Site: W	L-007	Rater(s): BS	Date: 4/10/18
0	0	Metric 1. Wetland Area (size).	
max 6 pts.	subtotal	Select one size class and assign score.    >50 acres (>20.2ha) (6 pts)   25 to <50 acres (10.1 to <20.2ha) (5 pts)   10 to <25 acres (4 to <10.1ha) (4 pts)   3 to <10 acres (1.2 to <4ha) (3 pts)   0.3 to <3 acres (0.12 to <1.2ha) (2pts)   0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)   < 0.1 acres (0.04ha) (0 pts)	
14	14	Metric 2. Upland buffers and surrounding land use.	
max 14 pts.	subtotal	2a. Calculate average buffer width. Select only one and assign score. Do not double check.  ✓ WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)  MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)  NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)  VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)  2b. Intensity of surrounding land use. Select one or double check and average.  ✓ VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)  LOW. Old field (>10 years), shrub land, young second growth forest. (5)  MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallowed the properties of the pr	ow field. (3)
15	29	Metric 3. Hydrology.	
max 30 pts.	subtotal	Precipitation (1) Seasonal/Intermittent surface water (3) Perennial surface water (lake or stream) (5) 3d. Duration inundation/sations and assign score.  Semi- to permand Regularly inundation of Seasonally inundations on the semi- to permand Regularly inundation of Seasonally inundations on the semi- to permand Regularly inundation of Seasonally inundations on the semi- to permand Regularly inundations on the semi- to permande Regularly inundations on the semi-	nin (1)  lake and other human use (1) pland (e.g. forest), complex (1) r upland corridor (1) uration. Score one or dbl check. ently inundated/saturated (4) ted/saturated (3) ated (2) ated in upper 30cm (12in) (1)
10	39	Metric 4. Habitat Alteration and Development.	
max 20 pts.	subtotal	4a. Substrate disturbance. Score one or double check and average.  None or none apparent (4)  Recovered (3)  Recovering (2)  Recent or no recovery (1)  4b. Habitat development. Select only one and assign score.  Excellent (7)  Very good (6)  Good (5)  Moderately good (4)  Fair (3)  Poor to fair (2)  Poor (1)	
ı		4c. Habitat alteration. Score one or double check and average.  None or none apparent (9) Recovered (6) Recovering (3) Recent or no recovery (1) Recent or no recovery (1) Recovering (3) Recovering (3) Recovering (4) Recovering (4) Recovering (5) Recovering (6) Recovering (7) Recovering (7) Recovering (7) Recovering (8) Recovering (9) Recov	
su	39 btotal this p	woody debris removal farming toxic pollutants nutrient enrichme	ent
last revised	1 Februa	ıry 2001 jjm	

Site: WI	L-007	R	ater(s): BS		<b>Date:</b> 4/10/18
sul	39 btotal first pa	1	<b>Manda</b>		
0	39	Metric 5. Special We	uanus.		
max 10 pts.	subtotal	Check all that apply and score as indicated Bog (10) Fen (10) Old growth forest (10) Mature forested wetland (5) Lake Erie coastal/tributary wetlake Erie coastal/tributary wetlake Plain Sand Prairies (Oat Relict Wet Prairies (10) Known occurrence state/fede Significant migratory songbine Category 1 Wetland. See Quant Communication Significant See Quant Category 1 Wetland.	etland-unrestricted hydrolo etland-restricted hydrolo k Openings) (10) ral threatened or endal d/water fowl habitat or u estion 1 Qualitative Ra	ogy (5) ngered species (10) usage (10) uting (-10)	
1	40	Metric 6. Plant comr	nunities, inte	erspersion, microto	pography.
max 20 pts.	subtotal	6a. Wetland Vegetation Communities.	Vegetation C	Community Cover Scale	
		Score all present using 0 to 3 scale.	0	Absent or comprises <0.1ha (0.24	
		Aquatic bed	1	Present and either comprises sma	
		0 Emergent		vegetation and is of moderate q	
		0 Shrub 0 Forest	2	significant part but is of low qual Present and either comprises sign	-
		0 Mudflats	۷	vegetation and is of moderate qu	
		0 Open water		1 -	dality of comprises a small
		o Other	3	part and is of high quality  Present and comprises significant	nart or more of wetland's
		6b. horizontal (plan view) Interspersion		vegetation and is of high quality	part, or more, or wetland's
				vegetation and is of high quality	
		Select only one. High (5)	Narrativo Do	scription of Vegetation Quality	
		Moderately high(4)	low	Low spp diversity and/or predoming	anno of poppative or
		Moderate (3)	IOW	disturbance tolerant native spec	
		Moderately low (2)	mod	·	
			mou	Native spp are dominant compone	
		✓ Low (1) None (0)		although nonnative and/or disturtion also be present, and specie	• • • • • • • • • • • • • • • • • • • •
		6c. Coverage of invasive plants. Refer	,	· ·	•
		to Table 1 ORAM long form for list. Ad-		moderately high, but generally we threatened or endangered spp	no presence or rare
		<u> </u>		<u> </u>	with poppetive and
		or deduct points for coverage  Extensive >75% cover (-5)	high	A predominance of native species	· · ·
		` '		and/or disturbance tolerant nativ	
		Moderate 25-75% cover (-3) Sparse 5-25% cover (-1)		absent, and high spp diversity a the presence of rare, threatened	
		` ` ` ` ` ` ` ` ` ` ` ` ` ` ` ` `		the presence of rare, threatened	i, or endangered spp
		✓ Nearly absent <5% cover (0) Absent (1)	Mudflat and	Open Water Class Quality	
		6d. Microtopography.	0	Absent <0.1ha (0.247 acres)	<del></del>
		Score all present using 0 to 3 scale.	1	Low 0.1 to <1ha (0.247 to 2.47 ac	ree
		vegetated hummucks/tussuc		Moderate 1 to <4ha (2.47 to 9.88	
		Coarse woody debris >15cm		High 4ha (9.88 acres) or more	acres)
		0 Standing dead >25cm (10in)	` '	Trigit 4tia (3.00 acres) of filore	<del></del>
		0 Amphibian breeding pools		aphy Cover Scale	
		, anymolan breeding pools	0	Absent	
			1	Present very small amounts or if n	nore common
			ı	of marginal quality	HOLG COLLINOLI
			2	Present in moderate amounts, but	t not of highest
			۷	quality or in small amounts of hi	
			3		
			ა	Present in moderate or greater an	IOUITIS
40				and of highest quality	

Site: WL-008		Rater(s): BS		<b>Date:</b> 4/10/18
1 1	Metric 1. Wetland Ar	ea (size).		
max 6 pts. subtotal	Select one size class and assign score    >50 acres (>20.2ha) (6 pts)   25 to <50 acres (10.1 to <20   10 to <25 acres (4 to <10.1h   3 to <10 acres (1.2 to <4ha)   0.3 to <3 acres (0.12 to <1.2   ✓ 0.1 to <0.3 acres (0.04 to <0   <0.1 acres (0.04ha) (0 pts)	.2ha) (5 pts) a) (4 pts) (3 pts) ha) (2pts)		
8 9	Metric 2. Upland buf	fers and surroundi	ng land use.	
max 14 pts. subtotal	✓ MEDIUM. Buffers average 2 NARROW. Buffers average 2 VERY NARROW. Buffers average 2 VERY NARROW. Buffers average 2 VERY LOW. 2nd growth or LOW. Old field (>10 years), MODERATELY HIGH. Resi	i (164ft) or more around wetland pe 25m to <50m (82 to <164ft) around v 10m to <25m (32ft to <82ft) around verage <10m (<32ft) around wetland	rimeter (7) wetland perimeter (4) d wetland perimeter (1) d perimeter (0) verage. ife area, etc. (7) prest. (5) ervation tillage, new fallo	ow field. (3)
15.5 24.5	Metric 3. Hydrology.	1		
max 30 pts. subtotal	3a. Sources of Water. Score all that a  High pH groundwater (5)  Other groundwater (3)  ✓ Precipitation (1)  Seasonal/Intermittent surface  Perennial surface water (lake)  3c. Maximum water depth. Select only  >0.7 (27.6in) (3)  0.4 to 0.7m (15.7 to 27.6in) (1)  ✓ <0.4m (<15.7in) (1)  3e. Modifications to natural hydrologic  ✓ None or none apparent (12)  Recovered (7)  Recovering (3)  Recent or no recovery (1)	e water (3) e or stream) (5) 3d. y one and assign score.  2)  regime. Score one or double chectory Check all disturbances observed ditch tile dike weir stormwater input	Part of wetland/up Part of riparian or Duration inundation/satu Semi- to permane Regularly inundat Seasonally inundat Seasonally satura k and average.  point source (non filling/grading road bed/RR track dredging other	in (1) lake and other human use (1) cland (e.g. forest), complex (1) cupland corridor (1) curation. Score one or dbl check ently inundated/saturated (4) ced/saturated (3) ated (2) ated in upper 30cm (12in) (1) stormwater)
11 25.5	Metric 4. Habitat Alt	eration and Develo	pment.	
max 20 pts. subtotal	<ul> <li>4a. Substrate disturbance. Score one  None or none apparent (4)  Recovered (3)  Recovering (2)  Recent or no recovery (1)</li> <li>4b. Habitat development. Select only  Excellent (7)  Very good (6)  Good (5)  Moderately good (4)  Fair (3)  Poor to fair (2)  Poor (1)</li> </ul>			
	4c. Habitat alteration. Score one or do	cuble check and average.  Check all disturbances observed		
25.5 subtotal this pa	Recovered (6) Recovering (3) Recent or no recovery (1)	mowing grazing clearcutting selective cutting woody debris removal toxic pollutants	shrub/sapling rem herbaceous/aqua sedimentation dredging farming nutrient enrichme	tic bed removal

Site: W	L-008	Rater(	s): BS	<b>Date:</b> 4/10/18
su	25.5 btotal first pa	ge		
0	25.5	Metric 5. Special Wetland	ds.	
max 10 pts.	subtotal	Check all that apply and score as indicated.  Bog (10) Fen (10) Old growth forest (10) Mature forested wetland (5) Lake Erie coastal/tributary wetland-ur Lake Erie coastal/tributary wetland-re Lake Plain Sand Prairies (Oak Openi Relict Wet Prairies (10) Known occurrence state/federal threa Significant migratory songbird/water for Category 1 Wetland. See Question 1	estricted hydro ngs) (10) atened or enda fowl habitat or	logy (5) angered species (10) usage (10)
4	29.5	Metric 6. Plant communi	ties, int	erspersion, microtopography.
max 20 pts.	subtotal	6a. Wetland Vegetation Communities.	Vegetation	Community Cover Scale
		Score all present using 0 to 3 scale.  O Aquatic bed Emergent	1	Absent or comprises <0.1ha (0.2471 acres) contiguous area  Present and either comprises small part of wetland's  vegetation and is of moderate quality, or comprises a
		0 Shrub 0 Forest 0 Mudflats 0 Open water	2	significant part but is of low quality  Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of high quality.
		Other  6b. horizontal (plan view) Interspersion.	3	part and is of high quality  Present and comprises significant part, or more, of wetland's vegetation and is of high quality
		Select only one.		3 1 7
		High (5)	Narrative D	escription of Vegetation Quality
		Moderately high(4) Moderate (3)	low	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species
		Moderately low (2)  ✓ Low (1)	mod	Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spp
		None (0) 6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add		can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp
		or deduct points for coverage  Extensive >75% cover (-5)  Moderate 25-75% cover (-3)	high	A predominance of native species, with nonnative spp and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always,
		Sparse 5-25% cover (-1)  ✓ Nearly absent <5% cover (0)		the presence of rare, threatened, or endangered spp
		Absent (1) 6d. Microtopography.	Mudflat and	d Open Water Class Quality Absent <0.1ha (0.247 acres)
		Score all present using 0 to 3 scale.	1	Low 0.1 to <1ha (0.247 to 2.47 acres)
		Vegetated hummucks/tussucks	2	Moderate 1 to <4ha (2.47 to 9.88 acres)
		1 Coarse woody debris >15cm (6in)	3	High 4ha (9.88 acres) or more
		Standing dead >25cm (10in) dbh		
		1 Amphibian breeding pools	Microtopog 0	raphy Cover Scale Absent
			1	Present very small amounts or if more common of marginal quality
			2	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
29.5			3	Present in moderate or greater amounts and of highest quality
Z9.0				

Site: WI	009	Rater(s): BS	<b>Date:</b> 4/10/18
0	0	Metric 1. Wetland Area (size).	
max 6 pts.	subtotal	Select one size class and assign score.  >50 acres (>20.2ha) (6 pts)  25 to <50 acres (10.1 to <20.2ha) (5 pts)  10 to <25 acres (4 to <10.1ha) (4 pts)  3 to <10 acres (1.2 to <4ha) (3 pts)  0.3 to <3 acres (0.12 to <1.2ha) (2pts)  0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)  <0.1 acres (0.04ha) (0 pts)	
1	1	Metric 2. Upland buffers and surrounding land	l use.
max 14 pts.	subtotal	2a. Calculate average buffer width. Select only one and assign score. Do not double of WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)  MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter. (8)  NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter. (9)  VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter. (9)  Intensity of surrounding land use. Select one or double check and average.  VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. LOW. Old field (>10 years), shrub land, young second growth forest. (5)  MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage.	neter (4) meter (1) (7) e, new fallow field. (3)
10	11	Metric 3. Hydrology.	
max 30 pts.	subtotal	High pH groundwater (5)  Other groundwater (3)  Precipitation (1)  Seasonal/Intermittent surface water (3)  Perennial surface water (lake or stream) (5)  3d. Duration inun  3c. Maximum water depth. Select only one and assign score.  >0.7 (27.6in) (3)  0.4 to 0.7m (15.7 to 27.6in) (2)  ✓ <0.4m (<15.7in) (1)  Part of  Part of	ource (nonstormwater) rading d/RR track
5	16	Metric 4. Habitat Alteration and Development.	<u> </u>
max 20 pts.	subtotal	4a. Substrate disturbance. Score one or double check and average.  None or none apparent (4)  Recovered (3)  Recovering (2)  Recent or no recovery (1)  4b. Habitat development. Select only one and assign score.  Excellent (7)  Very good (6)  Good (5)  Moderately good (4)  Fair (3)  Poor to fair (2)  Poor (1)	
		4c. Habitat alteration. Score one or double check and average.  None or none apparent (9) Recovered (6)  Check all disturbances observed mowing shrub/s	apling removal
suh	16	Recovering (3)  Recent or no recovery (1)	eous/aquatic bed removal ntation ig
last revised			

