



Water and Waste Department • Service des eaux et des déchets

ENVIRONMENT ACT LICENCE #1089E RR

**BIOSOLIDS DEWATERING, MONITORING,
AND DISPOSAL PROGRAMS**



2012



Water and Waste Department • Service des eaux et des déchets

January 30, 2013

Our Files: 040-17-08-23-01

Don Labossiere
Director, Environmental Compliance and Enforcement
Manitoba Conservation and Water Stewardship
123 Main Street
Winnipeg, Manitoba
R3C 1A5

Dear Mr. Labossiere:

RE: ANNUAL COMPLIANCE REPORT FOR ENVIRONMENT ACT LICENCE 1089E RR

Enclosed you will find our annual compliance report which details the City of Winnipeg's Biosolids Dewatering and Disposal Program for 2012. Included in this report are:

- a) details of the 2012 biosolids distribution and monitoring programs
- b) details of the proposed 2013 biosolids distribution program.

If you have any questions concerning the annual report, I may be reached by telephone at 204-986-4807 or by e-mail at kkjartanson@winnipeg.ca.

Yours sincerely,

Original signed by:

K.J.T. Kjartanson, P.Eng.
Manager of Environmental Standards

KJTK:rg
Enclosure

- c:
- D. Sacher, P.Eng.
 - C. Carroll, P.Eng.
 - G. Patton, P.Eng.
 - D. Drohomerski, CET
 - D. DeCraene

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Environmental Standards Division • Division des normes environnementales
2230 Main Street • 2230, Rue Main • Winnipeg • Manitoba R2V 4T8
tel/tél. (204) 986-4684 • fax/télec. (204) 339-2147 • www.winnipeg.ca



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**BIOSOLIDS DEWATERING, MONITORING,
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2012

Jenni Jones, B. Sc.
Laboratory Technician

Renée Grosselle, B. Sc.
Supervisor of Compliance Reporting Branch

Kelly Kjartanson, M. Sc., P. Eng.
Manager of Environmental Standards Division

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EXECUTIVE SUMMARY

Amended Environment Act Licence #1089E RR, issued on June 14, 2000, requires that the City of Winnipeg monitor its biosolids dewatering and disposal operations and submit an annual report to the regulating authority and various municipalities on or before the 31ST of January of each year.

This report summarizes the results of the City's 2012 Biosolids Application Program (WINGRO) and also outlines the proposed plan for the 2013 calendar year.

In 2012, the City produced 13,345 dry-tonnes of anaerobically digested, mechanically dewatered biosolids at its North End Water Pollution Control Centre (NEWPCC). The total solids concentration in the dewatered biosolids averaged 25.7%. The WINGRO program deposited 100% of the biosolids at the Brady Road Landfill. No biosolids were applied to agricultural land in 2012. The interim storage pad was not used in 2012.

We plan to continue disposing of biosolids at the Brady Road Landfill in 2013. We are proposing to pilot a biosolids composting facility at the landfill which would commence in the fall of 2013.

COMPLIANCE REPORT

Environment Act Licence #1089E was issued to the City of Winnipeg on February 21, 1989 and amended on April 28, 2000 (#1089E R) and on June 14, 2000 (#1089E RR). Licence #1089E RR sets limits, terms and conditions with which the City of Winnipeg must comply in the operation of its mechanical dewatering equipment, the temporary storage of biosolids, and with its disposal onto agricultural land. One of these conditions is that "**The applicant shall, on or before the 31st day of January of each year, submit to the Director, with a copy to the Rural Municipality of West St. Paul and to each Municipality in which biosolids have been disposed of, a report...**" In keeping with this requirement, the City of Winnipeg hereby submits this compliance report which contains information on its 2012 Biosolids Program.

Licence #1089E RR contains several clauses. This report presents results and/or comments for each of the clauses under which the City has generated pertinent information during the course of conducting its 2012 Biosolids Program. The report also provides information on its proposed Biosolids Program for the twelve months starting January 1, 2013.

The specific requirements of each clause are presented in **bold-faced type** followed by the City's comments.

2012 BIOSOLIDS APPLICATION PROGRAMS

(a) Dewatering

"The Licensee shall operate and maintain the mechanical dewatering equipment to achieve a level of at least 20 percent solids, by weight after the dewatering process." (Clause 5)

From January 1, 2012 to December 31, 2012 the City produced 13,345 dry-tonnes of mechanically-dewatered biosolids at its NEWPCC facility. Appendix I contains the mechanical dewatering operating records for 2012. In 2012, the total solids in the biosolids averaged $25.7 \pm 2.7\%$ ($n = 253$). The dewatering equipment achieved a total solids content in the biosolids of at least 20 percent by weight on all occasions.

