PIMA COUNTY DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR PROGRAM

33 N. Stone Avenue, Suite 700 • Tucson, Arizona 85701 • Phone: (520) 724-7400

AIR QUALITY OPERATING PERMIT

(As required by Title 17.12, Article II, Pima County Code)

ISSUED TO

FREEPORT MCMORAN CORPORATION
3350 E. VALENCIA ROAD
TUCSON, ARIZONA 85706

This air quality operating permit does not relieve applicant of responsibility for meeting all air pollution regulations

THIS PERMIT ISSUED SUBJECT TO THE FOLLOWING: **Conditions contained in the Specific Conditions**

PERMIT NUMBER **6154** PERMIT CLASS **II**

ISSUED: **September 12, 2013** EXPIRES: **September 11, 2018**

Mukonde Chama, P.E. Air Permits Manager, PDEQ

SIGNATURE TITLE

SUMMARY

This air quality operating permit is issued to Freeport-McMoran Corporation's Technology Center – Tucson (TCT). This "new" facility is a Research and Development (R&D) center and will contain mostly existing equipment. The equipment will be relocated from Freeport's Process Technology Center in Safford. The building was formerly occupied by American Airlines who vacated the premises in 2012.

As most of the equipment will be used in R&D processes, they will not require an air quality permit and they are not subject to any federal regulations that would lead to permitting. The equipment used in these processes fall into the category of insignificant activities as "Lab equipment used exclusively for chemical and physical analyses". Moreover, even if not classified as insignificant activities, the fact remains that these are not process equipment and therefore a Potential to Emit (PTE) is impractical to calculate based on the infrequent nature of use and no end product other than analysis results.

The TCT building has existing emergency generators each rated at 1,500 HP that will require an air quality permit.

As described above, there is no PTE for this facility other than from the emergency generators. The emergency generators are each limited to 100 hrs per year of maintenance and testing excluding hours of operation during emergencies as defined in the Code of Federal Regulations.

There are no facility-wide emissions estimates for this facility as it only operates emergency generators. Should there be a need to estimate emissions, the Control Officer will use the engine hours of operation which are recorded at all times.

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SPECIFIC CONDITIONS

[References are to Title 17 of the Pima County Code unless otherwise noted]

I. APPLICABILITY

Affected Emission Source or Process: **Class II true minor source for all pollutants.**

This source is a "new" permit for operation of the existing compression ignition engines (emergency generators. There is no requirement to install or operate and maintain any air pollution control equipment on the generators.

The conditions in this Section apply to the following engines identified in the table below. All conditions in this permit are federally enforceable unless otherwise specified.

Process/Unit Description	Serial Number
Detroit Diesel Generator	12E9391
Detroit Diesel Generator	12E9404

II. EMISSION LIMITATIONS AND OPERATING LIMITATIONS

A. The Permittee must comply with the requirements in III of the Specific Conditions which apply. [40 CFR 63.6603(A). 40 CFR 63 Subpart ZZZZ, Table 2d]

B. The Permittee must limit the hours of operation of each emergency engine to no more than 100 hours per calendar year as set forth in V.C of the Specific Conditions (Requirements for Emergency Stationary Engines). [PCC 17.12.185.A.2]

C. Opacity Standard

1. The Permittee shall not cause, allow, or permit to be emitted into the atmosphere from any stationary rotating machinery, (diesel generators) smoke for any period greater than ten consecutive seconds that exceeds 40 percent opacity. Visible emissions when starting cold equipment shall be exempt from this requirement for the first ten minutes. [PCC 17.16.340.E]

2. The Permittee shall not cause or permit the effluent from a single emission point, multiple emission point, or a fugitive emissions source to have an average optical density (opacity) equal to or greater than 60 percent when a cold diesel engine is started or when a diesel engine is accelerated under load as measured in accordance with EPA Method 9. [PCC 17.16.040]

