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

B652725525

FACILITY: Midland Cogeneration Venture		**SRN / ID:** B6527
LOCATION: 100 E. Progress Place, MIDLAND		**DISTRICT:** Saginaw Bay
CITY: MIDLAND		**COUNTY:** MIDLAND
CONTACT: Barbara VanderKelen ,		**ACTIVITY DATE:** 06/12/2014
STAFF: Kathy Brewer	**COMPLIANCE STATUS:** Compliance	**SOURCE CLASS:** MAJOR
SUBJECT: On-site inspection 6/11 (turbines) - 6/12/2014 (boilers), to determine compliance with MI-ROP-B6527-2008b, PTI 103-12, MAERS, & state & federal air regulations.		
RESOLVED COMPLAINTS:		

I(KLB) conducted an inspection of the MCV facility to evaluate compliance with the requirements of the federal Clean Air Act; Part 55, Air Pollution Control, of NREPA; the administrative rules and the conditions of MI-ROP-B6527-2008b and PTI #103-12. Ms. Barb VanderKelen, EH&S Manager for MCV accompanied me during the inspection and provided on site records. No violations of applicable air regulation and permits were found.

MCV facility consists of 12 natural gas fueled combined cycle turbines, with a net facility electrical output of greater than 1,550 megawatts (MW). The twelve gas turbines are equipped with heat recovery steam generators (GT/HRSGs) with a combined steam capacity of 1,200,000 lbs/hr. Six of the units (Turbines 9 - 14) are equipped with duct burners (DB) for supplemental firing each with a maximum heat input capacity of 249 million British thermal units per hour (MMBtu/hr). Twelve turbines (EU-T03 through EU-14) are equipped with a fogging system to reduce inlet air temperature during the warm weather season. Nitrogen oxide (NOx) emissions from each of eleven turbines is controlled via steam injection. NOx emissions from the remaining turbine are controlled via a dry low NOx burner. In addition to the 12 combined cycle turbines, the facility consists of 6 natural gas fired boilers, each with a heat input capacity of 370 MMBtu/hr, capable of supplying 250,000 pounds per hour (lb/hr) of steam. Part of the steam generated by the boilers is utilized to generate electricity and the remaining steam is utilized by process steam customers adjacent to the facility.

On April 23, 2013, the facility was issued Permit to Install No. 103-12 for two additional natural gas fired combustion turbine generators (CTG) each with a HRSG, and, one condensing steam generator (STG) with steam extraction for export to the existing facilities.

The following table lists stationary source emission information from the Michigan Air Emissions Reporting System.

Pollutant	Tons per Year (2012)	Tons Per Year (2013)
Carbon Monoxide (CO)	769	437
Ammonia	2.8	5.5

Pollutant	Tons per Year (2012)	Tons Per Year (2013)
Nitrogen Oxides (NO_x)	3105.7	1595
Particulate Matter (PM)	197.7	119
Sulfur Dioxide (SO_2)	3.9	2.8
Volatile Organic Compounds (VOCs)	65.6	43.3

In addition to the pollutants listed above, the facility's potential to emit Greenhouse Gases is 7547447 short tons of
CO2e.

The facility is subject to review under the Prevention of Significant Deterioration regulations of 40 CFR, PART 52.21, because at the time of New Source Review permitting the potential to emit of carbon monoxide, nitrogen oxides, and particulate matter was greater than 100 tons per year.

The facility is considered a major Title V 40 CFR Part 70 source due to the potential to emit nitrogen oxides, carbon monoxide, sulfur dioxide and particulate matter in excess of 100 tons per year, and the potential to emit of Greenhouse Gases is 100,000 tons per year or more calculated as carbon dioxide equivalents (CO2e) and 100 tons per year or more on a mass basis. In addition, the stationary source is considered a major source of Hazardous Air Pollutant (HAP) emissions because the potential to emit any single HAP regulated by the federal Clean Air Act, Section 112 is greater than 10 tons per year and the potential to emit of all HAPs combined is greater than 25 tons per year.
The facility is subject to the Standards of Performance for New Stationary Sources (40 CFR 60), including 40 CFR 60, Subpart A - General Provisions. Specifically, the existing and proposed natural gas fired stationary gas turbines and the duct burners are subject to 40 CFR 60, Subparts GG (Stationary Gas Turbines), Db (Industrial-Commercial-Institutional Steam Generating Units, and, KKKK (Stationary Combustion Turbines). The boilers are subject to 40 CFR 60, Subparts Da (Electrical Utility Steam Generating Units) .

The stationary source is subject to the National Emission Standard for Hazardous Air Pollutants promulgated in 40 CFR, Part 63, Subparts A, DDDDD (Industrial-Commercial and Institutional Boilers and Process Heaters), and ZZZZ (Stationary Reciprocating Combustion Engines). The proposed CTGs are also subject to 40 CFR, Part 63, Subpart YYYY (Stationary Combustion Turbines). The existing turbines were installed prior to January 14, 2003 and are not subject to 40 CFR, Part 63, Subpart YYYY. MCV also has an emergency diesel generator subject to the requirements of 40 CFR, Part 63, Subpart ZZZZ for emergency combustion ignition engines over 500 horsepower at a major source of HAPs.

The six existing boilers and twelve turbines at the stationary source are subject to the Clean Air Interstate Rule for NO_x and SO2 annual trading program and NOx ozone season trading program. The emission limitations or standards for Nitrogen Oxides and Carbon Monoxide from existing and proposed natural gas fired stationary gas turbines and duct burners, and, from the boilers at the stationary source, are exempt from the federal Compliance Assurance Monitoring (CAM) regulation under 40 CFR, Part 64, because the required continuous emission monitoring meet(s) the CAM exemption for a continuous compliance determination method. Therefore, existing and proposed natural gas fired stationary gas turbines, duct burners, and boilers are exempt from CAM requirements for Nitrogen Oxides and Carbon Monoxide .

A Malfunction Abatement Plan (MAP) is required for all turbine & boiler units. The AQD approved a MAP revision on April 23, 2013.

All required RATA tests have been performed and CEMS Excess Emission reports have all been submitted. The facility has changed the auto calibration fro CEMS units from occurring within an hour of startup to occurring within 20 minutes of startup. This should prevent missed calibrations on units that only run for short periods of time.

EU-DIESELGEN: Compliant

A diesel fired emergency generator with maximum hourly rated capacity of 47 million Btu/hr (7000 horsepower), installed August 1979 used during power failures to provide power for lighting and other vital plant systems and equipment. The generator is operated less than 100 hours per year for nonemergency purposes such as maintenance checks and readiness testing. EU-DIESELGEN is subject to the requirements of 40 CFR, Part 63, Subpart ZZZZ for emergency combustion ignition engines over 500 horsepower at a major source of HAPs. The performance testing, emission limitations, operation and maintenance requirements of 40 CFR Part 63, Subpart ZZZZ for nonemergency combustion ignition engines are not applicable as long as the facility operates EU-DIESELGEN in compliance with the conditions contained in the ROP and 40 CFR Part 63, Subpart ZZZZ.

The ROP limits sulfur dioxide emissions to 0.3 lb/MMBTU heat input[2] and the sulfur content in the diesel fuel to 0/3 percent by weight and a heat content of 19,8000 BTU/lb. The sulfur content of the diesel fuel is 0.2 percent by weight. The diesel generator had a material throughput of 210 gallons in 2013. The diesel generator is under maintenance and not currently operational. At the time of my site visit the engine had run 846.9 hours. The facility will records the hours of operation and perform maintenance required by 40 CRF Part 63 Subpart ZZZZ.

EU-TURBINE12: Compliant

EU-TURBINE12 is a combined cycle gas turbine equipped with a dry-low NOx burner. The Records reviewed determined the facility was in compliance The EU-TURBINE12 emission limits as follows:

Pollutant	Limit	Actual	Comment
1. Nitrogen Oxides (NOx)	98 pph	82.63 (stack test)	7/26/2012 TPU report
2. Carbon Monoxide (CO)	26 pph	16.79 (stack test)	7/26/2012 TPU report

Pollutant	Limit	Actual	Comment
3. NOx	400 lbs per startup		Site Records
4. NOx	200 lbs per shutdown		Site Records
6. NOx	0.10 lb/MMBTU	0.087 lb/MMBTU	March 2013 site record
7. NOx	429.2 tpy	346 tpy	Site Records

Supporting daily, hourly, monthly and 12 month rolling records for fuel use, operating hours and NOx emissions are attached.

CEMS records including calibration records and on site daily logbooks were reviewed. A copy of a daily calibration and completed CEMS daily check form are attached. During the inspection the CO2 analyzer instantaneous read out at 11:13 AM was 564 ppm, NOx was 17.5 ppm.

Last stack test date: May 8 – 9, 2014

FG-BOILERS1-6:Compliant
Six boilers are subject to the Maximum Achievable Control Technology (MACT) standards under the National Emission
Standard for Hazardous Air Pollutants for Major Sources for Industrial, Commercial, and Institutional Boilers and Process Heaters, 40 CFR Part 63 Subpart DDDDD. The Records reviewed determined the facility was in compliance the FG-BOILERS1-6 emission limits.

During the inspection Units 17 and 19 were operating. I viewed the CEMS trailer for the boilers. All calibration gases were within the expiration date. At 9:17 AM on 6/12/2014 the Unit 17 boiler instantaneous CO2 value was 0.687 ppm and the NOX was 19.26 ppm. The calibration records for Unit 17 CEMS on 6/11/2014, a screen shot

showing the CEMS operating status and recent calibration history, and, the 6/12/2014 CEMS electronic daily log report for Units 16 -18 are attached.

Print outs from the Unit 17 CEMS hourly NOx emissions for 6/12/2014, the year to date emissions for NOx, CO2, SO2 and fuel
usage are attached. A copy of the daily report with hourly NOx emissions and fuel usage for all six boilers from August 12, 2013 is attached. The daily NOx and fuel usage records for Unit 16 – 18 boilers for December 8, 2013 are also attached. Any values above the 24 hour operating limit of 0.037 lbs.NOx/MMBtu are investigated. The technician verifies the operating status for hourly values. If appropriate the periods of startup and shutdown are subtracted from the 24 hour averages.

Last RATA for BOILERS was in October 2013.

FG-TURBINES: Compliant
In April 2013, EU-11 stack test conducted for NOx, CO & O2 due to a compressor upgrade on the turbine. Test were run at 100% load w/duct burner and at 51% load and 55% load w/o duct burner. The CO emissions were estimated to be 35.7 lbs/hr, above the permit limit of 26 lbs/hr, during stack test at 51% load. The unit was brought up to 55% load & the emissions were 10.7 lbs/hr, within allowable limits. The facility MAP and associated operations monitoring alarms were modified to reflect that Unit 11 must not be operated at below 55% load. The facility does not operated the units at such loads except to establish operating ranges during stack tests.

Records of NOx emissions for March 15, 2013 are attached. The records include NOx emissions during periods when duct burners were in use and periods of startup and shut down. NOx emission limits for a particular unit depends upon the control technology and presence or absence of a duct burner. Any values over the hourly limits are reviewed and a determination made if a duct burner was operating or if the unit was in either startup or shut down mode. The monthly records for fuel use and duct burner operating hours for March 2013 also attached. The CO emissions fro turbines 9 -14 are also attached. The records reviewed indicate the facility was in compliance with emission limits and record keeping requirements in the ROP.

Screen shots of instantaneous operating conditions during the site inspection are attached. The on site operations monitoring system provides operators with information to determine if a unit is approaching an emission level that may exceed the allowed limit.

A copy of the operations Logbook from 6/11/2014 documenting turbine operating times and status is attached.

The facility upgraded CEMS units in 2012, and 2013 for the monitoring of turbines 7 -14. The site plans to upgrade the CEMS for turbines 3 - 6 in 2014. CEMS technician daily logs from April 1014 for units 11-14 are attached. The logs show that required calibrations have been performed. Automated records are also maintained. The Unit 12 daily calibration record for June 10, 2014 is attached as an example. On site records indicate that CEMS calibrations are performed as required. All calibration gases were hooked up properly and had certification labels attached.

FGCOLDCLEANER: Compliant
The cold cleaner is checked monthly to assure compliance with the ROP.

PTI 103-12: Compliant
On April 23, 2013 the PTI for two additional natural gas fired combustion turbine generators (CTG) each with a HRSG, and, one condensing steam generator (STG) with steam extraction for export to the existing facilities. The CTGs will be equipped with evaporative cooling units and the HRSGs will be equipped with DBs. The CTGs will each have a maximum heat input capacity of 2237.4 MMBtu/hr and the DBs will each have a maximum capacity of 249 MMBtu/hr. At the time of the inspection no construction of the new the generators had begun. The facility has until September 23, 2014 to begun construction or request an extension.

MAERS v. ECMPS: Compliant
AQD staff developed a spreadsheet that compared CEMS emissions reported to EPA v. MAERS emission reported data. The comparison highlighted differences in MCV MAERS v. CEMS values for several units. MCV staff and I reviewed calculations and reporting information for both databases and compared to on site records. One main difference was the EPA report included duct burner emission in their turbine unit totals and tehMAERs report has separate emissions reported for duct burner on and off conditions. The NOx calculation for the EPA collection and monitoring system plan has a heat input rate of 0.1115 NOx lbs/MMBTU. The MCV values reported to EPA ECMPS were evaluated. the attached spreadsheets contain details of the ECMPS reported values. When operating conditions and differences in the system assigned NOx emission rates are accounted for, the facility reported MAERS emissions are similar to the EPA ECMPS values reported.

The MAERS v. ECMPS information is filed in the facility MAERS folder.

