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

P041528759

FACILITY: North American Natural Resources (NANR)		**SRN / ID:** P0415
LOCATION: 4143 E. Rathburn Road, BIRCH RUN		**DISTRICT:** Saginaw Bay
CITY: BIRCH RUN		**COUNTY:** SAGINAW
CONTACT: Mike Jonca , Gas Plant Operator		**ACTIVITY DATE:** 03/09/2015
STAFF: Gina McCann	**COMPLIANCE STATUS:** Pending	**SOURCE CLASS:** MAJOR
SUBJECT: Full compliance inspection to determine compliance with MI-ROP-P0415-2014. glm		
RESOLVED COMPLAINTS:		

I (glm) visited the NANR-People's Generating Station, landfill gas-to-energy facility, owned and operated by North American Natural Resources (NANR)-. I met with Mike Jonca (Plant Operator).

North American Natural Resources – People's Generating Station (NANR – People's Generating Station), is a landfill gas-to-energy facility. NANR and Waste Management (WM) have a contractual agreement in which People's Landfill sells landfill gas (LFG) to NANR and NANR is dependent upon People's Landfill to provide landfill gas which is combusted in its five internal combustion engines. The contractual and spatial relationship of the two facilities establishes People's Landfill and NANR-People's Generating Station as a single stationary source based on the definition in Michigan's Rule 336.1119(r). However, based on an agreement between the AQD and management of People's Landfill and NANR-People's Generating Station, the two facilities were issued separate State Registration Numbers (SRNs) and ROPs in 2013 and 2014 respectively.

This stationary source takes raw landfill gas from Waste Management of Michigan, Inc. – People's Landfill (N5397) and treats the gas for use as fuel in five reciprocating internal combustion engines (4-Caterpillar G3516 and 1-Caterpillar G3520C).

The landfill gas is collected at the People's Landfill facility by an active gas collection system (owned and operated by WM) through a series of vertical extraction wells that are installed into the depths of the landfill refuse, which remove landfill gas by vacuum applied to the well from a blower. The LFG is then routed to North American Natural Resources (NANR)–People's generating facility for treatment and generation of electricity. Any excess LFG, or when the NANR facility is down, is routed to the open flare (owned and operated by WM). The collection system (owned and operated by WM) is periodically modified by adding a gas well and/or collection piping as needed when sections of the landfill begin to produce significant gas quantities. It is noted that the open flare is sized to burn all collected gas generated by the landfill.

I reviewed on site records of the engines and treatment systems. The preventative maintenance plan for the treatment systems does not adequately include the required information in the ROP. The facility should use this opportunity to revise the PMP for the treatment systems to include the normal operating parameters that would indicate proper performance, as well as the appropriate monitoring procedures.

EUTREATMENTSYS:

The collected landfill gas is filtered, dewatered, compressed, & cooled prior to use as fuel in one of four generators owned and operated by NANR. On March 25, 2004 the AQD provided a site specific NSPS applicability determination that system treating landfill gas from the People's GCCS meets the requirements of a 40 CFR 60.752(b)(2)(iii)C) for a treatment system. During the site visit the treatment system was operating and all required monitoring was performed. As noted above, the PMP for the treatment system needs to be revised to align with ROP requirements. While this is a violation of the ROP no formal violation notice will be sent, instead this inspection report will serve as a means of

documenting the compliance issues and the PMP document will be checked for the necessary updates during the next inspection.

FGENGINES#1-4:

This flexible group contains four 1145 horsepower reciprocating internal combustion engines that use treated landfill gas to generate electricity that is fed to the power grid. PTI#437-94 was previously rolled into the ROP. The four engines have emission limits for NOx, CO, VOCs, and HCL. The facility must also monitor and record the electrical output, hours of operation, and landfill gas flow to the engines. The information is recorded electronically and is not always transferred to paper, but can be retrieved as needed. Log sheets for December 1, 2014 and March 3, 2015 are attached. At the time of the inspection engine # 1 was not operating.

I viewed hourly and monthly emissions of NOx, CO, and VOC from each of the ICE for September 2013 thru February 2015. All emission calculations were below the permit limits for each of the engines in FGENGINES#1-4.

The most recent tests of the engines were conducted in 2000. Special condition V.1 in the MI-ROP-P0415-2014 states that upon request by the AQD District Supervisor, the permittee shall verify NOx, CO, HCl or VOC emission rates from one or more engines in FGENGINES#1-4, by testing at owner's expense, in accordance with Department requirements. As part of this full compliance evaluation, the Department will be requesting NOx, CO, and VOC emissions testing from all engines in FGENGINES#1-4.

