Mr. Richard Rubrics,

I have done the analysis on our optimal capacity planning. I created a model (attached) to find the optimal capacity produced and distributed from each production facility in 2 scenarios: with the Guadalajara production facility and without. I used the figures and numbers that we presented in our meeting for production and distribution costs.

**Findings:**

With the Guadalajara production facility and assuming all facilities work at **full capacity**, the optimal solution is to only use the facilities in Toronto, L.A., and Guadalajara for a yearly cost of ~**$40.2M**.

According to Mr. Curley’s information, running each facility at **90% capacity,** the optimal solution is to produce at 90% capacity at the Toronto, L.A., and Guadalajara facilities and to produce 1000 cartons/day at Seattle. The yearly cost would be ~**$41.4M**.

Without opening the Guadalajara facility, the other four production facilities would have to operate at full capacity just to meet demand. This is not adhering to Mr. Curley’s warning and it offers no room for increased demand. The yearly cost is also higher at ~**$49.4M.**

In years consistent with Yr. 5 and its demand and costs, opening the Guadalajara plant saves ~**$8M** per year. Given the initial investment of $30M, the plant would pay for itself in less than 4 years. This is not including the tax deduction for depreciation which would make up for the costs even quicker.

**Insight:**

Assuming that the company expects demand to increase in the future and facility capacity remains constant, the *Guadalajara production facility needs to be opened*. Given that it takes 2 years to build, to meet demand the beginning of construction needs to begin within the next 2 years and sooner is better to save costs.

Assuming that maintaining the facilities to reopen when demand increases and that the company wishes to operate at full capacity, production could be ceased at K.C. and Seattle plants. However, if we assume a 90% capacity limit, only the *K.C. facility should cease operation*. Note that the fixed costs would need to be analyzed further to assess the feasibility of shutting down, maintaining, and eventually reopening a plant. At least one if not both facilities would have to be used in the future to meet increasing demand.

Things to further consider in shutting down the plant would be the personnel costs of firing/moving/hiring employees from the K.C. facility to the Guadalajara facility, societal impact and reputation from large employment shifts such as this, and the potential effect of politics on having more resources in Mexico, as well as the ease of reopening the facility at a later date. Would it make it more difficult for HR to fill those positions efficiently?

If you have any questions, please email me or schedule a meeting.

Thank you,

Emily Gomez (McDougall)

Mapleleaf Corportation, Chief Marketing Director

**Figures:**



Figure : Production/Distribution Schedule



Figure : Costs of model with Guadalajara



Figure : Guadalajara savings