



# Maricopa County

Air Quality Department

AIR QUALITY DEPARTMENT  
1001 North Central Avenue  
Phoenix, AZ 85004

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MARICOPA COUNTY AIR QUALITY DEPARTMENT

Engineering and Permitting Division

1001 N. Central Avenue, Suite 400, Phoenix, Arizona 85004

Phone: (602) 506-6010

Fax: (602) 506-6985

**AIR QUALITY PERMIT TO OPERATE AND/OR CONSTRUCT**

*(As required by Title 49, Chapter 3, Article 2, Section 49-480, Arizona Revised Statutes)*

**ISSUED TO**

**DIGITAL REALTY TRUST CHANDLER, LLC**

**2121 S. PRICE RD  
CHANDLER, AZ 85248**

*This air quality permit to operate and/or construct does not relieve the applicant of the responsibility of meeting all air pollution regulations.*

THE PERMITTEE IS SUBJECT TO THE SPECIFIC AND GENERAL CONDITIONS IDENTIFIED IN THIS PERMIT.

**PERMIT NUMBER:** 000258

**REVISION DATE:** xx/xx/xxxx

**REVISION NUMBER:** 3.0.0.0

**EXPIRATION DATE:** 02/29/2021

**Todd Martin, Non-Title V Permit Supervisor**

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Any cited regulatory paragraphs or section numbers refer to the version of the rules and regulations that were in effect on the first date of public notice of the applicable Permit Condition unless specified otherwise. However, in the event the rules and regulations are amended during the term of this Permit, the amended rules and regulations shall apply to this Permit. Whenever the term, Control Officer, is used in this Permit it shall be interpreted to mean, Control Officer or designated representative. Where the term "Rule" appears, it shall be construed to mean "Maricopa County Air Pollution Control Regulations" unless otherwise noted.

## **SPECIFIC CONDITIONS**

### **Cat 3516B, Cummins QSK60-G6 and MTU G81 Emergency Engines**

#### **1. Allowable Emissions:**

The Permittee shall not allow emissions into the atmosphere in excess of any of the following:

	Twelve Month Rolling Total Emission Limits (tons/yr)
Carbon Monoxide (CO)	33.42
Nitrogen Oxide (NOx)	58.39
Volatile Organic Compounds (VOC)	4.74
Particulate Matter <10 Micron Diameter (PM <sub>10</sub> )	2.08
Particulate Matter <2.5 Micron Diameter (PM <sub>2.5</sub> )	2.08
Sulfur Oxides (SOx)	0.05

The 12-month rolling total emissions shall be calculated monthly within 15 days following the end of each calendar month by summing the emissions over the most recent 12 calendar months. The Permittee shall keep this emission record on-site for inspection or submittal upon request.

[Rule 220 §302.2] [Locally Enforceable Only]

#### **2. Operational Limitations:**

- a. The Permittee shall limit the total hours of operation of each emergency engine to no more than 100 hours per any twelve consecutive months including hours operated for the purposes of maintenance checks and readiness testing. The daily trigger of Best Available Control Technology (BACT) has been exempted for emergency engines.

[Rule 324 §§104.5, 205][40 CFR §60.4211(f)(2)]

- b. The emergency engines shall not be used for peak shaving. The emergency engines shall only be used for the following purposes:

- i. For power when normal power service fails from the serving utility or if onsite electrical transmission or onsite power generation equipment fails;
- ii. Reliability-related activities such as engine readiness, calibration, or maintenance or to prevent the occurrence of an unsafe condition during electrical system maintenance as long as the total number of hours of the operation does not exceed 100 hours per calendar year per engine as evidenced by an installed non-resettable hour meter;

[SIP Rule 324 §104] [40 CFR §60.4211(e)]

#### **3. Fuel Limitations:**

- a. The Permittee shall not use any fuel that contains more than 0.05% sulfur by weight, alone or in combination with other fuel.

[SIP Rule 324 §301.1]

- b. The Permittee shall only use diesel fuel that has a minimum cetane index of 40 or a maximum aromatic content of 35 volume percent; and has a maximum sulfur content of 15 parts per million (ppm) in the following engines: Cummins QSK60-G6 Emergency Engines.

