M4174
MAW12A

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

M417436386

FACILITY: DETROIT METROPOLITAN WAYNE COUNTY AIRPORT		**SRN / ID:** M4174
LOCATION: L.C. SMITH TERMINAL, ROMULUS		**DISTRICT:** Detroit
CITY: ROMULUS		**COUNTY:** WAYNE
CONTACT:		**ACTIVITY DATE:** 08/03/2016
STAFF: Stephen Weis	**COMPLIANCE STATUS:** Compliance	**SOURCE CLASS:** MAJOR
SUBJECT: Compliance inspection of the Detroit Metropolitan Wayne County Airport facility in Romulus. The facility is scheduled for inspection in FY 2016.		
RESOLVED COMPLAINTS:		

Location:
Detroit Metropolitan Wayne County Airport
(SRN M4174)
L.C. Smith Terminal
Romulus 48174

Date of Activity:
Wednesday, August 3, 2016

Personnel Present:

Steve Weis, DEQ-AQD Detroit Office
Bryan Wagoner, Environmental Administrator, Wayne County Airport Authority
Randy Tysar, Senior Environmental Engineer, BT Environmental Consulting

Purpose of Activity

A self-initiated inspection of the Detroit Metropolitan Wayne County Airport facility (hereinafter "Airport" or "Metro Airport") was conducted on Wednesday, August 3, 2016. The Airport facility was on my list of sources targeted for an inspection during FY 2016. The purpose of this inspection was to determine compliance of operations at the Airport facility with applicable rules, regulations and standards as promulgated by Public Act 451 of 1994 (NREPA, Part 55 Air Pollution Control), and with applicable Federal standards. The facility is also subject to the terms and conditions of Renewable Operating Permit (ROP) No. MI-ROP-M4174-2010, as well as two Permits to Install (PTI) that were issued in the time since the ROP became effective, PTI Nos. 175-10 and 109-11.

Facility Site Description

The land that is currently included as a part of the Airport stationary source is bounded by Interstate 94 to the north, Middlebelt Road to the east, Eureka Road to the south, and Vining Road to the west. Thus, the land that comprises the Airport facility covers several square miles.

Metro Airport is a full-service commercial and private airport that began operations in 1930. Operations at the Airport complex are overseen by the Wayne County Airport Authority. The Airport property contains many buildings and operations serving a wide array of functions. These include buildings/operations owned and operated by the Airport Authority and/or Wayne County; buildings/operations owned and operated by the various airlines doing business at the Airport; buildings/operations that provide support services to the Airport, the various airlines, or both. Many of these buildings/operations have been in existence for many years, and were built at various stages in the Airport's existence.

DEQ-AQD considers the buildings and operations owned and operated by the various airlines, commercial and institutional entities, and support services (an example being the airline fuel distribution facilities) located at the Airport as separate stationary sources from the buildings and operations operated and controlled by the Wayne County Airport Authority. The discussion that follows addresses the stationary source determination that was made regarding the Airport facility.

The determination of "Stationary Source" for the Airport facility

From the perspective of the applicability of air regulations, the Airport has been considered as a grouping of separate stationary sources, which include those that are directly owned, operated and controlled by the Wayne County Airport Authority, and those that are owned, operated and controlled by other entities at the Airport, independent of the Airport Authority, such as Delta Airlines. All of the operations at the Airport are contiguous to one another, and most if not all are located where they are because of the Airport and the role that these operations play in terms of supporting the Airport operations, or receiving support themselves. This would seem to classify all of the operations on the Airport property as a single stationary source.

This issue was examined in an EPA memorandum several years back. This memorandum was drafted in response to a written request dated June 15, 1989 relating to the PSD applicability and permitting requirements associated with the new airport in Denver, CO, which was in the planning stages at that time. The memorandum states in part that:

> "...if the SIC Manual grouping was the only criterion to consider, then the airport and all pollutant-emitting activities therein would be considered a single source. However, the definition requires that, for applicability purposes, emissions be aggregated not just on the basis of the SIC code but also based on a determination of "control" of the pollutant-emitting activities at a stationary source."

Based upon this logic, in the case of the Detroit Metropolitan Wayne County Airport, the issue of "control" lies with the owner/operator of each individual business/operation doing business at the Airport complex; the decision to locate there, as well as what type of business to operate, equipment to install, compliance with federal, state and local regulatory requirements, etc., lies entirely with the individual entities, themselves.