(b) Storage

"The Licensee shall only store biosolids at the temporary storage facility in circumstances when agricultural land is not accessible for direct biosolids disposal (Clause 6)" and "the Licensee shall ensure that the biosolids are removed from the temporary storage facility for application to agricultural land as soon as the agricultural land is available (Clause 7)."

In 2012, the storage pad was not used to provide interim storage for any mechanically-dewatered biosolids. The WINGRO program deposited 100% of the annual biosolids production at the Brady Road Landfill.

(c) Monitoring Results

“The Licensee shall conduct a monitoring program in accordance with Appendix “B” to this licence” (Clause 21) and present “the results of analysis of biosolids, soil, and surface water runoff, where the biosolids are applied as well as odour complaint investigations concerning biosolids storage and application” (Clause 22 (c)).

Table 1 contains the results of analyses conducted on samples of biosolids in fulfilment of the monitoring requirements stipulated in Licence #1089E RR. Ditchwater samples were not collected in 2012 because biosolids were not applied to any fields in 2011. Appendix I contains the mechanical dewatering operating records for 2012.

Although no formal odour complaints associated with the WINGRO Program were received in 2012, we experienced an increase in the number of odour complaints in 2011 and 2012 at the Brady Road Landfill due to our acceptance of biosolids on a daily basis. Due to the increased odour complaints, the City is developing strategies to mitigate the odour including measures such as covering the material with straw or trenching.

TABLE 1
2012 Biosolids Quality

Sample Number	Date Sampled *	Total Cd (mg/Kg-Cd)	Total Cr (mg/Kg-Cr)	Total Cu (mg/Kg-Cu)	Total Ni (mg/Kg-Ni)	Total Pb (mg/Kg-Pb)	Total Zn (mg/Kg-Zn)	Total P (mg/Kg-P)	NH3-N (mg/Kg-N)	TKN (mg/Kg-N)	pH (units)	Specific Conductance (dS/m)	Total Solids (%)
1	1-Jan-12	2.2	95	525	45.9	37.7	650	23,100	13,600	27,500	6.01	11.6	22.7
2	15-Jan-12	2.6	221	652	64.2	48.6	1,060	25,700	12,900	30,900	5.95	11.4	24.5
3	29-Jan-12	1.9	221	600	53.6	48.1	1,400	20,800	13,100	32,200	5.95	11.3	25.0
4	12-Feb-12	1.9	248	621	43.1	48.7	2,750	23,800	13,300	33,500	5.91	10.8	25.7
5	26-Feb-12	2.4	194	735	56.9	49.2	1,860	24,400	11,800	25,700	6.06	10.0	26.4
6	11-Mar-12	1.9	137	502	53.3	49.6	1,020	16,900	10,100	35,700	6.13	9.1	30.0
7	25-Mar-12	1.7	208	455	51.2	71.3	929	15,000	9,610	37,800	6.42	7.8	33.5
8	8-Apr-12	2.7	188	977	52.1	77.0	1,310	14,600	10,700	37,400	6.27	9.3	29.4
9	22-Apr-12	2.6	139	664	71.2	67.6	989	15,500	11,300	38,000	6.15	10.1	28.5
10	6-May-12	3.6	153	980	87.1	84.3	1,890	17,300	12,100	34,400	6.02	10.0	27.1
11	20-May-12	2.9	125	955	63.3	78.9	2,920	15,700	11,600	35,500	6.08	8.8	28.2
12	3-Jun-12	3.7	138	876	85.5	106.0	2,510	16,900	10,500	32,400	6.12	8.2	27.4
13	17-Jun-12	4.5	128	718	57.2	89.1	1,560	15,300	12,900	32,900	6.20	9.4	27.4
14	1-Jul-12	9.8	122	735	51.5	91.1	1,740	15,300	13,800	33,500	6.29	10.0	24.1
15	15-Jul-12	5.9	139	915	61.0	77.9	2,480	17,500	10,000	26,000	6.42	11.2	22.5
16	29-Jul-12	2.8	122	864	67.5	67.9	1,890	15,800	12,600	31,200	6.03	11.8	24.8
17	12-Aug-12	3.0	118	805	66.5	77.6	1,840	15,600	11,900	30,700	6.09	12.8	25.7
18	26-Aug-12	2.0	59	770	55.4	68.4	4,730	18,600	12,400	32,600	6.08	12.5	24.9
19	9-Sep-12	2.0	89	756	70.0	59.5	3,630	17,800	12,700	31,800	6.05	12.1	24.5
20	23-Sep-12	2.5	102	886	50.8	325.0	2,580	17,100	12,000	27,800	6.15	10.9	22.6
21	7-Oct-12	2.3	121	762	86.1	312.0	1,720	18,200	11,200	33,600	5.98	13.0	23.4
22	21-Oct-12	3.4	125	954	83.0	282.0	1,740	23,900	11,300	25,600	6.14	10.3	24.8
23	4-Nov-12	4.1	99	667	70.4	140.0	1,130	17,800	11,200	32,800	5.98	10.6	26.1
24	18-Nov-12	4.3	115	830	64.9	112.0	1,060	20,000	11,200	31,700	6.05	10.9	25.6
25	2-Dec-12	4.1	104	823	69.0	106.0	1,270	19,900	13,400	32,900	6.13	12.7	24.6
26	16-Dec-12	3.9	104	723	60.3	83.4	1,020	23,000	14,000	32,900	7.29	10.6	24.5
Average:		3.3	139	760	63.1	102.3	1,834	18,673	11,970	32,192	6.15	10.7	25.9
Maximum:		9.8	248	980	87.1	325.0	4,730	25,700	14,000	38,000	7.29	13.0	33.5
Minimum:		1.7	59	455	43.1	37.7	650	14,600	9,610	25,600	5.91	7.8	22.5