NAME _____ DATE 8/18/14 SUPERVISOR _____

MIDLAND COGENERATION
12
Report Dates 01/01/2014 - 06/10/2014

Monthy NOx Mass Totals

Per Fuel	Total
Month	tons
January	32.2
February	29.8
March	21.5
April	19.0
May	25.5
June	8.8

— ALL PLANT OUTAGE FOR ~1 WEEK IN APRIL

NOx Mass Totals

Per Fuel	137.0
Report	137.0

MIDLAND COGENERATION
Report Dates 01/01/2014 - 06/10/2014

Monthy Heat Input Totals

Per Fuel	Total
Month	mmBtu
January	810033
February	717452
March	532568
April	505789
May	698320
June	230468

Heat Input Totals

Per Fuel	3494631
Report	3494631

Report Gener ı Time: Generated by DCS
March 16, 20`
0:31

Midland Cogenera ı Venture

Unfired Units 03 - 05
One Hour Average DeNox Emissions

SU = start up
SD = shut down
DB = Duct Burner

From: 03/15/2013 0:00
To 03/16/2013 0:00

Time	Unit 03 JI03200 (MW)	Unit 03 FI03205 (KPPH)		Unit 03 Hourly Ave (LBS/HR)	Unit 03 Over Limit	Unit 04 JI04200 (MW)	Unit 04 FI04205 (KPPH)		Unit 04 Hourly Ave (LBS/HR)	Unit 04 Over Limit	Unit 05 JI05200 (MW)	Unit 05 FI05205 (KPPH)		Unit 05 Hourly Ave (LBS/HR)	Unit 05 Over Limitt
00:00	73.45	84.88		112.80		-0.08	2.41	*	67.80		81.55	95.90		67.70	
01:00	102.49	121.14		112.00		-0.08	1.02	*	0.00		81.84	96.64		69.70	
02:00	102.53	120.95		115.90		-0.08	0.03	*	0.00		82.02	96.64		69.60	
03:00	102.49	121.14		111.50		-0.08	-0.01	*	0.00		80.85	95.43		66.10	
04:00	102.53	120.77		108.10		-0.08	-0.01	*	0.00		82.24	97.08		63.20	
05:00	73.45	84.81		108.10		-0.08	-0.01	*	0.00		80.89	95.65		63.40	
06:00	72.54	84.33		111.50		38.37	-0.01		0.00		87.66	104.80		73.50	
07:00	102.49	120.00		108.60		84.18	2.19		48.30	SU	84.15	99.71		74.80	
08:00	102.71	119.78		108.60		101.43	117.73		904.60	745.60	84.84	100.55		85.10	
09:00	102.71	120.95		111.10		101.65	119.05		287.60	128.60 SU	87.19	103.67		74.50	
10:00	0.03	31.63	*	111.00		73.23	85.17		93.20		85.58	101.87		76.00	
11:00	0.03	1.97	*	112.30		73.23	85.47		94.30		88.36	105.28		70.70	
12:00	0.03	4.02	*	93.60		100.92	118.57		78.50		83.93	100.33		79.10	
13:00	0.03	3.98	*	0.00		100.74	118.17		90.50		82.90	97.99		77.80	
14:00	0.07	4.13	*	0.00		100.48	118.13		93.80		84.66	100.55		74.90	
15:00	0.07	3.76	*	0.00		100.44	118.02		94.70		81.33	95.68		72.80	
16:00	0.07	3.62	*	0.00		100.00	117.44		94.60		80.41	94.91		75.20	
17:00	0.07	3.98	*	0.00		100.04	117.62		95.60		79.90	93.45		70.60	
18:00	0.07	3.76	*	0.00		100.30	117.88		96.30		79.94	93.63		68.00	
19:00	0.03	4.20	*	0.00		90.81	108.90		96.30		82.28	97.55		64.80	
20:00	0.03	2.01	*	0.00		84.44	101.10		96.80		0.10	13.14	*	71.70	
21:00	0.03	1.97	*	0.00		81.88	96.56		92.80		0.10	4.86	*	78.70	
22:00	0.07	1.93	*	0.00		80.96	95.06		72.70		0.10	5.82	*	67.80	
23:00	0.07	1.64	*	0.00		81.62	96.64		69.50		0.10	5.60	*	0.00	

Unit 03, 04, & 05 Limits: 159 lbs/hr, 1500 lbs per S/U and 750 lbs per S/D

– Jan Blues –

Report Gene: n Time:
March 16, 20
0:35

Midland Cogenera 1 Venture

From: 03/15/2013 0:00
To 03/16/2013 0:00

Unfired Units 06 - 08
One Hour Average DeNox Emissions

	Unit 06				Unit 07				Unit 08			
Time	JI06200 (MW)	FI06205 (KPPH)	Hourly Ave (LBS/HR)	Over Limit	JI07200 (MW)	FI07205 (KPPH)	Hourly Ave (LBS/HR)	Over Limit	JI08200 (MW)	FI08205 (KPPH)	Hourly Ave (LBS/HR)	Over Limitt
00:00	0.03	-0.15 *	0.00		0.03	12.11 *	0.00		-0.12	-0.04 *	0.00	
01:00	0.03	-0.15 *	0.00		-0.01	12.08 *	0.00		-0.12	1.09 *	0.00	
02:00	0.03	-0.15 *	0.00		-0.01	12.77 *	0.00		-0.12	0.62 *	0.00	
03:00	-0.01	-0.12 *	0.00		0.03	13.36 *	0.00		-0.08	0.65 *	0.00	
04:00	-0.01	-0.12 *	0.00		0.03	13.58 *	0.00		-0.08	1.13 *	0.00	
05:00	0.03	-0.15 *	0.00		0.03	13.47 *	0.00		-0.12	0.87 *	0.00	
06:00	46.25	63.82	0.00		0.03	13.47 *	0.00		-0.12	0.87 *	0.00	
07:00	96.82	114.32	28.10		0.03	13.36 *	0.00		-0.12	-0.04 *	0.00	
08:00	97.77	114.95	99.80		0.03	13.36 *	0.00		-0.08	-0.04 *	0.00	
09:00	98.25	116.04	127.20		0.03	13.36 *	0.00		-0.12	-0.01 *	0.00	
10:00	9.44	38.33	127.40		0.03	13.36 *	0.00		-0.12	-0.01 *	0.00	
11:00	0.03	-0.15 *	128.30		0.03	13.32 *	0.00		-0.12	-0.01 *	0.00	
12:00	0.03	-0.15 *	96.20		0.03	13.18 *	0.00		-0.12	-0.04 *	0.00	
13:00	-0.01	-0.15 *	1.90		0.03	13.10 *	0.00		-0.12	-0.04 *	0.00	
14:00	-0.01	-0.12 *	0.00		0.03	12.44 *	0.00		-0.12	-0.04 *	0.00	
15:00	0.03	-0.15 *	0.00		0.03	11.05 *	0.00		-0.12	-0.04 *	0.00	
16:00	0.03	-0.15 *	0.00		0.03	10.39 *	0.00		-0.12	-0.04 *	0.00	
17:00	0.03	-0.15 *	0.00		0.07	9.95 *	0.00		-0.12	-0.04 *	0.00	
18:00	0.03	-0.15 *	0.00		0.07	9.70 *	0.00		-0.08	-0.04 *	0.00	
19:00	0.03	-0.15 *	0.00		-0.04	9.88 *	0.00		-0.08	-0.01 *	0.00	
20:00	0.03	-0.15 *	0.00		-0.01	9.95 *	0.00		-0.08	-0.04 *	0.00	
21:00	0.03	-0.15 *	0.00		-0.01	9.88 *	0.00		-0.12	-0.04 *	0.00	
22:00	0.03	-0.15 *	0.00		0.03	9.62 *	0.00		-0.12	-0.04 *	0.00	
23:00	0.03	-0.15 *	0.00		0.03	9.40 *	0.00		-0.12	-0.04 *	0.00	

Unit 06, 07, & 08 Limits: 159 lbs/hr, 1500 lbs per S/U and 750 lbs per S/D

Report Gener ı Time:
March 16, 20'
0:40

Midland Cogenera ı Venture

From: 03/15/2013 ' '0:00
To 03/16/2013 ' 0:00

Fired Units 09 - 11
One Hour Average DeNox Emissions

	Unit 09						Unit 10						Unit 11					
Time	JI09200 (MW)	FI09205 (KPPH)		FT09102X (MBTU/H)	Hourly Ave (LBS/HR)	Over Limit	JI10200 (MW)	FI10205 (KPPH)		FT10102X (MBTU/H)	Hourly Ave (LBS/HR)	Over Limit	JI11200 (MW)	FI11205 (KPPH)		FT11102X (MBTU/H)	Hourly Ave (LBS/HR)	Over Limitt
00:00	-0.04	0.13	*	0.00	0.00		0.03	-0.01	*	0.00	0.00		-0.04	-0.04	*	0.00	68.50	
01:00	-0.04	0.13	*	0.00	0.00		0.03	-0.01	*	0.00	0.00		-0.04	-0.01	*	0.00	0.00	
02:00	-0.04	0.13	*	0.00	0.00		0.03	-0.01	*	0.00	0.00		-0.04	-0.01	*	0.00	0.00	
03:00	-0.04	0.13	*	0.00	0.00		0.03	-0.01	*	0.00	0.00		-0.04	-0.01	*	0.00	0.00	
04:00	-0.04	0.13	*	0.00	0.00		0.03	-0.01	*	0.00	0.00		-0.04	-0.01	*	0.00	0.00	
05:00	-0.04	0.08	*	0.00	0.00		0.03	-0.01	*	0.00	0.00		-0.01	-0.01	*	0.00	0.00	
06:00	32.77	0.08		0.00	0.00	S U	51.45	68.22		0.00	0.00		-0.01	-0.01	*	0.00	0.00	
07:00	89.46	0.08		165.31	239.00	80.00 S.U	100.74	118.28		159.37	77.30		-0.01	-0.01	*	0.00	0.00	
08:00	-0.04	0.13	*	44.89	975.00	816.00	100.99	118.50		50.67	81.80		-0.04	-0.01	*	0.00	0.00	
09:00	-0.04	0.08	*	0.00	1,470.30	1,311.30 Spray valve Plugged	101.25	119.60		0.00	103.80		-0.04	0.03	*	0.00	0.00	
10:00	-0.04	0.04	*	0.00	688.80	529.80	74.11	85.76		0.00	103.00		-0.04	-0.01	*	0.00	0.00	
11:00	-0.08	0.04	*	0.00	0.00	S D	0.03	-0.01	*	0.00	108.80		-0.04	-0.01	*	0.00	0.00	
12:00	-0.08	0.04	*	0.00	0.00		0.03	-0.01	*	0.00	85.80		-0.04	0.03	*	0.00	0.00	
13:00	-0.04	0.04	*	0.00	0.00		0.03	-0.01	*	0.00	75.00		-0.04	-0.01	*	0.00	0.00	
14:00	-0.04	0.04	*	0.00	0.00		0.03	-0.01	*	0.00	0.00		-0.04	-0.01	*	0.00	0.00	
15:00	-0.01	0.04	*	0.00	0.00		0.03	-0.01	*	0.00	0.00		-0.04	-0.01	*	0.00	0.00	
16:00	-0.01	0.04	*	0.00	0.00		0.03	-0.01	*	0.00	0.00		-0.08	-0.01	*	0.00	0.00	
17:00	-0.04	0.04	*	0.00	0.00		0.03	-0.01	*	0.00	0.00		-0.08	-0.01	*	0.00	0.00	
18:00	-0.04	0.08	*	0.00	0.00		0.03	-0.01	*	0.00	0.00		-0.08	-0.04	*	0.00	0.00	
19:00	-0.04	0.13	*	0.00	0.00		0.03	-0.01	*	0.00	0.00		-0.08	-0.04	*	0.00	0.00	
20:00	-0.04	0.13	*	0.00	0.00		0.03	-0.01	*	0.00	0.00		-0.08	-0.01	*	0.00	0.00	
21:00	-0.04	0.13	*	0.00	0.00		0.03	-0.01	*	0.00	0.00		-0.08	-0.01	*	0.00	0.00	
22:00	-0.04	0.13	*	0.00	0.00		0.03	-0.01	*	0.00	0.00		-0.08	0.03	*	0.00	0.00	
23:00	-0.04	0.13	*	0.00	0.00		0.03	-0.01	*	0.00	0.00		-0.08	0.03	*	0.00	0.00	

Unit 09, 10, & 11 Limits: 159 lbs/hr (183 lb/hr w/ DB), 1500 lbs per S/U and 750 lbs per S/D

Report Gener ı Time:
March 16, 20`
0:45

Midland Cogenera ı Venture

From: 03/15/2013 ´ `0:00
To 03/16/2013 ` 0:00

Fired Units 12 - 14
One Hour Average DeNox Emissions

	Unit 12					Unit 13						Unit 14					
Time	JI12200 (MW)	FI12205 (KPPH)	FT12102X (MBTU/H)	Hourly Ave (LBS/HR)	Over Limit	JI13200 (MW)	FI13205 (KPPH)		FT13102X (MBTU/H)	Hourly Ave (LBS/HR)	Over Limit	JI14200 (MW)	FI14205 (KPPH)		FT14102X (MBTU/H)	Hourly Ave (LBS/HR)	Over Limitt
00:00	91.40	-0.12	31.75	92.50		-0.01	5.71	*	0.00	0.00		0.03	0.03	*	0.11	65.90	
01:00	91.14	-0.12	31.62	90.30		-0.01	5.96	*	0.00	0.00		0.07	0.03	*	0.27	0.00	
02:00	90.92	-0.12	30.90	89.20		-0.01	6.07	*	0.00	0.00		0.07	0.03	*	0.04	0.00	
03:00	90.45	-0.12	31.97	89.00		-0.04	6.18	*	0.00	0.00		0.03	0.03	*	0.04	0.00	
04:00	90.01	-0.12	31.26	88.90		-0.04	6.40	*	0.01	0.00		0.03	0.03	*	0.00	0.00	
05:00	89.97	-0.12	156.84	88.70		-0.01	6.22	*	0.00	0.00		0.07	0.07	*	0.04	0.00	
06:00	90.19	-0.12	219.86	88.40	DB	-0.01	6.40	*	0.00	0.00		50.68	69.50		0.04	0.00	
07:00	89.97	-0.12	227.05	101.60	3.60	-0.01	6.44	*	0.00	0.00		102.86	123.92		158.44	106.00	
08:00	89.97	-0.12	51.30	106.60	8.60	-0.04	6.40	*	0.00	0.00		102.42	124.39		54.52	87.50	
09:00	89.71	-0.15	0.58	108.20	10.20	-0.08	6.44	*	0.00	0.00		102.90	124.69		0.42	109.50	
10:00	89.24	-0.08	0.00	94.60		-0.08	6.44	*	0.00	0.00		23.72	47.12		0.03	100.70	
11:00	88.62	-0.08	22.24	89.20		-0.01	6.47	*	0.02	0.00		0.03	-0.01	*	0.01	100.50	
12:00	88.58	-0.08	28.07	89.00		-0.04	6.44	*	0.01	0.00		0.03	-0.01	*	0.05	82.30	
13:00	88.32	-0.08	28.04	90.70		-0.08	6.44	*	0.01	0.00		0.03	0.03	*	0.10	15.40	
14:00	87.96	-0.15	28.21	91.00		-0.08	6.88	*	0.01	0.00		0.03	0.03	*	0.05	0.00	
15:00	87.85	-0.15	209.35	90.70		-0.04	6.73	*	0.03	0.00		0.03	0.03	*	0.00	0.00	
16:00	87.37	-0.04	78.40	91.70		-0.04	6.73	*	0.00	0.00		0.03	0.03	*	0.07	0.00	
17:00	87.15	-0.04	28.14	109.30	DB 11.30	-0.04	6.88	*	0.02	0.00		0.03	0.03	*	0.06	0.00	
18:00	87.63	-0.08	28.45	95.40		-0.04	6.66	*	0.04	0.00		0.03	0.03	*	5.81	0.00	
19:00	88.36	-0.08	32.45	93.30		53.39	68.73		10.16	0.00		102.68	124.47		38.79	0.00	
20:00	89.02	-0.08	36.38	93.60		-0.01	10.43	*	0.02	152.80		0.03	0.03	*	1.44	101.20	
21:00	89.97	-0.08	134.49	95.20		-0.01	1.05	*	0.00	124.00		0.03	0.03	*	0.06	112.00	
22:00	89.97	-0.04	163.66	92.30		-0.01	4.42	*	0.00	79.30		0.07	0.03	*	0.11	78.30	
23:00	90.45	-0.04	161.00	102.30	DB 4.30	-0.01	5.01	*	0.00	0.00		0.07	0.03	*	0.48	0.00	

