



Water and Waste Department • Service des eaux et des déchets

## **ENVIRONMENT ACT LICENCE #1089E RR**

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



2013



Water and Waste Department • Service des eaux et des déchets

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January 30, 2014

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 2013. Included in this report are:

- a) details of the 2013 biosolids distribution and monitoring programs
- b) details of the proposed 2014 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](mailto:kkjartanson@winnipeg.ca).

Yours sincerely,

*Original signed by:*

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

KJTK:rg  
Enclosure

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- D. Sacher, P.Eng.
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Water and Waste Department • Service des eaux et des déchets

**ENVIRONMENT ACT LICENCE #1089E RR**

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

2013

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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 31<sup>ST</sup> of January of each year.

This report summarizes the results of the City's 2013 Biosolids Application Program (WINGRO) and also outlines the proposed plan for the 2014 calendar year.

In 2013, the City produced 12,927 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 25.9%. The WINGRO program deposited 100% of the biosolids at the Brady Road Resource Management Facility. No biosolids were applied to agricultural land in 2013. The interim storage pad was not used in 2013.

We plan to continue disposing of biosolids at the Brady Road Resource Management Facility in 2014. We are proposing to pilot a biosolids composting facility at the landfill which would commence in July 2014.

## **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 2013 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 2013 Biosolids Program. The report also provides information on its proposed Biosolids Program for the twelve months starting January 1, 2014.

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

## **2013 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, 2013 to December 31, 2013 the City produced 12,927 dry-tonnes of mechanically-dewatered biosolids at its NEWPCC facility. Appendix I contains the mechanical dewatering operating records for 2013. In 2013, the total solids in the biosolids averaged  $25.9 \pm 3.7\%$  ( $n = 250$ ). The dewatering equipment achieved a total solids content in the biosolids of at least 20 percent by weight on most occasions with the exception of three days in November. A bag of polymer was used in mid-November that was found to be of lower quality, which contributed to the low total solids content. Once the polymer was out of the polymer feed system, the total solids content returned to acceptable levels and the issue was resolved.

### **(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 2013, 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 Resource Management Facility.

**(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 2013 because biosolids were not applied to any fields in 2012. Appendix I contains the mechanical dewatering operating records for 2013.

We experienced a decrease in the number of odour complaints in 2013 from the previous two years at the Brady Road Resource Management Facility. The City is developing strategies to mitigate the odour including measures such as covering the material with straw or trenching, if necessary.



