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CEC Submittal

LGBF Revised Emissions and Modeling Assessment

Santa Clara, California

Prepared for

DIGITAL REALTY

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Revised Operational Analyses for Air Quality and Public Health

Based on the recent Bay Area Air Quality Management District (BAAQMD) requirements for emergency diesel generators greater than 1,000 horsepower (hp), Digital Realty has updated the following analyses to reflect the new BAAQMD requirement which will now utilize Environmental Protection Agency (EPA) Tier 4 engines greater than 1,000 brake horsepower (bhp). The Applicants decision to incorporate 46 Tier 4 diesel emergency generators will result in an annual readiness and maintenance testing schedule per year per engine which would be comprised of 50 hours per year (per engine). The tables which follow have been revised for the revised emissions factors, support data, and operational hour scenarios. In addition, the emissions, air quality impacts, and HRA results for the construction/operations overlap period are also included in several the following tables.

1.0 AIR QUALITY

This section presents the evaluation of the revised emissions and impacts resulting from the construction and operation of Lafayette Backup Generating Facility (LBGF) which supports the Lafayette Data Center (LDC), as well as the proposed mitigation measures to be used to minimize emissions and limit impacts to below established significance thresholds. This section is based upon an updated analysis prepared by Atmospheric Dynamics, Inc. in accordance with the California Energy Commission (CEC) application requirements for a Small Power Plant Exemption (SPPE) pursuant to the power plant siting regulations, and the rules and regulations of the Bay Area Air Quality Management District (BAAQMD or District). This analysis is but one part of a larger analysis, which seeks an SPPE Decision from the CEC and an Authority to Construct from the BAAQMD.

The following Appendices contain support data for the revised Air Quality and Public Health analyses.

Appendix AQ-1 – Engine Emissions Data for Criteria and Toxic Pollutants
Appendix AQ-2 – Engine Specification Brochures and Certification Information

40 CFR Part 60, Subpart IIII

Standards of Performance for Stationary Compression Ignition Internal Combustion Engines became effective July 11, 2006. The diesel engines are subject to Subpart IIII. The proposed engines are EPA Tier 4 rated and will comply with these regulations.

Compression Ignition (CI) Diesel Engines Emission Standards

Based on 40 CFR 60.4202, emergency CI engines rated at > 560 kW are subject to the emissions standards in 40 CFR 89.112, Table 1, as follows:

- Tier 4 – NO_x 0.67 g/kw-hr – 0.5 g/bhp-hr
- Tier 4 – POC 0.188 g/kw-hr – 0.14 g/bhp-hr
- Tier 4 – CO 3.5 g/kw-hr = 2.6 g/bhp-hr
- Tier 4 – PM 0.027 g/kw-hr = 0.02 g/bhp-hr

The proposed diesel-fired engines will satisfy these requirements based upon data supplied by the manufacturer as certified by EPA. In addition, the proposed engines will utilize a diesel particulate filter which will reduce the PM emissions to less than or equal to 0.02 g/bhp-hr.

40 CFR Part 60 Subpart ZZZZ

The proposed CI engines are exempt from the requirements of Subpart ZZZZ (63.6590 (c)(1)) if the engines comply with the emissions limitations specified in 40 CFR 60 Subpart IIII. See discussion above.

BAAQMD Air Quality Standards and Regulations

The section briefly describes the regulations which would apply to the LBGF as set forth in the BAAQMD Rules and Regulations.

<u>Regulation 2 Rule 2 – New Source Review (NSR)</u>

This rule applies to all new or modified sources requiring a Permit to Operate for any new source with actual or potential emissions above the rule trigger limit. The rule also specifies when BACT is required, when offsets are required and the offset ratios, as well the requirements for the required impact analyses, etc.

BACT Requirements

Pursuant to the revised BACT determination adopted by the BAAQMD on 12/21/2020, applicable to emergency backup engines rated at greater than or equal to 1000 HP, the proposed engines are required to meet EPA Tier 4 standards as follows:

- NO_x 0.5 g/bhp-hr
- CO 2.6 g/bhp-hr
- POC 0.14 g/bhp-hr
- PM 0.02 g/bhp-hr

The engines are expected to meet these standards.

Stationary Sources. The project's 46 standby diesel generators will be comprised of the following equipment:

- 45 – Cummins QSK95-G9 Diesel-fired engines, rated at 4309 HP (3000 kWe) at 100% Load
- 1 – Cummins QST30Diesel-fired engine, rated at 1482 HP (1105 kWe) at 100% Load

The generators proposed for installation are made by Cummins, with a certified Tier 4 rating. These engines will be equipped with diesel particulate filters (DPF) to reduce the diesel particulates to less than or equal to 0.02 grams/brake horse-power hour (g/bhp-hr). All generators would be operated routinely to ensure they would function during an emergency event. Appendix AQ1 presents the detailed emissions calculations for the proposed engines. Appendix AQ2 contains the manufacturers specification sheets for the engines.

