

**Table C-1: Crowned Ridge II 200 MW Shadow Flicker Tabular Results Sorted by Receptor ID**  
**Realistic case shadow results at occupied structures**  
**Results using GE 2.3-116-90 m HH, GE 2.1-116-80 m HH WTG's**  
**UTM NAD83 Zone 14**  
**Codington County**

Receptor ID	Participation Status	Easting (m)	Northing (m)	Elevation AMSL (m)	Real Case Shadow (hrs/year)	7/9/19 App. J Report Real Case Results	Distance to Nearest Turbine (ft)
CR2-C1-NP	Non-P	662,198.00	4,980,622.00	591.0	3:51	3:51	1,909
CR2-C2-NP	Non-P	662,238.00	4,980,604.00	590.9	1:03	1:03	1,880
CR1-C4-NP	Non-P	659,744.00	4,984,749.00	606.0	0:00	0:00	5,981
CR1-C5-NP	Non-P	659,958.00	4,984,794.00	604.8	0:00	0:00	5,659
CR1-C7-NP	Non-P	660,893.00	4,984,861.00	593.2	0:00	0:00	3,022
CR2-C7-NP	Non-P	665,694.00	4,966,179.00	570.0	0:00	0:00	4,409
CR1-C8-P	Participant	660,532.00	4,984,445.00	599.4	0:00	0:00	3,740
CR1-C9-NP	Non-P	665,352.00	4,985,004.00	609.0	18:08	18:08	2,280
CR2-C10-NP	Non-P	665,189.00	4,966,505.00	570.0	0:00	0:00	2,438
CR1-C10-P	Participant	663,510.00	4,985,195.00	609.0	12:25	38:22	2,346
CR1-C11-P	Participant	664,111.00	4,985,679.00	609.0	7:36	10:27	1,860
CR1-C12-NP	Non-P	662,222.00	4,985,736.00	603.0	10:53	17:08	2,201
CR1-C12-1-NP	Non-P	662,199.00	4,986,047.00	606.0	1:28	10:34	2,818
CR1-C13-NP	Non-P	663,792.00	4,985,785.00	612.0	12:30	18:16	2,589
CR1-C15-NP	Non-P	663,291.00	4,986,026.00	615.0	2:16	2:20	3,907
CR2-C16-NP	Non-P	665,418.00	4,966,866.00	567.0	7:30	7:29	2,756
CR1-C16-NP	Non-P	661,960.00	4,986,288.00	606.0	2:19	6:17	2,648
CR1-C18-P	Participant	663,651.00	4,987,157.00	610.4	5:58	5:58	3,409
CR1-C20-P	Participant	663,054.00	4,987,455.00	606.0	14:38	14:37	2,336
CR1-C21-P	Participant	660,756.00	4,984,086.00	594.0	1:00	1:00	2,388
CR2-C22-NP	Non-P	661,202.00	4,972,711.00	597.0	0:00	0:00	6,247
CR1-C22-P	Participant	660,755.00	4,984,082.00	594.0	1:01	1:01	2,375
CR2-C23-NP	Non-P	664,069.00	4,969,661.00	594.0	0:58	0:58	4,439
CR1-C23-P	Participant	660,619.00	4,984,078.00	595.8	0:00	0:00	2,523
CR1-C24-NP	Non-P	660,176.00	4,983,887.00	601.1	7:45	7:45	3,038
CR2-C24-NP	Non-P	661,541.00	4,969,653.00	600.0	3:21	3:21	3,809
CR1-C25-P	Participant	660,189.79	4,983,788.29	602.3	6:43	6:43	2,838
CR2-C26-P	Participant	664,733.00	4,968,915.00	591.0	6:09	6:09	1,959
CR2-C27-P	Participant	662,985.00	4,968,167.00	582.0	18:06	18:06	1,726
CR1-C28-NP	Non-P	665,429.00	4,988,598.00	590.9	2:43	2:43	2,831
CR2-C28-P	Participant	659,208.00	4,968,159.00	572.8	0:00	0:00	5,630
CR1-C29-NP	Non-P	666,572.00	4,988,867.00	575.9	6:54	*	2,457
CR2-C29-NP	Non-P	661,223.00	4,968,144.00	595.2	0:00	0:00	4,639
CR2-C30-NP	Non-P	659,100.00	4,968,023.00	568.6	0:00	0:00	5,502
CR2-C32-P	Participant	659,469.00	4,967,984.00	575.2	0:00	0:00	4,678
CR2-C33-P	Participant	663,878.00	4,967,612.00	576.1	2:28	2:28	2,999
CR2-C34-P	Participant	663,934.00	4,966,991.00	570.1	14:11	14:11	2,133
CR2-C35-NP	Non-P	658,964.00	4,974,334.00	566.8	0:00	0:00	4,432
CR2-C36-NP	Non-P	660,475.00	4,974,426.00	578.6	8:20	8:20	2,992

\* Not included in original submittal

Table C-1: Crowned Ridge II 200 MW Shadow Flicker Tabular Results Sorted by Receptor ID

Realistic case shadow results at occupied structures

Results using GE 2.3-116-90 m HH, GE 2.1-116-80 m HH WTG's

UTM NAD83 Zone 14

Codrington County

*continued*

Receptor ID	Participation Status	Easting (m)	Northing (m)	Elevation AMSL (m)	Real Case Shadow (hrs/year)	7/9/19 App. J Report Real Case Results	Distance to Nearest Turbine (ft)
CR2-C37-NP	Non-P	663,037.00	4,974,496.00	606.0	9:34	9:34	3,537
CR2-C38-NP	Non-P	660,874.00	4,966,929.00	585.5	25:57	25:57	1,906
CR2-C39-NP	Non-P	664,089.00	4,966,486.00	566.2	2:27	2:27	2,178
CR2-C40-NP	Non-P	659,189.00	4,974,765.00	578.3	1:38	1:33	2,841
CR2-C41-P	Participant	660,770.00	4,975,147.00	596.4	17:22	17:22	1,532
CR2-C42-NP	Non-P	664,887.00	4,975,388.00	597.0	12:14	12:14	3,566
CR2-C43-NP	Non-P	664,382.00	4,975,544.00	597.0	1:42	1:42	4,232
CR2-C44-NP	Non-P	659,145.00	4,966,062.00	561.4	0:43	0:43	4,183
CR2-C45-P	Participant	664,058.00	4,965,862.00	570.0	4:12	4:12	3,907
CR2-C46-NP	Non-P	660,435.00	4,965,627.00	582.0	12:08	12:00	2,569
CR2-C47-NP	Non-P	662,200.00	4,975,837.00	594.5	9:41	7:58	2,821
CR2-C48-NP	Non-P	662,370.00	4,965,588.00	590.3	19:13	19:14	2,172
CR2-C49-NP	Non-P	660,907.00	4,964,846.00	582.0	6:36	6:36	3,271
CR2-C50-P	Participant	661,252.00	4,976,035.00	597.0	19:23	4:27	1,696
CR2-C51-NP	Non-P	662,977.00	4,964,794.00	584.0	4:41	4:41	3,934
CR2-C52-NP	Non-P	662,688.00	4,964,792.00	585.9	14:32	14:32	3,054
CR2-C53-NP	Non-P	662,401.00	4,964,782.00	582.0	0:00	0:00	2,257
CR2-C54-NP	Non-P	662,636.00	4,976,079.00	597.0	12:36	12:36	2,287
CR2-C55-NP	Non-P	660,765.00	4,964,777.00	582.0	4:36	4:36	3,655
CR2-C56-NP	Non-P	660,759.00	4,964,737.00	582.0	4:54	4:54	3,786
CR2-C57-P	Participant	666,667.00	4,976,162.00	613.8	5:03	5:03	2,362
CR2-C58-NP	Non-P	660,764.00	4,964,686.00	582.0	5:51	5:51	3,904
CR2-C59-P	Participant	664,952.00	4,976,698.00	601.9	4:30	4:30	1,654
CR2-C60-P	Participant	662,287.00	4,976,800.00	594.0	13:54	13:54	3,793
CR2-C61-NP	Non-P	660,630.00	4,976,840.00	582.5	12:08	12:08	1,667
CR2-C62-NP	Non-P	666,992.00	4,977,048.00	615.0	16:54	16:54	1,860
CR2-C63-P	Participant	665,528.00	4,977,285.00	612.0	14:41	14:41	2,185
CR2-C64-NP	Non-P	660,901.00	4,964,220.00	582.0	0:00	0:00	4,429
CR2-C65-NP	Non-P	665,217.00	4,977,746.00	609.0	7:16	7:16	2,139
CR1-C66-NP	Non-P	659,718.00	4,985,032.00	606.0	0:00	0:00	5,800
CR2-C66-NP	Non-P	662,396.00	4,963,954.00	582.0	0:00	0:00	4,429
CR1-C67-NP	Non-P	659,789.00	4,985,057.00	606.0	0:00	0:00	5,791
CR2-C67-NP	Non-P	660,379.00	4,978,592.00	556.1	0:00	0:00	5,033
CR2-C68-NP	Non-P	662,517.00	4,963,408.00	579.0	0:00	0:00	6,237
CR2-C69-NP	Non-P	661,701.00	4,978,792.00	564.0	0:00	0:00	5,171
CR1-C70-NP	Non-P	665,135.00	4,988,293.00	595.9	12:01	12:01	3,540
CR2-C70-P	Participant	665,521.00	4,970,518.00	588.9	11:52	13:57	2,215
CR2-C71-NP	Non-P	665,411.00	4,970,503.00	586.1	8:28	10:14	2,529

\* Not included in original submittal

Table C-1: Crowned Ridge II 200 MW Shadow Flicker Tabular Results Sorted by Receptor ID