D. Initial Compliance No Requirements

E. Numerical Emissions Limitations No Requirements

F. Operating Limitations No Requirements

G. Fuel Requirements No Requirements

H. Performance Tests No Requirements

III. MONITORING, INSTALLATION, COLLECTION, OPERATION AND MAINTENANCE REQUIREMENTS

A. Maintenance Requirements

1. The Permittee must meet the following requirements for each emergency stationary CI RICE, except during periods of start-up: [40 CFR Subpart ZZZZ, Table 2d]

   a. Change oil and filter every 500 hours of operation or annually, whichever comes first, [40 CFR Subpart ZZZZ, Table 2d, 4.a]

   b. Inspect air cleaner every 1,000 hours of operation or annually, whichever comes first; and [40 CFR Subpart ZZZZ, Table 2d, 4.b]

   c. Inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary. [40 CFR Subpart ZZZZ, Table 2d, 4.c]

2. The Permittee must meet the following requirement during periods of start-up: [40 CFR Subpart ZZZZ, Table 2d]

   Minimize the engine's time spent at idle and minimize the engine's startup time at startup to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes, after which time the non-startup emission limitations apply.

B. The Permittee shall conduct a visible emissions check on the exhaust stack of each diesel generator at least quarterly while the generator is operating. For the purposes of this permit, a visible emission check is verification that abnormal emissions are not present at the generator stack. The Permittee shall record the date and time of the check, the name of the person conducting the check, the results of the check, and the type of corrective action taken (if required). [PCC 17.12.185.A.3]

C. Minimizing Emissions

The Permittee must operate and maintain all stationary RICE and after-treatment control device (if any) according to the manufacturer's emission-related written instructions or develop your own maintenance plan which must provide to the extent practicable for the maintenance and operation of the engine in a manner consistent with good air pollution control practice for minimizing emissions. [40 CFR 63.6625(e)]

D. Non-Resettable Hour Meter

The Permittee must install a non-resettable hour meter (if one is not already installed) on all existing emergency stationary RICE located at an area source of HAP emissions. [40 CFR 63.6625(f)]

E. Engine Idle and Startup Time Minimization

The Permittee must minimize the engine's time spent at idle during startup and minimize the engine's startup time to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes, after which time the emission standards* applicable to all times other than startup apply. [40 CFR 63.6625(h) & 40 CFR 63 Subpart ZZZZ, Table 2d]

(*Note: There are no emission standards that apply to emergency engines in Table 2d)

F. Alternate Oil Change Requirement

The Permittee has the option of utilizing an oil analysis program in order to extend the specified oil change requirement in III.A.1.a of the Specific Conditions. The oil analysis must be performed at the same frequency specified for changing the oil in III.A.1.a of the Specific Conditions. The analysis program must at a minimum analyze the following three parameters: Total Base Number, viscosity, and percent water content. The condemning limits for these parameters are as follows: Total Base Number is less than 30 percent of the Total Base Number of the oil when new; viscosity of the oil has changed by more than 20 percent from the viscosity of the oil when new; or percent water content (by volume) is greater than 0.5. If all of these condemning limits are not exceeded, the engine owner or operator is not required to change the oil. If any of the limits are exceeded, the engine owner or operator must change the oil within 2 days of receiving the results of the analysis; if the engine is not in operation when the results of the analysis are received, the engine owner or operator must change the oil within 2 days or before commencing operation, whichever is later. The owner or operator must keep records of the parameters that are analyzed as part of the program, the results of the analysis, and the oil changes for the engine. The analysis program must be part of the maintenance plan for the engine. [40 CFR 63.6625(i)]

V. CONTINOUS COMPLIANCE

A. General Requirements

1. The Permittee must be in compliance with the emission limitations and operating limitations identified in III of the Specific Conditions at all times. [40 CFR 63.6605(a)]

2. The Permittee must at all times, operate and maintain any affected source, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. The general duty to minimize emissions does not require the Permittee to make any further efforts to reduce emissions if levels required by this standard have been achieved. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Control Officer which may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source. [40 CFR 63.6605(b)]

B. Demonstration of Continuous Compliance with the emission limitations and operating limitations. [40 CFR 63.6640]

The Permittee must demonstrate continuous compliance with each emission limitation and operating limitation in II of the Specific Conditions according to the following work or management practices: [40 CFR 63.6640(a), 40 CFR 63 Subpart ZZZZ: Table 6, 9.a]

1. Operate and maintain the stationary RICE according to the manufacturer's emission-related operation and maintenance instructions; or [40 CFR 63 Subpart ZZZZ: Table 6, 9.a.i.]

