Appendix G Wetland Delineation Report

Wetland Delineation Report
Regal Above Ground Collection Line
Benton County, Minnesota

July, 2020

Prepared for:

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Introduction

Regal Solar LLC is proposing to develop a new 3.5 mile 34.5 kV above-ground collection line and associated substation infrastructure to interconnect the 100 MW Regal Solar Project in Benton County, Minnesota. A separate Wetland Delineation Report was completed for the 100 MW Regal Solar Project in 2018. The 86 acre Project Area is located in Sections 3, 10, 11, 12 and 13 of Township 38 North, Range 32 West in Benton County, Minnesota (Figure). HDR completed a wetland delineation to identify wetlands and streams within the Project Area.

Methods

Evaluation for the presence of wetlands and wetland hydrology within cultivated areas of the Project Area was performed using protocols defined in the July 2016 Minnesota Board of Water and Soil Resources (BWSR) and U.S. Army Corps of Engineers (USACE) *Guidance for Offsite Hydrology/Wetland Determinations* (USACE 2016).

Prior to onsite review, desktop resources were reviewed for the entire Project Area for potential wetland locations. Desktop resources reviewed included recent aerial photography and historical aerial photography, National Wetland Inventory (NWI) mapping (Figure 2), Minnesota Department of Natural Resources (MN DNR) Public Waters Inventory (PWI) maps (Figure 1), U.S. Department of Agriculture (USDA) Natural resources Conservation Service (NRCS) soil map units (Figure 2), and 2 foot light detection and ranging (LiDAR) contours (Figure 2). This review identified location of potential wetland areas within the Project Area. Wetlands identified in the field were delineated in accordance with methods outlined in the 1987 Corps of Engineers Wetlands Delineation Manual (USACE 1987) and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region (Version 2) (USACE 2010). The USACE defines areas as wetlands based on the following:

Those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas [33 CFR 328 3.b].

Wetland delineations are based on the presence of the following three parameters:

- Indicators of wetland hydrology
- o Predominance of hydrophytic vegetation
- Presence of hydric soils

"Atypical" or "problem areas" may be missing one or more of the three parameters, and still be classified as wetlands but must be justified using USACE criteria.

In addition to identifying wetlands, stream channels within the Project Area were identified by the presence of a defined bed and bank, as well as a defined ordinary high water mark (OHWM). OHWM characteristics were identified and mapped in accordance with USACE Regulatory Guidance Letter 05-05 (USACE 2005).

The onsite delineation was performed by HDR wetland scientists on June 24, 2020.

Site Description

The project area is located in north western Benton County, approximately 2 miles northwest of Rice, Minnesota within the Eastern Broadleaf Forest – Anoka Sand Plain Subsection as defined by The Minnesota Department of Natural Resources (MNDNR) (MNDNR, 2005). This area is described as flat, sandy lake plain along the Mississippi River. Broad sandy plains occupy much of the subsection (MN DNR 2005). Presettlement vegetation was oak barrens and openings (MN DNR 2005). The project area has been in crop production since at least 1953 based on historical aerial photography review.

Climate Data

The Minnesota Climatology Working Group (MNCWG, 2020) has an online calculator that provides a multi-month precipitation score for any date selected from a calendar. Scores of 6 to 9 are considered "dry", 10 to 14 "normal", and 15 to 18 "wet". For the time of the on-site delineation, precipitation for the Project area was considered "dry" with a score of 9 from MNCWG.

Historical Climate Data

A review of historical climate data for the project area was performed against the dates of historical aerial photos readily available through the Minnesota Historical Aerial Photographs Online (MHAPO) program and Farm Service Agency National Agriculture Imagery Program (NAIP). USACE guidance states that historical photographs should be reviewed for indicators of wetland hydrology when normal precipitation conditions are present (USACE 2016). This review of historical aerial photography was used to evaluate the frequency of occurrence and extent of offsite delineated wetland boundaries, specifically for cultivated areas of the Project Area. Normal conditions are determined by weighing precipitation data from the three months prior to the date of the imagery against the length of time since the precipitation contributed to the water budget (i.e. more recent precipitation is given greater weight). Of the publically available MHAPO and NAIP aerial photos, 2017, 2009, 2008, 2006 and 1953 had normal precipitation multi-month scores and therefore were selected for use in the historical aerial photography review (Table 1).

Table 1. Historical Aerial Photography Information

Year of Photo	Date of Photo	Source of Photo	MNCWG Multi- Month Score
1953	October 19	МНРО	10 - Normal
2006	June 18	NAIP	10 - Normal
2008	July 5	NAIP	13 - Normal
2009	June 15	NAIP	10 - Normal
2017	July 29	NAIP	12 - Normal

Soils

A summary of the USDA NRCS soil map units that occur onsite and their corresponding hydric ratings are listed in Table 2. Soil map units are included in Figure 2.

Table 2. Mapped Soil Types Onsite

Map Unit Symbol	Map Unit name	Hydric Rating
	Fordum-Winterfield complex, 0 to 2 percent slopes,	
1011A	frequently flooded	75
D2A	Elkriver fine sandy loam, 0 to 2 percent slopes, rarely flooded	0
DEN	Elkriver fine sandy loam, 0 to 2 percent slopes, occasionally	
D3A	flooded	15
D32A	Mosford sandy loam, 0 to 2 percent slopes	0
D36B	Eagleview-Menahga complex, 1 to 8 percent slopes	3
D67A	Hubbard loamy sand, 0 to 2 percent slopes	1
D67B	Hubbard loamy sand, 1 to 6 percent slopes	3
GP	Pits, gravel-Udipsamments complex	0

Results

Offsite review of historical aerial photography did not result in the identification of any locations of potential wetland hydrology within cultivated fields. Two locations of potential aerial signatures within a cultivated section of the Project Area, one of which is mapped as an NWI feature, were determined to be locations where hay bales were stored annually based on aerial review. Routine wetland data forms and photos were taken documenting upland conditions at these locations (WDP 4 Up, Photo 1 and WDP 5 Up, Photo 2).

A total of 3 wetland areas and 1 perennial river system (Platte River) for a total of 1.81 acres were delineated in the Project Area during the onsite review. Table 3 summarizes the delineated features by acreage and resource type. The delineated feature boundaries are shown in Figure 2. USACE routine wetland data forms for the delineated wetlands are included as Appendix A with data form collection locations shown on Figure 2. Ground level photography of the delineated features and the Project Area are included in Appendix B with photo locations shown on Figure 2.

Table 3. Delineated Features

Resource ID	NWI Wetland Type	Circular 39 Wetland Type	Eggers and Reed Vegetative Community	Area Sq. Ft. (acres)
Wetland 1	Palustrine Forested (PFO)	Type 1	Floodplain Forest	0.16
Wetland 2	Palustrine Forested (PFO)	Type 7	Hardwood Swamp	0.19
Wetland 3	Palustrine Unconsolidated Bottom (PUB)/PFO	Type 4/Type 1	Deep Marsh/Floodplain Forest	1.16
Platte River	Riverine	NA	NA	0.30
		Total		1.81

Wetland 1 consists of a floodplain fringe forested wetland (PFO/Type 1/Floodplain Forest) associated with the Platte River. The vegetation of wetland 1 is dominated by black willow (Salix nigra) green ash (Fraxinus pensylvanica) and eastern cottonwood trees (populous deltoids). The herbaceous understory is dominated by reed canary grass (Phalaris arundinacea) and black willow (salix nigra) saplings. Hydrology of wetland 1 is driven by the adjacency to the Platte River channel. The adjacent upland vegetation to Wetland 1 consists white oak (Quercus alba) and basswood (Tilia Americana) dominated forest with an herbaceous understory of smooth brome (Bromus inermis) and posion ivy (Toxicodendron radicans). The boundary of Wetland 1 was delineated along the toe if an adjacent slope and the dominance of hydrophytic vegetation. The boundary of wetland 1 extends beyond the Project Area.

Wetland 2 is a palustrine forested hardwood swamp wetland (PFO/Type7/Hardwood Swamp) dominated by silver maple (*Acer saccharinum*) green ash, and balsam poplar (*Populus balsamifera*) trees. Wetland 2 is located within the floodplain of the Platte River. The adjacent upland to Wetland 2 white oak and basswood dominated forest. The boundary of wetland 2 was delineated within a depressional area of the floodplain of the Platte River, the dominance of hydrophytic vegetation and the presence of saturated soil conditions. The boundary of wetland 2 extends beyond the Project Area.

Wetland 3 is a palustrine unconsolidated bottom/palustrine forested deep marsh/floodplain forest wetland (PUB/PFO/Type1/Type4/Deep Marsh/Floodplain Forest). The wetland comprises a floodplain forest fringe surrounding an open water oxbow feature of the Platte River. The vegetation of wetland 3 is dominated by Black willow within the forested area. The boundary of wetland 3 was delineated along the toe of an adjacent slope and the dominance of hydrophytic vegetation. The boundary of wetland 3 extends beyond the Project Area.

The Platte River within the Project area consists of an approximately 75 foot wide approximately 5 foot deep at the OHWM perennial river channel. The OHWM of the Platte River was identified by a well-defined bed and bank along with water staining levels on bridge piers located within the Project Area. The substrate of the Platte River within the Project area is large cobble and gravel. The Platte River is mapped as a MN DNR Public Water for its entire length within the Project Area.

Conclusions

3 wetland areas and 1 perennial river were identified and delineated within the Project Area. Wetland and stream boundaries were delineated in accordance with delineation methodologies as described in the July 2016 USACE and BWSR guidance, 1987 Corps of Engineers Wetlands Delineation Manual (USACE 1987), the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region (Version 2) (USACE 2010), and Regulatory Guidance Letter 05-05 (USACE, 2005). Development activities within the boundaries of these features is subject to review and approval by the USACE, Benton County (Local Governmental Unit (LGU) responsible for implementing the Minnesota Wetland Conservation Act (WCA)) and the MN DNR.

