	Description
78	sheet d/s - south side	90	d/s on north side
79	u/s - south side.		
80	view of tile input		
81	view of culvert south		
82	view of culvert south		
83	north side facing d/s		
84	overview of pool at culvert		
85	view of rock structure possible sediment trap		
86	view of 2nd trap on north side		
87	view of aquatic plant		
88	view of CSP on north side		
89	u/s on north side		

Water Bodies Assessment Field Collection Form

AECOM

Page 4 of 4

Watercourse Sketch

Study Area:

Jericho

Goshen

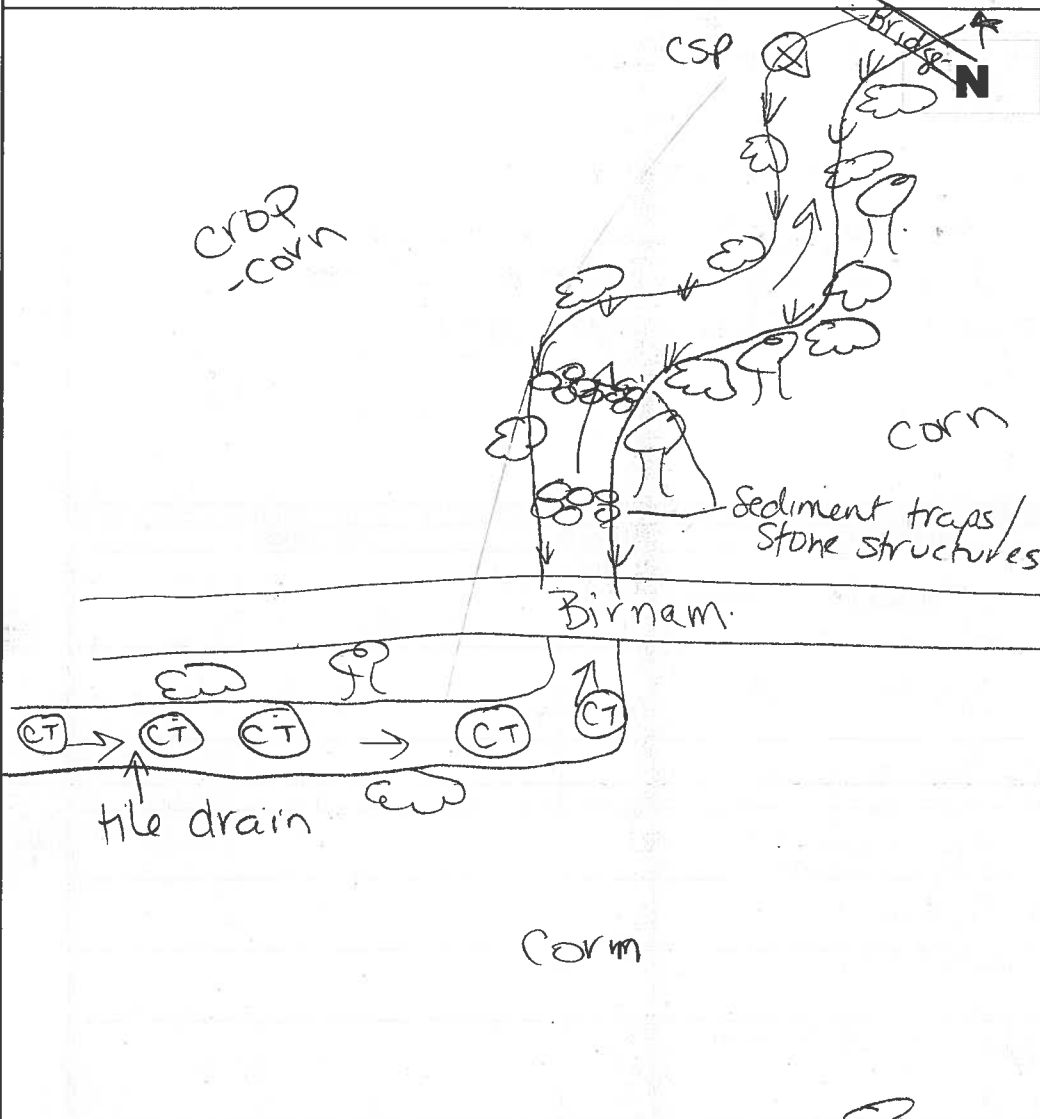
Bluewater

Land Parcel#

2619/2615

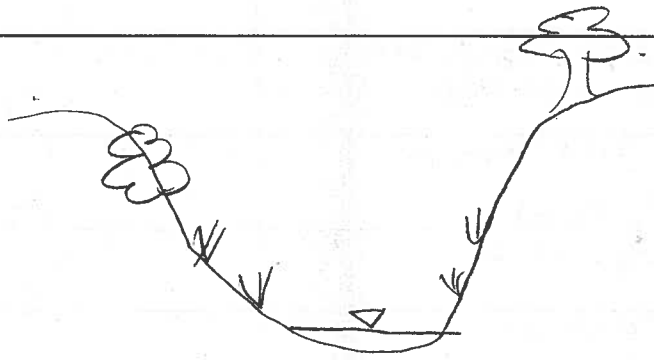
Site ID

R2.281



LEGEND	
10d depth (cm)	→
6w width	⇌
Riffle	⇌
Run/Glide	⇌
Pool	○
Island/Bar	■
Fine Substrate	▨
Gravel Substrate	###
Cobble/Boulder	oOooO
Debris	***
Cattail	CT
Submarg/Float Veg	SVFV
Emergent Vegetation	EV
Watercress	W
Iron Stairing	Fe
Eroded Bank	
Riprap / Other Stabilization	xxx
Instream Log/Tree	☐
Dam/Weir / Obstruction	AAA
Riparian Tree	⊙
Seep/Spring	↳
Undercut Bank	—
Barrier to Fish Movement	—
Seasonal Barrier	-S-
Ferrous line	-x-x-
Culvert	□

Horizontal View of Channel



Initial QA/QC By: L. Bentley

Date: May 30 2012

Technical QA/QC By: M

Date: June 2012

General Information

Study Area: Jericho Goshen Bluewater Land Parcel# 2619/2636/2653 Site ID: R2.281  
 Date: MAY 9 / 2012 Start time: 17:15 End Time: 17:35