2. Develop and follow your own maintenance plan which must provide to the extent practicable for the maintenance and operation of the engine in a manner consistent with good air pollution control practice for minimizing emissions. [40 CFR 63 Subpart ZZZZ: Table 6, 9.a.ii.]

C. Requirements for Emergency Stationary Engines. [40 CFR 63.6640(f)]

1. The Permittee must operate the emergency stationary RICE according to the requirements in V.C.1.a through c of the Specific Conditions. In order for the engine to be considered an emergency stationary RICE, any operation other than emergency operation, maintenance and testing, emergency demand response, and operation in non-emergency situations for 50 hours per year, as described in V.C.1.a through c of the Specific Conditions, is prohibited. If you do not operate the engine according to the requirements in V.C.1.a through c of the Specific Conditions, the engine will not be considered an emergency engine under this subpart and must meet all requirements for non-emergency engines: [40 CFR 63.6640(f)]

   a. There is no time limit on the use of emergency stationary RICE in emergency situations. [40 CFR 63.6640(f)(1)]

   b. The Permittee may operate the emergency stationary RICE for any combination of the purposes specified in V.C.1.b.i through iii of the Specific Conditions for a maximum of 100 hours per calendar year. Any operation for non-emergency situations as allowed by V.C.1.c of the Specific Conditions counts as part of the 100 hours per calendar year allowed by V.C.1.b.

      i. Emergency stationary RICE may be operated for maintenance checks and readiness testing, provided that the tests are recommended by federal, state or local government, the manufacturer, the vendor, the regional transmission organization or equivalent balancing authority and transmission operator, or the insurance company associated with the engine. Maintenance checks and readiness testing of such units is limited to 100 hours per calendar year. The Permittee may petition the Control Officer for approval of additional hours to be used for maintenance checks and readiness testing, but a petition is not required if the Permittee maintains records indicating that federal, state, or local standards require maintenance and testing of emergency RICE beyond 100 hours per calendar year. [40 CFR 63.6640(f)(2) & 63.6640 (f)(2)(i)]

      ii. Emergency stationary RICE may be operated for emergency demand response for periods in which the Reliability Coordinator under the North American Electric Reliability Corporation (NERC) Reliability Standard EOP–002–3, Capacity and Energy Emergencies (incorporated by reference, see § 63.14), or other authorized entity as determined by the Reliability Coordinator, has declared an Energy Emergency Alert Level 2 as defined in the NERC Reliability Standard EOP– 002–3. [40 CFR 63.6640 (f)(2)(ii)]

      iii. Emergency stationary RICE may be operated for periods where there is a deviation of voltage or frequency of 5 percent or greater below standard voltage or frequency. [40 CFR 63.6640 (f)(2)(iii)]

   c. The Permittee may operate emergency stationary RICE up to 50 hours per calendar year in non-emergency situations. The 50 hours of operation in non-emergency situations are counted as part of the 100 hours per calendar year for maintenance and testing and emergency demand response provided in V.C.1.b.ii of the Specific Conditions. Except as provided in V.C.1.c.i and ii of the Specific Conditions, the 50 hours per year for non-emergency situations cannot be used for peak shaving or non-emergency demand response, or to generate income for a facility to an electric grid or otherwise supply power as part of a financial arrangement with another entity. [40 CFR 63.6640 (f)(4)]

      i. Prior to May 3, 2014, the 50 hours per year for non-emergency situations can be used for peak shaving or nonemergency demand response to generate income for a facility, or to otherwise supply power as part of a financial arrangement with another entity if the engine is operated as part of a peak shaving (load management program) with the local

distribution system operator and the power is provided only to the facility itself or to support the local distribution system. [40 CFR 63.6640 (f)(4)(i)]

ii. The 50 hours per year for nonemergency situations can be used to supply power as part of a financial arrangement with another entity if all of the following conditions are met: [40 CFR 63.6640 (f)(4)(ii)]

(A) The engine is dispatched by the local balancing authority or local transmission and distribution system operator. [40 CFR 63.6640 (f)(4)(ii)(A)]

(B) The dispatch is intended to mitigate local transmission and/or distribution limitations so as to avert potential voltage collapse or line overloads that could lead to the interruption of power supply in a local area or region. [40 CFR 63.6640 (f)(4)(ii)(B)]

(C) The dispatch follows reliability, emergency operation or similar protocols that follow specific NERC, regional, state, public utility commission or local standards or guidelines. [40 CFR 63.6640 (f)(4)(ii)(C)]