References

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- MN DNR. 2005. Field Guide to the Native Plant Communities of Minnesota: The Laurentian Mixed Forest Province. Ecological land Classification Program, Minnesota County Biological Survey, and Natural Heritage and Nongame Research Program. MNDNR St. Paul, MN.
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- USDA, NRCS. 2020. Web Soil Survey for Benton County, Minnesota. http://websoilsurvey.nrcs.usda.gov/app/.
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- USACE. 2010. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region (Version 2.0). ERDC/EL TR-10-16. Vicksburg, MS: U.S. Army Engineer Research and Development Center.
- USACE and BWSR. 2016. Guidance for Offsite Hydrology/Wetland Determinations.

 http://www.bwsr.state.mn.us/wetlands/delineation/Guidance_for_Offsite_Hydrology_and_wetland_Determinations.pdf

Figures

Figure 1 – Project Location

Figure 2 – Delineated Features

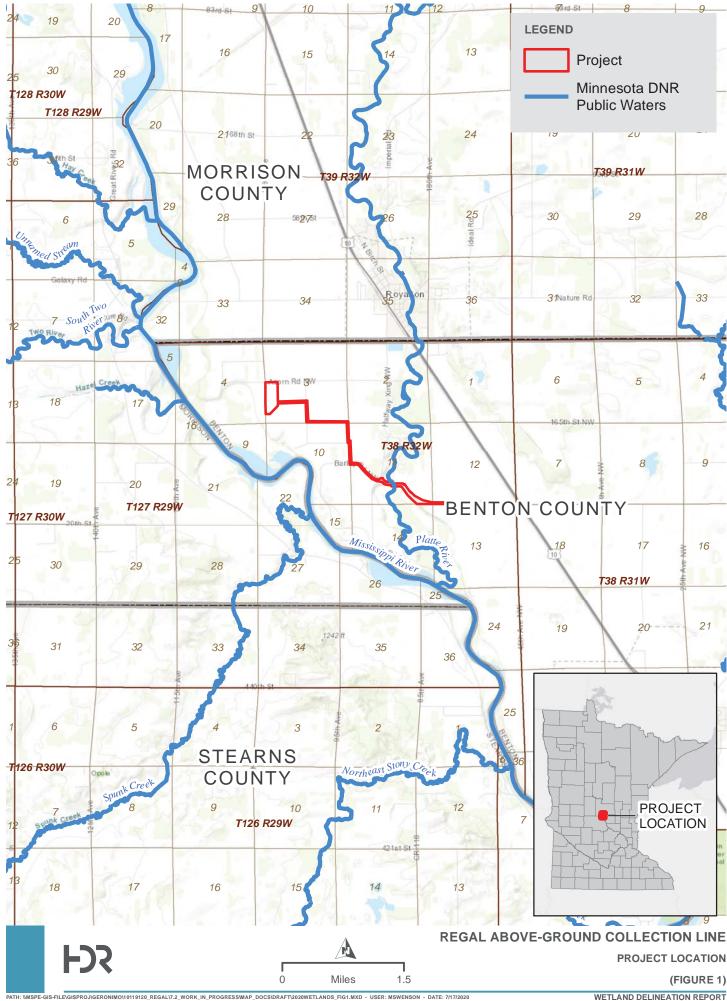




FIGURE 2-1

 $\tilde{\Sigma}$

REGAL ABOVE-GROUND COLLECTION LINE DELINEATED FEATURES

FIGURE 2-

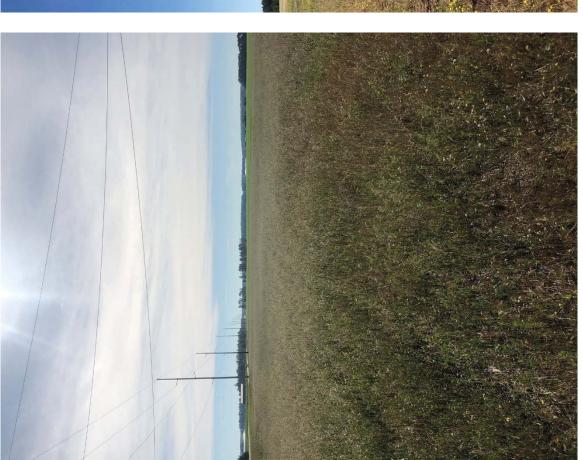
OJIGERONIMON10119120_REGALV 2_WORK_IN_PROGRESSWAP_DOCS\DRAFT2020WETLANDS_FIG2_1.MXD - USER: M



FIGURE 2-6

Appendix A

Ground Level Photography



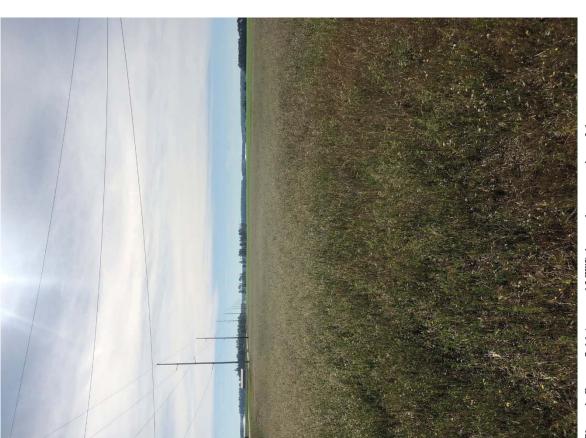


Photo 1. Grassy field (mapped NWI) in northwest portion of the project area. Orientation east.

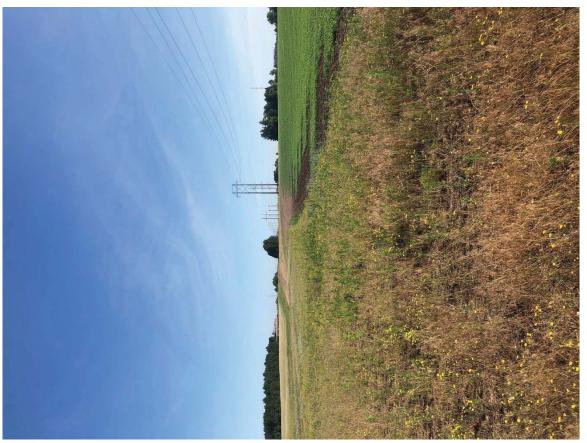


Photo 2. Planted potatoes and grassy field in north west section of the project area. Orientation north.

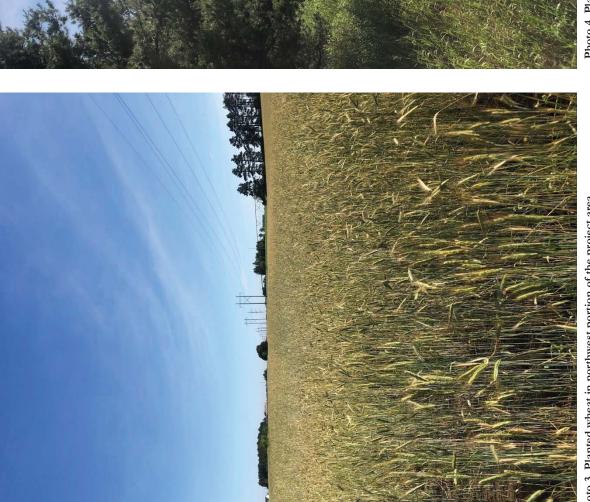
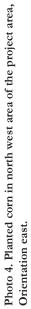
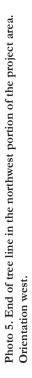


Photo 3. Planted wheat in northwest portion of the project area. Orientation north.





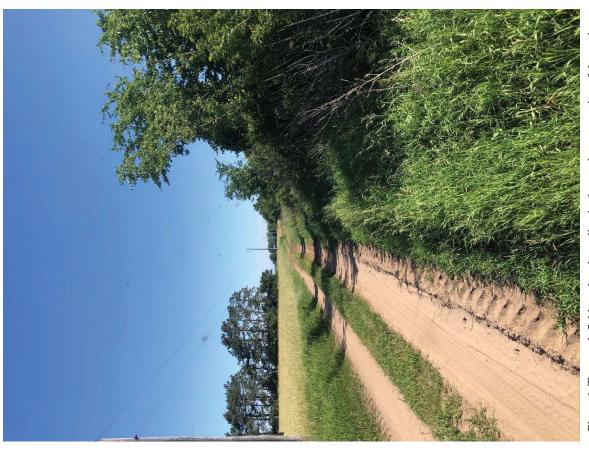


Photo 6. Two track field road and tree line in the north west portion of the project area. Orientation north.

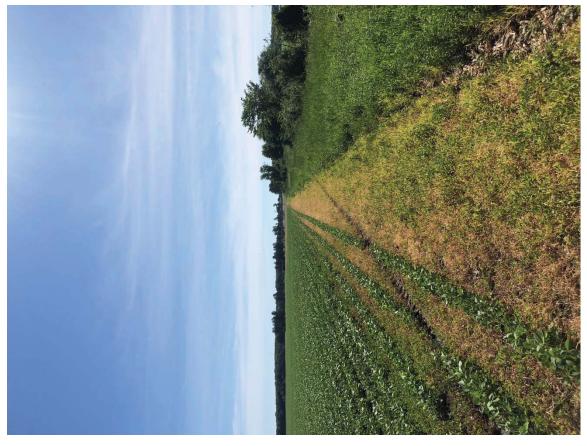


Photo 8. Planted beans and field edge. Orientation east.

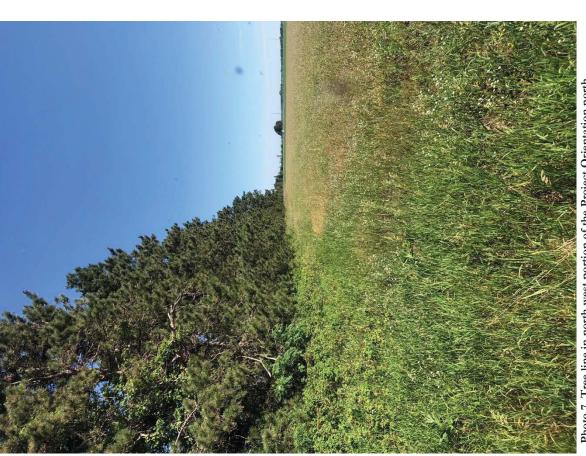


Photo 7. Tree line in north west portion of the Project Orientation north.

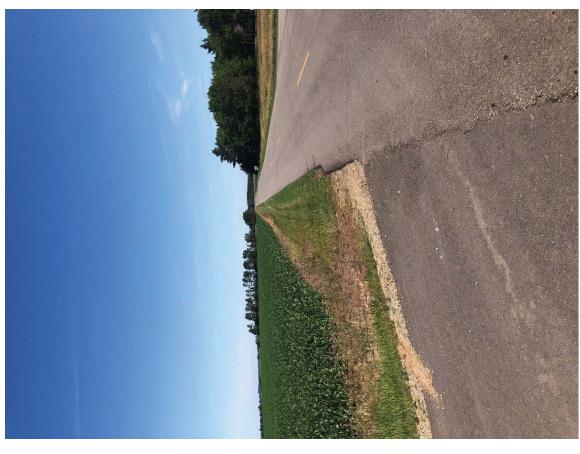


Photo 10. Intersection of 65th Ave and 163th Street. Orientation north.



Photo 9. Tree line and field edge. Orientation east.

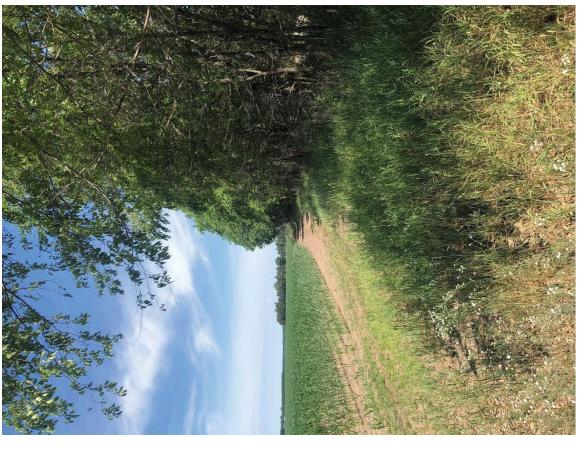
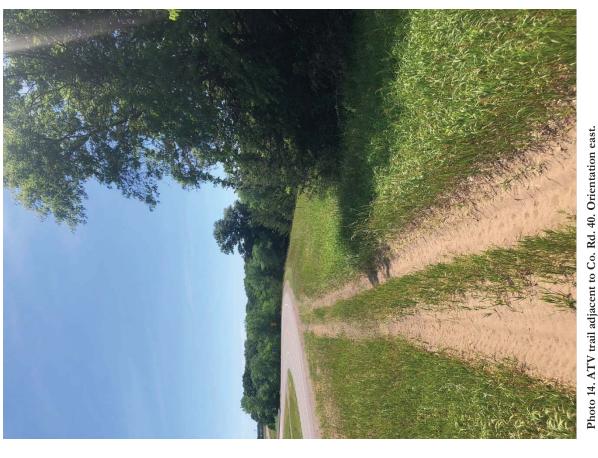


Photo 12. Planted Corn and forested field edge. Orientation west northwest.



