

DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION
ACTIVITY REPORT: Scheduled Inspection

N601025475

FACILITY: Northern Oaks Recycling and Disposal Facility		SRN / ID: N6010
LOCATION: 513 N. County Farm Road, HARRISON		DISTRICT: Saginaw Bay
CITY: HARRISON		COUNTY: CLARE
CONTACT: Keith Hayes , Gas Plant Operator		ACTIVITY DATE: 06/03/2014
STAFF: Gina McCann	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MAJOR
SUBJECT: Inspection to determine compliance with MI-ROP-N6010-2013. glm		
RESOLVED COMPLAINTS:		

I (glm) conducted an unannounced inspection at the Northern Oaks Recycling and Disposal facility. Northern Oaks is a Type II municipal solid waste landfill which is owned and operated by Waste Management of Michigan, Inc. The landfill accepts municipal and solid waste, construction debris, foundry sand, ash and contaminated soils. I conducted an odor survey prior to arriving at the site. No landfill gas odors were observed during the odor survey.

Northern Oaks was issued Renewable Operating Permit (ROP) number MI-ROP-N6010-2013 on August 12, 2013.

I met with Terry Nichols, District Manager, Keith Hayes, Gas Plant Operator, and Joni Jones, Scale House Operator of Waste Management. Mr. Hayes and I toured the landfill including the flare, leachate evaporator, & gas to energy plant. I reviewed on site records of the monitoring results for landfill gas collection and control system components, asbestos receiving and placement, waste acceptance records, odor complaint, and, odor survey records. All required information was available and no violations were found during the inspection.

EULANDFILL<50: Compliant

The landfill began accepting waste in December of 1992. The Maximum Design Capacity is 8.9 million cubic meters. The landfill is subject to NSPS WWW requirements applicable to a landfill with NMOC emission rate of less than 50 megagrams per year and a maximum design capacity of 2.5 million Mg. The last Tier II test for NMOC emission rate occurred on September 22, 2011. The site-specific NMOC concentration was 88 ppm NMOC as hexane. The calculated NMOC emissions for 2011 were 8.1 M/yr. The 2013 MAERS reported NMOC emissions were 2,129 pounds based on the amount of waste received and calculated using the EPA Landfill model. A site total of 41,038 pounds of VOC emissions were reported from the engine, landfill & flare.

Some odor complaints were received by the MDEQ between May 2012 and May 2014 by primarily one complainant. No Rule 901 violations were confirmed. Odor evaluations are performed seven days a week in an effort to abate odors if necessary. Upon my review of the logs off-site odors have not been observed by WM staff. Attached is a copy of the odor complaint tracking chart kept on site.

The facility holds community information meetings regularly to address citizen concerns and provide regulatory updates as well as general information on the solid waste program, initiatives, and overall solid waste news at state and local levels.

In an effort to reduce the potential for emissions associated with temporary exposure of buried waste during new cell construction and initial filling, the site did add inert fill. Adjustments were also made to wells in the GCCS to further minimize the opportunity for odors to migrate off-site.

The landfill is using chipped tires for trenches w/in the waste. The chipped tire trenches enhance gas flow to collection wells and reduce the need for installing additional horizontal wells.

I reviewed the waste acceptance records. Each load is entered into a corporate maintained database. The person at the weigh station records load weight, category, generator, and transporter. The information in the database is used to generate yearly reports for the amount of waste received and number of trucks traveling on site. The facility uses the waste acceptance rates and truck numbers to calculate emissions. The records appeared adequate to make required emission estimates. A copy of MDARD weigh scale certification from August 2013 and a copy of certificate of calibration from Cech Corporation from April 2014 are attached. Material Summary Report that lists waste accepted by type each day for the months of December 2013 and April 2014 are attached.

The flare was not operating at the time of the inspection. The flare operating information is monitored and recorded via a computer based tracking, record keeping, and alarm system. The system monitors flare temperatures and flows. An alarm is triggered for flame absence. The alarm will call an assigned employee. Records of flare operation and LFG to the evaporator for the month of May are attached.

The leachate evaporator had a flow of 473 scfm being fed to it at the time of the inspection. The leachate evaporator has the capacity to operate at 600 scfm landfill gas with a flow of 30,000 gpd leachate. Per agreement with the MDEQ Resource Management, the site recirculates up to five gallons of leachate residual for every ton of waste accepted. The site does not reintroduce leachate during periods when the landfill is generating relatively high leachate volumes. Records of leachate production and evaporation for the month of May 2014 are attached.

The facility is also recording GHG emissions. A copy of the weekly GHG control device report for the week of May 28, 2014 is attached.

The facility's MAP/Odor Abatement plan was approved on September 29, 2008. I reviewed the daily observation odor log completed by on site staff, complaint log, and complaint investigation records. The records indicate compliance with the MAP.

FGCOLDCLEANERS: Compliant

We viewed the on-site maintenance garage where a cold cleaner is located. The lid was closed and the cold cleaner was empty. The cold cleaner is only used a few times each year. The facility contracts Safety Kleen for disposal of solvents. Appropriate records were in place. The 2013 MAERS reported solvent throughput was 16 gallons.

EUASBESTOS: Compliant

I reviewed asbestos records and asbestos placement tracking. The facility maintains a site map w/codes that correspond to an asbestos gridplacement log. The facility also keeps generator and delivery information for asbestos containing waste accepted. Prior to excavating in an area of the landfill, electronics records of asbestos disposal locations are compared to any drilling proposal. The drilling locations are adjusted to avoid areas where asbestos was buried.

EUIENGINE1: Compliant

We viewed the gas to energy plant. The landfill gas is sent to the LFG generator first, the leachate evaporator second, and the flare receives any remaining collected gas. The internal combustion reciprocating engine is capable of combusting 600 cfm. The engine is subject to NSPS Subpart JJJJ and the NESHAP ZZZZ (RICE). The engine was tested on March 12, 2014 and shown to be in compliance with emission limits. A copy of the stack test observation report is attached.

A printout of the daily and monthly gas flow, operating hours, Kilowatts, & temperature record for the month of May 2014 engine operations is attached. A MAP for the engine was submitted on September 8, 2010 and approved. At the time of the inspection the facility was in compliance with the approved MAP. The facility is currently working on updating the MAP as part of their efforts to continually improve procedures and plan to submit revised version to MDEQ.