EUENGINE#5

PTII#321-06 was issued for two 2250 horsepower reciprocating internal combustion engines that run on landfill gas. This PTI was rolled into the current ROP and engine #6 was removed since installation of the equipment had not commenced within 18 months of the original PTI issuance date (R 336.1201(4)).

Engine #5 has a separate treatment system and gas supply with a low pressure blower and 3 micron filter. The facility states that engine #5 was ordered on 9-18-06 and manufactured on 10-11-2006, thereby not subject to NSPS JJJJ.

We viewed the operating hours, kilowatts generated, and landfill gas flow meters for all engines. The meters are the source of readings taken for required reporting parameters. The most current records are maintained in the generator building by the onsite operator. All required records requested were maintained and available to view.

Engine #5 has never been tested. Special condition V.1 in the MI-ROP-P0415-2014 states that upon request by the AQD District Supervisor, the permittee shall verify NOx and CO emissions from one or more engines in FGENGINES#5, by testing at owner's expense, in accordance with Department requirements. As part of this full compliance evaluation, the Department will be requesting NOx and CO emissions testing from Engine#5.

FGRICEMACT

On August 30, 2014 the facility submitted formaldehyde emissions calculations based on a recently updated emission factor. With the change in emission factors the facilty became a major source of HAPs.

On October 8, 2013 an initial notification was submitted to the Department in compliance with 40 CFR 63.6645, for new or reconstructed four-stroke lean-burn stationary engines with a site rating of greater than or equal to 25 HP located at a major source of HAP emissions.

Compliance with the RICE MACT is three years after an area source becomes a major source, 40 CFR Part 63.6595(b)(2). The ROP has a mistake of stating that the compliance date is upon start-up.

SSM:

The latest SSM plan submitted to the AQD by Waste Management Incorporated included the gas treatment system. Since the issuance of separate SRNs and ROPs, NANR should revise the SSM plan to make it their own. Reporting of SSM instances are limited to periods when the entire plant is shutdown,

not an individual engine. NANR submits SSM annual & semi annual reports to the AQD. Review of the 2014 SSM reports found that NANR had 7 malfunction events occurred due to loss of power at a substation, transmission line breakage, or, a thunderstorm. All actions taken during Startup and Shutdown events followed the SSM plan.

For the first semi-annual report, reporting period from January 1, 2014 thru June 30, 2014, there were 17 GCCS startup events and 7 GCCS malfunction events. The events are as follows: the treatment system for engine #5 was down due to loss of power (1/30/14-112.5 hours), engine #5's treatment system was down due to loss of power (2/19/14-0.75 hours), treatment system down due to automatic shutdown of protective system (2/26/14-1 hour), all engines were down due to a malfunction in the well field (2/26/14-1 hour), treatment system down due to automatic shutdown of protective system (3/8/14-1.25 hours) and all engines down due to loss of power (5/30/14-1.25 hours). Reports stated that there were no revisions made to plan and that all occurrences were consistent with the SSM Plan.

For the second semi-annual report, reporting period from July1, 2014 thru December 31, 2014, there were 12 GCCS startup events, 6 GCCS shutdown events and 5 GCCS malfunction events. The events are as follows: treatment system down due to loss of power-utility down (7/27/14-0.5 hours), treatment system down due to damage of header line (9/04/14-0.25 hours), Engine #5 treatment system down due to raptor valve failure (10/03/14-151.25 hours), treatment system down due to condensate pump failure (11/23/14-62.00 hours), and engine #5 treatment system down due to automatic shutdown of protective system (12/16/2014-4.00 hours). Reports stated that there were no revisions made to plan and that all occurrences were consistent with the SSM Plan.

MAERS:

I reviewed the 2014 MAERS submittal (submitted timely on 3/13/2015). There were discrepancies in the number of hours used to calculate the emissions and the number of hours of operation reported during the inspection. MAERS reported slightly more hours. Consultant is checking into which number is accurate and will revise.

Overall the facility has minor compliance issues to fix. The PMP for the treatment system needs to be revised to align with ROP requirements, as described above. While this is a violation of the ROP no formal violation notice will be sent, instead this inspection report will serve as a means of documenting the compliance issues and the PMP document will be checked for the necessary updates during the next inspection. Additionally, as part of this full compliance evaluation, the Department will be requesting emissions testing to verify emission rates for all engines at the facility. Test results no older than five years should be retained as the ROP requires maintaining air emission related records for a minimum of five years.

