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May 25, 2018

TM-9855
Code #09-LF-009

Siobhan Burland Ross
Acting Director
Environmental Approvals Branch
Manitoba Sustainable Development
1007 Century Street
Winnipeg MB
R3H 0W4

Re: Request for Additional Information- File 3023.00

Dear Ms. Burland Ross:

In response to the request for additional information sent by your office on May 23, as part of File 3023.00 Environmental Act Licence No. 1339 RR, Canadian Kraft Paper is pleased to provide the following additional details:

1. University of Toronto and Laurentian University are conducting greenhouse trials using sludge from our site and other industrial sludge. They found grass biomass improved with increased levels of sludge amendment with soil. Figure 1 shows grass growth on the sludge from Site 2A which was spread in November 2017. This is even before any grass seeds have been sown.

The dried sludge does not break apart easily. In comparison to untreated sites alongside, it produces no noticeable dust. It has texture like manure; as it breaks down it becomes very similar to black/brown soil with strong aggregation. See Figure 2.

Figure 1: Grass growth on sludge at site 2A in May 2018.

Figure 2: No visible dust has been observed from landspread site 2A in contrast to the surrounding bare ground.

2. In addition to sites 2A, B, C, and D that we received approval for last year, we are seeking approval for two capped landfill sites of approximately 6.9 and 3.5 Ha, and additional sites ii, iii, iv, and vi (Figures 3-6). We have approval for approximately 3000 BDT of sludge that needs to be removed from our North Settling Basin. We are seeking approval for another 3000 BDT from the South Settling Basin. This year we also have sludge buildup in the Aerated Lagoon, which is severely impacting our DO (dissolved oxygen) levels and is contributing to short circuiting around the lagoon baffle curtain. We need to remove approximately 2000 BDT from the lagoon. The lagoon material is secondary sludge and tests fit within the parameters outlined in Clause 14 and 18 of our October 27th, 2017 approval. In total we need to remove approximately 8000 BDT of sludge material to maintain effective treatment of our effluent.

We propose three phases of removal.

Phase 1: North Settling Basin- 3000 BDT spread on 2A, 2B, 2C, and capped landfill 1

Phase 2: South Settling Basin- 3000 BDT spread on Capped landfill 1

Phase 3: Lagoon- 2000 BDT spread on Capped Landfill 1 and 2

If we use the following application rates, we can accommodate all of the sludge as shown in Table 1.

Table 1: Proposed Application Rates and Locations

Phase	Site	# of Hectares	Rate	BDT of material
1	**2A**	5.37	345.7 tonne/Ha mix with yard waste 1:1 @ 1’	1856.4
1	**2B**	0.72	691.4 tonne/Ha @ 1’	497.8
1	**2C**	0.89	Test plots	218.4
1/2/3	**Capped landfill 1 (ii)**	6.9	691.4 tonne/Ha or 1’	4770.7
3	**Capped landfill 2 (iii)**	3.5	345.7 ton/Ha or 6’’	1209.9
			Total 2018	**8553.2**
Extra	**2D**	1.3	156 ton/Ha or 3”	202.8
Extra	**Front of lagoon (vi)**	0.6	156 ton/Ha or 3”	93.6
Extra	**South of water treament (iv)**	2.8	156 ton/Ha or 3”	436.8
			Total extra	733.2

At at rate of 691.4 tonnes/Ha, the 7 Ha landfill can accommodate half of the sludge. Site 2C is an ideal test plot size to compare different rates of application. Our active landfill is currently full and cannot accommodate much additional sludge. We may have the option to spread on site 2D. If we get approval for sites vi and iv, that would help as well.

