EXECUTIVE SUMMARY

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The current submission relates to the City of Brandon's expanded Industrial Waste Water Treatment Facility (IWWTF) only and also provides information about the operationally improved pretreatment plant operated by Maple Leaf Pork. The expansion of the IWWTF is being constructed primarily to serve the second production shift of the Maple Leaf Pork processing plant. A separate Notice of Alteration has been prepared by Maple Leaf Foods Inc. for alterations to their existing pork processing plant to accommodate the introduction of a second production shift at Maple Leaf Pork in Brandon.

The City of Brandon plans to construct a state-of-the-art expanded IWWTF about 3.5 km east of the most easterly built up area of Brandon, Manitoba. The site is located on the southernmost 20.88 hectares (51.59 acres) of NE¼ 16-10-18WPM. The Maple Leaf Pork site is located on the SE¼ 16-10-18 WPM and the SW¼ 16-10-18 WPM excluding the most northerly 650 feet perpendicular and the most westerly 100 feet perpendicular; making the total property area of the combined developments approximately 132.57 hectares (327.60 acres). The expanded IWWTF will treat the entire effluent of the first and second daily production shift and the daily clean-up shift after it leaves the operationally improved pretreatment plant located on the Maple Leaf Pork site to the south. The quality of the waste water effluent from the pretreatment plant will not significantly change the quality from the present and there is no need for it to do so.

The proposed waste water treatment method combines the existing biological system with an expanded biological and innovative membrane system that is capable of removing a larger percentage of nutrients. Typical daily waste water production from the pork processing plant has been 4,330 m^3/day (1.14 million US gallons per day) for the initial single shift and is projected to rise to 6,700 m^3/day (1.77 million US Gallons per day) for the double shift scenario. Construction of the expanded IWWTF will take place over an 11-month period and will employ an average of 30 people, with a peak month employment of about 40 workers.

The study area for the environmental impact assessment comprises all areas within a 10-km radius of the treatment facility; however, a greater detail of study has been conducted within a 3-km radius of the facility. The study area also includes the Assiniboine River between Brandon and Portage la Prairie.

The area where the expanded IWWTF will be constructed was graded and left vacant since the construction of the original IWWTF. The land was previously cultivated land and was previously used by Simplot as an area of fertigation (application of waste fertilizer by irrigation). The most westerly portion of the site is pastureland and has not previously been cultivated although it has been impacted by former gravel pit operations. An aquifer of considerable extent exists beneath the site and underlies the surrounding area.

Table ES-1 summarizes the anticipated impacts and mitigative measures for the relevant construction activities. From Table ES-1, it can be seen that any negative impacts from construction are generally low in magnitude or negligible, of short duration, local in extent and the large majority of impacts are mitigible. Moderate impacts are anticipated only from spills of chemicals or fuels onto the ground or into ditches. Construction of a special refueling area in an area of clay and immediate clean up of spills will reduce the residual impact from any spills to nil, since the contaminants will be cleaned up. A residual impact of inconvenience to local traffic will remain throughout construction.

Overall, the environmental impacts related to the construction of the expanded IWWTF are anticipated to be of low to moderate magnitude and largely manageable and mitigatible.

Table ES-2 summarizes the anticipated impacts and mitigative measures for the relevant operation activities. From Table ES-2, it can be seen that all potential impacts during operation are negligible or low except for one low to moderate (odours), three moderate (chemical/fuel spills on site, or into ditches, and the possibility of an equalization basin leak). The odours will be local, but long term and reversible. There is only one residence nearby within a kilometre. Any spills would be cleaned up immediately and ditches would be blocked if surface water were threatened. These impacts would be local, short term and rare in occurrence. Any groundwater contamination would be cleaned up and monitored. The equalization basin will be double-lined with a leak detection system. One typical potential impact is personal injury that could be a low, medium or high impact depending on the consequences of the injury. There will be only about five workers at the expanded Industrial Waste Water Treatment Facility and training is a high priority as part of the City of Brandon's focus on operating guidelines and protocols. The impacts on the Assiniboine River are not included in this report as yet; however it is anticipated that impacts on the Assiniboine River will be manageable considering the research attention it has received over the past five years.