Photo 11. Intersection of Barley Road and 65th Ave. Orientation north.



Fnoto 13. Looking towards the intersection of barley Road, balsa Road, and Co. Rd. 40. Orientation southeast.



Photo 15. Wetland 1 and the Platte River along the north side of County Road 40, looking upstream. Orientation north.



Photo 16. Platte River and the Co. Rd. 40 Bridge, looking upstream. Orientation north.



downstream. Orientation south.







Photo 20. Wetland 3, deep marsh conditions of the oxbow of the Platte River. Orientation south.

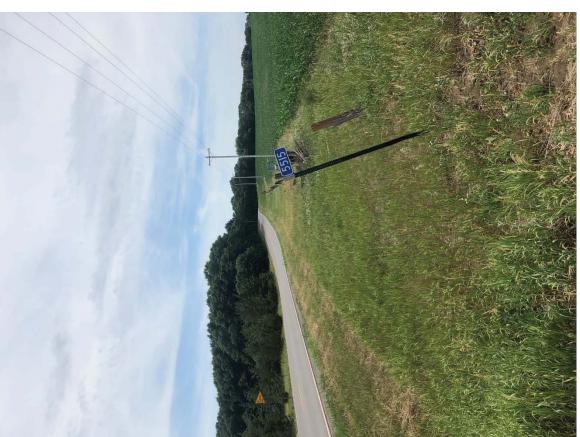


Photo 21. Location were the Project Area parallels Co. Rd. 40 in the southeast portion of the project area. Orientation west.



Photo 22. Location where Project Area parallels Co. Rd. 40 at the end of the southeast portion of the project area. Orientation west northwest.

Appendix B

USACE Routine Wetland Delineation Data Forms

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Regal Solar	City/Coun	ty: Benton	Sampling Date: 6/25/2020		
Applicant/Owner: Regal Solar LLC		State: MN	Sampling Point: WDP 1 Up		
Investigator(s): M Swenson		Section, Township, Range: S11 T38	3. R32W		
Landform (hillside, terrace, etc.): Floodplain		ave, convex, none): concave	Slope %: 0		
Subregion (LRR or MLRA): LRR K	Lat: 45.796852	Long: -94.291758	Datum: WGS 1984		
Soil Map Unit Name: Fordum-Winterfield comple	_				
Are climatic / hydrologic conditions on the site typi			explain in Remarks.)		
Are Vegetation, Soil, or Hydrology		Are "Normal Circumstances" prese			
Are Vegetation, Soil, or Hydrology		(If needed, explain any answers in			
SUMMARY OF FINDINGS – Attach sit		,	,		
Hydrophytic Vegetation Present? Ye	es No X Is the S	ampled Area			
Hydric Soil Present?		Wetland? Yes	No X		
Wetland Hydrology Present? Ye		ptional Wetland Site ID:			
Plot is located adjacent to the floodplain of the Pl					
HYDROLOGY					
Wetland Hydrology Indicators:		Secondary Indicators (r	minimum of two required)		
Primary Indicators (minimum of one is required; of	check all that apply)	Surface Soil Crack	s (B6)		
Surface Water (A1)	Water-Stained Leaves (B9)	Drainage Patterns	(B10)		
High Water Table (A2)	Aquatic Fauna (B13)	Moss Trim Lines (E	316)		
Saturation (A3)	Marl Deposits (B15)	Dry-Season Water	Table (C2)		
Water Marks (B1)	Water Marks (B1) Hydrogen Sulfide Odor (C1) Crayfish Burrows (C8)				
Sediment Deposits (B2) Oxidized Rhizospheres on Living Roots (C3) Saturation Visible on Aerial Imagery (C9)					
Drift Deposits (B3) Presence of Reduced Iron (C4) Stunted or Stressed Plants (D1)					
Algal Mat or Crust (B4) Recent Iron Reduction in Tilled Soils (C6) Geomorphic Position (D2) This Must Surface (C7)					
Iron Deposits (B5)	Thin Muck Surface (C7)	Shallow Aquitard ([,		
Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks) Microtopographic Relief (D4)					
Sparsely Vegetated Concave Surface (B8)		FAC-Neutral Test (D5)		
Field Observations:					
	o x Depth (inches):				
<u></u>	o x Depth (inches):	Wattand Hadaala wa Basaanto	Vaa Na V		
	o x Depth (inches):	Wetland Hydrology Present?	Yes No _X_		
(includes capillary fringe) Describe Recorded Data (stream gauge, monitor	ing well aerial photos, previous inspec	tions) if available:			
Bescribe Recorded Bata (Stream gauge, monitor	ing well, aeriai priotos, previous inspet	nions), ii avallabic.			
Remarks:					
Wetland hydrology is not present.					

VEGETATION – Use scientific names of plants.

10 Yes	<u>Tree Stratum</u> (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
2. Quercus alba 30 Yes FACU 1761	Fraxinus pennsylvanica	5	No	FACW	Alumba of Danisant Consis
Title americane		30	Yes	FACU	·
	3. Tilia americana	10	Yes	FACU	
Percent of Dominant Species 40,0% (Frevalence Index worksheet: Total % Cover of: Multiply by:	4.	-			
Prevalence Index worksheet: Total & Cover of: Multiply by:					
Total % Cover of the Multiply by:	7				Prevalence Index worksheet:
1. Salix nigra		45	=Total Cover		Total % Cover of: Multiply by:
2.	Sapling/Shrub Stratum (Plot size: 15)		-		OBL species 5 x 1 = 5
3.	1. Salix nigra	5	Yes	OBL	FACW species 20 x 2 = 40
4. UPL species 45 x 5 = 225 5. Column Totals: 120 (A) 460 Prevalence Index = B/A = 3.83 Hydrophytic Vegetation Indicators: 1 - Rapid Test for Hydrophytic Vegetation 2 - Dominance Test is >50% 1. Phalaris arundinacea 15 Yes FACW 2. Bronus inermis 45 Yes UPL 4 - Morphological Adaptations i (Provide suppodata in Remarks or on a separate sheet) 3. Urtica dioica 10 No FAC Problematic Hydrophytic Vegetation 4 - Morphological Adaptations i (Provide suppodata in Remarks or on a separate sheet) Froblematic Hydrophytic Vegetation i (Explain) Indicators of hydric soil and wetland hydrology mupresent, unless disturbed or problematic. Definitions of Vegetation Strata: Tree - Woody plants 3 in, (7,6 cm) or more in diam at breast height (DBH), regardless of height. Tree - Woody plants less than 3 in. DBH greater than or equal to 3,28 ft (1 m) tall. Herb - All herbaceous (non-woody) plants, regardl of size, and woody vines greater than 3.28 height. Hydrophytic Vegetation Present? Yes No X Remarks: (Include photo numbers here or on a separate sheet.)	2.				FAC species 10 x 3 = 30
4.	3.				FACU species 40 x 4 = 160
Prevalence Index = B/A = 3.83					UPL species 45 x 5 = 225
Prevalence Index = B/A = 3.83 7.	5.				Column Totals: 120 (A) 460 (B)
Hydrophytic Vegetation Indicators: 1 - Rapid Test for Hydrophytic Vegetation 2 - Dominance Test is >50% 1. Phalaris arundinacea	6				Prevalence Index = B/A = 3.83
Herb Stratum (Plot size: 5) 1 - Rapid Test for Hydrophytic Vegetation 2 - Dominance Test is >50% 3 - Prevalence Index is ≤3.0¹ 4 - Morphological Adaptations¹ (Provide support data in Remarks or on a separate sheet) 4 - Morphological Adaptations¹ (Provide support data in Remarks or on a separate sheet) Problematic Hydrophytic Vegetation¹ (Explain) 1 - Rapid Test for Hydrophytic Vegetation 2 - Dominance Test is >50% 3 - Prevalence Index is ≤3.0¹ 4 - Morphological Adaptations¹ (Provide support data in Remarks or on a separate sheet) Problematic Hydrophytic Vegetation¹ (Explain) 1 - Rapid Test for Hydrophytic Vegetation 1 - Rapid Test for Hydrophytic Vegetation 2 - Dominance Test is >50% 3 - Prevalence Index is ≤3.0¹ 4 - Morphological Adaptations¹ (Provide support data in Remarks or on a separate sheet) Problematic Hydrophytic Vegetation ¹ (Explain) 1 - Rapid Test for Hydrophytic Vegetation ¹ (Explain) 2 - Definitions of hydric soil and wetland hydrology muspresent, unless disturbed or problematic. Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diam at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft height. Hydrophytic Vegetation Present? Yes No X	_				Hydrophytic Vegetation Indicators:
Herb Stratum (Plot size:5) 1. Phalaris arundinacea		5	=Total Cover		1 - Rapid Test for Hydrophytic Vegetation
1. Phalaris arundinacea 1. Prevalence Index is \$3.0¹ 2. Bromus inermis 3. Urtica dioica 1. No FAC 4. Morphological Adaptations¹ (Provide suppodata in Remarks or on a separate sheet) 4. Problematic Hydrophytic Vegetation¹ (Explain) 5. Indicators of hydric soil and wetland hydrology mupresent, unless disturbed or problematic. 7. Definitions of Vegetation Strata: 8.	Herb Stratum (Plot size: 5)		-		
2. Bromus inermis 3. Urtica dioica 10 No FAC 4. Problematic Hydrophytic Vegetation ¹ (Explain) 5. Problematic Hydrophytic Vegetation ¹ (Explain) 6. Problematic Hydrophytic Vegetation ¹ (Explain) 7. Definitions of Vegetation Strata: 8. Pree — Woody plants 3 in. (7.6 cm) or more in diarr at breast height (DBH), regardless of height. 9. Sapling/shrub — Woody plants less than 3 in. DBH greater than or equal to 3.28 ft (1 m) tall. 12. Babe Stratum (Plot size:) 1. Woody Vine Stratum (Plot size:) 2. Suppose Stratum (Plot size:) 3. Hydrophytic Vegetation Present? Yes No X		15	Yes	FACW	3 - Prevalence Index is ≤3.0 ¹
3. Urtica dioica 10 No FAC Problematic Hydrophytic Vegetation ¹ (Explain) 5.		45	Yes	UPL	4 - Morphological Adaptations ¹ (Provide supporting
4. Problematic Hydrophytic Vegetation ¹ (Explain) 5.	O Hati disis-	10	No	FAC	
Indicators of hydric soil and wetland hydrology mupresent, unless disturbed or problematic.					Problematic Hydrophytic Vegetation ¹ (Explain)
7. Definitions of Vegetation Strata: 8. Tree – Woody plants 3 in. (7.6 cm) or more in diam at breast height (DBH), regardless of height. 10. Sapling/shrub – Woody plants less than 3 in. DBH greater than or equal to 3.28 ft (1 m) tall. 12. Herb – All herbaceous (non-woody) plants, regardl of size, and woody plants less than 3.28 ft tall. Woody Vine Stratum (Plot size:) 1. Woody vines – All woody vines greater than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft tall. Hydrophytic Vegetation Present? Yes No X	6				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
8	_				Definitions of Vegetation Strata:
9					Tree Monday plants 2 in (7.0 cm) or more in dispretar
Sapling/shrub – Woody plants less than 3 in. DBF greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardly of size, and woody plants less than 3.28 ft tall. Woody Vine Stratum (Plot size:) 1.	9.				` ' '
Woody Vine Stratum (Plot size:) 1.					Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.
Woody Vine Stratum (Plot size:) 1.	12.				
1		70	=Total Cover		
2. 3. 4. Hydrophytic Vegetation Present? Yes No X Remarks: (Include photo numbers here or on a separate sheet.)	1				Woody vines – All woody vines greater than 3.28 ft in
3. Hydrophytic Vegetation Present? Yes No X Remarks: (Include photo numbers here or on a separate sheet.)					gra
4	2				1 ' ' '
=Total Cover Remarks: (Include photo numbers here or on a separate sheet.)					_
Remarks: (Include photo numbers here or on a separate sheet.)			-Total Cover		11000mm 100 <u>m</u> 110 <u>x</u>
	` .	e sheet.)	_		