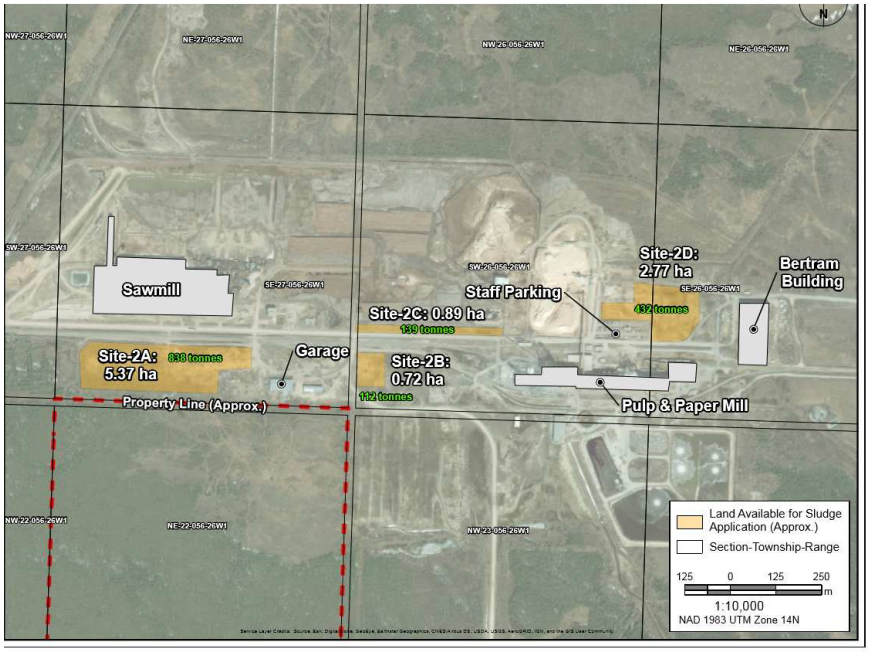

Figure 3: Site 2 A, B, C, and D

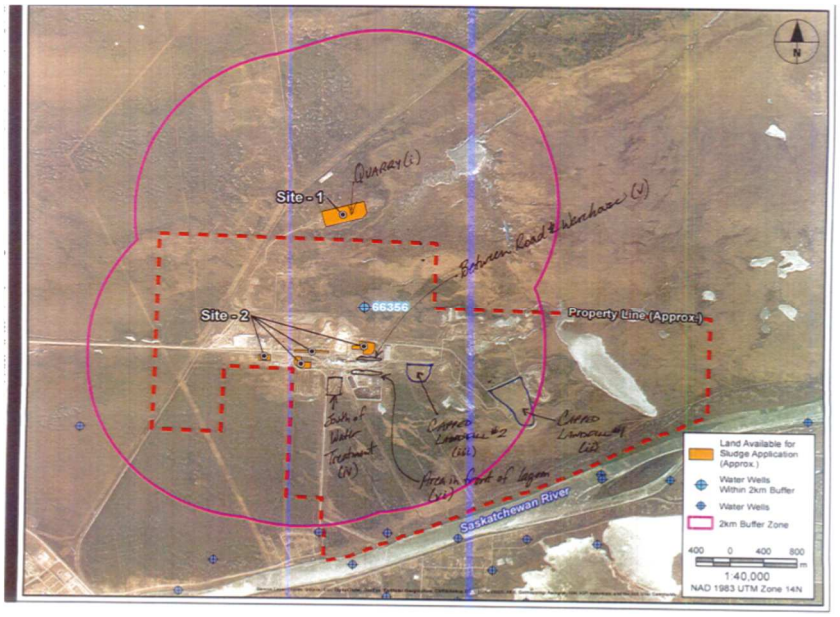

Figure 4: Additional proposed sites

Figure 5: Landfill 1 (ii)

Figure 6: Landfill 2 (iii)

3. CKP proposes to mix the yard waste to biosolids at a ratio of 1:1 based on volume. The rate of sludge application therefore be half of the volume added (eg. Mix sludge with yard waste to a depth of 6'' would be 156 tonnes of sludge per hectare). We would use a loader to mix materials and have material spread using either a spreader or by bulldozer.

4. The application of 690 tonnes/Ha was due to the consistency of the material. It was not possible to spread thinner using a bulldozer. This year, we are planning to use a manure spreader to achieve a lower application rate, where applicable.

5. For geotechnical data, please see the comments and details from Kristiina Cusitar of AECOM dated October 25, 2017 (attached) as a response to a request for further information: "As indicated in the Section 3.1 (Pilot Study Components) of the Pilot Study report, a composite soil sample was collected from the potential application sites for laboratory analytical testing for chemical and physical properties. As soil conditions were observed to be consistent at all four locations (Site-2A to Site-2D), it was determined that one composite sample for Site-2 composed of soil collected from Site-2A to Site-2D would be sufficient." From the above testing and information, all proposed sites on CKP property are expected to have the same chemical and physical properties. Groundwater well records for sites located within 2km of site 2 show clay depth to range from 1.5m to 6m with adequate thickness and material to protect groundwater. The old landfills (sites ii & iii) are clay capped.

6. Samples were collected from 3 sites distributed over each cell using a backhoe and grab samples. We recently sampled the lagoon using a 5 point grab sample and will do so for all future sampling.

7. There seems to be oversight from the testing lab for mercury. We are checking in with them to see why it was not consistently included in our reports. Based on the low level for the sludge sample collected November 27, 2017 (0.0073 mg/kg), one of the possible reasons is that mercury was below the DL. Mercury will be included from now on.

8. We have had a change of direction for our current situation regarding the land application of the sludge from the settling basins and lagoon. We are no longer seeking approval for agricultural application for this year. We would like to use the sludge as a growing medium on disturbed industrial land as a medium to vegetate barren areas. We are also considering the potential for dust control.

9. If Clause 20 regarding nitrate N and phosphorous testing only applies to agricultural land, are we exempt from this testing for our current proposed industrial sites?

10. At this time, we will not be seeking approval for land spreading at the quarry site. We will review these requirements if we consider the quarry site in future years.

Sincerely,

 for/

Jayne Sheppard, P. Eng.
Environmental Superintendent

Attach.

cc: Asit Dey, Manitoba Sustainable Development
Tamsin Patience
Andre Murphy
Vanessa Rosenkranz