Realistic case shadow results at occupied structures

Results using GE 2.3-116-90 m HH, GE 2.1-116-80 m HH WTG's

UTM NAD83 Zone 14

Codrington County

*continued*

Receptor ID	Participation Status	Easting (m)	Northing (m)	Elevation AMSL (m)	Real Case Shadow (hrs/year)	7/9/19 App. J Report Real Case Results	Distance to Nearest Turbine (ft)
CR1-C71-NP	Non-P	665,137.00	4,988,378.00	595.6	7:23	7:23	3,448
CR1-C72-NP	Non-P	665,158.00	4,988,170.00	594.6	7:39	7:39	3,776
CR2-C72-NP	Non-P	663,856.00	4,970,488.00	597.0	0:00	0:00	6,135
CR1-C73-NP	Non-P	663,066.00	4,982,530.00	591.0	6:57	6:57	3,704
CR1-C74-NP	Non-P	662,869.00	4,983,122.00	595.7	2:34	2:34	2,480
CR2-C75-NP	Non-P	664,866.00	4,969,808.00	583.7	5:05	5:05	4,396
CR1-C75-NP	Non-P	663,010.00	4,982,658.00	588.0	4:25	4:25	3,730
CR1-C76-NP	Non-P	662,981.00	4,982,580.00	588.3	5:26	5:26	3,901
CR2-C76-NP	Non-P	664,747.00	4,969,738.00	584.8	3:53	3:53	4,560
CR2-C77-NP	Non-P	663,865.00	4,969,694.00	597.0	1:28	1:28	4,406
CR1-C77-P	Participant	661,915.00	4,983,367.00	591.0	12:12	12:12	1,654
CR2-C78-P	Participant	665,273.00	4,983,933.00	609.0	25:17	25:17	1,919
CR1-C78-P	Participant	660,190.00	4,983,788.00	602.3	6:43	6:43	2,835
CR1-C79-NP	Non-P	660,452.00	4,983,750.00	595.9	22:38	22:37	2,037
CR2-C79-NP	Non-P	666,869.00	4,984,663.00	587.9	0:00	0:00	2,703
CR1-C80-NP	Non-P	659,351.00	4,983,174.00	604.4	0:40	0:40	5,308
CR1-C81-NP	Non-P	660,062.00	4,983,083.00	597.0	6:15	6:15	3,094
CR1-C84-NP	Non-P	659,607.00	4,982,216.00	594.0	0:00	0:00	5,856
CR1-C85-NP	Non-P	659,706.00	4,981,419.00	588.0	1:22	1:22	4,819
CR1-C86-P	Participant	662,086.00	4,982,135.00	585.0	16:51	16:51	2,306
CR1-C87-NP	Non-P	662,628.00	4,982,425.00	585.4	4:09	4:09	4,258
CR1-C88-NP	Non-P	660,156.00	4,980,595.00	570.9	0:00	0:00	4,045
CR2-C89-NP	Non-P	662,244.00	4,971,076.00	603.0	0:00	0:00	6,489
CR1-C89-P	Participant	662,062.00	4,982,029.00	584.3	21:39	21:39	2,165
CR2-C91-NP	Non-P	663,938.00	4,970,546.00	597.0	0:00	0:00	6,457
CR2-C92-NP	Non-P	663,855.00	4,970,535.00	597.0	0:00	0:00	6,247
CR2-C95-NP	Non-P	659,248.00	4,974,054.00	567.0	0:00	0:00	4,898
CR2-C96-NP	Non-P	659,316.00	4,974,063.00	570.6	0:00	0:00	4,813
CR2-C97-NP	Non-P	660,093.00	4,976,001.00	583.8	29:21	21:50	1,814
CR2-C98-NP	Non-P	660,155.00	4,976,007.00	582.8	32:23	23:19	1,749
CR2-C101-NP	Non-P	660,732.00	4,972,807.00	591.0	0:00	0:00	6,266
CR2-C102-NP	Non-P	662,025.00	4,976,085.00	594.1	8:29	6:09	3,609
CR2-C103-NP	Non-P	662,046.00	4,976,067.00	594.8	8:17	6:06	3,547
CR2-C105-NP	Non-P	662,122.00	4,976,029.00	595.3	7:46	5:58	3,425
CR2-C107-NP	Non-P	662,265.00	4,978,194.00	577.7	4:21	4:21	4,564
CR2-C115-NP	Non-P	663,555.00	4,980,564.00	575.2	8:18	8:18	2,520
CR2-C116-NP	Non-P	664,640.00	4,976,142.00	591.1	4:50	4:50	3,533
CR2-C117-NP	Non-P	664,742.00	4,976,142.00	594.2	4:53	4:53	3,481

\* Not included in original submittal



Table C-1: Crowned Ridge II 200 MW Shadow Flicker Tabular Results Sorted by Receptor ID

Realistic case shadow results at occupied structures

Results using GE 2.3-116-90 m HH, GE 2.1-116-80 m HH WTG's

UTM NAD83 Zone 14

Deuel County

continued

Receptor ID	Participation Status	Easting (m)	Northing (m)	Elevation AMSL (m)	Real Case Shadow (hrs/year)	7/9/19 App. J Report Real Case Results	Distance to Nearest Turbine (ft)
CR2-D3-NP	Non-P	672,390.00	4,963,482.00	612.0	0:00	6:47	18,746
CR2-D5-NP	Non-P	668,781.00	4,964,897.00	603.0	0:00	2:14	7,342
CR2-D6-P	Participant	668,762.00	4,967,671.00	591.0	3:35	17:16	2,844
CR2-D9-NP	Non-P	668,597.00	4,971,999.00	611.5	0:00	0:00	4,921
CR2-D11-NP	Non-P	669,646.00	4,974,534.00	604.4	21:54	5:51	1,919
CR2-D12-NP	Non-P	668,558.00	4,969,840.00	604.7	18:07	18:07	2,051
CR2-D14-NP	Non-P	670,351.11	4,973,543.31	606.0	11:51	14:04	2,041
CR2-D15-NP	Non-P	674,387.00	4,968,515.00	588.0	0:00	24:00	12,474
CR2-D16-P	Participant	671,626.00	4,966,693.00	601.7	0:00	5:21	8,005
CR2-D17-NP	Non-P	672,023.00	4,969,597.00	597.0	1:06	13:44	5,167
CR2-D18-NP	Non-P	671,540.00	4,976,154.00	582.0	22:04	22:04	2,201
CR2-D19-NP	Non-P	668,870.00	4,964,178.00	606.0	0:00	13:59	9,600
CR2-D20-NP	Non-P	675,261.00	4,968,400.00	579.0	0:00	3:00	15,364
CR2-D21-NP	Non-P	669,517.00	4,978,053.00	596.1	28:59	28:59	1,985
CR2-D22-NP	Non-P	668,798.00	4,963,767.00	603.1	0:00	14:20	10,777
CR2-D23-NP	Non-P	669,671.00	4,980,468.00	573.0	0:00	0:00	4,380
CR2-D30-NP	Non-P	669,549.00	4,974,233.00	611.9	17:10	6:03	2,044
CR2-D36-NP	Non-P	669,812.00	4,966,746.00	591.0	0:00	2:59	6,837
CR2-D37-NP	Non-P	674,048.00	4,974,071.00	573.0	0:00	0:00	6,542
CR2-D38-P	Participant	667,108.00	4,982,083.00	597.0	5:20	9:01	1,693
CR2-D39-P	Participant	668,443.00	4,974,627.00	614.4	18:50	18:50	1,706
CR2-D41-NP	Non-P	670,437.00	4,966,409.00	597.0	0:00	2:06	8,225
CR2-D44-NP	Non-P	670,434.00	4,965,956.00	593.8	0:00	20:58	9,363
CR2-D45-NP	Non-P	668,018.00	4,976,064.00	611.5	0:55	0:55	4,393
CR2-D46-NP	Non-P	669,797.00	4,966,804.00	591.0	0:00	1:23	6,778
CR2-D48-NP	Non-P	668,923.00	4,972,998.00	609.0	0:00	0:00	2,680
CR2-D49-P	Participant	672,024.00	4,974,135.00	583.2	8:42	8:42	3,537
CR2-D50-P	Participant	672,015.00	4,967,209.00	602.8	0:00	24:57	7,247
CR2-D51-NP	Non-P	675,005.00	4,970,131.00	577.8	0:00	8:27	14,977
CR2-D52-NP	Non-P	667,172.00	4,971,776.00	606.0	0:00	0:00	4,583
CR2-D53-P	Participant	670,392.00	4,975,925.00	592.8	27:37	27:36	1,801
CR2-D54-NP	Non-P	672,012.00	4,966,477.00	600.0	0:00	5:15	9,219
CR2-D56-P	Participant	667,119.00	4,977,925.00	612.0	5:18	8:47	2,110
CR2-D62-NP	Non-P	669,355.00	4,974,624.00	609.0	10:56	5:02	2,913
CR2-D63-NP	Non-P	670,546.00	4,961,419.00	615.0	0:00	0:00	20,138
CR2-D64-P	Participant	669,417.00	4,978,434.00	588.0	14:03	14:01	2,425
CR2-D65-NP	Non-P	670,422.00	4,966,654.00	597.0	0:00	5:26	7,424
CR2-D71-NP	Non-P	669,402.00	4,979,216.00	588.0	18:30	18:11	1,975

\* Not included in original submittal

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Realistic case shadow results at occupied structures