NAME: Yia R. MkaDATE: 6/12/2014SUPERVISOR: C. Gave

DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION


FCE Summary Report

Facility : Northern Oaks Recycling and Disposal Facility	SRN : N6010
Location : 513 N. County Farm Road	District : Saginaw Bay
	County : CLARE
City : HARRISON State: MI Zip Code : 48625	Compliance Status : Compliance
Source Class : MAJOR	Staff : Gina McCann
FCE Begin Date : 5/22/2012	FCE Completion Date : 6/12/2014
Comments :	

List of Partial Compliance Evaluations :

Activity Date	Activity Type	Compliance Status	Comments
06/03/2014	Scheduled Inspection	Compliance	Inspection to determine compliance with MI-ROP-N6010-2013. glm
05/07/2014	Stack Test	Compliance	JJJJ testing, test results in compliance with ROP. See stack test observations report for further info. glm
03/12/2014	Stack Test Observation	Compliance	Observe stack test of gas to energy plant and viewed operating & emissions from all gas control devices (flare, leachate evaporator, engine)
09/18/2013	Complaint Investigation	Pending	
09/16/2013	ROP Semi 1 Cert	Compliance	No deviations were reported. Original signature needed, is sending. glm Received copy with original signature 9/20/2013. glm
03/12/2013	Stack Test Observation	Pending	Observe stack test of gas to energy plant and viewed operating & emissions from all gas control devices (flare, leachate evaporator, engine)
03/12/2013	Odor Evaluation	Compliance	Odor observation conducted prior to engine stack test at Northern Oaks landfill. No Rule 901 violations.
03/09/2013	ROP Other		Test protocol for CO, NOx and VOC
12/28/2012	ROP Semi 1 Cert	Compliance	

Activity Date	Activity Type	Compliance Status	Comments
11/07/2012	Complaint Investigation	Compliance	Joint investigation w/EPA using GMAP to conduct real time methane & H2S concentrations. EPA will generate a report of GMAP results.
10/11/2012	Meeting Notes	Compliance	Waste Mangement Inc., Owner & operator of Northern Oaks Landfill, held a Community Information Meeting @ the landfill. The focus of the meeting was citizen odor complaints. DEQ staff were invited to attend.
09/19/2012	Odor Evaluation	Compliance	Odor evaluation prior to Clare County Commission meeting to discuss citizen concerns regarding odors in the Harrison, MI area
08/30/2012	Odor Evaluation	Compliance	Odor evaluation in vicinity of landfill. Slight odors observed to north of landfill on Lily Lake road. No Rule 901 violation.

Name: 

Date: 06/12/2014

Supervisor: 

ODOR COMPLAINT TRACKING CHART

FACILITY NAME: NORTHERN OAKS
 REPORT COMPLETED BY: FRED SAUTERS

MONTH: _____
 YEAR: 2013

	Date Received	Were Odors Detected During Daily Survey? Y or N	Survey Location(s) Odors were Detected	Call Logged By:	Complainant Name	Time and Date Odors were Detected	Location of Odor Detection	Wind Direction & Speed at Time of Odors	Remarks
1	5/8/13	N	N/A	FRED SAUTERS	RAY ELLIOTT	5/8/13 - 8:30A	ELLIOTT HOME	SEE NOTES	
2	5/26/13	N	N/A	FRED SAUTERS	RAY ELLIOTT	5/26/13 7:45A	ELLIOTT HOME	SEE NOTES	
3	6/12/13	N	OFFICE	FRED SAUTERS	RAY ELLIOTT	6/12/13 6:11A	ELLIOTT HOME	SEE NOTES	
4	7/12/13	N	N/A	FRED SAUTERS	RAY ELLIOTT	7-12-13 7:30A	ELLIOTT HOME	SEE NOTES	
5	8/18/13	N	N/A	FRED SAUTERS	RAY ELLIOTT	8/18/13 7:52	ELLIOTT HOME	SEE NOTES	
6	8/29/13	N	N/A	FRED SAUTERS	RAY ELLIOTT	8/29/13	ELLIOTT HOME	SEE NOTES	
7	9/4/13	N	N/A	FRED SAUTERS	RAY ELLIOTT	9/4/13	ELLIOTT HOME	SEE NOTES	
8	9/17/13	N	N/A	FRED SAUTERS	RAY ELLIOTT	9/17/13	ELLIOTT HOME	SEE NOTES	
9	11-29-13	N		Tommy Nichols	Ray Elliott	11-29 9:30am	Elliott home	See Notes	
10	1-31-14	N		Tommy Nichols	Ray Elliott	1-31 9:30am	Elliott home	See Notes	
11	2-3-14	N		T Nichols	Ray Elliott	23 8:50am	Elliott home	See Notes	
12	2-10-14	N		T Nichols	Ray Elliott	2-10 6:30am	Elliott's home	See Notes	
13	2-25-14	N		T Nichols	Ray Elliott	2-25 - 6:15am	Elliott's home	See Notes	
14	3-13-14	N		T Nichols	Ray Elliott	3-14 8:09am	Elliott's home	see notes	
15	5-22-14	N		T Nichols	Ray Elliott	5-22 10:00am	Elliott home	see notes	
16	5-30-14	N		T Nichols	R Elliott	5/30	Elliott home	see notes	
17									
18									
19									
20									

Jym
6/3/2014

MICHIGAN DEPT OF AGRICULTURE & RURAL DEVELOPMENT
 LABORATORY DIVISION
 WEIGHTS AND MEASURES PROGRAM
 (517) 655 - 8202
 michigan.gov/wminfo

JM
 8/31/2014

Device Detail

Insp Date: 8/27/2013 Business ID: 86826
 Business: NORTHER OAKS RECYCLING AND DISP.
 513 N. COUNTY FARM RD.
 HARRISON, MI 48625

Inspection: CD001695
 Store ID:
 Phone: 989-539-6111
 Inspector: 158 DAVID CROWLEY
 Reason: FIELD AUDIT

Make: METTLER TOLEDO
 Model: JAGUAR
 Serial: 5078633-5FA

Type: Heavy Capacity Scale
 Subtype: 09-5 (25000)
 Insp Type: Maintenance
 Loc:

Results: Sealed
 Other:
 Seal #: CECH

Elapsed Time:
 d: 20
 CLC or Section Capacity: 60000
 Cells

Capacity: 200000
 Class: III L
 NTEP: Yes

Units: lb
 Sections: 5
 Weighing Elements: Electronic Load

Indicating Elements: DWI
 Invoice#:

Recording Elements: CPU Interface

Deck Size: 10 X 80

Type	Name	Inc/Base	Actual	Display	Err	Tol	Res	Notes
Test	Zero Load	0	0	0	0	20	Pass	
Test	Increasing Load	5000	5000	5000	0	20	Pass	Section 1
Test	Increasing Load	4000	9000	9000	0	20	Pass	
Test	Increasing Load	4000	13000	13000	0	40	Pass	
Test	Shift	0	13000	13000	0	40	Pass	Section 2
Test	Shift	0	13000	13000	0	40	Pass	Section 3
Test	Shift	0	13000	13000	0	40	Pass	Section 4
Test	Shift	0	13000	13000	0	40	Pass	Section 5
Test	Range(Shift)	0	13000		0	40	Pass	
Test	Increasing Load	4000	17000	17000	0	40	Pass	Section 1
Test	Increasing Load	4000	21000	21000	0	60	Pass	
Test	Increasing Load	4000	25000	25000	0	60	Pass	
Test	Shift	0	25000	25000	0	60	Pass	Midspan
Test	Shift	0	25000	24980	-20	60	Pass	Section 2
Test	Shift	0	25000	25000	0	60	Pass	Midspan
Test	Shift	0	25000	25000	0	60	Pass	Section 3
Test	Shift	0	25000	25000	0	60	Pass	Midspan
Test	Shift	0	25000	25000	0	60	Pass	Section 4
Test	Shift	0	25000	25000	0	60	Pass	Midspan
Test	Shift	0	25000	25000	0	60	Pass	Section 5
Test	Range(Shift)	0	25000		20	60	Pass	
Test	Decreasing Load	-12000	13000	13000	0	40	Pass	Section 1
Test	Zero Load	0	0	0	0	20	Pass	
Test	Strain	33180	25000	58160	-20	60	Pass	

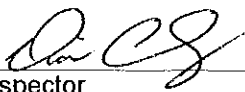

 Inspector

Acknowledged Receipt: _____

Device Detail

Notes:

Performed document review. Last calibration done by Cech Scale Co on 4/23/13.