During routine readiness testing, criteria pollutants and TACs (as DPM) would be emitted directly from the generators. Criteria pollutant emissions from generator testing were quantified using information provided by the manufacturer, as specified in Appendix AQ1. SO_2 emissions were based on the maximum sulfur content allowed in California diesel (15 parts per million by weight), and an assumed 100 percent conversion of fuel sulfur to SO_2. DPM emissions resulting from diesel stationary combustion were assumed equal to PM10/2.5 emissions. For conservative evaluation purposes, it was assumed that testing (weekly, monthly, quarterly, annual, and special testing) would occur for no more than 50 hours per year. 50 hours per year per engine is the limit specified by the Airborne Toxic Control Measure for Stationary Toxic Compression Ignition Engines (Title 17, Section 93115, CCR). However, it is the Applicant's experience that each engine will be operated for considerably less than 50 hours a year. Maintenance and readiness testing usually occurs at loads ranging from 10 to 100% load. For purposes of this application, emissions were assumed to occur at 100% load. Tables AQ1-1 and AQ1-2 in Appendix AQ1 present emissions based upon 100% load, number of engines tested, etc. The QSK95 and QST30 engines were evaluated for the following emissions scenarios:

- Scenario 1 - Declared emergency operations, 100 hrs/yr, Tier 4 emissions factors, 100% load, with Miratech catalyst/DPF controls. (BAAQMD Policy limit.) These emissions are not subject to NSR applicability.
- Scenario 2 - Maintenance/Readiness operations, 50 hrs/yr, Tier 4 emissions factors, 100% load, with Miratech catalyst/DPF controls. (ATCM limit.)

The tables which follow present emissions summaries for the two engines for each of the scenarios noted above in terms of the worst-case hourly, daily, and annual emissions. Maximum daily emissions are based on the assumption that only 10 of the QSK95 engines will be tested on any day (and the engines will not be run concurrently).

Table 4.3-1: Scenario 1 Emissions Summary for QSK95 and QST30 Engines

Period	NOx	CO	VOC	SO2	PM10/2.5	CO2e
QSK95-G9						
Max Hourly, lbs	213.7	1111.5	59.9	2.14	4.27	-
Max Daily, lbs	5130	26675.4	1536.4	51.3	102.6	-
Max Annual, tons	10.7	55.6	2.99	0.11	0.21	10556
Scenario 1 - Declared emergency operations, 100 hrs/yr, Tier 4 emissions factors, 100% load, with Miratech catalyst/DPF controls. ***Emissions from Scenario 1 are NOT subject to NSR applicability***.						
QST30						
Max Hourly, lbs	1.63	8.49	0.46	0.02	0.07	-
Max Daily, lbs	39.2	203.9	10.98	0.39	1.57	-
Max Annual, tons	0.08	0.42	0.02	0.0005	0.0035	82
Scenario 1 - Declared emergency operations, 100 hrs/yr, Tier 4 emissions factors, 100% load, with DPF controls. ***Emissions from Scenario 1 are NOT subject to NSR applicability***.						

Table 4.3-2: Scenario 2 Emissions Summary for QSK95 and QST30 Engines

Period	NOx	CO	VOC	SO2	PM10/2.5	CO2e
QSK95-G9						
Max Hourly, lbs	4.75	24.7	1.33	0.047	0.095	-
Max Daily, lbs	47.5	247	13.3	0.48	0.945	-
Max Annual, tons	5.34	27.8	1.5	0.05	0.11	5278
Scenario 2 - Maintenance/Readiness operations, 50 hrs/yr, Tier 4 emissions factors, 100% load, with Miratech catalyst/DPF controls.						
QST30						
Max Hourly, lbs	1.63	8.49	0.46	0.02	0.065	-
Max Daily, lbs	1.63	8.49	0.46	0.02	0.065	-
Max Annual, tons	0.041	0.21	0.011	0.0005	0.0016	41
Scenario 2 - Maintenance/Readiness operations, 50 hrs/yr, Tier 4 emissions factors, 100% load, with Miratech catalyst/DPF controls.						

Table 4.3-3 presents maximum daily and annual emissions data for the various testing scenarios in comparison to the BAAQMD CEQA significance thresholds.