Results using GE 2.3-116-90 m HH, GE 2.1-116-80 m HH WTG's

UTM NAD83 Zone 14

Deuel County

*continued*

Receptor ID	Participation Status	Easting (m)	Northing (m)	Elevation AMSL (m)	Real Case Shadow (hrs/year)	7/9/19 App. J Report Real Case Results	Distance to Nearest Turbine (ft)
CR2-D72-NP	Non-P	671,925.00	4,970,149.00	603.0	0:00	0:00	5,938
CR2-D73-NP	Non-P	672,072.00	4,971,556.00	600.0	0:00	0:00	7,405
CR2-D74-NP	Non-P	668,130.00	4,976,068.00	609.2	0:00	0:00	4,505
CR2-D75-NP	Non-P	669,473.00	4,981,625.00	570.0	0:00	0:00	7,319
CR2-D77-NP	Non-P	672,044.00	4,966,468.00	600.0	0:00	5:58	9,298
CR2-D79-NP	Non-P	672,172.00	4,974,737.00	585.0	2:16	2:16	1,955
CR2-D82-NP	Non-P	669,855.00	4,970,718.00	603.0	0:00	0:00	5,935
CR2-D83-NP	Non-P	675,891.00	4,966,810.00	579.0	0:00	12:25	18,658
CR2-D84-NP	Non-P	667,159.00	4,972,169.00	598.2	0:00	0:00	5,535
CR2-D85-NP	Non-P	669,593.00	4,976,302.00	603.0	4:36	4:36	1,949
CR2-D86-NP	Non-P	673,842.00	4,966,875.00	597.0	0:00	12:06	12,542
CR2-D90-NP	Non-P	670,516.00	4,962,327.00	612.0	0:00	7:36	17,493
CR2-D91-NP	Non-P	667,546.00	4,976,173.00	618.0	2:59	2:59	4,203
CR2-D92-NP	Non-P	671,159.00	4,971,610.00	597.2	0:00	0:00	6,319
CR2-D95-NP	Non-P	671,994.00	4,971,562.00	600.0	0:00	0:00	7,264
CR2-D96-NP	Non-P	672,899.00	4,971,469.00	594.0	0:00	0:00	9,249
CR2-D97-NP	Non-P	667,164.00	4,972,232.00	600.0	0:00	0:00	5,371
CR2-D98-P	Participant	669,757.00	4,972,426.00	606.0	0:00	0:00	5,381
CR2-D99-NP	Non-P	668,148.00	4,976,230.00	608.8	0:00	0:00	4,331
CR2-D100-NP	Non-P	668,589.00	4,972,064.00	609.9	0:00	0:00	4,708
CR2-D101-NP	Non-P	672,538.00	4,961,910.00	612.8	0:00	5:29	22,667
CR2-D103-NP	Non-P	670,588.00	4,961,119.00	615.0	0:00	0:00	21,079
CR2-D104-NP	Non-P	670,443.00	4,961,600.00	613.8	0:00	5:06	19,455
CR2-D105-NP	Non-P	670,348.00	4,963,826.00	611.7	0:00	17:56	13,179
CR2-D106-NP	Non-P	667,315.00	4,965,297.00	594.0	0:00	0:00	5,351
CR2-D107-NP	Non-P	670,405.00	4,966,321.00	597.0	0:00	2:27	8,520
CR2-D108-NP	Non-P	670,354.00	4,965,949.00	594.0	0:00	23:04	9,121
CR2-D109-NP	Non-P	676,885.00	4,965,806.00	576.0	0:00	4:51	22,979
CR2-D110-NP	Non-P	670,260.25	4,967,728.02	597.0	0:00	3:14	4,042
CR2-D111-P	Participant	671,876.00	4,969,006.00	600.0	2:01	29:32	4,180
CR2-D112-NP	Non-P	667,666.00	4,971,554.00	604.6	0:00	0:00	3,553
CR2-D113-NP	Non-P	667,774.00	4,971,544.00	606.9	0:00	0:00	3,537
CR2-D115-P	Participant	670,974.00	4,969,938.00	606.0	2:04	2:04	3,583
CR2-D116-NP	Non-P	673,491.00	4,972,398.00	577.8	0:00	0:00	9,055
CR2-D119-P	Participant	673,378.00	4,965,126.00	602.6	0:00	16:30	15,390
CR2-D120-NP	Non-P	673,401.00	4,964,165.00	609.0	0:00	2:19	18,067
CR2-D121-NP	Non-P	674,461.00	4,966,734.00	594.0	0:00	12:06	14,524
CR2-D122-P	Participant	673,601.00	4,967,341.00	594.0	0:00	18:17	11,092

\* Not included in original submittal







**Table C-2: Crowned Ridge II 200 MW Shadow Flicker Tabular Results Sorted by Real Case Shadow Flicker Hours/Year**  
**Realistic case shadow results at occupied structures**  
**Results using GE 2.3-116-90 m HH, GE 2.1-116-80 m HH WTG's**  
**UTM NAD83 Zone 14**  
**Codington County**

Receptor ID	Participation Status	Easting (m)	Northing (m)	Elevation AMSL (m)	Real Case Shadow (hrs/year)	7/9/19 App. J Report Real Case Results	Distance to Nearest Turbine (ft)
CR2-C98-NP	Non-P	660,155.00	4,976,007.00	582.8	32:23	23:19	1,749
CR2-C97-NP	Non-P	660,093.00	4,976,001.00	583.8	29:21	21:50	1,814
CR2-C38-NP	Non-P	660,874.00	4,966,929.00	585.5	25:57	25:57	1,906
CR1-C79-NP	Non-P	660,452.00	4,983,750.00	595.9	22:38	22:37	2,037
CR2-C48-NP	Non-P	662,370.00	4,965,588.00	590.3	19:13	19:14	2,172
CR1-C9-NP	Non-P	665,352.00	4,985,004.00	609.0	18:08	18:08	2,280
CR2-C62-NP	Non-P	666,992.00	4,977,048.00	615.0	16:54	16:54	1,860
CR2-C52-NP	Non-P	662,688.00	4,964,792.00	585.9	14:32	14:32	3,054
CR2-C54-NP	Non-P	662,636.00	4,976,079.00	597.0	12:36	12:36	2,287
CR1-C13-NP	Non-P	663,792.00	4,985,785.00	612.0	12:30	18:16	2,589
CR2-C42-NP	Non-P	664,887.00	4,975,388.00	597.0	12:14	12:14	3,566
CR2-C46-NP	Non-P	660,435.00	4,965,627.00	582.0	12:08	12:00	2,569
CR2-C61-NP	Non-P	660,630.00	4,976,840.00	582.5	12:08	12:08	1,667
CR1-C70-NP	Non-P	665,135.00	4,988,293.00	595.9	12:01	12:01	3,540
CR1-C12-NP	Non-P	662,222.00	4,985,736.00	603.0	10:53	17:08	2,201
CR2-C131-NP	Non-P	666,732.00	4,984,987.00	591.0	10:06	10:06	2,287
CR2-C47-NP	Non-P	662,200.00	4,975,837.00	594.5	9:41	7:58	2,821
CR2-C37-NP	Non-P	663,037.00	4,974,496.00	606.0	9:34	9:34	3,537
CR2-C102-NP	Non-P	662,025.00	4,976,085.00	594.1	8:29	6:09	3,609
CR2-C71-NP	Non-P	665,411.00	4,970,503.00	586.1	8:28	10:14	2,529
CR2-C36-NP	Non-P	660,475.00	4,974,426.00	578.6	8:20	8:20	2,992
CR2-C115-NP	Non-P	663,555.00	4,980,564.00	575.2	8:18	8:18	2,520
CR2-C103-NP	Non-P	662,046.00	4,976,067.00	594.8	8:17	6:06	3,547
CR2-C105-NP	Non-P	662,122.00	4,976,029.00	595.3	7:46	5:58	3,425
CR1-C24-NP	Non-P	660,176.00	4,983,887.00	601.1	7:45	7:45	3,038
CR1-C72-NP	Non-P	665,158.00	4,988,170.00	594.6	7:39	7:39	3,776
CR2-C16-NP	Non-P	665,418.00	4,966,866.00	567.0	7:30	7:29	2,756
CR1-C71-NP	Non-P	665,137.00	4,988,378.00	595.6	7:23	7:23	3,448
CR2-C65-NP	Non-P	665,217.00	4,977,746.00	609.0	7:16	7:16	2,139
CR1-C73-NP	Non-P	663,066.00	4,982,530.00	591.0	6:57	6:57	3,704
CR1-C29-NP	Non-P	666,572.00	4,988,867.00	575.9	6:54	*	2,457
CR2-C49-NP	Non-P	660,907.00	4,964,846.00	582.0	6:36	6:36	3,271
CR1-C81-NP	Non-P	660,062.00	4,983,083.00	597.0	6:15	6:15	3,094
CR2-C58-NP	Non-P	660,764.00	4,964,686.00	582.0	5:51	5:51	3,904
CR1-C76-NP	Non-P	662,981.00	4,982,580.00	588.3	5:26	5:26	3,901
CR2-C75-NP	Non-P	664,866.00	4,969,808.00	583.7	5:05	5:05	4,396
CR2-C56-NP	Non-P	660,759.00	4,964,737.00	582.0	4:54	4:54	3,786
CR2-C117-NP	Non-P	664,742.00	4,976,142.00	594.2	4:53	4:53	3,481
CR2-C116-NP	Non-P	664,640.00	4,976,142.00	591.1	4:50	4:50	3,533

\* Not included in original submittal

**Table C-2: Crowned Ridge II 200 MW Shadow Flicker Tabular Results Sorted by Real Case Shadow Flicker Hours/Year**  
**Realistic case shadow results at occupied structures**  
**Results using GE 2.3-116-90 m HH, GE 2.1-116-80 m HH WTG's**  
**UTM NAD83 Zone 14**  
**Codington County**  
*continued*