Weather Conditions: Sunny, windy 14°C  
 Field Crew: S. COHNES C. HARANG  
 Field Notes By: S. COHNES

Site Location

Binnam Line b/w Navroo Rd + Quaker Rd.

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

Easting: 0429711 Northing: 4767126 Description: START @ road crossing  
 Easting: 0429297 Northing: 4767116 Description: H<sub>2</sub>O Chem  
 Easting: 0429004 Northing: 4767120 Description: END = low flow barrier

Surrounding Landuse		Type of Watercourse	
Residential <input type="checkbox"/>	Meadow <input type="checkbox"/>	Intermittent <input type="checkbox"/>	Channelized <input type="checkbox"/>
Agriculture <input checked="" type="checkbox"/>	Wetland <input type="checkbox"/>	Permanent <input checked="" type="checkbox"/>	Natural Channel <input type="checkbox"/>
Forest <input type="checkbox"/>	Livestock <input type="checkbox"/>	Ephemeral <input type="checkbox"/>	
Other <input type="checkbox"/>			
Description: roadside row crop		Description: roadside ditchline	

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

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)

low gradient, roadside

In-Situ Water Quality

WT (°C): 15.7 AT (°C): 14°C  
 pH: 7.12 Cond ( s/cm): 585  
 Water Clarity: Clear  Turbid   
 Water Colour: colourless

Ground Water and Seepage Indicators

Watercress  Bank Seepage   
 Iron Staining  None   
 Bubbling    
 Other   
 Details: none observed