Site: WI	009	Rater(	s): BS	<b>Date:</b> 4/10/18	
sul	16	ge			
0	16	Metric 5. Special Wetland	ds.		
max 10 pts.	subtotal	Check all that apply and score as indicated.  Bog (10) Fen (10) Old growth forest (10) Mature forested wetland (5) Lake Erie coastal/tributary wetland-ur Lake Erie coastal/tributary wetland-re Lake Plain Sand Prairies (Oak Openii Relict Wet Prairies (10) Known occurrence state/federal threa Significant migratory songbird/water f Category 1 Wetland. See Question 1	estricted hydrol ngs) (10) atened or enda fowl habitat or i I Qualitative Ra	ngered species (10) usage (10) ating (-10)	
0	16	Metric 6. Plant communi	ties, inte	erspersion, microtopography.	
max 20 pts.	subtotal	6a. Wetland Vegetation Communities.	Vegetation (	Community Cover Scale	
		Score all present using 0 to 3 scale.	0	Absent or comprises <0.1ha (0.2471 acres) contiguous area	_
		O Aquatic bed	1	Present and either comprises small part of wetland's	Т
		0 Emergent		vegetation and is of moderate quality, or comprises a	
		0 Shrub		significant part but is of low quality	
		0 Forest	2	Present and either comprises significant part of wetland's	_
		0 Mudflats		vegetation and is of moderate quality or comprises a small	
		0 Open water		part and is of high quality	
		0 Other	3	Present and comprises significant part, or more, of wetland's	_
			3		
		6b. horizontal (plan view) Interspersion.		vegetation and is of high quality	_
		Select only one.			
		High (5)		escription of Vegetation Quality	
		Moderately high(4)	low	Low spp diversity and/or predominance of nonnative or	
		Moderate (3)		disturbance tolerant native species	
		Moderately low (2)	mod	Native spp are dominant component of the vegetation,	
		Low (1)		although nonnative and/or disturbance tolerant native spp	
		✓ None (0)		can also be present, and species diversity moderate to	
		6c. Coverage of invasive plants. Refer		moderately high, but generally w/o presence of rare	
		to Table 1 ORAM long form for list. Add		threatened or endangered spp	
		or deduct points for coverage	high	A predominance of native species, with nonnative spp	_
		Extensive >75% cover (-5)	Ü	and/or disturbance tolerant native spp absent or virtually	
		Moderate 25-75% cover (-3)		absent, and high spp diversity and often, but not always,	
		Sparse 5-25% cover (-1)		the presence of rare, threatened, or endangered spp	
		✓ Nearly absent <5% cover (0)		the precented of fare, threatened, or officing free epp	_
		Absent (1)	Mudflat and	Open Water Class Quality	
		6d. Microtopography.	0	Absent <0.1ha (0.247 acres)	
		Score all present using 0 to 3 scale.	1	Low 0.1 to <1ha (0.247 acres)	
			2	Moderate 1 to <4ha (2.47 to 9.88 acres)	
		<b>□</b>		,	
		O Coarse woody debris >15cm (6in)	3	High 4ha (9.88 acres) or more	
		O Standing dead >25cm (10in) dbh	Misses	andra Carray Carda	
		Amphibian breeding pools		raphy Cover Scale	
			0	Absent	
			1	Present very small amounts or if more common of marginal quality	
			2	Present in moderate amounts, but not of highest quality or in small amounts of highest quality	
			3	Present in moderate or greater amounts	
16				and of highest quality	

Site: WL-0	10	Rater(s): BS	<b>Date:</b> 4/10/18
1	1	Metric 1. Wetland Area (size).	
max 6 pts. sul	btotal	Select one size class and assign score.    >50 acres (>20.2ha) (6 pts)   25 to <50 acres (10.1 to <20.2ha) (5 pts)   10 to <25 acres (4 to <10.1ha) (4 pts)   3 to <10 acres (1.2 to <4ha) (3 pts)   0.3 to <3 acres (0.12 to <1.2ha) (2pts)   ✓ 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)   <0.1 acres (0.04ha) (0 pts)	
12	13	Metric 2. Upland buffers and surrounding land use	
max 14 pts. sul		2a. Calculate average buffer width. Select only one and assign score. Do not double check.  VIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)  MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)  NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)  VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)  2b. Intensity of surrounding land use. Select one or double check and average.  VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)  LOW. Old field (>10 years), shrub land, young second growth forest. (5)  MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fall HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)	
18	31	Metric 3. Hydrology.	
max 30 pts. sul	btotal	✓ Precipitation (1)  Seasonal/Intermittent surface water (3)  Perennial surface water (lake or stream) (5)  3c. Maximum water depth. Select only one and assign score.  >0.7 (27.6in) (3)  0.4 to 0.7m (15.7 to 27.6in) (2)  ✓ Part of wetland/u  Part of wetland/u	ain (1)  //lake and other human use (1)  upland (e.g. forest), complex (1)  or upland corridor (1)  turation. Score one or dbl check nently inundated/saturated (4)  ated/saturated (3)  dated (2)  rated in upper 30cm (12in) (1)
11 4	42	Metric 4. Habitat Alteration and Development.	
max 20 pts. sul		4a. Substrate disturbance. Score one or double check and average.  None or none apparent (4) Recovered (3) Recovering (2) Recent or no recovery (1)  4b. Habitat development. Select only one and assign score.  Excellent (7) Very good (6) Good (5) Moderately good (4) Fair (3) Poor to fair (2) Poor (1)	
		Recent or no recovery (1) clearcutting sedimentation	moval atic bed removal
	42 If this pag	selective cutting dredging farming toxic pollutants nutrient enrichm	ent
last revised 1 Fe			

Site: W	L-010	Rat	ter(s): BS	D	ate: 4/10/18
			. ,		
	42				
0	btotal first pa	Metric 5. Special Wetl	ands.		
max 10 pts.	subtotal	Check all that apply and score as indicated Bog (10) Fen (10) Old growth forest (10) Mature forested wetland (5) Lake Erie coastal/tributary wetla Lake Erie coastal/tributary wetla Lake Plain Sand Prairies (Oak C Relict Wet Prairies (10) Known occurrence state/federal Significant migratory songbird/w Category 1 Wetland. See Ques	nd-unrestricted hyd nd-restricted hydrol Openings) (10) threatened or enda ater fowl habitat or	ogy (5) Ingered species (10) usage (10)	
4	46	Metric 6. Plant commu	unities, into	erspersion, microtop	ography.
max 20 pts.	subtotal	6a. Wetland Vegetation Communities.	<u>Vege</u> tation	Community Cover Scale	
		Score all present using 0 to 3 scale.	0	Absent or comprises <0.1ha (0.2471	acres) contiguous area
		O Aquatic bed 1 Emergent O Shrub	1	Present and either comprises small p vegetation and is of moderate quali significant part but is of low quality	
		0 Forest	2	Present and either comprises signification	ant part of wetland's
		Mudflats     Open water	2	vegetation and is of moderate quali part and is of high quality	
		0 Other	3	Present and comprises significant par	rt. or more. of wetland's
		6b. horizontal (plan view) Interspersion.		vegetation and is of high quality	,
		Select only one.	Normative D	acquintion of Variation Quality	
		High (5)		escription of Vegetation Quality	
		Moderately high(4)	low	Low spp diversity and/or predominand	ce of nonnative or
		Moderate (3)		disturbance tolerant native species	6.0
		Moderately low (2)	mod	Native spp are dominant component	
		✓ Low (1)		although nonnative and/or disturbar	
		None (0)		can also be present, and species di	•
		6c. Coverage of invasive plants. Refer		moderately high, but generally w/o	presence of rare
		to Table 1 ORAM long form for list. Add		threatened or endangered spp	
		or deduct points for coverage	high	A predominance of native species, wi	* *
		Extensive >75% cover (-5)		and/or disturbance tolerant native s	• •
		Moderate 25-75% cover (-3)		absent, and high spp diversity and	
		Sparse 5-25% cover (-1)		the presence of rare, threatened, or	· endangered spp
		✓ Nearly absent <5% cover (0)			
		Absent (1)		Open Water Class Quality	
		6d. Microtopography.	0	Absent <0.1ha (0.247 acres)	
		Score all present using 0 to 3 scale.	1	Low 0.1 to <1ha (0.247 to 2.47 acres	
		Vegetated hummucks/tussucks	2	Moderate 1 to <4ha (2.47 to 9.88 acr	es)
		Coarse woody debris >15cm (6i	· —	High 4ha (9.88 acres) or more	
		<ul><li>Standing dead &gt;25cm (10in) dbl</li><li>Amphibian breeding pools</li></ul>		raphy Cover Scale	
			0	Absent	
			1	Present very small amounts or if more of marginal quality	
			2	Present in moderate amounts, but no quality or in small amounts of highe	_
			3	Present in moderate or greater amou	
			3	and of highest quality	110
40				and of highest quality	

Site: WL-011		Rater(s): BS		<b>Date:</b> 4/10/18	
	Metric 1. Wetland Ar	(oz (sizo)			
2 2	Wetland A.	ea (5126).			
max 6 pts. subtotal	Select one size class and assign score	.2ha) (5 pts) a) (4 pts) (3 pts) ha) (2pts)			
1 3	Metric 2. Upland buf	fers and surroundi	ng land use.		
max 14 pts. subtotal	MEDIUM. Buffers average 2 NARROW. Buffers average 2 VERY NARROW. Buffers average 2 VERY NARROW. Buffers average 2 VERY LOW. 2nd growth or 0 LOW. Old field (>10 years), MODERATELY HIGH. Resident average 2 MODERATELY HIGH. Resident average 2 NARROW. Buffers average 3 NARROW. Buffers 3 NARROW. Bu	i (164ft) or more around wetland per 25m to <50m (82 to <164ft) around v 10m to <25m (32ft to <82ft) around verage <10m (<32ft) around wetland	rimeter (7) vetland perimeter (4) I wetland perimeter (1) I perimeter (0) erage. ife area, etc. (7) orest. (5) rvation tillage, new fallo	ow field. (3)	
10 13	Metric 3. Hydrology.				
max 30 pts. subtotal	3a. Sources of Water. Score all that a  High pH groundwater (5)  Other groundwater (3)  Precipitation (1)  Seasonal/Intermittent surface Perennial surface water (lake  3c. Maximum water depth. Select only  >0.7 (27.6in) (3)  0.4 to 0.7m (15.7 to 27.6in) ( <ul> <li>&lt;0.4m (&lt;15.7in) (1)</li> </ul> 3e. Modifications to natural hydrologic  None or none apparent (12)  Recovered (7)  Recovering (3)  Recent or no recovery (1)	e water (3) e or stream) (5) 3d. I y one and assign score.  2) regime. Score one or double checl	Part of wetland/up Part of riparian or Duration inundation/satu Semi- to permane Regularly inundat Seasonally inundat V Seasonally satura	in (1) lake and other human usibland (e.g. forest), completupland corridor (1) uration. Score one or dblently inundated/saturated led/saturated (3) lated (2) lated in upper 30cm (12in) stormwater)	lex (1) I check I (4)
12 25	Metric 4. Habitat Alt	eration and Develo	pment.		
max 20 pts. subtotal	4a. Substrate disturbance. Score one  Vone or none apparent (4) Recovered (3) Recovering (2) Recent or no recovery (1)  4b. Habitat development. Select only Excellent (7) Very good (6) Good (5) Moderately good (4) Fair (3) Poor to fair (2) Poor (1)				
	4c. Habitat alteration. Score one or do				
25 subtotal this pa	·	Check all disturbances observed   mowing grazing clearcutting selective cutting woody debris removal toxic pollutants	shrub/sapling rem herbaceous/aqua sedimentation dredging farming nutrient enrichme	tic bed removal	