[40 CFR §§60.4207(a,b), 80.510(a,b)]

**4. Monitoring:**

The Permittee shall install a non-resettable hour meter prior to startup of the engines. The Permittee shall not operate the engines unless the cumulative run time meter is installed and working properly.

[Rule 220 §302.4] [40 CFR §60.4209]

**5. Opacity:**

a. The Permittee shall not discharge into the ambient air from any single source of emissions any air contaminant, other than uncombined water, in excess of 20% opacity, except as specified in Permit Condition 7.

b. Compliance with visible emissions shall be determined using the techniques specified in EPA Reference Method 9, 40 CFR Part 60, Appendix A.

[SIP Rule 324 §§303, 503.8]

**6. New Source Performance Standards:**

If the Permittee modifies or reconstructs a stationary compression ignition internal combustion engine, that engine shall comply with all applicable requirements of 40 CFR 60 Subpart III.

[40 CFR §60.4200(a)(3)]

**7. NSPS Subpart III Requirements:**

a. The Cummins QSK60-G6 engines shall be certified to meet EPA Tier 2 emission standards.

[40 CFR §60.4205]

b. Additional Opacity Standard:

For 2007 model year and later CI ICE rated 3,000 HP or less and 2011 model year and later CI ICE rated greater than 3,000 HP, the Permittee shall not allow exhaust opacity to exceed 15% during the lugging mode. This restriction does not apply to fire pump engines.

[40 CFR §§60.4205, 60.4202, 89.113(a)(2)]

c. Crankcase Emissions:

For the engines specified in Subsection b of this Permit Condition, the Permittee shall not discharge crankcase emissions into the ambient atmosphere, unless such crankcase emissions are permanently routed into the exhaust and included in all exhaust emission measurements. This provision does not apply to engines using turbochargers, pumps, blowers, or superchargers for air induction or fire pump engines.

[40 CFR §§60.4205, 89.112(e)]

d. The Permittee shall operate and maintain each engine according to the manufacturer's written instructions, or procedures developed by the Permittee that are approved by the engine manufacturer, over the entire life of the engine.

[40 CFR §§60.4211(a), 60.4206]

e. The Permittee shall only change those engine settings that are permitted by the manufacturer.

[40 CFR §60.4211(a)]

f. The Permittee shall meet the requirements of 40 CFR Part 89 as it applies.

[40 CFR §60.4211(a)]

**8. Emergency Provisions:**

The Permittee shall comply with all record keeping and reporting requirements of Rule 130 (Emergency Provisions) and Rule 140 (Excess Emissions) if the allowable hours of operation are exceeded.

[Rule 130; Rule 140]

**MTU/DDC G83 Prime Engines - SRP PowerPartner™ Program****9. Allowable Emissions:**

The Permittee shall not allow emissions into the atmosphere in excess of any of the following:

	Twelve Month Rolling Total Emission Limits (tons/yr)
Carbon Monoxide (CO)	20.33
Nitrogen Oxide (NO <sub>x</sub> )	31.53
Sulfur Oxides (SO <sub>x</sub> )	0.04
Particulate Matter <10 Micron Diameter (PM <sub>10</sub> )	1.16
Particulate Matter <2.5 Micron Diameter (PM <sub>2.5</sub> )	1.16
Volatile Organic Compounds (VOC)	1.28

The 12-month rolling total emissions shall be calculated monthly within 15 days following the end of each calendar month by summing the emissions over the most recent 12 calendar months. The Permittee shall keep this emission record on-site for inspection or submittal upon request.

[Rule 220 §302.2]

**10. BACT Determination:**

The Permittee shall only install and/or operate EPA Tier II certified engines as demand response engines.

[Rule 241 §301.2]

**11. Operational Limitations:**

a. The Permittee shall limit the operation of each generator to no more than 350 hours per any twelve consecutive month time period.