(D) The power is provided only to the facility itself or to support the local transmission and distribution system. [40 CFR 63.6640 (f)(4)(ii)(D)]

(E) The owner or operator identifies and records the entity that dispatches the engine and the specific NERC, regional, state, public utility commission or local standards or guidelines that are being followed for dispatching the engine. The local balancing authority or local transmission and distribution system operator may keep these records on behalf of the engine owner or operator. [40 CFR 63.6640 (f)(4)(ii)(E)]

D. Notification Requirements No Requirements

VI. Recordkeeping Requirements

A. The Permittee must keep the records described in VI.A.1 through A.5 of the Specific Conditions. [40 CFR 63.6655]

1. A copy of each notification and report that the Permittee submitted (if applicable) to comply with 40 CFR 63 Subpart ZZZZ, including all documentation supporting any Initial Notification or Notification of Compliance Status that were submitted. [40 CFR 63.6655(a) & 40 CFR 63.10(b)(2)(xiv)]

2. The Permittee shall also maintain files of all information (including all reports and notifications) required by this permit recorded in a form suitable and readily available for expeditious inspection and review. The files shall be retained for at least 5 years following the date of each occurrence, measurement, maintenance, corrective action, report, or record. At a minimum, the most recent 2 years of data shall be retained on site. The remaining 3 years of data may be retained off site. Such files may be maintained on microfilm, on a computer, on computer floppy disks, on magnetic tape disks, or on microfiche. [40 CFR 63.9 & 40 CFR 63.10(b)]

3. Records of the occurrence and duration of each malfunction of operation (*i.e.*, process equipment) or the air pollution control and monitoring equipment. [40 CFR 6655(a)(2)]

4. Records of all performance tests and performance evaluations as required in 40 CFR 63.10(b)(2)(viii). [40 CFR 6655(a)(3) & 40 CFR 63.10(b)(2)(viii)]

5. Records of all required maintenance performed on the air pollution control and monitoring equipment. [40 CFR 6655(a)(4)]

6. Records of actions taken during periods of malfunction to minimize emissions in accordance with V.A.2 of the Specific Conditions, including corrective actions to restore malfunctioning process and air pollution control and monitoring equipment to its normal or usual manner of operation. [40 CFR 6655(a)(5) & 40 CFR 63.6605(b)]

B. The Permittee must keep the records required in III.B and V.B of the Specific Conditions to show continuous compliance with each emission or operating limitation that applies. [PCC 17.12.185.A.4 & 40 CFR 6655(d)]

C. The Permittee must keep records of the maintenance conducted on all applicable existing emergency stationary RICE in order to demonstrate that the Permittee operated and maintained the stationary RICE and after-treatment control device (if any) according to the Permittee's own maintenance plan. [40 CFR 6655(e) & 40 CFR 6655(e)(2)]

D. The Permittee must keep records of the hours of operation of the engine that is recorded through the non-resettable hour meter. The Permittee shall document how many hours are spent for emergency operation; including what classified the operation as emergency and how many hours are spent for non-emergency operation. If the engine is used for the purposes specified in V.C.1.b.ii or iii or V.C.1.c.ii Specific Conditions, the Permittee must keep records of the notification of the emergency situation, and the date, start time, and end time of engine operation for these purposes. [40 CFR 60.6655(f) & 40 CFR 6655(f)(2)]

VII. Reporting Requirements

A. If an emergency engine is operating during an emergency and it is not possible to shut down the engine in order to perform the management practice requirements on the schedule required in Table 2d of this subpart, or if performing the management practice on the required schedule would otherwise pose an unacceptable risk under federal, state, or local law, the management practice can be delayed until the emergency is over or the unacceptable risk under federal, state, or local law has abated. The management practice should be performed as soon as practicable after the emergency has ended or the unacceptable risk under federal, state, or local law has abated. Sources must report any failure to perform the management practice on the schedule required and the federal, state or local law under which the risk was deemed unacceptable. [40 CFR 63 Subpart ZZZZ: Footnote 2 of Table 2]