The EPA memorandum goes on to state that:

> "...In cases where an airport authority (or an equivalent managing entity) acquires property, develops plans, and establishes a contract for the construction of a new airport, the airport authority (or equivalent) would be considered to be in "control" of the airport buildings or facilities for which it establishes a construction contract."

In the case of Metro Airport, the Wayne County Airport Authority (WCAA) was established within the last 15 or so years, well after the property was acquired and plans were made to construct the Airport, and well after most of the other entities doing business at the Airport have been in operation. I have been told during past visits to the Airport that while environmental staff from the WCAA do have some level of involvement with the other entities (an example being performing inspections to check on stormwater management practices at the locations of the other entities), these other entities otherwise operate independently of the WCAA; the other entities control their day to day operations and business decisions, and they are responsible for demonstrating compliance with applicable environmental regulations and requirements at their facilities.

Facility Operations

The operations at the Airport facility that are operated and controlled by the WCAA constitute the Airport stationary source, which has been assigned the SRN M4174. Many of these operations are subject to air regulations, and most of these are included in the facility's ROP, or regulated by one of the active Permits to Install.

All of this equipment plays a part in the WCAA's role of supporting Airport operations. Most of the equipment covered by permits is combustion equipment that provides heat and steam, or electrical power. There are also some underground fuel storage tanks included in the ROP that store and distribute fuel used in Airport vehicles.

The compliance status of the permitted equipment will be discussed in greater detail in the "Permits/Regulations/Orders/Other" section of this report. The largest sources of equipment at the Airport facility are:

- The DTE Energy Wayne County Midfield Terminal, which used to be known as the Midfield Energy Center. The equipment in this building is part of the Airport complex, but it is operated by DTE Energy; it includes three boilers that are capable of firing natural gas and Jet-A fuel, and three natural gas-fired reciprocating internal combustion engines (RICE). The boilers (which have a maximum heat input capacity of 47 MMBTU/hour when firing natural gas, 45 MMBTU/hour when firing Jet-A) are equipped with low-NOx burners, while the engines, which have a maximum heat input capacity of 48.3 MMBTU/hour, are equipped with catalytic oxidizers.

- Building 611, which houses four boilers that are capable of firing either natural gas or fuel oil. The maximum rated heat input capacity of the boilers is 20.8 MMBTU/hour when firing natural gas, and 20.4 MMBTU/hour when firing fuel oil.

- A natural gas-fired combustion turbine and an associated diesel-fired engine generator that is used as a starter engine for the turbine. This combustion equipment is located outside, just south of Building 611. The turbine is rated at 145 MMBTU/hour, and is equipped with SoLoNOx dry low emissions combustion system to reduce NOx emissions. The turbine is rated at 1,482 brake horsepower, and is equipped with a turbocharger to minimize emissions of NOx and maximize power output.

The Airport operates 24 hours per day, 365 days per year. The most recent MAERS report shows 700 persons employed at the facility.

Inspection Narrative

I arrived at the facility at 1:40pm. I went to Bryan's office, where I was met by Bryan and Randy.

I briefly explained the purpose of my visit, which was to discuss the permits that are currently in place to regulate air emissions at the Airport; I wanted to review all of the applicable permit conditions, check how the facility staff demonstrates compliance with the permit conditions, and determine whether the Airport facility is complying with applicable permit requirements and regulations.

We started the permit review by going over the facility's compliance with the ROP. We first discussed the Source-Wide Conditions. The records for the source wide emission limitations are divided between stationary, mobile and portable emission units. Portable emission units were described to me as engines on wheels; an example of this would be the engines that power lighted runway "X"'s, which are used to designate that a runway is closed. Randy stated that the portable units are not affected by the Federal regulations for engines (e.g. 40 CFR Part 60 Subparts IIII and JJJJ, 40 CFR Part 63 Subpart ZZZZ). Randy tracks fuel usage and running totals of emissions calculations on a spreadsheet from fuel usage information that is tracked, tabulated and provided to him by facility staff. Natural gas usage is tracked via gas meters located throughout the facility, while liquid fuel combusted in the various engines is tracked by measuring fuel additions to fuel supply tanks. As of the end of June, the 12 month rolling total emissions for CO is 4.5 tons, and for NOx is 14.8 tons. I was told that, due to ongoing energy efficiency programs at the facility, the facility-wide combustion emissions are trending downward.