Unit 12 Limits: 98 lbs/hr (122 lb/hr w/ DB), 400 lbs per S/U and 200 lbs per S/D

Unit 13 & 14 Limits: 159 lbs/hr (183 lb/hr w/ DB), 1500 lbs per S/U and 750 lbs per S/D

Midland Cogen Venture
Midland, MN
Unit 12

Today's Date: 06/11/2014
Time: 10:22:08

Reporting Period
Day: 06/10/2014

Daily NOx Summary

Hour	Online qtrs	Load MW	CO2 %	NOx ppm	NOx lb/mmBtu	Htip mmBtu	NOx lbs
0	4	79.5	2.8	17.2	0.076	886	67.34
1	4	74.8	2.8	16.5	0.073	847	61.85
2	4	74.8	2.9	16.6	0.071	848	60.20
3	4	75.4	2.9	16.6	0.071	853	60.58
4	4	75.6	2.9	16.5	0.071	855	60.72
5	4	79.2	2.9	16.9	0.072	886	63.81
6	4	78.9	2.9	17.0	0.073	883	64.42
7	4	76.7	2.9	17.0	0.073	864	63.04
8	4	76.7	2.8	17.6	0.078	864	67.38
9	4	76.8	2.8	17.9	0.079	865	68.30
10	4	80.2	2.8	17.9	0.079	896	70.75
11	4	80.5	2.8	17.6	0.078	899	70.13
12	4	79.8	2.8	17.3	0.077	891	68.63
13	4	79.3	2.8	17.4	0.077	887	68.26
14	4	81.7	2.8	15.0	0.067	897	60.08
15	4	82.7	2.8	13.8	0.061	909	55.44
16	4	82.7	2.8	13.9	0.062	910	56.40
17	4	82.4	2.8	14.2	0.063	907	57.16
18	4	81.3	2.9	15.9	0.068	932	63.40
19	4	79.6	2.9	18.5	0.079	921	72.79
20	4	79.1	3.2	20.3	0.079	1003	79.21
21	4	79.4	3.1	20.0	0.080	988	79.01
22	4	77.8	3.1	19.9	0.080	964	77.10
23	4	77.9	3.3	20.7	0.078	1002	78.12
Daily Totals		1893				21655	1594.12

C - Out of Control
D - Out of Service
A - Calibration Error
M - Maintenance Fault
I - Insufficient Data
X - Calibration Expired

KRD

GT "CO" Factor = 0.020
GT+DB "CO" Factor = 0.080
U12 GT+DB "CO" Factor = 0.020

MCV Monthly CO Emissions Report

Unit: 9	*Month*	*DB Op Hrs*	*GT Op Hrs*	*DB Op (%)*	*DB Fuel (mmBtu)*	*Total Fuel (mmBtu)*	*DB Fuel (%)*	*CO (tons)*
'2013	January	39	186	21.0%	3,124.4	157,841	2.0%	2.6
'2013	February	51	105	48.6%	5,828.8	110,010	5.3%	2.7
'2013	March	26	168	15.5%	2,348.4	164,761	1.4%	2.4
'2013	April	21	222	9.5%	1,442.0	218,402	0.7%	2.8
'2013	May	68	270	25.2%	6,268.7	278,061	2.3%	4.9
'2013	June	40	168	23.8%	2,989.6	172,042	1.7%	2.9
'2013	July	172	297	57.9%	27,029.0	340,852	7.9%	9.3
'2013	August	125	185	67.6%	8,292.7	214,042	3.9%	6.5
'2013	September	70	101	69.3%	4,557.7	108,727	4.2%	3.3
'2013	October	76	253	30.0%	6,675.6	241,238	2.8%	4.6
'2013	November	19	226	8.4%	1,132.8	196,579	0.6%	2.5
'2013	December	47	206	22.8%	6,204.0	202,515	3.1%	3.4
	Unit Total:	***754***	***2,387***	***31.6%***	***75,893.7***	***2,405,070***	***3.2%***	***47.9***

Unit: 10	*Month*	*DB Op Hrs*	*GT Op Hrs*	*DB Op (%)*	*DB Fuel (mmBtu)*	*Total Fuel (mmBtu)*	*DB Fuel (%)*	*CO (tons)*
'2013	January	48	131	36.6%	5,755.1	128,595	4.5%	2.7
'2013	February	8	55	14.5%	539.6	49,927	1.1%	0.7
'2013	March	56	193	29.0%	7,533.5	180,909	4.2%	3.4
'2013	April	24	295	8.1%	1,215.3	238,300	0.5%	3.0
'2013	May	70	304	23.0%	6,347.7	290,602	2.2%	4.9
'2013	June	30	196	15.3%	2,056.5	164,018	1.3%	2.4
'2013	July	121	221	54.8%	18,912.6	236,545	8.0%	6.3
'2013	August	90	296	30.4%	9,309.5	291,000	3.2%	5.6
'2013	September	130	282	46.1%	18,857.6	300,593	6.3%	7.2
'2013	October	125	423	29.6%	16,992.6	404,965	4.2%	7.6
'2013	November	63	382	16.5%	5,605.2	341,934	1.6%	5.1
'2013	December	5	81	6.2%	340.7	61,626	0.6%	0.7
	Unit Total:	***770***	***2,859***	***26.9%***	***93,465.9***	***2,689,014***	***3.5%***	***49.5***

Unit: 11	*Month*	*DB Op Hrs*	*GT Op Hrs*	*DB Op (%)*	*DB Fuel (mmBtu)*	*Total Fuel (mmBtu)*	*DB Fuel (%)*	*CO (tons)*
'2013	January	11	71	15.5%	739.1	67,509	1.1%	1.0

'2013	October	31	196	15.8%	2,880.8	181,326	1.6%	2.7
'2013	November	66	263	25.1%	4,953.6	257,296	1.9%	4.5
'2013	December	71	336	21.1%	5,444.3	321,849	1.7%	5.3
	Unit Total:	***649***	***2,245***	***28.9%***	***67,686.8***	***2,337,044***	***2.9%***	***44.0***

Unit: 14

	Month	***DB Op Hrs***	***GT Op Hrs***	***DB Op (%)***	***DB Fuel (mmBtu)***	***Total Fuel (mmBtu)***	***DB Fuel (%)***	***CO (tons)***
'2013	January	10	57	17.5%	770.8	55,209	1.4%	0.8
'2013	February	10	62	16.1%	703.9	59,360	1.2%	0.9
'2013	March	49	236	20.8%	4,191.6	217,645	1.9%	3.5
'2013	April	13	144	9.0%	756.7	140,268	0.5%	1.8
'2013	May	73	266	27.4%	6,454.9	268,561	2.4%	4.9
'2013	June	30	149	20.1%	2,363.5	148,778	1.6%	2.4
'2013	July	132	248	53.2%	19,347.2	263,810	7.3%	6.9
'2013	August	34	158	21.5%	3,080.0	158,187	1.9%	2.6
'2013	September	32	106	30.2%	3,022.2	93,272	3.2%	1.8
'2013	October	33	129	25.6%	3,217.7	130,425	2.5%	2.3
'2013	November	0	14	0.0%	0.0	6,807	0.0%	0.1
'2013	December	1	101	1.0%	27.4	91,686	0.0%	0.9
	Unit Total:	***417***	***1,670***	***25.0%***	***43,935.9***	***1,634,008***	***2.7%***	***28.9***

MCV Monthly NOx Emissions Report

Unit: 3

	Month	GT Starts	Total Fuel (mmBtu)	DB Fuel (mmBtu)	NOx Tons	NOx Rate (lbs/mmBtu)
2013	January	5	41,667	0.0	3.1	0.149
2013	February	2	3,393	0.0	0.6	0.354
2013	March	17	77,890	0.0	5.5	0.141
2013	April	10	64,400	0.0	3.5	0.109
2013	May	12	169,579	0.0	5.8	0.068
2013	June	16	249,840	0.0	9.9	0.079
2013	July	25	268,651	0.0	16.5	0.123
2013	August	19	199,348	0.0	11.4	0.114
2013	September	13	159,986	0.0	8.6	0.108
2013	October	19	174,887	0.0	10.2	0.117
2013	November	13	70,268	0.0	4.7	0.134
2013	December	21	102,357	0.0	6.2	0.121
	Unit Total:	**172**	**1,582,266**	**0.0**	**86.0**	**0.1087**

Unit: 4

	Month	GT Starts	Total Fuel (mmBtu)	DB Fuel (mmBtu)	NOx Tons	NOx Rate (lbs/mmBtu)
2013	January	12	201,054	0.0	10.5	0.104
2013	February	9	93,396	0.0	5.7	0.122
2013	March	20	372,977	0.0	15.2	0.082
2013	April	21	335,844	0.0	15.8	0.094
2013	May	17	379,390	0.0	16.9	0.089
2013	June	16	206,170	0.0	8.9	0.086
2013	July	28	299,466	0.0	12.3	0.082
2013	August	22	246,566	0.0	12.6	0.102
2013	September	13	128,849	0.0	6.3	0.098
2013	October	18	246,394	0.0	11.9	0.097
2013	November	25	203,815	0.0	10.5	0.103
2013	December	19	246,800	0.0	10.8	0.088
	Unit Total:	**220**	**2,960,721**	**0.0**	**137.4**	**0.0928**

Unit: 5

	Month	GT Starts	Total Fuel (mmBtu)	DB Fuel (mmBtu)	NOx Tons	NOx Rate (lbs/mmBtu)
2013	January	15	94,823	0.0	4.5	0.095
2013	February	8	29,796	0.0	1.4	0.094
2013	March	6	390,419	0.0	14.2	0.073

2013	April	14	186,364	0.0	8.9	0.096
2013	May	8	293,002	0.0	14.2	0.097
2013	June	5	263,985	0.0	7.1	0.054
2013	July	13	348,391	0.0	10.8	0.062
2013	August	10	267,572	0.0	13.6	0.102
2013	September	1	84,501	0.0	2.9	0.069
2013	October	23	192,474	0.0	8.2	0.085
2013	November	15	211,580	0.0	7.0	0.066
2013	December	10	247,024	0.0	7.5	0.061
	Unit Total:	***128***	***2,609,931***	***0.0***	***100.3***	***0.0769***

Unit: 6

	Month	*GT Starts*	*Total Fuel (mmBtu)*	*DB Fuel (mmBtu)*	*NOx Tons*	*NOx Rate (lbs/mmBtu)*
2013	January	14	253,980	0.0	13.1	0.103
2013	February	11	214,229	0.0	11.1	0.104
2013	March	31	232,547	0.0	12.7	0.109
2013	April	24	326,732	0.0	18.6	0.114
2013	May	18	269,805	0.0	17.8	0.132
2013	June	14	164,592	0.0	9.2	0.112
2013	July	7	28,016	0.0	1.6	0.114
2013	August	25	229,635	0.0	12.8	0.111
2013	September	16	116,549	0.0	5.2	0.089
2013	October	25	271,370	0.0	10.3	0.076
2013	November	23	136,237	0.0	4.7	0.069
2013	December	28	184,635	0.0	6.8	0.074
	Unit Total:	***236***	***2,428,327***	***0.0***	***123.9***	***0.1020***

Unit: 7

	Month	*GT Starts*	*Total Fuel (mmBtu)*	*DB Fuel (mmBtu)*	*NOx Tons*	*NOx Rate (lbs/mmBtu)*
2013	January	22	96,156	0.0	9.7	0.202
2013	February	15	136,224	0.0	7.8	0.115
2013	March	21	179,894	0.0	9.4	0.105
2013	April	22	225,151	0.0	13.1	0.116
2013	May	19	361,225	0.0	21.1	0.117
2013	June	19	329,988	0.0	15.7	0.095
2013	July	25	288,352	0.0	16.9	0.117
2013	August	23	233,101	0.0	13.6	0.117
2013	September	17	165,641	0.0	9.3	0.112
2013	October	19	206,936	0.0	10.7	0.103
2013	November	24	292,013	0.0	13.5	0.092
2013	December	14	216,007	0.0	9.7	0.090
	Unit Total:	***240***	***2,730,688***	***0.0***	***150.5***	***0.1102***

Unit: 8

	Month	GT Starts	Total Fuel (mmBtu)	DB Fuel (mmBtu)	NOx Tons	NOx Rate (lbs/mmBtu)
2013	January	11	73,196	0.0	5.4	0.148
2013	February	7	24,559	0.0	1.9	0.155
2013	March	8	37,915	0.0	2.8	0.148
2013	April	13	88,665	0.0	5.7	0.129
2013	May	25	293,812	0.0	16.7	0.114
2013	June	16	170,031	0.0	9.8	0.115
2013	July	20	289,792	0.0	16.0	0.110
2013	August	20	254,255	0.0	14.0	0.110
2013	September	14	155,867	0.0	8.2	0.105
2013	October	16	161,934	0.0	10.3	0.127
2013	November	19	86,638	0.0	7.0	0.162
2013	December	24	149,609	0.0	10.5	0.140
	Unit Total:	**193**	**1,786,273**	**0.0**	**108.3**	**0.1213**