Notes: taken roadside - lots of algal growth

roadside survey site 2012

**Water Bodies Assessment Field Collection Form**

Stream Morphology																				
Site Length (m): 450m			Bank Stability:																	
Channel Dimensions			<table style="width:100%; text-align: center;"> <tr> <td></td> <td>Stable</td> <td>Slightly unstable</td> <td>Moderately unstable</td> <td>Unstable</td> </tr> <tr> <td>Left Bank</td> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td>Right Bank</td> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> </table>				Stable	Slightly unstable	Moderately unstable	Unstable	Left Bank	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Right Bank	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Stable	Slightly unstable	Moderately unstable	Unstable																
Left Bank	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>																
Right Bank	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>																
Mean Wetted Width (m): 2.2m	Mean Wetted Depth (m): 0.35m	Description: vegetated w/ grasses, Rys w/ trees & shrubs																		
Mean Bankfull Width (m): 3.0m	Mean Bankfull Depth (m): 0.75m																			
Mean Top of Bank Width (m): 6.0m	Mean Top of Bank Depth (m): 3.5m																			
Flow Description: (high or low flow conditions, stagnant, etc)																				
low flow, lots of algae - attached + floating																				
Habitat																				
Substrate (<=>)			Morphological Structure (%)																	
Description Bo - Boulder Co - Cobble Gr - Gravel Sa - Sand Si - Silt Cl - Clay MK - Muck DT - Detritus Cl.			<table border="1" style="width:100%; text-align: center;"> <tr> <th>Pool</th> <th>Riffle</th> <th>Run</th> <th>Flat</th> </tr> <tr> <td></td> <td></td> <td>100</td> <td></td> </tr> </table>			Pool	Riffle	Run	Flat			100								
Pool	Riffle	Run	Flat																	
		100																		
			Notes: water runs through straight ditchline - low gradient																	
Instream Cover (%)																				
Other	Woody Debris	Boulders	Cobble	Aquatic Vegetation*	None	Undercut Banks														
				95		Average Depth: (% Cover)														
Note: Low = 0 - 30%; Moderate = 30 - 75%; High = 75 - 100%																				
*Aquatic Vegetation Species Present (algae, submergent, emergent etc.)																				
floating + submerged. algae, some cattails																				
Canopy Cover (% closed cover):			Types of Cover (% cover)																	
100-90% <input type="checkbox"/>	30-1% <input type="checkbox"/>	Trees	Shrubs	Man-made structures																
90-60% <input type="checkbox"/>	0% <input checked="" type="checkbox"/>	Grasses	Herbaceous	Other																
60-30% <input type="checkbox"/>																				
Note: Low = 0 - 30%; Moderate = 30 - 60%; High = 60 - 100%																				
Notes: (vegetation species, types of structures)																				
none. some riparian trees & shrubs but no closed canopy																				
Riparian Vegetation																				
Width of riparian vegetation: Rys ~ 4m (roadside R-o-w) L w/s 2m grasses																				
Description of vegetation community surrounding 30 m from watercourse: roadway   crop agriculture.																				
Obstructions to Fish Passage																				
No Obstructions <input checked="" type="checkbox"/>	Man-Made <input type="checkbox"/>	Natural <input checked="" type="checkbox"/>	Low Flow Barrier <input checked="" type="checkbox"/>																	
Description of Barrier: <del>none observed</del> d/s limit of reach, natural woody debris low flow barrier.																				
Height of Barrier (m): 0.15m																				
GPS Coordinates: E 0429004 N4767120																				

Water Bodies Assessment Field Collection Form

AECOM

Date: MAY 9/2012

Land Parcel/Site ID: R2.281 Page 3 of 4

2109/2636/2053

Other General Comments Regarding the Study Area:

- watercourse exists as roadside drainage channel
- low flow conditions, with lots of floating and attached algae as instream cover.
- w/ canopy cover or shade, though riparian trees & shrubs present w/ ROW.

Additional UTM Coordinates:

Photo log			
Picture #	Description	Picture #	Description
1a	sheet		
1b	looking d/s from road outside of site		
2	algae mat across Brnam Line		
3	looking up/s from Brnam Line		
4	looking east		
5	looking west		
6	algae & banks vegetated		
7	cattail pocket		
8	water quality location		
9	looking west @ TER 2008		
10	barrier outside site		
11	looking east from end of site		

Water Bodies Assessment Field Collection Form

AECOM

Page 4 of 4

Watercourse Sketch

Study Area:

Jericho

Goshen

Bluewater

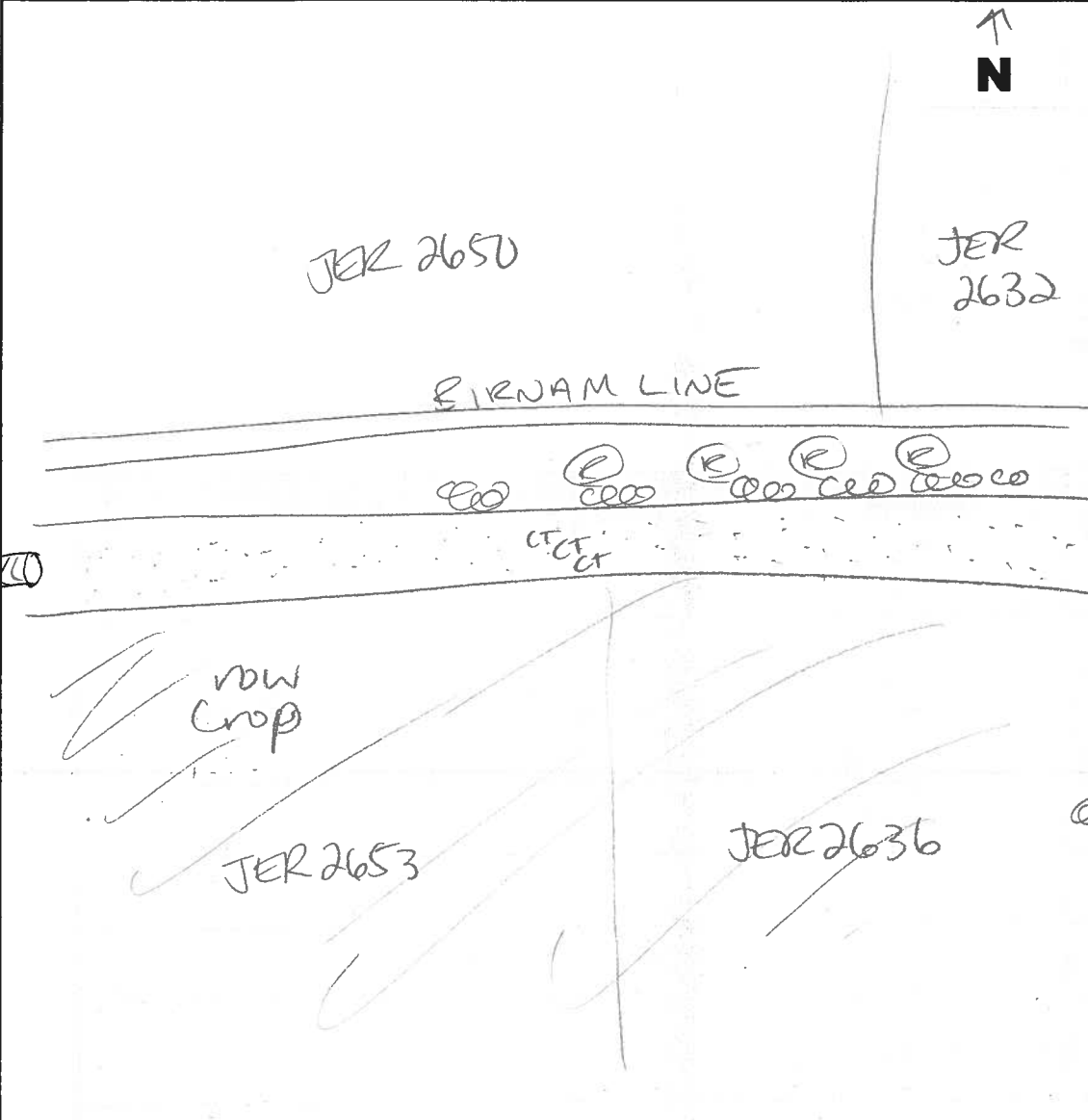
Land Parcel#

26361

Site ID

R2.281-JER2636

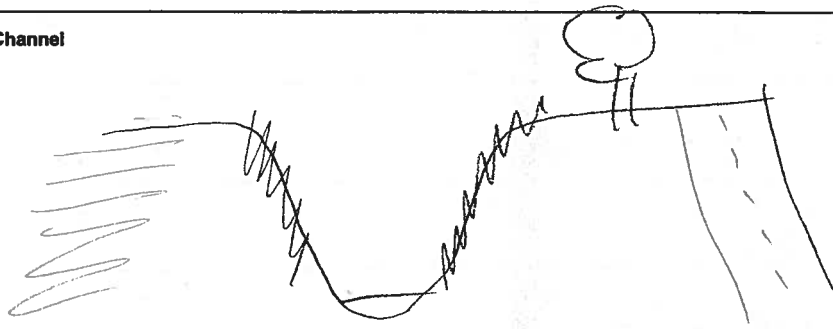
2619/2653



LEGEND	
10d depth (cm)	→
0w width	⇌
Riffle	○
Run/Glide	■
Pool	▨
Island/Bar	###
Fine Substrate	oOoo
Gravel Substrate	***
Cobble/Boulder	CT
Debris	SV/FV
Cattail	EV
Submerg/Floet Veg	W
Emergent Vegetation	Fe
Watercress	
Iron Staining	xxxx
Eroded Bank	☞
Riprap / Other Stabilization	AAA
Instream Log/Tree	⊙
Dam/Weir / Obstruction	⊢
Riparian Tree	—
Seep/Spring	-S-
Undercut Bank	-x-x-
Barrier to Fish Movement	┌
Seasonal Barrier	└
Fence line	
Culvert	