**TABLE 1**  
**2013 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	11-Jan-13	2.0	94	664	53.3	76.3	889	21,200	12,600	31,400	6.04	20.6	24.5
2	14-Jan-13	1.6	99	587	55.7	70.3	1,080	19,500	13,600	31,400	6.08	19.3	25.0
3	27-Jan-13	2.1	111	662	57.6	62.0	1,450	22,600	13,700	35,400	6.08	18.2	26.3
4	9-Feb-13	2.4	113	597	51.9	59.4	5,080	22,700	13,900	34,800	5.99	16.8	26.3
5	23-Feb-13	2.4	126	586	65.2	63.3	2,870	20,800	12,600	34,800	5.87	15.2	27.3
6	9-Mar-13	2.3	213	520	75.2	57.9	1,460	18,300	12,000	34,300	6.02	14.1	27.3
7	23-Mar-13	2.4	184	557	121.0	62.1	1,220	20,100	11,700	34,500	6.00	8.1	28.5
8	7-Apr-13	1.9	136	487	85.7	63.2	927	16,900	10,500	34,500	6.15	6.7	30.5
9	21-Apr-13	1.7	103	434	70.9	66.4	801	15,400	10,200	33,100	6.30	7.5	31.0
10	5-May-13	1.7	97	439	59.2	109.0	734	14,000	9,280	34,700	6.26	6.7	33.6
11	19-May-13	2.1	121	488	57.3	98.9	2,340	14,500	10,300	35,400	6.17	7.3	31.3
12	2-Jun-13	1.9	117	488	50.2	102.0	1,910	15,000	9,450	33,800	6.11	7.0	30.9
13	16-Jun-13	1.1	116	532	49.9	99.2	1,490	14,900	10,200	38,200	5.88	4.4	30.7
14	30-Jun-13	1.7	105	483	39.1	91.2	1,110	12,900	10,300	31,600	6.02	5.6	28.1
15	14-Jul-13	2.0	109	769	45.8	91.7	1,450	14,800	11,400	26,700	5.97	11.7	25.4
16	29-Jul-13	1.6	107	641	56.6	92.0	1,140	13,700	11,400	30,300	6.13	10.9	26.7
17	11-Aug-13	2.0	110	675	56.8	96.3	1,180	21,600	12,500	30,000	6.28	9.4	25.6
18	25-Aug-13	0.7	107	657	50.5	132.0	718	17,000	NA**	37,400	6.19	10.9	24.4
19	8-Sep-13	1.6	101	659	39.9	94.5	1,000	18,400	12,000	28,900	5.96	10.0	23.4
20	22-Sep-13	1.3	109	671	45.1	91.1	1,040	19,900	11,200	27,500	5.98	10.5	23.7
21	6-Oct-13	1.0	108	709	49.4	79.8	2,830	25,500	12,000	30,000	6.26	10.2	24.2
22	20-Oct-13	0.9	78	588	63.4	63.9	2,370	17,800	12,000	25,200	6.09	10.5	22.1
23	4-Nov-13	2.0	101	682	64.6	70.4	2,080	24,800	13,000	26,900	6.46	10.0	21.4
24	17-Nov-13	2.4	101	762	63.4	89.1	3,520	25,700	13,300	23,200	6.48	9.3	20.2
25	1-Dec-13	1.3	74	563	40.6	46.7	1,450	14,400	12,100	25,100	6.45	9.3	21.6
26	16-Dec-13	1.3	72	565	47.4	45.3	1,140	14,600	11,400	35,400	6.45	9.0	21.2
<b>Average:</b>		1.7	112	595	58.3	79.8	1,665	18,346	11,705	31,712	6.14	10.7	26.2
<b>Maximum:</b>		2.4	213	769	121.0	132.0	5,080	25,700	13,900	38,200	6.48	20.6	33.6
<b>Minimum:</b>		0.7	72	434	39.1	45.3	718	12,900	9,280	23,200	5.87	4.4	20.2

\* Indicates starting date for year 2013 biweekly composite samples

\*\* Ammonia was not analyzed on Aug 25 due to a technician error

**(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 12,927 dry-tonnes of mechanically-dewatered biosolids produced at the NEWPCC from January 1, 2013 to December 31, 2013, 100% were disposed at the Brady Road Resource Management.

**2014 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 2014 WINGRO application year, which runs from January 1, 2014 to December 31, 2014, the City plans no land application at the present time and plans to dispose of all biosolids at the Brady Road Resource Management Facility.

The City received approval by Manitoba Conservation on April 20, 2012 to divert 20% of biosolids from the landfill to a pilot composting facility located within Brady Road Resource Management Facility. Although the completion of the pilot biosolids facility is scheduled for July 2014, 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.

