Water and Waste Department • Service des eaux et des déchets

ENVIRONMENT ACT LICENCE #1089E RR

BIOSOLIDS DEWATERING, MONITORING, AND DISPOSAL PROGRAMS

2011

Winnipeg

Water and Waste Department • Service des eaux et des déchets

January 31, 2012

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

Mr. Mark Stephens
Regional Supervisor
Manitoba Conservation
Suite 160 – 123 Main Street
Winnipeg, Manitoba
R3C 1A5

Dear Mr. Stephens:

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 2011. Included in this report are:

a) details of the 2011 biosolids distribution and monitoring programs
b) details of the proposed 2012 biosolids distribution program.

As required under Clause 22 of the Licence, a copy of this report is being sent to the Rural Municipality of West St. Paul.

If you have any questions concerning the annual report, I may be reached by telephone at 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.
W. Watters, P.Eng.
G. Fuga, P.Eng.
D. Drohomerski, CET
D. DeCraene

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Winnipeg

Water and Waste Department • Service des eaux et des déchets

January 31, 2012

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

Reeve and Council
Rural Municipality of West St. Paul
Box 27, Grp 31, RR1B
3350 Main Street
Winnipeg, Manitoba
R3C 4A3

Dear Reeve and Council:

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 2011. This is being provided in accordance with Clause 22 of the licence. Included in this report are:

a) details of the 2011 biosolids distribution and monitoring programs
b) details of the proposed 2012 biosolids distribution program.

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

Yours sincerely,

Original signed by:

K.J.T. Kjartanson, 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

2011

Heather Demchenko, 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 2011 Biosolids Application Program (WINGRO) and also outlines the proposed plan for the 2012 calendar year.

In 2011, the City produced 13,957 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 Landfill. No biosolids were applied to agricultural land in 2011. The interim storage pad was not used in 2011.

We plan to continue disposing of biosolids at the Brady Road landfill in 2012. We are proposing to pilot a biosolids composting facility at the landfill which would commence in 2012 if approved by Manitoba Conservation.

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 2011 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 2011 Biosolids Program. The report also provides information on its proposed Biosolids Program for the twelve months starting January 1, 2012.

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

2011 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, 2011 to December 31, 2011 the City produced 13,957 dry-tonnes of mechanically-dewatered biosolids at its NEWPCC facility. Appendix I contains the mechanical dewatering operating records for 2011. In 2011, the total solids in the biosolids averaged 25.9 ± 2.5% (n = 250). 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 2011, 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)).

The following pages and Appendix I contain the results of analyses conducted on samples of biosolids, ditchwater and soils collected in fulfilment of the monitoring requirements stipulated in Licence #1089E RR. Ditchwater samples were taken in 2011 near fields that had biosolids applied in 2010.

These results include the following:

- Biosolids Quality — Table 1
- Ditchwater — Table 2
- % Solids in Mechanically Dewatered Biosolids — Appendix I

Although no formal odour complaints associated with the WINGRO Program were received in 2011, we experienced an increase in the number of odour complaints 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