Sampling Point: WDP 1 Up

SOIL Sampling Point: WDP 1 Up

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)							
Depth	Matrix		Redo	x Feature	es		
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture Remarks
0-10	10YR 2/1	100					Sandy
10-20	10YR 4/3	100					Sandy
-							
-							
¹ Type: C=Co	ncentration, D=Deple	etion, RM=F	Reduced Matrix, M	IS=Mask	ed Sand (Grains.	² Location: PL=Pore Lining, M=Matrix.
Hydric Soil II	ndicators:						Indicators for Problematic Hydric Soils ³ :
Histosol ((A1)	_	Polyvalue Belo	w Surfac	e (S8) (L	RR R,	2 cm Muck (A10) (LRR K, L, MLRA 149B)
	pedon (A2)		MLRA 149B	,			Coast Prairie Redox (A16) (LRR K, L, R)
Black His		_	Thin Dark Surf				
	Sulfide (A4)	_	High Chroma S				Polyvalue Below Surface (S8) (LRR K, L)
	Layers (A5)		Loamy Mucky			K, L)	Thin Dark Surface (S9) (LRR K, L)
	Below Dark Surface	(A11) _	Loamy Gleyed		-2)		Iron-Manganese Masses (F12) (LRR K, L, R)
	rk Surface (A12)	_	Depleted Matri		C)		Piedmont Floodplain Soils (F19) (MLRA 149B)
	ucky Mineral (S1)	_	Redox Dark Su				Mesic Spodic (TA6) (MLRA 144A, 145, 149B) Red Parent Material (F21)
Sandy Re	eyed Matrix (S4)	_	Depleted Dark Redox Depress				Very Shallow Dark Surface (F22)
	Matrix (S6)	_	Marl (F10) (LR	•	"		Other (Explain in Remarks)
Dark Surf		_		, _,			
	(0.)						
³ Indicators of	hydrophytic vegetation	on and wetl	and hydrology mu	st be pre	sent, unle	ess distu	urbed or problematic.
	ayer (if observed):		, 0,	•	· ·		<u> </u>
Type:							
Depth (in	ches):						Hydric Soil Present? Yes No _X_
Remarks:							<u> </u>
	n is revised from Nort	thcentral ar	nd Northeast Region	onal Sup	plement \	ersion 2	2.0 to include the NRCS Field Indicators of Hydric Soils,
	2015 Errata. (http://ww						
Hydric soils a	re not present.						

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Regal Solar	City/County: Benton Sampling Date: 6/25/2020			
Applicant/Owner: Regal Solar LLC	State: MN Sampling Point: WDP 1 Wet			
Investigator(s): M Swenson	Section, Township, Range: S11 T38, R32W			
Landform (hillside, terrace, etc.): Floodplain	Local relief (concave, convex, none): concave Slope %: 0			
Subregion (LRR or MLRA): LRR K Lat: 45.796854	Long: -94.291721 Datum: WGS 1984			
Soil Map Unit Name: Fordum-Winterfield complex, 0 to 2 percent sl	opes, frequently flooded NWI classification: PFO			
Are climatic / hydrologic conditions on the site typical for this time of y				
Are Vegetation, Soil, or Hydrology significantl				
Are Vegetation, Soil, or Hydrology naturally p				
	g sampling point locations, transects, important features, etc.			
Hydrophytic Vegetation Present? Yes X No	Is the Sampled Area			
Hydric Soil Present? Yes X No	within a Wetland? Yes X No			
Wetland Hydrology Present? Yes X No	If yes, optional Wetland Site ID: Wetland 1			
Plot is located in a floodplain frindge wetland adjacent to the Platte I	(iver.			
HYDROLOGY				
Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)			
Primary Indicators (minimum of one is required; check all that apply				
Surface Water (A1) Water-Stained Le	<u> </u>			
x High Water Table (A2) Aquatic Fauna (E				
x Saturation (A3)Marl Deposits (B				
Water Marks (B1) Hydrogen Sulfide				
I 	oheres on Living Roots (C3) Saturation Visible on Aerial Imagery (C9)			
Drift Deposits (B3) Presence of Red	<u> </u>			
<u> </u>	uction in Tilled Soils (C6) <u>x</u> Geomorphic Position (D2)			
Iron Deposits (B5)Thin Muck Surface				
Inundation Visible on Aerial Imagery (B7)Other (Explain in				
Sparsely Vegetated Concave Surface (B8)	x FAC-Neutral Test (D5)			
Field Observations:				
	inches):			
Water Table Present? Yes x No Depth (inches): 4			
Saturation Present? Yes x No Depth (inches): 0 Wetland Hydrology Present? Yes X No			
(includes capillary fringe)				
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:				
Remarks:				
Wetland hydrology is present.				

$\label{eq:VEGETATION} \textbf{-} \textbf{Use scientific names of plants}.$

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. Fraxinus pennsylvanica	30	Yes	FACW	Number of Dominant Species
2. Salix nigra	15	Yes	OBL	That Are OBL, FACW, or FAC: 4 (A)
3. 4.				Total Number of Dominant Species Across All Strata:4 (B)
5.6.				Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)
7				Prevalence Index worksheet:
	45	=Total Cover		Total % Cover of: Multiply by:
Sapling/Shrub Stratum (Plot size:)				OBL species40 x 1 =40
1. Salix nigra	25	Yes	OBL	FACW species 90 x 2 = 180
2.				FAC species 0 x 3 = 0
3.				FACU species 0 x 4 = 0
4				UPL species 0 x 5 = 0
5.				Column Totals:130(A)220(B)
6.				Prevalence Index = B/A =1.69
7				Hydrophytic Vegetation Indicators:
	25	=Total Cover		1 - Rapid Test for Hydrophytic Vegetation
Herb Stratum (Plot size: 5)				X 2 - Dominance Test is >50%
Phalaris arundinacea	60	Yes	FACW	X 3 - Prevalence Index is ≤3.0 ¹
2				4 - Morphological Adaptations (Provide supporting
3				data in Remarks or on a separate sheet)
4.				Problematic Hydrophytic Vegetation ¹ (Explain)
5				¹ Indicators of hydric soil and wetland hydrology must be
6.				present, unless disturbed or problematic.
7				Definitions of Vegetation Strata:
8.				Tree – Woody plants 3 in. (7.6 cm) or more in diameter
9.				at breast height (DBH), regardless of height.
10				Sapling/shrub – Woody plants less than 3 in. DBH and
11				greater than or equal to 3.28 ft (1 m) tall.
12.				Herb – All herbaceous (non-woody) plants, regardless
	60	=Total Cover		of size, and woody plants less than 3.28 ft tall.
Woody Vine Stratum (Plot size:)				Woody vines – All woody vines greater than 3.28 ft in
1.				height.
2.				
3.				Hydrophytic Vegetation
4.				Present? Yes X No No
		=Total Cover		
Remarks: (Include photo numbers here or on a separate	te sheet.)			
Hydrophytic vegetation is present.				

Sampling Point: WDP 1 Wet

SOIL Sampling Point: WDP 1 Wet

Profile Descr	ription: (Describe to	the dep	th needed to docu	ment th	e indicat	or or co	nfirm the absence of	indicators.)
Depth	Matrix			x Featur				
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0-6	10YR 2/1	100					Sandy	
6-20	10YR 4/2	90	10YR 4/6	10	С	М	Loamy/Clayey	Prominent redox concentrations
¹ Type: C=Co	ncentration, D=Deple	etion RM-	-Reduced Matrix M	S-Mask	ed Sand	Grains	² l ocation: P	L=Pore Lining, M=Matrix.
Hydric Soil II		Z. (O) 1, 1 (1VI-	-reduced Matrix, W	O-Masic	ca cana	Oranio.		or Problematic Hydric Soils ³ :
Histosol (Polyvalue Belo	w Surfac	e (S8) (L	RR R.		ick (A10) (LRR K, L, MLRA 149B)
	pedon (A2)	•	MLRA 149B)		() (-	,		rairie Redox (A16) (LRR K, L, R)
Black His			Thin Dark Surfa	,	(I RR R	MI RA 1		icky Peat or Peat (S3) (LRR K, L, R)
	n Sulfide (A4)	•	High Chroma S					e Below Surface (S8) (LRR K, L)
	Layers (A5)		Loamy Mucky N			(K, L)		rk Surface (S9) (LRR K, L)
	Below Dark Surface	(A11)	Loamy Gleyed		-2)			nganese Masses (F12) (LRR K, L, R)
	rk Surface (A12)		X Depleted Matrix					nt Floodplain Soils (F19) (MLRA 149B)
Sandy Mi	ucky Mineral (S1)		Redox Dark Su				Mesic S	podic (TA6) (MLRA 144A, 145, 149B)
Sandy GI	eyed Matrix (S4)		Depleted Dark	Surface	(F7)		Red Par	ent Material (F21)
Sandy Re	edox (S5)		Redox Depress	sions (F8	3)		Very Sha	allow Dark Surface (F22)
Stripped	Matrix (S6)		Marl (F10) (LR l	R K, L)			Other (E	xplain in Remarks)
Dark Surf	face (S7)							
³ Indicators of	hydrophytic vegetation	on and we	tland hydrology mu	st he nre	sent un	less distu	rhed or problematic	
	ayer (if observed):	on and we	dana nyarology ma	ot bo pro	oont, an	icoo diota	problematio.	
Туре:								
Depth (in	ches):						Hydric Soil Presei	nt? Yes x No No
Remarks:							•	
								S Field Indicators of Hydric Soils,
	2015 Errata. (http://ww	ww.nrcs.u	sda.gov/Internet/FS	E_DOC	UMENTS	S/nrcs142	p2_051293.docx)	
Hydric soils a	re present.							