Overall, the environmental impacts related to the operation of the expanded IWWTF are anticipated to center on the Assiniboine River, but will be manageable.

Table ES-1: Summary of Environmental Impacts (Construction)

Classification of Potential Impact	Project Phase	Potential Impact	Magnitude of Impact	Direction of Impact	Duration of Impact	Frequency of Impact	Scope of Impact	Mitigative Measures	Degree of Reversibility	Residual Impact
Air Emissions	Construction	Construction Vehicle Exhaust	Negligible	Negative	Short Term	Continuous during working hours	Local	Vehicles to be well maintained	Irreversible	Normal construction equipment emissions
		Airborne Dust and Particulates	Low	Negative	Short Term	Intermittent	Local	Earthwork to be limited to building site as much as possible; Non-toxic dust control measures will be taken if necessary	Reversible	Minimum airborne dust and particles
		Odours	Low	Negative	Short Term	Intermittent	Local	Large buffer zone to property line (240 m; or 800 feet)	Reversible	Odours dispersed naturally
Greenhouse Gasses	Construction	Construction Vehicle Exhaust	Low to Negligible	Negative	Short Term	Continuous during working hours	Provincial	Vehicles to be well maintained	Irreversible	Minimization of GHG emissions
Noise	Construction	Back-up Beepers	Negligible	Neutral	Short Term	Intermittent	Local	None, safety issue	Reversible	Minor annoyances in sparsely populated areas
		Machinery Noise	Low	Negative	Short Term	Continuous during working hours	Local	Vehicles to be well maintained and operate only during appropriate hours	Reversible	
		Pile Driving Equipment	Low	Negative	Short Term	Intermitent during working hours	Local	Restrict hours of use to appropriate times	Reversible	
Human Heath	Construction	Construction worker health/ safety	Low	Negative	Short Term	Continuous during working hours	Local	Manitoba Workplace Safety and Health regulations to be followed	Reversible	Minimize health/ safety impacts
		Particulate emissions(dust) affecting humans	Low	Negative	Short Term	Intermittent	Local	Non-toxic dust control measures will be undertaken if necessary. Affected workers can be removed from the influence of excessive dust or use PPE.	Reversible	Minimize dust etc. on work site

Table ES-1: Summary of Environmental Impacts (Construction) (Cont'd.)

Classification of Potential Impact	Project Phase	Potential Impact	Magnitude of Impact	Direction of Impact	Duration of Impact	Frequency of Impact	Scope of Impact	Mitigative Measures	Degree of Reversibility	Residual Impact
Surface Water	Construction	Sediment deposition via runoff	Low	Negative	Moderate	Intermittent	Local	Silt fences will be placed in ditches. Pond is in place upstream of river.	Reversible	Sediment in run-off is intercepted
		Chemical spills to ditches	Low	Negative	Moderate	Intermittent	Local	Storm water to be monitored, if necessary, during construction for comparison to existing levels. Check dams will be constructed if necessary. Holding ponds upstream of river.	Reversible	Nil, clean-up activities would be employed to remove contam-inants
Assiniboine River	Construction	Water quality In Assiniboine River	Negligible	Negative	Short Term	Once	Local	Monitoring surface water before it leaves site	Reversible	Nil
Groundwater	Construction	Chemical/Fuel spills on the site	Moderate	Negative	Moderate	Rare	Local	Chemicals and Fuels stored and used in a designated area of the site with low permeability and berms to the greatest extent possible	Reversible	Nil, clean-up activities would be employed to remove contam-inants
		Chemical/Fuel spills in ditches	Moderate	Negative	Moderate	Rare	Local	Immediate Clean-up measures will be under-taken	Reversible	Nil, clean-up activities would be employed to remove contam-inants
Soils	Construction	Chemical/fuel spills on the site	Low	Negative	Long term	Rare	Local	Chemicals and Fuels stored and used in a designated area of the site with low permeability and berms to the greatest extent possible	Reversible	Nil, clean-up activities would be employed to remove contam-inants
		Disturbance of previously disturbed area due to surface preparation	Low	Negligible	Long Term	Once	Local	Confine activities to project area, salvage topsoil materials suitable for reclamation, and re-vegetate to prevent erosion	Reversible	Nil

Table ES-1: Summary of Environmental Impacts (Construction) (Cont'd.)