2011 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-11	3.5	89	864	42.4	56.3	1,270	20,000	15,700	28,800	6.29	13.0	22.23
2	16-Jan-11	2.9	92	701	39.3	57.5	1,010	21,100	13,400	31,300	6.29	11.4	23.63
3	29-Jan-11	3.1	115	818	37.1	56.6	1,940	23,800	12,100	30,100	6.21	10.7	23.59
4	12-Feb-11	4.9	154	1210	50.2	62.4	1,500	26,500	10,800	28,900	6.17	10.6	24.45
5	26-Feb-11	4.4	140	879	43.4	50.1	1,990	26,000	10,700	30,200	6.11	9.7	25.32
6	13-Mar-11	2.5	151	703	48.6	52.5	2,650	23,100	9,780	38,500	6.12	9.7	26.38
7	27-Mar-11	2.0	126	614	44.9	62.7	3,110	18,500	8,470	32,300	5.94	7.1	30.56
8	10-Apr-11	2.3	101	618	46.2	68.8	2,050	14,500	8,060	32,700	6.14	8.1	31.34
9	24-Apr-11	1.6	96	631	38.5	56.7	1,140	14,900	10,300	29,700	6.13	8.6	29.09
10	8-May-11	2.1	92	592	43.0	52.1	1,020	13,000	10,200	29,800	6.17	9.0	28.76
11	22-May-11	2.3	117	690	46.7	59.6	970	18,100	10,300	29,800	6.17	9.8	28.18
12	5-Jun-11	2.6	115	522	38.7	58.0	752	13,200	11,300	31,100	6.34	8.9	28.55
13	19-Jun-11	3.0	99	478	38.8	52.3	690	11,600	12,100	31,900	6.24	8.9	28.07
14	3-Jul-11	2.8	117	766	39.6	74.4	1,150	12,600	12,900	33,600	6.17	10.8	28.62
15	17-Jul-11	3.4	104	991	36.9	72.3	4,310	16,600	12,400	30,800	6.04	11.6	26.24
16	31-Jul-11	10.1	127	988	36.9	68.0	3,460	21,200	13,500	28,600	6.19	11.5	23.57
17	14-Aug-11	3.8	113	717	37.8	57.4	1,900	18,300	12,200	31,000	6.20	10.9	25.76
18	28-Aug-11	2.7	112	760	43.3	66.9	1,540	14,900	11,800	29,800	6.35	10.0	25.62
19	11-Sep-11	2.7	96	734	46.5	58.3	1,490	14,000	10,600	30,900	6.24	11.1	26.21
20	24-Sep-11	4.1	114	813	57.7	190.0	1,430	16,900	10,900	28,100	6.26	11.4	24.61
21	24-Sep-11	3.6	124	784	55.4	72.5	1,190	17,500	11,900	28,700	6.27	9.8	25.13
22	8-Oct-11	3.2	121	682	52.4	58.2	999	16,900	10,900	28,700	6.17	10.6	24.91
23	6-Nov-11	2.6	129	665	58.7	60.9	1,030	20,400	11,100	31,500	6.14	10.0	26.76
24	18-Nov-11	3.3	129	816	61.3	73.2	1,330	20,500	11,300	31,000	6.21	11.5	25.35
25	4-Dec-11	3.1	91	731	46.1	52.2	1,090	16,800	12,000	29,100	6.19	12.5	23.78
26	18-Dec-11	2.9	106	700	67.7	51.9	957	19,700	12,000	32,100	6.12	11.8	24.06
	Average:	3.3	114	749	46.1	65.5	1,614	18,100	11,412	30,731	6.19	10.34	26.2
	Maximum:	10.1	154	1,210	67.7	190.0	4,310	26,500	15,700	38,500	6.35	13.0	31.3
	Minimum:	1.6	89	478	36.9	50.1	690	11,600	8,060	28,100	5.94	7.10	22.2

* Indicates starting date for year 2011 biweekly composite samples

TABLE 2

2011 Ditchwater Sampling Results
Fields # 60 34-12-2W and 61 – 35-12-2W

Sample Location	Sample Number	Date	NH_3^+ mg/L N	NO_3-NO_2 mg/L N	TKN mg/L N	Total Phosphorus mg/L P	Conductivity umhos/cm	Total Coliform MPNU/100 mL	Fecal Coliform MPNU/100 mL
Far Upstream	288391	April 07/11	0.168	1.16	<2	0.5	200	4300	<3
	288511	April 08/11	0.667	1.21	<2	0.7	197	430	<3
	288609	April 11/11	0.165	1.36	<2	0.7	202	9300	<3
	288951	April 12/11	0.100	1.13	<2	0.7	229	4300	4
	288998	April 13/11	0.061	0.69	<2	0.3	471	43000	9
	289044	April 14/11	<0.003	0.10	2	0.3	926	9300	<3
Upstream	288388	April 07/11	0.093	0.38	<2	<0.3	259	4300	<3
	288508	April 08/11	0.063	17.50	<2	0.7	949	23000	4
	288606	April 11/11	0.528	10.30	<2	0.4	1120	15000	<3
	288948	April 12/11	0.364	8.51	<2	0.4	1080	43000	<3
	288995	April 13/11	0.059	0.29	<2	0.4	1050	4300	<3
	289041	April 14/11	<0.003	0.01	<2	0.4	1380	2300	<3
Downstream	288385	April 07/11	0.146	0.69	<2	<0.3	156	4300	<3
	288505	April 08/11	0.944	0.21	<2	<0.3	87	930	<3
	288603	April 11/11	0.243	1.74	<2	<0.3	624	4300	<3
	288945	April 12/11	0.226	0.86	<2	<0.3	616	2100	<3
	288992	April 13/11	0.286	0.80	<2	0.3	331	430	<3
	289038	April 14/11	1.130	1.31	3	0.7	551	4300	<3
Far Downstream	288386	April 07/11	0.151	4.59	<2	1.0	246	150000	930
	288506	April 08/11	0.324	3.53	<2	1.2	321	43000	150
	288604	April 11/11	0.296	2.70	<2	0.7	699	4300	750
	288946	April 12/11	0.127	6.11	<2	0.6	874	430	230
	288993	April 13/11	0.325	3.39	2	0.7	911	23000	430
	289039	April 14/11	0.314	3.82	<2	0.6	901	7500	93