☞ = shrubs

Horizontal View of Channel



Initial QA/QC By:

L. Bentley

Date:

May 16, 2012

Technical QA/QC By:

Sutker

Date:

Jun 11/12

<b>AECOM</b>		Page 1 of 4	
<b>General Information</b>			
Study Area: <u>Jericho</u>	Goshen	Bluewater	Land Parcel# <u>JEE 3272</u> <u>3271(ASA)</u>
Date: <u>June 1/12</u>	Start time: <u>8h30</u>	Site ID: <u>R2.30</u>	
Weather Conditions: <u>RAIN</u> <u>12°C</u>		Field Crew: <u>Charlene</u> <u>Sdaraiche</u>	
		Field Notes By: <u>Sdaraiche</u>	
<b>Site Location</b>			
<u>EAST ARKONA</u> <u>N+S CIGINDI</u>			
(ASA)			
<b>UTM Co-ordinates (continue on page 3 if necessary)</b>			
Easting: <u>433333</u>	Northing: <u>4777792</u>	Description: <u>R2.30A (ST)</u>	
Easting: <u>433341</u>	Northing: <u>4777814</u>	Description: <u>R2.30B (tile)</u>	
Easting: <u>433353</u>	Northing: <u>4777875</u>	Description: <u>R2.30C (SIDE VALLEY)</u>	
Easting: <u>433361</u>	Northing: <u>4777885</u>	Description: <u>R2.30D (END-CULVERT)</u>	
<b>Surrounding Landuse</b> Residential <input type="checkbox"/> Agriculture <input type="checkbox"/> Forest <input checked="" type="checkbox"/> Other <input type="checkbox"/> Meadow <input type="checkbox"/> Wetland <input type="checkbox"/> Livestock <input type="checkbox"/>		<b>Type of Watercourse</b> Intermittent <input checked="" type="checkbox"/> Permanent <input type="checkbox"/> Ephemeral <input type="checkbox"/> Channelized <input type="checkbox"/> Natural Channel <input checked="" type="checkbox"/>	
Description:		Description:	
Notes: (include any inputs into the system i.e. tile drainage, seepages, overland flow) - Tile Drain <u>R/B (R2.30B)</u> - <u>SIDE VALLEY ON R/B (INTERMITTENT) AT R2.30C</u> Is any portion of the water body underground or not as mapped? <u>Y / 0</u> If Yes describe:			
GPS Coordinate: Easting -		Northing -	
Description -			
Description of Land Topography Surrounding Water Body (rolling hills, sloping towards water body)			
<u>sloping</u> <u>stoppage towards WB</u>			
<b>In-Situ Water Quality</b>		<b>Ground Water and Seepage Indicators</b>	
WT (°C): <u>/</u>	AT (°C): <u>12.1</u>	Watercress <input type="checkbox"/>	Bank Seepage <input type="checkbox"/>
pH: <u>/</u>	Cond ( s/cm): <u>/</u>	Iron Staining <input type="checkbox"/>	None <input checked="" type="checkbox"/>
D.O. (mg/L): <u>/</u>		Bubbling <input type="checkbox"/>	<input type="checkbox"/>
Water Clarity: <u>Clear</u> <input type="checkbox"/>	<u>Turbid</u> <input type="checkbox"/>	Other <input type="checkbox"/>	<input type="checkbox"/>
Water Colour: <u>/</u>		Details:	
Notes: <u>X No water</u> <u>X Dry</u>			