For EU009, DTE sends Randy a log of the hours that the engine was used and the amount of fuel that was combusted in the unit. Randy has been getting information in this way from DTE to track engine usage since 2003. For FG001, I was told that the units only operate for readiness checks. Randy described an issue with Engine 1 involving two occasions when the engine ran, and there was a recorded temperature drop across the catalyst. As Randy explained, when an engine fires and gets up to operating temperature, the catalyst should light up. It was determined that the facility staff that were recording the temperature did not wait for the engine to warm up properly before taking the reading. DTE trained their staff regarding taking the temperature measurement.

For FG002, I was told that the only times that the equipment fired kerosene was for testing events in December 2006, February 2007 and December 2008. For FGFuel Dispensing, Bryan and Randy told me that some changes have been made to the storage tanks addressed in the permit by this flexible group. The storage tanks that were located near the old powerhouse have been removed, as have the tanks near the facility police station (Building 358) and the Smith Terminal (Building 603). Two new storage tanks have been installed in the maintenance area. Randy agreed to complete an updated inventory of the active storage tanks at the facility, and provide a regulatory analysis of the tanks. This list will be provided to me, and it will be addressed during the renewal of the ROP, which is currently in progress.

We then discussed the two PTIs. PTI No. 109-11 addresses the installation and operation of 4 boilers, identified as EU-NEWBOILER1 through EU-NEWBOILER4, that are located in Building 611. These boilers replaced four larger boilers that were removed from service and dismantled. Randy showed me how he tracks the fuel usage of these boilers on a spreadsheet based on information that is provided to him by facility staff who read the fuel meters. Boiler 1 was the first of these boilers to commence operation, with the first usage occurring in November 2012. I was told that oil has not been used in these boilers in 2016. We went over the dates that the initial notifications of construction and start-up of these boilers was submitted, in accordance with the requirements of 40 CFR Part 60 Subpart Dc.

PTO No. 175-10 addresses the installation and operation of a natural gas-fired turbine and a diesel-fired generator that is used solely to assist in starting the turbine. I was shown records of equipment operation, which showed that the turbine has operated for 8 hours thus far in 2016, while the so-called "black start generator" has operated for 3 hours. Randy showed me the emission calculations that he performs for the turbine, as well as the operating log. The emissions data is based on the most recent compliance test, which was performed on October 1, 2015. Similar to the turbine, Randy showed be records that track the hours that the generator has operated.

After some closing discussion and a review of action items, I left the facility at 3:45pm.

Permits/Regulations/Orders/Other

Permits
The Airport facility currently has a ROP and two active DEQ-AQD Permits to Install (PTI). The following is a summary of the facility's compliance with each of these permits.

- **ROP No. MI-ROP-M4174-2010**

This ROP was issued to the Airport facility with an effective date of March 9, 2010. The Airport submitted a ROP renewal application, which was received by DEQ-AQD on September 9, 2014. The renewal application is currently being reviewed, and the renewed ROP is being drafted by DEQ-AQD staff.

The following paragraphs provide a description of the Airport facility's compliance with the terms and conditions puts forth by the ROP, with the headings representing the sections of the ROP.

Source-Wide Conditions

The Source-Wide Conditions table in the Airport's ROP puts forth facility-wide CO and NOx emission limits that include "All process equipment at the facility, including equipment covered by other permits, grand-fathered equipment and exempt equipment". This section also requires that records be kept of the fuel usage associated with the process equipment that is included in the facility-wide emission limits. I was shown the records that are kept by the facility and their consultant, and as of the end of June, the 12 month rolling calculated emissions are 4.5 tons of CO and 14.8 tons of NOx. As mentioned earlier in this report, combustion emissions are trending downward due to an ongoing energy efficiency program at the Airport. The facility is **in compliance**. A copy of the Source Totals emissions report from this year's MAERS report (which summarizes emissions activity for the 2015 calendar year) is attached to this report for reference.

EU009

This Emission Unit addresses a spark ignition reciprocating internal combustion engine firing Jet-A kerosene only (maximum heat input capacity is approximately 4.0 MMBTU/hr) driving an emergency electrical generator.

DTE tracks the usage of this engine and sends usage/hours logs and fuel usage records to Randy, who in turn compiles the information. Randy showed me the records, and showed that, as of the end of June, the 12 month rolling time period usage of the engine is 12 hours. **Compliance**.

FG001

This Flexible Group includes the Emission Units designated as EU001, EU002 and EU003, which are three natural gas-fired spark ignition reciprocating internal combustion engines rated at 48.3 MMBTU/hour. These emission units are located in the Midfield Terminal Energy Facility portion of the Airport, and are equipped with catalytic oxidizers to control emissions of carbon monoxide.