Table 4.3-3: Facility Operational Emissions and BAAQMD CEQA Significance Levels

Scenario	**Lbs/Day**					
	NO_x	**CO**	**VOC**	**SO_2**	**PM10**	**PM2.5**
BAAQMD CEQA Thresholds	54	NA	54	NA	82	54
Worst Case Daily Emissions[1]	47.5	247	13.3	0.475	0.95	0.95
Significance Threshold Exceeded	No	NA	No	NA	No	No
Scenario	**Tons/Yr**					
	NO_x	**CO**	**VOC**	**SO_2**	**PM10**	**PM2.5**
BAAQMD CEQA Thresholds	10	NA	10	NA	15	10
Worst Case Annual Emissions[2]	5.5	28.4	1.53	0.051	0.11	0.11
Significance Threshold Exceeded	No	NA	No	NA	No	No
[1] Based on the emissions from Scenario 2 for a 10 engine test day for the QSK95. [2] Based on the summation of the QSK95 and QST30 engine emissions under Scenario 2. [2] Worst case CO2e emissions are 5319 tpy.						

The following should be noted with respect to Table 4.3-3 above.

1. NO_x emissions do not exceed the BAAQMD CEQA significance levels on the days when the 10 engine readiness tests occur, nor on a TPY basis (total emissions from all engines).
2. The emissions of NO_x will be mitigated through the participation in the BAAQMD ERC Bank, or other alternative methods as negotiated with the BAAQMD.

Table 4.3-4 presents the summation of emissions for all engines for the maximum of the scenarios noted above, i.e., Scenario 1 plus Scenario 2 to meet the 150 hours per year criteria per the BAAQMD permitting policy criteria.

Table 4.3-4 BAAQMD 150 Hour per Year Emissions Summation (tons per year)

Engines	NOx	CO	VOC	SO2	PM10/2.5	CO2e
QSK95 and QST30	16.2	84.0	4.52	0.16	0.38	15957
Summation of Scenario 1 and 2 for both engines. Based on EPA Tier4 factors. ***These values are NOT the NSR applicability values.***						

Table 4.3-5 presents data on the DPM emissions levels (worst case) for both models of engines.

Table 4.3-5: Toxic Air Contaminant (DPM) Emissions from the Proposed Engines (per engine basis)

Scenario	QSK95	QST30
	DPM Emissions	
Maximum Annual, lbs/yr	4.75	3.25
Maximum Hourly, lbs	0.095	0.065

Notes: DPM is the approved surrogate compound for diesel fuel combustion for purposes of health risk assessment.
Annual emissions for each engine are based on the max allowed runtime of 50 hours per year Miratech catalyst/DPF emissions, Scenario 2.

Table 4.3-6 presents the hourly and annual fuel use values for the maximum operational scenario as outlined above.

Table 4.3-6 Engine Fuel Use Values

Scenario	QSK95	QST30
	Fuel Use, gallons (per engine basis)	
Maximum Annual, gals/yr	10,350	3,610
Maximum Hourly, gals/hr	207	72.2
Total Annual Fuel Use (All Engines)		
Annual Fuel Use, gals/yr	455,400	3,610

AIR QUALITY IMPACT ANALYSIS

The 15.45-acre project site (north parcel), located at 2825 Lafayette Avenue in the City of Santa Clara (Santa Clara County), is currently developed with two two-story office buildings and associated paved parking and loading areas (total of 326,400 sq.ft.)(APN 224-04-093). The project proposes to demolish the existing improvements on the site to construct a multi-story 576,120 square foot data center building. The LDC building would house computer servers for private clients in a secure and environmentally controlled structure. And the LBGF would be designed to provide 99 megawatts (MW) of Information Technology (IT) power.

Modeling Overview

The evaluation of the potential air quality impacts and health risks were based on the estimate of the ambient air concentrations that could result from LBGF air emission sources. This section discusses the selection of the dispersion model, the data that was used in the dispersion model (pollutants modeled with appropriate averaging times, source characterization, building downwash, terrain, and meteorology), etc.

Assessments of ambient concentrations resulting from pollutant emissions (called air quality impacts) are normally conducted using USEPA-approved air quality dispersion models. These models are based on mathematical descriptions of atmospheric diffusion and dispersion processes in which a pollutant source impact can be calculated over a given area and for a specific period of time (called averaging period). By using mathematical models, the assessment of emissions can be determined for both existing sources as well as future sources not yet in operation. Inputs required by most dispersion models, which must be specified by the user, include the following:

- Model options, such as averaging time to be calculated;
- Meteorological data, used by the model to estimate the dispersion conditions experience by the source emissions;
- Source data, such as source location and characteristics – stack emissions like those considered here are modeled as "point" sources, which require user inputs of the release height, exit temperature and velocity, and stack diameter (used by the dispersion model to estimate the mechanical and buoyant plume rise that will occur due to the release of emissions from a stack); and
- Receptor data, which are the location(s) of the given area where ambient concentrations are to be calculated by the dispersion model.