Receptor ID	Participation Status	Easting (m)	Northing (m)	Elevation AMSL (m)	Real Case Shadow (hrs/year)	7/9/19 App. J Report Real Case Results	Distance to Nearest Turbine (ft)
CR2-C51-NP	Non-P	662,977.00	4,964,794.00	584.0	4:41	4:41	3,934
CR2-C55-NP	Non-P	660,765.00	4,964,777.00	582.0	4:36	4:36	3,655
CR1-C75-NP	Non-P	663,010.00	4,982,658.00	588.0	4:25	4:25	3,730
CR2-C107-NP	Non-P	662,265.00	4,978,194.00	577.7	4:21	4:21	4,564
CR1-C87-NP	Non-P	662,628.00	4,982,425.00	585.4	4:09	4:09	4,258
CR2-C76-NP	Non-P	664,747.00	4,969,738.00	584.8	3:53	3:53	4,560
CR2-C1-NP	Non-P	662,198.00	4,980,622.00	591.0	3:51	3:51	1,909
CR2-C134-NP	Non-P	667,097.00	4,973,011.00	613.0	3:42	3:42	3,363
CR2-C24-NP	Non-P	661,541.00	4,969,653.00	600.0	3:21	3:21	3,809
CR1-C28-NP	Non-P	665,429.00	4,988,598.00	590.9	2:43	2:43	2,831
CR1-C74-NP	Non-P	662,869.00	4,983,122.00	595.7	2:34	2:34	2,480
CR2-C39-NP	Non-P	664,089.00	4,966,486.00	566.2	2:27	2:27	2,178
CR1-C16-NP	Non-P	661,960.00	4,986,288.00	606.0	2:19	6:17	2,648
CR1-C15-NP	Non-P	663,291.00	4,986,026.00	615.0	2:16	2:20	3,907
CR2-C119-NP	Non-P	665,052.00	4,974,682.00	600.0	2:06	2:06	4,760
CR2-C118-NP	Non-P	665,014.00	4,974,639.00	600.0	1:57	1:57	4,947
CR2-C132-NP	Non-P	666,857.00	4,985,021.00	588.2	1:47	1:47	1,883
CR2-C43-NP	Non-P	664,382.00	4,975,544.00	597.0	1:42	1:42	4,232
CR2-C40-NP	Non-P	659,189.00	4,974,765.00	578.3	1:38	1:33	2,841
CR1-C12-1-NP	Non-P	662,199.00	4,986,047.00	606.0	1:28	10:34	2,818
CR2-C77-NP	Non-P	663,865.00	4,969,694.00	597.0	1:28	1:28	4,406
CR1-C85-NP	Non-P	659,706.00	4,981,419.00	588.0	1:22	1:22	4,819
CR2-C2-NP	Non-P	662,238.00	4,980,604.00	590.9	1:03	1:03	1,880
CR2-C23-NP	Non-P	664,069.00	4,969,661.00	594.0	0:58	0:58	4,439
CR2-C44-NP	Non-P	659,145.00	4,966,062.00	561.4	0:43	0:43	4,183
CR1-C80-NP	Non-P	659,351.00	4,983,174.00	604.4	0:40	0:40	5,308
CR2-C137-NP	Non-P	658,951.00	4,979,194.00	568.2	0:00	0:00	6,555
CR1-C4-NP	Non-P	659,744.00	4,984,749.00	606.0	0:00	0:00	5,981
CR1-C5-NP	Non-P	659,958.00	4,984,794.00	604.8	0:00	0:00	5,659
CR1-C66-NP	Non-P	659,718.00	4,985,032.00	606.0	0:00	0:00	5,800
CR1-C67-NP	Non-P	659,789.00	4,985,057.00	606.0	0:00	0:00	5,791
CR1-C7-NP	Non-P	660,893.00	4,984,861.00	593.2	0:00	0:00	3,022
CR1-C84-NP	Non-P	659,607.00	4,982,216.00	594.0	0:00	0:00	5,856
CR1-C88-NP	Non-P	660,156.00	4,980,595.00	570.9	0:00	0:00	4,045
CR2-C101-NP	Non-P	660,732.00	4,972,807.00	591.0	0:00	0:00	6,266
CR2-C10-NP	Non-P	665,189.00	4,966,505.00	570.0	0:00	0:00	2,438

\* Not included in original submittal

**Table C-2: Crowned Ridge II 200 MW Shadow Flicker Tabular Results Sorted by Real Case Shadow Flicker Hours/Year**  
**Realistic case shadow results at occupied structures**  
**Results using GE 2.3-116-90 m HH, GE 2.1-116-80 m HH WTG's**  
**UTM NAD83 Zone 14**  
**Codington County**  
*continued*

Receptor ID	Participation Status	Easting (m)	Northing (m)	Elevation AMSL (m)	Real Case Shadow (hrs/year)	7/9/19 App. J Report Real Case Results	Distance to Nearest Turbine (ft)
CR2-C135-NP	Non-P	667,172.00	4,966,196.00	595.2	0:00	0:00	2,884
CR2-C136-NP	Non-P	667,209.00	4,966,166.00	595.4	0:00	0:00	2,887
CR2-C29-NP	Non-P	661,223.00	4,968,144.00	595.2	0:00	0:00	4,639
CR2-C30-NP	Non-P	659,100.00	4,968,023.00	568.6	0:00	0:00	5,502
CR2-C35-NP	Non-P	658,964.00	4,974,334.00	566.8	0:00	0:00	4,432
CR2-C53-NP	Non-P	662,401.00	4,964,782.00	582.0	0:00	0:00	2,257
CR2-C64-NP	Non-P	660,901.00	4,964,220.00	582.0	0:00	0:00	4,429
CR2-C66-NP	Non-P	662,396.00	4,963,954.00	582.0	0:00	0:00	4,429
CR2-C67-NP	Non-P	660,379.00	4,978,592.00	556.1	0:00	0:00	5,033
CR2-C68-NP	Non-P	662,517.00	4,963,408.00	579.0	0:00	0:00	6,237
CR2-C69-NP	Non-P	661,701.00	4,978,792.00	564.0	0:00	0:00	5,171
CR2-C72-NP	Non-P	663,856.00	4,970,488.00	597.0	0:00	0:00	6,135
CR2-C79-NP	Non-P	666,869.00	4,984,663.00	587.9	0:00	0:00	2,703
CR2-C7-NP	Non-P	665,694.00	4,966,179.00	570.0	0:00	0:00	4,409
CR2-C89-NP	Non-P	662,244.00	4,971,076.00	603.0	0:00	0:00	6,489
CR2-C91-NP	Non-P	663,938.00	4,970,546.00	597.0	0:00	0:00	6,457
CR2-C92-NP	Non-P	663,855.00	4,970,535.00	597.0	0:00	0:00	6,247
CR2-C95-NP	Non-P	659,248.00	4,974,054.00	567.0	0:00	0:00	4,898
CR2-C96-NP	Non-P	659,316.00	4,974,063.00	570.6	0:00	0:00	4,813
CR2-C22-NP	Non-P	661,202.00	4,972,711.00	597.0	0:00	0:00	6,247
CR2-C155-NP	Non-P	657,554.63	4,975,127.34	554.6	0:00	*	7,034
CR2-C154-P	Participant	660,684.34	4,967,166.18	588.0	30:00	30:00	2,041
CR2-C78-P	Participant	665,273.00	4,983,933.00	609.0	25:17	25:17	1,919
CR1-C89-P	Participant	662,062.00	4,982,029.00	584.3	21:39	21:39	2,165
CR2-C50-P	Participant	661,252.00	4,976,035.00	597.0	19:23	4:27	1,696
CR2-C27-P	Participant	662,985.00	4,968,167.00	582.0	18:06	18:06	1,726
CR2-C41-P	Participant	660,770.00	4,975,147.00	596.4	17:22	17:22	1,532
CR1-C86-P	Participant	662,086.00	4,982,135.00	585.0	16:51	16:51	2,306
CR2-C63-P	Participant	665,528.00	4,977,285.00	612.0	14:41	14:41	2,185
CR1-C20-P	Participant	663,054.00	4,987,455.00	606.0	14:38	14:37	2,336
CR2-C34-P	Participant	663,934.00	4,966,991.00	570.1	14:11	14:11	2,133
CR2-C60-P	Participant	662,287.00	4,976,800.00	594.0	13:54	13:54	3,793
CR1-C10-P	Participant	663,510.00	4,985,195.00	609.0	12:25	38:22	2,346
CR1-C77-P	Participant	661,915.00	4,983,367.00	591.0	12:12	12:12	1,654
CR2-C70-P	Participant	665,521.00	4,970,518.00	588.9	11:52	13:57	2,215
CR1-C11-P	Participant	664,111.00	4,985,679.00	609.0	7:36	10:27	1,860
CR1-C78-P	Participant	660,190.00	4,983,788.00	602.3	6:43	6:43	2,835
CR1-C25-P	Participant	660,189.79	4,983,788.29	602.3	6:43	6:43	2,838

\* Not included in original submittal



**Table C-2: Crowned Ridge II 200 MW Shadow Flicker Tabular Results Sorted by Real Case Shadow Flicker Hours/Year**  
**Realistic case shadow results at occupied structures**  
**Results using GE 2.3-116-90 m HH, GE 2.1-116-80 m HH WTG's**  
**UTM NAD83 Zone 14**  
**Deuel County**  
**continued**