I. Emission Limits

The permit includes emission limits for NOx, CO and VOC, and the facility is required to test for these pollutants once during the term of the ROP. The last compliance test was performed on September 12, 2014, and the test demonstrated **compliance** with the emission limits.

III. Process/Operational Restrictions

The facility is **in compliance** with conditions 1 and 2; only natural gas is fired in the engines, and I was told that the catalytic oxidizers are operated and properly maintained.

V. Testing/Sampling

The facility performed a compliance test on September 12, 2014, in **compliance** with condition V.1.

VI. Monitoring/Recordkeeping

Compliance with the special conditions in this section was demonstrated during the site visit. Monthly records of natural gas usage are kept (VI.1); devices to measure the catalyst inlet temperature and pressure drop across the catalyst bed are in place and maintained (VI.2, 3 and 5); the temperature change across the catalyst is monitored and recorded (VI.4). As mentioned in the last section of this report, there was an issue with regard to condition VI.4 whereby there were two erroneous catalyst bed temperature readings – on January 27 and March 24, 2016, the catalyst bed temperature readings were taken while the engine and catalyst were still in startup mode, and the catalyst was not up to operating temperature. Facility staff were trained as to when to take the temperature reading. This deviation is included in the ROP Report Certification for the first semi-annual period of 2016, which was received via e-mail on September 14, 2016.

VII. Reporting

The facility submitted all required certification and deviation reports. **Compliance**.

VIII. Stack/Vent Restrictions

The stack parameters were not verified during this site visit. There has been no indication that these parameters have changed since the emission units were permitted.

IX. Other Requirements

Condition IX.1 has not been evaluated, as the facility has not needed to modify their CAM monitoring plan. The facility is **compliant** with their current CAM plan (IX.2).

FG002

This Flexible Group includes the Emission Units designated as EU006, EU007 and EU008, which are three high temperature water generators, each rated at 47 MMBTU/hour when firing natural gas and 45 MMBTU/hour when firing Jet-A kerosene. These emission units are located in the Midfield Terminal Energy Facility portion of the Airport, and are equipped with low NOx burners.

I. Emission Limits

The permit includes emission limits for NOx, CO and VOC, and the facility is required to test for these pollutants once during the term of the ROP. As mentioned earlier in this report, these emission units have not fired Jet-A fuel since 2008, so any emission limits that apply during periods when the boilers are firing Jet-A are not evaluated at this time. The last compliance test was performed on December 18-20, 2012 and the test demonstrated **compliance** with the emission limits. Measured NOx emissions were below the permitted limit of 0.15 lb/MMBTU (the highest emitting boiler has a 3 run average of 0.13, with no runs equaling or exceeding 0.15). Measured CO and VOC emissions had 3 run averages of less than 0.01 lb/MMBTU for all three boilers, which is well below the permitted limit of 0.20 lb/MMBTU.

III. Process/Operational Restrictions

The facility is **in compliance** with conditions 1 through 3; currently (and for some time), only natural gas is fired in the boilers.

V. Testing/Sampling

The facility performed a compliance test on December 12, 2012, in **compliance** with conditions V.1 and 2.

VI. Monitoring/Recordkeeping

Compliance with the special conditions in this section was demonstrated during the site visit. Monthly records of natural gas usage are kept (VI.1); an initial notification, as required by 40 CFR Part 60 Subpart Dc, was submitted in 2003 (VI.2). Special conditions VI.3 and 4 are not applicable at this time, as the emission units are not currently firing Jet-A fuel, and have not done so since 2008.

VII. Reporting

The facility submitted all required certification and deviation reports. **Compliance**.

VIII. Stack/Vent Restrictions

The stack parameters were not verified during this site visit. There has been no indication that these parameters have changed since the emission units were permitted.

IX. Other Requirements

Condition IX.1 is not applicable at this time, as the emission units are not currently firing Jet-A fuel.

FG003

This Flexible Group includes the Emission Units designated as EUBOILER#1 and EUBOILER#4, which were two natural gas fired boilers rated at 54.3 MMBTU/hour located in Building 611. These emission units have been permanently removed from operation and dismantled. FG003 has been marked for removal from the ROP in the renewal application.

FG004

This Flexible Group includes the Emission Units designated as EUBOILER#2 and EUBOILER#3, which were two natural gas fired boilers rated at 54.3 MMBTU/hour; EUBOILER#2 was also capable of firing No.2 fuel oil. The boilers were also located in Building 611. These emission units have been permanently removed from operation and dismantled. FG004 has been marked for removal from the ROP in the renewal application.