(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 13,957 dry-tonnes of mechanically-dewatered biosolids produced at the NEWPCC from January 1, 2011 to December 31, 2011, 100% were disposed at the Brady Road Landfill.

2012 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 2012 WINGRO application year, which runs from January 1, 2012 to December 31, 2012, the City plans no land application at the present time and plans to dispose of all biosolids at the Brady Road Landfill.

The City has requested approval by Manitoba Conservation to divert 20% of biosolids from the landfill to a pilot scale composting facility located within Brady Road Landfill. If approval is granted, the proposed pilot project will commence in the spring of 2012. If 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 01/2011

Day	Source	Destination	Wet Weight (T)	Solids (%)	Dry Weight (T)
03	NEWPCC	#2 0-0-	217.66	21.4	46.58
04	NEWPCC	#2 0-0-	289.36	20.5	59.32
05	NEWPCC	#2 0-0-	195.50	21.5	42.03
06	NEWPCC	#2 0-0-	166.76	24.1	40.19
07	NEWPCC	#2 0-0-	211.78	21.9	46.38
10	NEWPCC	#2 0-0-	259.90	21.1	54.84
11	NEWPCC	#2 0-0-	236.66	22.6	53.49
12	NEWPCC	#2 0-0-	121.72	23.7	28.85
13	NEWPCC	#2 0-0-	106.82	23.2	24.78
14	NEWPCC	#2 0-0-	68.26	21.7	14.81
17	NEWPCC	#2 0-0-	217.40	23.4	50.87
18	NEWPCC	#2 0-0-	141.90	23.4	33.20
19	NEWPCC	#2 0-0-	219.78	23.8	52.31
20	NEWPCC	#2 0-0-	124.24	22.5	27.95
21	NEWPCC	#2 0-0-	221.06	23.0	50.84
22	NEWPCC	#2 0-0-	98.08	23.0	22.56
24	NEWPCC	#2 0-0-	292.00	23.4	68.33
25	NEWPCC	#2 0-0-	319.62	23.7	75.75
26	NEWPCC	#2 0-0-	246.02	22.5	55.36
27	NEWPCC	#2 0-0-	209.86	24.3	51.00
28	NEWPCC	#2 0-0-	141.72	24.3	34.44
31	NEWPCC	#2 0-0-	165.28	24.1	39.83

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-	4271.38					---------	---------

Monthly Hauling Report
For the Month 02/2011

Day	Source	Destination	Wet Weight (T)	Solids (%)	Dry Weight (T)
01	NEWPCC	#2 0-0-	282.50	24.3	68.65
02	NEWPCC	#2 0-0-	258.06	24.2	62.45
03	NEWPCC	#2 0-0-	260.14	22.8	59.31
04	NEWPCC	#2 0-0-	260.86	23.4	61.04
07	NEWPCC	#2 0-0-	288.32	23.0	66.31
08	NEWPCC	#2 0-0-	211.82	22.5	47.66
09	NEWPCC	#2 0-0-	96.94	23.5	22.78
10	NEWPCC	#2 0-0-	124.00	22.5	27.90
11	NEWPCC	#2 0-0-	144.20	22.5	32.45
14	NEWPCC	#2 0-0-	219.26	24.1	52.84
15	NEWPCC	#2 0-0-	196.82	24.8	48.81
16	NEWPCC	#2 0-0-	194.02	24.4	47.34
17	NEWPCC	#2 0-0-	245.12	25.4	62.26
18	NEWPCC	#2 0-0-	141.84	24.7	35.03
22	NEWPCC	#2 0-0-	216.08	24.0	51.86
23	NEWPCC	#2 0-0-	286.12	24.0	68.67
24	NEWPCC	#2 0-0-	195.32	23.6	46.10
25	NEWPCC	#2 0-0-	237.30	22.7	53.87
26	NEWPCC	#2 0-0-	121.90	24.0	29.26
28	NEWPCC	#2 0-0-	238.34	25.2	60.06