Classification of Potential Impact	Project Phase	Potential Impact	Magnitude of Impact	Direction of Impact	Duration of Impact	Frequency of Impact	Scope of Impact	Mitigative Measures	Degree of Reversibility	Residual Impact
Wildlife	Construction	Habitat reduction	Low	Negative	Long Term	Continuous	Local	Areas of disturbance will be minimized to the extent possible.	Irreversible	Minimal habitat reduction
		Habitat alienation in adjacent areas due to noise and light disturbance	Low	Negative	Short Term	Continuous	Local	Confine activity to project area. Additional habitat available nearby.	Reversible	Nil
		Deer mortality due to vehicle collisions	Negligible	Negative	Moderate	Intermittent	Local	Awareness training and encourage personnel to obey speed limits on access roads	Reversible	Small increase in number of kills in short term
Vegetation	Construction	Vegetation reduction through site grubbing and levelling	Low	Negative	Moderate	Continuous	Local	Earthwork limited to building site as much as possible. Topsoil stockpiled for use in landscaping.	Reversible	Minimal reduction in vegetation in short term
		Fuel/chemical spills causing injury to vegetation	Negligible	Negative	Short Term	Rare	Local	Employee training and awareness programs and contingency plans	Reversible	Minimal vegetation injury
Overall Economic Impact	Construction	Direct and indirect employment	Low	Positive	Moderate	Continuous	Regional	No mitigation necessary	Irreversible	Economic gain to region
Transportation	Construction	Increase in immediate site traffic	Low	Negative	Short term	Continuous	Regional	On site vehicle storage will be provided; i.e. no vehicles parked on public roads.	Reversible	Normal inconvenience for local traffic with turning vehicles
		Increase in accident rate	Low	Negative	Short Term	Intermittent	Regional	Ample rest area parking available at existing truck stops.	Reversible	Factors leading to fatigue and accidents will be reduced

Table ES-1: Summary of Environmental Impacts (Construction) (Cont'd.)

Classification of Potential Impact	Project Phase	Potential Impact	Magnitude of Impact	Direction of Impact	Duration of Impact	Frequency of Impact	Scope of Impact	Mitigative Measures	Degree of Reversibility	Residual Impact
Heritage Impacts	Construction	Disturbance or demolition of heritage resources	Negligible	Negative	Short Term	Once	Local	The site was inspected by a qualified consultant so that items/areas of significance could be addressed.	Reversible	Nil, no significant heritage resources were encountered on the site.
Ozone Depleting Substances	Construction	Propellant emissions	Negligible	Negative	Short Term	Intermittent	Provincial	Use alternative products	Irreversible	Negligible
		Refrigerant emissions	Low	Negative	Long Term	Intermittent	Provincial	Refrigerants to be serviced and recovered by qualified personnel according to regulations.	Irreversible	Minimal to no impact on ozone layer via refrigerant releases
Waste Generation and Disposal	Construction	Disposal of construction wastes	Low	Negative	Short Term	Continuous	Local	Wastes generated through the construction process will be gathered and periodically hauled to the local landfill.	Reversible	Construction wastes properly disposed of in a safe manner
		Disposal of hazardous wastes, solvents, etc.	Low	Negative	Moderate	Intermittent	Regional	Hazardous wastes generated on the site such as solvents, etc. will be properly stored, transported, and disposed of according to regulations.	Reversible	Hazardous wastes disposed of properly. Minimal human health risks

Table ES-2: Summary of Environmental Impacts (Operation)