**APPENDIX I**

**OPERATING RECORDS**

for

**MECHANICAL DEWATERING OF BIOSOLIDS**



Monthly Hauling Report  
For the Month 02/2013

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-	123.48	26.1	32.23				
04	NEWPCC	#2 0-0-	219.08	26.2	57.40				
05	NEWPCC	#2 0-0-	148.78	26.0	38.68				
06	NEWPCC	#2 0-0-	144.16	25.8	37.19				
07	NEWPCC	#2 0-0-	144.66	25.5	36.89				
08	NEWPCC	#2 0-0-	196.94	25.2	49.63				
11	NEWPCC	#2 0-0-	219.02	25.5	55.85				
12	NEWPCC	#2 0-0-	220.02	27.4	60.29				
13	NEWPCC	#2 0-0-	98.88	24.4	24.13				
14	NEWPCC	#2 0-0-	193.80	25.9	50.19				
15	NEWPCC	#2 0-0-	173.98	26.8	46.63				
19	NEWPCC	#2 0-0-	172.52	26.8	46.24				
20	NEWPCC	#2 0-0-	243.28	26.0	63.25				
21	NEWPCC	#2 0-0-	219.40	26.2	57.48				
22	NEWPCC	#2 0-0-	267.20	26.8	71.61				
25	NEWPCC	#2 0-0-	221.16	27.9	61.70				
26	NEWPCC	#2 0-0-	219.04	27.1	59.36				
27	NEWPCC	#2 0-0-	147.44	27.1	39.96				
28	NEWPCC	#2 0-0-	146.88	26.7	39.22				
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-	3519.72							

Monthly Hauling Report  
For the Month 03/2013

Source	Destination	Wet Weight (T)	Solids (%)	Dry Weight (T)	Wet Rate (T/km)	Dry Rate (T/km)	Spread (T)	Incorporated (T)
NEWPCC	#2 0-0-	236.38	27.4	64.77				
NEWPCC	#2 0-0-	292.20	28.1	82.11				
NEWPCC	#2 0-0-	107.20	28.1	30.12				
NEWPCC	#2 0-0-	46.99	20.0	9.40				
NEWPCC	#2 0-0-	47.60	20.0	9.52				
NEWPCC	#2 0-0-	247.74	26.6	65.90				
NEWPCC	#2 0-0-	220.44	26.0	57.31				
NEWPCC	#2 0-0-	197.18	26.4	52.06				
NEWPCC	#2 0-0-	218.56	28.1	61.42				
NEWPCC	#2 0-0-	242.20	26.3	63.70				
NEWPCC	#2 0-0-	121.76	26.8	32.63				
NEWPCC	#2 0-0-	244.18	27.2	66.42				
NEWPCC	#2 0-0-	291.08	27.3	79.46				
NEWPCC	#2 0-0-	170.96	27.5	47.02				
NEWPCC	#2 0-0-	147.62	27.2	40.15				
NEWPCC	#2 0-0-	221.94	27.0	59.92				
NEWPCC	#2 0-0-	221.88	24.1	53.47				
NEWPCC	#2 0-0-	195.72	26.7	52.26				
NEWPCC	#2 0-0-	265.82	28.0	74.43				
NEWPCC	#2 0-0-	147.20	28.0	41.22				
Summary								
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Wet Weight (T)	Dry Weight (T)	Distance (km)	Wet Rate (T/km)	Dry Rate (T/km)	Spread (T)	Incorporated (T)		
3884.65								

Monthly Hauling Report  
For the Month 04/2013

Source	Destination	Wet Weight (T)	Solids (%)	Dry Weight (T)	Wet Rate (T/km)	Dry Rate (T/km)	Spread (T)	Incorporated (T)
NEWPCC	#2 0-0-	246.22	28.8	70.91				
NEWPCC	#2 0-0-	295.60	29.7	87.79				
NEWPCC	#2 0-0-	242.06	29.4	71.17				
NEWPCC	#2 0-0-	192.30	30.6	58.84				
NEWPCC	#2 0-0-	170.86	30.9	52.79				
NEWPCC	#2 0-0-	222.18	29.9	66.43				
NEWPCC	#2 0-0-	315.48	29.8	94.01				
NEWPCC	#2 0-0-	221.98	30.3	67.26				
NEWPCC	#2 0-0-	218.86	30.1	65.88				
NEWPCC	#2 0-0-	192.80	30.4	58.61				
NEWPCC	#2 0-0-	149.68	30.5	45.65				
NEWPCC	#2 0-0-	245.58	30.5	74.90				
NEWPCC	#2 0-0-	268.96	30.6	82.30				
NEWPCC	#2 0-0-	270.04	31.4	84.79				
NEWPCC	#2 0-0-	162.77	31.7	51.60				
NEWPCC	#2 0-0-	216.84	32.0	69.39				
NEWPCC	#2 0-0-	244.76	31.2	76.37				
NEWPCC	#2 0-0-	188.58	30.8	58.08				
NEWPCC	#2 0-0-	191.04	29.0	55.40				
NEWPCC	#2 0-0-	142.04	32.2	45.74				
NEWPCC	#2 0-0-	209.79	30.6	64.19				
NEWPCC	#2 0-0-	217.72	30.1	65.53				
Summary								
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Wet Weight (T)	Dry Weight (T)	Distance (km)	Wet Rate (T/km)	Dry Rate (T/km)	Spread (T)	Incorporated (T)		
4826.14								
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Monthly Hauling Report  
For the Month 05/2013