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-	4218.96						
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Monthly Hauling Report
For the Month 03/2011

Day	Source	Destination	Wet Weight (T)	Solids (%)	Dry Weight (T)
01	NEWPCC	#2 0-0-	213.80	25.4	54.31
02	NEWPCC	#2 0-0-	260.48	24.8	64.60
03	NEWPCC	#2 0-0-	326.54	25.3	82.62
04	NEWPCC	#2 0-0-	295.40	25.0	73.85
07	NEWPCC	#2 0-0-	293.52	25.7	75.44
08	NEWPCC	#2 0-0-	345.26	25.5	88.04
09	NEWPCC	#2 0-0-	73.18	25.9	18.95
10	NEWPCC	#2 0-0-	118.08	25.7	30.35
11	NEWPCC	#2 0-0-	102.04	25.1	25.61
15	NEWPCC	#2 0-0-	145.00	25.2	36.54
16	NEWPCC	#2 0-0-	144.50	25.3	36.56
17	NEWPCC	#2 0-0-	173.26	25.3	43.84
18	NEWPCC	#2 0-0-	223.54	25.5	57.00
21	NEWPCC	#2 0-0-	173.00	25.4	43.94
22	NEWPCC	#2 0-0-	318.08	25.4	80.79
23	NEWPCC	#2 0-0-	296.14	27.3	80.85
24	NEWPCC	#2 0-0-	242.54	28.5	69.12
25	NEWPCC	#2 0-0-	239.86	29.1	69.80
28	NEWPCC	#2 0-0-	284.00	31.3	88.89
29	NEWPCC	#2 0-0-	193.40	31.6	61.11
30	NEWPCC	#2 0-0-	273.72	30.2	82.67
31	NEWPCC	#2 0-0-	237.78	29.4	69.91

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-	4973.12					---------	---------

Monthly Hauling Report
For the Month 04/2011

Day	Source	Destination	Wet Weight (T)	Solids (%)	Dry Weight (T)
01	NEWPCC	#2 0-0-	118.40	29.7	35.16
02	NEWPCC	#2 0-0-	123.40	29.7	36.65
04	NEWPCC	#2 0-0-	197.82	29.6	58.55
05	NEWPCC	#2 0-0-	245.02	28.6	70.08
06	NEWPCC	#2 0-0-	151.20	29.5	44.60
07	NEWPCC	#2 0-0-	147.06	30.4	44.71
08	NEWPCC	#2 0-0-	119.78	31.6	37.85
11	NEWPCC	#2 0-0-	219.62	31.8	69.84
12	NEWPCC	#2 0-0-	197.30	30.5	60.18
13	NEWPCC	#2 0-0-	148.06	33.1	49.01
14	NEWPCC	#2 0-0-	150.02	31.4	47.11
15	NEWPCC	#2 0-0-	199.02	29.9	59.51
18	NEWPCC	#2 0-0-	245.02	32.6	79.88
19	NEWPCC	#2 0-0-	241.32	31.8	76.74
20	NEWPCC	#2 0-0-	193.22	31.7	61.25
21	NEWPCC	#2 0-0-	202.84	30.4	61.66
25	NEWPCC	#2 0-0-	322.08	29.6	95.34
26	NEWPCC	#2 0-0-	243.66	29.6	72.12
27	NEWPCC	#2 0-0-	193.02	29.6	57.14
28	NEWPCC	#2 0-0-	238.50	28.6	68.21
29	NEWPCC	#2 0-0-	170.92	27.2	46.49
30	NEWPCC	#2 0-0-	72.98	27.2	19.85

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-	4140.26					---------	---------