FG005

This Flexible Group includes the emission units designated as EUENGINE4, 8-11, 15, 17, 21, 22, 27 through 29, and 41 through 47. These units are a variety of diesel-fired engines (and one natural gas-fired engine) that are located all over the Airport facility. Most of these engines serve as emergency engines. The permitting requirements are light, consisting of monitoring and recording the fuel usage in the engines, and monitoring the sulfur content of the fuel oil used in the engines. Randy showed me the fuel usage records, which are **compliant** with conditions VI.1 and VI.2. I was told that all of the fuel-fired engines use ultra-low sulfur diesel fuel (<15ppm), and records are kept for each delivery. This is **compliant** with conditions III.1 and VI.3.

In the ROP renewal application, the facility has requested that several engines be removed from this Flexible Group – EUENGINE3, 5, 6, 7, 18, 19, 20, 23, 24, 25, 26, and 30 through 40. The reasoning for the Airport requesting that these engines be removed from the Flexible Group is they are portable (most are mounted on wheels to be moved around the Airport as needed), relatively small (some power air compressors in work areas, some are rated at 13hp), and are not subject to any Federal regulations. The usage of these emission units is still tracked, and the resultant emissions are still calculated and included as part of the requirements of the Source-Wide Conditions.

FG006

This Flexible Group includes the emission units designated as EUENGINE1 and EUENGINE2, which are portable emergency diesel-fired generator engines. It should be noted that EUENGINE1 was permanently shut down in late 2014.

I. Emission Limits

The permit includes an emission limit for NOx. The facility is required to perform a compliance emissions test for NOx once during the term of the ROP. The last compliance test was performed on Engine 2 on January 8, 2015 and the test demonstrated **compliance** with the emission limits. Measured NOx emissions had a three run average of 380 lbs. of NOx/1,000 gallons of fuel usage on the driver's side, and 390 lbs./1,000 gallon on the passenger's side, which is below the permitted limit of 550 lbs. of NOx/1,000 gallons.

II. Material Limits

It was shown to me that the facility uses well under 60,000 gallons of fuel in this engine. **Compliance.**

III. Process/Operational Restrictions

The facility is **in compliance** with conditions III.1 and 2; only diesel fuel is fired in this engine, and ultra-low sulfur diesel fuel is used by the Airport facility.

V. Testing/Sampling

The facility performed a compliance test on January 8, 2015, in **compliance** with condition V.1.

VI. Monitoring/Recordkeeping

Compliance with the special conditions in this section was demonstrated during the site visit. Monthly records of diesel fuel usage are kept (VI.1 and 2), and the sulfur content of each load of incoming fuel is kept (VI.3). This engine is not started every month; it is operated as needed.

VII. Reporting

The facility submitted all required certification and deviation reports. **Compliance**.

FG007

This Flexible Group includes the emission units designated as EUENGINE13 and EUENGINE14, which are 1,500 kW diesel-fired emergency generator sets, each rated at 2,153 hp. These two generators are located at the McNamara Terminal's parking deck.

I. Emission Limits

The permit includes an emission limit for NOx. The facility is required to perform a compliance emissions test for NOx once during the term of the ROP. The last compliance test was performed on Engine 2 on January 8, 2015 and the test demonstrated **compliance** with the emission limits. Measured NOx emissions had a three run average of 397 lbs. of NOx/1,000 gallons of fuel usage for Engine 13, and 395 lbs. of NOx/1,000 gallons of fuel usage for Engine 14, which is below the permitted limit of 515 lbs. of NOx/1,000 gallons.

II. Material Limits

It was shown to me that the facility uses well under the 136,000 gallons of fuel that these engines are limited to by condition II.1. **Compliance.**

III. Process/Operational Restrictions

The facility is **in compliance** with conditions III.1 through 5; only diesel fuel is fired in this engine, I was told that the engine is operated in accordance with manufacturer's recommendations during startup, shutdown and malfunction, and ultra-low sulfur diesel fuel is used by the Airport facility.

V. Testing/Sampling

The facility performed a compliance test on January 8, 2015, in **compliance** with condition V.1.

VI. Monitoring/Recordkeeping

Compliance with the special conditions in this section was demonstrated during the site visit. Monthly records of diesel fuel usage are kept (VI.1 and 2), and the sulfur content of each load of incoming fuel is kept (VI.5). The facility tracks any malfunctions and maintenance relating to these engines, and keeps records of the emission test results (VI.3). There have not been any times that electricity from these engines has been sold to the utility grid (VI.4).