Site: WI	L-011	Rate	er(s): BS	[0	<b>Date:</b> 4/10/18
				<u>.</u>	
	25				
su	btotal first pa				
0	25	Metric 5. Special Wetla	ands.		
max 10 pts.	subtotal	Check all that apply and score as indicated	<u>.</u>		
		Bog (10) Fen (10)			
		Old growth forest (10)			
		Mature forested wetland (5)  Lake Erie coastal/tributary wetlan	d uprostricted by	Irology (10)	
		Lake Erie coastal/tributary wetlan			
		Lake Plain Sand Prairies (Oak O	•		
		Relict Wet Prairies (10)		angular and angular (40)	
		Known occurrence state/federal t Significant migratory songbird/wa			
		Category 1 Wetland. See Questi		- , ,	
2	27	Metric 6. Plant commu	nities, int	erspersion, microtop	ography.
2	27				3
max 20 pts.	subtotal	6a. Wetland Vegetation Communities.		Community Cover Scale	
		Score all present using 0 to 3 scale.  O Aquatic bed	0	Absent or comprises <0.1ha (0.2471  Present and either comprises small	
		1 Emergent	1	vegetation and is of moderate qua	
		1 Shrub		significant part but is of low quality	,
		0 Forest	2	Present and either comprises signific	
		0 Mudflats 0 Open water		vegetation and is of moderate qua part and is of high quality	ity or comprises a small
		0 Other	3	Present and comprises significant pa	art, or more, of wetland's
		6b. horizontal (plan view) Interspersion.		vegetation and is of high quality	
		Select only one. High (5)	Narrative Do	escription of Vegetation Quality	
		Moderately high(4)	low	Low spp diversity and/or predominar	nce of nonnative or
		Moderate (3)	<del></del>	disturbance tolerant native species	
		Moderately low (2)  ✓ Low (1)	mod	Native spp are dominant component although nonnative and/or disturba	
		None (0)		can also be present, and species of	• • • • • • • • • • • • • • • • • • • •
		6c. Coverage of invasive plants. Refer		moderately high, but generally w/o	presence of rare
		to Table 1 ORAM long form for list. Add	hinh	threatened or endangered spp	with mannative and
		or deduct points for coverage  Extensive >75% cover (-5)	high	A predominance of native species, v and/or disturbance tolerant native	
		Moderate 25-75% cover (-3)		absent, and high spp diversity and	• •
		✓ Sparse 5-25% cover (-1)		the presence of rare, threatened, of	or endangered spp
		Nearly absent <5% cover (0) Absent (1)	Mudflat and	Open Water Class Quality	
		6d. Microtopography.	0	Absent <0.1ha (0.247 acres)	
		Score all present using 0 to 3 scale.	1	Low 0.1 to <1ha (0.247 to 2.47 acres	
		<ul><li>Vegetated hummucks/tussucks</li><li>Coarse woody debris &gt;15cm (6in</li></ul>	2 3	Moderate 1 to <4ha (2.47 to 9.88 ac	ores)
		O Coarse woody debris >15cm (6in	′ <u> </u>	High 4ha (9.88 acres) or more	
		Amphibian breeding pools		raphy Cover Scale	
			0	Absent	
			1	Present very small amounts or if mo of marginal quality	re common
			2	Present in moderate amounts, but n	ot of highest
				quality or in small amounts of high	
1			3	Present in moderate or greater amou	unts
~- l				and of highest quality	

Site: W	'L <b>-</b> 012	F	Rater(s): BS		<b>Date:</b> 10/2/18	
		Metric 1. Wetland Ar	92 (SiZO)			
0	0	Wether I. Wethand An	ea (Size).			
max 6 pts.	subtotal	Select one size class and assign score.    >50 acres (>20.2ha) (6 pts)   25 to <50 acres (10.1 to <20.2ha) (5 pts)   10 to <25 acres (4 to <10.1ha) (4 pts)   3 to <10 acres (1.2 to <4ha) (3 pts)   0.3 to <3 acres (0.12 to <1.2ha) (2pts)   0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)   < <0.1 acres (0.04ha) (0 pts)				
3	3	Metric 2. Upland buf	fers and surroundi	ng land use.		
max 14 pts.	subtotal	MEDIUM. Buffers average 2:  VARROW. Buffers average VERY NARROW. Buffers average VERY NARROW. Buffers average VERY NARROW. Buffers average VERY LOW. 2nd growth or continuous LOW. Old field (>10 years), so MODERATELY HIGH. Resident NARROW.	(164ft) or more around wetland per 5m to <50m (82 to <164ft) around v 10m to <25m (32ft to <82ft) around erage <10m (<32ft) around wetland	rimeter (7) wetland perimeter (4) d wetland perimeter (1) d perimeter (0) verage. ife area, etc. (7) orest. (5) vervation tillage, new fallo	ow field. (3)	
16	19	Metric 3. Hydrology.				
max 30 pts.	subtotal	3a. Sources of Water. Score all that an High pH groundwater (5)  Other groundwater (3)  Precipitation (1)  Seasonal/Intermittent surface  Perennial surface water (lake)  3c. Maximum water depth. Select only  >0.7 (27.6in) (3)  0.4 to 0.7m (15.7 to 27.6in) (2)  ✓ <0.4m (<15.7in) (1)  3e. Modifications to natural hydrologic  Vone or none apparent (12)  Recovered (7)  Recovering (3)  Recent or no recovery (1)	e water (3) or stream) (5) one and assign score.  2)  regime. Score one or double check Check all disturbances observed ditch tile dike weir stormwater input	Part of wetland/up Part of riparian or Duration inundation/satu Semi- to permane Regularly inundat Seasonally inundat Seasonally satura and average.  point source (non filling/grading road bed/RR track dredging other	in (1) lake and other human pland (e.g. forest), cor upland corridor (1) uration. Score one or ently inundated/satura ted/saturated (3) ated (2) ated in upper 30cm (1) stormwater)	mplex (1) dbl check ated (4)
12	31	Metric 4. Habitat Alte	eration and Develo	pment.		
max 20 pts.	subtotal	4a. Substrate disturbance. Score one None or none apparent (4) Recovered (3) Recovering (2) Recent or no recovery (1)  4b. Habitat development. Select only of Excellent (7) Very good (6) Good (5) Moderately good (4) Fair (3) Poor to fair (2) Poor (1)	one and assign score.			
		4c. Habitat alteration. Score one or do  None or none apparent (9)	uble check and average.  Check all disturbances observed			
	31	Recovered (6) Recovering (3) Recent or no recovery (1)	mowing grazing clearcutting selective cutting woody debris removal toxic pollutants	shrub/sapling rem herbaceous/aqua sedimentation dredging farming nutrient enrichme	tic bed removal	
last revised	ı Februa	ry Zuu i jjm				

Site: WL-0	12	Rater(	s): BS	<b>Date:</b> 10/2/18
	31			
	I first pa	ge		
0 3	31	Metric 5. Special Wetlan	ds.	
max 10 pts. su	ıbtotal	Check all that apply and score as indicated.  Bog (10)		
		Fen (10)		
		Old growth forest (10)  Mature forested wetland (5)		
		Lake Erie coastal/tributary wetland-u  Lake Erie coastal/tributary wetland-re		
		Lake Plain Sand Prairies (Oak Openi		
		Relict Wet Prairies (10) Known occurrence state/federal threa	atened or enda	angered species (10)
		Significant migratory songbird/water  Category 1 Wetland. See Question		= ' '
0 :	31			erspersion, microtopography.
			ŕ	
max 20 pts. Su	ıbtotal	6a. Wetland Vegetation Communities. Score all present using 0 to 3 scale.	vegetation	Community Cover Scale Absent or comprises <0.1ha (0.2471 acres) contiguous area
		O Aquatic bed	1	Present and either comprises small part of wetland's
		1 Emergent		vegetation and is of moderate quality, or comprises a
		0 Shrub		significant part but is of low quality
		0 Forest 0 Mudflats	2	Present and either comprises significant part of wetland's
		0 Mudflats 0 Open water		vegetation and is of moderate quality or comprises a small part and is of high quality
		0 Other	3	Present and comprises significant part, or more, of wetland's
		6b. horizontal (plan view) Interspersion.		vegetation and is of high quality
		Select only one.		
		High (5)		escription of Vegetation Quality  Low spp diversity and/or predominance of nonnative or
		Moderately high(4) Moderate (3)	low	disturbance tolerant native species
		Moderately low (2)	mod	Native spp are dominant component of the vegetation,
		Low (1)		although nonnative and/or disturbance tolerant native spp
		✓ None (0)		can also be present, and species diversity moderate to
		6c. Coverage of invasive plants. Refer		moderately high, but generally w/o presence of rare
		to Table 1 ORAM long form for list. Add or deduct points for coverage	high	threatened or endangered spp  A predominance of native species, with nonnative spp
		Extensive >75% cover (-5)	riigir	and/or disturbance tolerant native spp absent or virtually
		Moderate 25-75% cover (-3)		absent, and high spp diversity and often, but not always,
		✓ Sparse 5-25% cover (-1)		the presence of rare, threatened, or endangered spp
		Nearly absent <5% cover (0)	Mudfleten	d Onen Water Class Quality
		Absent (1) 6d. Microtopography.	0	d Open Water Class Quality Absent <0.1ha (0.247 acres)
		Score all present using 0 to 3 scale.	1	Low 0.1 to <1ha (0.247 to 2.47 acres)
		Vegetated hummucks/tussucks	2	Moderate 1 to <4ha (2.47 to 9.88 acres)
		O Coarse woody debris >15cm (6in)	3	High 4ha (9.88 acres) or more
		o Standing dead >25cm (10in) dbh o Amphibian breeding pools	Microtopod	raphy Cover Scale
		To Journal preeding hoop	0	Absent
			1	Present very small amounts or if more common
				of marginal quality
			2	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
			3	Present in moderate or greater amounts
31				and of highest quality
19 i l				

Site: W	L-012	Rater(s): BS	<b>Date:</b> 10/2/18
2	2	Metric 1. Wetland Area (size).	
max 6 pts.	subtotal	Select one size class and assign score.  >50 acres (>20.2ha) (6 pts)  25 to <50 acres (10.1 to <20.2ha) (5 pts)  10 to <25 acres (4 to <10.1ha) (4 pts)  3 to <10 acres (1.2 to <4ha) (3 pts)  0.3 to <3 acres (0.12 to <1.2ha) (2pts)  0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)  <0.1 acres (0.04ha) (0 pts)	
4	6	Metric 2. Upland buffers and surrounding land use	<b>).</b>
max 14 pts.	subtotal	2a. Calculate average buffer width. Select only one and assign score. Do not double check.  WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)  MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)  NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (0)  VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)  buffers average <10m (<32ft) around wetland perimeter (0)  Low. Old field (>10 years), shrub land, young second growth forest. (5)  WODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fall HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)	1)
22	28	Metric 3. Hydrology.	
max 30 pts.	subtotal	<ul> <li>✓ Precipitation (1)</li> <li>✓ Seasonal/Intermittent surface water (3)</li> <li>✓ Perennial surface water (lake or stream) (5)</li> <li>3d. Duration inundation/s</li> <li>3c. Maximum water depth. Select only one and assign score.</li> <li>✓ Semi- to perminent to permine</li></ul>	plain (1) m/lake and other human use (1) d/upland (e.g. forest), complex (1) n or upland corridor (1) saturation. Score one or dbl check anently inundated/saturated (4) dated/saturated (3) indated (2) turated in upper 30cm (12in) (1)
13	41	Metric 4. Habitat Alteration and Development.	
max 20 pts.	subtotal	4a. Substrate disturbance. Score one or double check and average.  None or none apparent (4)  Recovered (3)  Recovering (2)  Recent or no recovery (1)  4b. Habitat development. Select only one and assign score.  Excellent (7)  Very good (6)  Good (5)  Moderately good (4)  Fair (3)  Poor to fair (2)  Poor (1)	
г		4c. Habitat alteration. Score one or double check and average.  None or none apparent (9) Recovered (6) Recovering (3) Recent or no recovery (1) Recent or no recovery (1) Recovering (3) Recovering (3) Recovering (3) Recovering (4) Recovering (3) Recovering (3) Recovering (4) Recovering (4) Recovering (5) Recovering (6) Recovering (7) Recovering (7) Recovering (7) Recovering (8) Recovering (9) Recov	removal quatic bed removal
sul	41 btotal this pa	woody debris removal   farming   toxic pollutants   nutrient enrich	ment
last revised	1 Februa	ry 2001 jjm	

Site: WI	L-012	R	ater(s): BS		<b>Date:</b> 10/2/18
sul 0	41 btotal first pa	Metric 5. Special We	tlands.		
max 10 pts.	subtotal	Check all that apply and score as indicated Bog (10)	ated.		
		Fen (10) Old growth forest (10) Mature forested wetland (5) Lake Erie coastal/tributary we Lake Erie coastal/tributary we Lake Plain Sand Prairies (0a Relict Wet Prairies (10) Known occurrence state/fede Significant migratory songbire Category 1 Wetland. See Qu	etland-restricted hydrolo k Openings) (10) ral threatened or endar d/water fowl habitat or u	ogy (5) ngered species (10) usage (10)	
8	49	Metric 6. Plant comr	·	•	pography.
max 20 pts.	subtotal	6a. Wetland Vegetation Communities.	Vegetation C	Community Cover Scale	
		Score all present using 0 to 3 scale.	0	Absent or comprises <0.1ha (0.24	
		Aquatic bed	1	Present and either comprises sma	
		1 Emergent		vegetation and is of moderate quality	ua <b>l</b> ity, or comprises a
		1 Shrub		significant part but is of low qual	-
		1 Forest	2	Present and either comprises sign	ificant part of wetland's
		0 Mudflats		vegetation and is of moderate q	uality or comprises a small
		Open water		part and is of high quality	
		0 Other	3	Present and comprises significant	part, or more, of wetland's
		6b. horizontal (plan view) Interspersion		vegetation and is of high quality	,
		Select only one.	•	vogotation and to or might quality	
			Norretive De	scarintian of Vagatation Quality	
		High (5)		scription of Vegetation Quality	
		Moderately high(4)	low	Low spp diversity and/or predomir	
		Moderate (3)		disturbance tolerant native spec	
		✓ Moderately low (2)	mod	Native spp are dominant compone	ent of the vegetation,
		Low (1)		although nonnative and/or distu	bance tolerant native spp
		None (0)		can also be present, and specie	s diversity moderate to
		6c. Coverage of invasive plants. Refer	•	moderately high, but generally w	/o presence of rare
		to Table 1 ORAM long form for list. Ad-	d	threatened or endangered spp	
		or deduct points for coverage	high	A predominance of native species	, with nonnative spp
		Extensive >75% cover (-5)		and/or disturbance tolerant nativ	re spp absent or virtua <b>ll</b> y
		Moderate 25-75% cover (-3)		absent, and high spp diversity a	
		✓ Sparse 5-25% cover (-1)		the presence of rare, threatened	
		Nearly absent <5% cover (0)		,	,
		Absent (1)	Mudflat and	Open Water Class Quality	
		6d. Microtopography.	0	Absent <0.1ha (0.247 acres)	
		Score all present using 0 to 3 scale.	1	Low 0.1 to <1ha (0.247 to 2.47 ac	res)
		Vegetated hummucks/tussuc		Moderate 1 to <4ha (2.47 to 9.88	
		<b>—</b>			acres)
		1 Coarse woody debris >15cm	` '	High 4ha (9.88 acres) or more	
		2 Standing dead >25cm (10in)		canby Cayor Saala	
		1 Amphibian breeding pools		aphy Cover Scale	
			0	Absent	
			1	Present very small amounts or if n	nore common
				of marginal quality	
			2	Present in moderate amounts, but	
				quality or in small amounts of hi	ghest quality
			3	Present in moderate or greater an	nounts
				and of highest quality	