* Indicates starting date for year 2012 biweekly composite samples

(d) Distribution Program

“details of the biosolids distribution program carried out during the previous calendar year, including the description of the location of the land on which the biosolids were applied and the dry weight of biosolids distributed per hectare.” (Clause 22 (a))

Of the 13,345 dry-tonnes of mechanically-dewatered biosolids produced at the NEWPCC from January 1, 2012 to December 31, 2012, 100% were disposed at the Brady Road Landfill.

2013 PROPOSED BIOSOLIDS APPLICATION PROGRAMS

“details of the biosolids application program proposed to be carried out during the one-year period following the issuance of the report, including a description of the locations of the land on which application will be carried out, the proposed dates of application, and the proposed dry weight of biosolids per hectare of agricultural land”. (Clause 22 (b))

In the 2013 WINGRO application year, which runs from January 1, 2013 to December 31, 2013, the City plans no land application at the present time and plans to dispose of all biosolids at the Brady Road Landfill.

The City received approval by Manitoba Conservation on April 30, 2012 to divert 20% of biosolids from the landfill to a pilot scale composting facility located within Brady Road Landfill. Although the completion of the pilot biosolids facility is scheduled for October 2013, the completion of the project will be highly weather dependent. At the end of the two year pilot study we will be submitting a report on the composting project and if the project is successful, a long term disposal plan will be submitted to Manitoba Conservation for approval.

APPENDIX I

OPERATING RECORDS

for

MECHANICAL DEWATERING OF BIOSOLIDS

Monthly Hauling Report
For the Month 01/2012

Day	Source	Destination	Wet Weight (T)	Solids (%)	Dry Weight (T)	Wet Rate (T/km)	Dry Rate (T/km)	Spread (T)	Incorporated (T)
03	NEWPCC	#2 0-0-	219.88	23.7	52.11				
04	NEWPCC	#2 0-0-	289.60	22.3	64.58				
05	NEWPCC	#2 0-0-	268.30	23.2	62.25				
06	NEWPCC	#2 0-0-	243.32	22.3	54.26				
09	NEWPCC	#2 0-0-	242.82	21.1	51.24				
10	NEWPCC	#2 0-0-	267.70	21.1	56.49				
11	NEWPCC	#2 0-0-	193.04	21.6	41.70				
12	NEWPCC	#2 0-0-	241.50	23.2	56.03				
13	NEWPCC	#2 0-0-	196.58	23.9	46.98				
16	NEWPCC	#2 0-0-	216.68	23.6	51.14				
17	NEWPCC	#2 0-0-	220.26	26.1	57.49				
18	NEWPCC	#2 0-0-	189.38	25.2	47.72				
19	NEWPCC	#2 0-0-	143.84	24.3	34.95				
20	NEWPCC	#2 0-0-	210.58	24.6	51.80				
23	NEWPCC	#2 0-0-	237.56	26.2	62.24				
24	NEWPCC	#2 0-0-	214.64	24.1	51.73				
25	NEWPCC	#2 0-0-	166.52	24.0	39.96				
26	NEWPCC	#2 0-0-	119.34	24.2	28.88				
27	NEWPCC	#2 0-0-	144.38	24.4	35.23				
30	NEWPCC	#2 0-0-	261.90	24.7	64.69				
31	NEWPCC	#2 0-0-	214.72	24.5	52.61				