Monthly Hauling Report
For the Month 05/2011

Day	Source	Destination	Wet Weight (T)	Solids (%)	Dry Weight (T)
02	NEWPCC	#2 0-0-	195.08	28.7	55.99
03	NEWPCC	#2 0-0-	291.50	27.1	79.00
04	NEWPCC	#2 0-0-	216.50	29.0	62.78
05	NEWPCC	#2 0-0-	168.34	29.8	50.17
06	NEWPCC	#2 0-0-	172.26	29.8	51.33
09	NEWPCC	#2 0-0-	147.90	29.8	44.07
10	NEWPCC	#2 0-0-	244.38	29.8	72.83
11	NEWPCC	#2 0-0-	293.72	29.7	87.24
12	NEWPCC	#2 0-0-	197.92	29.4	58.19
13	NEWPCC	#2 0-0-	201.82	25.1	50.66
14	NEWPCC	#2 0-0-	147.18	27.1	39.89
16	NEWPCC	#2 0-0-	367.74	29.2	107.38
17	NEWPCC	#2 0-0-	97.22	28.6	27.80
18	NEWPCC	#2 0-0-	17.24	20.0	3.45
19	NEWPCC	#2 0-0-	157.24	20.0	41.39
20	NEWPCC	#2 0-0-	327.52	28.8	94.33
24	NEWPCC	#2 0-0-	294.14	29.7	87.36
25	NEWPCC	#2 0-0-	292.68	28.9	84.59
26	NEWPCC	#2 0-0-	296.22	27.7	82.05
27	NEWPCC	#2 0-0-	324.34	27.4	88.87
30	NEWPCC	#2 0-0-	227.12	27.0	61.32
31	NEWPCC	#2 0-0-	274.20	28.4	77.87

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-	4952.26						
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Monthly Hauling Report
For the Month 06/2011

Day	Source	Destination	Wet Weight (T)	Solids (%)	Dry Weight (T)
01	NEWPCC	#2 0-0-	250.82	26.6	66.72
02	NEWPCC	#2 0-0-	349.22	27.7	96.73
03	NEWPCC	#2 0-0-	225.08	27.9	62.80
06	NEWPCC	#2 0-0-	347.36	27.4	95.18
07	NEWPCC	#2 0-0-	289.98	26.9	78.00
08	NEWPCC	#2 0-0-	121.84	29.3	35.70
09	NEWPCC	#2 0-0-	223.36	28.6	63.88
10	NEWPCC	#2 0-0-	199.98	27.8	55.59
13	NEWPCC	#2 0-0-	298.30	28.1	83.82
14	NEWPCC	#2 0-0-	293.94	28.6	84.07
15	NEWPCC	#2 0-0-	171.18	28.7	49.13
16	NEWPCC	#2 0-0-	145.60	28.3	41.20
17	NEWPCC	#2 0-0-	172.82	28.9	49.94
20	NEWPCC	#2 0-0-	298.98	29.2	87.30
21	NEWPCC	#2 0-0-	297.80	28.5	84.87
22	NEWPCC	#2 0-0-	171.16	28.7	49.12
23	NEWPCC	#2 0-0-	126.48	28.4	35.92
24	NEWPCC	#2 0-0-	149.10	28.0	41.75
27	NEWPCC	#2 0-0-	300.22	29.6	88.87
28	NEWPCC	#2 0-0-	221.60	26.9	59.61
29	NEWPCC	#2 0-0-	245.16	28.1	68.89
30	NEWPCC	#2 0-0-	199.04	25.9	51.55

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-	5099.02					---------	---------

Monthly Hauling Report
For the Month 07/2011

Day	Source	Destination	Wet Weight (T)	Solids (%)	Dry Weight (T)
05	NEWPCC	#2 0-0-	121.56	23.8	28.93
06	NEWPCC	#2 0-0-	146.14	28.3	41.36
07	NEWPCC	#2 0-0-	192.36	29.2	56.17
08	NEWPCC	#2 0-0-	170.22	28.7	48.85
11	NEWPCC	#2 0-0-	295.56	30.3	89.56
12	NEWPCC	#2 0-0-	221.08	29.1	64.34
13	NEWPCC	#2 0-0-	171.08	28.0	47.91
14	NEWPCC	#2 0-0-	73.74	27.7	20.43
15	NEWPCC	#2 0-0-	217.96	27.4	59.72
18	NEWPCC	#2 0-0-	271.14	24.7	66.97
19	NEWPCC	#2 0-0-	268.88	25.5	68.56
20	NEWPCC	#2 0-0-	145.86	26.3	38.36
21	NEWPCC	#2 0-0-	176.36	26.1	46.03
22	NEWPCC	#2 0-0-	122.80	27.1	33.28
25	NEWPCC	#2 0-0-	247.44	28.2	69.78
26	NEWPCC	#2 0-0-	248.02	27.2	67.46
27	NEWPCC	#2 0-0-	196.84	26.0	51.18
28	NEWPCC	#2 0-0-	197.92	26.0	51.46
29	NEWPCC	#2 0-0-	245.54	24.8	60.89