Source	Destination	Wet Weight (T)	Solids (%)	Dry Weight (T)	Wet Rate (T/km)	Dry Rate (T/km)	Spread (T)	Incorporated (T)
NEWPCC	#2 0-0-	219.76	30.4	66.81				
NEWPCC	#2 0-0-	196.31	30.2	59.29				
NEWPCC	#2 0-0-	220.16	32.0	70.45				
NEWPCC	#2 0-0-	223.04	32.1	71.60				
NEWPCC	#2 0-0-	241.90	32.3	78.14				
NEWPCC	#2 0-0-	291.26	32.8	95.53				
NEWPCC	#2 0-0-	144.74	33.6	48.63				
NEWPCC	#2 0-0-	244.04	33.3	81.27				
NEWPCC	#2 0-0-	268.28	34.2	91.75				
NEWPCC	#2 0-0-	269.02	33.5	90.12				
NEWPCC	#2 0-0-	169.08	33.9	57.32				
NEWPCC	#2 0-0-	215.94	34.1	73.64				
NEWPCC	#2 0-0-	178.48	33.4	59.61				
NEWPCC	#2 0-0-	291.98	32.4	94.60				
NEWPCC	#2 0-0-	266.74	31.5	84.03				
NEWPCC	#2 0-0-	218.68	31.3	68.45				
NEWPCC	#2 0-0-	242.76	32.6	79.14				
NEWPCC	#2 0-0-	267.64	30.8	82.43				
NEWPCC	#2 0-0-	219.04	29.4	64.40				
NEWPCC	#2 0-0-	220.10	30.0	66.03				
NEWPCC	#2 0-0-	219.46	30.0	65.84				
NEWPCC	#2 0-0-	172.88	30.1	52.04				
Summary								
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NEWPCC	#2 0-0-	5001.29						



Monthly Hauling Report  
For the Month 06/2013

Source	Destination	Wet Weight (T)	Solids (%)	Dry Weight (T)	Wet Rate (Tkm)	Dry Rate (Tkm)	Spread (T)	Incorporated (T)
NEWPCC	#2 0-0-	219.64	29.8	65.45				
NEWPCC	#2 0-0-	196.30	28.1	55.16				
NEWPCC	#2 0-0-	220.08	30.1	66.25				
NEWPCC	#2 0-0-	196.48	30.0	58.94				
NEWPCC	#2 0-0-	120.92	31.1	37.61				
NEWPCC	#2 0-0-	292.12	29.7	86.76				
NEWPCC	#2 0-0-	142.82	29.5	42.13				
NEWPCC	#2 0-0-	122.20	30.4	37.15				
NEWPCC	#2 0-0-	169.46	31.2	52.87				
NEWPCC	#2 0-0-	215.88	32.0	69.08				
NEWPCC	#2 0-0-	318.88	32.7	104.27				
NEWPCC	#2 0-0-	220.66	31.2	68.85				
NEWPCC	#2 0-0-	145.74	29.9	43.58				
NEWPCC	#2 0-0-	216.44	28.9	62.55				
NEWPCC	#2 0-0-	217.42	28.2	61.31				
NEWPCC	#2 0-0-	221.58	28.3	62.71				
NEWPCC	#2 0-0-	292.64	30.0	87.79				
NEWPCC	#2 0-0-	219.84	28.9	63.53				
NEWPCC	#2 0-0-	119.68	29.4	35.19				
NEWPCC	#2 0-0-	120.18	29.8	35.81				