VII. Reporting

The facility submitted all required certification and deviation reports. **Compliance**.

VIII. Stack/Vent Restrictions

The stack parameters were not verified during this site visit. There has been no indication that these parameters

have changed since the emission units were permitted.

IX. Other Requirements

The two engines in FG007 have not been modified, so the requirements of this section have not applied.

FG008

This Flexible Group includes the emission units designated as EUENGINE27 and EUENGINE28, which are 1,000 kW stationary diesel-fired emergency generators that are located at the Airport's North Terminal, and are both subject to Federal NSPS and MACT requirements.

I. Emission Limits

There are no emission limits in the permit for this Flexible Group.

II. Material Limits

There are no material limit restrictions in the permit for this Flexible Group.

III. Process/Operational Restrictions

The facility is **in compliance** with conditions III.1 through 5. The engines are certified to meet the applicable certification emission standards (III.1); they use diesel fuel that meets the 40 CFR Part 80 requirements (III.2); facility staff told me that the engines are operated and maintained to meet the emission standards in 40 CFR Part 60, Subpart IIII (III.3); the usage of the engines meets the usage limitations as described in 40 CFR 60.4211 (III.4); the sulfur content of the fuel used in the engines is compliant (III.5).

VI. Monitoring/Recordkeeping

The facility is **in compliance** with conditions VI.1 and 2. The engines are equipped with non-resettable hour meters (VI.1), and records are kept of the sulfur content of fuel used in the engines (VI.2).

VII. Reporting

The facility submitted all required certification and deviation reports. **Compliance**.

IX. Other Requirements

The equipment is **complying** with the applicable requirements of 40 CFR Part 60 Subpart IIII and 40 CFR Part 63 Subpart ZZZZ. Randy maintains an inventory of the engines/generators at the Airport facility, what regulations are applicable to them, and the requirements of any applicable regulations.

FGFUELDISPENSING

This Flexible Group includes equipment associated with the storage and dispensing of fuel used to refuel Airport vehicles. The Flexible Group description in the ROP lists six underground storage tanks and corresponding fuel dispensing equipment. The Airport has removed a couple of storage tanks, and has put in two new tanks in the maintenance area. Randy has committed to putting together an inventory of fuel storage tanks at the entire facility, and evaluating the applicability of regulations to the tanks. This information will be useful for the ROP renewal.

This Flexible Group does not include any emission or material usage limits. It consists of conditions that address how gasoline is handled via the equipment included in FGFUELDISPENSING to ensure that the gasoline handling operations are compliant with DEQ-AQD's applicable Part 6 and Part 7 administrative rules. According to the discussion during the site visit, the equipment in this Flexible Group appears to be **in compliance** with applicable permit conditions.

It was discussed that the gasoline tanks may be subject to 40 CFR Part 63, Subpart CCCCCC (National Emission Standards for Hazardous Air Pollutants for Source Category: Gasoline Dispensing Facilities). This regulation applies to area sources of hazardous air pollutants (HAPs).

FGCOLDCLEANERS

Cold cleaners were not evaluated during this site visit. This visit did not involve a physical observation of all of the different WCAA operations at the Airport facility, so no cold cleaners were observed.

- **Permit to Install No. 175-10**

This permit addresses the installation and operation of two emission units that are located outside and just to the south of Building 611:

- A natural gas-fired turbine identified as EU-Turbine. This turbine is a Titan 130-20501S Axal model. It is nominally rated at 145 MMBTU/hour, and equipped with a SoLoNOx dry low emission combustion system to control NOx emissions.
- A diesel-fired engine generator that has a nameplate capacity of 1,482 brake horsepower. The engine serves as a starter engine for the EU-Turbine; it only runs to spin the turbine util the turbine can take over on its own power. The engine is equipped with a turbocharger to minimize emissions of NOx and maximize power output.

The following provides a description of the Airport's compliance with the Special Conditions put forth by Permit to Install No. 175-10; the permit conditions are grouped under the Emission Units EU-Turbine and EU-Gen.

EU-Turbine

I. Emission Limits

The permit includes emission limits for NOx and CO, as well as an opacity limit. The facility is required to perform compliance emissions tests for NOx and CO. The permit states that the CO emission test must be performed once every 5 years (or, once during the term of the ROP); the testing frequency is not specifically stated in the permit for NOx, but this test must also be performed once during the term of the ROP. The PTI has not yet been incorporated into the ROP.