Summary

Source	Destination	Wet Weight (T)	Dry Weight (T)	Distance (km)	Wet Rate (T/km)	Dry Rate (T/km)	Spread (T)	Incorporated (T)
NEWPCC	#2 0-0-	4502.54						

Monthly Hauling Report
For the Month 02/2012

Day	Source	Destination	Wet Weight (T)	Solids (%)	Dry Weight (T)	Wet Rate (T/km)	Dry Rate (T/km)	Spread (T)	Incorporated (T)
01	NEWPCC	#2 0-0-	192.66	24.2	46.62				
02	NEWPCC	#2 0-0-	144.28	24.2	34.92				
03	NEWPCC	#2 0-0-	142.76	24.9	35.55				
06	NEWPCC	#2 0-0-	215.68	24.8	53.49				
07	NEWPCC	#2 0-0-	240.92	25.4	61.19				
08	NEWPCC	#2 0-0-	217.18	26.1	56.68				
09	NEWPCC	#2 0-0-	167.36	25.0	41.84				
10	NEWPCC	#2 0-0-	119.02	25.3	30.11				
13	NEWPCC	#2 0-0-	237.80	25.2	59.93				
14	NEWPCC	#2 0-0-	194.12	26.4	51.25				
15	NEWPCC	#2 0-0-	193.50	25.6	49.54				
16	NEWPCC	#2 0-0-	96.70	25.8	24.95				
17	NEWPCC	#2 0-0-	124.14	26.4	32.77				
21	NEWPCC	#2 0-0-	218.18	25.7	56.07				
22	NEWPCC	#2 0-0-	289.16	24.9	72.00				
23	NEWPCC	#2 0-0-	288.94	25.5	73.68				
24	NEWPCC	#2 0-0-	262.16	25.5	66.85				
27	NEWPCC	#2 0-0-	61.20	20.0	12.24				
28	NEWPCC	#2 0-0-	166.36	24.2	40.26				
29	NEWPCC	#2 0-0-	167.18	25.2	42.13				

Summary

Source	Destination	Wet Weight (T)	Dry Weight (T)	Distance (km)	Wet Rate (T/km)	Dry Rate (T/km)	Spread (T)	Incorporated (T)
NEWPCC	#2 0-0-	3739.30						

Monthly Hauling Report
For the Month 03/2012

Day	Source	Destination	Wet Weight (T)	Solids (%)	Dry Weight (T)	Wet Rate (T/km)	Dry Rate (T/km)	Spread (T)	Incorporated (T)
01	NEWPCC	#2 0-0-	235.88	25.1	59.21				
02	NEWPCC	#2 0-0-	219.32	26.0	57.02				
05	NEWPCC	#2 0-0-	216.80	26.1	56.58				
06	NEWPCC	#2 0-0-	291.34	26.2	76.33				
07	NEWPCC	#2 0-0-	235.80	27.6	65.08				
08	NEWPCC	#2 0-0-	212.56	28.0	59.52				
09	NEWPCC	#2 0-0-	362.48	28.4	102.95				
12	NEWPCC	#2 0-0-	189.20	28.4	53.73				
13	NEWPCC	#2 0-0-	217.30	29.7	64.54				
14	NEWPCC	#2 0-0-	244.10	30.7	74.94				
15	NEWPCC	#2 0-0-	193.62	30.0	58.09				
16	NEWPCC	#2 0-0-	92.76	30.4	28.20				
19	NEWPCC	#2 0-0-	98.64	26.9	26.53				
20	NEWPCC	#2 0-0-	94.98	31.1	29.54				
21	NEWPCC	#2 0-0-	121.76	30.3	36.89				
22	NEWPCC	#2 0-0-	241.48	31.3	75.58				
23	NEWPCC	#2 0-0-	266.16	31.8	84.64				
26	NEWPCC	#2 0-0-	289.72	33.2	96.19				
27	NEWPCC	#2 0-0-	237.12	33.0	78.25				
28	NEWPCC	#2 0-0-	213.88	33.9	72.51				
29	NEWPCC	#2 0-0-	141.66	33.7	47.74				
30	NEWPCC	#2 0-0-	146.10	33.8	49.38				

Summary

Source	Destination	Wet Weight (T)	Dry Weight (T)	Distance (km)	Wet Rate (T/km)	Dry Rate (T/km)	Spread (T)	Incorporated (T)
NEWPCC	#2 0-0-	4562.66						