[Rule 220 §302.2]

b. The Permittee shall operate and maintain the engine according to the manufacturer's written instructions, or procedures developed by the Permittee that are approved by the engine manufacturer, over the entire life of the engine.

[40 CFR §60.4211(a)][40 CFR §60.4206]

c. The Permittee shall only change those engine settings that are permitted by the manufacturer.

[40 CFR §60.4211(a)]

d. The Permittee shall meet the requirements of 40 CFR parts 89, 94, or 1068, as they apply.

[40 CFR §60.4211(a)]

e. Fuel Sulfur Content:

f. The Permittee shall use diesel fuel that meets the following requirements of 40 CFR 80.510(a), except that any existing diesel fuel purchased (or otherwise obtained) prior to October 1, 2010, may be used until depleted:

i. A minimum cetane index of 40 or a maximum aromatic content of 35 volume percent; and

ii. Maximum sulfur content of 15 parts per million (ppm).

[40 CFR §60.4207(a,b)] [40 CFR §80.510(a,b)]

**12. NSPS Subpart IIII Emissions Limitations/Standards:**

a. Smoke standards: Exhaust opacity shall not exceed the following limits:

i. 15% during the lugging mode; and

ii. 20% during all other modes.

[40 CFR §60.4205(b), 40 CFR §89.113]

b. Crankcase emissions: Naturally aspirated engines shall not discharge crankcase emissions into the ambient atmosphere, unless such crankcase emissions are permanently routed into the exhaust and

included in all exhaust emission measurements. This provision does not apply to engines using turbochargers, pumps, blowers, or superchargers for air induction.

[40 CFR §60.4205(b)]

### 13. Good Combustion Practices/Tuning Procedure:

The Permittee shall conduct preventative maintenance or tuning procedures recommended by the engine manufacturer to ensure good combustion practices to minimize NOx emissions. The tuning procedure shall include all of the following, if so equipped, and appropriate to the engine type:

- a. Lubricating Oil and Filter: change once every three months or after no more than 300 hours of operation, whichever occurs last;
- b. Inlet Air Filter: clean once every three months or after no more than 300 hours of operation and replace every 1,000 hours of operation or every year, whichever occurs last;
- c. Fuel Filter: clean once every year or replace (if cartridge type) once every 1,000 hours of operation, whichever occurs last;
- d. Check and adjust the following once every year or after no more than 1,000 hours of operation, whichever occurs last:
  - i. Intake and exhaust valves
  - ii. Spark plugs (if so equipped)
  - iii. Spark timing and dwell or fuel injection timing (if adjustable), and
  - iv. Carburetor mixture (if adjustable).
- e. Spark Plugs and Ignition Points: replace after 3,000 hours of operation or every year whichever occurs last;
- f. Coolant: change after 3,000 hours of operation or every year whichever occurs last; and
- g. Exhaust System: check for leaks and/or restrictions after 3,000 hours of operation or every year whichever occurs last.

[Rule 324 §302]

### 14. Monitoring:

- a. The Permittee shall install a non-resettable hour meter prior to startup of the engine(s). The Permittee shall not operate the engine(s) unless the cumulative run time meter is installed and working properly.  
[40 CFR §60.4209(a)][Rule 220 §302.4]
- b. If the Permittee operates an engine equipped with a diesel particulate filter to comply with the emission standards in §60.4204, the diesel particulate filter must be installed with a backpressure monitor that notifies the owner or operator when the high backpressure limit of the engine is approached.

[40 CFR 60.4209(b)]

### 15. Opacity:

- a. The Permittee shall not discharge into the ambient air from any single source of emissions any air contaminant, other than uncombined water, in excess of 20% opacity.
- b. Compliance with visible emissions shall be determined using the techniques specified in EPA Reference Method 9, 40 CFR Part 60, Appendix A.

[SIP Rule 324 §§303, 503.8]

### 16. Reporting:

Owners and operators of non-emergency stationary CI ICE that are greater than 2,237 KW (3,000 HP), or have a displacement of greater than or equal to 10 liters per cylinder, or are pre-2007 model year engines that are greater than 130 KW (175 HP) and not certified, must meet the requirements of Subparts [a] – [b] of this Condition.