Unit: 9

	Month	GT Starts	Total Fuel (mmBtu)	DB Fuel (mmBtu)	NOx Tons	NOx Rate (lbs/mmBtu)
2013	January	27	157,841	3,124.4	10.3	0.131
2013	February	13	110,010	5,828.8	6.5	0.118
2013	March	28	164,761	2,348.4	11.2	0.136
2013	April	27	218,402	1,442.0	12.8	0.117
2013	May	21	278,061	6,268.7	14.4	0.104
2013	June	17	172,042	2,989.6	8.7	0.101
2013	July	22	340,852	27,029.0	16.1	0.094
2013	August	22	214,042	8,292.7	11.7	0.109
2013	September	12	108,727	4,557.7	6.3	0.116
2013	October	23	241,238	6,675.6	13.4	0.111
2013	November	33	196,579	1,132.8	11.3	0.115
2013	December	23	202,515	6,204.0	11.4	0.113
	Unit Total:	**268**	**2,405,070**	**75,893.7**	**134.1**	**0.1115**

Unit: 10

	Month	GT Starts	Total Fuel (mmBtu)	DB Fuel (mmBtu)	NOx Tons	NOx Rate (lbs/mmBtu)
2013	January	18	128,595	5,755.1	5.1	0.079
2013	February	14	49,927	539.6	2.2	0.088
2013	March	26	180,909	7,533.5	8.1	0.090
2013	April	32	238,300	1,215.3	11.7	0.098
2013	May	24	290,602	6,347.7	13.5	0.093
2013	June	17	164,018	2,056.5	7.7	0.094
2013	July	21	236,545	18,912.6	9.2	0.078

2013	August	16	291,000	9,309.5	13.6	0.093
2013	September	11	300,593	18,857.6	9.9	0.066
2013	October	11	404,965	16,992.6	10.7	0.053
2013	November	4	341,934	5,605.2	9.0	0.053
2013	December	11	61,626	340.7	3.2	0.104
	Unit Total:	***205***	***2,689,014***	***93,465.9***	***103.9***	***0.0773***

Unit: 11

	Month	*GT Starts*	*Total Fuel (mmBtu)*	*DB Fuel (mmBtu)*	*NOx Tons*	*NOx Rate (lbs/mmBtu)*
2013	January	14	67,509	739.1	5.5	0.163
2013	February	8	28,418	193.8	2.4	0.169
2013	March	25	125,159	793.5	7.5	0.120
2013	April	18	127,009	1,425.1	7.5	0.118
2013	May	21	223,266	3,404.2	10.9	0.098
2013	June	14	139,968	2,165.8	7.2	0.103
2013	July	23	232,901	18,723.8	11.9	0.102
2013	August	23	234,252	11,187.0	11.9	0.102
2013	September	13	96,683	2,784.7	3.7	0.077
2013	October	20	135,552	2,011.9	4.4	0.065
2013	November	22	89,731	918.1	3.7	0.082
2013	December	22	128,005	1,055.2	4.9	0.077
	Unit Total:	***223***	***1,628,453***	***45,402.2***	***81.5***	***0.1001***

Unit: 12

	Month	*GT Starts*	*Total Fuel (mmBtu)*	*DB Fuel (mmBtu)*	*NOx Tons*	*NOx Rate (lbs/mmBtu)*
2013	January	3	865,610	115,115.3	35.1	0.081
2013	February	1	769,263	103,882.3	33.4	0.087
2013	March	2	807,835	71,266.1	35.0	0.087
2013	April	1	794,187	72,357.6	34.1	0.086
2013	May	0	778,679	63,478.9	32.3	0.083
2013	June	4	737,839	69,350.5	29.8	0.081
2013	July	11	520,260	48,027.7	20.3	0.078
2013	August	3	699,411	48,511.5	27.7	0.079
2013	September	1	574,823	62,292.2	22.7	0.079
2013	October	10	561,651	7,297.7	21.7	0.077
2013	November	3	682,009	25,755.7	25.0	0.073
2013	December	1	775,695	62,105.0	28.9	0.075
	Unit Total:	***40***	***8,567,262***	***749,440.5***	***346.0***	***0.0808***

Unit: 13

	Month	*GT Starts*	*Total Fuel (mmBtu)*	*DB Fuel (mmBtu)*	*NOx Tons*	*NOx Rate (lbs/mmBtu)*
2013	January	9	54,848	441.2	2.6	0.095

TOTAL FUEL − DB FUEL
= GT FUEL converts to mmcf
7817820 ~ 7664.53 mmcf

2013	February	5	43,970	2,558.1	2.1	0.096
2013	March	9	142,088	3,055.0	6.6	0.093
2013	April	15	192,525	2,476.8	10.0	0.104
2013	May	18	296,289	5,553.6	15.3	0.103
2013	June	10	123,859	1,123.3	5.9	0.095
2013	July	17	450,462	32,523.6	20.2	0.090
2013	August	13	156,004	2,819.2	8.4	0.108
2013	September	9	116,528	3,857.3	5.0	0.086
2013	October	25	181,326	2,880.8	8.7	0.096
2013	November	9	257,296	4,953.6	11.9	0.093
2013	December	13	321,849	5,444.3	14.6	0.091
	Unit Total:	***152***	***2,337,044***	***67,686.8***	***111.3***	***0.0952***

Unit: 14

	Month	*GT Starts*	*Total Fuel (mmBtu)*	*DB Fuel (mmBtu)*	*NOx Tons*	*NOx Rate (lbs/mmBtu)*
2013	January	13	55,209	770.8	2.8	0.101
2013	February	12	59,360	703.9	3.0	0.101
2013	March	35	217,645	4,191.6	10.9	0.100
2013	April	19	140,268	756.7	7.9	0.113
2013	May	25	268,561	6,454.9	13.7	0.102
2013	June	16	148,778	2,363.5	7.8	0.105
2013	July	22	263,810	19,347.2	11.6	0.088
2013	August	18	158,187	3,080.0	8.6	0.109
2013	September	13	93,272	3,022.2	4.6	0.099
2013	October	17	130,425	3,217.7	4.5	0.069
2013	November	5	6,807	0.0	0.3	0.088
2013	December	16	91,686	27.4	2.9	0.063
	Unit Total:	***211***	***1,634,008***	***43,935.9***	***78.6***	***0.0962***

Hourly data from electronic daily records per cent Summarized.

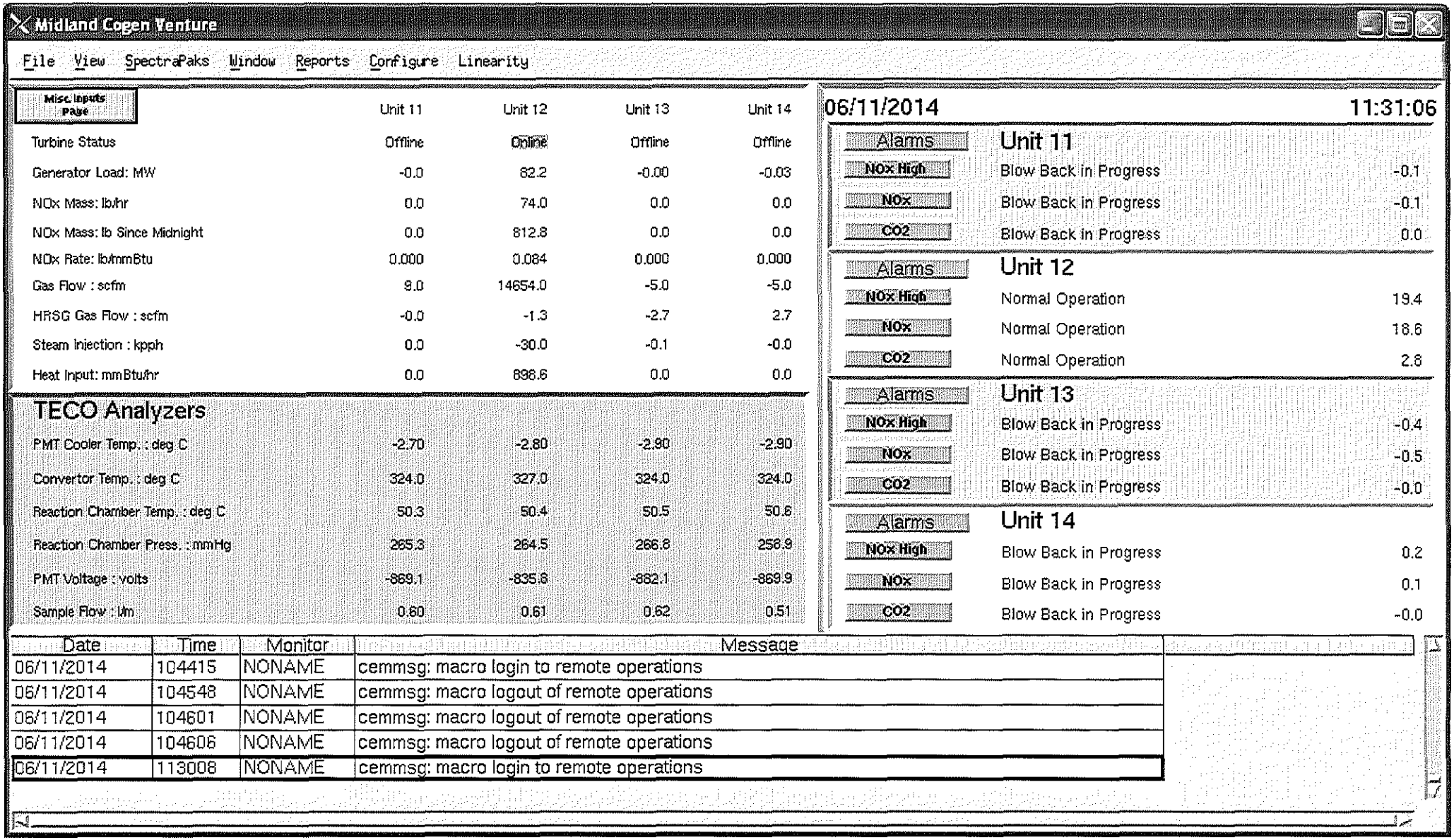
Monthly Summary Information: March - 2013

Duct Burner Info	Unit 09	Unit 10	Unit 11	Unit 12	Unit 13	Unit 14
DB Fuel, mmBtu	2,348.4	7,533.5	793.5	71,266.1	3,055.0	4,191.6
DB Operating Hrs	26	56	8	519	29	49

Boiler Info	Unit 16	Unit 17	Unit 18	Unit 19	Unit 20	Unit 21
Boiler Fuel, mmBtu	47,089.3	49,467.3	0.0	49,010.2	17,912.8	270.6
Boiler Operating Hrs	329	364	0	373	129	3

Fuel Model Info

M&R Heater Fuel, QF Summary	655	mmBtu
Combined Heat Added, QF Summary	1,194.99	Btu/lb
Average On Peak Temperature, deg F	35.1	
Average Off Peak Temperature, deg F	29.7	
Starts, Total Number per Month	228	(User Input)
Part Load Operation, Total Unit Hours per Month	1750	
Ramp Hours, Total Ramp Hours per Month	77	
Fuel Heating Value, Month Average Btu/cu ft	1027.5	
Duct Firing, Percent of Total Fuel Used for Duct Firing	2.84%	
Boilers, Percent of Total Fuel Used in Boilers	5.27%	
Unit 2 Operation, Percent Hours OPERATING	0.00%	
Unit 12 Operation, Percent Hours OPERATING	95.97%	
Unit 15 Operation, Percent Hours OPERATING	100.00%	
Non-Sequential Generation, Electricity	-109,921	kWh
Non-Sequential Generation, Process Steam	-13,903,215	lbs
Non-Sequential Generation, Fuel Use	-21,360	mmBtu
Net Dependable Capacity, GADS	1,575	MW


Midland Cogen Venture
File View SpectraPaks Window Reports Configure Linearity
Misc. Inputs Page
Unit 11 Unit 12 Unit 13 Unit 14
Turbine Status Offline Online Offline Offline
Generator Load: MW -0.0 82.2 -0.00 -0.03
NOx Mass: lb/hr 0.0 74.0 0.0 0.0
NOx Mass: lb Since Midnight 0.0 812.8 0.0 0.0
NOx Rate: lb/mmBtu 0.000 0.084 0.000 0.000
Gas Flow : scfm 9.0 14654.0 -5.0 -5.0
HRSG Gas Flow : scfm -0.0 -1.3 -2.7 2.7
Steam Injection : kpph 0.0 -30.0 -0.1 -0.0
Heat Input: mmBtu/hr 0.0 896.6 0.0 0.0
TECO Analyzers
PMT Cooler Temp. : deg C -2.70 -2.80 -2.90 -2.90
Convertor Temp. : deg C 324.0 327.0 324.0 324.0
Reaction Chamber Temp. : deg C 50.3 50.4 50.5 50.6
Reaction Chamber Press. : mmHg 265.3 264.5 266.8 258.9
PMT Voltage : volts -869.1 -835.6 -882.1 -869.9
Sample Flow : l/m 0.60 0.61 0.62 0.51
06/11/2014 11:31:06
Alarms Unit 11
NOx High Blow Back in Progress -0.1
NOx Blow Back in Progress -0.1
CO2 Blow Back in Progress 0.0
Alarms Unit 12
NOx High Normal Operation 19.4
NOx Normal Operation 18.6
CO2 Normal Operation 2.8
Alarms Unit 13
NOx High Blow Back in Progress -0.4
NOx Blow Back in Progress -0.5
CO2 Blow Back in Progress -0.0
Alarms Unit 14
NOx High Blow Back in Progress 0.2
NOx Blow Back in Progress 0.1
CO2 Blow Back in Progress -0.0
Date Time Monitor Message
06/11/2014 104415 NONAME cemmsg: macro login to remote operations
06/11/2014 104548 NONAME cemmsg: macro logout of remote operations
06/11/2014 104601 NONAME cemmsg: macro logout of remote operations
06/11/2014 104606 NONAME cemmsg: macro logout of remote operations
06/11/2014 113008 NONAME cemmsg: macro login to remote operations