Inspector

Acknowledged Receipt:



Certificate of Calibration

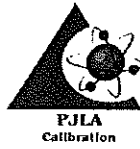
Truck NIST class III, III L, III L Legal For Trade

06/3/2014
ym

Certificate #:

01

3984 Cabaret Trail W.
Saginaw MI 48603
12770 Fairlane St.
Livonia MI 48150



Accreditation # 69792

FOR:
Waste Management Northern Oaks
513 N. County Farm
Harrison, MI 48625

Scale Control #: 01
Description: Truck Scale
Make: Mettler Toledo
Model: 7560 Above Ground
Serial Number: Unknown
ID Number:
Capacity: 200,000
Increment: 20
Unit of Measure: lbs
In Tol / Out Tol Based On: HB-44 Sections 2.20 - 2.24
Deviation or Requirement:

N/A
 Digital Weight Indicator:
Make: Mettler Toledo
Model: Jaguar
Serial Number: 5078633-5FA
ID Number:

Date Calibrated: 04/07/14
Next Due: April-15
Location:
Emin/Nmax:
Class: III L
of Divisions: 10000
Temperature and Humidity within operating range unless noted: T: H:
Rec'd Condition: not working

SHIFT TEST: As Found N/A or Not In Service As Left N/A or Left As Found

Section # /	Wts Applied	Results:	Error	Tol.	In Tol / Out Tol	Section # /	Wts Applied	Results:	Error	Tol.	In Tol / Out Tol
Section 1:	13000			2	In Tol	Section 1:	13000	13000	0	2	In Tol
	25000			3	In Tol		25000	24980	-1	3	In Tol
Mid Span	25000			3	In Tol	Mid Span	25000	25000	0	3	In Tol
Section 2:	13000			2	In Tol	Section 2:	13000	13000	0	2	In Tol
	25000			3	In Tol		25000	25000	0	3	In Tol
Mid Span	25000			3	In Tol	Mid Span	25000	25000	0	3	In Tol
Section 3:	13000			2	In Tol	Section 3:	13000	13000	0	2	In Tol
	25000			3	In Tol		25000	25000	0	3	In Tol
Mid Span	25000			3	In Tol	Mid Span	25000	25000	0	3	In Tol
Section 4:	13000			2	In Tol	Section 4:	13000	13000	0	2	In Tol
	25000			3	In Tol		25000	25000	0	3	In Tol
Mid Span	25000			3	In Tol	Mid Span	25000	25000	0	3	In Tol
Section 5:	13000			2	In Tol	Section 5:	13000	13000	0	2	In Tol
	25000			3	In Tol		25000	25000	0	3	In Tol
Mid Span	25000			3	In Tol	Mid Span				3	In Tol
Section 6:	13000			2	In Tol	Section 6:				2	In Tol
	25000			3	In Tol					3	In Tol
Mid Span	25000			3	In Tol	Mid Span				3	In Tol
Section 7:	13000			2	In Tol	Section 7:				2	In Tol
	25000			3	In Tol					3	In Tol
Mid Span	25000			3	In Tol	Mid Span				3	In Tol
Section 8:	13000			2	In Tol	Section 8:				2	In Tol
	25000			3	In Tol					3	In Tol
Mid Span	25000			3	In Tol	Mid Span				3	In Tol
Section 9:	13000			2	In Tol	Section 9:				2	In Tol
	25000			3	In Tol					3	In Tol



Certificate of Calibration

NIST class III, IIIL, IIII or UNMARKED Scale

Inc / Dec Test: <input checked="" type="checkbox"/> As Found <input type="checkbox"/> N/A or Not In Service		<input checked="" type="checkbox"/> As Left <input type="checkbox"/> N/A or Left As Found							
Wts Applied	Results:	Error	Tol.	In Tol / Out Tol	Wts Applied	Results:	Error	Tol.	In Tol / Out Tol
5000			1	In Tol	5000	5000	0	1	In Tol
9000			1	In Tol	9000	9000	0	1	In Tol
13000			2	In Tol	13000	13000	0	2	In Tol
17000			2	In Tol	17000	17000	0	2	In Tol
21000			3	In Tol	21000	21000	0	3	In Tol
25000			3	In Tol	25000	25000	0	3	In Tol
21000			3	In Tol	21000	21000	0	3	In Tol
17000			2	In Tol	17000	17000	0	2	In Tol
13000			2	In Tol	13000	13000	0	2	In Tol
9000			1	In Tol	9000	9000	0	1	In Tol
5000			1	In Tol	5000	5000	0	1	In Tol
0			1	In Tol	0	0	0	1	In Tol

STRAIN		<input checked="" type="checkbox"/> As Found <input type="checkbox"/> N/A or Not In Service		<input checked="" type="checkbox"/> As Left <input type="checkbox"/> N/A or Left As Found								
Direction	Lights	Wts Added	Heavies	Error	Tol.	In Tol / Out Tol	Lights	Wts Added	Heavies	Error	Tol.	In Tol / Out Tol
North		25000			3	In Tol	31580	25000	56580	0	3	In Tol
South		25000			3	In Tol	31580	25000	56600	1	3	In Tol

Calibration Equipment Used:

Description	Vehicle / Serial Number	Additional Weight(s) Used
1000 Lb Test Weights Weight Cart and Nest Weights	truck 16	

Test Weights are traceable to NIST through NIST to International SI units. Vehicle number and additional weights listed are relative to current Michigan Test ID Number / Certificate of Calibration. Corresponding certificates and serial numbers are available upon request.

Notes:

Measurement Uncertainty Information:

Best Uncertainties represent expanded uncertainties using a coverage factor of K=2 which provides a level of confidence of approximately 95%. Allowance must be made for the environment at the place of calibration, uncertainty induced by the item being calibrated and adverse effects caused by transportation of calibration equipment. These factors could result in the uncertainty being larger than the BMC. Statement of In/Out Tolerance is done with consideration of Uncertainty Budget.

The results shown above relate only to the item calibrated as described above. This certificate shall not be reproduced except in full, without the written approval of the laboratory.

Mike Cassells 4/7/2014
Approved Signatory _____ Date

D. Prill 4/7/2014
Reviewed By _____ Date

*WMM
6/13/2014*



Origin / Material Summary Report Northern Oaks RDF: S04096 (USA)

Date 12/01/2013 12:00 AM to 12/31/2013 11:59 PM

Customer: All | Operation Type: All | Ticket Type: All | Customer Type: All | PMT Category: All | Pro

