

DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION
ACTIVITY REPORT: On-site Inspection

B641571897

FACILITY: WILLIAMS INTERNATIONAL	SRN / ID: B6415
LOCATION: 2280 W MAPLE RD, WALLED LAKE	DISTRICT: Warren
CITY: WALLED LAKE	COUNTY: OAKLAND
CONTACT: Tom Littlefield , Facilities Engineering Manager	ACTIVITY DATE: 11/17/2023
STAFF: Iranna Konanahalli	COMPLIANCE STATUS: Compliance
SUBJECT: FY 2024 FCE scheduled on-site inspection of Williams International ("Williams") located at 2280 E West Maple Road, Walled Lake, MI 48390-3828.	SOURCE CLASS: SM OPT OUT
RESOLVED COMPLAINTS:	

Williams International (B6415)
2280 E West Maple Road
Walled Lake, MI 48390-3828

Contacts:

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4. **Matt Donar** (Phone: 248-960-2457; Cell: NA; [E-mail: mDonar@Williams-int.com](mailto:mDonar@Williams-int.com))
Fuels Coordinator Engineer,
5. **Tome Littlefield** (Phone: 248-960-2550; Cell: NA; [E-mail: tLittlefield@Williams-int.com](mailto:tLittlefield@Williams-int.com)), Facilities director,

Active permit: PTI No. **515-93C** dated October 23, 2013, for indoor and outdoor jet / aircraft engine testing facilities. : PTI No. 515-93C is deemed to be a **de facto ROP opt-out / Synthetic Minor permit** because it has a Potential-to-Emit (PTE) limit of about 40 tons of nitrogen oxides (NO_x) per year (PTI No. 515-93C, FG-Testcells, 4.1a & 4.1b limits: 38.4 tons of NO_x and 18 tons of SO₂ per year).

PTI Voids: Based upon the FY 2024 inspection and the e-mail (Tuesday, December 26, 2023, 12:49 PM, Konanahalli, Irranna (EGLE) KONANAHALLII@michigan.gov), the following permits have been voided:

1. **PTI No. 280-93:** Equip. removed. 1 Spray Booth; 2 Grinders; and 2 Ovens; and 1 bearing cleaning process.
2. **PTI No. 554-93:** Equip. removed. 4 Wax melting pots; 2 Injection machines; 1 dewax furnace; 1 Sand mold hopper & spree. Approved on 07/27/1993.
3. **PTI No. 507-93:** Equip. removed. Laser welders; brazing furnace; EDM (Electrical Discharge Machine) Drill Machines; 2 Laser Cut Machines and Blue M ovens. Approved on 9/14/1993.
4. **PTI No. 254-03:** Equip. removed. 1 Bake out oven for removing binder and sand from aluminum castings. Approved on 01/16/2004.
5. **PTI No. 289-02:** Equip. removed. 1 Flame spray booth for coating engines with molting metal alloy and/or ceramic, controlled with a cartridge filter followed by a high efficiency particulate arrestor.

MiEnviro: Williams International (B6415) will be added to the list of air pollution sources that must report annual emissions using MiEnviro software because PTI No. 515-93C is deemed a Synthetic Minor Permit especially for nitrogen oxide emissions from aircraft engines test cells.

On **November 17, 2023**, I conducted a level-2 **FY 2024 FCE scheduled on-site inspection** of Williams International (“Williams”) located at 2280 E West Maple Road, Walled Lake, MI 48390-3828. This source is uniquely identified by the Air Quality Division with the State Registration Number (SRN) of B6415. The inspection was conducted to determine compliance with the Federal Clean Air Act; Article II, Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994, PA 451; and Michigan Department of Environment Great Lakes and Energy, Air Quality Division (EGLE-AQD) administrative rules; and the conditions of Permit to Install (PTI) No. **515-93C** for indoor and outdoor engine testing facilities.

Williams International is a manufacturer of small gas turbine. Williams manufactures jet engines for cruise missiles and small jet aircraft. In 1954, Dr. Sam B. Williams founded Williams Research Corporation in Birmingham, Michigan. In 1981, the company became Williams International, a privately-owned company. Williams develops and manufactures jet engines (gas turbine engines) for both military (Aircraft, Aeronautics and Missile Systems) and commercial aircraft applications.

PTI No. 515-93C Compliance**PTI No. 515-93C Emission Units (EUs)**

Emission Unit ID	Emission Unit Description	Flexible Group ID	
EU-Testcell-A	Indoor engine test cells exhausted through type A stacks	FG-Testcells	
EU-Testcell-B	Indoor engine test cells exhausted through type B stacks	FG-Testcells	
EU-Testcell-C&D	Indoor engine test cells exhausted through type C and/or D stacks	FG-Testcells	
EU-Testcell-OTF	Outdoor engine testing facilities		
<p>B9 is either vented through a main stack or a scrubber. The scrubber consists of spraying solid particles (powder: adsorbent or Sorbent) from the top to remove contaminant gases. The scrubber is followed by a baghouse to further remove fine particulate matter escaping from the scrubber. This operation has not been done for over a year.</p> <p>Aviation Turbine Fuel (ATF) fuel tank levels are monitored and reconciled with contemporaneous fuel usage meters. All fuels are ATF.</p>			

PTI No. 515-93C, EU-Testcell-A

EU-Testcell-A (FG-Testcells): Indoor engine test cells exhausted through type A stacks.