MIDLAND COGENRATION VENTURE
UNITS 11-14
CEMS DAILY CHECK FORM

DATE: 4-14-14 - 4-20-14 **INITIALS:** JDL

	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	SUNDAY
SYSTEM ALARMS ACTIVE (Y/N)							
CEMS FAULT?	—	—	—	—	U12	—	—
AIR PRESSURE LOW?	—	—	—	—	—	—	—
SHELTER TEMP HIGH?	—	—	—	—	—	—	—
ANALYZER FAULTS?	—	—	—	—	12's CO2	—	—
TEMPERATURE CONTROLLER FAULT?	—	—	—	—	—	—	—
CALIBRATION ERROR TESTS							
LOW NOX SPAN: OOC/WARNING (Y/N)?	—	—	—	—	—	—	—
LOW NOX ZERO: OOC/WARNING (Y/N)?	—	—	—	—	—	—	—
HIGH NOX SPAN: OOC/WARNING (Y/N)?	—	—	—	—	—	—	—
HIGH NOX ZERO: OOC/WARNING (Y/N)?	—	—	—	—	—	—	—
CO2 SPAN: OOC/WARNING (Y/N)?	—	—	—	—	—	—	—
CO2 ZERO: OOC/WARNING (Y/N)?	—	—	—	—	—	—	—
GENERAL CHECKS (Y/N)?							
LEAKS IN EVIDENCE?	—	—	—	—	—	—	—
UNUSUAL PUMP VIBRATIONS?	—	—	—	—	—	—	—
CALIBRATION GAS PRESSURE							
ANY PRESSURE LOW OR ABNORMAL?	—	—	—	U12	—	—	—
SPECTRAVIEW COMPUTER/PRINTER							
DISPLAY ABNORMAL (Y/N)?	—	—	—	—	—	—	—
TAPE BACKUP ABNORMAL?	—	—	—	—	—	—	—
PRINTER PAPER EXHAUSTED (Y/N)?	—	—	—	—	—	—	—
MAKE NOTES IN DAILY LOG? (X)	—	—	—	—	—	—	—

ANY YES (Y) RESPONSE
REQUIRES CORRECTIVE ACTION.

4-17 - Replaced unit 12's 27 ppm gas bottle (empty)
4-18 - Unit 12's CO2 analyzer failed. John replaced with spare

KJB 6-1-14

MIDLAND COGENRATION VENTURE
UNITS 11-14
CEMS DAILY CHECK FORM

DATE: 4-21-14 - 4-27-14 **INITIALS:** JDL

	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	SUNDAY
SYSTEM ALARMS ACTIVE (Y/N)							
CEMS FAULT?	—	—	—	—	—	—	—
AIR PRESSURE LOW?	—	—	—	—	—	—	—
SHELTER TEMP HIGH?	—	—	—	—	—	—	—
ANALYZER FAULTS?	—	—	—	—	—	—	—
TEMPERATURE CONTROLLER FAULT?	—	—	—	—	—	—	—
CALIBRATION ERROR TESTS							
LOW NOX SPAN: OOC/WARNING (Y/N)?	—	—	—	—	—	—	—
LOW NOX ZERO: OOC/WARNING (Y/N)?	—	—	—	—	—	—	—
HIGH NOX SPAN: OOC/WARNING (Y/N)?	—	—	—	—	—	—	—
HIGH NOX ZERO: OOC/WARNING (Y/N)?	—	—	—	—	—	—	—
CO2 SPAN: OOC/WARNING (Y/N)?	—	—	—	—	—	—	—
CO2 ZERO: OOC/WARNING (Y/N)?	—	—	—	—	—	—	—
GENERAL CHECKS (Y/N)?							
LEAKS IN EVIDENCE?	—	—	—	—	—	—	—
UNUSUAL PUMP VIBRATIONS?	—	—	—	—	—	—	—
CALIBRATION GAS PRESSURE							
ANY PRESSURE LOW OR ABNORMAL?	—	—	—	—	—	—	—
SPECTRAVIEW COMPUTER/PRINTER							
DISPLAY ABNORMAL (Y/N)?	—	—	—	—	—	—	—
TAPE BACKUP ABNORMAL?	—	—	—	—	—	—	—
PRINTER PAPER EXHAUSTED (Y/N)?	—	—	—	—	—	—	—
MAKE NOTES IN DAILY LOG? (X)	—	—	—	—	—	—	—

ANY YES (Y) RESPONSE
REQUIRES CORRECTIVE ACTION.

4-21 - D:d unit 12's Linearity test with spare CO_2 analyzer.

Daily Calibration Summary
Midland Cogen Venture
Unit 12

Report Period
Day: 06/10/2014

	ZERO CAL			SPAN CAL			
	TIME	ZERO	%CE	REF	TIME	SPAN	%CE	REF
NOX Hi	7:18	0.00	0.000P	0.00	7:22	89.70	0.280P	88.30
NOX	7:18	0.00	0.000P	0.00	7:25	26.40	0.200P	26.20
CO2	7:18	0.00	0.000P	0.00	7:22	9.10	0.100P	9.00

Today's Date: 06/11/2014
Time: 10:23:29

%CE = Percent Calibration Error

P - Calibration Passed F - Calibration Failed

KJB

MCW 9/12/14 KJB

OPERATORS LOG - USED TO NOTE EEC CAUSE

Date	Time	Unit	Equipment	Entry
	12:01 AM	0	Plant	Steam Turbine MW'S Unit 1:20mw's Unit 2:s/d Unit 15 MW's:2mw's Process Steam Flows Dow:364kpph DCC:26k Makeup Water Flow:1114gpm
	12:07 AM		Plant	LDC Setting:42 mw's Units Running:12,15,17,19,21 Units Unavailable:none Ducts Running:12 Ducts Unavailable:none
	08:10 AM	8	GTG	Started unit.
	08:22 AM	7	GTG	Started unit.
	08:26 AM	8	GTG	Unit is on the grid.
	08:41 AM	7	GTG	Unit is on the grid.
	09:15 AM	17 19	BOILER	Shutdown burner on boiler
	09:45 AM	21	BOILER	Shutdown burner on boiler
	10:29 AM	7 8	Denox Injection	Denox is now in compliance Dx back in compliance for units Raise Dx steam header press. and lowered MW output on u
	12:01 PM	12	GTG	Unit trip caused by: Flame off, I&C t/s. DB tripped @ same t
	12:02 PM	10	GTG	Started unit.
	12:12 PM	10	GTG	Unit is on the grid.
	12:31 PM	10	Duct Burner	Started The Duct Burner
	12:39 PM	10	GTG	Unit trip caused by: Unit tripped due hi Vibs. @ 50mw's. DB tripped @ the same time.
	12:41 PM	11	GTG	Started unit.
	12:58 PM	11	GTG	Unit is on the grid.
	01:33 PM	7 8	Denox Injection	Denox is now in compliance Unit 7&8 in compliance, Unit 12 had to Max out units.
	04:20 PM	12	GTG	Started unit.
	04:38 PM	12	GTG	Unit is on the grid.
	05:45 PM	11	Duct Burner	Shutdown the Duct Burner
	05:52 PM	7 8	Denox Injection	Denox is now in compliance Units 7&8 were OOC when @ l load. D Comar made adjustments to Dx stm injection flows
	08:12 PM	12	GTG	Shutdown unit.
	08:40 PM	17 19 21	BOILER	Started burner on boiler
	08:44 PM	12	GTG	Unit is off the grid.
	08:44 PM	21	BOILER	Started burner on boiler
	09:26 PM	7	GTG	Shutdown unit.
	09:26 PM	8	GTG	Shutdown unit.
	09:52 PM	11	Duct Burner	Started The Duct Burner
	10:03 PM	7	GTG	Unit is off the grid.
	10:03 PM	8	GTG	Unit is off the grid.
08/14/2013 Wednesday				
08/15/2013 Thursday				
08/16/2013 Friday				
08/17/2013 Saturday				
08/18/2013 Sunday				
08/19/2013 Monday				
08/20/2013 Tuesday				

Daily Calibration Summary
Midland Cogen Venture
Unit 17

Report Period
Day: 06/11/2014

	ZERO CAL				SPAN CAL (ppm)			
	TIME	ZERO	%CE	REF	TIME	SPAN	%CE	REF
NOx Hi	7:19	0.00	0.000P	0.00	7:23	174.20	1.080P	179.60
NOx Lo	7:19	0.00	0.000P	0.00	7:27	44.20	1.300P	45.50
CO	7:19	-0.30	0.300P	0.00	7:23	110.20	0.500P	110.70
Oxy	7:23	0.00	0.000P	0.00	7:19	19.10	0.200P	19.30

(Computer)
(From Bottle label each time changed)

Today's Date: 06/12/2014
Time: 08:21:35

%CE = Percent Calibration Error

P - Calibration Passed F - Calibration Failed

Screen Shot of CEMS STATUS

Midland Cogen Venture

File Spectrapaks View Window Reports Linearity Configure Analyzer Health

Summary Page

	Unit 16	Unit 17	Unit 18
Boiler Status	Offline	Online	Offline
NOx Mass: lb/hr	0.00	2.77	0.00
NOx Rate: lb/mmBtu	0.000	0.025	0.000
CO Mass: lb/hr	0.00	0.06	0.00
CO Rate: lb/mmBtu	0.000	0.001	0.000
Gas Flow : kcfh	1.3	106.2	0.1
Steam Flow : kpph	1.5	72.1	0.4
Heat Input: mmBtu/hr	0.0	108.5	0.0
Sample Line Temp: Deg F	249	249	249
Stack Probe Temp: Deg F	251	249	249
Cal Gas 1 Pressure : psig	1117.7		
Cal Gas 2 Pressure : psig	756.6		
Cal Gas 3 Pressure : psig	1818.6		

06/12/2014 08:45:04

Alarms	Unit 16	
NOx High	Unit Off-Line	-0.5
NOx	Unit Off-Line	-0.5
CO	Unit Off-Line	-0.1
O2	Unit Off-Line	20.7

Alarms	Unit 17	
NOx High	Normal Operation	19.4
NOx	Normal Operation	19.2
CO	Normal Operation	0.6
O2	Normal Operation	4.4

Alarms	Unit 18	
NOx High	Unit Off-Line	-0.4
NOx	Unit Off-Line	-0.3
CO	Unit Off-Line	0.2
O2	Unit Off-Line	21.0

Date	Time	Monitor	Message
06/12/2014	72430	OXY2	06/12/14 07:23:10 OXY2 ZERO passed M: 0.0 E: 0.0
06/12/2014	72430	CO_2	06/12/14 07:23:10 CO_2 SPAN passed M: 110.4 E: 110.7
06/12/2014	72431	NOXH2	06/12/14 07:23:10 NOXH2 SPAN WARNING M: 174.0 E: 179.6
06/12/2014	72719	CALG32	Unit 17 LR NOx Span done
06/12/2014	72837	NOX2	06/12/14 07:27:10 NOX2 SPAN passed M: 44.1 E: 45.5
06/12/2014	83848	NONAME	cemmsg: macro login to remote operations

calebration history

1035

Daily Log Report
Midland Cogeneration Venture
Midland, Michigan
Units 16 - 18
June 12 2014
Generated: 06/12/14

KAB

Time	Daylog	Message
01:14:52	root	cemmsg: 12 Jun 01:14:52 ntpdate[22283]: step time server 10.
01:14:52	root	144.0.1 offset -8.228061 sec
01:15:00	root	cemmsg: 12 Jun 01:15:00 ntpdate[22290]: adjust time server 1
01:15:00	root	0.144.0.1 offset -0.003368 sec
02:15:00	macro	cemmsg: Tape Backup is starting
02:21:15	macro	cemmsg: Tape Backup Complete
02:22:49	macro	cemmsg: The tape backed up the correct number of files.
02:22:49	macro	cemmsg: 5462 files backed up.
7:15:19	CALG12	Unit 17 O2 Span, NOx/CO Zero in Progress
7:19:19	CALG12	Unit 17 O2 Span, NOx/CO Zero done
7:19:19	CALG22	Unit 17 O2 Zero, HR NOx/CO Span in Progress
7:20:23	OXY2	06/12/14 07:19:10 OXY2 SPAN passed M: 19.1 E: 19.3
7:20:24	CO_2	06/12/14 07:19:10 CO_2 ZERO passed M: -0.2 E: 0.0
7:20:24	NOX2	06/12/14 07:19:10 NOX2 ZERO passed M: 0.0 E: 0.0
7:20:25	NOXH2	06/12/14 07:19:10 NOXH2 ZERO passed M: 0.0 E: 0.0
7:23:19	CALG22	Unit 17 O2 Zero, HR NOx/CO Span done
7:23:19	CALG32	Unit 17 LR NOx Span in Progress
7:24:30	OXY2	06/12/14 07:23:10 OXY2 ZERO passed M: 0.0 E: 0.0
7:24:30	CO_2	06/12/14 07:23:10 CO_2 SPAN passed M: 110.4 E: 110.7
7:24:31	NOXH2	06/12/14 07:23:10 NOXH2 SPAN WARNING M: 174.0 E: 179.6
7:27:19	CALG32	Unit 17 LR NOx Span done
7:28:37	NOX2	06/12/14 07:27:10 NOX2 SPAN passed M: 44.1 E: 45.5