- a. The Permittee shall submit an Initial Notification:
  - i. The initial notification shall contain the information specified below:
    - 1) Name and address of the owner or operator;
    - 2) The address of the affected source;
    - 3) Engine information including make, model, engine family, serial number, model year, maximum engine power, and engine displacement;
    - 4) Emission control equipment; and
    - 5) Fuel used.
  - ii. Notifications shall be submitted to the following:
    - 1) Maricopa County Air Quality Department, Attn: Non-Title V Permitting Supervisor, 1001 Central Ave., Suite 400, Phoenix, AZ 85004-1944.
- b. The Permittee shall maintain the following records for a period of at least five years from the date of the records and make them available to the Control Officer upon request:
  - i. All notifications submitted to comply with this subpart and all documentation supporting any notification.
  - ii. Maintenance conducted on the engine.
  - iii. If the stationary CI internal combustion is a certified engine, documentation from the manufacturer that the engine is certified to meet the emission standards.
  - iv. If the stationary CI internal combustion is not a certified engine, documentation that the engine meets the emission standards.

[40 CFR § 63.4214(a)]

## **Recordkeeping Requirements**

### **17. Recordkeeping:**

- a. The Permittee shall maintain the following records for a period of at least five years from the date of the records and make them available to the Control Officer upon request:
  - i. An initial one time entry listing the particular engine combustion type (compression or spark-ignition or rich or lean burn); manufacturer; model designation, rated brake horsepower, serial number and where the engine is located on the site.
  - ii. Monthly rolling twelve month total of hours of operation, including hours of operation for testing, reliability and maintenance.
  - iii. Fuel type and sulfur content of fuel.
  - iv. An explanation for the use of the engine if it is used as an emergency engine.

[SIP Rule 324 §502][40 CFR §§60.4214(b)]
- b. The Permittee shall maintain a copy of manufacturer data for each engine indicating compliance with the standards in Condition 7.

[Rule 220 §302.7][40 CFR §§60.4211(b)(3)]
- c. For each engine listed in Permit Condition 7, the Permittee shall maintain an onsite copy of the manufacturer's written instructions, or procedures developed by the Permittee in accordance with these Permit Conditions and make it available to MCAQD upon request.

[Rule 220 §302.7]
- d. An owner or operator of a prime engine shall maintain an annual record of good combustion practices

according to Rule 324 section 302.

[Rule 324 §302] [Rule 220 §302.7]

- e. If the Control Officer requests proof of the sulfur content of fuel burned in the engines, the Permittee shall submit fuel receipts, contract specifications, pipeline meter tickets, Material Safety Data Sheets (MSDS), fuel supplier information or purchase records, if applicable, from the fuel supplier, indicating the sulfur content of the fuel oil. In lieu of these, testing of the fuel oil for sulfur content to meet the applicable sulfur limit shall be permitted as evidence of compliance.

[Rule 220 §302.13] [Rule 324 §501.4]

## **GENERAL CONDITIONS**

### **18. Posting of Permit:**

This Permit shall be posted in a clearly visible and accessible location on the site where the equipment is installed.

[Rule 200 §312]

### **19. Compliance:**

- a. The issuance of any Permit or Permit revision shall not relieve the Permittee from compliance with any Federal laws, Arizona laws, or the County or SIP Rules, nor does any other law, regulation or permit relieve the Permittee from obtaining a Permit or Permit revision required under the County Rules.

[Rule 200 §309][Rule 220 §406.3][Locally Enforceable Only]

- b. The Permittee shall comply with all conditions of this Permit including all applicable requirements of Federal laws, Arizona laws, and Maricopa County Air Pollution Control Rules and Regulations now in effect and as amended in the future. Any Permit noncompliance is grounds for enforcement action, Permit termination or revocation, or for denial of a renewal application. In addition, non-compliance with any federally enforceable requirements constitutes a violation of the Clean Air Act.