CY 2022: Daily & monthly maximum fuel usage occurred in October 2022 (391.5 gallons per day & 1,399.8 gallons per month) (PTI No. 515-93C, EU-Testcell-A, 1.1a limit: 722 gallons per day) & 8,227.2 gallons per year. (PTI No. 515-93C, EU-Testcell-A, 1.1b limit: 112,574 gallons per year).

CY 2023: Daily & monthly maximum fuel usage occurred in March 2023 (569.7 gallons per day & 2,580.4 gallons per month) (PTI No. 515-93C, EU-Testcell-A, 1.1a limit: 722 gallons per day) & 7,008.4 gallons per year (PTI No. 515-93C, EU-Testcell-A, 1.1b limit: 112,574 gallons per year).

The daily, monthly, annual fuel usage record are kept.

The emissions are discharged via eight (8) stacks SV-Testcell-A1-A8.

In A-wing component test cell, Williams does not burn any fuel and stacks have been removed a couple of decades ago.

PTI No. 515-93C, EU-Testcell-B

EU-Testcell-B (FG-Testcells): Indoor engine test cells exhausted through type B stacks.

CY 2022: Daily & monthly maximum fuel usage occurred in September 2022 (2,695.5 gallons per day & 19,083.0 gallons per month) (PTI No. 515-93C, EU-Testcell-B, 2.1a limit: 5,556 gallons per day) & 120,613.2 gallons per year. (PTI No. 515-93C, EU-Testcell-B, 2.1b limit: 176,065 gallons per year).

CY 2023: Daily & monthly maximum fuel usage occurred in November & January 2023 (2,082.4 (Nov) gallons per day & 20,694.3 (Jan) gallons per month) (PTI No. 515-93C, EU-

Testcell-B, 2.1a limit: 5,556 gallons per day) & 140,874.7gallons per year max (PTI No. 515 -93C, EU-Testcell-B, 2.1b limit: 176,065 gallons per year).

CY 2023 Sulfur in fuel: API = 44.2. Specific Gravity SG = 0.8054. Highest sulfur content in ATF = 0.06% << 0.125% S (PTI No. 515-93C, EU-Testcell-B, 2.1c limit: 0.125% Sulfur)

The daily, monthly, annual fuel usage record are kept.

The emissions are discharged via two (2) stacks SV-Testcell-B1-B2.

PTI No. 515-93C, EU-Testcell-C&D

EU-Testcell-C&D (FG-Testcells): Indoor engine test cells exhausted through type C and/or D stacks.

CY 2022: Daily & monthly maximum occurred in November 2022 and January 2022 (2,729.6 gallons per day (November) & 28,497.7 gallons per month (January)) (PTI No. 515-93C, EU-Testcell- C&D, 3.1a limit: 10,805 gallons per day). 150,200.8 gallons per year. (PTI No. 515-93C, EU-Testcell-C&D, 3.1b limit: 704,260 gallons per year).

CY 2023: Daily & monthly maximum occurred in November 2023 & January 2023 (2,082.4 gallons per day (November) & 20,694.3 gallons per month (January)) (PTI No. 515-93C, EU -Testcell-C&D, 3.1a limit: 10,805 gallons per day). 46,556.2 gallons per year. (PTI No. 515-93C, EU-Testcell-C&D, 3.1b limit: 704,260 gallons per year).

The daily, monthly, annual fuel usage record are kept.

The emissions are discharged via three (3) stacks SV-Testcell-C1-C3.

PTI No. 515-93C, FG-Testcells

FG-Testcells (EU-Testcell-A, EU-Testcell-B, EU-Testcell-C&D, EU-Testcell-OTF): Indoor and Outdoor Engine Test Cells.

Since sulfur content in is substantially less than the limit (0.06% << 0.125%) and annual fuel usage is significantly less the limits (280,084.20 << 887,574 gallons per 12-month period), annual nitrogen oxides and sulfur dioxide limits deemed to have been met (PTI No. 51593C, FG-Testcells, 4.1a & 4.1b limits: 38.4 tons of NO_x and 18 tons of SO₂ per year)

As a matter of fact, Williams emitted 14.47 (highest for CY 2022) in October 2022 and 13.68 (highest for CY 2023) in January 2023, tons of nitrogen oxides per year (<< 38.4 tons of NO_x) (PTI No. 515-93C, FG-Testcells, 4.1a & 4.1b limits: 38.4 tons of NO_x and 18 tons of SO₂ per year)

Also, Williams emitted 2.50 (highest for CY 2022) in October 2022 and 2.37 (highest for CY 2023) in January 2023, tons of sulfur dioxide per year (<< 18 tons of SO₂ per year). (PTI No. 515-93C, FG-Testcells, 4.1a & 4.1b limits: 38.4 tons of NO_x and 18 tons of SO₂ per year)

CY 2022: Total fuel usage 280,084.20 gallons per year (PTI No. 515-93C, FG-Testcells, 4.2 limits: 887,574 gallons per 12-month period)

CY 2023: Total fuel usage 194,465.70 gallons per year (PTI No. 515-93C, FG-Testcells, 4.2 limits: 887,574 gallons per 12-month period)

The fuel usage, sulfur content, records are kept. 12-month rolling NO_x and SO₂ emission calculations records are kept using MS Excel.

Conclusion

Williams is in compliance with the permit (PTI No. 515-93C).

NAME *J Sllennan*

DATE 05/16/2024

SUPERVISOR *Joyce*