Midland Cogen Venture
Midland, MI
Unit 17

Today's Date: 06/12/2014
Time: 08:18:10

Reporting Period
Day: 06/11/2014

Daily NOx Summary

Hour	Online qtrs	Load kpph	O2 %	NOx ppm	NOx lb/mmBtu	Htip mmBtu	NOx lbs
0	4	143.5	2.7	23.7	0.028	219	6.13
1	4	150.3	2.7	24.1	0.029	229	6.64
2	4	142.3	2.7	23.2	0.028	217	6.07
3	4	141.5	2.7	22.7	0.027	216	5.83
4	4	150.9	2.6	23.1	0.027	230	6.20
5	4	130.2	2.9	21.6	0.026	198	5.16
6	4	112.0	3.1	20.2	0.025	173	4.32
7	4	114.9	3.1	20.5	0.025	176	4.39
8	4	91.6	3.8	19.2	0.024	139	3.33
9	4	86.0	4.0	18.9	0.024	128	3.07
10	4	77.5	4.3	19.3	0.025	116	2.89
11	4	74.6	4.4	19.4	0.026	111	2.90
12	4	85.0	4.1	19.1	0.025	127	3.18
13	4	81.5	4.1	19.1	0.025	122	3.05
14	4	78.5	4.2	19.2	0.025	117	2.94
15	4	76.5	4.3	19.3	0.025	114	2.85
16	4	90.0	3.8	18.8	0.024	136	3.27
17	4	87.5	4.0	18.8	0.024	133	3.19
18	4	86.5	4.0	18.8	0.024	131	3.14
19	4	79.8	4.2	18.8	0.024	121	2.90
20	4	80.6	4.1	18.9	0.024	122	2.94
21	4	79.8	4.2	18.9	0.025	121	3.03
22	4	89.0	3.8	18.9	0.024	135	3.24
23	4	102.0	3.5	19.3	0.024	155	3.71
Daily Totals		2432				3685	94.37

C - Out of Control
D - Out of Service
A - Calibration Error
M - Maintenance Fault
I - Insufficient Data
X - Calibration Expired

From CEMs data

KJB

Monthly Emissions Report
Plant: MIDLAND COGENERATION
Unit: 17

Report Dates: 01/01/2014 - 06/11/2014

Month	NOx tons	Heat Input mmBtu	SO2 tons	CO2 tons	Steam klb/hr	CO tons
January	0.9	62550	0.0	3717.8	41704	0.0
February	1.5	95952	0.0	5703.6	63994	0.1
March	1.3	84224	0.0	5006.4	56275	0.1
April	0.7	50114	0.0	2978.8	33384	0.0
May	0.3	23338	0.0	1387.2	15269	0.0
June	0.2	16852	0.0	1001.6	11055	0.0
YTD Totals	5.0	333030	0.1	19795.4	221680	0.3
Ozone Season	0.6	40190				

KAB
6/12/14

FROM CEMS DATA

Report Gene. n Time:
August 13, 201
0:50

KJB 6/18/2014

Midland Cogener: ı Venture

From: 08/12/2013)0:00
To 08/13/2013 0. 00

Boiler Units 16, 17, & 18
One Hour Average NOx Emissions

EXAMPLE

	Unit 16				Unit 17				Unit 18			
	6STM-FLOV (KPPH)	16HTIPM1 (MMBTU)		Hourly Ave (LBS/HR)	Hourly Ave (LBS/MMBTU)	7STM-FLOV (KPPH)	17HTIPM2 (MMBTU)	Hourly Ave (LBS/HR)	Hourly Ave (LBS/MMBTU)	8STM-FLOV (KPPH)	18HTIPM3 (MMBTU)	Hourly Ave (LBS/HR)	Hourly Ave (LBS/MMBTU)
00:00	1.06	0.00	*	0.00	0.000	83.91	125.08	3.14	0.025	1.02	0.00 *	0.00	0.000
01:00	1.06	0.00	*	0.00	0.000	82.68	123.44	3.07	0.025	1.02	0.00 *	0.00	0.000
02:00	1.06	0.00	*	0.00	0.000	85.50	127.67	3.16	0.025	1.02	0.00 *	0.00	0.000
03:00	1.06	0.00	*	0.00	0.000	82.95	123.82	3.05	0.025	1.02	0.00 *	0.00	0.000
04:00	1.06	0.00	*	0.00	0.000	85.18	127.30	3.11	0.025	1.02	0.00 *	0.00	0.000
05:00	1.06	0.00	*	0.00	0.000	80.16	119.52	2.97	0.024	1.03	0.00 *	0.00	0.000
06:00	1.06	0.00	*	0.00	0.000	77.56	115.79	2.88	0.025	1.55	0.00 *	0.00	0.000
07:00	1.06	0.00	*	0.00	0.000	87.37	130.62	3.06	0.025	3.10	0.00 *	0.00	0.000
08:00	1.06	0.00	*	0.00	0.000	35.61	23.93	0.71	0.022	1.99	0.00 *	0.00	0.000
09:00	1.06	0.00	*	0.00	0.000	4.36	0.00 *	0.00	0.000	1.03	0.00 *	0.00	0.000
10:00	1.06	0.00	*	0.00	0.000	5.74	0.00 *	0.00	0.000	1.03	0.00 *	0.00	0.000
11:00	1.06	0.00	*	0.00	0.000	4.75	0.00 *	0.00	0.000	1.03	0.00 *	0.00	0.000
12:00	1.06	0.00	*	0.00	0.000	2.79	0.00 *	0.00	0.000	1.03	0.00 *	0.00	0.000
13:00	1.06	0.00	*	0.00	0.000	2.11	0.00 *	0.00	0.000	1.03	0.00 *	0.00	0.000
14:00	1.06	0.00	*	0.00	0.000	2.31	0.00 *	0.00	0.000	1.03	0.00 *	0.00	0.000
15:00	1.06	0.00	*	0.00	0.000	2.06	0.00 *	0.00	0.000	1.03	0.00 *	0.00	0.000
16:00	1.06	0.00	*	0.00	0.000	2.25	0.00 *	0.00	0.000	1.03	0.00 *	0.00	0.000
17:00	1.06	0.00	*	0.00	0.000	1.99	0.00 *	0.00	0.000	1.03	0.00 *	0.00	0.000
18:00	1.06	0.00	*	0.00	0.000	2.06	0.00 *	0.00	0.000	1.03	0.00 *	0.00	0.000
19:00	1.06	0.00	*	0.00	0.000	2.07	0.00 *	0.00	0.000	1.03	0.00 *	0.00	0.000
20:00	1.06	0.00	*	0.00	0.000	48.42	41.97	1.48	0.002	1.99	0.00 *	0.00	0.000
21:00	1.06	0.00	*	0.00	0.000	82.22	128.97	3.04	0.024	1.00	0.00 *	0.00	0.000
22:00	1.06	0.00	*	0.00	0.000	85.95	133.25	3.26	0.024	1.01	0.00 *	0.00	0.000
23:00	1.06	0.00	*	0.00	0.000	80.70	125.13	3.06	0.024	1.01	0.00 *	0.00	0.000
DAILY VALUES:		**0.00**					**133.25**	**2.99**	**0.024**		**0.00**		
		0.00		0.00			1,446.49	36.00			0.00	0.00	

Unit 16, 17, & 18 Limits: 370 mmBtu/hr, 13.7 lbs/hr, 0.037 lbs/mmBtu

Report Gene. n Time:
August 13, 201
0:50

Midland Cogener: a Venture

From: 08/12/2013 0:00
To 08/13/2013 0:00

Boiler Units 19, 20, & 21
One Hour Average NOx Emissions

Examples

	Unit 19			Unit 20			Unit 21		
	9STM-FLOV (KPPH)	19HTIPM1 (MMBTU)	Hourly Ave (LBS/HR)	Hourly Ave (LBS/MMBTU)	0STM-FLOV (KPPH)	20HTIPM2 (MMBTU)	Hourly Ave (LBS/HR)	Hourly Ave (LBS/MMBTU)	1STM-FLOV (KPPH)	21HTIPM3 (MMBTU)	Hourly Ave (LBS/HR)	Hourly Ave (LBS/MMBTU)
00:00	85.05	119.29	3.06	0.025	6.37	0.00 *	0.00	0.000	86.54	124.15	3.33	0.026
01:00	83.85	117.40	3.05	0.026	6.54	0.00 *	0.00	0.000	85.29	122.49	3.33	0.028
02:00	86.77	121.62	3.12	0.026	6.68	0.00 *	0.00	0.000	88.15	126.59	3.40	0.026
03:00	84.14	117.66	3.05	0.026	6.60	0.00 *	0.00	0.000	85.57	122.81	3.20	0.028
04:00	83.45	121.43	3.10	0.026	6.69	0.00 *	0.00	0.000	85.66	126.31	3.29	0.027
05:00	81.06	113.45	2.97	0.025	6.75	0.00 *	0.00	0.000	82.21	118.57	3.17	0.026
06:00	78.46	109.90	2.91	0.026	6.60	0.00 *	0.00	0.000	79.79	114.80	3.08	0.027
07:00	89.06	124.57	2.95	0.027	6.61	0.00 *	0.00	0.000	90.28	129.82	3.69	0.028
08:00	63.86	54.00	2.95	0.027	6.45	0.00 *	0.00	0.000	16.55	18.68 *	4.01	0.028
09:00	0.96	0.00 *	2.95	0.027	6.18	0.00 *	0.00	0.000	4.41	0.00 *	3.05	0.025
10:00	0.96	0.00 *	0.93	0.014	6.11	0.00 *	0.00	0.000	3.17	0.00 *	0.00	0.000
11:00	0.96	0.00 *	0.00	0.000	6.10	0.00 *	0.00	0.000	2.99	0.00 *	0.00	0.000
12:00	0.96	0.00 *	0.00	0.000	6.04	0.00 *	0.00	0.000	3.33	0.00 *	0.00	0.000
13:00	0.96	0.00 *	0.00	0.000	5.82	0.00 *	0.00	0.000	3.81	0.00 *	0.00	0.000
14:00	0.96	0.00 *	0.00	0.000	5.76	0.00 *	0.00	0.000	3.71	0.00 *	0.00	0.000
15:00	0.96	0.00 *	0.00	0.000	5.63	0.00 *	0.00	0.000	3.83	0.00 *	0.00	0.000
16:00	0.96	0.00 *	0.00	0.000	5.49	0.00 *	0.00	0.000	3.46	0.00 *	0.00	0.000
17:00	0.96	0.00 *	0.00	0.000	5.42	0.00 *	0.00	0.000	3.18	0.00 *	0.00	0.000
18:00	0.96	0.00 *	0.00	0.000	5.60	0.00 *	0.00	0.000	3.11	0.00 *	0.00	0.000
19:00	0.96	0.00 *	0.00	0.000	5.62	0.00 *	0.00	0.000	3.37	0.00 *	0.00	0.000
20:00	7.75	16.50 *	0.56	0.000	5.74	0.00 *	0.00	0.000	3.16	17.48 *	0.92	0.005
21:00	81.43	108.98	2.94	0.013	5.73	0.00 *	0.00	0.000	81.55	124.16	3.31	0.054
22:00	86.27	127.24	3.24	0.026	5.98	0.00 *	0.00	0.000	90.10	132.48	3.39	0.026
23:00	85.00	118.95	3.22	0.026	6.16	0.00 *	0.00	0.000	86.81	124.39	3.15	0.026
DAILY VALUES:		**127.24**	**3.02**	**0.025**		**0.00**				**132.48**	**3.29**	**0.029**
		1,371.00	41.00			0.00	0.00			1,402.72	44.31	

Unit 19, 20, & 21 Limits: 370 mmBtu/hr, 13.7 lbs/hr, 0.037 lbs/mmBtu

Report Gene on Time:
December 09, 13
0:50

Kgs 6/12/14

Midland Cogener n Venture

From: 12/08/2013 00:00
To 12/09/2013 0:00

Boiler Units 16, 17, & 18
One Hour Average NOx Emissions

	Unit 16				Unit 17				Unit 18			
	6STM-FLOW (KPPH)	16HTIPM1 (MMBTU)	Hourly Ave (LBS/HR)	Hourly Ave (LBS/MMBTU)	7STM-FLOW (KPPH)	17HTIPM2 (MMBTU)	Hourly Ave (LBS/HR)	Hourly Ave (LBS/MMBTU)	8STM-FLOW (KPPH)	18HTIPM3 (MMBTU)	Hourly Ave (LBS/HR)	Hourly Ave (LBS/MMBTU)
00:00	80.12	123.18	4.01	0.030	6.95	0.00 *	0.00	0.000	83.19	121.01	3.74	0.031
01:00	82.95	127.49	4.02	0.032	7.59	0.00 *	0.00	0.000	86.01	125.12	3.78	0.030
02:00	85.17	130.56	4.03	0.031	7.34	0.00 *	0.00	0.000	88.38	128.33	3.84	0.031
03:00	83.59	128.32	4.04	0.032	7.54	0.00 *	0.00	0.000	86.67	125.95	3.82	0.032
04:00	82.87	127.21	4.05	0.031	7.70	0.00 *	0.00	0.000	86.05	125.05	3.82	0.030
05:00	82.54	126.90	4.02	0.031	8.29	0.00 *	0.00	0.000	85.74	124.75	3.83	0.029
06:00	84.31	129.22	4.05	0.030	8.49	0.00 *	0.00	0.000	87.53	127.08	3.88	0.029
07:00	81.29	124.88	4.06	0.031	8.67	0.00 *	0.00	0.000	84.46	122.70	3.72	0.030
08:00	86.47	132.66	4.05	0.032	8.73	0.00 *	0.00	0.000	89.89	130.53	3.86	0.030
09:00	83.80	128.72	4.03	0.031	7.57	0.00 *	0.00	0.000	87.06	126.53	3.81	0.030
10:00	83.96	128.93	4.03	0.031	8.57	0.00 *	0.00	0.000	87.10	126.66	3.82	0.031
11:00	83.76	128.52	4.03	0.032	7.73	0.00 *	0.00	0.000	86.83	126.23	3.82	0.030
12:00	86.29	132.49	4.04	0.029	8.39	0.00 *	0.00	0.000	89.33	129.98	3.87	0.030
13:00	81.78	129.92	4.01	0.029	7.85	0.00 *	0.00	0.000	87.65	127.42	3.84	0.030
14:00	86.01	131.94	4.04	0.031	8.04	0.00 *	0.00	0.000	89.13	129.57	3.87	0.030
15:00	84.97	130.32	4.02	0.029	7.59	0.00 *	0.00	0.000	88.05	127.89	3.85	0.030
16:00	82.91	117.12	3.65	0.031	7.16	0.00 *	0.00	0.000	84.59	123.29	3.76	0.031
17:00	0.90	0.00 *	0.00	0.011	9.41	0.00 *	0.00	0.000	2.12	0.00 *	0.00	0.021
18:00	0.90	0.00 *	0.00	0.000	9.80	0.00 *	0.00	0.000	1.32	0.00 *	0.00	0.000
19:00	0.90	0.00 *	0.00	0.000	9.63	0.00 *	0.00	0.000	1.61	0.00 *	0.00	0.000
20:00	0.90	0.80 *	0.01	0.000	9.36	0.54 *	0.00	0.000	1.71	0.00 *	0.00	0.000
21:00	44.69	28.74	1.38	0.000	~~23.69~~	~~36.57~~ *	~~1.90~~	~~0.048~~ SV	6.50	20.07 *	0.90	0.018
22:00	82.66	128.85	3.92	0.020	~~82.57~~	~~125.63~~	~~4.22~~	~~0.070~~ SV	85.70	126.53	3.65	0.045
23:00	77.76	119.97	3.85	0.030	77.82	117.26	3.40	0.030	80.45	117.82	3.54	0.031
DAILY VALUES:		**132.66**	**3.97**	**0.030**		**125.63**	**3.57**	~~0.050~~ .030		**130.53**	**3.77**	**0.031**
		2,456.75	77.35			280.00	9.53			2,412.50	73.01	