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-	3730.50						

Monthly Hauling Report
For the Month 08/2011

Day	Source	Destination	Wet Weight (T)	Solids (%)	Dry Weight (T)
02	NEWPCC	#2 0-0-	297.06	24.9	73.97
03	NEWPCC	#2 0-0-	198.76	23.6	46.91
04	NEWPCC	#2 0-0-	246.34	23.1	56.91
05	NEWPCC	#2 0-0-	175.32	23.7	41.55
08	NEWPCC	#2 0-0-	250.04	22.7	56.76
09	NEWPCC	#2 0-0-	275.78	23.3	64.26
10	NEWPCC	#2 0-0-	248.38	22.7	56.38
11	NEWPCC	#2 0-0-	245.74	23.4	57.50
12	NEWPCC	#2 0-0-	274.42	23.7	65.04
15	NEWPCC	#2 0-0-	269.96	25.8	69.65
16	NEWPCC	#2 0-0-	194.54	25.4	49.41
17	NEWPCC	#2 0-0-	97.60	25.2	24.60
18	NEWPCC	#2 0-0-	165.66	24.7	40.92
19	NEWPCC	#2 0-0-	152.32	25.3	38.54
22	NEWPCC	#2 0-0-	239.24	26.2	62.68
23	NEWPCC	#2 0-0-	241.40	27.8	67.11
24	NEWPCC	#2 0-0-	243.96	26.1	63.67
25	NEWPCC	#2 0-0-	148.04	25.5	37.75
26	NEWPCC	#2 0-0-	170.36	26.5	45.15
29	NEWPCC	#2 0-0-	196.16	25.7	50.41
30	NEWPCC	#2 0-0-	190.64	27.7	52.81
31	NEWPCC	#2 0-0-	191.06	26.5	50.63

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-	4712.78					---------	---------

Monthly Hauling Report
For the Month 09/2011

Day	Source	Destination	Wet Weight (T)	Solids (%)	Dry Weight (T)
01	NEWPCC	#2 0-0-	171.30	24.0	41.11
02	NEWPCC	#2 0-0-	226.06	25.0	56.52
06	NEWPCC	#2 0-0-	265.78	25.2	66.98
07	NEWPCC	#2 0-0-	224.20	25.6	57.40
08	NEWPCC	#2 0-0-	248.36	26.1	64.82
09	NEWPCC	#2 0-0-	173.56	25.2	43.74
12	NEWPCC	#2 0-0-	299.40	25.4	76.05
13	NEWPCC	#2 0-0-	224.12	25.1	56.26
14	NEWPCC	#2 0-0-	196.62	25.3	49.75
15	NEWPCC	#2 0-0-	166.50	24.0	39.96
16	NEWPCC	#2 0-0-	117.48	25.0	29.37
19	NEWPCC	#2 0-0-	221.40	24.0	53.14
20	NEWPCC	#2 0-0-	218.04	23.9	52.11
21	NEWPCC	#2 0-0-	198.68	25.4	50.46
22	NEWPCC	#2 0-0-	165.68	22.8	37.77
23	NEWPCC	#2 0-0-	221.98	27.6	61.27
26	NEWPCC	#2 0-0-	249.22	25.2	62.80
27	NEWPCC	#2 0-0-	247.32	26.4	65.29
28	NEWPCC	#2 0-0-	220.02	24.4	53.69
29	NEWPCC	#2 0-0-	196.78	24.4	48.02
30	NEWPCC	#2 0-0-	196.94	24.4	48.05