Water Bodies Assessment Field Collection Form

Stream Morphology							
Site Length (m): <u>200 m</u>			Bank Stability:				
Channel Dimensions			Stable	Slightly unstable	Moderately unstable	Unstable	
Mean Wetted Width (m): <u>—</u>		Mean Wetted Depth (m): <u>—</u>	Left Bank <input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Mean Bankfull Width (m): <u>1.75</u>		Mean Bankfull Depth (m): <u>0.30</u>	Right Bank <input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Mean Top of Bank Width (m): <u>15.00</u>		Mean Top of Bank Depth (m): <u>4.25</u>	Description: <u>Sloped ~45°</u>				
Flow Description: (high or low flow conditions, stagnant, etc)							
DRY BUT <sup>MAYBE</sup> moderate flow in spring							
Substrate (<=>)			Morphological Structure (%)				
Bo - Boulder	Si >> Co = BO		Pool	Riffle	Run	Flat	
Co - Cobble				50	50		
Gr - Gravel							
Sa - Sand							
Si - Silt							
Cl - Clay							
MK - Muck							
DT - Detritus							
Notes: <u>When Flowing</u>							
Instream Cover (%)							
Other	Woody Debris	Boulders	Cobble	Aquatic Vegetation*	None	Undercut Banks	
		5	5			Average Depth: <u>—</u> (% Cover)	
Note: Low = 0 - 30%; Moderate = 30 - 75%; High = 75 - 100%							
*Aquatic Vegetation Species Present (algae, submergent, emergent etc.)							
None							
Canopy Cover (% closed cover):			Types of Cover (% cover)				
100-90%	<input checked="" type="checkbox"/>	30-1%	<input type="checkbox"/>	Trees <u>90</u>	Shrubs	Man-made structures	
90-60%	<input type="checkbox"/>	0%	<input type="checkbox"/>	Grasses	Herbaceous	Other	
60-30%	<input type="checkbox"/>						
Note: Low = 0 - 30%; Moderate = 30 - 60%; High = 60 - 100%							
Notes: (vegetation species, types of structures)							
WALNUTS, SUGAR MAPLE, ASH							
Width and Description of riparian vegetation:			Riparian Vegetation				
LB - <u>&gt;10</u>			RB - <u>7/10</u>				
Only Forest Plants							
Overhanging Vegetation Present <u>Y/N</u>			% Overhanging Vegetation:				
Description of Overhanging Vegetation:							
Obstructions to Fish Passage							
None Observed <input checked="" type="checkbox"/>	Man-Made <input type="checkbox"/>	Natural <input type="checkbox"/>	Low Flow Barrier <input type="checkbox"/>				
Description of Barrier:							
Height of Barrier (m)			GPS Coordinates:				



Water Bodies Assessment Field Collection Form

3747

AECOM

Date: June 1/12

Land Parcel/Site ID:

JCR 3272  
3271

Page 3 of 4

R2.30

Other General Comments Regarding the Study Area:

JCR 3271 - ASA only

- Dry when Assessment
- Forest section
- meander channel

Additional UTM Coordinates:

Photo log			
Picture #	Description	Picture #	Description
1196	Facing North (R2.30A)		
1198	Tile (R2.30B)		
1199	From (R2.30B) to P/S		
1200	Culvert Facing Road (R2.30D)		
1201	From culvert Facing W/S (R2.30D)		
1202	Valley side channel Facing to the Road		
1203	ASA Facing North (R2.30C)		
1204	ll ll ll		

Water Bodies Assessment Field Collection Form

AECOM

Page 4 of 4

Watercourse Sketch

Study Area:

Jericho

Goshen

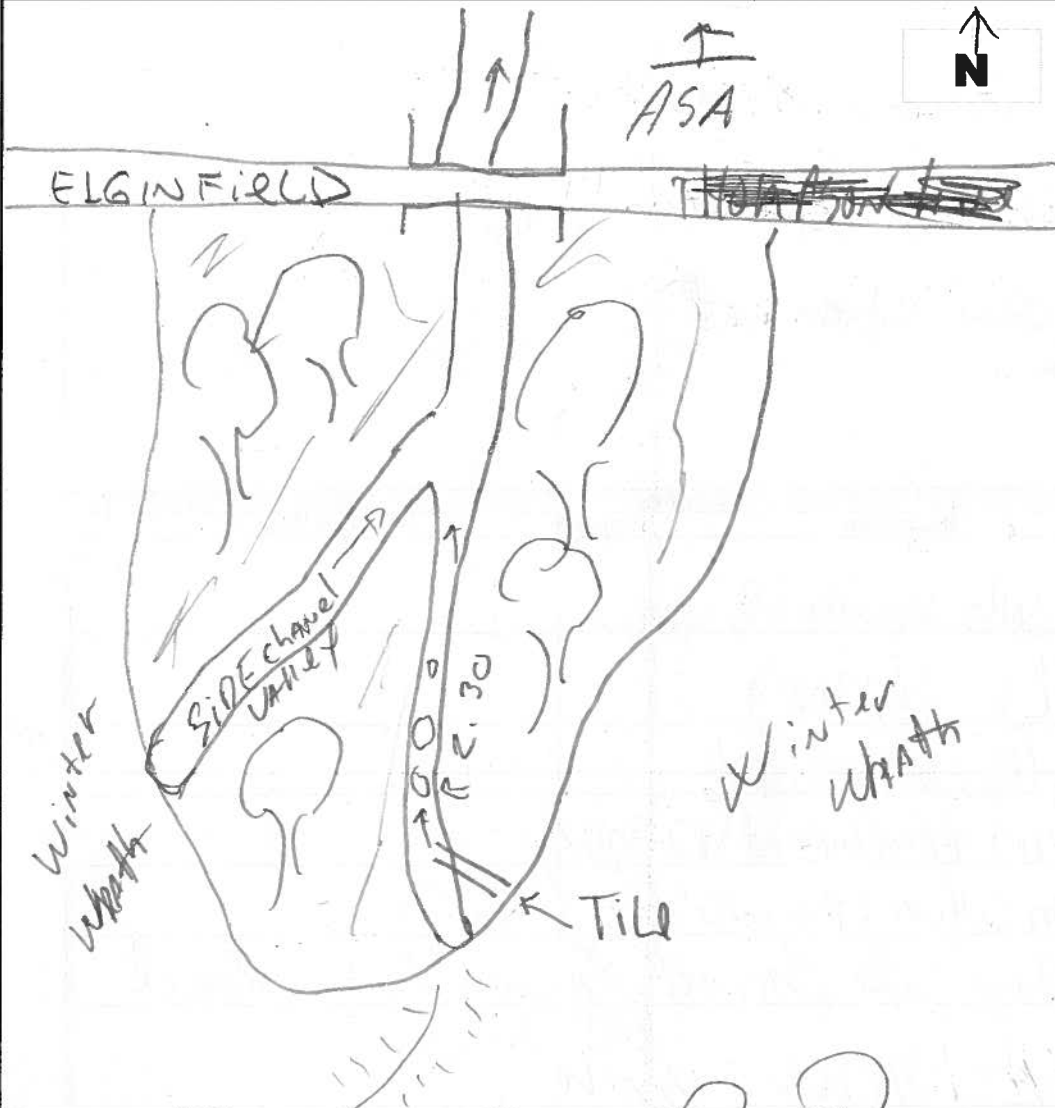
Bluewater

Land Parcel#

27A1  
Jer 3272  
2271

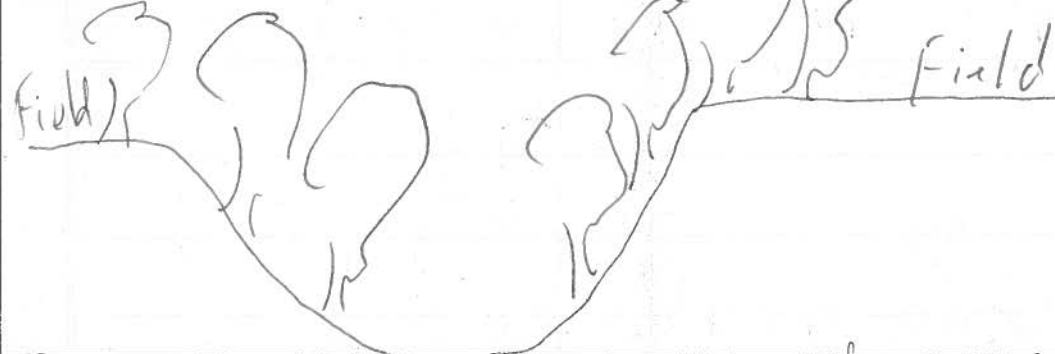
Site ID

R2.30



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

Horizontal View of Channel



Initial QA/QC By: L. Bentley

Date: June 4, 2012

Technical QA/QC By: Suffer

Date: Oct 2/12