Unit 16, 17, & 18 Limits: 370 mmBtu/hr, 13.7 lbs/hr, 0.037 lbs/mmBtu

① TECHNICIAN ~~FILL~~ INVESTIGATES CAUSE FOR VALUES > LIMITS.
② VALUES DURING STARTUP/SHUTDOWN Subtracted from Hourly Average
(THIS IS DONE ONLY AFTER REVIEW/VERIFICATION OF STATUS)

MCV Monthly Boiler Emissions Report

Unit ID: 16

Year	Month	Fuel Use	Op Hrs	NOx Tons	CO Tons
2013	January	101,173.6	648	1.5	0.30
2013	February	96,631.5	615	1.4	0.30
2013	March	47,089.3	329	0.8	0.20
2013	April	39,803.4	264	0.6	0.10
2013	May	37,731.0	238	0.5	0.10
2013	June	9,060.1	55	0.1	0.00
2013	July	1,633.7	13	0.0	0.00
2013	August	11,511.3	87	0.2	0.00
2013	September	44,887.9	245	0.6	0.10
2013	October	1,715.7	9	0.0	0.00
2013	November	0.0	0	0.0	0.00
2013	December	22,141.1	162	0.3	0.10
	Unit Total:	**413,378.6**	**2,665**	**6.0**	**1.20**

Unit ID: 17

Year	Month	Fuel Use	Op Hrs	NOx Tons	CO Tons
2013	January	100,896.7	649	1.5	0.10
2013	February	94,657.5	608	1.4	0.10
2013	March	49,467.3	364	0.8	0.10
2013	April	59,099.6	405	0.9	0.10
2013	May	48,398.8	320	0.7	0.00
2013	June	29,295.2	188	0.4	0.00
2013	July	24,129.7	143	0.3	0.00
2013	August	49,382.3	364	0.7	0.10
2013	September	74,241.8	466	1.1	0.10
2013	October	50,818.9	382	0.7	0.00
2013	November	32,738.8	234	0.5	0.00
2013	December	54,577.4	340	0.8	0.00
	Unit Total:	**667,704.0**	**4,463**	**9.8**	**0.60**

Unit ID: 18

Year	Month	Fuel Use	Op Hrs	NOx Tons	CO Tons
2013	January	20,216.3	117	0.3	0.10
2013	February	74,724.7	460	1.0	0.40
2013	March	0.0	0	0.0	0.00

2013	April	0.0	0	0.0	0.00
2013	May	0.0	0	0.0	0.00
2013	June	27,812.3	177	0.4	0.10
2013	July	36,868.3	251	0.5	0.20
2013	August	7,319.5	57	0.1	0.00
2013	September	67,814.9	419	0.8	0.30
2013	October	51,653.3	402	0.7	0.20
2013	November	51,209.9	379	0.7	0.20
2013	December	61,531.3	399	0.8	0.30
	Unit Total:	**399,150.5**	**2,661**	**5.3**	**1.80**

Unit ID: 19

Year	Month	Fuel Use	Op Hrs	NOx Tons	CO Tons
2013	January	23,664.6	164	0.3	0.10
2013	February	61,299.7	406	0.8	0.10
2013	March	49,010.2	373	0.7	0.10
2013	April	42,759.8	312	0.6	0.10
2013	May	1,197.9	9	0.0	0.00
2013	June	28,662.0	187	0.4	0.10
2013	July	54,470.8	357	0.7	0.20
2013	August	58,519.9	464	0.8	0.20
2013	September	70,338.7	472	0.9	0.20
2013	October	47,246.0	373	0.7	0.20
2013	November	54,327.5	405	0.8	0.20
2013	December	53,534.8	359	0.7	0.10
	Unit Total:	**545,031.9**	**3,881**	**7.4**	**1.60**

Unit ID: 20

Year	Month	Fuel Use	Op Hrs	NOx Tons	CO Tons
2013	January	59,894.5	365	0.8	0.10
2013	February	12,739.3	75	0.2	0.00
2013	March	17,912.8	129	0.2	0.00
2013	April	0.0	0	0.0	0.00
2013	May	0.0	0	0.0	0.00
2013	June	0.0	0	0.0	0.00
2013	July	0.0	0	0.0	0.00
2013	August	0.0	0	0.0	0.00
2013	September	0.0	0	0.0	0.00
2013	October	1,428.3	9	0.0	0.00

2013	November	11,467.9	75	0.2	0.00
2013	December	5,582.7	42	0.1	0.00
	Unit Total:	**109,025.5**	**695**	**1.5**	**0.10**

Unit ID: 21

Year	Month	Fuel Use	Op Hrs	NOx Tons	CO Tons
2013	January	2,412.2	15	0.0	0.00
2013	February	1,215.0	8	0.0	0.00
2013	March	270.6	3	0.0	0.00
2013	April	7,409.0	55	0.1	0.00
2013	May	0.0	0	0.0	0.00
2013	June	20,584.7	143	0.3	0.10
2013	July	42,006.4	273	0.6	0.20
2013	August	47,061.3	351	0.7	0.30
2013	September	26,526.3	172	0.4	0.20
2013	October	41,628.9	322	0.6	0.30
2013	November	18,043.6	126	0.2	0.10
2013	December	42,473.9	250	0.6	0.10
	Unit Total:	**249,631.9**	**1,718**	**3.5**	**1.30**
	Grand Total:	**2,383,922.4**	**16,083**	**33.5**	**6.60**

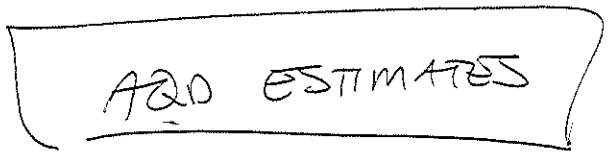
Michigan Air Emissions Reporting System (MAERS)

Emissions Comparison - Emission Threshold per Pollutant

AQD Source ID (SRN) : B6527
Source Name : Midland Cogeneration Venture
Source Location : 100 E. Progress Place, MIDLAND, MI, 48640

Reporting Year : 2013
Fee Category :

Pollutant Code	Annual Emissions	Unit	QA Threshold	Threshold Unit
CO	436.741	TON	100.000	TON
NOX	1595.163	TON	100.000	TON
PM10,PRIMARY	119.546	TON	100.000	TON
PM2.5,PRIMRY	119.546	TON	100.000	TON
ACETALDEHYDE	1291.760	LB	1000.000	LB
ACROLEIN	206.681	LB	40.000	LB
BENZENE	387.548	LB	200.000	LB
FORMALDEHYDE	22928.387	LB	160.000	LB
PRPLENE OXID	936.510	LB	600.000	LB



Michigan Air Emissions Reporting System (MAERS)

Emissions Comparison - Previous Year

AQD Source ID (SRN): B6527 **Reporting Year:** 2013

Source Name: Midland Cogeneration Venture

Source Locations: 100 E. Progress Place , MIDLAND, MI, 48640-8997 **Fee Category:** I

Emission Unit ID: RGDUCTBURNERS **SCC/AMS Code:** 10200604

Pollutant	Curr Year	Curr Amt	Curr Unit	Prev Year	Prev Amt	Prev Unit	Pct Change	Curr Year Material	Thrup Curr Amt	Thrup Curr Unit	Prev Year Material	Thrup Prev Amt	Thrup Prev Unit	Thrup Pct Change
AMMONIA	2013	3375.14	LB	2012	3540.10	LB	-4.7	NATURAL GAS	1054.73	MMCF	NATURAL GAS	1106.28	MMCF	-4.7
CO	2013	372686.00	LB	2012	564760.00	LB	-34.0	NATURAL GAS	1054.73	MMCF	NATURAL GAS	1106.28	MMCF	-4.7
NOX	2013	91421.00	LB	2012	109348.00	LB	-16.4	NATURAL GAS	1054.73	MMCF	NATURAL GAS	1106.28	MMCF	-4.7
PM10,PRIMARY	2013	8015.95	LB	2012	8407.73	LB	-4.7	NATURAL GAS	1054.73	MMCF	NATURAL GAS	1106.28	MMCF	-4.7
PM2.5,PRIMRY	2013	8015.95	LB	2012	8407.73	LB	-4.7	NATURAL GAS	1054.73	MMCF	NATURAL GAS	1106.28	MMCF	-4.7
SO2	2013	632.84	LB	2012	663.77	LB	-4.7	NATURAL GAS	1054.73	MMCF	NATURAL GAS	1106.28	MMCF	-4.7
VOC	2013	5801.02	LB	2012	6084.54	LB	-4.7	NATURAL GAS	1054.73	MMCF	NATURAL GAS	1106.28	MMCF	-4.7

Emission Unit ID: RGBOILERS1-6 **SCC/AMS Code:** 10200604

Pollutant	Curr Year	Curr Amt	Curr Unit	Prev Year	Prev Amt	Prev Unit	Pct Change	Curr Year Material	Thrup Curr Amt	Thrup Curr Unit	Prev Year Material	Thrup Prev Amt	Thrup Prev Unit	Thrup Pct Change
AMMONIA	2013	7553.70	LB	2012	2028.13	LB	272.5	NATURAL GAS	2360.53	MMCF	NATURAL GAS	633.79	MMCF	272.4
CO	2013	13200.00	LB	2012	3600.00	LB	266.7	NATURAL GAS	2360.53	MMCF	NATURAL GAS	633.79	MMCF	272.4
NOX	2013	67400.00	LB	2012	17800.00	LB	278.7	NATURAL GAS	2360.53	MMCF	NATURAL GAS	633.79	MMCF	272.4
PM10,PRIMARY	2013	17940.03	LB	2012	4816.80	LB	272.4	NATURAL GAS	2360.53	MMCF	NATURAL GAS	633.79	MMCF	272.4
PM2.5,PRIMRY	2013	17940.03	LB	2012	4816.80	LB	272.4	NATURAL GAS	2360.53	MMCF	NATURAL GAS	633.79	MMCF	272.4
SO2	2013	1416.32	LB	2012	380.27	LB	272.6	NATURAL GAS	2360.53	MMCF	NATURAL GAS	633.79	MMCF	272.4
VOC	2013	12982.92	LB	2012	3485.84	LB	272.4	NATURAL GAS	2360.53	MMCF	NATURAL GAS	633.79	MMCF	272.4

Michigan Air Emissions Reporting System (MAERS)

Emissions Comparison - Previous Year

AQD Source ID (SRN): B6527 **Reporting Year:** 2013

Source Name: Midland Cogeneration Venture

Source Locations: 100 E. Progress Place , MIDLAND, MI, 48640-8997 **Fee Category:** I

Emission Unit ID: RGDUCTBURNERS **SCC/AMS Code:** 10200604

Pollutant	Curr Year	Curr Amt	Curr Unit	Prev Year	Prev Amt	Prev Unit	Pct Change	Curr Year Material	Thrup Curr Amt	Thrup Curr Unit	Prev Year Material	Thrup Prev Amt	Thrup Prev Unit	Thrup Pct Change
AMMONIA	2013	3375.14	LB	2012	3540.10	LB	-4.7	NATURAL GAS	1054.73	MMCF	NATURAL GAS	1106.28	MMCF	-4.7
CO	2013	372686.00	LB	2012	564760.00	LB	-34.0	NATURAL GAS	1054.73	MMCF	NATURAL GAS	1106.28	MMCF	-4.7
NOX	2013	91421.00	LB	2012	109348.00	LB	-16.4	NATURAL GAS	1054.73	MMCF	NATURAL GAS	1106.28	MMCF	-4.7
PM10,PRIMARY	2013	8015.95	LB	2012	8407.73	LB	-4.7	NATURAL GAS	1054.73	MMCF	NATURAL GAS	1106.28	MMCF	-4.7
PM2.5,PRIMRY	2013	8015.95	LB	2012	8407.73	LB	-4.7	NATURAL GAS	1054.73	MMCF	NATURAL GAS	1106.28	MMCF	-4.7
SO2	2013	632.84	LB	2012	663.77	LB	-4.7	NATURAL GAS	1054.73	MMCF	NATURAL GAS	1106.28	MMCF	-4.7
VOC	2013	5801.02	LB	2012	6084.54	LB	-4.7	NATURAL GAS	1054.73	MMCF	NATURAL GAS	1106.28	MMCF	-4.7

Emission Unit ID: RGBOILERS1-6 **SCC/AMS Code:** 10200604

Pollutant	Curr Year	Curr Amt	Curr Unit	Prev Year	Prev Amt	Prev Unit	Pct Change	Curr Year Material	Thrup Curr Amt	Thrup Curr Unit	Prev Year Material	Thrup Prev Amt	Thrup Prev Unit	Thrup Pct Change
AMMONIA	2013	7553.70	LB	2012	2028.13	LB	272.5	NATURAL GAS	2360.53	MMCF	NATURAL GAS	633.79	MMCF	272.4
CO	2013	13200.00	LB	2012	3600.00	LB	266.7	NATURAL GAS	2360.53	MMCF	NATURAL GAS	633.79	MMCF	272.4
NOX	2013	67400.00	LB	2012	17800.00	LB	278.7	NATURAL GAS	2360.53	MMCF	NATURAL GAS	633.79	MMCF	272.4
PM10,PRIMARY	2013	17940.03	LB	2012	4816.80	LB	272.4	NATURAL GAS	2360.53	MMCF	NATURAL GAS	633.79	MMCF	272.4
PM2.5,PRIMRY	2013	17940.03	LB	2012	4816.80	LB	272.4	NATURAL GAS	2360.53	MMCF	NATURAL GAS	633.79	MMCF	272.4
SO2	2013	1416.32	LB	2012	380.27	LB	272.6	NATURAL GAS	2360.53	MMCF	NATURAL GAS	633.79	MMCF	272.4
VOC	2013	12982.92	LB	2012	3485.84	LB	272.4	NATURAL GAS	2360.53	MMCF	NATURAL GAS	633.79	MMCF	272.4