The last compliance test was performed on the turbine on October 1, 2015. This test demonstrated **compliance** with the emission limits. Measured NOx emissions were 9.3 ppm dry at 15% oxygen (vs. the permitted limit of 25 ppm), 0.03 lb/MMBTU (vs. the permitted limit of 0.06 lb/MMBTU) and 5.4 lbs. per hour (vs. the permitted limit of 8.7 lbs./hour. Measured CO emissions were 0.007 lb/MMBTU (vs. the permitted limit of 0.061 lb/MMBTU) and 1.1 lbs. per hour (vs. the permitted limit of 8.8 lbs/ per hour).

In addition, I was told that when the turbine operates, visible emission readings are performed.

II. Material Limits

The facility is **in** compliance, as only natural gas is combusted in the turbine.

III. Process/Operational Restrictions

The facility is **in compliance** with conditions III.1 through 4. III.1 limits the hours of operation of the turbine to 1,250 hour per 12 month rolling time period. The turbine has only operated 8 hours thus far in 2016. The facility has submitted a malfunction abatement plan (MAP) for the turbine, dated May 2, 2012, in compliance with III.2. A startup, shutdown and malfunction plan has been created and approved (III.3). The facility states that operation of the turbine is compliant with the requirements of 40 CFR Part 60 Subpart KKKK (Standards of Performance for Stationary Combustion Turbines).

IV. Design/Equipment Parameters

According to the facility, the maximum design heat input capacity is not in excess of 145 MMBTU/hour (**in compliance** with IV.1), and the low NOx burner is installed, maintained and operated in a satisfactory manner (**in compliance** with IV.2).

V. Testing/Sampling

The facility performed a compliance test on October 1, 2015, in **compliance** with conditions V.1 and V.2.

VI. Monitoring/Recordkeeping

Compliance with the special conditions in this section was demonstrated during the site visit. For VI.1, emission calculations are kept in spreadsheet, and use the emissions data from the October 1, 2015 emissions test. For VI.2, I was told that when the turbine operates, visible emission readings are taken and documented. The hours of operation of the turbine are tracked and logged (VI.3). The facility is tracking the information listed in condition VI.4.

VII. Reporting

The facility submitted all required certification and deviation reports. **Compliance**.

VIII. Stack/Vent Restrictions

The stack parameters were not verified during this site visit. There has been no indication that these parameters have changed since the emission unit was permitted.

EU-Gen

I. Emission Limits

The permit includes emission limits for PM, NMHC + NOx and CO. These limits are found in 40 CFR Part 60, Subpart IIII. There is no specific compliance testing requirement for the engine. It is assumed that the engines are certified, which serves to demonstrate compliance with the emission requirements of Subpart IIII.

II. Material Limits

The facility is **in** compliance, as the diesel fuel used in the engine meets the requirements in conditions II.1 and 2.

III. Process/Operational Restrictions

The facility is **in compliance** with conditions III.1 through 4. The facility said that the engine is operated and maintained in accordance with manufacturer's instructions (III.1); the engine does not operate for more than 500 hours per 12 month rolling time period (III.2), as it has operated for 3 hours thus far in 2016; and the facility states that they are complying with the applicable provisions of 40 CFR Part 60 Subpart IIII, and 40 CFR Part 63, Subpart ZZZZ (III.3 and 4).

IV. Design/Equipment Parameters

The engine is equipped with a non-resettable hour meter (**in compliance** with IV.1), and according to the facility, it is not exceeding the listed nameplate capacity (IV.2).

VI. Monitoring/Recordkeeping

The facility is **in compliance** with the special conditions in this section, as applicable records (hours of operation, fuel certification) are being kept.

VII. Reporting

The facility submitted all required certification and deviation reports. The initial notification required by condition VII.2 was submitted on September 23, 2011. **Compliance**.

VIII. Stack/Vent Restrictions

The stack parameters were not verified during this site visit. There has been no indication that these parameters have changed since the emission unit was permitted.

- **Permit to Install No. 109-11**

This permit addresses the installation and operation of four natural gas-fired fire tube boilers. These boilers are

rated at 20.8 MMBTU/hour when burning natural gas, and 20.4 MMBTU/hour when burning fuel oil. These boilers were installed in Building 611, and they take the place of the four boilers that were removed from this building, EUBOILER#1 and #4 (which made up FG003), and EUBOILER#2 and #3 (which made up FG004).

The following provides a description of the Airport's compliance with the Special Conditions put forth by Permit to Install No. 109-11; the permit conditions are grouped under the Flexible Group FG-NEWBOILERS.

