

## Submitted to DNR for the record on May 4, 2021

### Corrections to:

#### Written Comments in Opposition to the Proposed NMP for Supreme Beef LLC

Submitted 3/8/2021 by Steve Veysey, 919 Murray Drive, Ames IA

Comments submitted on March 8 raised 17 issues. The primary document was 25 pages but supporting appendices A-L were also submitted. In reviewing DNR's April 2 summary of public comments and their response to my comments, I became aware of factual errors I made in presenting Issue 6 and Issue 9. This also led to inconsistencies in several derived summary tables presented later in the document. I submit this document to correct those errors for the record. It should be noted that in each case the Issue premise and conclusions remain the same. Some field assignments and numerical values are different.

Issue 1	No corrections
Issue 2	No corrections
Issue 3	No corrections
Issue 4	No corrections
Issue 5	No corrections

Issue 6            Table 7 includes the field designated "Costigan E Lane" as one of four fields where an incorrect DCA was chosen for the RUSLE2 calculation. DNR acknowledges that Table 7 is correct with respect to the three other fields but believes that the DCA originally chosen for Costigan E Lane is correct. After a careful review of the defining language contained in ITN 29, I agree with DNR in their interpretation.

Issue 7	No corrections
Issue 8	No corrections

Issue 9            Table 8 contains a list of 8 fields where I state that the applicant has overestimated the field-center-distance-to-stream by 100% or more. There are two issues. First, due to an accidental shift in several cells within my master database of field-related data, certain distances were assigned to the wrong fields. That was an error on my part and it affects some Table 8 entries, but also several values and field-assignments in Tables 9, 10, and 16. Second, in the discussion I state that "*The correct stream layer to use is derived from the national NHD Stream Centerline coverage. This layer is available at the Iowa Geographic Map Server (Iowa – Stream Centerlines)*". In fact, although the IGMS stream centerline coverage contains significantly more small-stream detail than the DNR AFO Siting Atlas to which I compare, it is not equivalent to the USGS-EPA NHD coverage. Examination of metadata shows that the IGMS stream centerline coverage was created a number of years ago, primarily as part of a flood plain mapping project. I have been consistent in my assertion that the correct dataset to use for GIS measurement of field-to-stream distances is the USGS-EPA NHD dataset for Iowa. This is the only coverage that specifically includes and identifies intermittent streams. I first raised this point in an 11/16/20 email to Brian Jergenson regarding SDR measurements: "*I will fine tune this value in one direction or the other when I load the latest USGS NHD Plus HR stream coverage.*"

To correct these measurement and field assignment errors I have created an ArcGIS shapefile coverage of fields of concern and have used the tools within ArcGIS to find the geometric center of each field and to measure to the closest down-slope perennial or intermittent stream as shown by the USGS-EPA NHD dataset for Iowa. The new "Table Eight" is listed below. The "100% distance difference" was still used as the listing threshold. In addition, you will note three new columns related to SDR values; these help one decide in which cases the new SDR values are significantly different to warrant P-Index recalculation.

**Corrected Table 8 - Field to Stream Distances**

Designation	Dist_NMP_back_calc_ft	GIS Precise	Distance Difference %	PI_SDR	PI_SDR corrected	SDR factor effect
Carlson - Farmersburg 5	2000	82	2339	0.42	0.92	2.19
Costigan - School House Bottom	400	109	267	0.62	0.86	1.39
East 120	2600	97	2580	0.40	0.88	2.20
Goedken East	1600	583	174	0.44	0.56	1.27
Goedken West	2600	701	271	0.40	0.54	1.35
Home x Schneiders	1600	529	202	0.44	0.58	1.32
June's	1500	700	114	0.45	0.54	1.20
Koether - Giard 34	3200	870	268	0.38	0.51	1.34
Koether - Giard 35	2600	763	241	0.40	0.53	1.33
Meiers	750	96	681	0.53	0.88	1.66
North Harness	2900	1350	115	0.39	0.46	1.18
Schutte South	2600	351	641	0.40	0.64	1.60
Walt and Elmer's	2900	1160	150	0.39	0.48	1.23

Issue 10 Incorporating the Table 7 single DCA correction, and the thirteen Table 8 SDR corrections results in changes to Table 9 "Fields with P-Index equal or above 5.0".