Project/Site: Regal Solar		City/County: Benton		Sampling Date: 6/25/2020		
Applicant/Owner: Regal Solar LLC			State: MN	Sampling Point: WDP 2 Up		
Investigator(s): M Swenson			Section, Town	ship, Range: S11 T38, R32W		
Landform (hillside, terrace, etc.): Hillslope	Loca	al relief (concave, conv		Slope %: 8		
Subregion (LRR or MLRA): LRR K	Lat: 45.796381		-94.28935	Datum: WGS 1984		
Soil Map Unit Name: Hubbard loamy sand, 0			NWI classification:			
Are climatic / hydrologic conditions on the site t	typical for this time of year?	Yes <u>x</u>	No (If no, o	explain in Remarks.)		
Are Vegetation, Soil, or Hydrol	logysignificantly disturbe	ed? Are "Norm	al Circumstances" prese	ent? Yes x No		
Are Vegetation, Soil, or Hydrol	<u> </u>		, explain any answers in	n Remarks.)		
SUMMARY OF FINDINGS – Attach			•	,		
Hydrophytic Vegetation Present?	Yes No X	Is the Sampled Are	ea			
Hydric Soil Present?	Yes No X	within a Wetland?		No X		
Wetland Hydrology Present?	Yes No X	If yes, optional Wetl	and Site ID:			
HYDROLOGY						
Wetland Hydrology Indicators:			Secondary Indicators (r	minimum of two required)		
Primary Indicators (minimum of one is require			Surface Soil Crack	, ,		
Surface Water (A1)	Water-Stained Leaves (BS	9)	Drainage Patterns			
High Water Table (A2)	Aquatic Fauna (B13)	i	Moss Trim Lines (E	•		
Saturation (A3) Water Marks (B1)	Marl Deposits (B15)		Dry-Season Water			
Water Marks (B1) Sediment Deposits (B2)	Hydrogen Sulfide Odor (C Oxidized Rhizospheres or	•	Crayfish Burrows (on Aerial Imagery (C9)		
Drift Deposits (B3)	Presence of Reduced Iron		Stunted or Stresse			
Algal Mat or Crust (B4)	Recent Iron Reduction in					
Iron Deposits (B5)	Thin Muck Surface (C7)		Shallow Aquitard (D3)			
Inundation Visible on Aerial Imagery (B7)	Other (Explain in Remarks	s)	Microtopographic Relief (D4)			
Sparsely Vegetated Concave Surface (B8	<u> </u>	<u></u>	FAC-Neutral Test (
Field Observations:						
Surface Water Present? Yes	No x Depth (inches):					
Water Table Present? Yes	No x Depth (inches):		· · · · · · · · · · · · · · · · · · ·	W No V		
Saturation Present? Yes	No x Depth (inches):	wetiand	d Hydrology Present?	Yes No _X		
(includes capillary fringe) Describe Recorded Data (stream gauge, mon	uitoring well aerial photos previ	ious inspections) if av	zilahle:			
Describe Notoridod Data (otroam gaage,	morning won, donar priotos, p.s	ous mapoonons,, ii a.	allabic.			
Remarks: Wetland hydrology is not present.						
Wetland nydrology is not present.						

VEGETATION – Use scientific names of plants.

Sampling Point: WDP 2 Up

	Absolute	Dominant	Indicator	
Tree Stratum (Plot size:30)	% Cover	Species?	Status	Dominance Test worksheet:
1. Quercus alba	30	Yes	FACU	Number of Dominant Species
2. Acer saccharinum	15	Yes	FACW	That Are OBL, FACW, or FAC: 2 (A)
3. Tilia americana	25	Yes	FACU	Total Number of Dominant
4				Species Across All Strata: 5 (B)
5.				Percent of Dominant Species
6.				That Are OBL, FACW, or FAC: 40.0% (A/B)
7.				Prevalence Index worksheet:
	70	=Total Cover		Total % Cover of: Multiply by:
Sapling/Shrub Stratum (Plot size: 15)		•		OBL species 0 x 1 = 0
1.				FACW species 15 x 2 = 30
2.				FAC species 20 x 3 = 60
3.				FACU species 55 x 4 = 220
4.				UPL species 10 x 5 = 50
				Column Totals: 100 (A) 360 (B)
6				Prevalence Index = B/A = 3.60
7.				Hydrophytic Vegetation Indicators:
·		Total Cavar		
Llorb Chroture (Distoine) 5		=Total Cover		1 - Rapid Test for Hydrophytic Vegetation
Herb Stratum (Plot size: 5	_			2 - Dominance Test is >50%
1. Panicum virgatum	5	No	<u>FAC</u>	3 - Prevalence Index is ≤3.01
2. Bromus inermis	10	Yes	<u>UPL</u>	4 - Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet)
3. <u>Toxicodendron radicans</u>	15	Yes	FAC	
4.				Problematic Hydrophytic Vegetation ¹ (Explain)
5				¹ Indicators of hydric soil and wetland hydrology must be
6				present, unless disturbed or problematic.
7				Definitions of Vegetation Strata:
8.				Tree – Woody plants 3 in. (7.6 cm) or more in diameter
9.				at breast height (DBH), regardless of height.
10				Sapling/shrub – Woody plants less than 3 in. DBH and
11				greater than or equal to 3.28 ft (1 m) tall.
12				Herb – All herbaceous (non-woody) plants, regardless
	30	=Total Cover		of size, and woody plants less than 3.28 ft tall.
Woody Vine Stratum (Plot size:)		•		Washings All washings greater than 2.20 ft in
1.				Woody vines – All woody vines greater than 3.28 ft in height.
2.				
3.				Hydrophytic
4.				Vegetation Present? Yes No X
		=Total Cover		1.000
Remarks: (Include photo numbers here or on a separate	to sheet \	_ 10tal 00vel		1
Hydrophytic vegetation is not present.	ie sneet.)			
•				

SOIL Sampling Point: WDP 2 Up

Profile Desc	ription: (Describe t	o the dep	th needed to docu	ment th	e indicat	or or co	onfirm the absence of indicators.)
Depth	Matrix		Redo	x Featur	es		
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture Remarks
0-6	10YR 2/2	100					Sandy
6-20	10YR 4/3	100					Sandy
			,				
							·
¹ Type: C=Co	oncentration, D=Deple	etion. RM=	Reduced Matrix. N	IS=Mask	ed Sand	Grains.	² Location: PL=Pore Lining, M=Matrix.
Hydric Soil I						0.0	Indicators for Problematic Hydric Soils ³ :
Histosol	(A1)	_	Polyvalue Belo	w Surfac	ce (S8) (L	RR R,	2 cm Muck (A10) (LRR K, L, MLRA 149B)
Histic Ep	ipedon (A2)		MLRA 149B)			Coast Prairie Redox (A16) (LRR K, L, R)
Black His	stic (A3)		Thin Dark Surf	ace (S9)	(LRR R,	MLRA 1	149B)5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
Hydroger	n Sulfide (A4)		High Chroma S				Polyvalue Below Surface (S8) (LRR K, L)
	Layers (A5)		Loamy Mucky			K, L)	Thin Dark Surface (S9) (LRR K, L)
	Below Dark Surface	(A11)	Loamy Gleyed		F2)		Iron-Manganese Masses (F12) (LRR K, L, R)
	rk Surface (A12)		Depleted Matri		C)		Piedmont Floodplain Soils (F19) (MLRA 1498
	ucky Mineral (S1) leyed Matrix (S4)		Redox Dark St				Mesic Spodic (TA6) (MLRA 144A, 145, 149B) Red Parent Material (F21)
	edox (S5)		Depleted Dark Redox Depres				Very Shallow Dark Surface (F22)
	Matrix (S6)	•	Marl (F10) (LR		<i>>)</i>		Other (Explain in Remarks)
	face (S7)	•		, ,			
	,						
³ Indicators of	hydrophytic vegetati	on and we	tland hydrology mu	st be pre	esent, unl	ess distu	urbed or problematic.
Restrictive L	ayer (if observed):						
Type:							
Depth (in	ches):						Hydric Soil Present? Yes No X
Remarks:							•
							2.0 to include the NRCS Field Indicators of Hydric Soils,
	2015 Errata. (http://w ire not present.	ww.nrcs.u	sda.gov/Internet/FS	SE_DOC	UMENTS	/nrcs142	2p2_051293.docx)
Tiyano sons a	ire not present.						

Project/Site: Regal Solar		City/County: Benton		Sampling Date: <u>6/25/2020</u>
Applicant/Owner: Regal Solar LLC			State: MN	Sampling Point: WDP 2 Wet
Investigator(s): M Swenson		Section, Township	o, Range: <u>S11 T38,</u>	, R32W
Landform (hillside, terrace, etc.): Floodplair	nLocal re	elief (concave, convex, non	e): concave	Slope %: 0
Subregion (LRR or MLRA): LRR K	Lat: 45.796386	Long:94.2	89303	Datum: WGS 1984
Soil Map Unit Name: Hubbard loamy sand, 0) to 2 percent slopes		NWI classification:	PFO
Are climatic / hydrologic conditions on the site	· ·	Yes x	No (If no, e	xplain in Remarks.)
Are Vegetation, Soil, or Hydro			cumstances" prese	
Are Vegetation, Soil, or Hydro	·		ain any answers in	
			•	,
SUMMARY OF FINDINGS – Attach	Site iliap silowing samp	ing point locations,	transects, min)Oriani italuits, ell.
Hydrophytic Vegetation Present?	Yes X No	Is the Sampled Area		
Hydric Soil Present?	Yes X No	within a Wetland?	Yes X	No
Wetland Hydrology Present?	Yes X No	If yes, optional Wetland S	Site ID: Wetland	2
Plot is located in a harwood swamp forested	Wetland Within the Platte Kiver i	100аргат.		
HYDROLOGY				
Wetland Hydrology Indicators:		Seco	ndary Indicators (m	ninimum of two required)
Primary Indicators (minimum of one is require			Surface Soil Cracks	, ,
x Surface Water (A1)	Water-Stained Leaves (B		Orainage Patterns (I	•
x High Water Table (A2)	Aquatic Fauna (B13)		Moss Trim Lines (B	•
x Saturation (A3)	Marl Deposits (B15)		Ory-Season Water	
Water Marks (B1)	Hydrogen Sulfide Odor (C	· —	Crayfish Burrows (C	•
Sediment Deposits (B2)	Oxidized Rhizospheres or			n Aerial Imagery (C9)
Drift Deposits (B3)	Presence of Reduced Iron	` '	Stunted or Stressed	
Algal Mat or Crust (B4) Iron Deposits (B5)	Recent Iron Reduction in Thin Muck Surface (C7)	· · · —	Geomorphic Positio Shallow Aquitard (D	, ,
Inundation Visible on Aerial Imagery (B7)			Microtopographic R	,
Sparsely Vegetated Concave Surface (Bi			FAC-Neutral Test (E	
Field Observations:	<u></u>		710 11001101 1001 (2	
Surface Water Present? Water Table Present? Saturation Present? (includes capillary fringe)	No Depth (inches): No Depth (inches): No Depth (inches):	0	Irology Present?	Yes <u>X</u> No
Describe Recorded Data (stream gauge, mor	nitoring well, aerial photos, previ	ious inspections), if availabl	e:	
Remarks: Wetland hydrology is present.				