Alamo Solar Project

APPENDIX

STREAM ASSESSMENT FORMS



Primary Headwater Habitat Evaluation Form HHEI Score (sum of metrics 1, 2, 3): SITE NAME/LOCATION | Alamo Solar Farm SITE NUMBER WB-001 RIVER BASIN Beasley Run DRAINAGE AREA (mi²) 0.72 1,792 LAT. 39.71641 LONG. -84.64734 RIVER CODE LENGTH OF STREAM REACH (ft) RIVER MILE DATE 11/02/17 BJS SCORER COMMENTS NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO RECOVERY STREAM CHANNEL **MODIFICATIONS:** SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes HHEI (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B. Metric PERCENT **PERCENT Points** BLDR SLABS [16 pts] SILT [3 pt] 40% 0% BOULDER (>256 mm) [16 pts] LEAF PACK/WOODY DEBRIS [3 pts] 0% 0% **Substrate** 0% BEDROCK [16 pt] 0% FINE DETRITUS [3 pts] Max = 400% 0% COBBLE (65-256 mm) [12 pts] CLAY or HARDPAN [0 pt] 30% 0% GRAVEL (2-64 mm) [9 pts] MUCK [0 pts] 12 30% 0% SAND (<2 mm) [6 pts] ARTIFICIAL [3 pts] Total of Percentages of (B) Substrate Percentage 0.00% 100% A + BBldr Slabs, Boulder, Cobble, Bedrock SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: TOTAL NUMBER OF SUBSTRATE TYPES: 3 Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of Pool Depth evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box): Max = 30> 30 centimeters [20 pts] > 5 cm - 10 cm [15 pts] > 22.5 - 30 cm [30 pts] < 5 cm [5 pts] > 10 - 22.5 cm [25 pts] NO WATER OR MOIST CHANNEL [0 pts] 30 25 COMMENTS **MAXIMUM POOL DEPTH (centimeters):** BANK FULL WIDTH (Measured as the average of 3-4 measurements) Bankfull (Check ONLY one box): > 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] Width Max=30> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]  $\leq$  1.0 m (<=3' 3") [5 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] 0.90 COMMENTS AVERAGE BANKFULL WIDTH (meters): This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆ RIPARIAN WIDTH FLOODPLAIN QUALITY (Most Predominant per Bank) (Per Bank) R Wide >10m Mature Forest, Wetland Conservation Tillage Immature Forest, Shrub or Old Moderate 5-10m Urban or Industrial Field Open Pasture, Row Crop Narrow <5m Residential, Park, New Field Fenced Pasture None Mining or Construction COMMENTS FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Moist Channel, isolated pools, no flow (Intermittent) Stream Flowing Subsurface flow with isolated pools (Interstitial) Dry channel, no water (Ephemeral) COMMENTS SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box): None 1.0 2.0 3.0

Moderate to Severe

2.5

1.5

Moderate (2 ft/100 ft)

>3

Severe (10 ft/100 ft)

Flat (0.5 ft/100 ft)

0.5

STREAM GRADIENT ESTIMATE

Flat to Moderate

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):	
QHEIPERFORMED? - Yes V No QHEI Score (If Yes, Atta	ach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)  WWH Name:	Distance from Evaluated Stream
CWH Name:	Distance from Evaluated Stream
EWH Name: _	Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHEE	DAREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: Eaton South NRCS Soil Map F	Page: NRCS Soil Map Stream Order
County: Preble Township / City:	
MISCELLANEOUS	
Base Flow Conditions? (Y/N): N _ Date of last precipitation: 11/01/17	Quantity: 0.69
Photograph Information: Representative photos taken	
Elevated Turbidity? (Y/N): N Canopy (% open): 70%	
Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. a	and attach results) Lab Number:
Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.)	Conductivity (µmhos/cm)
Is the sampling reach representative of the stream (Y/N) If not, please explain:	
Additional comments/description of pollution impacts:	
Additional commence decomplian of pollution impacts.	
BIOTIC EVALUATION  Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional	I. NOTE: all voucher samples must be labeled with the site
ID number. Include appropriate field data sheets from the Pri	•
Fish Observed? (Y/N) Voucher? (Y/N) Salamanders Observed? (Y/N) Aquatic Macroinvertebrate	Voucher? (Y/N) N Voucher? (Y/N) N
Comments Regarding Biology:	
<u> </u>	
DRAWING AND NARRATIVE DESCRIPTION OF STREAM F	REACH (This <u>must</u> be completed):
Include important landmarks and other features of interest for site evaluation ar	nd a narrative description of the stream's location
FLOW -	





Primary Headwater Habitat Evaluation Form HHEI Score (sum of metrics 1, 2, 3): SITE NAME/LOCATION | Alamo Solar Farm SITE NUMBER WB-002 RIVER BASIN Beasley Run DRAINAGE AREA (mi²) 0.00 1,530 LAT. 39.71402 LONG. -84.64771 RIVER CODE LENGTH OF STREAM REACH (ft) RIVER MILE DATE 11/02/17 SCORER BJS COMMENTS NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO RECOVERY STREAM CHANNEL **MODIFICATIONS:** SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes HHEI (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B. Metric PERCENT **PERCENT Points** BLDR SLABS [16 pts] SILT [3 pt] 70% 0% BOULDER (>256 mm) [16 pts] LEAF PACK/WOODY DEBRIS [3 pts] 0% 0% **Substrate** 0% BEDROCK [16 pt] 0% FINE DETRITUS [3 pts] Max = 400% 0% COBBLE (65-256 mm) [12 pts] CLAY or HARDPAN [0 pt] 5% 0% GRAVEL (2-64 mm) [9 pts] MUCK [0 pts] 12 25% 0% SAND (<2 mm) [6 pts] ARTIFICIAL [3 pts] Total of Percentages of (B) Substrate Percentage 0.00% 100% A + BBldr Slabs, Boulder, Cobble, Bedrock SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: TOTAL NUMBER OF SUBSTRATE TYPES: 3 Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of Pool Depth evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box): Max = 30> 30 centimeters [20 pts] > 5 cm - 10 cm [15 pts] > 22.5 - 30 cm [30 pts] < 5 cm [5 pts] > 10 - 22.5 cm [25 pts] NO WATER OR MOIST CHANNEL [0 pts] 0 COMMENTS **MAXIMUM POOL DEPTH (centimeters):** BANK FULL WIDTH (Measured as the average of 3-4 measurements) Bankfull (Check ONLY one box): > 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] Width Max=30> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]  $\leq$  1.0 m (<=3' 3") [5 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] 0.30 COMMENTS AVERAGE BANKFULL WIDTH (meters): This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆ RIPARIAN WIDTH FLOODPLAIN QUALITY (Most Predominant per Bank) (Per Bank) R Wide >10m Mature Forest, Wetland Conservation Tillage Immature Forest, Shrub or Old Moderate 5-10m Urban or Industrial Field Open Pasture, Row Crop Narrow <5m Residential, Park, New Field Fenced Pasture None Mining or Construction COMMENTS FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Moist Channel, isolated pools, no flow (Intermittent) Stream Flowing Subsurface flow with isolated pools (Interstitial) Dry channel, no water (Ephemeral)

> Moderate (2 ft/100 ft) Moderate to Severe Severe (10 ft/100 ft)

3.0

>3

2.0

2.5

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):

1.0

1.5

Flat (0.5 ft/100 ft)

COMMENTS

STREAM GRADIENT ESTIMATE

Flat to Moderate

None

0.5

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):
QHEI PERFORMED? - Yes ✓ No QHEI Score (If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)  WWH Name: Distance from Evaluated Stream  CWH Name: Distance from Evaluated Stream
EWH Name: Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: Eaton South  NRCS Soil Map Page: NRCS Soil Map Stream Order
County: Preble Township / City:
MISCELLANEOUS  Base Flow Conditions? (Y/N): Y Date of last precipitation: 11/01/17 Quantity: 0.69
Photograph Information: Representative photos taken
Elevated Turbidity? (Y/N): N Canopy (% open): 100%
Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number:
Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.) Conductivity (µmhos/cm)
Is the sampling reach representative of the stream (Y/N) If not, please explain:
Additional comments/description of pollution impacts:
BIOTIC EVALUATION  Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)
Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N Vouc
Comments Regarding Biology:
DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location
FLOW TO THE PROPERTY OF THE PR

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# Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3): SITE NAME/LOCATION | Alamo Solar Farm SITE NUMBER WB-003 RIVER BASIN Beasley Run DRAINAGE AREA (mi²) 0.75 3,419 LAT 39.70329 LONG -84.65005 RIVER CODE LENGTH OF STREAM REACH (ft) RIVER MILE DATE 11/02/17 BJS SCORER COMMENTS NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO RECOVERY STREAM CHANNEL **MODIFICATIONS:** SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes HHEI (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B. Metric PERCENT **PERCENT Points** BLDR SLABS [16 pts] SILT [3 pt] 40% 0% BOULDER (>256 mm) [16 pts] LEAF PACK/WOODY DEBRIS [3 pts] 0% 0% **Substrate** 0% BEDROCK [16 pt] 0% FINE DETRITUS [3 pts] Max = 400% 5% COBBLE (65-256 mm) [12 pts] CLAY or HARDPAN [0 pt] 0% 0% GRAVEL (2-64 mm) [9 pts] MUCK [0 pts] 12 55% 0% SAND (<2 mm) [6 pts] ARTIFICIAL [3 pts] Total of Percentages of (B) Substrate Percentage 5.00% 100% A + BBldr Slabs, Boulder, Cobble, Bedrock SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: TOTAL NUMBER OF SUBSTRATE TYPES: 3 Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of Pool Depth evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box): Max = 30> 30 centimeters [20 pts] > 5 cm - 10 cm [15 pts] > 22.5 - 30 cm [30 pts] < 5 cm [5 pts] > 10 - 22.5 cm [25 pts] NO WATER OR MOIST CHANNEL [0 pts] 30 30 COMMENTS **MAXIMUM POOL DEPTH (centimeters):** BANK FULL WIDTH (Measured as the average of 3-4 measurements) Bankfull (Check ONLY one box): > 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] Width Max=30> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] ≤ 1.0 m (<=3' 3") [5 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] 3.70 25 COMMENTS AVERAGE BANKFULL WIDTH (meters): This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆ RIPARIAN WIDTH FLOODPLAIN QUALITY (Most Predominant per Bank) (Per Bank) R Wide >10m Mature Forest, Wetland Conservation Tillage Immature Forest, Shrub or Old Moderate 5-10m Urban or Industrial Field Open Pasture, Row Crop Narrow <5m Residential, Park, New Field Fenced Pasture None Mining or Construction COMMENTS FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Moist Channel, isolated pools, no flow (Intermittent) Stream Flowing Subsurface flow with isolated pools (Interstitial) Dry channel, no water (Ephemeral) COMMENTS SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box): None 1.0 2.0 3.0 2.5 >3 0.5 1.5 STREAM GRADIENT ESTIMATE

Moderate to Severe

Severe (10 ft/100 ft)

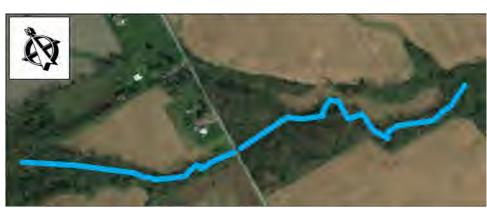
Moderate (2 ft/100 ft)

Flat (0.5 ft/100 ft)

Flat to Moderate

CWH Name:	Distance from Evaluated Stream Distance from Evaluated Stream Distance from Evaluated Stream REA. CLEARLY MARK THE SITE LOCATION
DOWNSTREAM DESIGNATED USE(S)  WWH Name:  CWH Name:  EWH Name:  MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED ARE	Distance from Evaluated Stream Distance from Evaluated Stream Distance from Evaluated Stream  REA. CLEARLY MARK THE SITE LOCATION
WWH Name:  CWH Name:  EWH Name:  D  MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AR	Distance from Evaluated Stream Distance from Evaluated Stream Distance from Evaluated Stream  REA. CLEARLY MARK THE SITE LOCATION
CWH Name:  EWH Name:  MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AF	Distance from Evaluated Stream Distance from Evaluated Stream Distance from Evaluated Stream  REA. CLEARLY MARK THE SITE LOCATION
EWH Name:  MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AR	Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AF	REA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: Eaton South  NRCS Soil Map Page	e: NRCS Soil Map Stream Order
County: Preble Township / City:	
MISCELLANEOUS	
Base Flow Conditions? (Y/N): Y Date of last precipitation: 11/01/17	Quantity: 0.69
Photograph Information: Representative photos taken	
Elevated Turbidity? (Y/N): N Canopy (% open): 5%	
Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and	attach results) Lab Number:
Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.)	Conductivity (µmhos/cm)
Is the sampling reach representative of the stream (Y/N) If not, please explain:	
Additional comments/description of pollution impacts:	
BIOTIC EVALUATION  Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. N	
Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Frogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N) N Aquatic Macroinvertebrates	Voucher? (Y/N)
Comments Regarding Biology:	
DRAWING AND NARRATIVE DESCRIPTION OF STREAM REA	ACH (This must be completed):
Include important landmarks and other features of interest for site evaluation and a	