**Corrected Table 9. Fields with P-Index equal or above 5.0**

Designation	PI_Gross_Erosion_tay	PI_SDR	Dist_GIS_meas_ft	PI_Buffer_factor	PI_Enrich_factor	PI_STP_soil_erosion	PI_Erosion_PI	PI_RCW_factor	PI_STP_runoff	PI_P_app_factor	PI_Runoff_PI	PI_Tile_Sub_PI	PI_Total_Calc
East 120	11.10	0.88	97	1.00	1.10	0.83	8.92	1.32	0.21	0.05	0.34	0.07	9.33
June's	17.00	0.54	700	1.00	1.10	0.76	7.67	1.32	0.13	0.05	0.24	0.07	7.98
Koether - Giard 35	17.00	0.53	763	1.00	1.10	0.81	8.03	1.32	0.19	0.05	0.32	0.07	8.41

Issue 11 Incorporating Table 7 and Table 8 corrections results in changes to Table 10 "Fields that may have P-Index > 5.0". The premise is that because of serious omissions and over-simplifications in

the RUSLE2 management plans listed for each field, and the exclusion of ephemeral gully erosion, it is probable that additional fields currently calculating above 3.5 might calculate correctly above 5.0.

**Corrected Table 10 Four Additional Fields MAY Have P-Index > 5.0**

Designation	Rusle2_soil_loss_tay	PI_Gross_Erosion_tay	PI_SDR	Dist_GIS_meas_ft	PI_Buffer_factor	PI_Erich_factor	PI_STP_soil_erosion	PI_Erosion_PI	PI_RCW_factor	PI_STP_runoff	PI_P_app_factor	PI_Runoff_PI	PI_Tile_Sub_PI	PI_Total_Calc
Goedken East	5.70	5.70	0.56	583	1.00	1.10	0.93	3.27	1.32	0.33	0.05	0.50	0.07	3.84
Home x Schneiders	5.70	5.70	0.58	529	1.00	1.10	0.86	3.13	1.32	0.25	0.05	0.40	0.07	3.59
Schutte South	5.70	5.70	0.64	351	1.00	1.10	1.03	4.13	1.32	0.44	0.05	0.65	0.07	4.85
Walt and Elmer's	7.30	7.30	0.48	1160	1.00	1.10	0.89	3.43	1.32	0.26	0.05	0.41	0.07	3.91

Issue 12 No corrections  
 Issue 13 No corrections  
 Issue 14 No corrections  
 Issue 15 No corrections  
 Issue 16 No corrections

Issue 17 Based upon Issue 6 and Issue 9 corrections, there are several changes necessary to Table 16, "Field Disqualification Summary", columns *P-Index*  $\geq 5.0$  and *P-Index is or may be*  $\geq 5.0$ . See below.

NOTE: The corrections in Issue 9 and Issue 10 also result in slight modifications in the following Appendices:

Appendix A No change  
 Appendix B No change  
 Appendix C Strike P.6, RUSLE2 DCA soil recalculation of Costigan E Lane not required.  
 Appendix D No change  
 Appendix E Corrected and included  
 Appendix F No change  
 Appendix G No change  
 Appendix H Delete. PDF version still contains spreadsheet errors referred to above. Corrected Excel file available upon request.  
 Appendix I No change  
 Appendix J No change  
 Appendix K No change  
 Appendix L No change