Origin	Material	Loads	Yards	Tons	Mt
	APV	5	0.0	0.00	
	DGO	3	0.0	0.00	
Origin Total		8	0.0	0.00	
MI-ARENAC	1000T	10	244.0	87.30	
Origin Total		10	244.0	87.30	
MI-CLARE	1000E	47	0.0	0.00	
MI-CLARE	1000T	84	2,186.0	657.02	\$
MI-CLARE	1000Y	82	624.8	292.62	
MI-CLARE	2000T	29	655.0	93.88	
MI-CLARE	2000Y	85	494.3	132.36	
MI-CLARE	5010L	204	0.0	0.00	
MI-CLARE	Cont Soil Snd-Tons	2	20.0	21.75	
MI-CLARE	Cont Soil Sp. W.-Tons	1	20.0	4.09	
MI-CLARE	DGO	9	0.0	0.00	
Origin Total		543	4,000.1	1201.72	\$
MI-GLADWIN	1000T	50	1,173.0	387.59	\$
MI-GLADWIN	2000T	12	380.0	47.75	
MI-GLADWIN	2000Y	4	15.0	3.76	
MI-GLADWIN	DGO	2	0.0	0.00	
MI-GLADWIN	Spwaste Solid Oth-Each	4	12.0	3.00	
MI-GLADWIN	Spwaste Solid Oth-Tons	1	40.0	6.12	
Origin Total		73	1,620.0	448.22	\$
MI-GRATIOT	1000T	58	1,625.0	426.83	\$
MI-GRATIOT	2000T	7	180.0	21.69	
MI-GRATIOT	5006T	8	270.0	31.12	
MI-GRATIOT	DGO	2	0.0	0.00	
Origin Total		75	2,075.0	479.64	\$
MI-ISABELLA	1000T	207	5,808.0	1707.05	\$-
MI-ISABELLA	1000Y	1	4.0	1.25	
MI-ISABELLA	2000T	68	2,215.0	712.60	\$:
MI-ISABELLA	2000Y	3	16.0	4.00	



Origin / Material Summary Report Northern Oaks RDF: S04096 (USA)

Date 12/01/2013 12:00 AM to 12/31/2013 11:59 PM

Customer: All | Operation Type: All | Ticket Type: All | Customer Type: All | PMT Category:

Origin	Material	Loads	Yards	Tons	M.
MI-ISABELLA	5006T	16	610.0	29.66	
MI-ISABELLA	Asb Friable-Cubic Yards	17	1,020.0	235.14	
MI-ISABELLA	Asb Non Fri-Tons	1	60.0	10.10	
MI-ISABELLA	C&D INDUSTRIAL-Tons	1	20.0	2.62	
MI-ISABELLA	Dead Animals-Tons	1	20.0	4.94	
MI-ISABELLA	DGO	12	0.0	0.00	
MI-ISABELLA	Spwaste Plant-Tons	2	80.0	12.69	
Origin Total		329	9,853.0	2720.05	:
MI-LAKE	1000T	2	66.0	21.96	
Origin Total		2	66.0	21.96	
MI-MECOSTA	1000T	48	1,127.0	395.79	:
MI-MECOSTA	2000T	6	150.0	35.13	
MI-MECOSTA	DGO	2	0.0	0.00	
Origin Total		56	1,277.0	430.92	:
MI-MISSAUKEE	1000T	23	509.0	157.80	
MI-MISSAUKEE	2000T	3	80.0	19.83	
MI-MISSAUKEE	Ash - Bottom-Tons	1	20.0	15.08	
MI-MISSAUKEE	DGO	1	0.0	0.00	
Origin Total		28	609.0	192.71	
MI-MONTCALM	Cont Soil Sp. W.-Cubic Yards	12	326.0	407.09	
Origin Total		12	326.0	407.09	
MI-OGEMAW	1000T	1	33.0	11.41	
Origin Total		1	33.0	11.41	
MI-OSCEOLA	1000T	66	1,677.0	395.17	\$
MI-OSCEOLA	1000Y	1	1.0	0.25	
MI-OSCEOLA	2000T	9	240.0	30.59	
MI-OSCEOLA	2000Y	2	50.0	23.91	
MI-OSCEOLA	Cont Soil Sp. W.-Tons	17	340.0	271.97	
MI-OSCEOLA	DGO	7	0.0	0.00	
MI-OSCEOLA	Spwaste Plant-Tons	2	80.0	15.61	
Origin Total		104	2,388.0	737.50	\$



Origin / Material Summary Report Northern Oaks RDF: S04096 (USA)

Date 12/01/2013 12:00 AM to 12/31/2013 11:59 PM

Customer: All | Operation Type: All | Ticket Type: All | Customer Type: All | PMT Category: All

Origin	Material	Loads	Yards	Tons	Ma
MI-ROSCOMMON	1000T	78	1,916.0	593.18	\$
MI-ROSCOMMON	2000T	28	715.0	139.58	
MI-ROSCOMMON	2000Y	2	4.5	1.13	
MI-ROSCOMMON	DGO	7	0.0	0.00	
Origin Total		115	2,635.5	733.89	\$
MI-WEXFORD	1000T	34	989.0	366.75	\$
MI-WEXFORD	2000T	3	110.0	19.26	
MI-WEXFORD	DGO	2	0.0	0.00	
Origin Total		39	1,099.0	386.01	\$
Ticket Totals		1395	26,225.6	7858.42	\$2

JMM
02/13/2014



Origin / Material Summary Report Northern Oaks RDF: S04096 (USA)

Date 04/01/2014 12:00 AM to 04/30/2014 11:59 PM

Customer: All | Operation Type: All | Ticket Type: All | Customer Type: All | PMT Category: All

Origin	Material	Loads	Yards	Tons	M
MI-ARENAC	1000T	9	266.0	96.39	
Origin Total		9	266.0	96.39	
MI-CLARE	1000E	48	2.0	0.00	
MI-CLARE	1000T	87	2,208.0	651.80	
MI-CLARE	1000U	4	6.0	27.29	
MI-CLARE	1000Y	168	801.8	384.49	
MI-CLARE	2000T	100	2,100.0	301.36	
MI-CLARE	2000Y	178	826.8	249.21	
MI-CLARE	5004E	2	0.0	0.00	
MI-CLARE	5004T	12	174.0	60.74	
MI-CLARE	5004Y	4	5.0	1.26	
MI-CLARE	5006T	1	20.0	2.00	
MI-CLARE	5010L	211	0.0	0.00	
MI-CLARE	9014G	41	1,595.0	1823.82	
MI-CLARE	Cont Soil Snd-Tons	4	40.0	44.14	
MI-CLARE	Cont Soil Sp. W.-Tons	1	10.0	0.63	
MI-CLARE	DGO	4	0.0	0.00	
MI-CLARE	Spwaste Solid Oth-Tons	3	19.0	5.49	
Origin Total		868	7,807.6	3552.23	§
MI-GLADWIN	1000T	54	1,316.0	422.80	§
MI-GLADWIN	1000U	1	0.0	2.97	
MI-GLADWIN	1000Y	3	9.0	2.25	
MI-GLADWIN	2000T	40	980.0	129.50	
MI-GLADWIN	2000Y	2	4.0	1.00	
MI-GLADWIN	DGO	4	0.0	0.00	
MI-GLADWIN	Spwaste Solid Oth-Each	2	4.0	1.00	
Origin Total		106	2,313.0	559.52	§
MI-GRATIOT	1000T	54	1,463.0	385.19	§
MI-GRATIOT	2000T	6	170.0	17.51	
MI-GRATIOT	5006T	10	400.0	43.19	
MI-GRATIOT	Spwaste Solid Oth-Tons	1	40.0	5.04	



Origin / Material Summary Report Northern Oaks RDF: S04096 (USA)

Date 04/01/2014 12:00 AM to 04/30/2014 11:59 PM

Customer: All | Operation Type: All | Ticket Type: All | Customer Type: All | PMT Category: All |