Michigan Air Emissions Reporting System (MAERS)

Emissions Comparison - Previous Year

AQD Source ID (SRN): B6527 **Reporting Year:** 2013

Source Name: Midland Cogeneration Venture

Source Locations: 100 E. Progress Place , MIDLAND, MI, 48640-8997 **Fee Category:** I

Emission Unit ID: EUTURBINE12 **SCC/AMS Code:** 20200203

Pollutant	Curr Year	Curr Amt	Curr Unit	Prev Year	Prev Amt	Prev Unit	Pct Change	Curr Year Material	Thrup Curr Amt	Thrup Curr Unit	Prev Year Material	Thrup Prev Amt	Thrup Prev Unit	Thrup Pct Change
CO	2013	55819.00	LB	2012	94090.00	LB	-40.7	NATURAL GAS	7664.53	MMCF	NATURAL GAS	8176.56	MMCF	-6.3
NOX	2013	631466.00	LB	2012	644573.00	LB	-2.0	NATURAL GAS	7664.53	MMCF	NATURAL GAS	8176.56	MMCF	-6.3
PM10,PRIMARY	2013	51597.62	LB	2012	55044.60	LB	-6.3	NATURAL GAS	7664.53	MMCF	NATURAL GAS	8176.56	MMCF	-6.3
PM2.5,PRIMRY	2013	51597.62	LB	2012	55044.60	LB	-6.3	NATURAL GAS	7664.53	MMCF	NATURAL GAS	8176.56	MMCF	-6.3
SO2	2013	867.15	LB	2012	1175.95	LB	-26.3	NATURAL GAS	7664.53	MMCF	NATURAL GAS	8176.56	MMCF	-6.3
VOC	2013	16417.42	LB	2012	17514.19	LB	-6.3	NATURAL GAS	7664.53	MMCF	NATURAL GAS	8176.56	MMCF	-6.3

Emission Unit ID: EUCOLDCLEANER **SCC/AMS Code:** 40100398

Pollutant	Curr Year	Curr Amt	Curr Unit	Prev Year	Prev Amt	Prev Unit	Pct Change	Curr Year Material	Thrup Curr Amt	Thrup Curr Unit	Prev Year Material	Thrup Prev Amt	Thrup Prev Unit	Thrup Pct Change
VOC	2013	0.00	LB	2012	0.00	LB		SOLVENTS	12.00	GAL	SOLVENTS	0.00	GAL	

Michigan Air Emissions Reporting System (MAERS)

Emissions Comparison - Source Totals

AQD Source ID (SRN): B6527 **Reporting Year:** 2013

Source Name: Midland Cogeneration Venture

Source Locations: 100 E. Progress Place , MIDLAND, MI, 48640-8997

Red Text - Indicates Criteria Pollutants

SOURCE REPORTED EMISSIONS		
Pollutant	**Amount**	**Unit**
AMMONIA	10928.84	LB
CO	873482.30	LB
NOX	3190326.84	LB
PM10,FLTRBLE	8.93	LB
PM10,PRIMARY	239092.79	LB
PM2.5,FLTRBL	8.93	LB
PM2.5,PRIMRY	239092.79	LB
SO2	5639.49	LB
TOC	10.35	LB
VOC	86600.19	LB
ACENAPHTHEN		LB
ACENAPHTHYL		LB
ACETALDEHYDE		LB
ACROLEIN		LB
ANTHRACENE		LB
BENZ(A)ANTHR		LB
BENZ(GHI)PE		LB
BENZENE		LB
BENZO(A)PYRE		LB
BENZO(B)FLUO		LB
BENZO(K)FLUO		LB
BUTADIENE,13		LB
CHRYSENE		LB
CO2		LB
DIBENZAHAN		LB
ETHYLBENZENE		LB
FLUORANTHENE		LB
FLUORENE		LB
FORMALDEHYDE		LB
INDN(123CDPY		LB

AQD CALCULATED EMISSIONS		
Pollutant	**Amount**	**Unit**
AMMONIA	10928.84	LB
CO	2730056.85	LB
NOX	10914626.64	LB
PM10,FLTRBLE	8.93	LB
PM10,PRIMARY	239092.79	LB
PM2.5,FLTRBL	8.93	LB
PM2.5,PRIMRY	239092.79	LB
SO2	5639.49	LB
TOC	10.35	LB
VOC	86686.59	LB
ACENAPHTHEN	0.00	LB
ACENAPHTHYL	0.00	LB
ACETALDEHYDE	1291.76	LB
ACROLEIN	206.68	LB
ANTHRACENE	0.00	LB
BENZ(A)ANTHR	0.00	LB
BENZ(GHI)PE	0.00	LB
BENZENE	387.55	LB
BENZO(A)PYRE	0.00	LB
BENZO(B)FLUO	0.00	LB
BENZO(K)FLUO	0.00	LB
BUTADIENE,13	13.89	LB
CHRYSENE	0.00	LB
CO2	3552284796.00	LB
DIBENZAHAN	0.00	LB
ETHYLBENZENE	1033.39	LB
FLUORANTHENE	0.44	LB
FLUORENE	0.00	LB
FORMALDEHYDE	22928.39	LB
INDN(123CDPY	0.00	LB

Michigan Air Emissions Reporting System (MAERS)

Emissions Comparison - Source Totals

AQD Source ID (SRN): B6527 **Reporting Year:** 2013

Source Name: Midland Cogeneration Venture

Source Locations: 100 E. Progress Place , MIDLAND, MI, 48640-8997

SOURCE REPORTED EMISSIONS		
Pollutant	**Amount**	**Unit**
MERCURY		LB
METHANE		LB
NAPHTHALENE		LB
NITROUS OXID		LB
PAH		LB
PHENANTHRENE		LB
PRPLENE OXID		LB
PYRENE		LB
TOLUENE		LB
XYLENES ISO		LB

AQD CALCULATED EMISSIONS		
Pollutant	**Amount**	**Unit**
MERCURY	0.00	LB
METHANE	277723.71	LB
NAPHTHALENE	41.98	LB
NITROUS OXID	96880.37	LB
PAH	71.05	LB
PHENANTHRENE	0.00	LB
PRPLENE OXID	936.51	LB
PYRENE	0.00	LB
TOLUENE	4198.16	LB
XYLENES ISO	2066.79	LB

Table 2: Cumulative Data Summary -- EPA-Accepted Values

Unit/Stack/Pipe ID: 012

	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	Ozone Season	Year-to-Date
Number of Operating Hours	2,061	2,168	1,752	1,991	3,207	7,972
Operating Time (hrs)	2,054.25	2,165.25	1,740.00	1,981.00	3,193.75	7,940.50
SO2 Mass (tons)	0.7	0.7	0.5	0.6		2.5
Heat Input (mmBtu)	2,442,707	2,310,706	1,794,493	2,019,354	3,311,011	8,567,260
NOx Mass (tons)	103.5	96.2	70.7	75.6	132.8	346.0

TOTAL FUEL + NO_x EMISSIONS INCLUDE Duct Burner 12 operating

Table 3: Emission Comments

Unit/Stack/Pipe ID: 012

Quarter	Comments
QTR 4	Report made on 01/02/2014 at 14:08:13

Reporting Season: 2013

	1st Quarter		2nd Quarter		3rd Quarter		4th Quarter		Total		
Unit No.	EPA Accepted Annual NOx (tons)	EPA Accepted Annual Fuel (mmBtu)	EPA Accepted Annual NOx (tons)	EPA Accepted Annual Fuel (mmBtu)	EPA Accepted Annual NOx (tons)	EPA Accepted Annual Fuel (mmBtu)	EPA Accepted Annual NOx (tons)	EPA Accepted Annual Fuel (mmBtu)	EPA Accepted Annual NOx (tons)	EPA Accepted Annual Fuel (mmBtu)	EPA Accepted Annual SO2 (tons)
Unit 3	9.1	122,950.0	19.3	483,818.0	36.5	627,983.0	21.4	353,092.0	85.3	1,587,843.0	0.4
Unit 4	30.8	667,426.0	41.6	921,402.0	31.1	674,878.0	33.4	701,628.0	136.9	2,965,334.0	0.9
Unit 5	20.3	515,037.0	30.2	743,350.0	27.4	700,463.0	22.8	651,076.0	100.7	2,609,926.0	0.8
Unit 6	36.9	700,754.0	45.6	761,128.0	19.5	374,198.0	21.8	592,241.0	123.8	2,428,321.0	0.7
Unit 7	26.9	412,272.0	49.9	916,362.0	39.7	687,092.0	33.9	714,954.0	150.4	2,730,680.0	0.8
Unit 8	9.8	135,670.0	32.4	562,606.0	38.2	699,911.0	27.8	398,180.0	108.2	1,796,267.0	0.6
Unit 9	28.0	432,610.0	36.0	668,583.0	34.2	663,620.0	36.0	640,331.0	134.2	2,405,064.0	0.7
Unit 10	15.4	369,429.0	33.1	692,918.0	32.3	828,137.0	23.0	808,524.0	103.8	2,689,008.0	0.7
Unit 11	15.4	221,084.0	25.6	490,242.0	27.6	563,834.0	12.9	353,286.0	81.5	1,528,446.0	0.5
Unit 12	103.5	2,442,707.0	96.2	2,310,706.0	70.7	1,794,493.0	75.6	2,019,354.0	346.0	8,567,260.0	2.5
Unit 13	11.3	240,988.0	31.2	612,672.0	33.5	722,994.0	35.2	760,471.0	111.2	2,337,125.0	0.7
Unit 14	16.8	332,213.0	29.0	557,605.0	24.9	515,267.0	7.7	228,917.0	78.4	1,634,002.0	0.6
Unit 16	3.6	248,022.0	1.2	87,936.0	0.7	58,826.0	0.4	24,649.0	5.9	419,433.0	0.1
Unit 17	3.7	244,478.0	2.0	137,587.0	2.1	148,077.0	2.0	139,464.0	9.8	669,606.0	0.1
Unit 18	1.3	95,092.0	0.4	28,265.0	1.4	113,572.0	2.3	166,500.0	5.4	403,429.0	0.0
Unit 19	1.9	136,066.0	1.0	73,927.0	2.4	186,992.0	2.2	156,547.0	7.5	553,532.0	0.1
Unit 20	1.2	90,737.0	0.0	18.0	0.0	0.0	0.3	18,844.0	1.5	109,599.0	0.0
Unit 21	0.1	4,072.0	0.4	28,270.0	1.7	116,870.0	1.4	102,929.0	3.6	252,141.0	0.0
Totals	336.0	7,400,607.0	475.1	10,067,215.0	423.9	9,476,207.0	360.1	8,832,987.0	1,595.1	35,777,016.0	10.1

Annual reported to EPA. includes Duct Burner

Eng / Cems / Cemsreport / 2013 / 1st qtr / Loadbook

ECMPS Client Tool

Version 1.0 2013 Q3

United States Environmental Protection Agency (EPA)
Emissions Collection and Monitoring Plan System (ECMPS) Feedback
January 9, 2014 10:27 AM

Re: Midland Cogeneration Venture (10745) - 012

Dear Certifying Official:

Thank you for submitting your Quarterly Emissions Report using the U. S. EPA's Emissions Collection and Monitoring Plan System (ECMPS) software. This ECMPS Feedback report provides you with a detailed submission receipt, a summary of the evaluations performed on your submission, and guidance on any follow-up actions needed if any errors were found. EPA has also received a copy of this Feedback Report as part of your submission.

SUBMISSION STATUS

The EPA has received your Quarterly Emissions Report for the Facility and Monitoring Location(s) listed in Table 1 below. The Table also provides confirmation of EPA's receipt (Date, Time, etc.) of your submission. Prior to submission ECMPS evaluated your emissions report and assigned an overall "Error Status Level" to it, based on the results (see Table 1). This Feedback Report also contains Table 2, which displays EPA-Accepted Cumulative Values for emissions and other parameters.

Table 1: Submission Receipt and Error Status Level Information

Report Received for Facility ID (ORIS Code):	10745
Facility Name:	Midland Cogeneration Venture
State:	MI
Monitoring Locations:	012
Submission Type:	EM for 2013 QTR 4
Error Status Level:	No Errors
Submission Date/Time:	01/09/2014 10:27:21 AM
Submitter User ID:	bvokal
Submission ID:	736239
Resubmission Required:	No
EPA Analyst:	Louis Nichols; (202) 343-9008; nichols.louis@epa.gov

EXPLANATION OF YOUR ERROR STATUS LEVEL LISTED IN TABLE 1

The EPA has accepted your Emissions data submission. ECMPS detected no errors in your data based on the checks performed. NOTE: The ECMPS submission access window for this Emissions report has been closed. If you need to resubmit this data, please see the DATA RESUBMISSION guidance, below.

OTHER INFORMATION AND BULLETINS FROM EPA

QUESTIONS: Please contact your EPA Analyst listed in Table 1 with any questions regarding this submission and the evaluation results. If you need assistance with correcting problems in the Emissions data for this facility, please send an email to ECMPS Technical Support at: ecmps-support@camdsupport.com.

DATA RESUBMISSION: If you need to resubmit emissions data, including for previous calendar quarters, please complete the ECMPS Data Resubmission Request Form located at: http://ecmps.camdsupport.com/help_resubmit_form.shtml. Please provide detailed documentation of the reasons for the resubmission. Support staff will review your request and notify you via e-mail when the necessary database access window has been granted for your resubmission.

TECHNICAL SUPPORT: please visit the ECMPS Technical Support website at: http://ecmps.camdsupport.com for information about ECMPS software downloads, ECMPS News, Technical Support, documentation, tutorials, FAQs, and more.

ECMPS Data Reporting Instructions: for detailed information about reporting Monitoring Plan, QA/Certification Test, and Emissions data, please see the ECMPS Reporting Instructions on EPA's website at: http://www.epa.gov/airmarkets/business/ecmps/reporting-instructions.html.

If you have any questions regarding this correspondence, please feel free to contact your EPA Analyst listed in Table 1 as soon as possible. Thank you for your attention to this matter.