Corrected Table 16. Field Disqualification Summary

Designation	Manure Acres NMP	Correct_soil_P_test	Distance_to_SB_miles	predominant slope > 9%	Own_Rent_Easement	No "correct soils P-test"	Expired Easement Agreement	P-Index is > 5.0	P-Index is or may be > 5.0	Slopes > 9% w/o Conservation Plan	Manure hauling distance > 5 miles
Airport Monona	68.6	y	3.8	n	E						
Carlson - Farmersburg 1	218.0	y	7.8	n	E						
Carlson - Farmersburg 2	57.5	y	7.8	n	E						
Carlson - Farmersburg 3	77.0	y	7.8	n	E						
Carlson - Farmersburg 5	59.0	y	7.9	n	E						
Costigan - School House Bottom	39.6	n	8.4	n	O						
Costigan East lane	31.7	n	7.9	n	O						
Costigan House Bottom	53.0	n	7.8	n	O						
Derks Home	195.2	n	7.9	y	E						
East 120	103.3	n	30.8	y	R						
Fred Berns Norrh	214.0	y	11.0	n	R						
Fred Berns South	170.5	y	11.0	n	R						
Freddy's Hay	87.5	n	3.4	y	O						
Goedken East	30.1	n	2.6	y	E						
Goedken West	41.7	n	2.6	y	E						
Heuers	157.6	y	10.3	y	R						
Home Farm 1	16.4	n	2.5	y	O						
Home Farm 2	84.7	n	2.5	n	O						
Home Farm 3	17.2	n	2.5	n	O						
Home Farm 4	79.5	n	2.3	n	O						
Home Farm Hay	9.0	n	2.3	n	O						
Home Grain Farm	379.5	y	12.1	y	R						
Home North	67.8	y	11.3	y	R						
Home x Schneiders	120.5	y	11.3	y	R						
June's	38.3	n	7.7	y	E						
Kathy's	71.7	y	2.1	y	O						
Kathy's Hay	30.0	y	2.1	y	O						
Kevin's Farm	252.3	y	1.0	n	E						
Koether - Franklin 26/35	135.0	n	6.3	y	E						
Koether - Giard 34	100.0	n	3.8	y	E						
Koether - Giard 35	172.0	n	3.6	y	E						
Leroy's	121.7	y	4.0	n	O						
Marting Hay	7.0	n	2.6	y	O						

Meiers	60.8	n	10.5	n	O								
Monroe A	6.3	n	2.7	n	R								
Monroe B	22.5	n	8.2	n	R								
Monroe C	174.0	n	8.5	n	R								
North Harness	95.4	n	7.8	n	E								
Palas Hay East	7.5	y	3.0	y	O								
Palas Hay West	10.5	y	8.7	n	O								
Radloff North	124.1	y	8.7	n	O								
Radloff South	109.0	y	5.3	y	O								
Schutte South	58.4	y	2.0	n	E								
Smith	207.6	y	1.5	y	R								
Walt and Elmer's	172.1	y	0.5	y	O								
Acres remaining based upon each disqualification status	4355.1						2754.9	2756.6	4355.1	4355.1	2105.3	1641.3	
Acres remaining based upon red disqualification =							Acres remaining based upon red and yellow disqualification =						
<b>1964.1</b>							<b>121.7</b>						



Iowa Phosphorous Index

v. 1/22/2007

Credits: Iowa State University  
 USDA National Soil Tilth Laboratory  
 USDA Natural Resource Conservation Service