Origin	Material	Loads	Yards	Tons	K
Origin Total		71	2,073.0	450.93	
MI-ISABELLA	1000T	225	6,078.0	1935.20	
MI-ISABELLA	1000Y	3	10.0	2.50	
MI-ISABELLA	2000T	123	3,630.0	505.64	
MI-ISABELLA	2000Y	5	29.0	8.97	
MI-ISABELLA	5006T	18	630.0	28.40	
MI-ISABELLA	Asb Non Fri-Tons	21	705.0	892.82	
MI-ISABELLA	DGO	3	0.0	0.00	
MI-ISABELLA	Spwaste Plant-Tons	4	160.0	23.81	
MI-ISABELLA	Spwaste Solid Oth-Tons	1	20.0	16.48	
Origin Total		403	11,262.0	3413.82	\$
MI-LAKE	1000T	3	82.0	26.76	
Origin Total		3	82.0	26.76	
MI-MECOSTA	1000T	54	1,170.0	404.25	
MI-MECOSTA	2000T	14	370.0	73.95	
MI-MECOSTA	DGO	1	0.0	0.00	
Origin Total		69	1,540.0	478.20	
MI-MISSAUKEE	1000T	20	460.0	143.47	
MI-MISSAUKEE	2000T	2	60.0	11.49	
MI-MISSAUKEE	Ash - Bottom-Tons	1	20.0	16.06	
MI-MISSAUKEE	Ash - Fly-Tons	2	40.0	27.08	
MI-MISSAUKEE	Spwaste Solid Oth-Tons	1	15.0	8.22	
Origin Total		26	595.0	206.32	
MI-MONTCALM	1000T	1	35.0	11.30	
Origin Total		1	35.0	11.30	
MI-OGEMAW	1000T	2	57.0	22.12	
MI-OGEMAW	2000T	1	10.0	5.08	
MI-OGEMAW	2000Y	1	2.5	0.63	
Origin Total		4	69.5	27.83	
MI-OSCEOLA	1000T	71	1,796.0	381.06	
MI-OSCEOLA	1000Y	1	2.5	0.63	



Origin / Material Summary Report Northern Oaks RDF: S04096 (USA)

Date 04/01/2014 12:00 AM to 04/30/2014 11:59 PM

Customer: All | Operation Type: All | Ticket Type: All | Customer Type: All | PMT Category: All |

Origin	Material	Loads	Yards	Tons	K
MI-OSCEOLA	2000T	29	1,050.0	216.42	
MI-OSCEOLA	Cont Soil Sp. W.-Tons	1	1.0	0.77	
MI-OSCEOLA	Spwaste Plant-Tons	1	40.0	3.18	
MI-OSCEOLA	Treated Wood-Cubic Yards	5	200.0	47.27	
Origin Total		108	3,089.5	649.33	
MI-ROSCOMMON	1000T	72	1,897.0	629.43	
MI-ROSCOMMON	1000U	2	0.0	1.73	
MI-ROSCOMMON	1000Y	5	21.5	8.95	
MI-ROSCOMMON	2000T	30	700.0	112.67	
MI-ROSCOMMON	2000Y	2	5.5	1.38	
Origin Total		111	2,624.0	754.16	
MI-WEXFORD	1000T	31	891.0	335.25	
Origin Total		31	891.0	335.25	
Ticket Totals		1810	32,647.6	10562.04	\$

6/3/2014 *JM*

Greenhouse Gas Emissions Reporting - LFG Monitoring Monthly Control Device Data Form

Complete this form Monthly for LFG control device(s).

Rev. 1/15/2014

CorpDB Site Name: **Northern Oaks RDF** CorpDB Site ID Number: **S04096**

printed

Total LFG Volume								
Control Device Description	Flow Meter Description	Flow Meter Serial No.	Reading Date		Reading Time	Totalizer Reading (MSCF)	Prior Month Totalizer Reading (MSCF)	Total Volume Consumed (MSCF)
Leachate Evaporator	P/rot tube	0236276	5/31	2014	0:00:00	65,287	44,991	20,296
Flare	Thermal Mass	275892	5/31	2014	0:00:00	7,992	7,529	463
Gas Plant	ABB Orifice Plate	T103133209	5/31	2014	0:00:00			18,638
HOURS		Hours						Hours
Leachate Evaporator	Hours		5/31	2014	0:00:00	2,547.2	1,836.3	710.9
Flare	Hours		5/31	2014	0:00:00	952.9	922.2	50.7
Wellfield under Vacuum	Hours		5/31	2014	0:00:00	2,077.3	1,333.3	744.0
Gas Plant	Hours		5/31	2014				738.8

Field Calibration - Gas Composition Meter									
Meter Manufacturer: Lantec			Meter Model No.: Gem NAV2000			Meter Serial No.: GM 12784			
Date/Time		5-28-14 @9:21 a.m		Performed By:		Keith Hayes			
Service Date for Composition Meter: (Note: meter cannot be used if service period has expired): 8-14-2014									
Calibration Gas									
Zero Gas Composition				Manufactured By:	Manufacture Date:	Expiration Date:	Lot / ID Number	Comments	
CH ₄ (%)	CO ₂ (%)	N ₂ (%)	O ₂ (%)	Fresh Air	NA	NA	NA	Span gas used as zero gas for O ₂ sensor.	
0.0	0.0	79.1	0.0						
(Fresh Air)	(Fresh Air)	(Fresh Air)	(Span Gas)						
Span Gas Composition				Manufactured By:	Manufacture Date:	Expiration Date:	Lot / ID Number	Comments	
CH ₄ (%)	CO ₂ (%)	N ₂ (%)	O ₂ (%)	Spec Air		5/1/15	42151-01	Fresh air used as span gas for O ₂ sensor.	
50.0	35.0	15.0	20.9						
			(Fresh Air)						
Reading After Calibration									
Zero Gas Reading					Span Gas Reading				
CH ₄ (%)	CO ₂ (%)	O ₂ (%)	CH ₄ (%)	CO ₂ (%)	O ₂ (%)				
0.0	0.1	20.8	50.0	35.0	0.0				

GHG Monitoring Port - LFG Composition												
Control Device Description	LGMS Sample Port ID:	Reading Date / Time		CH ₄ (%)	CO ₂ (%)	O ₂ (%)	Balance Gas (%)	LFG Pressure @ Flowmeter ("H ₂ O)	LFG Temperature @ Flowmeter (°F)	LFG Flow Rate (SCFM)	Runtime Hours for the Period	Complete GCCS Outage Hours *
Leachate Evaporator	LEACEVAP	28-May	9:59 AM	52.6	35.8	1.3	10.3	-19.9	81	332	710.9	
Flare	NorFLARE	5/20/2014	9:57 AM	51.6	35.8	1.3	11.3	-0.1	67	122	50.7	
Gas Plant	NOGASPLT	5/28/2014	9:24 AM	53.1	35.5	1.3	10.1	18.3	98	430	738.8	
Wellfield under full Vacuum										884	744	

* Hours where all control devices were not operating at the same time during this period.