VEGETATION – Use scientific names of plants.

Free Stratum (Plot size:30)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:		
. Fraxinus pennsylvanica	30	Yes	FACW	Number of Dancingst Consider		
. Acer saccharinum	25	Yes	FACW	Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)		
Populus balsamifera	25	Yes	FACW	Total Number of Deminera		
				Total Number of Dominant Species Across All Strata: 5 (B)		
				Beauty of Beauty and Consider		
j.				Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)		
:				Prevalence Index worksheet:		
	80	=Total Cover		Total % Cover of: Multiply by:		
sapling/Shrub Stratum (Plot size: 15)		•		OBL species 10 x 1 = 10		
				FACW species 90 x 2 = 180		
				FAC species 0 x 3 = 0		
				FACU species 0 x 4 = 0		
				UPL species 0 x 5 = 0		
				Column Totals: 100 (A) 190 (B		
i				Prevalence Index = B/A = 1.90		
				Hydrophytic Vegetation Indicators:		
		=Total Cover		1 - Rapid Test for Hydrophytic Vegetation		
Herb Stratum (Plot size: 5)		•		X 2 - Dominance Test is >50%		
. Glyceria striata	10	Yes	OBL	X 3 - Prevalence Index is ≤3.0 ¹		
2. Impatiens capensis	10	Yes	FACW	4 - Morphological Adaptations ¹ (Provide supportindata in Remarks or on a separate sheet)		
3.						
i				Problematic Hydrophytic Vegetation ¹ (Explain)		
5.						
3.				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.		
				Definitions of Vegetation Strata:		
3.				- W		
				Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.		
0.						
1.				Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.		
2.						
	20	=Total Cover		Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.		
Voody Vine Stratum (Plot size:)		•				
·				Woody vines – All woody vines greater than 3.28 ft in height.		
2.						
3.				Hydrophytic		
1.				Vegetation Present? Yes X No		
		=Total Cover				
Remarks: (Include photo numbers here or on a separat Hydrophytic vegetation is present.	te sheet.)	=Total Cover				

SOIL Sampling Point: WDP 2 Wet

Profile Descr	ription: (Describe to	the dep	th needed to docu	ment th	e indicat	or or co	nfirm the absence of	indicators.)
Depth	Matrix			x Featur				
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0-6	10YR 2/1	100					Muck	
6-20	10YR 6/2	90	10YR 4/6	10	С	М	Loamy/Clayey	Prominent redox concentrations
			_					
¹Type: C=Co	ncentration, D=Deple	etion. RM=	Reduced Matrix. M	S=Mask	ed Sand	Grains	² I ocation: P	L=Pore Lining, M=Matrix.
Hydric Soil II		Z. (O) 1, 1 (1V) =	-reduced Matrix, M	O-Masic	ou ound	Oranio.		or Problematic Hydric Soils ³ :
Histosol (Polyvalue Belo	w Surfac	ce (S8) (L	RR R.		ick (A10) (LRR K, L, MLRA 149B)
	pedon (A2)	•	MLRA 149B		() (-	,		rairie Redox (A16) (LRR K, L, R)
Black His			Thin Dark Surfa	,	(I RR R	MI RA 1		icky Peat or Peat (S3) (LRR K, L, R)
	n Sulfide (A4)	•	High Chroma S					e Below Surface (S8) (LRR K, L)
	Layers (A5)		Loamy Mucky I			(K, L)		rk Surface (S9) (LRR K, L)
	Below Dark Surface	(A11)	Loamy Gleyed		-2)			nganese Masses (F12) (LRR K, L, R)
	rk Surface (A12)		X Depleted Matri					nt Floodplain Soils (F19) (MLRA 149B)
Sandy Mi	ucky Mineral (S1)		Redox Dark Su				Mesic S _I	podic (TA6) (MLRA 144A, 145, 149B)
Sandy GI	eyed Matrix (S4)		Depleted Dark	Surface	(F7)		Red Par	ent Material (F21)
Sandy Re	edox (S5)		Redox Depress	sions (F8	3)		Very Sha	allow Dark Surface (F22)
Stripped	Matrix (S6)		Marl (F10) (LR	RK,L)			Other (E	xplain in Remarks)
Dark Surf	face (S7)							
³ Indicators of	hydrophytic vegetation	on and we	tland hydrology mu	st he nre	sent un	less distu	urhed or problematic	
	ayer (if observed):	on and we	dana nyarology ma	ot bo pro	oont, an	icoo diota	problematio.	
Туре:								
Depth (in	ches):						Hydric Soil Preser	nt? Yes X No
Remarks:								
								S Field Indicators of Hydric Soils,
	2015 Errata. (http://ww	ww.nrcs.u	sda.gov/Internet/FS	E_DOC	UMENTS	S/nrcs142	2p2_051293.docx)	
Hydric soils a	re present.							

Project/Site: Regal Solar	City/County: Benton Sampling Date: 6/25/2020
Applicant/Owner: Regal Solar LLC	State: MN Sampling Point: WDP 3 Up
Investigator(s): M Swenson	Section, Township, Range: S11 T38, R32W
-	ocal relief (concave, convex, none): concave Slope %: 8
Subregion (LRR or MLRA): LRR K Lat: 45.795015	Long: -94.287455 Datum: WGS 1984
Soil Map Unit Name: Hubbard loamy sand, 0 to 2 percent slopes	NWI classification: NA
Are climatic / hydrologic conditions on the site typical for this time of year?	Yes x No (If no, explain in Remarks.)
Are Vegetation, Soil, or Hydrology significantly distr	urbed? Are "Normal Circumstances" present? Yes x No
Are Vegetation, Soil, or Hydrology naturally probler	
	mpling point locations, transects, important features, etc.
Hydrophytic Vegetation Present? Yes No X	Is the Sampled Area
Hydric Soil Present? Yes No _X	within a Wetland? Yes No X
Wetland Hydrology Present? Yes No _X	If yes, optional Wetland Site ID:
HYDROLOGY	
Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	Surface Soil Cracks (B6)
Surface Water (A1) Water-Stained Leaves	
High Water Table (A2) Aquatic Fauna (B13)	Moss Trim Lines (B16)
Saturation (A3)Marl Deposits (B15)	Dry-Season Water Table (C2)
Water Marks (B1) Hydrogen Sulfide Odo	<u> </u>
	s on Living Roots (C3) Saturation Visible on Aerial Imagery (C9)
Drift Deposits (B3) Presence of Reduced	
Algal Mat or Crust (B4) Recent Iron Reduction	· · · · · · · · · · · · · · · · · · ·
Iron Deposits (B5) Thin Muck Surface (C7 Inundation Visible on Aerial Imagery (B7) Other (Explain in Rem.	
Sparsely Vegetated Concave Surface (B8)	FAC-Neutral Test (D5)
Field Observations:	
Surface Water Present? Yes No x Depth (inches	s):
Water Table Present? Yes No x Depth (inches	
Saturation Present? Yes No x Depth (inches	
(includes capillary fringe)	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, processes and processes are processes as a second processes are processed as a second processes are processes as a second processes are processed as a second processes are processes as a second processes are proc	revious inspections), if available:
Remarks: Wetland hydrology is not present.	
violatia flyarology to flot prosont.	

VEGETATION – Use scientific names of plants.

Sampling Point: WDP 3 Up

<u> </u>	Absolute	Dominant	Indicator	
Tree Stratum (Plot size: 30)	% Cover	Species?	Status	Dominance Test worksheet:
1. Quercus alba	40	Yes	FACU	Number of Dominant Species
2. Tilia americana	30	Yes	FACU	That Are OBL, FACW, or FAC: 2 (A)
3.				Total Number of Dominant
4				Species Across All Strata: 5 (B)
5				Percent of Dominant Species
6				That Are OBL, FACW, or FAC: 40.0% (A/B)
7.				Prevalence Index worksheet:
	70	=Total Cover		Total % Cover of: Multiply by:
Sapling/Shrub Stratum (Plot size:)				OBL species 0 x 1 = 0
1				FACW species 10 x 2 = 20
2				FAC species15 x 3 =45
3.				FACU species 75 x 4 = 300
4				UPL species10 x 5 =50
5				Column Totals:110 (A)415 (B)
6				Prevalence Index = B/A = 3.77
7.				Hydrophytic Vegetation Indicators:
		=Total Cover		1 - Rapid Test for Hydrophytic Vegetation
Herb Stratum (Plot size:5)				2 - Dominance Test is >50%
1. Cirsium arvense	5	No	FACU	3 - Prevalence Index is ≤3.0 ¹
2. Bromus inermis	10	Yes	UPL	4 - Morphological Adaptations (Provide supporting
Toxicodendron radicans	15	Yes	FAC	data in Remarks or on a separate sheet)
4. Phalaris arundinacea	10	Yes	FACW	Problematic Hydrophytic Vegetation ¹ (Explain)
5.				Indicators of hydric call and watland hydrology must be
6.				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
7.				Definitions of Vegetation Strata:
8.				Tree Meady plants 2 in (7.0 am) or mays in diameter
9.				Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.
10.				
11.				Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.
12.				
	40	=Total Cover		Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
Woody Vine Stratum (Plot size:)		•		
1.				Woody vines – All woody vines greater than 3.28 ft in height.
2.				_ ŭ
3.				Hydrophytic
4.				Vegetation Present? Yes No X
		=Total Cover		100
Remarks: (Include photo numbers here or on a separa	to obset \	_ Total Cover		
Hydrophytic vegetation is not present.	te sneet.)			

SOIL Sampling Point: WDP 3 Up

Profile Desc	ription: (Describe t	o the dep	th needed to docu	ment th	e indicat	or or co	onfirm the absence of indicators.)
Depth	Matrix		Redo	x Featur	es		
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture Remarks
0-6	10YR 2/2	100					Sandy
6-20	10YR 4/3	100					Sandy
			,				
							·
¹ Type: C=Co	oncentration, D=Deple	etion. RM=	Reduced Matrix. N	IS=Mask	ed Sand	Grains.	² Location: PL=Pore Lining, M=Matrix.
Hydric Soil I						0.0	Indicators for Problematic Hydric Soils ³ :
Histosol	(A1)	_	Polyvalue Belo	w Surfac	ce (S8) (L	RR R,	2 cm Muck (A10) (LRR K, L, MLRA 149B)
Histic Ep	ipedon (A2)		MLRA 149B)			Coast Prairie Redox (A16) (LRR K, L, R)
Black His	stic (A3)		Thin Dark Surf	ace (S9)	(LRR R,	MLRA 1	149B)5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
Hydroger	n Sulfide (A4)		High Chroma S				Polyvalue Below Surface (S8) (LRR K, L)
	Layers (A5)		Loamy Mucky			K, L)	Thin Dark Surface (S9) (LRR K, L)
	Below Dark Surface	(A11)	Loamy Gleyed		F2)		Iron-Manganese Masses (F12) (LRR K, L, R)
	rk Surface (A12)		Depleted Matri		C)		Piedmont Floodplain Soils (F19) (MLRA 1498
	ucky Mineral (S1) leyed Matrix (S4)		Redox Dark St				Mesic Spodic (TA6) (MLRA 144A, 145, 149B) Red Parent Material (F21)
	edox (S5)		Depleted Dark Redox Depres				Very Shallow Dark Surface (F22)
	Matrix (S6)	•	Marl (F10) (LR		<i>>)</i>		Other (Explain in Remarks)
	face (S7)	•		, ,			
	,						
³ Indicators of	hydrophytic vegetati	on and we	tland hydrology mu	st be pre	esent, unl	ess distu	urbed or problematic.
Restrictive L	ayer (if observed):						
Type:							
Depth (in	ches):						Hydric Soil Present? Yes No X
Remarks:							•
							2.0 to include the NRCS Field Indicators of Hydric Soils,
	2015 Errata. (http://w ire not present.	ww.nrcs.u	sda.gov/Internet/FS	SE_DOC	UMENTS	/nrcs142	2p2_051293.docx)
Tiyano sons a	ire not present.						