Classification of Potential Impact	Project Phase	Potential Impact	Magnitude of Impact	Direction of Impact	Duration of Impact	Frequency of Impact	Scope of Impact	Mitigative Measures	Degree of Reversibility	Residual Impact
Air Emissions	Operation	Vehicle Exhaust	Negligible	Negative	Long Term	Intermittent during working hours	Local	Vehicles to be well maintained	Irreversible	Normal yard equipment emissions
	Operation	Airborne Dust and Particulate	Low	Negative	Long Term	Intermittent	Local	Non-toxic dust control measures will be under-taken, if necessary. Pavement in future.	Reversible	Minimum air-borne dust and particles. Dust not tolerable near food processing plant.
	Operation	Odours/Stack Emissions	Low to Medium	Negative	Long Term	Intermittent	Local	Large buffer zone to property line (more than 240 m or 800 feet to nearest resident)	Reversible	Odours dispersed naturally otherwise not a concern
Greenhouse Gasses	Operation	Climate Change	Low to Negligible	Negative	Long Term	Continuous during working hours	Provincial	L.E. Equipment to be used and well maintained	Irreversible	Minimization of GHG emissions
Noise	Operation	Back-up Beepers	Negligible	Neutral	Short Term	Intermittent	Local	None, safety issue	Reversible	Minor annoyances in sparsely populated areas
	Operation	Machinery Noise	Low	Neutral	Short Term	Intermittent	Local	Interior machinery; well maintained. Hearing protection provided to workers, as required	Reversible	Muffled noise from within equipment building .
	Operation	Traffic	Low	Negative	Short Term	Intermittent	Local	Traffic control and keep site equipment in good working order	Reversible	If any, only impacts one residence.
Human Health	Operation	Worker Health/Safety	Low	Negative	Short Term	Intermittent during working hours	Local	Manitoba Workplace Safety and Health regulations to be followed. Safety Officer and Nurse on staff	Reversible	Minimize health/ safety impacts

Table ES-2: Summary of Environmental Impacts (Operation) (Cont'd.)

Classification of Potential Impact	Project Phase	Potential Impact	Magnitude of Impact	Direction of Impact	Duration of Impact	Frequency of Impact	Scope of Impact	Mitigative Measures	Degree of Reversibility	Residual Impact
	Operation	Particulate Emissions (Dust) Affecting Humans	Low	Negative	Short Term	Intermittent	Local	Use of water and non-toxic dust control measures will be undertaken if necessary	Reversible	Minimize dust, etc. on work site
	Operation	Personal Injury	Low, Medium, or High	Negative	Short or Long Term	Intermittent	Local	Nurse on site; emergency response team	Reversible	Persistent or chronic injuries
Surface Water	Operation	Sediment deposition via runoff	Low	Negative	Short Term	Intermittent	Local	Site and ditches will be vegetated, where practical. Storm ponds located upstream of river.	Reversible	Sediment in runoff is intercepted
	Operation	Chemical spills to ditches	Low	Negative	Moderate	Rare	Local	Check dams will be constructed if necessary. Proper chemical storage and handling procedures to be practiced.	Reversible	Nil, clean-up activities would be employed to remove contaminants
Assiniboine River	Operation (Winter)	Ammonia may be toxic to aquatic life	Assiniboine River Impact Assessment Will Be Provided by May 15, 2003							
	Operation (Winter)	Oxygen Depletion								
	Operation (Winter)	TN and TP enrichment; algae growth								
	Operation (Winter)	Protozoa and Coliform								
	Operation (Open Water)	Ammonia may be toxic to aquatic life								
	Operation (Open Water)	Oxygen Depletion								
	Operation (Open Water)	TN and TP enrichment; algae growth								
	Operation (Open Water)	Protozoa and Coliform								

Table ES-2: Summary of Environmental Impacts (Operation) (Cont'd.)