Receptor ID	Participation Status	Easting (m)	Northing (m)	Elevation AMSL (m)	Real Case Shadow (hrs/year)	7/9/19 App. J Report Real Case Results	Distance to Nearest Turbine (ft)
CR2-D21-NP	Non-P	669,517.00	4,978,053.00	596.1	28:59	28:59	1,985
CR2-D18-NP	Non-P	671,540.00	4,976,154.00	582.0	22:04	22:04	2,201
CR2-D11-NP	Non-P	669,646.00	4,974,534.00	604.4	21:54	5:51	1,919
CR2-D71-NP	Non-P	669,402.00	4,979,216.00	588.0	18:30	18:11	1,975
CR2-D12-NP	Non-P	668,558.00	4,969,840.00	604.7	18:07	18:07	2,051
CR2-D30-NP	Non-P	669,549.00	4,974,233.00	611.9	17:10	6:03	2,044
CR2-D132-NP	Non-P	669,497.00	4,974,128.00	609.0	16:49	6:45	2,264
CR2-D221-NP	Non-P	670,351.11	4,973,543.31	606.0	11:51	14:04	2,041
CR2-D14-NP	Non-P	670,351.11	4,973,543.31	606.0	11:51	14:04	2,041
CR2-D127-NP	Non-P	668,841.00	4,969,858.00	603.0	11:40	11:40	2,894
CR2-D62-NP	Non-P	669,355.00	4,974,624.00	609.0	10:56	5:02	2,913
CR2-D128-NP	Non-P	668,625.00	4,967,652.00	588.0	4:53	15:58	2,779
CR2-D130-NP	Non-P	672,080.49	4,973,212.28	591.0	4:38	15:12	3,776
CR2-D222-NP	Non-P	672,080.49	4,973,212.28	591.0	4:38	15:12	3,779
CR2-D85-NP	Non-P	669,593.00	4,976,302.00	603.0	4:36	4:36	1,949
CR2-D129-NP	Non-P	669,645.00	4,973,005.00	606.0	4:30	4:30	4,511
CR2-D91-NP	Non-P	667,546.00	4,976,173.00	618.0	2:59	2:59	4,203
CR2-D79-NP	Non-P	672,172.00	4,974,737.00	585.0	2:16	2:16	1,955
CR2-D17-NP	Non-P	672,023.00	4,969,597.00	597.0	1:06	13:44	5,167
CR2-D45-NP	Non-P	668,018.00	4,976,064.00	611.5	0:55	0:55	4,393
CR2-D154-NP	Non-P	672,205.00	4,960,261.00	610.8	0:00	0:00	26,194
CR2-D101-NP	Non-P	672,538.00	4,961,910.00	612.8	0:00	5:29	22,667
CR2-D180-NP	Non-P	671,823.00	4,960,368.00	615.0	0:00	0:00	25,213
CR2-D103-NP	Non-P	670,588.00	4,961,119.00	615.0	0:00	0:00	21,079
CR2-D63-NP	Non-P	670,546.00	4,961,419.00	615.0	0:00	0:00	20,138
CR2-D104-NP	Non-P	670,443.00	4,961,600.00	613.8	0:00	5:06	19,455
CR2-D22-NP	Non-P	668,798.00	4,963,767.00	603.1	0:00	14:20	10,777
CR2-D19-NP	Non-P	668,870.00	4,964,178.00	606.0	0:00	13:59	9,600
CR2-D5-NP	Non-P	668,781.00	4,964,897.00	603.0	0:00	2:14	7,342
CR2-D90-NP	Non-P	670,516.00	4,962,327.00	612.0	0:00	7:36	17,493
CR2-D105-NP	Non-P	670,348.00	4,963,826.00	611.7	0:00	17:56	13,179
CR2-D106-NP	Non-P	667,315.00	4,965,297.00	594.0	0:00	0:00	5,351
CR2-D107-NP	Non-P	670,405.00	4,966,321.00	597.0	0:00	2:27	8,520
CR2-D108-NP	Non-P	670,354.00	4,965,949.00	594.0	0:00	23:04	9,121
CR2-D109-NP	Non-P	676,885.00	4,965,806.00	576.0	0:00	4:51	22,979
CR2-D83-NP	Non-P	675,891.00	4,966,810.00	579.0	0:00	12:25	18,658
CR2-D112-NP	Non-P	667,666.00	4,971,554.00	604.6	0:00	0:00	3,553
CR2-D113-NP	Non-P	667,774.00	4,971,544.00	606.9	0:00	0:00	3,537

\* Not included in original submittal

**Table C-2: Crowned Ridge II 200 MW Shadow Flicker Tabular Results Sorted by Real Case Shadow Flicker Hours/Year**  
**Realistic case shadow results at occupied structures**  
**Results using GE 2.3-116-90 m HH, GE 2.1-116-80 m HH WTG's**  
**UTM NAD83 Zone 14**  
**Deuel County**  
*continued*

Receptor ID	Participation Status	Easting (m)	Northing (m)	Elevation AMSL (m)	Real Case Shadow (hrs/year)	7/9/19 App. J Report Real Case Results	Distance to Nearest Turbine (ft)
CR2-D20-NP	Non-P	675,261.00	4,968,400.00	579.0	0:00	3:00	15,364
CR2-D15-NP	Non-P	674,387.00	4,968,515.00	588.0	0:00	24:00	12,474
CR2-D189-NP	Non-P	667,228.00	4,971,527.00	606.0	0:00	0:00	3,757
CR2-D51-NP	Non-P	675,005.00	4,970,131.00	577.8	0:00	8:27	14,977
CR2-D72-NP	Non-P	671,925.00	4,970,149.00	603.0	0:00	0:00	5,938
CR2-D84-NP	Non-P	667,159.00	4,972,169.00	598.2	0:00	0:00	5,535
CR2-D97-NP	Non-P	667,164.00	4,972,232.00	600.0	0:00	0:00	5,371
CR2-D96-NP	Non-P	672,899.00	4,971,469.00	594.0	0:00	0:00	9,249
CR2-D100-NP	Non-P	668,589.00	4,972,064.00	609.9	0:00	0:00	4,708
CR2-D9-NP	Non-P	668,597.00	4,971,999.00	611.5	0:00	0:00	4,921
CR2-D190-NP	Non-P	675,131.00	4,970,954.00	573.0	0:00	0:00	16,043
CR2-D95-NP	Non-P	671,994.00	4,971,562.00	600.0	0:00	0:00	7,264
CR2-D116-NP	Non-P	673,491.00	4,972,398.00	577.8	0:00	0:00	9,055
CR2-D92-NP	Non-P	671,159.00	4,971,610.00	597.2	0:00	0:00	6,319
CR2-D73-NP	Non-P	672,072.00	4,971,556.00	600.0	0:00	0:00	7,405
CR2-D82-NP	Non-P	669,855.00	4,970,718.00	603.0	0:00	0:00	5,935
CR2-D3-NP	Non-P	672,390.00	4,963,482.00	612.0	0:00	6:47	18,746
CR2-D205-NP	Non-P	670,455.00	4,960,601.00	611.6	0:00	0:00	22,437
CR2-D120-NP	Non-P	673,401.00	4,964,165.00	609.0	0:00	2:19	18,067
CR2-D206-NP	Non-P	676,828.00	4,963,231.00	588.0	0:00	0:00	27,637
CR2-D207-NP	Non-P	676,828.00	4,963,280.00	588.0	0:00	0:00	27,529
CR2-D41-NP	Non-P	670,437.00	4,966,409.00	597.0	0:00	2:06	8,225
CR2-D44-NP	Non-P	670,434.00	4,965,956.00	593.8	0:00	20:58	9,363
CR2-D77-NP	Non-P	672,044.00	4,966,468.00	600.0	0:00	5:58	9,298
CR2-D121-NP	Non-P	674,461.00	4,966,734.00	594.0	0:00	12:06	14,524
CR2-D86-NP	Non-P	673,842.00	4,966,875.00	597.0	0:00	12:06	12,542
CR2-D125-NP	Non-P	670,404.00	4,966,786.00	597.0	0:00	13:11	7,001
CR2-D126-NP	Non-P	670,227.27	4,967,454.62	593.3	0:00	3:04	4,934
CR2-D52-NP	Non-P	667,172.00	4,971,776.00	606.0	0:00	0:00	4,583
CR2-D213-NP	Non-P	667,178.00	4,971,525.00	606.0	0:00	0:00	3,816
CR2-D99-NP	Non-P	668,148.00	4,976,230.00	608.8	0:00	0:00	4,331
CR2-D48-NP	Non-P	668,923.00	4,972,998.00	609.0	0:00	0:00	2,680
CR2-D74-NP	Non-P	668,130.00	4,976,068.00	609.2	0:00	0:00	4,505
CR2-D133-NP	Non-P	669,661.00	4,980,356.00	576.0	0:00	0:00	4,035
CR2-D75-NP	Non-P	669,473.00	4,981,625.00	570.0	0:00	0:00	7,319
CR2-D37-NP	Non-P	674,048.00	4,974,071.00	573.0	0:00	0:00	6,542
CR2-D65-NP	Non-P	670,422.00	4,966,654.00	597.0	0:00	5:26	7,424
CR2-D54-NP	Non-P	672,012.00	4,966,477.00	600.0	0:00	5:15	9,219

\* Not included in original submittal









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**Crowned Ridge II Wind Farm  
200 MW  
Shadow Overview Map**

*Client*  
SWCA Environmental Consultants

*Project Description*  
Wind turbine layout with occupied structures within 2 km.  
  
Predicted shadow flicker levels at existing residences.