Monitoring Performed By:	
Name: Keith Hayes	Telephone: 989-544-1114
Title: Gas Plant Manager	Contact Email: khayes1@wm.com
Signature: <i>Keith Hayes</i>	

Readings for gas plant on discharge side (+ number)
 Leachate + flare readings on intake side, (- number)

DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION
ACTIVITY REPORT: Stack Test Observation

N601024584

FACILITY: Northern Oaks Recycling and Disposal Facility		SRN / ID: N6010
LOCATION: 513 N. County Farm Road, HARRISON		DISTRICT: Saginaw Bay
CITY: HARRISON		COUNTY: CLARE
CONTACT: Debora Johnston , Environmental Engineer		ACTIVITY DATE: 03/12/2014
STAFF: Gina McCann	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MAJOR
SUBJECT: Observe stack test of gas to energy plant and viewed operating & emissions from all gas control devices (flare, leachate evaporator, engine)		
RESOLVED COMPLAINTS:		

I (glm) observed an emission test of the landfill gas to energy facility at Northern Oaks RDF. Staff from TPU in attendance was Rob Dickman. I was present for the completion of the first run and part of the second run, associated monitoring calibrations, stack sample collection and processing. Mr. Michael Brack, Field Services Manager for Dorenzo & Associates, conducted the test for Waste Management LLC. The Waste Management Energy Recovery Operator Keith Hayes and Regional Manager Richard Kunze, were present throughout the test.

A single CAT® G3520C IC engine was tested. The engine was installed on November 11, 2010. Per the WM LLC site staff, the plate ID is GZJ00226 and the engine has 26,714 hours of operation. An engine is scheduled for a swap out at 54,000 operating hours. Three 60-minute test runs for NOx, CO, and NMOC were performed. I recorded the following information:

Run 1 (start ~9:30 AM)

LFG flow to engine: 518 scfm
LFG flow to leachate evaporator: 411 scfm
LFG flow to flare: off
Oil Engine temp: 197 F
Flare exhaust temp: off
Fuel gas quality = 51.4 %
Engine exhaust Temp = 116 F
KW output range = 1578

Run 2 (start ~ 11:20 AM)

LFG flow to engine: 522 scfm
LFG flow to leachate evaporator: off
LFG flow to flare: 416 scfm
Oil Engine temp: 199F
Flare exhaust temp: off
Fuel gas quality = 51.4 %
Engine exhaust Temp = 1588.5 KW

During the test the Kilowatt output was in the range of 1580. The Kilowatt set point for the engine is 1620. The gas quality is monitored continuously by an automated gas chromatograph. The fuel valve and throttle (air/fuel ratio) is adjusted in response to gas quality and environmental conditions.

The test runs were performed alternating splitting gas flow between the leachate evaporator and engine, for run 1, and the flare and the engine for run 2. The test requires the engine to operate at such a high capacity that it was drawing hard on the landfill. At this time of year the gas production is lower making it hard to operate the engine at the capacity needed as well as the leachate evaporator and the flare.

There were no visible emissions from the engine stack or the flare prior to or during the test. The two leachate evaporator exhaust stacks had continuous white attached plumes. Wind was from the N/NE.

All test sample collection and QA/QC appeared to be in accordance with the test plan.

NAME _____

DATE _____

SUPERVISOR _____

Northern Oaks Engine Plant

DATE:

Utility Readings

	TIME	KW	POWER FACTOR	HERTZ	AMPS/VOLTS A/PHASE	AMPS/VOLTS B/PHASE	AMPS/VOLTS C/PHASE	KW/HRS	UTILITY HOURS	COMMENTS
1	800	1325.8	.991	60	4139/186.6	4168/180	4146/187.4	32398649	30851	
2	800	1307.3	.992	60	4131/183.2	4153/179.6	4128/190.3	32475230	30851	
3										
4										
5	800	1302.9	.993	60	4117/183.4	4145/186.7	4111/191.8	32514984	30851	
6	800	1316.9	.992	60	4113/185.4	4137/180.8	4105/192.1	32546496	30851	
7	800	1311.2	.992	60	4115/184	4128/182.1	4106/190.8	32578443	30851	
8	800	1313.2	.992	60	4133/183.4	4151/183.2	4128/189.4	32610165	30851	
9	800	1317	.991	60	4149/182	4164/182.5	4139/188.7	32641998	30851	
10										
11										
12	800	1319.6	.990	60	4159/183.6	4181/180.8	4158/187.5	32736436	30851	
13	800	1299.7	.991	60	4085/184.6	4106/182.5	4099/188.8	32767800	30851	
14	800	1315.7	.991	60	4149/182.7	4163/182.5	4139/188.5	32799400	30851	
15	800	1316.9	.991	60	4159/182	4180/180	4105/192.5	32827838	30866	
16	800	1314.7	.991	60	4118/184.8	4142/182	4111/196.3	32861791	30866	
17										
18										
19	800	1350	.993	60	4123/192	4134/187	4116/197	32956770	30866	
20	800	1305	.953	60	4086/185	4108/183	4087/186	32988199	30866	
21	800	1318	.997	60	4122/182.6	4151/180.6	4118/190	33019954	30866	
22	800	1337	.991	60	4130/186.1	4156/181.3	4129/190.8	33051395	30866	
23	800	1325.9	.992	60	4102/186.7	4125/184.4	4101/192.6	33083018	30866	
24										
25										
26										
27	800	1308.1	.989	60	4075/187.7	4099/183.2	4080/191.4	33208899	30866	
28	800	1296.1	.989	60	4127/183.5	4148/180.7	4130/184.4	3323637	30875	
29	800	1326.4	.990	60	4135/185.4	4159/180.6	4138/185.9	33264798	30875	
30	800	1319.0	.991	60	4135/185.3	4167/180.6	4133/187.9	33296060	30875	
31	800	1300	.991	60	4227/179.1	4252/176.2	4221/183.9	33358056	30875	

Northen Oaks Engine Plant

Radiator Sheet

Month/Year:		Engine #1		
Date	Time	Jacket Water %	Aux Water %	Radiator Pressure
1	800	90	90	5
2	800	80	90	6
3				
4				
5	800	80	90	6
6	800	80	90	6
7	800	80	90	6
8	800	80	90	6
9	800	80	90	6
10				
11				
12	800	80	90	1
13	800	80	90	5
14	800	90	90	1
15	800	90	90	1
16	800	80	90	1
17				
18				
19				
20				
21				
22	800	90	90	2
23	800	90	90	1
24				
25				
26				
27	800	90	90	6
28	800	90	90	8
29	800	90	90	1
30	800	90	90	1
31				