Project/Site: Regal Solar		City/County: Benton	Sampling Date: 6/25/2020			
Applicant/Owner: Regal Solar LLC		State: MN	Sampling Point: WDP 3 Wet			
Investigator(s): M Swenson		Section, Township, Range: S11 T38	3, R32W			
Landform (hillside, terrace, etc.): Floodplain	Local r	elief (concave, convex, none): concave	Slope %: 0			
Subregion (LRR or MLRA): LRR K	Lat: 45.794976	Long: -94.287505	Datum: WGS 1984			
Soil Map Unit Name: Hubbard loamy sand, 0	to 2 percent slopes	NWI classification:	PFO			
Are climatic / hydrologic conditions on the site	typical for this time of year?	Yes x No (If no, e	explain in Remarks.)			
Are Vegetation, Soil, or Hydrol	logy significantly disturb					
Are Vegetation , Soil , or Hydrol						
SUMMARY OF FINDINGS – Attach	<u> </u>		,			
	<u> листир ене на 5 гм , </u>		PO			
Hydrophytic Vegetation Present?	Yes X No	Is the Sampled Area				
Hydric Soil Present?	Yes x No No	within a Wetland? Yes X	No			
Wetland Hydrology Present? Remarks: (Explain alternative procedures here)	Yes X No	If yes, optional Wetland Site ID: Wetland	3			
Plot is located in a harwood swamp forested v	voliding aujacinot to a copi	erraeep marsh ronner expert er ale i lieue i lieu				
HYDROLOGY						
Wetland Hydrology Indicators:		Secondary Indicators (r	minimum of two required)			
Primary Indicators (minimum of one is require	d; check all that apply)	Surface Soil Cracks	s (B6)			
Surface Water (A1)	Water-Stained Leaves (BS	· —	, ,			
x High Water Table (A2)	Aquatic Fauna (B13)	Moss Trim Lines (B16)				
x Saturation (A3)	Marl Deposits (B15)	Dry-Season Water				
Water Marks (B1)	Hydrogen Sulfide Odor (C	 '	,			
Sediment Deposits (B2)	Oxidized Rhizospheres or	• • • • • • • • • • • • • • • • • • • •	on Aerial Imagery (C9)			
Drift Deposits (B3)	Presence of Reduced Iron					
Algal Mat or Crust (B4)	Recent Iron Reduction in	• • •	, ,			
Iron Deposits (B5)	Thin Muck Surface (C7)	Shallow Aquitard (I	•			
Inundation Visible on Aerial Imagery (B7) Sparsely Vegetated Concave Surface (B8)	· · ·	x FAC-Neutral Test (
	<u>')</u>	X FAC-Neutral Test (
Field Observations: Surface Water Present? Yes Water Table Present? Yes x Saturation Present? Yes x (includes capillary fringe)	No x Depth (inches): No Depth (inches): Depth (inches):	0	Yes _ X _ No			
Describe Recorded Data (stream gauge, mon	itoring well, aerial photos, previ	ious inspections), if available:				
Remarks: Wetland hydrology is present.						

$\label{eq:VEGETATION} \textbf{-} \textbf{Use scientific names of plants}.$

	Absolute	Dominant	Indicator	
Tree Stratum (Plot size: 30)	% Cover	Species?	Status	Dominance Test worksheet:
Fraxinus pennsylvanica	10	Yes	FACW	Number of Dominant Species
2. Salix nigra	20	Yes	OBL	That Are OBL, FACW, or FAC:5 (A)
3. Populus deltoides4.	15	Yes	FAC	Total Number of Dominant Species Across All Strata: 5 (B)
5.6.				Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)
7.				Prevalence Index worksheet:
	45	=Total Cover		Total % Cover of: Multiply by:
Sapling/Shrub Stratum (Plot size:)	-			OBL species 20 x 1 = 20
1				FACW species 50 x 2 = 100
2.				FAC species 15 x 3 = 45
3.				FACU species 0 x 4 = 0
4.				UPL species 0 x 5 = 0
5.				Column Totals: 85 (A) 165 (B)
6.				Prevalence Index = B/A = 1.94
7.				Hydrophytic Vegetation Indicators:
		=Total Cover		1 - Rapid Test for Hydrophytic Vegetation
Herb Stratum (Plot size: 5)				X 2 - Dominance Test is >50%
1. Phalaris arundinacea	30	Yes	FACW	X 3 - Prevalence Index is ≤3.0 ¹
Impatiens capensis	10	Yes	FACW	4 - Morphological Adaptations ¹ (Provide supporting
3.				data in Remarks or on a separate sheet)
4.				Problematic Hydrophytic Vegetation ¹ (Explain)
5.6.				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
7.				Definitions of Vegetation Strata:
8.				Tree Moody plants 2 in (7.6 cm) or more in diameter
9.				Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.
10				Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.
12.				
	40	=Total Cover		Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
Woody Vine Stratum (Plot size:) 1.				Woody vines – All woody vines greater than 3.28 ft in height.
2.				
3.				Hydrophytic
4.				Vegetation Present? Yes X No
		=Total Cover		
Remarks: (Include photo numbers here or on a separat Hydrophytic vegetation is present.	e sheet.)			

Sampling Point: WDP 3 Wet

SOIL Sampling Point: WDP 3 Wet

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth	Matrix		Redo	x Featur	es			
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0-6	10YR 2/1	100					Loamy/Clayey	
6-20	10YR 6/2	90	10YR 4/6	10	С	M	Loamy/Clayey	Prominent redox concentrations
			-					
	-							
	ncentration, D=Deple	etion, RM=	Reduced Matrix, M	S=Mask	ed Sand	Grains.		L=Pore Lining, M=Matrix.
Hydric Soil I					(00) (1			or Problematic Hydric Soils ³ :
Histosol (,	Polyvalue Belo		ce (S8) (L	RK K,		uck (A10) (LRR K, L, MLRA 149B)
Black His	ipedon (A2)		MLRA 149B) Thin Dark Surfa	,	(I DD D	MI DA 1		rairie Redox (A16) (LRR K, L, R) ucky Peat or Peat (S3) (LRR K, L, R)
	n Sulfide (A4)	•	High Chroma S					ie Below Surface (S8) (LRR K, L)
	Layers (A5)		Loamy Mucky I					rk Surface (S9) (LRR K, L)
	Below Dark Surface	(A11)	Loamy Gleyed			· i · · · · · · · · · · · · · · · · · ·		nganese Masses (F12) (LRR K, L, R)
	rk Surface (A12)	(,,,,	Depleted Matrix		_/			nt Floodplain Soils (F19) (MLRA 149B)
	ucky Mineral (S1)	•	Redox Dark Su		6)			podic (TA6) (MLRA 144A, 145, 149B)
	leyed Matrix (S4)		Depleted Dark					rent Material (F21)
Sandy Re	edox (S5)	·	Redox Depress	sions (F8	3)		Very Sh	allow Dark Surface (F22)
Stripped	Matrix (S6)		Marl (F10) (LR	R K, L)			Other (E	xplain in Remarks)
Dark Sur	face (S7)							
	hydrophytic vegetation	on and we	tland hydrology mu	st be pre	esent, un	less distu	rbed or problematic.	
	ayer (if observed):							
Type:								
Depth (in	ches):						Hydric Soil Prese	nt? Yes <u>X</u> No
Remarks:								
	n is revised from Nor 2015 Errata. (http://w							S Field Indicators of Hydric Soils,
Hydric soils a		ww.mcs.u	sua.gov/internet/F3	E_DOC	UIVIEINIS	5/11ICS 142	.p2_051293.d0Cx)	
	•							

Project/Site: Regal Solar	City/County: Benton Sampling Date: 6/24/2020					
Applicant/Owner: Regal Solar LLC	State: MN Sampling Point: WDP 4 Up					
Investigator(s): M Swenson	Section, Township, Range: S3 T38, R32W					
Landform (hillside, terrace, etc.): Field	Local relief (concave, convex, none): none Slope %: 0					
Subregion (LRR or MLRA): LRR K Lat: 45.814304	Long: -94.323609 Datum: WGS 1984					
Soil Map Unit Name: Hubbard loamy sand, 0 to 2 percent slopes	NWI classification: NA					
Are climatic / hydrologic conditions on the site typical for this time of y	ear? Yes x No (If no, explain in Remarks.)					
Are Vegetation, Soil, or Hydrologysignificantl						
Are Vegetation, Soil, or Hydrologynaturally p						
	sampling point locations, transects, important features, etc.					
Hydrophytic Vegetation Present? Yes No X	Is the Sampled Area					
Hydric Soil Present? Yes No X	within a Wetland? Yes No X					
Wetland Hydrology Present? Yes No X	If yes, optional Wetland Site ID:					
were present. There fore the area was determined to not be a wetland	ıd.					
HYDROLOGY						
Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)					
Primary Indicators (minimum of one is required; check all that apply)						
Surface Water (A1)Water-Stained Le	 · · · · · · · · · · · · · · · · · ·					
High Water Table (A2) Aquatic Fauna (E	• • • • • • • • • • • • • • • • • • • •					
	Marl Deposits (B15) Dry-Season Water Table (C2)					
1 	Hydrogen Sulfide Odor (C1) Crayfish Burrows (C8) Oxidized Rhizospheres on Living Roots (C3) Saturation Visible on Aerial Imagery (C9)					
l 	· · · / <u>—</u>					
Drift Deposits (B3)Presence of Red	· · · · · · · · · · · · · · · · · · ·					
1 	uction in Tilled Soils (C6) Geomorphic Position (D2)					
Iron Deposits (B5) Inundation Visible on Aerial Imagery (B7) Other (Explain in	<u> </u>					
Inundation Visible on Aerial Imagery (B7)Other (Explain in Sparsely Vegetated Concave Surface (B8)	Remarks) Microtopographic Relief (D4) FAC-Neutral Test (D5)					
Field Observations:	PAC-Neutral Test (D3)					
	nches):					
	nches):					
Saturation Present? Yes No X Depth (
(includes capillary fringe)						
Describe Recorded Data (stream gauge, monitoring well, aerial phot	os, previous inspections), if available:					
Remarks:						
Wetland hydrology is not present.						