Summary  
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WPC #2 0-0- 3988.96

Monthly Hauling Report  
For the Month 07/2013

Source	Destination	Wet Weight (T)	Solids (%)	Dry Weight (T)	Wet Rate (T/km)	Dry Rate (T/km)	Spread (T)	Incorporated (T)
NEWPCC	#2 0-0-	269.26	30.3	81.59				
NEWPCC	#2 0-0-	271.16	28.5	77.28				
NEWPCC	#2 0-0-	198.08	27.8	55.07				
NEWPCC	#2 0-0-	244.80	28.4	69.52				
NEWPCC	#2 0-0-	220.84	27.3	60.29				
NEWPCC	#2 0-0-	220.98	28.7	63.42				
NEWPCC	#2 0-0-	192.22	27.4	52.67				
NEWPCC	#2 0-0-	173.10	24.9	43.10				
NEWPCC	#2 0-0-	217.84	28.2	61.43				
NEWPCC	#2 0-0-	221.80	26.5	58.78				
NEWPCC	#2 0-0-	224.08	26.1	58.49				
NEWPCC	#2 0-0-	145.86	25.9	37.78				
NEWPCC	#2 0-0-	172.04	23.2	39.91				
NEWPCC	#2 0-0-	146.34	24.8	36.29				
NEWPCC	#2 0-0-	200.42	23.2	46.50				
NEWPCC	#2 0-0-	272.98	26.2	71.52				
NEWPCC	#2 0-0-	268.28	21.7	58.22				
NEWPCC	#2 0-0-	145.02	26.2	38.00				
NEWPCC	#2 0-0-	169.82	27.1	46.02				
NEWPCC	#2 0-0-	226.96	27.0	61.28				
NEWPCC	#2 0-0-	220.44	26.8	59.08				
NEWPCC	#2 0-0-	269.50	26.9	72.50				

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-	4691.82						

Monthly Hauling Report  
For the Month 08/2013

Day	Source	Destination	Wet Weight (T)	Solids (%)	Dry Weight (T)	Wet Rate (T/km)	Dry Rate (T/km)	Spread (T)	Incorporated (T)
1	NEWPCC	#2 0-0-	218.90	25.4	55.60				
2	NEWPCC	#2 0-0-	173.94	26.7	46.44				
6	NEWPCC	#2 0-0-	265.26	26.8	71.09				
7	NEWPCC	#2 0-0-	220.48	26.8	59.09				
8	NEWPCC	#2 0-0-	295.68	24.7	73.03				
9	NEWPCC	#2 0-0-	224.00	24.2	54.21				
2	NEWPCC	#2 0-0-	223.58	25.6	57.24				
3	NEWPCC	#2 0-0-	221.22	26.0	57.52				
4	NEWPCC	#2 0-0-	144.60	26.0	37.60				
5	NEWPCC	#2 0-0-	146.42	25.5	37.34				
6	NEWPCC	#2 0-0-	121.54	25.7	31.24				
9	NEWPCC	#2 0-0-	216.70	25.4	55.04				
0	NEWPCC	#2 0-0-	168.70	27.3	46.05				
1	NEWPCC	#2 0-0-	198.20	23.2	45.98				
2	NEWPCC	#2 0-0-	122.78	23.6	28.98				
3	NEWPCC	#2 0-0-	151.18	25.0	37.80				
6	NEWPCC	#2 0-0-	149.51	23.3	34.84				
7	NEWPCC	#2 0-0-	218.72	25.6	55.99				
8	NEWPCC	#2 0-0-	145.30	25.9	37.63				
9	NEWPCC	#2 0-0-	167.80	25.7	43.13				
0	NEWPCC	#2 0-0-	148.42	24.6	36.51				