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-	4449.44						

Monthly Hauling Report
For the Month 10/2011

Day	Source	Destination	Wet Weight (T)	Solids (%)	Dry Weight (T)
03	NEWPCC	#2 0-0-	245.50	23.9	58.67
04	NEWPCC	#2 0-0-	250.80	25.0	62.70
05	NEWPCC	#2 0-0-	294.76	24.8	73.10
06	NEWPCC	#2 0-0-	297.10	25.1	74.57
07	NEWPCC	#2 0-0-	200.42	24.1	48.30
11	NEWPCC	#2 0-0-	274.66	24.3	66.74
12	NEWPCC	#2 0-0-	248.02	25.1	62.25
13	NEWPCC	#2 0-0-	298.32	25.1	74.88
14	NEWPCC	#2 0-0-	248.04	23.7	58.79
17	NEWPCC	#2 0-0-	274.06	25.1	68.79
18	NEWPCC	#2 0-0-	248.50	25.5	63.37
19	NEWPCC	#2 0-0-	273.54	25.6	70.03
20	NEWPCC	#2 0-0-	219.60	25.2	55.34
25	NEWPCC	#2 0-0-	101.62	25.4	25.81
26	NEWPCC	#2 0-0-	98.32	25.2	24.78
27	NEWPCC	#2 0-0-	120.10	23.9	28.70
28	NEWPCC	#2 0-0-	170.24	22.6	38.47
31	NEWPCC	#2 0-0-	292.44	25.3	73.99

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-	4156.04					---------	---------

Monthly Hauling Report
For the Month 11/2011

Day	Source	Destination	Wet Weight (T)	Solids (%)	Dry Weight (T)
01	NEWPCC	#2 0-0-	145.92	25.6	37.36
02	NEWPCC	#2 0-0-	198.38	23.9	47.41
03	NEWPCC	#2 0-0-	171.68	25.4	43.61
04	NEWPCC	#2 0-0-	238.78	25.1	59.93
07	NEWPCC	#2 0-0-	245.64	25.3	62.15
08	NEWPCC	#2 0-0-	218.46	27.1	59.20
09	NEWPCC	#2 0-0-	265.46	26.7	70.88
10	NEWPCC	#2 0-0-	115.28	27.6	31.82
14	NEWPCC	#2 0-0-	266.96	26.8	71.55
15	NEWPCC	#2 0-0-	263.18	27.9	73.43
16	NEWPCC	#2 0-0-	218.86	26.8	58.66
17	NEWPCC	#2 0-0-	190.48	25.7	48.95
18	NEWPCC	#2 0-0-	210.20	26.3	55.28
21	NEWPCC	#2 0-0-	236.26	25.4	60.01
22	NEWPCC	#2 0-0-	188.72	25.9	48.88
23	NEWPCC	#2 0-0-	186.00	26.0	48.36
24	NEWPCC	#2 0-0-	190.38	25.6	48.74
25	NEWPCC	#2 0-0-	192.10	25.5	48.99
28	NEWPCC	#2 0-0-	190.50	25.0	47.63
29	NEWPCC	#2 0-0-	240.34	25.0	60.09
30	NEWPCC	#2 0-0-	240.38	25.1	60.34

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-	4413.96						

Monthly Hauling Report
For the Month 12/2011

Day	Source	Destination	Wet Weight (T)	Solids (%)	Dry Weight (T)
01	NEWPCC	#2 0-0-	195.58	24.4	47.72
02	NEWPCC	#2 0-0-	243.12	24.8	60.29
05	NEWPCC	#2 0-0-	256.88	24.6	63.19
06	NEWPCC	#2 0-0-	212.82	25.0	53.20
07	NEWPCC	#2 0-0-	121.90	25.2	30.72
08	NEWPCC	#2 0-0-	141.88	20.9	29.65
09	NEWPCC	#2 0-0-	217.06	23.8	51.66
12	NEWPCC	#2 0-0-	239.62	24.1	57.75
13	NEWPCC	#2 0-0-	240.40	24.2	58.18
14	NEWPCC	#2 0-0-	94.90	24.2	22.97
15	NEWPCC	#2 0-0-	169.46	24.5	41.52
16	NEWPCC	#2 0-0-	196.40	24.8	48.71
19	NEWPCC	#2 0-0-	245.02	24.1	59.05
20	NEWPCC	#2 0-0-	289.32	23.6	68.28
21	NEWPCC	#2 0-0-	216.76	23.6	51.16
22	NEWPCC	#2 0-0-	239.86	23.5	56.37
23	NEWPCC	#2 0-0-	273.50	24.0	65.64
27	NEWPCC	#2 0-0-	169.98	24.0	40.80
28	NEWPCC	#2 0-0-	268.52	24.6	66.06
29	NEWPCC	#2 0-0-	240.50	23.8	57.24
30	NEWPCC	#2 0-0-	214.38	23.9	51.24

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-	4487.86					---------	---------