*Location:* Watertown, SD  
*Project #:* 20174431

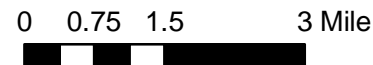
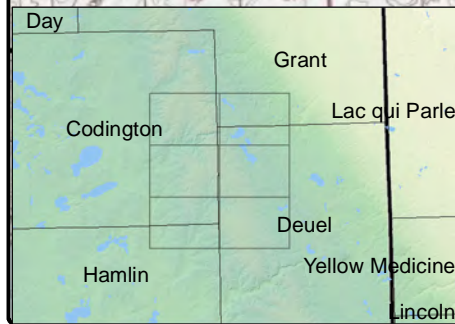
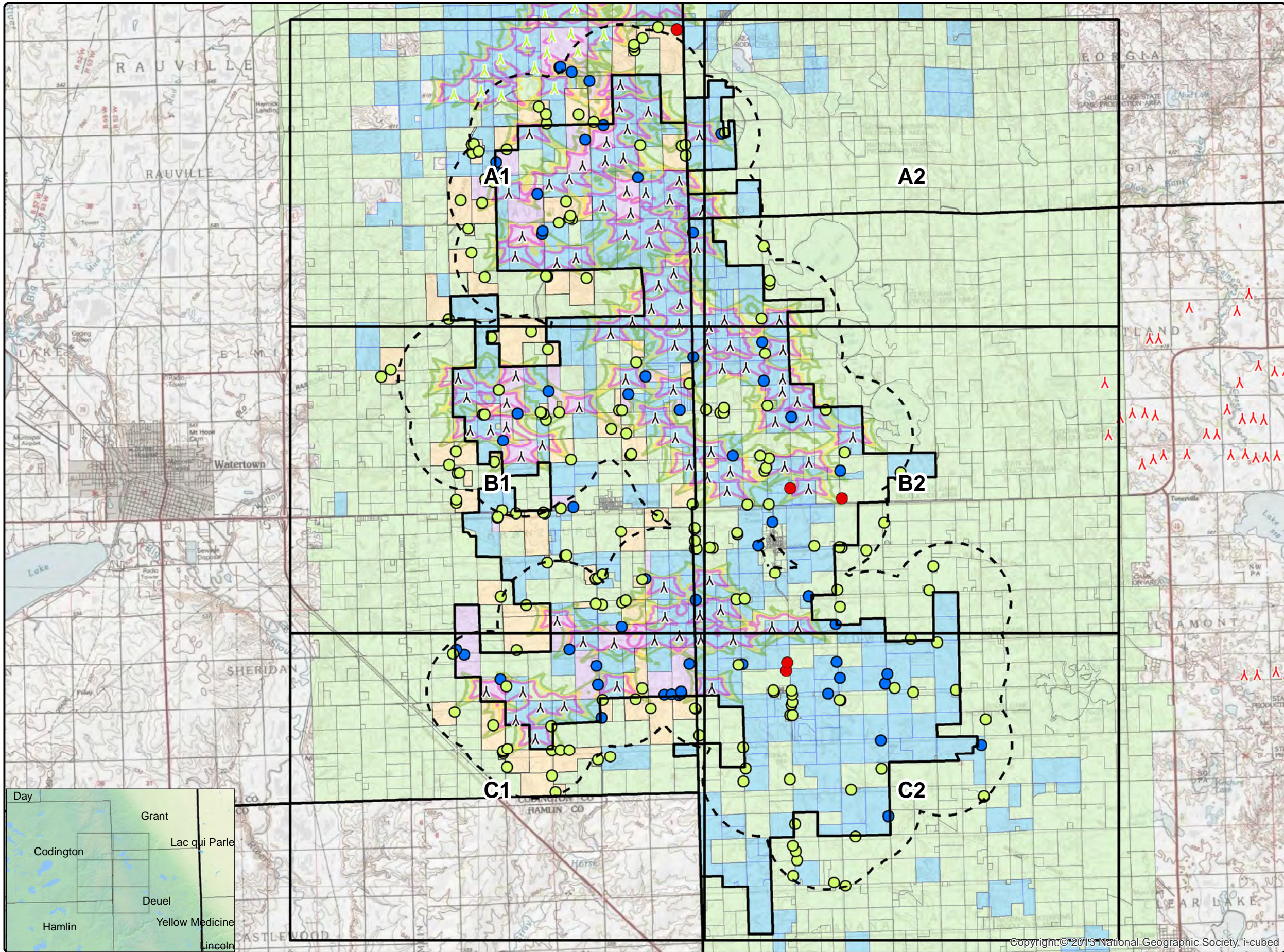
*Issue Dates*

#	Description	Date
1	Original	2019.09.18

*Drawn By:* AS      *Checked By:* JH

- Legend**
- ▲ Crowned Ridge II Turbines
  - ▲ Crowned Ridge Turbines
  - ▲ Deuel Harvest Turbines
  - - - 2 km Turbine Buffer
  - ▭ County Lines
  - ▭ CR II Project Boundary
  - CR2 Intervenor
  - Non-Participants Noise
  - Participants Noise
- Shadow Flicker (hr/yr)**
- 10
  - 15
  - 20
  - 25
  - 30
- ▭ Non-Participating Codington Parcels
  - ▭ Participating Codington\_Parcels
  - ▭ Non-Participating Parcels
  - ▭ Participating Parcels

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**Crowned Ridge II Wind Farm  
200 MW  
Shadow Iso-Lines**

*Client*  
SWCA Environmental Consultants

*Project Description*  
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Predicted shadow flicker levels at existing residences.

*Location:* Watertown, SD  
*Project #:* 20174431

*Issue Dates*

#	Description	Date
1	Original	2019.09.18

Drawn By: AS      Checked By: JH

**Legend**

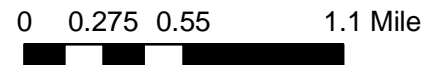
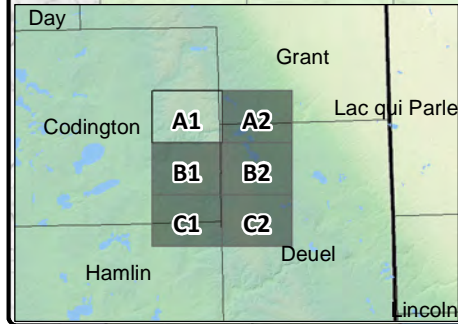
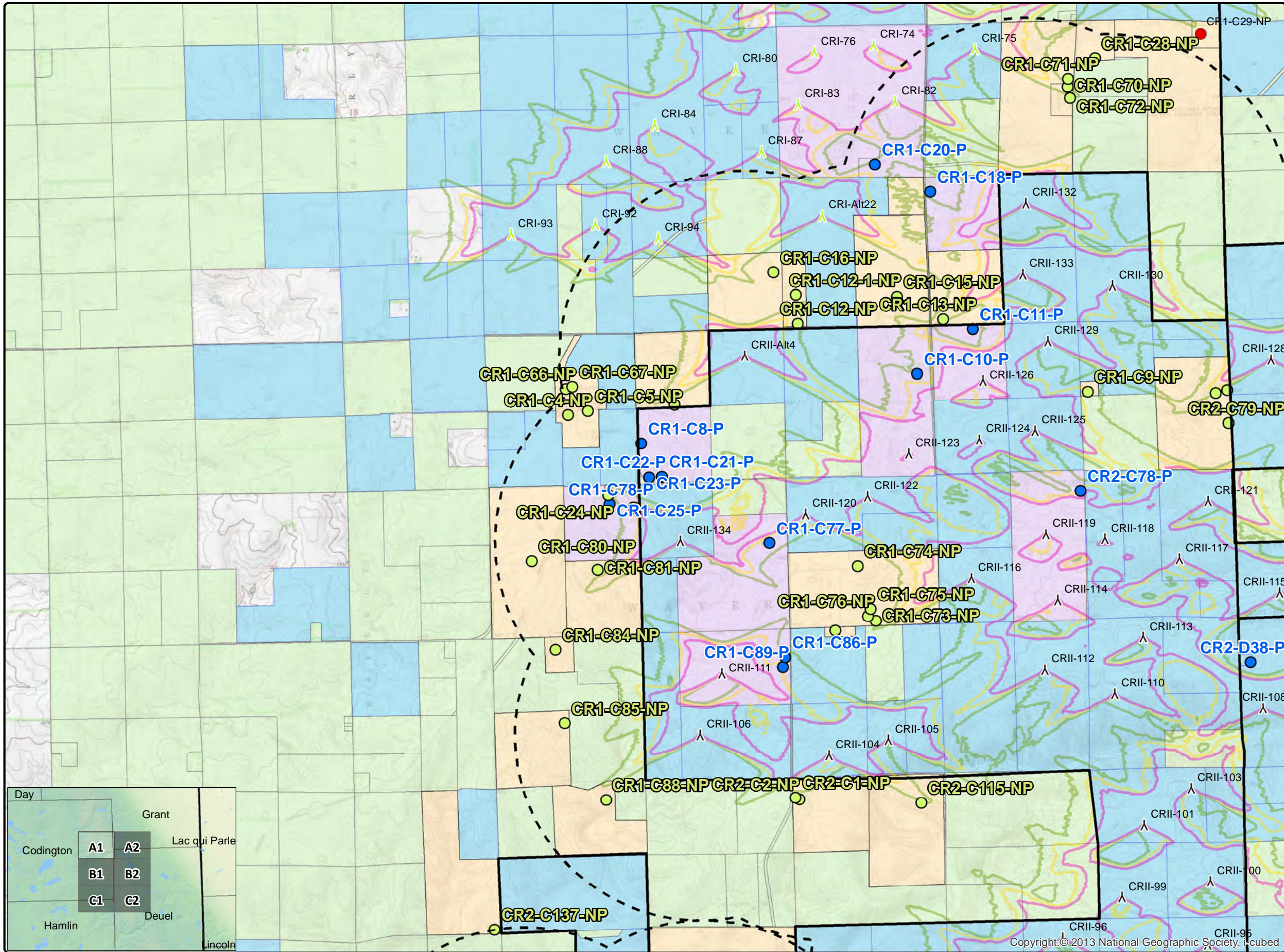
- ▲ Crowned Ridge II Turbines
- ▲ Crowned Ridge Turbines
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- 2 km Turbine Buffer
- ▭ County Lines
- ▭ CR II Project Boundary
- CR2 Intervenor
- Non-Participants Shadow
- Participants Shadow