Summary  
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3942.93

#2 0-0-

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Monthly Hauling Report  
For the Month 09/2013

Day	Source	Destination	Wet Weight (T)	Solids (%)	Dry Weight (T)	Wet Rate (T/km)	Dry Rate (T/km)	Spread (T)	Incorporated (T)
3	NEWPCC	#2 0-0-	272.92	23.8	64.96				
4	NEWPCC	#2 0-0-	220.52	24.1	53.15				
5	NEWPCC	#2 0-0-	146.68	22.4	32.86				
6	NEWPCC	#2 0-0-	198.86	23.1	45.94				
9	NEWPCC	#2 0-0-	217.74	23.1	50.30				
0	NEWPCC	#2 0-0-	149.40	24.1	36.00				
1	NEWPCC	#2 0-0-	143.72	23.5	33.77				
2	NEWPCC	#2 0-0-	100.08	23.2	23.22				
3	NEWPCC	#2 0-0-	145.96	22.3	32.55				
6	NEWPCC	#2 0-0-	273.98	22.6	61.92				
7	NEWPCC	#2 0-0-	219.64	22.4	49.20				
8	NEWPCC	#2 0-0-	195.44	24.0	46.91				
9	NEWPCC	#2 0-0-	221.44	22.2	49.16				
0	NEWPCC	#2 0-0-	147.24	23.6	34.75				
3	NEWPCC	#2 0-0-	171.48	23.3	39.96				
4	NEWPCC	#2 0-0-	223.04	23.1	51.52				
5	NEWPCC	#2 0-0-	193.56	23.3	45.10				
6	NEWPCC	#2 0-0-	121.10	24.5	29.67				
7	NEWPCC	#2 0-0-	245.52	23.8	58.43				
0	NEWPCC	#2 0-0-	223.00	23.3	51.96				

Summary  
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Wet Weight (T) 3831.32  
Destination #2 0-0-

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Monthly Hauling Report  
For the Month 10/2013

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-	219.68	53.82	24.5	53.82				
02	NEWPCC	#2 0-0-	270.28	62.98	23.3	62.98				
03	NEWPCC	#2 0-0-	198.72	44.91	22.6	44.91				
04	NEWPCC	#2 0-0-	193.48	45.66	23.6	45.66				
07	NEWPCC	#2 0-0-	197.54	48.00	24.3	48.00				
08	NEWPCC	#2 0-0-	245.80	57.76	23.5	57.76				
09	NEWPCC	#2 0-0-	99.16	23.80	24.0	23.80				
10	NEWPCC	#2 0-0-	120.84	29.48	24.4	29.48				
11	NEWPCC	#2 0-0-	172.24	41.34	24.0	41.34				
15	NEWPCC	#2 0-0-	268.02	64.06	23.9	64.06				
16	NEWPCC	#2 0-0-	270.02	62.64	23.2	62.64				
17	NEWPCC	#2 0-0-	194.82	46.76	24.0	46.76				
18	NEWPCC	#2 0-0-	248.04	62.51	25.2	62.51				
21	NEWPCC	#2 0-0-	198.14	43.79	22.1	43.79				
22	NEWPCC	#2 0-0-	217.52	50.03	23.0	50.03				
23	NEWPCC	#2 0-0-	172.64	38.15	22.1	38.15				
24	NEWPCC	#2 0-0-	123.40	27.27	22.1	27.27				
25	NEWPCC	#2 0-0-	246.20	52.69	21.4	52.69				
28	NEWPCC	#2 0-0-	225.72	51.24	22.7	51.24				
29	NEWPCC	#2 0-0-	294.34	63.58	21.6	63.58				
30	NEWPCC	#2 0-0-	219.84	45.07	20.5	45.07				
31	NEWPCC	#2 0-0-	220.70	47.67	21.6	47.67				