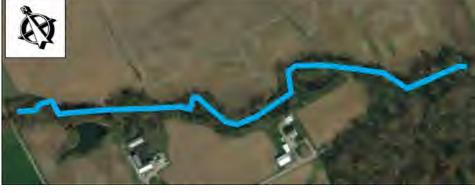


### **ChieFP** Primary Headwater Habitat Evaluation Form HHEI Score (sum of metrics 1, 2, 3):

SITE NAME/LOCATION Alamo Solar Fa	rm	
SITE NUMBER		5
	LAT. 39.70054 LONG84.65736 RIVER CODE RIVER MILE	
DATE 11/03/17 SCORER BJS	COMMENTS	
NOTE: Complete All Items On This Fo	rm - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instruc	ctions
STREAM CHANNEL NONE / NAME / N	ATURAL CHANNEL  RECOVERED  RECOVERING  RECENT OR NO RECENT OR	/ERY
	very type of substrate present. Check ONLY two predominant substrate TYPE boxes	
-	ficant substrate types found (Max of 8). Final metric score is sum of boxes A & B.	HHEI Metric
TYPE BLDR SLABS [16 pts]		Points
BOULDER (>256 mm) [16 pts]	0% LEAF PACK/WOODY DEBRIS [3 pts] 0%	Substrate
BEDROCK [16 pt]	U% FINE DETRITUS [3 pts]	Max = 40
<ul><li>✓ ☐ COBBLE (65-256 mm) [12 pts]</li><li>☐ ✓ GRAVEL (2-64 mm) [9 pts]</li></ul>	55%	
SAND (<2 mm) [6 pts]	10% ARTIFICIAL [3 pts] 0%	25
Total of Percentages of	55.00% (A) Substrate Percentage 100% (B)	A + B
Bldr Slabs, Boulder, Cobble, Bedrock	Check 100%	ATB
SCORE OF TWO MOST PREDOMINATE SUE	TOTAL NUMBER OF SUBSTRATE TYPES: 4	
• •	· · ·	Pool Dept
<ul><li>evaluation. Avoid plunge pools from ro</li><li>&gt; 30 centimeters [20 pts]</li></ul>	pad culverts or storm water pipes) (Check ONLY one box):  > 5 cm - 10 cm [15 pts]	Max = 30
> 22.5 - 30 cm [30 pts]	< 5 cm [5 pts]	
> 10 - 22.5 cm [25 pts]	NO WATER OR MOIST CHANNEL [0 pts]	30
COMMENTS	MAXIMUM POOL DEPTH (centimeters): 30	
3. BANK FULL WIDTH (Measured as the	ne average of 3-4 measurements) (Check ONLY one box):	Bankfull
> 4.0 meters (> 13') [30 pts]	> 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]	Width
> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	∠ ≤ 1.0 m (<=3' 3") [5 pts]	Max=30
COMMENTS	AVERAGE BANKFULL WIDTH (meters): 3.00	20
OSIMILETTO .	AVEIGNOL BANKI OLE WIB III (IIIcle19).	
	This information must also be completed	
RIPARIAN ZONE AND FLOOD		
<u>RIPARIAN WIDTH</u> L R (Per Bank)	FLOODPLAIN QUALITY  L R (Most Predominant per Bank) L R	
Wide >10m	Mature Forest, Wetland Conservation Tillage	
✓ ✓ Moderate 5-10m	Immature Forest, Shrub or Old Field Urban or Industrial	
Narrow <5m	Residential, Park, New Field Open Pasture, Row Crop	
None	Fenced Pasture Mining or Construction	
COMMENTS		
FLOW REGIME (At Time of E	valuation) (Check ONLY one box):	
Stream Flowing	Moist Channel, isolated pools, no flow (Intermittent)	
Subsurface flow with isolated po	ools (Interstitial) Dry channel, no water (Ephemeral)	
_		
CINILOCITY (Number of boards	a par 61 m (200 ft) of channel) (Chack ON! Vana hav)	
SINUOSITY (Number of bends None	s per 61 m (200 ft) of channel) (Check <i>ONLY</i> one box):  1.0	
None 0.5  STREAM GRADIENT ESTIMATE	1.0 1.5 2.0 2.5 3.0 >3	
None 0.5	1.0 2.0 3.0	ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):
QHEI PERFORMED? - Yes ✓ No QHEI Score (If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)
WWH Name: Distance from Evaluated Stream
CWH Name: Distance from Evaluated Stream
EWH Name: Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: Eaton South  NRCS Soil Map Page: NRCS Soil Map Stream Order
County: Preble Township / City:
MISCELLANEOUS
Base Flow Conditions? (Y/N): Y Date of last precipitation: 11/03/17 Quantity: 0.28
Photograph Information: Representative photos taken
Elevated Turbidity? (Y/N): N Canopy (% open): 5%
Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number:
Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.) Conductivity (µmhos/cm)
Is the sampling reach representative of the stream (Y/N) If not, please explain:
Additional comments/description of pollution impacts:
Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)  Fish Observed? (Y/N) N Voucher? (Y
DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This <u>must</u> be completed):  Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location
FLOW →







Primary Headwater Habitat Evaluation Form HHEI Score (sum of metrics 1, 2, 3): SITE NAME/LOCATION | Alamo Solar Farm SITE NUMBER | WB-005 RIVER BASIN Beasley Run DRAINAGE AREA (mi²) 0.66 LAT. 39.70070 LONG. -84.65642 RIVER CODE 22 LENGTH OF STREAM REACH (ft) RIVER MILE DATE 11/03/17 BJS SCORER COMMENTS NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY STREAM CHANNEL **MODIFICATIONS:** SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes HHEI (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B. Metric PERCENT **PERCENT Points** BLDR SLABS [16 pts] SILT [3 pt] 10% 0% BOULDER (>256 mm) [16 pts] LEAF PACK/WOODY DEBRIS [3 pts] 0% 0% **Substrate** 0% BEDROCK [16 pt] 0% FINE DETRITUS [3 pts] Max = 400% 90% COBBLE (65-256 mm) [12 pts] CLAY or HARDPAN [0 pt] 0% 0% GRAVEL (2-64 mm) [9 pts] MUCK [0 pts] 17 0% 0% SAND (<2 mm) [6 pts] ARTIFICIAL [3 pts] Total of Percentages of (B) (A) Substrate Percentage 90.00% 100% A + BBldr Slabs, Boulder, Cobble, Bedrock 15 TOTAL NUMBER OF SUBSTRATE TYPES: 2 SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of Pool Depth evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box): Max = 30> 30 centimeters [20 pts] > 5 cm - 10 cm [15 pts] > 22.5 - 30 cm [30 pts] < 5 cm [5 pts] > 10 - 22.5 cm [25 pts] NO WATER OR MOIST CHANNEL [0 pts] 0 COMMENTS **MAXIMUM POOL DEPTH (centimeters):** BANK FULL WIDTH (Measured as the average of 3-4 measurements) Bankfull (Check ONLY one box): > 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] Width Max=30> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]  $\leq$  1.0 m (<=3' 3") [5 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] 5 1.00 COMMENTS AVERAGE BANKFULL WIDTH (meters): This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆ RIPARIAN WIDTH FLOODPLAIN QUALITY (Most Predominant per Bank) (Per Bank) R Wide >10m Mature Forest, Wetland Conservation Tillage Immature Forest, Shrub or Old Moderate 5-10m Urban or Industrial Field Open Pasture, Row Crop Narrow <5m Residential, Park, New Field Fenced Pasture None Mining or Construction COMMENTS FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Moist Channel, isolated pools, no flow (Intermittent) Stream Flowing Subsurface flow with isolated pools (Interstitial) Dry channel, no water (Ephemeral) COMMENTS

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box): 1.0 2.0 3.0 2.5 >3 1.5 STREAM GRADIENT ESTIMATE Flat to Moderate Moderate (2 ft/100 ft) Moderate to Severe Severe (10 ft/100 ft)

Flat (0.5 ft/100 ft)

None

0.5

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):	
QHEI PERFORMED? - Yes No QHEI Score (If Yes, Att	ach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)  WWH Name:  CWH Name:	Distance from Evaluated Stream
EWH Name:EWH Name:	Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHE	D AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: Eaton South NRCS Soil Map I	Page: NRCS Soil Map Stream Order
County: Preble Township / City:	
MISCELLANEOUS	
Base Flow Conditions? (Y/N): Y Date of last precipitation: 11/03/17	Quantity: 0.28
Photograph Information: Representative photos taken	
Elevated Turbidity? (Y/N): N Canopy (% open): 0%	
Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id.	and attach results) Lab Number:
Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.)	Conductivity (µmhos/cm)
Is the sampling reach representative of the stream (Y/N) If not, please explain:	
Additional comments/description of pollution impacts:	
Performed? (Y/N):  N  (If Yes, Record all observations. Voucher collections optional ID number. Include appropriate field data sheets from the Price Fish Observed? (Y/N)  Frogs or Tadpoles Observed? (Y/N)  N  Voucher? (Y/N)  Voucher? (Y/N)  N  Aquatic Macroinvertebrate  Comments Regarding Biology:	rimary Headwater Habitat Assessment Manual)  N  N  N
DRAWING AND NARRATIVE DESCRIPTION OF STREAM Include important landmarks and other features of interest for site evaluation at	

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# Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3):

SITE NAME/LOCATION Alamo Solar Farm	
SITE NUMBER WB-006 RIVER BASIN Sevenmile Creek DRAINAGE AREA (mi²)	0.05
LENGTH OF STREAM REACH (ft) LAT LAT LONG84.65137 RIVER CODE RIVER MILE	
DATE 11/03/17 SCORER BJS COMMENTS	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Inst	ructions
STREAM CHANNEL	COVERY
1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes	
(Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.	HHEI   Metric
TYPE         PERCENT         TYPE         PERCENT           □ □ □ BLDR SLABS [16 pts]         0%         ✓ □ SILT [3 pt]         45%	Points
BOULDER (>256 mm) [16 pts] 0% LEAF PACK/WOODY DEBRIS [3 pts] 0%	Substrate
BEDROCK [16 pt] 0% FINE DETRITUS [3 pts] 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0%	Max = 40
COBBLE (65-256 mm) [12 pts] 5% CLAY or HARDPAN [0 pt] 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0%	
SAND (<2 mm) [6 pts] 40% ARTIFICIAL [3 pts] 0%	13
Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock (A) Substrate Percentage Check (B)	A + B
SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 9 TOTAL NUMBER OF SUBSTRATE TYPES: 4	
2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box):	Pool Depth Max = 30
> 30 centimeters [20 pts] > 5 cm - 10 cm [15 pts]	
> 22.5 - 30 cm [30 pts]	25
COMMENTS MAXIMUM POOL DEPTH (centimeters): 20	
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONL Y one box):  > 4.0 meters (> 13') [30 pts]  > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]	Bankfull Width
> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	Max=30
> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	
COMMENTS AVERAGE BANKFULL WIDTH (meters): 1.50	15
This information <u>must</u> also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆	
RIPARIAN WIDTH FLOODPLAIN QUALITY	
L R (Per Bank) L R (Most Predominant per Bank) L R	
Wide >10m	
Moderate 5-10m Field Urban or Industrial	
Narrow <5m Residential, Park, New Field Open Pasture, Row C	ор
None Fenced Pasture Mining or Construction	l
FLOW REGIME (At Time of Evaluation) (Check ONLY one box):	
Stream Flowing Moist Channel, isolated pools, no flow (Intermitten	t)
Subsurface flow with isolated pools (Interstitial)  COMMENTS  Dry channel, no water (Ephemeral)	1
SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):	
None   1.0   2.0   3.0   3.0   3.15   2.5   3.0	
STREAM GRAD <u>IEN</u> T ESTIMATE	
Ziguranan Dguran Dwaran Dwaran Dwaran San Domini	
Flat (0.5 ft/100 ft) Flat to Moderate Moderate (2 ft/100 ft) Moderate to Severe Severe (10 ft	100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):
QHEI PERFORMED? - Yes V No QHEI Score (If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)
WWH Name: Distance from Evaluated Stream
CWH Name: Distance from Evaluated Stream
EWH Name: Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: Eaton South NRCS Soil Map Page: NRCS Soil Map Stream Order
County: Preble Township / City:
MISCELLANEOUS
Base Flow Conditions? (Y/N): Y Date of last precipitation: 11/03/17 Quantity: 0.28
Photograph Information: Representative photos taken
Elevated Turbidity? (Y/N): N Canopy (% open): 100%
Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number:
Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.) Conductivity (µmhos/cm)
Is the sampling reach representative of the stream (Y/N) If not, please explain:
·
Additional comments/description of pollution impacts:
BIOTIC EVALUATION
N N N
Performed? (Y/N): (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)
Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N Vouc
Comments Regarding Biology:
DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This <u>must</u> be completed):
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location
FLOW T