Field Number		Erosion								+	Runoff				+	Tile / Subsurface Recharge			=	Overall PI							
		Gross Erosion	x	STF	x	SDR	x	Buffer Factor	x	Enrichment Factor	x	STP Factor	=	Erosion PI	RCN Factor	x	STP Factor	x	P App Factor	=	Runoff PI	Flow Factor	x	STP Factor	=	Tile/Sub Factor	P-Index
Orig	Carlson - Farmersburg 5	2.29		1.00		0.42		1.00		1.10		0.91		0.96	1.32		0.30		0.05		0.46	1.00		0.07		0.07	1.49
CORR	Carlson - Farmersburg 5	2.29		1.00		0.92		1.00		1.10		0.91		2.11	1.32		0.30		0.05		0.46	1.00		0.07		0.07	2.64
Orig	Costigan - School House Bottom	2.00		1.00		0.62		1.00		1.10		0.93		1.27	1.32		0.33		0.05		0.50	1.00		0.07		0.07	1.84
CORR	Costigan - School House Bottom	2.00		1.00		0.86		1.00		1.10		0.93		1.76	1.32		0.33		0.05		0.50	1.00		0.07		0.07	2.33
Orig	East 120	11.10		1.00		0.40		1.00		1.10		0.83		4.05	1.32		0.21		0.05		0.34	1.00		0.07		0.07	4.47
CORR	East 120	11.10		1.00		0.88		1.00		1.10		0.83		8.92	1.32		0.21		0.05		0.34	1.00		0.07		0.07	9.33
Orig	Goedken East	5.70		1.00		0.44		1.00		1.10		0.93		2.57	1.32		0.33		0.05		0.50	1.00		0.07		0.07	3.14
CORR	Goedken East	5.70		1.00		0.56		1.00		1.10		0.93		3.27	1.32		0.33		0.05		0.50	1.00		0.07		0.07	3.84
Orig	Goedken West	5.70		1.00		0.40		1.00		1.10		0.86		2.16	1.32		0.25		0.05		0.40	1.00		0.07		0.07	2.62
CORR	Goedken West	5.70		1.00		0.54		1.00		1.10		0.86		2.91	1.32		0.25		0.05		0.40	1.00		0.07		0.07	3.38
Orig	Home x Schneiders	5.70		1.00		0.44		1.00		1.10		0.86		2.37	1.32		0.25		0.05		0.40	1.00		0.07		0.07	2.84
CORR	Home x Schneiders	5.70		1.00		0.58		1.00		1.10		0.86		3.13	1.32		0.25		0.05		0.40	1.00		0.07		0.07	3.59
Orig	June's	7.30		1.00		0.45		1.00		1.10		0.76		2.75	1.32		0.13		0.05		0.24	1.00		0.07		0.07	3.05
CORR	June's	17.00		1.00		0.54		1.00		1.10		0.76		7.67	1.32		0.13		0.05		0.24	1.00		0.07		0.07	7.98
Orig	Koether - Giard 34	5.70		1.00		0.38		1.00		1.10		0.75		1.79	1.32		0.11		0.05		0.21	1.00		0.07		0.07	2.07
CORR	Koether - Giard 34	5.70		1.00		0.51		1.00		1.10		0.75		2.40	1.32		0.11		0.05		0.21	1.00		0.07		0.07	2.68
Orig	Koether - Giard 35	11.10		1.00		0.40		1.00		1.10		0.81		3.96	1.32		0.19		0.05		0.32	1.00		0.07		0.07	4.34
CORR	Koether - Giard 35	17.00		1.00		0.53		1.00		1.10		0.81		8.03	1.32		0.19		0.05		0.32	1.00		0.07		0.07	8.41
Orig	Meiers	2.29		1.00		0.53		1.00		1.10		0.77		1.03	1.32		0.13		0.05		0.24	1.00		0.07		0.07	1.34
CORR	Meiers	2.29		1.00		0.88		1.00		1.10		0.77		1.71	1.32		0.13		0.05		0.24	1.00		0.07		0.07	2.01
Orig	North Harness	5.70		1.00		0.39		1.00		1.10		0.86		2.10	1.32		0.24		0.05		0.38	1.00		0.07		0.07	2.56
CORR	North Harness	5.70		1.00		0.46		1.00		1.10		0.86		2.48	1.32		0.24		0.05		0.38	1.00		0.07		0.07	2.93
Orig	Schutte South	5.70		1.00		0.40		1.00		1.10		1.03		2.58	1.32		0.44		0.05		0.65	1.00		0.07		0.07	3.30
CORR	Schutte South	5.70		1.00		0.64		1.00		1.10		1.03		4.13	1.32		0.44		0.05		0.65	1.00		0.07		0.07	4.85
Orig	Walt and Elmer's	7.30		1.00		0.39		1.00		1.10		0.89		2.79	1.32		0.26		0.05		0.41	1.00		0.07		0.07	3.27
CORR	Walt and Elmer's	7.30		1.00		0.48		1.00		1.10		0.89		3.43	1.32		0.26		0.05		0.41	1.00		0.07		0.07	3.91

NOTE: For ORG calculations, the factors used in each term are the same as in the NMP calculations. For CORR calculations, the factors highlighted in light blue are different. Different Gross Erosion values result from using the correct DCA soil type and associated slope length, slope grade, and soil crop yield as contained in the eFOTG tables for Clayton County, in the RUSLE2 calculations. Note that Ephemeral Gully and Classical Gully estimates have not been done by the producer for any of the 45 fields. There is established protocol for doing this, but it requires more direct knowledge of the fields. ITN 25 is clear. The Total Erosion factor in the Erosive PI term must include the sum of RUSLE2 rill and interrill, AND ephemeral gully AND classical gully erosion. The Total P-Index will be higher in every case when this is done properly. Different SDR values result from using the correct distance-to-stream values.

Corrected Appendix E Thirteen Fields Recalculated