Monthly Hauling Report
For the Month 04/2012

Day	Source	Destination	Wet Weight (T)	Solids (%)	Dry Weight (T)	Wet Rate (T/km)	Dry Rate (T/km)	Spread (T)	Incorporated (T)
02	NEWPCC	#2 0-0-	258.10	33.4	86.21				
03	NEWPCC	#2 0-0-	216.32	33.4	72.25				
04	NEWPCC	#2 0-0-	166.48	31.9	53.11				
05	NEWPCC	#2 0-0-	99.52	33.4	33.24				
09	NEWPCC	#2 0-0-	143.46	30.7	44.04				
10	NEWPCC	#2 0-0-	266.92	30.7	81.94				
11	NEWPCC	#2 0-0-	195.42	30.7	59.99				
12	NEWPCC	#2 0-0-	114.28	30.2	34.51				
13	NEWPCC	#2 0-0-	120.56	30.1	36.29				
16	NEWPCC	#2 0-0-	215.98	29.3	63.28				
17	NEWPCC	#2 0-0-	215.82	30.2	65.18				
18	NEWPCC	#2 0-0-	173.16	28.2	48.83				
19	NEWPCC	#2 0-0-	117.56	28.3	33.27				
20	NEWPCC	#2 0-0-	146.70	27.9	40.93				
23	NEWPCC	#2 0-0-	217.94	29.2	63.64				
24	NEWPCC	#2 0-0-	192.00	27.7	53.18				
25	NEWPCC	#2 0-0-	141.36	30.2	42.69				
26	NEWPCC	#2 0-0-	143.34	29.4	42.14				
27	NEWPCC	#2 0-0-	121.08	29.9	36.20				
30	NEWPCC	#2 0-0-	172.08	27.1	46.63				

Summary

Source	Destination	Wet Weight (T)	Dry Weight (T)	Distance (km)	Wet Rate (T/km)	Dry Rate (T/km)	Spread (T)	Incorporated (T)
NEWPCC	#2 0-0-	3438.08						

Monthly Hauling Report
For the Month 05/2012

Day	Source	Destination	Wet Weight (T)	Solids (%)	Dry Weight (T)	Wet Rate (T/km)	Dry Rate (T/km)	Spread (T)	Incorporated (T)
01	NEWPCC	#2 0-0-	193.78	27.6	53.48				
02	NEWPCC	#2 0-0-	258.76	27.3	70.64				
03	NEWPCC	#2 0-0-	260.58	26.9	70.10				
04	NEWPCC	#2 0-0-	240.18	28.3	67.97				
07	NEWPCC	#2 0-0-	235.08	27.6	64.88				
08	NEWPCC	#2 0-0-	213.90	27.7	59.25				
09	NEWPCC	#2 0-0-	241.46	27.6	66.64				
10	NEWPCC	#2 0-0-	214.26	26.4	56.56				
11	NEWPCC	#2 0-0-	192.34	26.3	50.59				
14	NEWPCC	#2 0-0-	242.82	25.7	62.41				
15	NEWPCC	#2 0-0-	242.24	28.2	68.31				
16	NEWPCC	#2 0-0-	212.00	26.9	57.03				
17	NEWPCC	#2 0-0-	188.36	27.3	51.42				
18	NEWPCC	#2 0-0-	140.08	26.6	37.26				
22	NEWPCC	#2 0-0-	218.62	24.0	52.47				
23	NEWPCC	#2 0-0-	208.80	27.2	56.79				
24	NEWPCC	#2 0-0-	48.20	26.7	12.87				
25	NEWPCC	#2 0-0-	143.68	26.1	37.50				
28	NEWPCC	#2 0-0-	191.00	28.0	53.48				
29	NEWPCC	#2 0-0-	256.42	28.7	73.59				
30	NEWPCC	#2 0-0-	229.14	30.3	69.43				
31	NEWPCC	#2 0-0-	261.26	30.2	78.90				

Summary

Source	Destination	Wet Weight (T)	Dry Weight (T)	Distance (km)	Wet Rate (T/km)	Dry Rate (T/km)	Spread (T)	Incorporated (T)
NEWPCC	#2 0-0-	4632.96						