**Shadow Flicker (hr/yr)**

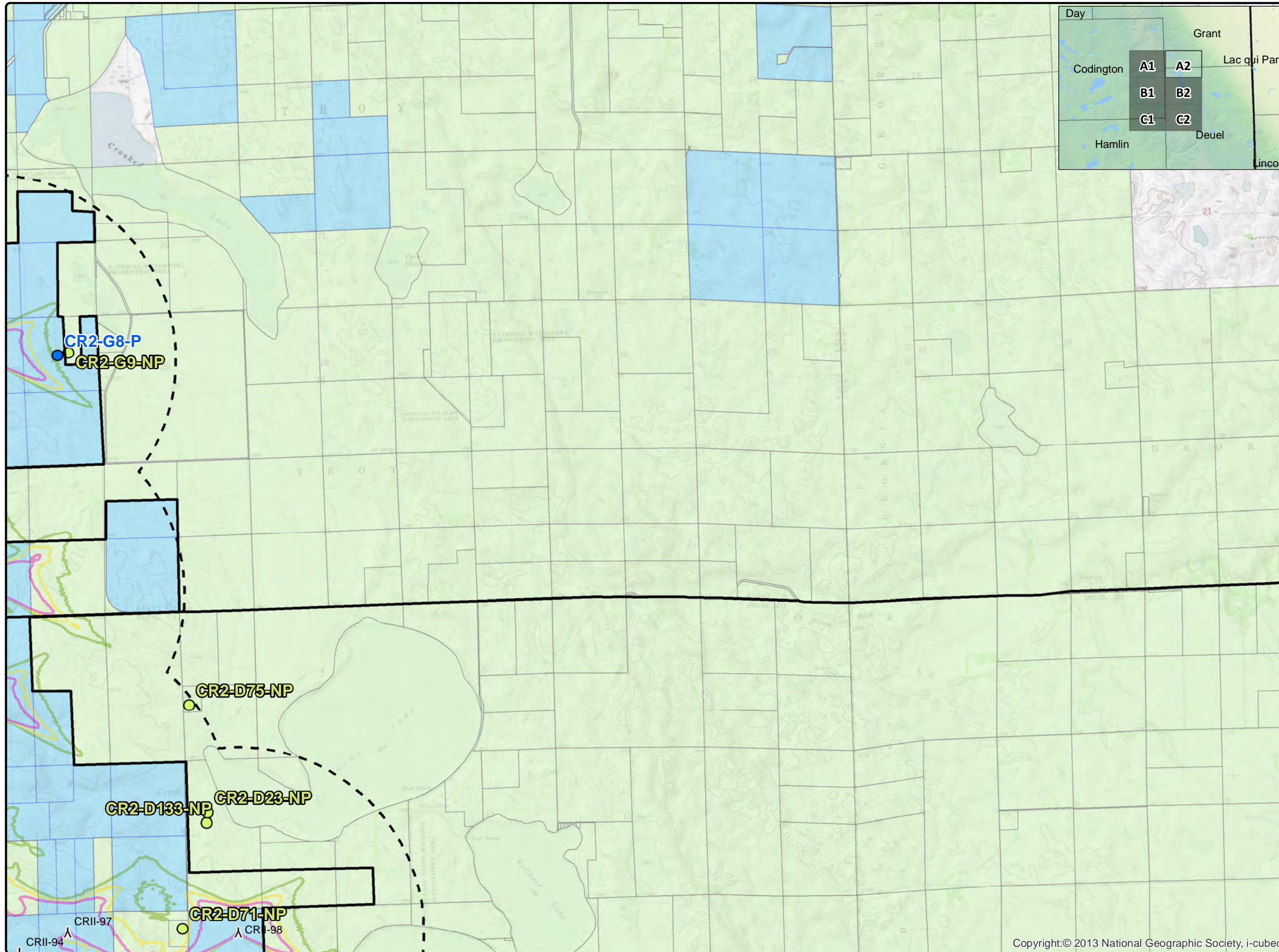
- 10
- 15
- 20
- 25
- 30

- ▭ Non-Participating Codington Parcels
- ▭ Participating Codington\_Parcels
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Predicted shadow flicker levels at existing residences.

*Location:* Watertown, SD  
*Project #:* 20174431


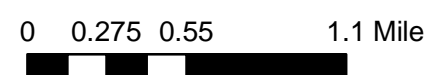
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1	Original	2019.09.18

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**Legend**

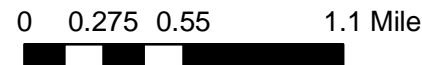
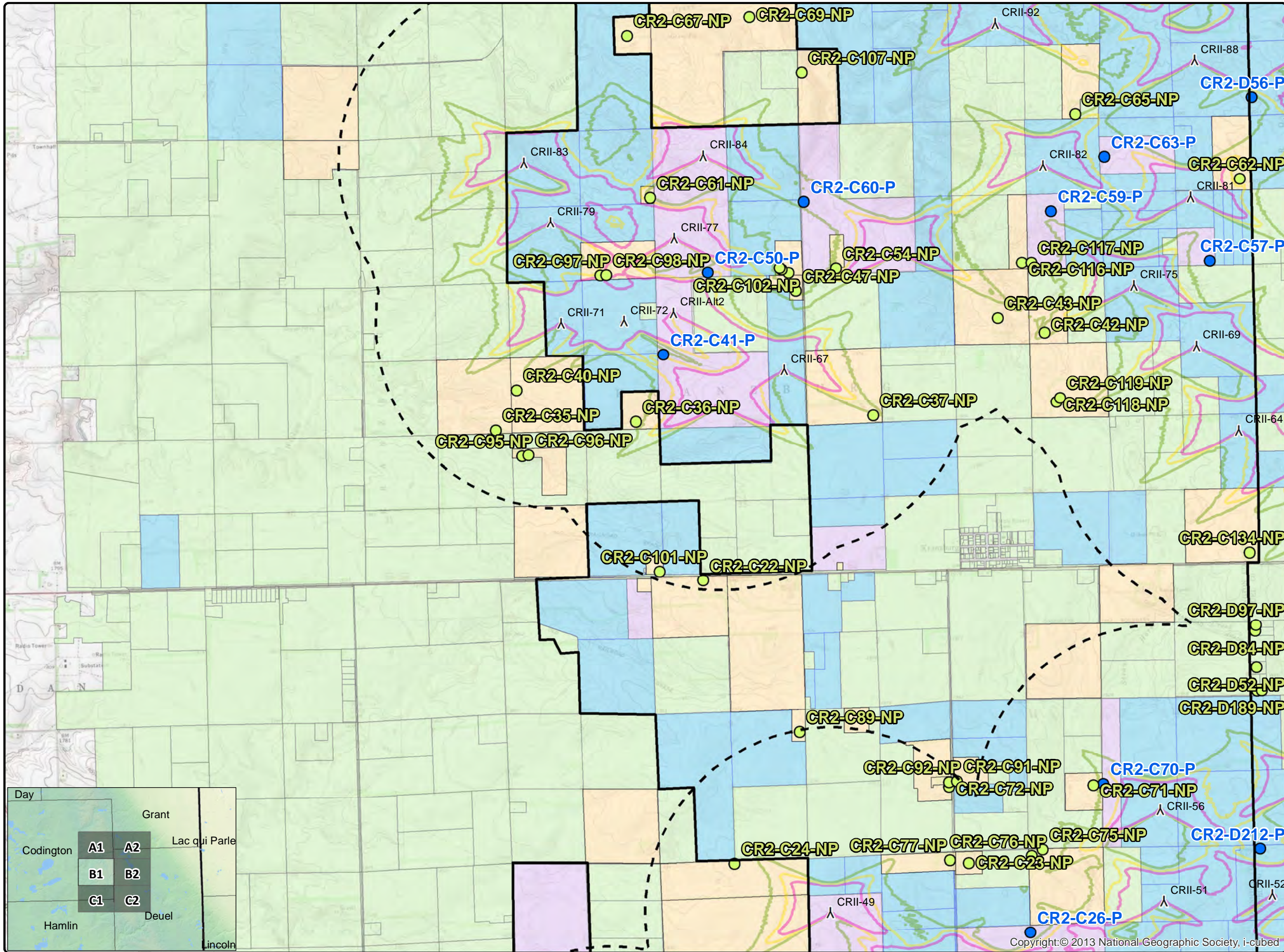
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**Shadow Flicker (hr/yr)**