Classification of Potential Impact	Project Phase	Potential Impact	Magnitude of Impact	Direction of Impact	Duration of Impact	Frequency of Impact	Scope of Impact	Mitigative Measures	Degree of Reversibility	Residual Impact
Groundwater	Operation	Chemical/fuel spills on the site	Moderate	Negative	Moderate	Rare	Local	Secondary containment; adhere to codes	Reversible	Nil, clean-up activities would be employed to remove contaminants
	Operation	Chemical/fuel spills in ditches	Moderate	Negative	Moderate	Rare	Local	Immediate clean-up measures will be undertaken	Reversible	Nil, clean-up activities would be employed to remove contaminants
	Operation	Equalization basin leakage	Moderate	Negative	Moderate	Rare	Local	Containment and contaminated water directed to anaerobic lagoon of IWWTF. Groundwater monitoring program in place.	Reversible	Nil, clean-up activities would be employed to remove contaminants
Soils	Operation	Chemical/Fuel Spills on the Site	Low	Negative	Moderate	Rare	Local	Secondary containment and adhere to Codes	Reversible	Nil, clean-up activities would be employed to remove contaminants
	Operation	Oil Drips from Vehicles	Low	Negative	Long Term	Intermittent	Local	Visual monitoring and removal of contamin-ated soil, if necessary	Reversible	Nil
Wildlife	Operation	Habitat Alienation in Adjacent Areas Due to Noise and Light Disturbance	Low	Negative	Long Term	Continuous	Local	Confine activity to project area. Site is already used for heavy industrial activity, remaining wildlife have adapted.	Reversible	Nil
	Operation	Deer Mortality Due to Vehicle Collisions	Low	Negative	Long Term	Intermittent	Local	Awareness training and encourage personnel to obey speed limits on access roads.	Reversible	Small increase in number of kills in long term
Vegetation	Operation	Native Vegetation Allowed on Remainder of Site	Moderate	Positive	Long Term	Continuous	Local	Allow native vegetation to grow on undisturbed portions of the site. Disturbed site is re-established grass land from previous construction.	Reversible	Increase in acreage of native vegetation

Classification of Potential Impact	Project Phase	Potential Impact	Magnitude of Impact	Direction of Impact	Duration of Impact	Frequency of Impact	Scope of Impact	Mitigative Measures	Degree of Reversibility	Residual Impact
	Operation	Fuel/Chemical Spills Causing Injury to Vegetation	Negligible	Negative	Short Term	Intermittent	Local	Employee training and awareness programs and contingency plans. Proper storage and handling procedures.	Reversible	Minimal vegetation injury

Table ES-2: Summary of Environmental Impacts (Operation) (Cont'd.)

Classification of Potential Impact	Project Phase	Potential Impact	Magnitude of Impact	Direction of Impact	Duration of Impact	Frequency of Impact	Scope of Impact	Mitigative Measures	Degree of Reversibility	Residual Impact
Overall Economic Impact	Operation	Direct and Indirect Employment	Negligible	Positive	Long Term	Continuous	Local	No mitigation necessary	Reversible	Economic gain to region
Transportation	Operation	Increase in Site-Bound Traffic	Negligible	Negative	Long Term	Continuous	Local	Offset peak hours; improved roadways to site; turning lanes.	Reversible	Normal inconvenience for local traffic; more traffic
	Operation	Increase in Accident Rate	Low	Negative	Long Term	Intermittent	Local	Improved traffic control for higher capacity	Reversible	Factors leading to congestion reduced
Ozone Depleting Substances	Operation	Propellant Emissions	Negligible	Negative	Long Term	Intermittent	Provincial	Use alternative products	Irreversible	Negligible
Solid Waste Generation and Disposal	Operation	Disposal of Operational Wastes	Low	Negative	Short Term	Continuous	Local	Wastes generated through the operation process will be gathered and periodically hauled to the local landfill	Reversible	Operational wastes properly disposed of in a safe manner
	Operation	Biosolids disposal on agricultural land	High	Positive	Long Term	Intermittent	Local	Biosolids Management Plan, with land application according to Environment Act Licence	Reversible	Negative potential impact turned into positive resource