NORTHERN OAKS RENEWABLE ENERGY FACILITY

ENGINE# 1

DATE

	Time	ENGINE HOURS	RUN TIME	OIL TEMP	OIL PSI	JW TEMP	JW PSI	MAN PSI	MAN TEMP	SCFM	THROTTLE POS	FUEL POS	BTU's	DIP STCK OIL LVL	BATT VOLTS/AMPS	JW IN/OUT	AUX IN/OUT	DAY TANK
1	800	27,877.9	24	197	70.1	213	36	38.22	122.9	414	47	50	506	Full	26/11.8	124/120	66/110	7"
2	800	27,961.8		197	72.6	213	36	37.56	122.5	419	48	50	503	Full	26/11.6	130/126	70/110	3.5"
3																		
4																		
5	800	27,973.9	72	197	71.8	213	38	37.77	121.8	419	47	50	494	Full	26/11.8	112/120	67/106	14"
6	800	27,997.9	24	197	72.7	213	38	37.77	122.5	424	47	51	492	Full	26/11.8	1120/120	68/110	10"
7	800	28,021.9	24	197	71.0	213	37	37.48	122.7	420	46	51	491	Full	26/11.9	118/122	68/108	6.5"
8	800	28,045.9	24	197	70.7	213	38	38.00	125.4	420	48	51	502	Full	26/12.0	138/126	74/110	6.5"
9	800	28,069.9	24	197	69.9	215	36	37.4	124.0	412	48	50	509	Full	26/11.9	140/180	74/112	17"
10																		
11																		
12	800	28,142.02	27.1	197	70.3	213	30	37.93	123.4	420	48	51	497	Full	26.2/11.9	144/188	80/112	7"
13	800	28,165.8	23.7	199	71.2	215	32	38.00	124.2	414	50	50	510	Full	26/12.2	104/182	90/116	7"
14	800	28,187.9	24.1	197	71.6	213	30	38.22	123.8	431	48	51	491	Full	26/11.4	140/184	70/112	7"
15	800	28,213.2	23.3	197	76.3	213	30	37.48	124	464	50	50	499	Full	26/11.7	132/180	64/110	3"
16	800	28,237.1	23.9	197	70.2	213	30	37.77	123.7	415	47	50	500	Full	26/12.8	120/178	62/108	17.5"
17																		
18																		
19	800	28,304.34		199	70.3	213	29	37.93	32	428	48	51	492	Full	26.1/12.2	140/185	80/110	6-17
20	800	28,333.28		197	70.8	213	30	38.00	32	415	48	51	502	Full	26.1/12	118/110	76/100	14
21	800	28,357.41		197	70.0	213	32	37.70	32	419	48	51	503	Full	26.1/12.2	145/188	70/114	14
22	800	28,381.35		197	70.5	213	32	37.93	32	431	49	52	487	Full	26.2/12	140/180	78/110	11
23	800	28,405.4		197	71.2	213	31	38.37	32	443	48	52	485	Full	26/11.49	134/180	74/110	7"-18
24																		
25																		
26																		
27	800	28,501.4		199	69.9	215	35	37.41	32	419	49	51	498	Full	26/12.2	108/142	92/116	4"
28	800	28,520.7		197	71.5	213	29	37.48	124.9	429	48	51	487	Full	26/11.7	140/174	80/110	13"
29	800	28,544.7		199	70.7	213	29	37.84	125.1	438	48	51	487	Full	26/12.2	138/180	80/110	5.5"
30	800	28,568.7		199	72.5	213	24	38.00	125.1	439	48	52	487	Full	26/11.7	140/178	80/112	15
31	800	28,616.7		199	71.2	213	29	38.00	125.4	419	50	51	497					

Totalflow Daily Volume Report (Report Code: 321)

Report Page: 1

Meter ID: NOFCU

Location: Northern Oaks Landfill

Print Date: 3 Jun 2014 10:41:19

Collect Time: 6/1/2014 6:30:01 AM

Effective Dates: 1 May 2014 to 31 May 2014

Data Source: Archive

Firmware Rev:

Firmware Part Number: 2103132-028

6/13/2014 Jm

SYSTEM	BUYER
STATE	
LEASE	
PRODUCER	
OPERATOR	

Date	DP In H2O	SP PSIA	Tf Deg F	Volume MCF	Energy MMBTU	Integral	Flow Time %	A HL	A DD HL	Z F	B F	R S	T C	A E	D E	L C	L CL	A NG	M GE
1-May-2014	10.91	17.94	89.64	591.9852	327.4138	14.3290	100.00	-	-	-	-	-	-	-	-	-	-	-	-
2-May-2014	11.10	17.98	90.51	596.8419	327.8471	14.4546	100.00	-	-	-	-	-	-	-	-	-	-	-	-
3-May-2014	10.95	17.96	90.41	592.7613	327.6436	14.3505	100.00	-	-	-	-	-	-	-	-	-	-	-	-
4-May-2014	11.23	18.11	89.35	602.8375	327.3697	14.6036	100.00	-	-	-	-	-	-	-	-	-	-	-	-
5-May-2014	11.16	18.14	89.39	601.6429	326.8864	14.5711	100.00	-	-	-	-	-	-	-	-	-	-	-	-
6-May-2014	11.73	18.19	91.98	614.6972	332.5768	14.8984	100.00	-	-	-	-	-	-	-	-	-	-	-	-
7-May-2014	11.30	18.17	89.41	605.5385	327.6889	14.6718	100.00	-	-	-	-	-	-	-	-	-	-	-	-
8-May-2014	11.21	18.15	98.33	598.6666	329.8185	14.4908	100.00	-	-	-	-	-	-	-	-	-	-	-	-
9-May-2014	11.11	18.07	98.45	594.8399	331.5298	14.3945	100.00	-	-	-	-	-	-	-	-	-	-	-	-
10-May-2014	11.35	18.11	96.37	602.2848	329.4243	14.5919	100.00	-	-	-	-	-	-	-	-	-	-	-	-
11-May-2014	11.58	18.19	99.97	607.4266	329.5819	14.7238	100.00	-	-	-	-	-	-	-	-	-	-	-	-
12-May-2014	11.32	18.15	97.19	601.7073	330.9961	14.5751	100.00	-	-	-	-	-	-	-	-	-	-	-	-
13-May-2014	11.19	18.12	98.45	597.5952	331.4279	14.4658	100.00	-	-	-	-	-	-	-	-	-	-	-	-
14-May-2014	11.36	18.20	94.17	585.3593	317.1229	14.1858	97.02	-	-	-	✓	-	-	-	-	-	-	-	-
15-May-2014	10.93	18.02	89.15	593.6375	332.7426	14.3618	100.00	-	-	-	-	-	-	-	-	-	-	-	-
16-May-2014	11.07	18.10	89.83	598.3352	328.1204	14.4885	100.00	-	-	-	-	-	-	-	-	-	-	-	-
17-May-2014	11.12	18.13	89.89	600.1827	327.9500	14.5344	100.00	-	-	-	-	-	-	-	-	-	-	-	-
18-May-2014	11.48	18.22	96.17	607.6752	329.1985	14.7222	100.00	-	-	-	-	-	-	-	-	-	-	-	-
19-May-2014	11.57	18.25	99.16	608.8865	329.6779	14.7506	100.00	-	-	-	-	-	-	-	-	-	-	-	-
20-May-2014	11.21	18.11	95.15	599.8307	329.7774	14.5210	100.00	-	-	-	-	-	-	-	-	-	-	-	-
21-May-2014	11.47	18.09	104.00	601.4080	330.7661	14.5633	100.00	-	-	-	-	-	-	-	-	-	-	-	-
22-May-2014	12.00	18.16	99.10	617.7363	330.3350	14.9890	100.00	-	-	-	-	-	-	-	-	-	-	-	-
23-May-2014	12.09	18.21	99.53	620.4015	329.9696	15.0594	100.00	-	-	-	-	-	-	-	-	-	-	-	-
24-May-2014	11.92	18.27	102.72	615.6729	330.5391	14.9330	100.00	-	-	-	-	-	-	-	-	-	-	-	-
25-May-2014	11.77	18.25	104.72	610.8057	331.0281	14.8063	100.00	-	-	-	-	-	-	-	-	-	-	-	-
26-May-2014	11.83	18.19	106.66	610.2494	331.7896	14.7953	100.00	-	-	-	-	-	-	-	-	-	-	-	-
27-May-2014	11.63	18.13	106.98	482.6277	262.6133	11.7031	80.31	-	-	✓	✓	-	-	-	-	-	-	-	-
28-May-2014	12.11	18.20	103.36	618.3137	330.4774	15.0129	100.00	-	-	-	-	-	-	-	-	-	-	-	-
29-May-2014	12.17	18.24	103.13	620.5465	330.2557	15.0713	100.00	-	-	-	-	-	-	-	-	-	-	-	-
30-May-2014	12.19	18.28	107.19	619.7958	330.6132	15.0489	100.00	-	-	-	-	-	-	-	-	-	-	-	-
31-May-2014	12.10	18.30	107.09	618.0997	330.6911	15.0036	100.00	-	-	-	-	-	-	-	-	-	-	-	-

Monthly:	11.49	18.15	97.34	18638.3890	10143.8731	451.6710	99.27	-	-	✓	✓	-	-	-	-	-	-	-	-
DP	% Low 0.00	% High 0.00	Min 0.00	Max 17.68	Backflow: 0.00														
SP	0.00	0.00	12.90	21.15	I Mult. Avg 41265.88														
Tf	0.00	0.00	78.95	118.56															

End of Report

total landfill gas usage for May 2013 - 2014

Maintenance
Log

Northern oaks Engine Log.