[A.A.C. R18-2-306.A.8.a][Locally Enforceable Only]

- c. It shall not be a defense for the Permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with these Permit Conditions.

[Rule 220 §302.10][A.A.C. R18-2-306.A.8.b][Locally Enforceable Only]

- d. Rights and Privileges: This Permit does not convey any property rights or exclusive privilege of any sort.

[Rule 220 §302.12][Locally Enforceable Only]

- e. Fees: The Permittee shall pay all fees to the Control Officer in accordance with Rule 280. No permit or permit revision is valid until the applicable permit fee has been received and until the permit is issued by the Control Officer.

[Rule 200 §409][Rule 280 §302][A.R.S. 49-480(D)][SIP Rule 28]

### **20. Malfunctions, Emergency Upsets, and Excess Emissions:**

An affirmative defense of an emergency, excess emission, and/or during startup and shutdown shall be demonstrated through properly signed, contemporaneous operating logs, or other relevant evidence as outlined in Rule 130 for emergencies and Rule 140 for excess emissions.

[Rule 130 §§201, 400][Rule 140 §§400, 500][SIP Rule 140]

### **21. Revision / Reopening / Revocation:**

The Permit may be revised, reopened, revoked and reissued, or terminated for cause. The filing of a request by the Permittee for a permit revision, revocation and reissuance, or termination, or of a notification of planned changes or anticipated noncompliance does not stay any Permit Condition.

[Rule 220 §302.11][Locally Enforceable Only]

### **22. Records:**

- a. The Permittee shall furnish information that the Control Officer may request in writing to determine

whether cause exists for revising, revoking and reissuing this permit, or terminating this permit, or to determine compliance with this permit. The information shall be provided in a timeframe specified by the Control Officer. Upon request, the Permittee shall also furnish to the Control Officer copies of records required to be kept by this Permit. For information claimed to be confidential, the Permittee shall furnish a copy of such records directly to the Administrator along with a claim of confidentiality.

[Rule 220 §302.13][SIP Rule 40]

- b. If the Permittee fails to submit any relevant facts or has submitted incorrect information in a permit application, the Permittee shall, upon becoming aware of such failure or incorrect submittal, promptly submit such supplementary facts or corrected information. In addition, the Permittee shall provide additional information as necessary to address any requirements that become applicable to the source after the date a complete application is filed but prior to release of a proposed permit. Willful misrepresentation of facts in a permit application is cause for revocation or denial of a permit.

[Rule 220 §§301.5, 301.6][Locally Enforceable Only]

### 23. Right to Entry:

- a. The Control Officer during reasonable hours, for the purpose of enforcing and administering County or SIP Rules or the Clean Air Act, or any provision of the Arizona Revised Statutes relating to the emission or control prescribed pursuant thereto, may enter every building, premises, or other place, except the interior of structures used as private residences. Every person is guilty of a petty offense under A.R.S. 49-488 who in any way denies, obstructs or hampers such entrance or inspection that is lawfully authorized by warrant.
- b. The Permittee shall allow the Control Officer or his designated representatives, upon presentation of proper credentials (e.g., Maricopa County Air Quality Department identification) and other documents as may be required by law, to:
- i. Enter upon the Permittee's premises where a source is located or emissions-related activity is conducted, or where records are required to be kept pursuant to the conditions of the permit;
  - ii. Have access to and copy, at reasonable times, any records that are required to be kept pursuant to the conditions of the permit;
  - iii. Inspect, at reasonable times, any sources, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required pursuant to this permit;
  - iv. Sample or monitor, at reasonable times, substances or parameters for the purpose of assuring compliance with the Permit or other applicable requirements; and
  - v. To record any inspection by use of written, electronic, magnetic, and photographic media.

[Rule 100 §105][Rule 220 §302.17-21][SIP Rule 43]

### 24. Severability:

The rules, paragraphs, clauses, provisions, and/or sections of this Permit are severable, and, if any rule, paragraph, clause, provision, and/or section of this Permit is held invalid, the remainder of this Permit shall not be affected thereby.

[Rule 220 §302.9][SIP Rule 80]