Monthly Hauling Report
For the Month 06/2012

Day	Source	Destination	Wet Weight (T)	Solids (%)	Dry Weight (T)	Wet Rate (TKm)	Dry Rate (TKm)	Spread (T)	Incorporated (T)
01	NEWPCC	#2 0-0-	280.42	30.0	84.13				
04	NEWPCC	#2 0-0-	194.50	28.1	54.66				
05	NEWPCC	#2 0-0-	217.48	27.8	60.46				
06	NEWPCC	#2 0-0-	310.96	27.4	85.20				
07	NEWPCC	#2 0-0-	188.60	28.1	53.00				
08	NEWPCC	#2 0-0-	56.82	28.0	15.91				
11	NEWPCC	#2 0-0-	140.26	26.7	37.45				
12	NEWPCC	#2 0-0-	95.02	27.0	25.66				
13	NEWPCC	#2 0-0-	70.40	26.2	18.45				
14	NEWPCC	#2 0-0-	70.62	25.9	18.29				
15	NEWPCC	#2 0-0-	137.10	25.9	35.51				
18	NEWPCC	#2 0-0-	215.80	28.6	61.72				
19	NEWPCC	#2 0-0-	213.86	30.4	65.01				
20	NEWPCC	#2 0-0-	210.86	29.2	61.57				
21	NEWPCC	#2 0-0-	240.06	28.0	67.22				
22	NEWPCC	#2 0-0-	143.76	29.0	41.69				
25	NEWPCC	#2 0-0-	280.98	27.8	78.11				
26	NEWPCC	#2 0-0-	240.74	26.9	64.76				
27	NEWPCC	#2 0-0-	216.48	26.5	57.37				
28	NEWPCC	#2 0-0-	163.74	25.6	41.92				
29	NEWPCC	#2 0-0-	142.64	24.4	34.81				

Summary

Source	Destination	Wet Weight (T)	Dry Weight (T)	Distance (km)	Wet Rate (TKm)	Dry Rate (TKm)	Spread (T)	Incorporated (T)
NEWPCC	#2 0-0-	3831.10						

Monthly Hauling Report
For the Month 07/2012

Day	Source	Destination	Wet Weight (T)	Solids (%)	Dry Weight (T)	Wet Rate (T/km)	Dry Rate (T/km)	Spread (T)	Incorporated (T)
03	NEWPCC	#2 0-0-	196.62	24.2	47.58				
04	NEWPCC	#2 0-0-	292.34	24.2	70.75				
05	NEWPCC	#2 0-0-	220.80	23.8	52.55				
06	NEWPCC	#2 0-0-	190.96	23.5	44.88				
09	NEWPCC	#2 0-0-	223.04	24.0	53.53				
10	NEWPCC	#2 0-0-	193.54	22.4	43.35				
11	NEWPCC	#2 0-0-	120.02	24.4	29.29				
12	NEWPCC	#2 0-0-	116.10	24.2	28.10				
13	NEWPCC	#2 0-0-	144.50	23.9	34.54				
16	NEWPCC	#2 0-0-	265.26	23.2	61.54				
17	NEWPCC	#2 0-0-	193.52	23.8	46.06				
18	NEWPCC	#2 0-0-	294.60	22.6	66.58				
19	NEWPCC	#2 0-0-	214.20	22.6	48.41				
20	NEWPCC	#2 0-0-	171.70	22.6	38.81				
23	NEWPCC	#2 0-0-	248.80	22.1	54.99				
24	NEWPCC	#2 0-0-	301.16	21.6	65.05				
25	NEWPCC	#2 0-0-	171.22	21.2	36.30				
26	NEWPCC	#2 0-0-	146.14	21.9	32.00				
27	NEWPCC	#2 0-0-	199.56	21.8	43.50				
30	NEWPCC	#2 0-0-	224.28	22.4	50.24				
31	NEWPCC	#2 0-0-	247.84	23.0	57.00				

Summary

Source	Destination	Wet Weight (T)	Dry Weight (T)	Distance (km)	Wet Rate (T/km)	Dry Rate (T/km)	Spread (T)	Incorporated (T)
NEWPCC	#2 0-0-	4376.20						

Monthly Hauling Report
For the Month 08/2012

Day	Source	Destination	Wet Weight (T)	Solids (%)	Dry Weight (T)	Wet Rate (T/km)	Dry Rate (T/km)	Spread (T)	Incorporated (T)
01	NEWPCC	#2 0-0-	203.38	23.8	48.41				
02	NEWPCC	#2 0-0-	162.70	23.7	38.56				
03	NEWPCC	#2 0-0-	195.04	24.3	47.40				
07	NEWPCC	#2 0-0-	290.62	25.6	74.40				
08	NEWPCC	#2 0-0-	293.48	26.2	76.89				
09	NEWPCC	#2 0-0-	95.50	27.0	25.78				
10	NEWPCC	#2 0-0-	94.22	26.1	24.59				
13	NEWPCC	#2 0-0-	243.54	25.6	62.35				
14	NEWPCC	#2 0-0-	218.20	25.3	55.20				
15	NEWPCC	#2 0-0-	97.54	25.5	24.87				
16	NEWPCC	#2 0-0-	120.62	23.9	28.83				
17	NEWPCC	#2 0-0-	92.12	24.5	22.57				
20	NEWPCC	#2 0-0-	245.62	25.3	62.14				
21	NEWPCC	#2 0-0-	219.08	24.6	53.89				
22	NEWPCC	#2 0-0-	145.30	22.9	33.27				
23	NEWPCC	#2 0-0-	146.00	25.1	36.65				
24	NEWPCC	#2 0-0-	100.96	25.0	25.24				
27	NEWPCC	#2 0-0-	171.20	24.8	42.46				
28	NEWPCC	#2 0-0-	218.04	25.1	54.73				
29	NEWPCC	#2 0-0-	94.74	25.2	23.87				
30	NEWPCC	#2 0-0-	146.36	25.8	37.76				
31	NEWPCC	#2 0-0-	142.32	25.0	35.58				
Summary -----									
Source	Destination	Wet Weight (T)	Dry Weight (T)	Distance (km)	Wet Rate (T/km)	Dry Rate (T/km)	Spread (T)	Incorporated (T)	
NEWPCC	#2 0-0-	3736.58					-----	-----	