4-10-14

JJM
6/13/2014

9:55 B.O

Change 3 heads #'s 19, 17, 15

9:55 B.O 10.4

CYLINDERS Full of Antifreeze

19:40 E.S

19:40 B.C

0

5-14-14

- 28,191.05 Hours

08:52 B.O

CYLINDER #7 exhaust temp

08:54 E.O

Deviating low. (Plug Replacement on

09:28 E.S

All cylinders)

09:34 B.C

> CYLINDER #15 Transformer

9:36 E.O

9:43 E.S

9:44 B.C

5-27-14 comp - 29100.09

Eng Hours - 28,501.71

0814 B.O

08:15 E.O

1304 E.S

1315 B.C

- Valve Recession, compressor oil
change, ENGINE oil change,
change - oil sample ports, Valve
lash. Replaced 1. Pins + Rod on
#17 cylinder.

3-25-14

20:55 B.O
20:58 E.O
21:02 E.S
21:04 - B.C
- change detonation sensor on 2+4

3-28-14

(27074.4 Hours)

8:34 B.O
8:35 E.O
9:02 E.S
9:03 B.C
FCI Flow meter cal
For FLARE Flow meter

4-6-14

(27290.78 Hours)

9:25 B.O
9:25 E.O 30
9:50 E.S
9:50 B.C
CYLINDER #10 Detonation.
Replaced plug/transformer

over for
4-10-14

4-25-14

- 27412.4 Hours

9:09 B.O
9:11 E.O
10:05 E.S
10:23 B.C
Oil change / plugs /
changed cylinder #18 TRANS

3-25-14

Hour 27, 023.97

16:53 B.O
16:53 E.O .1 - cylinder #1 High voltage.
17:04 B.S changed plug.
17:10 B.C

3-26-14

12:00 B.O
13:00 B.O
13:59 E.S GAS ISSUES
14:02 B.C

3-25-14

07,0350.71

15:50 B.O
15:55 E.O
16:10 E.S
16:11 B.C
Cylinder #1 Low exhaust temp.
Changed plug + trans

3-26-14

27038.71

19:39 B.O
19:40 E.O
19:40 B.S
19:41 B.C
Changed detonation sensor

3-17-2014

26829.7 Hours

9:28 B.O 604 Hours on fluid
 9:30 E.O oil diff High. changed
 9:57 E.S filters. / Paint Rocker Boxes
 10:20 B.C

3-24-14

27,003.12 Hours

11:30 B.O
 11:30 E.O ? cylinder #20 cold.
 17:00 E.S Replace #20 Head
 17:55 B.C

3-25-14

27,018.9

8:53 B.O
 8:55 E.O (3.9 hours) valves, Bridges, oil change.
 12:35 E.S plug change.
 12:40 B.C Replace #20 Bridges

~~25000~~
 → 38.98
 \$1395
 29603

2-19-14

26222.87 HRS

5:41 B.O

Top END

5:43 E.O

oil change.

18:48 E.S

13.1

19:00 B.C

2-21-14

HRS - 26260.9

8:28 B.O

VALVE RECESSORS

8:30 E.O

2 HOURS

Compressor oil change.

10:25 E.S

10:28 B.C

3-10-14

Hours - 26668.2

10:30 B.O

Air Valve RECESSORS

10:31 E.O

TURBO CHARGER Right side

11:51 E.S

11:55 B.C

2/10 - 333

0926

3-11-14

26725

Air Valve

15:17 B.O

15:17 E.O

16:15 E.S

16:15 B.C

2-4-13

25873.64 = Hours

1458 B.O

1500 E.O

1520 E.S

1526 B.C

(2) Change oil filters.

2-4-14

6:45 - B.O

6:45 - E.O

6:53 - E.S

6:56 - B.C

25877.63

(1) #6 Transformer Replacement
(Below normal)

2-14-14

26112.96 HRS

14:49 B.O

14:51 E.O

15:29 E.S

15:30 B.C

(3) - Oil filter Diff. High.
Change filters.
- changed "Rens" w/ motion Rebuild

2-18-14

(26210.17 Hours)

10:35 B.O

10:35 E.O

15:08 B.C

14:55 E.S

(2) Deformation cylinder #28
changed plug

1119 Δ
~~0830~~ Engine Start

1-~~14~~¹⁵-14

1147 Breakers Closed

- Shutdown on Low
cyl. temp. on cyl.
11 + # 13.

- Light on switchgear on
for low jacket water level

1-21-13~~14~~

25536.33 HRS

12:00 B.O

12:03 E.O

13:21 E.S

13:33 B.C

Oil change, plugs on
ENGINE

1.2

1-28-1~~4~~

7:58 B.O

7:58 E.O

8:12 E.S

8:14 B.C

O² shutdown.

11 hours

- P-CART

1-11-15

25337.08

6:07 B.O

6:07 E.O .8 Engine overload

6:52 E.S

6:53 B.C

1-11-15

7:10 B.O

CYLINDER #20 Detonation

7:10 E.O .2

Changed plug

7:28 E.S

7:31 B.C

1 12

25369.57

4:30 ES .4

4:35 BC set 1550

1 13

~~1:36~~

1:50 ES

1:58 BC

2:30 Change #13 plug

~~2:45~~ ST

3:00 BC

McCann, Gina (DEQ)

From: Johnston, Debora <djohnsto@wm.com>
Sent: Wednesday, June 11, 2014 1:23 PM
To: McCann, Gina (DEQ)
Subject: RE: Leachate Production Records

Hi Gina – Sorry for the delay, the past two weeks have been a whirlwind. Thanks for the e-mail summarizing your visit, I am glad things went smoothly for you.

Leachate summary for the month of May:

Total generation – 1,835,996 gallons

Evaporation – 947,346 gallons

Recirculated – 64,134 gallons (evaporator residuals)

Hauled Off-site – 796,179 gallons

Please let me know if you need anything else. Hopefully I will see you in a couple of weeks. Take Care!! DJ.

From: McCann, Gina (DEQ) [<mailto:McCannG2@michigan.gov>]
Sent: Tuesday, June 03, 2014 4:26 PM
To: Johnston, Debora
Cc: Hayes, Keith
Subject: Leachate Production Records

Hi Deb,

Looking for leachate production and evaporation records for the month of May 2014. Keith said that you had it in a better form than he was able to access.
No hurry, at your convenience.

Thanks,

Gina L. McCann

Environmental Quality Analyst
Michigan Department Environmental Quality
Air Quality Division
Saginaw-Bay District Office
989.894.6218
McCannG2@michigan.gov