- 10
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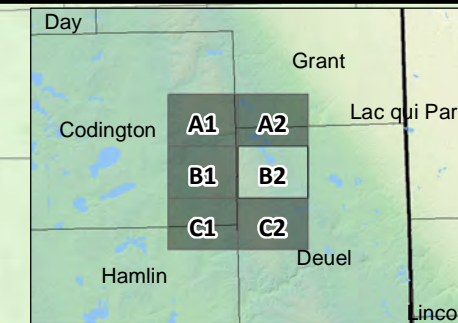
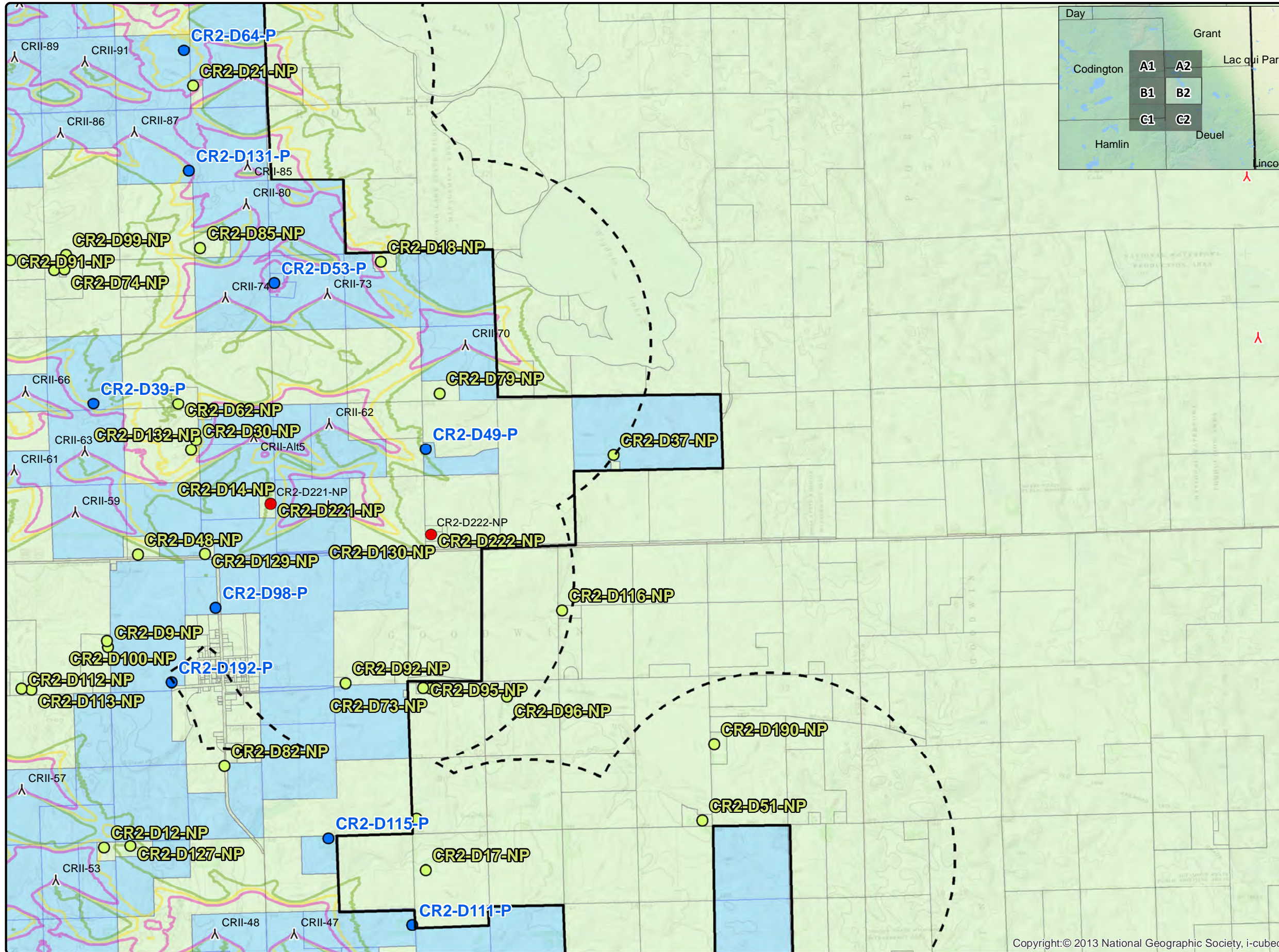
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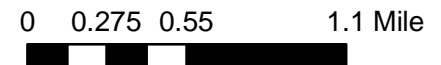
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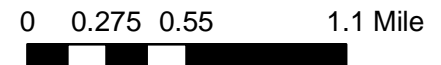
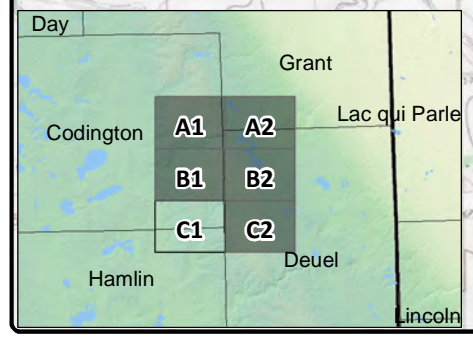
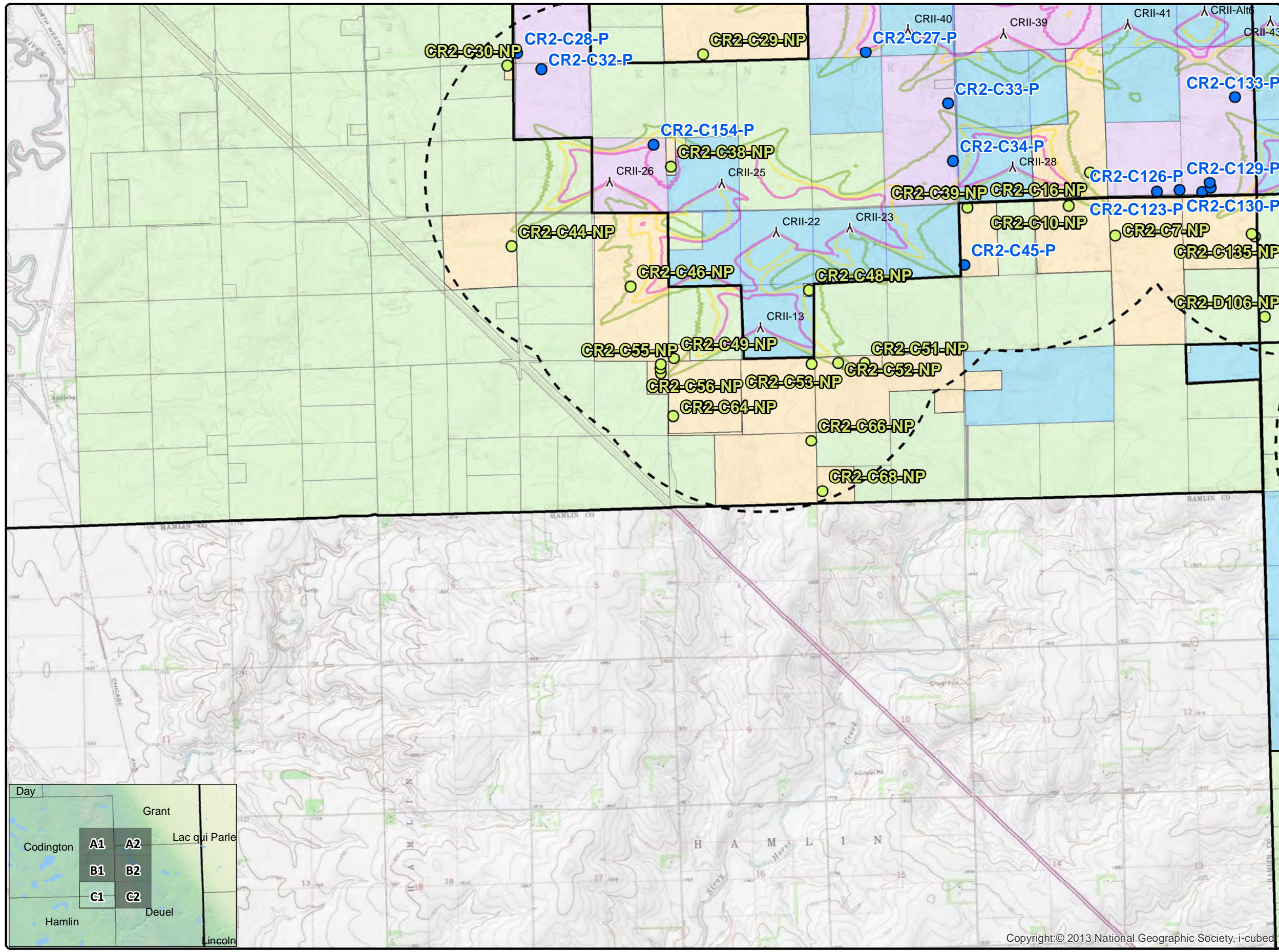
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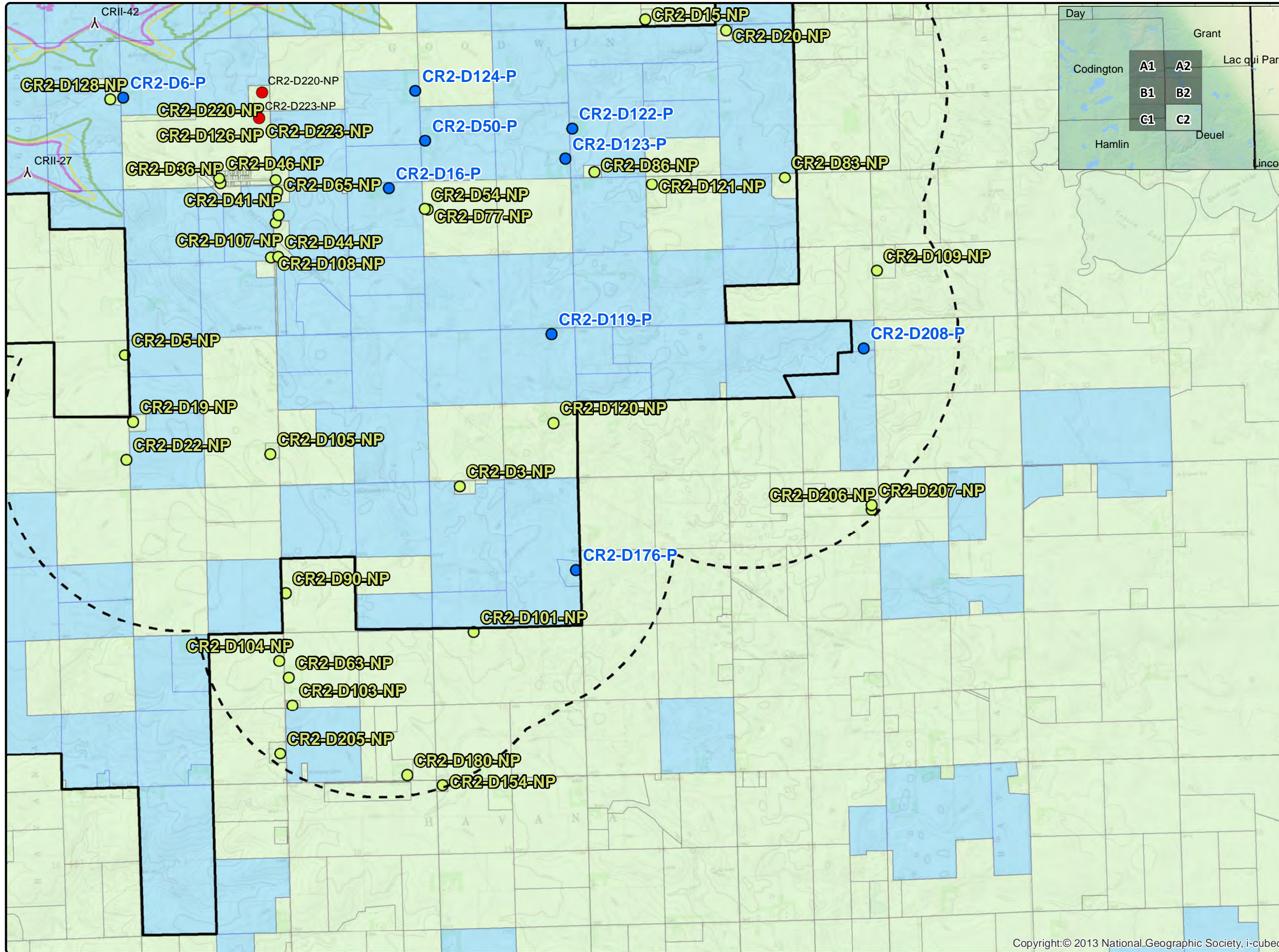
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**Legend**


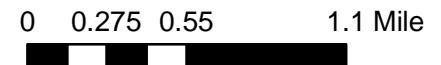
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