### **ChiefP** Primary Headwater Habitat Evaluation Form HHEI Score (sum of metrics 1, 2, 3):

OTTE NOWIDEN	1)	
OTTE NOWIDEN		02
LENGTH OF STREAM REACH (ft) 2,891		.92
14/00/45		
	COMMENTS	
NOTE: Complete All Items On This Form	n - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instr	uctions
STREAM CHANNEL NONE / NAT MODIFICATIONS:	TURAL CHANNEL RECOVERED RECOVERING RECENT OR NO REC	OVERY
	ery type of substrate present. Check ONLY two predominant substrate TYPE boxes	
	ant substrate types found (Max of 8). Final metric score is sum of boxes A & B.	HHE Metri
TYPE PE P	ERCENT         TYPE         PERCENT           0%         SILT [3 pt]         5%	Point
BOULDER (>256 mm) [16 pts]	0% LEAF PACK/WOODY DEBRIS [3 pts] 0%	Substra
BEDROCK [16 pt]	0% FINE DETRITUS [3 pts] 0%	Max = 4
[12 pto]	60% CLAY or HARDPAN [0 pt] 0% 0% 0%	
GRAVEL (2-64 mm) [9 pts]  SAND (<2 mm) [6 pts]	30% MUCK [0 pts] 0%	25
	Artin Toline [e pto]	
Total of Percentages of 6 Bldr Slabs, Boulder, Cobble, Bedrock	Substrate Percentage 100% (B)	A + B
SCORE OF TWO MOST PREDOMINATE SUBS	STRATE TYPES: 21 TOTAL NUMBER OF SUBSTRATE TYPES: 4	
2. Maximum Pool Depth (Measure the maximum	naximum pool depth within the 61 meter (200 ft) evaluation reach at the time of	Pool Dep
evaluation. Avoid plunge pools from road	d culverts or storm water pipes) (Check ONLY one box):	Max = 3
> 30 centimeters [20 pts]	> 5 cm - 10 cm [15 pts]	
> 22.5 - 30 cm [30 pts] > 10 - 22.5 cm [25 pts]	< 5 cm [5 pts] NO WATER OR MOIST CHANNEL [0 pts]	20
COMMENTS	MAXIMUM POOL DEPTH (centimeters): 38	
3. BANK FULL WIDTH (Measured as the		Bankfu
> 4.0 meters (> 13') [30 pts]	> 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]	Width
	< 1.0 m (<=3' 3") [5 nte]	
> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	L ≤ 1.0 m (<=3' 3") [5 pts]	Max=30
> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]		Max=30
> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	L ≤ 1.0 m (<=3' 3") [5 pts]  AVERAGE BANKFULL WIDTH (meters): 3.70	
> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] COMMENTS	AVERAGE BANKFULL WIDTH (meters): 3.70  This information <u>must</u> also be completed	Max=30
> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	AVERAGE BANKFULL WIDTH (meters): 3.70  This information <u>must</u> also be completed	Max=30
> 3.0 m - 4.0 m (> 9 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS  RIPARIAN ZONE AND FLOODP  RIPARIAN WIDTH  (Per Bank)	AVERAGE BANKFULL WIDTH (meters): 3.70  This information must also be completed  PLAIN QUALITY  ♣ NOTE: River Left (L) and Right (R) as looking downstream ♣  FLOODPLAIN QUALITY  L R (Most Predominant per Bank)  L R	Max=30
> 3.0 m - 4.0 m (> 9 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS  RIPARIAN ZONE AND FLOODP  RIPARIAN WIDTH  L R (Per Bank)  Wide >10m	This information must also be completed  PLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream   FLOODPLAIN QUALITY  L R (Most Predominant per Bank)  Mature Forest, Wetland  Conservation Tillage	Max=30
> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS  RIPARIAN ZONE AND FLOODP  RIPARIAN WIDTH  (Per Bank)	This information must also be completed  PLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream FLOODPLAIN QUALITY  L R (Most Predominant per Bank) Mature Forest, Wetland Conservation Tillage Immature Forest, Shrub or Old Field Urban or Industrial	Max=30
> 3.0 m - 4.0 m (> 9 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS  RIPARIAN ZONE AND FLOODP  RIPARIAN WIDTH  (Per Bank) Wide >10m	This information must also be completed  PLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream FLOODPLAIN QUALITY  L R (Most Predominant per Bank)  Mature Forest, Wetland  Immature Forest, Shrub or Old  Urban or Industrial	Max=30
> 3.0 m - 4.0 m (> 9 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS  RIPARIAN ZONE AND FLOODP RIPARIAN WIDTH L R (Per Bank) Wide >10m  Moderate 5-10m	This information must also be completed  PLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream A  FLOODPLAIN QUALITY  L R (Most Predominant per Bank)  Mature Forest, Wetland  Immature Forest, Shrub or Old  Field  Onen Pasture Row Creen	Max=30
> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS  RIPARIAN ZONE AND FLOODP  RIPARIAN WIDTH  L R (Per Bank) Wide >10m  Moderate 5-10m  Narrow <5m	This information must also be completed  PLAIN QUALITY NOTE: River Left (L) and Right (R) as looking downstream   FLOODPLAIN QUALITY  L R (Most Predominant per Bank)  Mature Forest, Wetland  Immature Forest, Shrub or Old Field  Residential, Park, New Field  Open Pasture, Row Cro	25
> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS  RIPARIAN ZONE AND FLOODP  RIPARIAN WIDTH  L R (Per Bank) Wide >10m Wide >10m Narrow <5m None COMMENTS	This information must also be completed  PLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream ☆  FLOODPLAIN QUALITY  L R (Most Predominant per Bank)  Mature Forest, Wetland  Immature Forest, Wetland  Immature Forest, Shrub or Old  Field  Residential, Park, New Field  Fenced Pasture  AVERAGE BANKFULL WIDTH (meters):  3.70  L R  Conservation Tillage  Urban or Industrial  Open Pasture, Row Cro  Mining or Construction	25
> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS  RIPARIAN ZONE AND FLOODP  RIPARIAN WIDTH  L R (Per Bank) Wide >10m Woderate 5-10m  Narrow <5m None COMMENTS  FLOW REGIME (At Time of Evaluation o	This information must also be completed  PLAIN QUALITY   NOTE: River Left (L) and Right (R) as looking downstream  FLOODPLAIN QUALITY  L R (Most Predominant per Bank)  Mature Forest, Wetland  Immature Forest, Wetland  Immature Forest, Shrub or Old  Field  Residential, Park, New Field  Fenced Pasture  Mining or Construction  Moist Channel, isolated pools, no flow (Intermittent)	25
> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS  RIPARIAN ZONE AND FLOODP RIPARIAN WIDTH L R (Per Bank) Wide >10m Wide >10m Narrow <5m None COMMENTS  FLOW REGIME (At Time of Evaluation of Evalua	This information must also be completed  PLAIN QUALITY   NOTE: River Left (L) and Right (R) as looking downstream  FLOODPLAIN QUALITY  L R (Most Predominant per Bank)  Mature Forest, Wetland  Immature Forest, Wetland  Immature Forest, Shrub or Old  Field  Residential, Park, New Field  Fenced Pasture  Mining or Construction  Moist Channel, isolated pools, no flow (Intermittent)	25
> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS  RIPARIAN ZONE AND FLOODP RIPARIAN WIDTH L R (Per Bank) Wide >10m Wide >10m Narrow <5m None COMMENTS  FLOW REGIME (At Time of Evaluation of Evalua	This information must also be completed  PLAIN QUALITY ♣NOTE: River Left (L) and Right (R) as looking downstream ♣  FLOODPLAIN QUALITY  L R (Most Predominant per Bank)  Mature Forest, Wetland  Immature Forest, Wetland  Immature Forest, Shrub or Old  Field  Residential, Park, New Field  Fenced Pasture  Mining or Construction  Moist Channel, isolated pools, no flow (Intermittent) Dry channel, no water (Ephemeral)	25
> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS  RIPARIAN ZONE AND FLOODP RIPARIAN WIDTH L R (Per Bank) Wide >10m Wide >10m Narrow <5m None COMMENTS  FLOW REGIME (At Time of Eval) Stream Flowing Subsurface flow with isolated pool COMMENTS  SINUOSITY (Number of bends personal stream of the st	This information must also be completed  PLAIN QUALITY ♣NOTE: River Left (L) and Right (R) as looking downstream ♣  FLOODPLAIN QUALITY  L R (Most Predominant per Bank)  Mature Forest, Wetland  Immature Forest, Wetland  Immature Forest, Shrub or Old  Field  Residential, Park, New Field  Fenced Pasture  Mining or Construction  Moist Channel, isolated pools, no flow (Intermittent)  Dry channel, no water (Ephemeral)	25
> 3.0 m - 4.0 m (> 9 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS  RIPARIAN ZONE AND FLOODP RIPARIAN WIDTH L R (Per Bank) Wide >10m Wide >10m Narrow <5m None COMMENTS  FLOW REGIME (At Time of Evaluation of Evaluat	This information must also be completed  PLAIN QUALITY ♣NOTE: River Left (L) and Right (R) as looking downstream ♣  FLOODPLAIN QUALITY  L R (Most Predominant per Bank)  Mature Forest, Wetland  Immature Forest, Wetland  Immature Forest, Shrub or Old  Field  Residential, Park, New Field  Fenced Pasture  Mining or Construction  Moist Channel, isolated pools, no flow (Intermittent) Dry channel, no water (Ephemeral)	25
> 3.0 m - 4.0 m (> 9 7" - 13') [25 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]  COMMENTS  RIPARIAN ZONE AND FLOODP RIPARIAN WIDTH (Per Bank) Wide >10m  Moderate 5-10m  Narrow <5m None COMMENTS  FLOW REGIME (At Time of Eval Stream Flowing Subsurface flow with isolated pool COMMENTS  SINUOSITY (Number of bends p None 0.5	This information must also be completed  PLAIN QUALITY  NOTE: River Left (L) and Right (R) as looking downstream  FLOODPLAIN QUALITY  Residential, Park, New Field  Residential, Park, New Field  Fenced Pasture  Moist Channel, isolated pools, no flow (Intermittent)  Dry channel, no water (Ephemeral)  PLAIN QUALITY  Residential, Park, New Field  Moist Channel, isolated pools, no flow (Intermittent)  Dry channel, no water (Ephemeral)	25
None COMMENTS   SINUOSITY (Number of bends p	This information must also be completed  PLAIN QUALITY  NOTE: River Left (L) and Right (R) as looking downstream  FLOODPLAIN QUALITY  Residential, Park, New Field  Residential, Park, New Field  Fenced Pasture  Moist Channel, isolated pools, no flow (Intermittent)  Dry channel, no water (Ephemeral)  PLAIN QUALITY  Residential, Park, New Field  Moist Channel, isolated pools, no flow (Intermittent)  Dry channel, no water (Ephemeral)	25 25

QHEI PERFORMED? - Yes V No QHEI Score (If Yes, Attach Completed QHEI Form)  DOWNSTREAM DESIGNATED USE(S)  WWH Name: Distance from Evaluated Stream EWH Name: Distance from Evaluated Stream Distance from Evaluated Stream Distance from Evaluated Stream Distance from Evaluated Stream NAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION  USGS Quadrangle Name: Eaton South NRCS Soil Map Page: NRCS Soil Map Stream Order  County: Preble Township / City:  MISCELLANEOUS  Base Flow Conditions? (Y/N): Y Date of last precipitation: 11/03/17 Quantity: 0.28  Photograph Information: Representative photos taken  Elevated Turbidity? (Y/N): N Canopy (% open): 15%
WWH Name:  CWH Name:  Distance from Evaluated Stream  NAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION  USGS Quadrangle Name:  Eaton South  NRCS Soil Map Page:  NRCS Soil Map Stream Order  Township / City:  MISCELLANEOUS  Base Flow Conditions? (Y/N):  Y  Date of last precipitation:  11/03/17  Quantity:  0.28
CWH Name:  EWH Name:  Distance from Evaluated Stream  Distance from Evaluated Stream  Distance from Evaluated Stream  MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION  USGS Quadrangle Name:  Eaton South  NRCS Soil Map Page:  NRCS Soil Map Stream Order  Township / City:  MISCELLANEOUS  Base Flow Conditions? (Y/N):  Y  Date of last precipitation:  11/03/17  Quantity:  0.28
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Base Flow Conditions? (Y/N): Y Date of last precipitation: 11/03/17 Quantity: 0.28  Photograph Information: Representative photos taken
Photograph Information: Representative photos taken
N. Carol
Elevated Turbidity? (Y/N): Canopy (% open):15%
Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number:
Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.) Conductivity (µmhos/cm)
Is the sampling reach representative of the stream (Y/N) If not, please explain:
Additional comments/description of pollution impacts:
BIOTIC EVALUATION
N N
Performed? (Y/N): (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)
Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) Voucher? (Y/N) N Vouche
rogs of Ladpoles Observed? (Y/N) N Aquatic Macroinvertebrates Observed? (Y/N) N Voucher? (Y/N)
Comments Regarding Biology:
DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location
201
FLOW -





