GEORGIA
DEPARTMENT OF NATURAL RESOURCES
ENVIRONMENTAL PROTECTION DIVISION

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NARRATIVE

TO: James Eason

FROM: Renee Browne

DATE: June 13, 2019

Facility Name:	**The Keep Campus**
AIRS No.:	09700091
Location:	Lithia Springs, GA (Douglas County)
Application #:	27036
Date of Application:	April 17, 2019

Background Information

Permit No. 7375-097-0091-S-01-0 was issued February 9, 2018 to The Keep Campus for the construction and operation of a data center to be located at 580 Douglas Hills Road in Lithia Springs, Georgia 30168 (Douglas County). The company plans to start construction later this year on the planned data center with diesel-fired emergency generators to supply power during readiness testing, system maintenance and emergencies.

Douglas County is listed in Rule 391-3-1-.03(8)(c)13 "Additional Provisions for Ozone Non-Attainment Areas for Counties that were Formerly Part of the 1-hour Ozone Non-Attainment Area" which defines a "major source" as any stationary source that emits or has the potential to emit, at least 25 tons per year of VOC or NOx. This threshold was removed from GRAQC 391-3-1-.03(10)(a)4(ii) in June 2018; therefore, the Title V major source threshold for each criteria pollutant, including VOC and NOx, is 100 tpy, pursuant to GRAQC 391-3-1-.03(10)(b)1(i) and 40 CFR 70.2. With the 100 tpy major source thresholds now in place for Douglas County, the Keep Campus maintains its minor source status. Switch LTD, the owner of the Keep Campus, is not requesting to modify any facility-wide emission limits as part of this permit application.

Purpose of Application

The Keep Campus submitted Application No. 27036, dated April 17, 2019, requesting authorization to construct and operate a new diesel-fired emergency back-up generator (Source Code: CGEN) and diesel belly tank to provide back-up power to the corporate offices at 580 Douglas Hills Road, Lithia Springs (Douglas County).

No Public Advisory was issued.

Addition to Equipment List

Emission Units		Associated Control Devices	
Source Code	Description	Source Code	Description
CGEN	1, 613 kW Corporate Diesel-Fired Emergency Generator and associated diesel tank for back-up power to Corporate Offices	N/A	N/A

Emissions Summary

Calculations for criteria pollutants are based on the maximum annual hours of operation for emergency engines located at a data center (500 hours per year). NOx, CO, and PM emissions rates are calculated using the factors provided as the raw emissions data on the emergency back-up emission sheet at worst case power loads. The manufacturer provided raw emissions data for SO_2 has been conservatively scaled by a factor of three to account for up to 15 ppm of sulfur content in diesel as the manufacturer's guarantee assumes a fuel sulfur content of 5 ppm. For the new diesel-fired emergency generator (Source Code: CGEN), the manufacturer assumed a conservative estimate of 330 ppm sulfur content for raw emissions data for SO_2. The manufacturer provided PM emission factors. Total PM_{10} and $PM_{2.5}$ emissions are assumed to be equivalent to the sum of the filterable PM component and condensable PM. For the new Corporate Diesel-Fired Emergency Generator (Source Code: CGEN), the manufacturer provided PM emission factor is the same for PM_{10}, as well as $PM_{2.5}$.

The VOC emission rate is calculated using emission factors from AP-42 Section 3.4, Table 3.4-1 (10/96) for total organic compounds using appropriate power output and conversion factors. HAP emissions are based on the maximum heat input and annual hours of operation. Emission factors for HAP are obtained from AP-42, Section 3.4, Tables 3.4-3, and 3.4-4.

Although exempt from permitting, the potential emissions from the cooling towers and diesel belly tanks are included in the Title V/NSR major source determinations for the facility. Potential emissions from the diesel belly tanks are estimated using emission factors from EPA's WebFIRE (http://cfpub.epa.gov/oarweb/index.cfm?action=fire.main) for above-ground diesel tanks (SCC code 40400302/40400301). The tank throughput was estimated by multiplying the engine output for the proposed generator by the maximum annual operational hours and dividing by the heat content of diesel fuel, conservatively assuming 100% engine output.

Facility-Wide Emissions
(in tons per year)

Pollutant	Potential Emissions		
	Before Mod.	Corporate Emergency Generator (Source Code: CGEN)	Total Potential Emissions
NOx	25*	2.26	25*
CO	17.9	0.175	18.08
VOC	5.4	0.030	5.43
PM	2.7	0.025	2.73
$PM_{10}/PM_{2.5}$	2.9/2.9	0.025/0.025	2.93/2.93
SO_2	0.18	0.045	0.225
Max. Individual HAP	3.2E-01	3.54e-3	3.24e-1
Total HAP	5.00e-1	5.54e-3	5.06e-1

* 25 tpy NOx permit limit

Regulatory Applicability

Georgia State Rules:

391-3-1-.02(2)(b) – The allowable visible emission from the generator is 40% in accordance with Georgia Rule 391-3-1-.02(2)(b)1.

391-3-1-.02(2)(g) – The allowable fuel sulfur content is 2.5 weight percent in accordance with Georgia Rule 391-3-1-.02(2)(g)2. This requirement is subsumed by NSPS IIII requirement, which requires maximum fuel oil sulfur requirement of 15 ppm (0.0015% by weight).

391-3-1-.02(2)(mmm) – Each generator that operates less than 200 hours per twelve consecutive months will meet the definition of Rule (mmm)4(i) for "Emergency Standby Stationary Engines" and will operate only during routine testing, maintenance, and emergencies. Each generator that operates between 200 and 500 hours per twelve consecutive months will meet the definition of Rule (mmm)8 for engines at data centers and will additionally be limited to the hours of 10 p.m. and 4 a.m. for routine testing and maintenance during the months of May through September.

Federal Rules:

40 CFR 60 Subpart IIII – The emergency generator will be constructed after July 11, 2005 and manufactured after April 1, 2006. It is subject to the requirements of NSPS Subpart IIII and meets the definition of an emergency stationary ICE in 60.4219. The company must comply with the emission standards and opacity requirement under NSPS Subpart IIII by purchasing a certified engine. The generator shall only use diesel fuel that has a maximum sulfur content of 15 parts per million (ppm) (0.0015% by weight) and either a minimum cetane index of 40 or maximum aromatic content of 35 volume percent. The

accumulated non-emergency service (maintenance check and readiness testing) time for the generator shall not exceed 100 hours per year. Non-resettable hour meters and records of the time and reason of operation are required.

40 CFR 63 Subpart ZZZZ (RICE MACT) - The emergency generator will be constructed after June 12, 2006. Therefore, it is considered a new emergency stationary reciprocating internal combustion engine (RICE) and it is subject to 40 CFR 63 Subpart ZZZZ. 40 CFR 63 Subpart ZZZZ [40 CFR 63.6590(c)] states that new emergency stationary RICE located at an area source, must meet the requirements of 40 CFR 63 Subpart ZZZZ by meeting the requirements of 40 CFR 60 Subpart IIII.

Permit Conditions

Conditions 6.2 and 7.6 was modified to include the new Corporate Diesel-Fired Emergency Generator (Source Code: CGEN) NOx emissions in the site-wide required NOx emissions monthly and consecutive twelve-month calculations.

Toxic Impact Assessment

A toxic impact analysis was not required for this permit.

Summary & Recommendations

Therefore, I recommend issuing proposed Air Quality Permit No. 7375-097-0091-S-01-1 for the operation of the Corporate Diesel-Fired Emergency Generator (Source Code: CGEN) at The Keep Campus.