EXTended Ag Services, Inc.

202 South Highway 86
Lakefield, MN 56150
507.662.5005 phone
507.662.5105 fax
info@extendedag.com

March 23, 2026

Environmental Land Management
1602 11th Drive NE
Austin, MN 55912

RE: Agronomist Review for Danisco US, Inc – Cedar Rapids, IA: Permit # 57-SDP-50-22P

The following is an agronomic review of waste byproducts applied from the Danisco US, Inc facility in Cedar Rapids, IA, permit# 57-SDP-50-22P. A brief description of the regulated waste byproducts will be given to provide context of the review and a brief discussion of the land application sites, application rates and site characteristics will be done as well. The review will include applications made for the 2025 crop year.

Product Description:

The Danisco US, Inc Facility is permitted to apply up to 14 wet tons per acre of a 'filter aid' by-product, handled as a solid, cake-type material, with immediate incorporation. The solid waste material applied at the suggested rate will supply a 94 – 75 – 9 lbs./acre (N-P2O5-K2O) first year plant available analysis. The organic nitrogen in the products will be slowly converted to plant available nitrate as soil microbes convert it – thus, its ultimate availability will depend on numerous environmental conditions including, soil temperature, moisture, drainage and pH. It should be noted that the product does not contain detectable levels of arsenic, lead or mercury and has only negligible amounts of sodium.

A corn crop with a yield of 200 bushels per acre will require approximately 180-190 pounds of nitrogen and will remove about 70 pounds of phosphorus and 60 pounds of potassium per acre. A soybean crop with a yield of 50 bushels per acre will require approximately 190 pounds of nitrogen (fixed on its own), 40 pounds of phosphorus and 75 pounds of potassium per acre each year. From an agronomic perspective, soil fertility in the medium to high range is preferred. This translates to ±41 ppm for phosphorus using the Mehlich-3 ICP test and ±201 ppm for Potassium (ammonium acetate or Mehlich-3 ICP). The opinion in this review will be based on characteristics and rates of the applied byproduct, current soil tests and land application site conditions.

Land Application Sites for 2025 Crop Year:

Site	Permitted Acres	Acres Applied	RATE	Dry Tons Applied	Byproduct	Application Period
Prasil Sutliff	80	80	4.5	358.6	Filter Cake	4th Quarter
Prasil Sailor Road	59	59	4.9	288.1	Filter Cake	4th Quarter
Prasil River	102	102	2.3	233.1	Filter Cake	4th Quarter
Prasil Sutliff East	72	72	4.5	323.5	Filter Cake	1st Quarter
Prasil Yellow Pine	59	59	4.5	264.4	Filter Cake	2nd Quarter

The fields used for land application were evaluated for soil phosphorus levels, salts and soil pH. Farms with a soil pH below 6.0 should receive an application of agricultural lime. Salt levels should be managed to maintain levels below 1.0. Fields with a phosphorus level exceeding 41 ppm should be managed so that fertility levels do not increase, thus applying nutrients at crop removal rates. A summary of field characteristics is shown below:

Farmer	Site	pH	MEH-3 P	Salts	Net P2O5	Net K2O
John Prasil	Prasil Sutliff	6.1	34	0.1	16	-40
John Prasil	Prasil Sailor Road	6.8	72	0.1	34	-32
John Prasil	Prasil River	5.8	8	0.1	-43	-56
John Prasil	Prasil Sutliff East	6.7	18	0.1	26	-33
John Prasil	Prasil Yellow Pine	6.4	14	0.1	25	-34

2025 Site Specific Discussion:

Prasil Sutliff: This farm received 358.6 dry tons of product applied on approximately 80 acres in the 4th Quarter of the 2024-2025 crop year. A single by-product source was applied to the acres. A reported Corn yield of 203 Bushels per acre was harvested on the farm. Based on this yield, approximately 65 lbs. of P2O5 and 45 lbs. of K2O were removed. Soil test results show that the organic matter levels are approximately 1.2%, the phosphorus ranges from a minimum of 28 and a max of 38 with an average of 34 ppm; the Very High range according to Iowa State University. Soil potassium averages 93 ppm; the Very Low range according to Iowa State University. Based on the cummulative application rate and reported crop yields, a net of 16 lbs of P2O5 and -40 lbs of K2O are calculated on these acres. Average soil pH is 6.1 - Slightly Acidic and should be monitored to maintain soil pH near 6.5. Reported salt (EC) levels are 0.1 mhoms/dm and there are no concerns related to current measured salt levels.