# ChiefPA Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3):

SITE NAME/LOCATION Alamo Solar Farm	
SITE NUMBER WB-008 RIVER BASIN Sevenmile Creek DRAINAGE AREA (mi²) 0.	15
LENGTH OF STREAM REACH (ft) 518 LAT. 39.73294 LONG84.66420 RIVER CODE RIVER MILE	
DATE 04/10/18 SCORER BJS COMMENTS	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instru	uctions
STREAM CHANNEL	OVERY
1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes	HHEI
(Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.  TYPE  PERCENT  TYPE  PERCENT	Metric
BLDR SLABS [16 pts]	Points
BOULDER (>256 mm) [16 pts]	Substrate
COBBLE (65-256 mm) [12 pts] 0% CLAY or HARDPAN [0 pt] 0%	Max = 40
☐ ☐ GRAVEL (2-64 mm) [9 pts] ☐ ☐ MUCK [0 pts] ☐ ☐ MUCK [0 pts] ☐ ☐ ARTIFICIAL [3 pts] ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐	11
Total of Percentages of Occor (A) Substrate Percentage (B)	A + B
Bldr Slabs, Boulder, Cobble, Bedrock Check	ATB
2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box):	Pool Depth Max = 30
> 30 centimeters [20 pts] > 5 cm - 10 cm [15 pts]	
> 22.5 - 30 cm [30 pts]	25
COMMENTS MAXIMUM POOL DEPTH (centimeters): 15	
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):	Bankfull
> 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]	Width
> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	Max=30
> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	
COMMENTS Poorly defined banks in areas  AVERAGE BANKFULL WIDTH (meters): 1.20	15
Death, defined banks in succe	
COMMENTS Poorly defined banks in areas  AVERAGE BANKFULL WIDTH (meters): 1.20  This information must also be completed	
This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  Poorly defined banks in areas  AVERAGE BANKFULL WIDTH (meters):  AVERAGE BANKFULL WIDTH (meters):  1.20  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  ANOTE: River Left (L) and Right (R) as looking downstream A  RIPARIAN WIDTH  FLOODPLAIN QUALITY	
This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  ANOTE: River Left (L) and Right (R) as looking downstream  RIPARIAN WIDTH  FLOODPLAIN QUALITY  L R (Per Bank)  L R (Most Predominant per Bank)  L R	
This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  ANOTE: River Left (L) and Right (R) as looking downstream ANOTE: River Left (L) and Right (R) and Right (R) as	
This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  ANOTE: River Left (L) and Right (R) as looking downstream RIPARIAN WIDTH  L R (Per Bank)  Wide >10m  Mature Forest, Wetland  Moderate 5-10m  AVERAGE BANKFULL WIDTH (meters):  1.20  L R (Nost Predominant per Bank)  L R (Most Predominant per Bank)  I Mature Forest, Wetland  Woderate 5-10m  Conservation Tillage  Immature Forest, Shrub or Old  Field  Conservation Field	15
This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  NOTE: River Left (L) and Right (R) as looking downstream RIPARIAN WIDTH  L R (Per Bank)  Wide >10m  Mature Forest, Wetland  Moderate 5-10m  Narrow <5m  AVERAGE BANKFULL WIDTH (meters):  1.20  L R (Most Predominant per Bank)  L R (Most Predominant per Bank)  L R (Most Predominant per Bank)  Mature Forest, Wetland  Urban or Industrial  Open Pasture, Row Cro	15
This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  ANOTE: River Left (L) and Right (R) as looking downstream:  RIPARIAN WIDTH  L R (Per Bank)  Wide >10m  Mature Forest, Wetland  Moderate 5-10m  Residential, Park, New Field  AVERAGE BANKFULL WIDTH (meters):  1.20  L R (Onservation Tillage of the completed of the compl	15
This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  ANOTE: River Left (L) and Right (R) as looking downstream:  RIPARIAN WIDTH  L R (Per Bank)  Wide >10m  Mature Forest, Wetland  Moderate 5-10m  Residential, Park, New Field  Fenced Pasture  AVERAGE BANKFULL WIDTH (meters):  1.20  L R (Indicate Section 1.20  L R (Indicate Section 1.20  AVERAGE BANKFULL WIDTH (meters):  1.20  L R (Indicate Section 1.20  Residential, Park, New Field  AVERAGE BANKFULL WIDTH (meters):  1.20  L R (Indicate Section 1.20  AVERAGE BANKFULL WIDTH (meters):  1.20  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  ANOTE: River Left (L) and Right (R) as looking downstream:  A RIPARIAN WIDTH  FLOODPLAIN QUALITY  L R (Per Bank)  Wide >10m  Auture Forest, Wetland  Conservation Tillage  Indicate Section 1.20  Open Pasture, Row Crown of North Construction  All Park (New Field)  AVERAGE BANKFULL WIDTH (meters):  1.20	15
This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  **NOTE: River Left (L) and Right (R) as looking downstream **  RIPARIAN WIDTH  L R (Per Bank)  Wide >10m  Mature Forest, Wetland  Immature Forest, Shrub or Old  Immature Forest, Shrub or Old  Narrow <5m  Residential, Park, New Field  None  COMMENTS  FLOW REGIME (At Time of Evaluation) (Check ONLY one box):  Stream Flowing  AVERAGE BANKFULL WIDTH (meters):  1.20  AVERAGE BANKFULL WIDTH (meters):  AVERAGE BANKFULL WIDTH (meters):  1.20  AVERAGE BANKFULL WIDTH (meters):	15
This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  RIPARIAN WIDTH  FLOODPLAIN QUALITY  Wide >10m  Mature Forest, Wetland  Moderate 5-10m  Mature Forest, Shrub or Old  Immature Forest, Shrub or Old  Wide >10m  Narrow <5m  Residential, Park, New Field  None  COMMENTS  Fenced Pasture  Mining or Construction  COMMENTS	15
This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  ANOTE: River Left (L) and Right (R) as looking downstream  RIPARIAN WIDTH  FLOODPLAIN QUALITY  L R (Per Bank)  Wide >10m  Mature Forest, Wetland  Moderate 5-10m  Mature Forest, Shrub or Old  Immature Forest, Shrub or Old  Narrow <5m  Residential, Park, New Field  Open Pasture, Row Cro  None  COMMENTS  FLOW REGIME (At Time of Evaluation) (Check ONLY one box):  Stream Flowing  Subsurface flow with isolated pools (Interstitial)  COMMENTS  SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):  SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):	15
This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  RIPARIAN WIDTH	15
This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream (Most Predominant per Bank)  RIPARIAN WIDTH  ROBERT (Per Bank)  Wide > 10m  Mature Forest, Wetland  Moderate 5-10m  Residential, Park, New Field  Narrow <5m  Residential, Park, New Field  None  COMMENTS  FLOW REGIME (At Time of Evaluation) (Check ONLY one box):  Stream Flowing  Subsurface flow with isolated pools (Interstitial)  COMMENTS  SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):  None  1.0  2.0  3.0  3.0  3.0  3.0  3.0  3.0  3	15
This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  RIPARIAN WIDTH	<b>15</b>

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):	
QHEIPERFORMED? - Yes No QHEIScore (If Yes, Att	tach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)	
WWH Name:	Distance from Evaluated Stream
CWH Name:	_ Distance from Evaluated Stream _
EWH Name: _	Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHE	D AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: Eaton South NRCS Soil Map	Page:NRCS Soil Map Stream Order
County: Preble Township / City:	
MISCELLANEOUS	
Base Flow Conditions? (Y/N):_Y Date of last precipitation:_ 04/03/18	Quantity: <b>2.08</b>
Photograph Information: Representative photos taken	
Elevated Turbidity? (Y/N): N Canopy (% open): 15%	
Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id.	and attach results) Lab Number:
Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.)	Conductivity (µmhos/cm)
Is the sampling reach representative of the stream (Y/N) If not, please explain:	
in the sampling reach representative of the sheart (1717) in the, prease explain	
Additional comments/description of pollution impacts:	
BIOTIC EVALUATION	
Performed? (Y/N): N (If Yes, Record all observations. Voucher collections options	NOTE: all consequences are also recent to labeled with the airce
Performed? (Y/N): (If Yes, Record all observations. Voucher collections options ID number. Include appropriate field data sheets from the P	
Fish Observed? (Y/N) N Voucher? (Y/N) Salamanders Observed? (Y/N)	Name to 20 OVAN N
Fish Observed? (Y/N) N Voucher? (Y/N) Salamanders Observed? (Y/N) N Voucher? (Y/N) Aquatic Macroinvertebra	ates Observed? (Y/N) Voucher? (Y/N)
Comments Regarding Biology:	N
<u> </u>	
DRAWING AND NARRATIVE DESCRIPTION OF STREAM	REACH (This must be completed):
Include important landmarks and other features of interest for site evaluation a	·
	·







## **ChieFP** Primary Headwater Habitat Evaluation Form HHEI Score (sum of metrics 1, 2, 3):

SITE NAME/LOCATION Alamo Solar Fa	ırm	
	WB-010 RIVER BASIN Beasley Run DRAINAGE AREA (mi²) 0.	.15
LENGTH OF STREAM REACH (ft) 442	LAT. 39.69070 LONG84.65627 RIVER CODE RIVER MILE	
DATE 04/10/18 SCORER BJS	COMMENTS	
NOTE: Complete All Items On This Fo	rm - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instru	uctions
STREAM CHANNEL NONE / N MODIFICATIONS:	ATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO RECO	OVERY
	very type of substrate present. Check ONLY two predominant substrate TYPE boxes	
-	ficant substrate types found (Max of 8). Final metric score is sum of boxes A & B.  PERCENT TYPE PERCENT	HHE Metri
BLDR SLABS [16 pts]	0% SILT [3 pt] 50%	Point
BOULDER (>256 mm) [16 pts]  BEDROCK [16 pt]	0% LEAF PACK/WOODY DEBRIS [3 pts] 0% 0% 0%	Substra
COBBLE (65-256 mm) [12 pts]	10% CLAY or HARDPAN [0 pt] 0%	Max =
GRAVEL (2-64 mm) [9 pts]	35% MUCK [0 pts] 0%	16
SAND (<2 mm) [6 pts]	5% ARTIFICIAL [3 pts] 0%	
Total of Percentages of	10.00% (A) Substrate Percentage 100% (B)	A + B
Bldr Slabs, Boulder, Cobble, Bedrock SCORE OF TWO MOST PREDOMINATE SUE		
2. Maximum Pool Depth (Measure the	maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of	Pool De
evaluation. Avoid plunge pools from ro	oad culverts or storm water pipes) (Check ONLY one box):	Max = 3
> 30 centimeters [20 pts] > 22.5 - 30 cm [30 pts]	> 5 cm - 10 cm [15 pts] < 5 cm [5 pts]	
> 10 - 22.5 cm [25 pts]	NO WATER OR MOIST CHANNEL [0 pts]	30
COMMENTS	MAXIMUM POOL DEPTH (centimeters): 25	
BANK FULL WIDTH (Measured as the second seco	he average of 3-4 measurements) (Check <i>ONLY</i> one box):  > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]	Bankfu Width
> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	≤ 1.0 m (<=3' 3") [5 pts]	Max=3
> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]		
COMMENTS	AVERAGE BANKFULL WIDTH (meters): 2.40	20
RIPARIAN ZONE AND FLOOI	This information must also be completed  DPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆	
RIPARIAN WIDTH	FLOODPLAIN QUALITY	
L R (Per Bank)  Wide >10m	L R (Most Predominant per Bank) L R  Mature Forest, Wetland Conservation Tillage	
Moderate 5-10m	Immature Forest, Shrub or Old Urban or Industrial	
Narrow <5m	Field Open Pasture, Row Cro	p
None Nanow \Sin	Fenced Pasture Mining or Construction	
COMMENTS	Fericed Fasture Milling of Constituction	
FLOW REGIME (At Time of F	valuation) (Check ONLY one box):	
Stream Flowing `	Moist Channel, isolated pools, no flow (Intermittent)	
Subsurface flow with isolated po	ools (Interstitial) Dry channel, no water (Ephemeral)	
	n nor Cd no (200 ft) of abound). (Charle ON!! Varia have)	-
None SINUOSITY (Number of bends	s per 61 m (200 ft) of channel) (Check <i>ONLY</i> one box):  1.0	
0.5	1.5 2.5 >3	
STREAM GRADIENT ESTIMATE		
Flat (0.5 ft/100 ft) Flat to Moderate	Moderate (2 ft/100 ft) Moderate to Severe Severe (10 ft/10	00.60
Flat (0.5 ft/100 ft)	Moderate (2 m/100 m)   Moderate to Severe   Severe (10 m/t)	ου π)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):
QHEIPERFORMED? - Yes V No QHEI Score (If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)  WWH Name: Distance from Evaluated Stream  CWH Name: Distance from Evaluated Stream  EWH Name: Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: Eaton South NRCS Soil Map Page: NRCS Soil Map Stream Order
County: Preble Township / City:
MISCELLANEOUS
Base Flow Conditions? (Y/N): Y Date of last precipitation: 04/03/18 Quantity: 2.08
Photograph Information:Representative photos taken
Elevated Turbidity? (Y/N): N Canopy (% open): 0%
Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number:
Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.) Conductivity (µmhos/cm)
Is the sampling reach representative of the stream (Y/N) If not, please explain:
Additional comments/description of pollution impacts:
Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)  Fish Observed? (Y/N) N Voucher? (Y
DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):  Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location  FLOW





# Primary Headwater Habitat Evaluation Form

66

HHEI Score (sum of metrics 1, 2, 3): SITE NAME/LOCATION | Alamo Solar Farm SITE NUMBER | WB-010 RIVER BASIN Beasley Run DRAINAGE AREA (mi²) 0.27 LAT. 39.69070 LONG. -84.65627 RIVER CODE 916 LENGTH OF STREAM REACH (ft) RIVER MILE DATE **04/10/18** BJS SCORER COMMENTS NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO RECOVERY STREAM CHANNEL **MODIFICATIONS:** SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes HHEI (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B. Metric PERCENT **PERCENT Points** BLDR SLABS [16 pts] SILT [3 pt] 40% 0% BOULDER (>256 mm) [16 pts] LEAF PACK/WOODY DEBRIS [3 pts] 0% 0% **Substrate** 0% 0% BEDROCK [16 pt] FINE DETRITUS [3 pts] Max = 400% 10% COBBLE (65-256 mm) [12 pts] CLAY or HARDPAN [0 pt] 35% 0% GRAVEL (2-64 mm) [9 pts] MUCK [0 pts] 16 15% 0% SAND (<2 mm) [6 pts] ARTIFICIAL [3 pts] Total of Percentages of (B) (A) Substrate Percentage 10.00% 100% A + BBldr Slabs, Boulder, Cobble, Bedrock 12 SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: TOTAL NUMBER OF SUBSTRATE TYPES: 4 Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of Pool Depth evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box): Max = 30> 30 centimeters [20 pts] > 5 cm - 10 cm [15 pts] > 22.5 - 30 cm [30 pts] < 5 cm [5 pts] > 10 - 22.5 cm [25 pts] NO WATER OR MOIST CHANNEL [0 pts] 30 30 COMMENTS **MAXIMUM POOL DEPTH (centimeters):** BANK FULL WIDTH (Measured as the average of 3-4 measurements) Bankfull (Check ONLY one box): > 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] Width Max=30> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]  $\leq$  1.0 m (<=3' 3") [5 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] 2.50 20 COMMENTS AVERAGE BANKFULL WIDTH (meters): This information must also be completed RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆ RIPARIAN WIDTH FLOODPLAIN QUALITY (Most Predominant per Bank) (Per Bank) R Wide >10m Mature Forest, Wetland Conservation Tillage Immature Forest, Shrub or Old Moderate 5-10m Urban or Industrial Field Open Pasture, Row Crop Narrow <5m Residential, Park, New Field Fenced Pasture None Mining or Construction COMMENTS FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Moist Channel, isolated pools, no flow (Intermittent) Stream Flowing Subsurface flow with isolated pools (Interstitial) Dry channel, no water (Ephemeral) COMMENTS SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box): None 1.0 2.0 3.0 2.5 >3 0.5 1.5 STREAM GRADIENT ESTIMATE Flat (0.5 ft/100 ft) Flat to Moderate Moderate (2 ft/100 ft) Moderate to Severe Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):	
QHEI PERFORMED? - Yes V No QHEI Score (If Yes, Atta	ch Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)	
WWH Name:	_ Distance from Evaluated Stream
CWH Name:	Distance from Evaluated Stream
EWH Name: _	Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED	AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: Eaton South NRCS Soil Map P	age: NRCS Soil Map Stream Order
County: Preble Township / City:	<u> </u>
MISCELLANEOUS	
Base Flow Conditions? (Y/N): Y Date of last precipitation: 04/03/18	Quantity: 2.08
Photograph Information: Representative photos taken	
Elevated Turbidity? (Y/N): N Canopy (% open): 0%	
Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. a	and attach results) Lab Number:
Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.)	Conductivity (µmhos/cm)
Is the sampling reach representative of the stream (Y/N) If not, please explain:	
Additional comments/description of pollution impacts:	
Performed? (Y/N):  N  (If Yes, Record all observations. Voucher collections optional ID number. Include appropriate field data sheets from the Pri Voucher? (Y/N)  Frogs or Tadpoles Observed? (Y/N)  N  Voucher? (Y/N)  Aquatic Macroinvertebrat Comments Regarding Biology:	mary Headwater Habitat Assessment Manual)  Voucher? (Y/N)
DRAWING AND NARRATIVE DESCRIPTION OF STREAM R Include important landmarks and other features of interest for site evaluation an	