VEGETATION – Use scientific names of plants. Sampling Point: WDP 4 Up Absolute Dominant Indicator <u>Tree Stratum</u> (Plot size: ____) % Cover Species? Status **Dominance Test worksheet:** 1. Number of Dominant Species That Are OBL, FACW, or FAC: 3. Total Number of Dominant 4. Species Across All Strata: 2 (B) 5. Percent of Dominant Species That Are OBL, FACW, or FAC: 6. 0.0% (A/B) 7. Prevalence Index worksheet: =Total Cover Total % Cover of: Multiply by: ___ x 1 = **OBL** species Sapling/Shrub Stratum (Plot size: ____) x 2 = 0 1. FACW species 0 x 3 = 2. **FAC** species 0 15 x 4 = ____ 3. **FACU** species 60 4. **UPL** species 60 x 5 = 5. Column Totals: 75 (A) 360 4.80 6. Prevalence Index = B/A = 7. **Hydrophytic Vegetation Indicators:** =Total Cover 1 - Rapid Test for Hydrophytic Vegetation Herb Stratum (Plot size: _____5) 2 - Dominance Test is >50% 3 - Prevalence Index is ≤3.01 Triticum aestivum 15 Yes 4 - Morphological Adaptations (Provide supporting 2. Sonchus arvensis **FACU** data in Remarks or on a separate sheet) 3. Problematic Hydrophytic Vegetation¹ (Explain) 4. 5. ¹Indicators of hydric soil and wetland hydrology must be 6. present, unless disturbed or problematic. 7. **Definitions of Vegetation Strata:** 8. Tree - Woody plants 3 in. (7.6 cm) or more in diameter 9. at breast height (DBH), regardless of height. 10. Sapling/shrub - Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless 75 =Total Cover of size, and woody plants less than 3.28 ft tall. Woody Vine Stratum (Plot size:) Woody vines - All woody vines greater than 3.28 ft in 1. Hydrophytic 3 Vegetation Present? Yes No X =Total Cover

Remarks: (Include photo numbers here or on a separate sheet.) Hydrophytic vegetation is not present.

SOIL Sampling Point: WDP 4 Up

Depth (inches) Matrix (inches) Redox Features Texture Remarks 0-8 10YR 2/2 100 Sandy 8-20 10YR 3/4 100 Sandy
0-8 10YR 2/2 100 Sandy
8-20 10YR 3/4 100 Sandy
¹ Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ² Location: PL=Pore Lining, M=Matrix.
Hydric Soil Indicators: Indicators for Problematic Hydric Soils ³ :
Histosol (A1) Polyvalue Below Surface (S8) (LRR R, 2 cm Muck (A10) (LRR K, L, MLRA 149B)
Histic Epipedon (A2) MLRA 149B) Coast Prairie Redox (A16) (LRR K, L, R)
Black Histic (A3) Thin Dark Surface (S9) (LRR R, MLRA 149B) 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
Hydrogen Sulfide (A4) High Chroma Sands (S11) (LRR K, L) Polyvalue Below Surface (S8) (LRR K, L)
Stratified Layers (A5) Loamy Mucky Mineral (F1) (LRR K, L) Thin Dark Surface (S9) (LRR K, L)
Depleted Below Dark Surface (A11) Loamy Gleyed Matrix (F2) Iron-Manganese Masses (F12) (LRR K, L, R) Thick Dark Surface (A12) Depleted Matrix (F3) Piedmont Floodplain Soils (F19) (MLRA 149B)
Sandy Mucky Mineral (S1) Redox Dark Surface (F6) Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
Sandy Gleyed Matrix (S4) Depleted Dark Surface (F7) Red Parent Material (F21)
Sandy Redox (S5) Redox Depressions (F8) Very Shallow Dark Surface (F22)
Stripped Matrix (S6) Marl (F10) (LRR K, L) Other (Explain in Remarks)
Dark Surface (S7)
³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
Restrictive Layer (if observed): Type:
· · · · · · · · · · · · · · · · · · ·
Depth (inches): Hydric Soil Present? Yes No X
Remarks: This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils,
Version 7.0, 2015 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)
Hydric soils are not present.

Project/Site: Regal Solar	(City/County: Benton		Sampling Date: <u>6/24/2020</u>
Applicant/Owner: Regal Solar LLC	_		State: MN	Sampling Point: WDP 5 Up
Investigator(s): M Swenson		Section, To	vnship, Range: S3 T38	3, R32W
Landform (hillside, terrace, etc.): Field	Local re		·	Slope %: 0
Subregion (LRR or MLRA): LRR K	Lat: 45.812462	•	-94.324165	Datum: WGS 1984
Soil Map Unit Name: Hubbard loamy sand, 0			NWI classification	
Are climatic / hydrologic conditions on the site	· · · · · · · · · · · · · · · · · · ·	Yes x		, explain in Remarks.)
Are Vegetation, Soil, or Hydrol		· · · · · · · · · · · · · · · · · · ·		sent? Yes x No
Are Vegetation, Soil, or Hydrol			I, explain any answers	
SUMMARY OF FINDINGS – Attach				
Hydrophytic Vegetation Present?	Yes No X	Is the Sampled A		· ·
Hydric Soil Present?	Yes No X	within a Wetland?		No X
Wetland Hydrology Present?	Yes No X	If yes, optional We		· —
Plot is located in low drainage of a cultivated present. Therefore the area was determined t	• •		,,,	
HYDROLOGY				
Wetland Hydrology Indicators:			Secondary Indicators	(minimum of two required)
Primary Indicators (minimum of one is require			Surface Soil Crac	, ,
Surface Water (A1)	Water-Stained Leaves (B9	9)	Drainage Patterns	
High Water Table (A2)	Aquatic Fauna (B13)		Moss Trim Lines (
Saturation (A3)	Marl Deposits (B15)	4)	Dry-Season Wate	
Water Marks (B1)	Hydrogen Sulfide Odor (C		Crayfish Burrows	
Sediment Deposits (B2) Drift Deposits (B3)	Oxidized Rhizospheres on Presence of Reduced Iron	-	Stunted or Stress	on Aerial Imagery (C9)
Algal Mat or Crust (B4)	Recent Iron Reduction in 1		Geomorphic Posit	` '
Iron Deposits (B5)	Thin Muck Surface (C7)	Tilled Solis (Co)	Shallow Aquitard	` '
Inundation Visible on Aerial Imagery (B7)		3)	Microtopographic	
Sparsely Vegetated Concave Surface (B)		•)	FAC-Neutral Test	
Field Observations:	<u>, </u>		_	
Surface Water Present? Yes	No x Depth (inches):			
Water Table Present? Yes	No x Depth (inches):			
Saturation Present? Yes	No x Depth (inches):	Wetlan	d Hydrology Present?	? Yes No X
(includes capillary fringe)				
Describe Recorded Data (stream gauge, mor	nitoring well, aerial photos, previ	ous inspections), if a	vailable:	
Remarks:				
Wetland hydrology is not present.				

VEGETATION – Use scientific names of plants.

EGETATION – Use scientific names of plants	Absoluto	Dominant	Indicator			
<u>Free Stratum</u> (Plot size:)	Absolute % Cover	Dominant Species?	Status	Dominance Test worksheet:		
·				Number of Dominant Species		
·				That Are OBL, FACW, or FAC:	0 (A)	
i				Total Number of Dominant		
l				Species Across All Strata:	1 (B)	
5				Percent of Dominant Species		
S				That Are OBL, FACW, or FAC:	0.0% (A/B	
7				Prevalence Index worksheet:		
		=Total Cover		Total % Cover of: M	lultiply by:	
Sapling/Shrub Stratum (Plot size:))			OBL species 0 x 1 =	0	
1				FACW species 0 x 2 =	0	
2.				FAC species 0 x 3 =	0	
3				FACU species 10 x 4 =	40	
4				UPL species 75 x 5 =	375	
5				Column Totals: 85 (A)	415 (B	
5.				Prevalence Index = B/A =	4.88	
7.				Hydrophytic Vegetation Indicators	:	
		=Total Cover		1 - Rapid Test for Hydrophytic Ve	getation	
Herb Stratum (Plot size:5				2 - Dominance Test is >50%		
1. Triticum aestivum	75	Yes	UPL	3 - Prevalence Index is ≤3.0 ¹		
2. Sonchus arvensis 3.	10	No	FACU	4 - Morphological Adaptations ¹ (F		
				Problematic Hydrophytic Vegetat	ion ¹ (Explain)	
·· 5.						
5. 5.				¹ Indicators of hydric soil and wetland be present, unless disturbed or proble		
7.				Definitions of Vegetation Strata:		
3.				Tree – Woody plants 3 in. (7.6 cm) or		
9				at breast height (DBH), regardless of	height.	
10				Sapling/shrub – Woody plants less t		
11				and greater than or equal to 3.28 ft (1	m) tall.	
12	85	=Total Cover		Herb – All herbaceous (non-woody) pof size, and woody plants less than 3		
Woody Vine Stratum (Plot size:		= rotal Cover				
1.	'			Woody vines – All woody vines grea height.	ter than 3.28 ft ir	
				no.g.u.		
	· · ·			Hydrophytic		
4.				Vegetation Present? Yes No	x	
		=Total Cover		Tresent: res	<u> </u>	
		•		I		

SOIL Sampling Point: WDP 5 Up

Profile Desc	ription: (Describe t	o the dep	th needed to docu	ment th	e indicat	or or co	onfirm the absence of indicators.)
Depth	Matrix		Redo	x Featur	es		
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture Remarks
0-12	10YR 2/2	100					Sandy
12-20	10YR 3/4	100					Sandy
							·
							·
	ncentration, D=Deple	etion, RM=	Reduced Matrix, N	1S=Mask	ed Sand	Grains.	² Location: PL=Pore Lining, M=Matrix.
Hydric Soil I							Indicators for Problematic Hydric Soils ³ :
Histosol			Polyvalue Belo		ce (S8) (L	.RR R,	2 cm Muck (A10) (LRR K, L, MLRA 149B)
	ipedon (A2)		MLRA 149B	,	/I DD D	MI DA 4	Coast Prairie Redox (A16) (LRR K, L, R)
Black His	n Sulfide (A4)		Thin Dark Surf High Chroma S				149B) 5 cm Mucky Peat or Peat (S3) (LRR K, L, R) Polyvalue Below Surface (S8) (LRR K, L)
	Layers (A5)	•	Loamy Mucky				Thin Dark Surface (S9) (LRR K, L)
	Below Dark Surface	(Δ11)	Loamy Gleyed			ι κ , ι	Iron-Manganese Masses (F12) (LRR K, L, R)
	rk Surface (A12)	(Δ11)	Depleted Matri		2)		Piedmont Floodplain Soils (F19) (MLRA 149B
	ucky Mineral (S1)		Redox Dark Su		6)		Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
	leyed Matrix (S4)	•	Depleted Dark				Red Parent Material (F21)
	edox (S5)	•	Redox Depres				Very Shallow Dark Surface (F22)
	Matrix (S6)	•	 Marl (F10) (LR		,		Other (Explain in Remarks)
Dark Sur	face (S7)	•					_
³ Indicators of	hydrophytic vegetati	on and we	tland hydrology mu	ist be pre	esent, unl	ess distu	urbed or problematic.
Restrictive L	ayer (if observed):						
Type:							
Depth (in	ches):						Hydric Soil Present? Yes No X
Remarks:							
							2.0 to include the NRCS Field Indicators of Hydric Soils,
	2015 Errata. (http://w	ww.nrcs.u	sda.gov/Internet/FS	SE_DOC	UMENTS	/nrcs142	2p2_051293.docx)
Tiyunc sons a	re not present.						