Summary  
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Wet Weight (T) 4617.14

Destination #2 0-0-

Monthly Hauling Report  
For the Month 11/2013

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-	123.02	21.9	26.94				
04	NEWPCC	#2 0-0-	268.34	21.3	57.16				
05	NEWPCC	#2 0-0-	219.04	21.2	46.44				
06	NEWPCC	#2 0-0-	146.40	21.1	30.89				
07	NEWPCC	#2 0-0-	146.02	20.9	30.52				
08	NEWPCC	#2 0-0-	220.88	21.3	47.05				
12	NEWPCC	#2 0-0-	120.29	21.2	25.50				
13	NEWPCC	#2 0-0-	294.94	21.8	64.30				
14	NEWPCC	#2 0-0-	294.24	20.5	60.32				
15	NEWPCC	#2 0-0-	271.10	20.1	54.49				
18	NEWPCC	#2 0-0-	222.84	19.8	44.12				
19	NEWPCC	#2 0-0-	222.26	20.0	44.45				
20	NEWPCC	#2 0-0-	50.40	20.0	10.08				
21	NEWPCC	#2 0-0-	50.48	20.1	10.15				
22	NEWPCC	#2 0-0-	49.66	20.1	9.98				
25	NEWPCC	#2 0-0-	148.80	19.8	29.46				
26	NEWPCC	#2 0-0-	146.59	19.0	27.85				
27	NEWPCC	#2 0-0-	144.56	20.7	29.93				
28	NEWPCC	#2 0-0-	192.38	21.4	41.17				
29	NEWPCC	#2 0-0-	145.36	21.0	30.53				
Summary									
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Source	Destination	Wet Weight (T)	Dry Weight (T)	Distance (km)	Wet Rate (T/km)	Dry Rate (T/km)	Spread (T)	-----	
NEWPCC	#2 0-0-	3477.60							

Monthly Hauling Report  
For the Month 12/2013

Source	Destination	Wet Weight (T)	Solids (%)	Dry Weight (T)	Dry Rate (T/km)	Wet Rate (T/km)	Dry Rate (T/km)	Spread (T)	Incorporated (T)
NEWPCC	#2 0-0-	145.02	21.4	31.03					
NEWPCC	#2 0-0-	145.60	22.2	32.32					
NEWPCC	#2 0-0-	73.14	21.6	15.80					
NEWPCC	#2 0-0-	146.54	21.6	31.65					
NEWPCC	#2 0-0-	149.74	21.0	31.44					
NEWPCC	#2 0-0-	147.38	20.8	30.66					
NEWPCC	#2 0-0-	194.14	20.9	40.58					
NEWPCC	#2 0-0-	72.92	20.9	15.24					
NEWPCC	#2 0-0-	147.64	21.0	31.00					
NEWPCC	#2 0-0-	148.10	21.1	31.25					
NEWPCC	#2 0-0-	221.10	21.7	47.98					
NEWPCC	#2 0-0-	146.02	20.6	30.08					
NEWPCC	#2 0-0-	145.43	20.5	29.81					
NEWPCC	#2 0-0-	218.18	20.5	44.73					
NEWPCC	#2 0-0-	195.60	20.8	40.68					
NEWPCC	#2 0-0-	294.18	21.1	62.07					
NEWPCC	#2 0-0-	75.22	22.6	17.00					
NEWPCC	#2 0-0-	394.32	22.6	89.12					
NEWPCC	#2 0-0-	241.96	24.0	58.07					
NEWPCC	#2 0-0-	98.06	23.4	22.95					

Summary  
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Wet Weight (T) 3400.29  
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