

May 30, 2016



Manitoba Sustainable Development
Environmental Approvals Branch
160 - 123 Main Street
Winnipeg, Manitoba R3C 1A5

Attention: Ms. Jennifer Winsor, P.Eng.
Environmental Engineer

***McCain Foods (Canada) Potato-Processing Plant, Carberry, Manitoba
Notice of Alteration: Temporary Suspension of Clause 19***

Dear Ms. Winsor:

On behalf of the McCain Foods Canada, a Division of McCain Foods Limited (McCains), Dillon Consulting Limited (Dillon) submits the following Notice of Alteration (NoA) to the *Environmental Act Licence 2650 RR* (EAL), for the potato-processing plant located south of Carberry, Manitoba. The NoA is requesting a temporary suspension of *Clause 19 Respecting Irrigation* and associated *Appendix G* from the EAL.

The following sections provide the details of the request for the temporary suspension and the associated rationale.

Background

A 65 acre potato field located on the east half of the SE quarter of 20-10-14 W or GPS 14U 476156 E 5521445 (the Field) was scheduled to receive effluent irrigation from the McCain lagoon in 2016 [Note: this field is owned by McCains and leased to a local producer]. Analysis of the soil in the 0-4 foot profile revealed that nitrate nitrogen (NO3-N) exceeded the allowable limits in one of the two soil types in the field. A detailed description of the field based on soil type is listed in the table on the following page.

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	Gregg Clay Loam	Ramada Fine Sandy Loam - Wellwood Loam/Clay Loam
Area	11.8 acres or 18%	53.2 acres or 82%
Agricultural Capability	Class 2W	1
Irrigation Suitability Class	Fair	Good
Class for Potatoes	3	2
Potential Environmental Impact	Low	Minimum
Maximum allowable NO3-N in 1-4 foot profile	140 lb/ac (based on CLI Agriculture Capability)	140 lb/ac (based on CLI Agriculture Capability)
Residual NO3-N in 1-4 foot profile in spring of 2016	254 lbs/ac	117 lbs/ac

On May 2, 2016, eight soil samples from the 0-4 foot profile from each of the two soil types were composited and submitted to Agvise Inc. for analysis. Results of the analysis (see above) indicated the average residual NO3-N (185.t lbs/ac) exceeded the maximum allowable residual; this information was communicated to McCains on May 17, 2016. By this date the farmer had already planted the field to french fry processing potatoes. Most growing seasons, irrigation is required to produce potatoes of suitable quality for processing into french fries. This particular field does not have another source of irrigation water other than effluent from the McCain lagoon. If this field does not receive effluent irrigation water the farmer could potentially produce a crop that is not marketable and suffer a significant financial loss. The application of effluent will ensure a marketable crop and harvesting the tubers will remove approximately 120 lbs N/acre from the field.

Recommended Actions

In consultation with Mitchell Timmerman, Agri-Ecosystems Specialist with Manitoba Agriculture, the following is the proposed remediation plan. For the 2016 growing season we are requesting a temporary suspension of *Clause 19 Respecting Irrigation* and associated *Appendix G* from the EAL that would allow McCain to provide the Field with effluent water. In addition the farmer will not add additional N to the field other than what is contained in the effluent water. Based on 2015 nitrogen effluent concentrations, less than 15 lbs/ac NO3-N would be added to the potato crop if 12 inches of effluent were applied [Note: similar effluent concentrations are expect for the 2016 growing season]. In the fall of 2016, the soil from the Field will be sampled to 4 feet to track the residual NO3-N levels in accordance with the EAL.

In 2017, McCains will ensure that the field is planted to cereal crops to facilitate the uptake and removal of the residual soil nitrogen. As an example, annual Rye Grass

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(Italian) and oats could be planted, with no additions of nitrogen other than what is contained in the effluent irrigation [Note: because the only source of water for the Field is effluent irrigation, in order to maximize the cereal crop yield and associated removal of residual nitrogen it is recommended to apply effluent irrigation for the 2017 growing season. The net benefit of nitrogen removal with the increased crop yield would be significantly greater than the amount of nitrogen added by the effluent irrigation]. This crop will be harvested as forage removing 150 lbs of nitrogen in the 0–4 foot soil profile. In the fall of 2017, the residual NO₃-N soil level will be assessed as per the EAL to determine if further remediation is required. When the residual NO₃-N soil level is determined to be below the Maximum allowable NO₃-N in 0-4 foot profile as indicated above, the temporary suspension of *Clause 19 Respecting Irrigation* and associated *Appendix G* from the EAL would expire and the conditions of the EAL would be reinstated.

The progress of the remediation plan will be communicated to Manitoba Sustainable Development as part of the annual reporting submitted in accordance with the EAL.

Closing

Based on the above information, Dillon recommends implementation of the temporary suspension of *Clause 19 Respecting Irrigation* and associated *Appendix G* from the EAL identified herein. Pending acceptance of this NoA by Manitoba Sustainable Development, the 2016 effluent irrigation will proceed as indicated.

If you have any questions or comments, please contact the undersigned at your convenience.

Yours truly,

DILLON CONSULTING LIMITED

Doug Bell, M.Sc., P. Geo., FGC
Partner

cc: Lynda Berry – McCain Foods (Canada), Carberry Plant
Mitchell Timmerman - Manitoba Agriculture

DDB:jef

Our file: 15-1526-2000