I. Emission Limits

The permit includes emission limits for NOx, one that applies when the boilers are firing natural gas, and one when they are firing fuel oil. There were no specific compliance testing requirements put in the permit, and to this point, there have been no tests performed to check compliance with the NOx limits.

Compliance with conditions I.1 and I.2 is undetermined, as PTI No. 109-11 does not put forth a practical way to verify compliance with the emission limits. It will be suggested that the ROP renewal, which will incorporate the terms and conditions of PTI No. 109-11, include language requiring that the NOx emission limits be verified during the term of the ROP.

II. Material Limits

The conditions in this section address the use of fuel oil in the boilers. The facility has not used fuel oil in the boilers in 2016. The powerhouse is equipped with fuel meters that measure the amount of fuel used by the boilers.

III. Process/Operational Restrictions

The facility is **in compliance** with conditions III.1 and III.2. Only natural gas and/or fuel oil are used in the boilers, and according to facility staff, the boilers are operated and maintained in accordance with manufacturer's recommendations.

IV. Design/Equipment Parameters

According to the facility, the maximum design heat input capacity of each boiler is not in excess of 20.8 MMBTU/hour (**in compliance** with IV.1)

VI. Monitoring/Recordkeeping

The facility is **in compliance** with condition VI.1, as records of the fuel oil certification are kept for fuels used at the facility. The facility also tracks the amount of fuel used in the boilers, **in compliance** with condition VI.2.

VII. Reporting

The facility submitted notification of the date of construction of each of the boilers, as well as the startup dates. Notification of startup for Boiler 1 was dated January 8, 2013, for Boiler 2 - January 30, 2013, and for Boilers 3 and 4 – September 16, 2013. **Compliance**.

VIII. Stack/Vent Restrictions

The stack parameters were not verified during this site visit. There has been no indication that these parameters have changed since the emission unit was permitted.

IX. Other Requirements

Condition IX.1 requires that the permittee comply with all applicable requirements of their ROP. The information reviewed as part of this site visit indicates that the Airport facility is **in compliance** with their ROP, and thus with this permit condition.

Regulations
The Airport facility is a synthetic minor facility in regards to the Prevention of Significant Deterioration (PSD) regulations of Title 40 of the Code of Federal Regulations, Part 52.21. This is accomplished through the NOx and CO emission limits put forth in the Source-Wide Conditions section of the facility's ROP.

Of the many engines and generators operating at the facility, some are subject to the requirements of 40 CFR

Part 63 Subpart ZZZZ, 40 CFR Part 60 Subpart IIII and 40 CFR Part 60 Subpart JJJJ. A document was included with the ROP renewal application that lists the engines at the facility, and discusses the regulatory requirements. A copy of the discussion from the ROP renewal application relating to the engines/generators is attached to this report. It includes forms that were created by the Airport facility's consultant to be used to track compliance of the engines that are subject to the Federal regulations.

The natural gas-fired turbine is subject to 40 CFR Part 60 Subpart KKKK.

The boilers operating at the facility are subject to 40 CFR Part 60 Subpart Dc, and they are likely subject to 40 CFR Part 63 Subpar t DDDDD. A discussion was included with the ROP renewal application that lists the boilers at the Airport facility, and summarizes the requirements that Subpart DDDDD will impart on these boilers. A copy of the discussion is attached to this report for reference.

The fuel dispensing equipment is currently subject to the requirements of Parts 6 and 7 of the Michigan Administrative Rules. Since the Airport facility is considered a major source of HAPs, not an area source, the fuel dispensing equipment will not be subject to 40 CFR Part 63, Subpart CCCCCC.

Compliance Determination

Based upon the results of the August 3, 2016 site visit and review of the facility's compliance records, the Detroit Metropolitan Wayne County Airport facility in Romulus appears to be **in compliance** with applicable rules and regulations, including with the terms and conditions of ROP No. MI-ROP-M4174-2010, and Permit to Install Nos. 175-10 and 109-11.

Attachments to this report: a facility map from the application for PTI No. 109-11; a print out of the Source Totals emission report from the latest MAERS submittal; a print out of the listing of the reciprocating internal combustion engines (RICE) and boilers at the facility, and the regulatory discussion that accompanied them, as found in the ROP renewal application and authored by Randy Tysar of BT Environmental Consulting; additional information relating to the generators and turbine, including usage records, opacity records and maintenance records; an updated listing of the underground fuel storage tanks that are part of the fuel dispensing operations at the facility.

NAME Steve Wells DATE 9/28/16 SUPERVISOR JK