Prasil Sailor Road: This farm received 288.1 dry tons of product applied on approximately 59 acres in the 4th Quarter of the 2024-2025 crop year. A single by-product source was applied to the acres. A

reported Corn yield of 169 Bushels per acre was harvested on the farm. Based on this yield, approximately 54 lbs. of P2O5 and 37 lbs. of K2O were removed. Soil test results show that the organic matter levels are approximately 1.6%, the phosphorus ranges from a minimum of 66 and a max of 77 with an average of 72 ppm; the Very High range according to Iowa State University. Soil potassium averages 127 ppm; the Low range according to Iowa State University. Based on the cummulative application rate and reported crop yields, a net of 34 lbs of P2O5 and -32 lbs of K2O are calculated on these acres. Average soil pH is 6.8 - Neutral and no action is needed. Reported salt (EC) levels are 0.1 mhoms/dm and there are no concerns related to current measured salt levels.

Prasil River: This farm received 233.1 dry tons of product applied on approximately 102 acres in the 4th Quarter of the 2024-2025 crop year. A single by-product source was applied to the acres. A reported Corn yield of 263 Bushels per acre was harvested on the farm. Based on this yield, approximately 84 lbs. of P2O5 and 58 lbs. of K2O were removed. Soil test results show that the organic matter levels are approximately 3%, the phosphorus ranges from a minimum of 7 and a max of 11 with an average of 8 ppm; the Very Low range according to Iowa State University. Soil potassium averages 74 ppm; the Very Low range according to Iowa State University. Based on the cummulative application rate and reported crop yields, a net of -43 lbs of P2O5 and -56 lbs of K2O are calculated on these acres. Average soil pH is 5.8 - Very Acidic and should be treated with agricultural lime to raise the pH to 6.5. Reported salt (EC) levels are 0.1 mhoms/dm and there are no concerns related to current measured salt levels.

Prasil Sutliff East: This farm received 323.5 dry tons of product applied on approximately 72 acres in the 1st Quarter of the 2024-2025 crop year. A single by-product source was applied to the acres. A reported Corn yield of 171 Bushels per acre was harvested on the farm. Based on this yield, approximately 55 lbs. of P2O5 and 38 lbs. of K2O were removed. Soil test results show that the organic matter levels are approximately 2%, the phosphorus ranges from a minimum of 14 and a max of 21 with an average of 18 ppm; the Optimum range according to Iowa State University. Soil potassium averages 73 ppm; the Very Low range according to Iowa State University. Based on the cummulative application rate and reported crop yields, a net of 26 lbs of P2O5 and -33 lbs of K2O are calculated on these acres. Average soil pH is 6.7 - Neutral and no action is needed. Reported salt (EC) levels are 0.1 mhoms/dm and there are no concerns related to current measured salt levels.

Prasil Yellow Pine: This farm received 264.4 dry tons of product applied on approximately 59 acres in the 2nd Quarter of the 2024-2025 crop year. A single by-product source was applied to the acres. A reported Corn yield of 173 Bushels per acre was harvested on the farm. Based on this yield, approximately 55 lbs. of P2O5 and 38 lbs. of K2O were removed. Soil test results show that the organic matter levels are approximately 1.4%, the phosphorus ranges from a minimum of 10 and a max of 20 with an average of 14 ppm; the Low range according to Iowa State University. Soil potassium averages 84 ppm; the Very Low range according to Iowa State University. Based on the cummulative application rate and reported crop yields, a net of 25 lbs of P2O5 and -34 lbs of K2O are calculated on these acres. Average soil pH is 6.4 - Slightly Acidic and should be monitored to maintain soil pH near 6.5. Reported salt (EC) levels are 0.1 mhoms/dm and there are no concerns related to current measured salt levels.

Soil phosphorus and applied nitrogen are the primary nutrients of concern to water quality and public health. The reported rates of Nitrogen do not pose a risk to water quality. The applied phosphorus rates

are generally above crop removal rates for the reported crop yields, but are within an agronomic norm for the region. If additional phosphorus applications are calibrated to soil test needs of the reported soil phosphorus levels, the applied phosphorus does not pose a significant risk to environmental quality or public health. Soil phosphorus levels that have increased significantly above the Very High range should be managed to reduce soil test levels through crop removal. As such long-term management should consider maintaining and not building additional soil phosphorus levels as there is little to no agronomic benefit, and potential for increased phosphorus runoff increases with corresponding increases in soil test phosphorus. Salt levels in the soils appears to be well below any thresholds for crop injury. Best management practices in nutrient management and land application should always be followed.

Regards,

Jim Nesseth
Certified Agronomist
License #: 17118

Andrew Nesseth
Environmental Consultant