Monthly Hauling Report
For the Month 09/2012

Day	Source	Destination	Wet Weight (T)	Solids (%)	Dry Weight (T)	Wet Rate (T/km)	Dry Rate (T/km)	Spread (T)	Incorporated (T)
04	NEWPCC	#2 0-0-	247.18	24.2	59.82				
05	NEWPCC	#2 0-0-	148.08	23.8	35.24				
06	NEWPCC	#2 0-0-	99.28	24.8	24.62				
07	NEWPCC	#2 0-0-	146.12	24.6	35.95				
10	NEWPCC	#2 0-0-	195.12	26.0	50.73				
11	NEWPCC	#2 0-0-	186.40	25.7	47.90				
12	NEWPCC	#2 0-0-	116.88	23.8	27.82				
13	NEWPCC	#2 0-0-	137.61	24.8	34.13				
14	NEWPCC	#2 0-0-	167.78	24.2	40.60				
17	NEWPCC	#2 0-0-	167.70	23.8	39.91				
18	NEWPCC	#2 0-0-	269.72	24.5	66.08				
19	NEWPCC	#2 0-0-	247.86	24.1	59.73				
20	NEWPCC	#2 0-0-	292.08	22.4	65.43				
21	NEWPCC	#2 0-0-	247.18	24.0	59.32				
24	NEWPCC	#2 0-0-	200.08	22.1	44.22				
25	NEWPCC	#2 0-0-	249.10	22.5	56.05				
26	NEWPCC	#2 0-0-	221.70	21.3	47.22				
27	NEWPCC	#2 0-0-	240.98	23.5	56.63				
28	NEWPCC	#2 0-0-	164.74	22.9	37.73				
Summary -----									
Source	Destination		Wet Weight (T)		Distance (km)	Wet Rate (T/km)	Dry Rate (T/km)	Spread (T)	Incorporated (T)
NEWPCC	#2 0-0-		3745.59						

Monthly Hauling Report
For the Month 10/2012

Day	Source	Destination	Wet Weight (T)	Dry Weight (T)	Solids (%)	Dry Weight (T)	Wet Rate (T/km)	Dry Rate (T/km)	Spread (T)	Incorporated (T)
01	NEWPCC	#2 0-0-	294.36	22.7	66.82					
02	NEWPCC	#2 0-0-	295.76	22.6	66.84					
03	NEWPCC	#2 0-0-	295.08	22.3	65.80					
04	NEWPCC	#2 0-0-	297.52	20.7	61.59					
05	NEWPCC	#2 0-0-	293.54	21.6	63.41					
06	NEWPCC	#2 0-0-	218.88	22.4	49.03					
09	NEWPCC	#2 0-0-	294.52	23.3	68.62					
10	NEWPCC	#2 0-0-	244.63	23.1	56.51					
11	NEWPCC	#2 0-0-	295.38	22.9	67.64					
12	NEWPCC	#2 0-0-	196.16	22.5	44.14					
13	NEWPCC	#2 0-0-	196.82	22.5	44.29					
15	NEWPCC	#2 0-0-	197.02	22.1	43.54					
16	NEWPCC	#2 0-0-	268.58	23.6	63.38					
17	NEWPCC	#2 0-0-	221.40	23.6	52.25					
18	NEWPCC	#2 0-0-	146.88	23.6	34.67					
19	NEWPCC	#2 0-0-	118.74	23.1	27.43					
22	NEWPCC	#2 0-0-	296.52	23.1	68.50					
23	NEWPCC	#2 0-0-	214.48	23.4	50.19					
24	NEWPCC	#2 0-0-	242.58	23.7	57.49					
25	NEWPCC	#2 0-0-	165.74	25.1	41.60					
26	NEWPCC	#2 0-0-	245.66	25.2	61.91					
29	NEWPCC	#2 0-0-	266.82	25.2	67.24					
30	NEWPCC	#2 0-0-	245.28	24.8	60.83					
31	NEWPCC	#2 0-0-	245.58	24.9	61.15					