# Primary Headwater Habitat Evaluation Form

29

HHEI Score (sum of metrics 1, 2, 3): SITE NAME/LOCATION | Alamo Solar Farm SITE NUMBER | WB-011 RIVER BASIN Beasley Run DRAINAGE AREA (mi²) 0.00 LAT. 39.69025 LONG. -84.65577 RIVER CODE 79 LENGTH OF STREAM REACH (ft) RIVER MILE DATE **04/10/18** BJS SCORER COMMENTS NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO RECOVERY STREAM CHANNEL **MODIFICATIONS:** SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B. HHEI Metric PERCENT **PERCENT Points** BLDR SLABS [16 pts] SILT [3 pt] 40% 0% BOULDER (>256 mm) [16 pts] LEAF PACK/WOODY DEBRIS [3 pts] 0% 0% **Substrate** 0% BEDROCK [16 pt] 0% FINE DETRITUS [3 pts] Max = 400% 30% COBBLE (65-256 mm) [12 pts] CLAY or HARDPAN [0 pt] 15% 0% GRAVEL (2-64 mm) [9 pts] MUCK [0 pts] 19 15% 0% SAND (<2 mm) [6 pts] ARTIFICIAL [3 pts] Total of Percentages of (B) (A) Substrate Percentage 30.00% 100% A + BBldr Slabs, Boulder, Cobble, Bedrock 15 SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: TOTAL NUMBER OF SUBSTRATE TYPES: 4 Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of Pool Depth evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box): Max = 30> 30 centimeters [20 pts] > 5 cm - 10 cm [15 pts] > 22.5 - 30 cm [30 pts] < 5 cm [5 pts] > 10 - 22.5 cm [25 pts] NO WATER OR MOIST CHANNEL [0 pts] 5 COMMENTS **MAXIMUM POOL DEPTH (centimeters):** BANK FULL WIDTH (Measured as the average of 3-4 measurements) Bankfull (Check ONLY one box): > 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] Width Max=30> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]  $\leq$  1.0 m (<=3' 3") [5 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] 5 0.90 COMMENTS AVERAGE BANKFULL WIDTH (meters): This information must also be completed **RIPARIAN ZONE AND FLOODPLAIN QUALITY** ☆NOTE: River Left (L) and Right (R) as looking downstream☆ RIPARIAN WIDTH FLOODPLAIN QUALITY (Most Predominant per Bank) (Per Bank) R Wide >10m Mature Forest, Wetland Conservation Tillage Immature Forest, Shrub or Old Moderate 5-10m Urban or Industrial Field Open Pasture, Row Crop Narrow <5m Residential, Park, New Field Fenced Pasture None Mining or Construction COMMENTS FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Moist Channel, isolated pools, no flow (Intermittent) Stream Flowing Subsurface flow with isolated pools (Interstitial) Dry channel, no water (Ephemeral) COMMENTS SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box): None 1.0 2.0 3.0 2.5 >3 0.5 1.5 STREAM GRADIENT ESTIMATE Flat (0.5 ft/100 ft) Flat to Moderate Moderate (2 ft/100 ft) Moderate to Severe Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):	
QHEI PERFORMED? - Yes V No QHEI Score (If Yes, Atta	ach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)  WWH Name: CWH Name: EWH Name:	Distance from Evaluated Stream  Distance from Evaluated Stream  Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHEI	DAREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: Eaton South NRCS Soil Map F	Page: NRCS Soil Map Stream Order
D., t.I.	
MISCELLANEOUS	
Base Flow Conditions? (Y/N): Y Date of last precipitation: 04/03/18	Quantity: <b>2.08</b>
Photograph Information: Representative photos taken	
Elevated Turbidity? (Y/N): N Canopy (% open): 0%	
Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id.	and attach results) Lab Number:
Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.)	Conductivity (µmhos/cm)
Is the sampling reach representative of the stream (Y/N) If not, please explain:	
Additional comments/description of pollution impacts:	
Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional ID number. Include appropriate field data sheets from the President of Transport of Transpo	imary Headwater Habitat Assessment Manual)  Voucher? (Y/N)
DRAWING AND NARRATIVE DESCRIPTION OF STREAM F Include important landmarks and other features of interest for site evaluation and  FLOW	· —

Save as pdf



Primary Headwater Habitat Evaluation Form HHEI Score (sum of metrics 1, 2, 3): SITE NAME/LOCATION | Alamo Solar Farm SITE NUMBER WB-012 RIVER BASIN Beasley Run DRAINAGE AREA (mi²) 0.11 704 LAT. 39.69133 LONG. -84.65722 RIVER CODE LENGTH OF STREAM REACH (ft) RIVER MILE DATE **04/10/18** SCORER BJS COMMENTS NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO RECOVERY STREAM CHANNEL **MODIFICATIONS:** SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes HHEI (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B. Metric PERCENT **PERCENT Points** BLDR SLABS [16 pts] SILT [3 pt] 30% 0% BOULDER (>256 mm) [16 pts] LEAF PACK/WOODY DEBRIS [3 pts] 0% 0% **Substrate** 0% 0% BEDROCK [16 pt] FINE DETRITUS [3 pts] Max = 400% 15% COBBLE (65-256 mm) [12 pts] CLAY or HARDPAN [0 pt] 15% 0% GRAVEL (2-64 mm) [9 pts] MUCK [0 pts] 13 40% 0% SAND (<2 mm) [6 pts] ARTIFICIAL [3 pts] Total of Percentages of (B) (A) Substrate Percentage 15.00% 100% A + BBldr Slabs, Boulder, Cobble, Bedrock SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: TOTAL NUMBER OF SUBSTRATE TYPES: 4 Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of Pool Depth evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box): Max = 30> 30 centimeters [20 pts] > 5 cm - 10 cm [15 pts] > 22.5 - 30 cm [30 pts] < 5 cm [5 pts] > 10 - 22.5 cm [25 pts] NO WATER OR MOIST CHANNEL [0 pts] 15 10 COMMENTS **MAXIMUM POOL DEPTH (centimeters):** BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box): Bankfull > 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] Width Max=30> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] ≤ 1.0 m (<=3' 3") [5 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] 15 **AVERAGE BANKFULL WIDTH (meters):** 1.20 COMMENTS This information must also be completed

	RIPARIAN ZONE AND FLOODPI	LAIN QUAL	.ITY ☆NOTE: Ri	iver Left (L) and Ri	ight (R) as Id	ooking downstream 🏠
	RIPARIAN WIDTH	FLOODF	PLAIN QUALITY			
LR	(Per Bank)	L R	(Most Predominant	per Bank)	L R	
1 1	Wide >10m	✓ ✓	Mature Forest, Wet			Conservation Tillage
	Moderate 5-10m		Immature Forest, S Field	hrub or Old		Urban or Industrial
	Narrow <5m		Residential, Park, N	lew Field		Open Pasture, Row Crop
	None		Fenced Pasture			Mining or Construction
	COMMENTS					
7	FLOW REGIME (At Time of Evalue Stream Flowing Subsurface flow with isolated pools COMMENTS_	, ,				ols, no flow (Intermittent) hemeral)
	SINUOSITY (Number of bends per None 0.5	er 61 m (20 1.0 1.5	0 ft) of channel) (Ch	eck <i>ONLY</i> one bo 2.0 2.5	×):	3.0 >3
STRE Flat (0.5 ft/	EAM GRADIENT ESTIMATE  100 ft) Flat to Moderate	Mode	erate (2 ft/100 ft)	Moderate to S	Severe	Severe (10 ft/100 ft

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):
QHEI PERFORMED? - Yes V No QHEI Score (If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)
WWH Name: Distance from Evaluated Stream
CWH Name: Distance from Evaluated Stream  EWH Name: Distance from Evaluated Stream
WAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION  USGS Quadrangle Name: Eaton South  NRCS Soil Map Page: NRCS Soil Map Stream Order
County: Preble Township / City:
MISCELLANEOUS
Base Flow Conditions? (Y/N): Y Date of last precipitation:
Photograph Information: Representative photos taken
Elevated Turbidity? (Y/N): N Canopy (% open): 0%
Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number:
Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.) Conductivity (µmhos/cm)
Is the sampling reach representative of the stream (Y/N) If not, please explain:
Additional comments/description of pollution impacts:
Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)  Fish Observed? (Y/N) N Voucher? (Y
DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed): Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location  FLOW

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Primary Headwater Habitat Evaluation Form HHEI Score (sum of metrics 1, 2, 3): SITE NAME/LOCATION | Alamo Solar Farm SITE NUMBER | WB-013 RIVER BASIN Beasley Run DRAINAGE AREA (mi²) 0.00 LAT. 39.69111 LONG. -84.65698 RIVER CODE 76 LENGTH OF STREAM REACH (ft) RIVER MILE DATE **04/10/18** BJS SCORER COMMENTS NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO RECOVERY STREAM CHANNEL **MODIFICATIONS:** SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B. HHEI Metric PERCENT **PERCENT Points** BLDR SLABS [16 pts] SILT [3 pt] 80% 0% BOULDER (>256 mm) [16 pts] LEAF PACK/WOODY DEBRIS [3 pts] 0% 0% **Substrate** 0% BEDROCK [16 pt] 0% FINE DETRITUS [3 pts] Max = 400% 0% COBBLE (65-256 mm) [12 pts] CLAY or HARDPAN [0 pt] 5% 0% GRAVEL (2-64 mm) [9 pts] MUCK [0 pts] 12 15% 0% SAND (<2 mm) [6 pts] ARTIFICIAL [3 pts] Total of Percentages of (B) Substrate Percentage 0.00% 100% A + BBldr Slabs, Boulder, Cobble, Bedrock SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: TOTAL NUMBER OF SUBSTRATE TYPES: 3 Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of Pool Depth evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box): Max = 30> 30 centimeters [20 pts] > 5 cm - 10 cm [15 pts] > 22.5 - 30 cm [30 pts] < 5 cm [5 pts] > 10 - 22.5 cm [25 pts] NO WATER OR MOIST CHANNEL [0 pts] 5 5 COMMENTS **MAXIMUM POOL DEPTH (centimeters):** BANK FULL WIDTH (Measured as the average of 3-4 measurements) Bankfull (Check ONLY one box): > 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] Width Max=30> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]  $\leq$  1.0 m (<=3' 3") [5 pts] > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts] 5 0.60 COMMENTS AVERAGE BANKFULL WIDTH (meters): This information must also be completed **RIPARIAN ZONE AND FLOODPLAIN QUALITY** ☆NOTE: River Left (L) and Right (R) as looking downstream☆ RIPARIAN WIDTH FLOODPLAIN QUALITY (Most Predominant per Bank) (Per Bank) R Wide >10m Mature Forest, Wetland Conservation Tillage Immature Forest, Shrub or Old Moderate 5-10m Urban or Industrial Field Open Pasture, Row Crop Narrow <5m Residential, Park, New Field Fenced Pasture None Mining or Construction COMMENTS FLOW REGIME (At Time of Evaluation) (Check ONLY one box): Moist Channel, isolated pools, no flow (Intermittent) Stream Flowing Subsurface flow with isolated pools (Interstitial) Dry channel, no water (Ephemeral) COMMENTS SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box): None 1.0 2.0 3.0

2.5

Moderate to Severe

1.5

Moderate (2 ft/100 ft)

>3

Severe (10 ft/100 ft)

Flat (0.5 ft/100 ft)

0.5

STREAM GRADIENT ESTIMATE

Flat to Moderate

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):
QHEIPERFORMED? - Yes V No QHEI Score (If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)  WWH Name: Distance from Evaluated Stream
CWH Name: Distance from Evaluated Stream
EWH Name: Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: Eaton South NRCS Soil Map Page: NRCS Soil Map Stream Order
County: Preble Township / City:
MISCELLANEOUS
Base Flow Conditions? (Y/N): Y Date of last precipitation: 04/03/18 Quantity: 2.08
Photograph Information: Representative photos taken
Elevated Turbidity? (Y/N): N Canopy (% open): 0%
Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number:
Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.) Conductivity (µmhos/cm)
Is the sampling reach representative of the stream (Y/N) If not, please explain:
Additional comments/description of pollution impacts:
BIOTIC EVALUATION
Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)
Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N Vouc
Comments Regarding Biology:
DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This <u>must</u> be completed):
Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location
FLOW -

Save as pdf



This foregoing document was electronically filed with the Public Utilities

**Commission of Ohio Docketing Information System on** 

12/10/2018 2:29:17 PM

in

Case No(s). 18-1578-EL-BGN

Summary: Application Exhibit G (Part 6 of 7) electronically filed by Mr. Michael J. Settineri on behalf of Alamo Solar I, LLC