B. Should the Permittee be contractually obligated to make the emergency engine(s) be available for more than 15 hours per calendar year for the purposes specified in V.C.1.b.ii or iii of the Specific Conditions or that operates for the purpose specified in V.C.1.c.ii of the Specific Conditions, the Permittee shall apply for a minor permit revision to include the additional reporting requirements necessary for such use. [PCC 17.12.185.A.5]

ADDITIONAL PERMIT REQUIREMENTS

I. COMPLIANCE WITH PERMIT CONDITIONS [PCC 17.12.185.A.7.a & b]

A. The Permittee shall comply with all conditions of this permit including all applicable requirements of the Arizona air quality statutes and the air quality rules. Any permit noncompliance constitutes a violation of the Arizona Revised Statutes and is grounds for enforcement action; for permit termination, revocation and reissuance, or revision; or for denial of a permit renewal application. In addition, noncompliance with any federally enforceable requirement constitutes a violation of the Clean Air Act.

B. The Permittee shall report to the Control Officer any emissions in excess of the limits established by this permit. The report shall be in 2 parts as specified below: [PCC 17.12.185.A.5 & PCC 17.12.040]

1 Notification by telephone or facsimile within 24 hours of the time the Permittee first learned of the occurrence of excess emission that includes all available information pursuant to PCC 17.12.040.B. To report excess emissions call **520-724-7400** or fax to **520-838-7432**

2. Detailed written notification by submission of an excess emissions report within 72 hours of the notification in I.B.1 above. **Send to PDEQ 33 N. Stone Avenue, Ste. 700, Tucson, AZ 85701.**

C. It shall not be a defense for a Permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

D. The permit does not convey any property rights of any sort, or any exclusive privilege to the permit holder.

E. The Permittee shall pay fees to the Control Officer pursuant to PCC 17.12.400.
[PCC 17.12.185.A.8 & PCC 17.12.400]

II. PERMIT REVISION, REOPENING, REVOCATION AND REISSUANCE, OR TERMINATION FOR CAUSE [PCC 17.12.185.A.7.c]

The permit may be revised, reopened, revoked and reissued, or terminated for cause pursuant to PCC 17.12.270. 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.

III. DUTY TO PROVIDE INFORMATION [PCC 17.12.165.G & PCC 17.12.185.A.7.e]

A. The Permittee shall furnish to the Control Officer, within a reasonable time, any information that the Control Officer may request in writing to determine whether cause exists for revising, revoking and reissuing, or terminating the permit or to determine compliance with the permit. Upon request, the Permittee shall also furnish to the Control Officer copies of records required to be kept by the permit. For information claimed to be confidential, the Permittee shall furnish a copy of such records to the Control Officer along with a claim of confidentiality.

B. If the Permittee has failed to submit any relevant facts or if the Permittee has submitted incorrect information in the permit application, the Permittee shall, upon becoming aware of such failure or incorrect submittal, promptly submit such supplementary facts or corrected information.

IV. SEVERABILITY CLAUSE [PCC 17.12.185.A.6]

The provisions of this permit are severable. If any provision of this permit is held invalid, the remainder of this permit shall not be affected thereby.

Attachment 1

Applicable Regulations

Requirements Specifically Identified as Applicable:

Code of Federal Regulations Title 40, Part 63:

Subpart ZZZZ National Emission Standards for Stationary Reciprocating Internal Combustion Engines

Pima County Code (PCC) Title 17, Chapter 17.16:

17.16.010 Local Rules and Standards – Applicability of More than One Standard
17.16.020 Noncompliance with Applicable Standards
17.16.040 Visible Emission Standards: Standards and applicability (Include NESHAP)
17.16.050 Visibility Limiting Standards
17.16.340 Standards of Performance for Stationary Rotating Machinery
17.16.530 National Emission Standards for Hazardous Air Pollutants (NESHAP)

Attachment 2

Equipment List

Name (Equipment ID)	Description/ Type	Make	Model	Serial Number	Date of Manufacture	Maximum Capacity (HP)	NESHAP Applicable
Generator	Emergency	Detroit Diesel	9123746	12E9391	11/1/1989	1500	Y
Generator	Emergency	Detroit Diesel	91237416	12E9404	11/1/1989	1500	Y

Attachment 3

Insignificant Equipment/ List

1. All equipment used in the Research & Development Process excluding emergency generators.

2. All boilers are insignificant equipment as they are used for comfort/ heating or do not fire continuously for more than an 8 hour period.