Summary

Source	Destination	Wet Weight (T)	Dry Weight (T)	Distance (km)	Wet Rate (T/km)	Dry Rate (T/km)	Spread (T)	Incorporated (T)
NEWPCC	#2 0-0-	5797.93						

Monthly Hauling Report
For the Month 11/2012

Day	Source	Destination	Wet Weight (T)	Solids (%)	Dry Weight (T)	Wet Rate (T/km)	Dry Rate (T/km)	Spread (T)	Incorporated (T)
01	NEWPCC	#2 0-0-	144.10	24.3	35.02				
02	NEWPCC	#2 0-0-	167.68	27.4	45.94				
05	NEWPCC	#2 0-0-	272.96	25.5	69.61				
06	NEWPCC	#2 0-0-	221.00	26.0	57.46				
07	NEWPCC	#2 0-0-	244.82	23.5	57.53				
08	NEWPCC	#2 0-0-	172.56	23.6	40.72				
09	NEWPCC	#2 0-0-	199.36	25.3	50.44				
12	NEWPCC	#2 0-0-	195.20	25.3	49.39				
13	NEWPCC	#2 0-0-	222.38	27.0	60.04				
14	NEWPCC	#2 0-0-	266.18	27.6	73.47				
15	NEWPCC	#2 0-0-	267.14	27.0	72.13				
16	NEWPCC	#2 0-0-	189.40	27.6	52.27				
19	NEWPCC	#2 0-0-	267.92	26.8	71.80				
20	NEWPCC	#2 0-0-	220.38	26.0	57.30				
21	NEWPCC	#2 0-0-	120.74	25.0	30.19				
22	NEWPCC	#2 0-0-	170.34	26.0	44.29				
23	NEWPCC	#2 0-0-	131.96	25.8	34.05				
26	NEWPCC	#2 0-0-	247.24	25.6	63.29				
27	NEWPCC	#2 0-0-	193.80	24.2	46.90				
28	NEWPCC	#2 0-0-	193.48	24.6	47.60				
29	NEWPCC	#2 0-0-	148.00	24.2	35.82				
30	NEWPCC	#2 0-0-	146.84	26.2	38.47				

Summary

Source	Destination	Wet Weight (T)	Dry Weight (T)	Distance (km)	Wet Rate (T/km)	Dry Rate (T/km)	Spread (T)	Incorporated (T)
NEWPCC	#2 0-0-	4403.48						

Monthly Hauling Report
For the Month 12/2012

Day	Source	Destination	Wet Weight (T)	Solids (%)	Dry Weight (T)	Wet Rate (T/km)	Dry Rate (T/km)	Spread (T)	Incorporated (T)
03	NEWPCC	#2 0-0-	223.48	24.2	54.08				
04	NEWPCC	#2 0-0-	221.08	25.3	55.93				
05	NEWPCC	#2 0-0-	194.64	24.1	46.91				
06	NEWPCC	#2 0-0-	149.90	24.6	36.88				
07	NEWPCC	#2 0-0-	121.46	24.6	29.88				
10	NEWPCC	#2 0-0-	216.98	23.8	51.64				
11	NEWPCC	#2 0-0-	218.02	24.4	53.20				
12	NEWPCC	#2 0-0-	143.86	24.4	35.10				
13	NEWPCC	#2 0-0-	169.22	24.5	41.46				
14	NEWPCC	#2 0-0-	145.12	24.7	35.85				
17	NEWPCC	#2 0-0-	221.16	24.7	54.63				
18	NEWPCC	#2 0-0-	183.02	24.3	44.47				
19	NEWPCC	#2 0-0-	218.28	24.2	52.83				
20	NEWPCC	#2 0-0-	264.74	24.3	64.33				
21	NEWPCC	#2 0-0-	160.48	24.6	39.48				
24	NEWPCC	#2 0-0-	218.70	24.4	53.36				
27	NEWPCC	#2 0-0-	398.88	24.2	96.53				
28	NEWPCC	#2 0-0-	197.64	25.0	49.41				
31	NEWPCC	#2 0-0-	371.28	25.0	92.82				
Summary -----									
Source	Destination	Wet Weight (T)	Dry Weight (T)	Distance (km)	Wet Rate (T/km)	Dry Rate (T/km)	Spread (T)	Incorporated (T)	
NEWPCC	#2 0-0-	4037.94							



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