NAME Nina L. Kopka DATE 3/20/15 SUPERVISOR C. Hare

3/9/15

Peoples Generating

DATE	3-3-15
TIME	8am
NAME	MS

Switch gear room

	Engine 5	Engine 4	Engine 3	Engine 2	Engine 1
Hours			35815	24754	34499
Energy	54321547	228981	5899553	20482644	8453523
Voltage	4.19		4.22	4.21	4.23
Amps	204		96	93	82
Kilowatts	1450		690	675	600
Power factor	.995		.99	.99	.99
Freq	60.01		60	60	59.98

	Utility EAST	WEST		East	West
Cec meter	6830	34290,133	kw total		
Volts	4.25				
Amps	259		kw export		
Kilowatts	1900				
Kwh	113447		kw parasitic		

ENGINE ROOM

	TEMP				
	Engine 1	Engine 2	Engine 3	Engine 4	Engine 5
HOURS	33714	24752	35816	41064	57410
Manifold AIR TEMP	140	140	—		
EXHAUST	800-850	800-1050	800-1050		
OIL PSIG	80	90	80		
ENG COOLANT TEMP	240	300+	240		
MANIFOLD PRESS	10	16	16		
OIL DIFF	9	8	8		
OIL TEMP	210	205	210		
CV diff	125	.25	.45		
Gas psig	2-7	3-3	4-4		
intake temp	70	70	70		
Dany tank level	8	6	9		
oil added					
Throttle angle	—				

Peoples Generating

DATE	12-1-19
TIME	8:45am
NAME	MS

Switch gear room

electrical output

	Engine 5	Engine 4	Engine 3	Engine 2	Engine 1
Hours		39996	34050	23161	
Energy	8175314	5003931	4635475	941917	3739923
Voltage	4.20	4.25	4.24	4.23	
Amps	185	90	100	97	
Kilowatts	1350	650	735	715	
Power factor	.991	.98	.99	.99	
Freq	60	60.01	60.00	60.02	

	Utility EAST	Utility WEST		East	West
Cec meter	6962	33256.145	kw total		
Volts	4.24				
Amps	270		kw export		
Kilowatts	1950				
Kwh	161629		kw parasitic		

ENGINE ROOM

	Engine 1	Engine 2	TEMP	Engine 3	Engine 4	Engine 5
HOURS	52190	23159		34050	39240	55426
Manifold AIR TEMP		140		—	140	122
EXHAUST		800-1050		800-1050	800-1050	1150
OIL PSIG		80		75	80	75
ENG COOLANT TEMP		260		240	235	221
MANIFOLD PRESS		20		20	15	36.8
OIL DIFF		8		10	8	6
OIL TEMP		205		208	205	194
CV diff		.90		.60	.25	—
Gas psig		3-3		4-1	5-5	2
intake temp		65		65	65	65
Dany tank level		0		0	0	0
oil added						
Throttle angle		—		—	—	

Repair log engine #5

Top end - left 14+15 heads on - new plugs
Cleaned Pistons left cuffs in + on cleaned — 47593 11-

Oil change - filters — 47765 11-3

replaced Raptor - roman - valve lash new plugs 48161 12-16-1

Oil change - filters - new plugs — 48960 1-20-1

replaced all T-stats 109c
and hose from AC to reg housing — 49343 2-10-1

Oil change - filters - new plugs. valve lash
replaced Raptor - reman out of cal. code — 49912 3-6-14

replaced Plugs New — 50672 4-7-14

Oil change - re gapped Plugs - filters
coolant press sensor - #4 cyl Head
water pump - oring on tube #17 thermo — 50917 4-21-14

New plugs + All 4 New Batteries — 51775 5-27-14

Oil change - filters - riveted rad fan — 52100 6-10-14

New plugs + Air filters — 52774 7-8-14

replaced crankcase filters — 7-11-14

All new roto coils on Heads CAT 5315 hrs

Oil change - filters — 53205 8-21-14

New plugs and #16 candle 834 hrs — 53608 9-7-14

kjm 3/9/15

Repair log engine #1

2 Remain starters + ALL 4 Batteries 24263 8-8-13

replaced head #3. Burnt Valve- 24861 9-16-13

Oil change. filters - chkd lash 25080 11-6-13

Top end - left #3 head 26310 2-11-14
Valve lash new Plugs

Oil change - filters Greased — 26478 2-20-14

Oil change - filters - Chkd lash 28075 4-29-14
Set of clean plugs

replaced Both Turbo cart. cleaned aftercooler 28936 6-18-14
rebuilt snorkle - replaced speed sen. cleaned Plugs
Valve lash - replaced pushrod + adjr #13 exh

Oil change - filters - replaced linkage near snorkle — 29458 7-10-14

replaced actuator + cyl head #6 + 2301A 28608 7-17-14

Oil change - filters - greased fixed oil leak 30850 9-10-14
on oil reg - clean plugs

replaced Head #15 Burnt valve 32311 12-15-14

Oil change - filters - valve lash 32355 12-17-14
cleaned Plugs

Kent 2/9/15