Model Selection

To estimate ambient air concentrations, the latest version (version19191) of the AERMOD dispersion model was used. AERMOD is appropriate for use in estimating ground-level short-term ambient air concentrations resulting from non-reactive buoyant emissions from sources located in simple, intermediate, and complex terrain. AERMOD is the preferred guideline model recommended by USEPA for these types of assessments and is based on conservative assumptions (i.e., the model tends to over-predict actual impacts by assuming steady state conditions, no pollutant loss through conservation of mass, no chemical reactions, etc.). AERMOD is capable of assessing impacts from a variety of source types such as point, area, line, and volume sources (as noted above, point source types are used to model stack sources like the LBGF engine emissions); downwash effects; gradual plume rise as a function of downwind distance; time-dependent exponential decay of pollutants; and can account for settling and dry deposition of particulates (all LBGF emissions were conservatively modeled as non-reactive gaseous emissions). The model is capable of estimating concentrations for a wide range of averaging times (from one hour to the entire period of meteorological data provided).

AERMOD calculates ambient concentrations in areas of simple terrain (receptor base elevations below the stack release heights), intermediate terrain (receptor base elevations between stack release and final plume height), and complex terrain (receptor base elevations above final plume height). AERMOD assesses these impacts for all meteorological conditions, including those that would limit the amount of final plume rise. Plume impaction on elevated terrain, such as on the slope of a nearby hill, can cause high ground level concentrations, especially under stable atmospheric conditions. Due to the relatively flat nature of the LBGF project terrain area, including the surrounding properties, plume impaction effects would not be expected to occur. AERMOD also considers receptors located above the receptor base elevation, called flagpole receptors.

Another dispersion condition that can cause high ground level pollutant concentrations is caused by building downwash. Building downwash can occur during high wind speeds or a building or structure is in close proximity to the emission source. This can result in building wake effects where the plume is drawn down toward the ground by the lower pressure region that exists in the lee side (downwind) of the building or structure. This AERMOD feature was also used in modeling the LBGF emission sources as described later.

Model Input Options

Model options refer to user selections that account for conditions specific to the area being modeled or to the emissions source that needs to be examined. Examples of model options selected for this analysis includes the use of multiple flagpole heights for each receptor modeled and the urban dispersion option (using a Santa Clara County population of 1,938,153). Land use in the immediate area surrounding the project site is characterized as “urban”. This is based on the land uses within the area circumscribed by a three (3) km radius around the project site, which is greater than 50 percent urban. Therefore, in the modeling analyses, the urban dispersion option was selected.

AERMOD also supplies recommended defaults for the user for other model options. This analysis was conducted using AERMOD in the regulatory default mode, which includes the following additional modeling control options:

- adjusting stack heights for stack-tip downwash,
- using upper-bound concentration estimates for sources influenced by building downwash from super-squat buildings,
- incorporating the effects of elevated terrain,
- employing the USEPA-recommended calms processing routine, and
- employing the USEPA-recommended missing data processing routine.

Calculation of chemical concentrations for use in the impact and exposure analysis requires the selection of appropriate concentration averaging times. Average pollutant concentrations ranging from one (1) hour to annual based on the meteorological data were calculated for each LBGF source and the facility in total.

According to the Auer land use classification scheme, a 3 km radius boundary around the proposed site yields a predominately “urban” classification. This is consistent with the current land use and zoning designation for the site and surrounding area as “commercial, and light and heavy industrial”.

Meteorological Data - Modeling Inputs

AERMOD requires a meteorological input file to characterize the transport and dispersion of pollutants in the atmosphere. Surface and upper air meteorological data inputs, along with surface parameter data describing the land use and surface characteristics near a site, are first processed using AERMET, the meteorological preprocessor to AERMOD. The output files generated by AERMET are the surface and upper air meteorological input files required by AERMOD.

AERMOD uses hourly meteorological data to characterize plume dispersion. AERMOD calculates the dispersion conditions for each hour of meteorological data for the emission sources modeled at the user-specific receptor locations. The resulting 1-hour impacts are then averaged by AERMOD for the averaging time(s) specified by the user (accounting for calm winds and missing meteorological data as specified in the model options). Meteorological data from the San Jose International Airport were provided by the BAAQMD for the five years of 2013 through 2017, inclusive. The representativeness of the meteorological data is dependent on the proximity of the meteorological monitoring site to the area under consideration; the complexity of the terrain, the exposure of the meteorological monitoring site, and the period of time during which the data are collected. The data was collected approximately three (3) kilometers from the eastern edge of the LBGF project boundary and were provided by BAAQMD as the most appropriate meteorological data for this modeling analysis. The data were processed by BAAQMD with AERMET (version 18081), AERMOD's meteorological data preprocessor module.

The BAAQMD LBGF meteorological data consists of surface measurements including wind speed, wind direction, temperature, and solar radiation, which were combined with National Weather Service upper air data from the Oakland International Airport. The USEPA-recommended 90% completeness criteria are met for all modeled parameters in the BAAQMD meteorological data.

Building and Receptors – Modeling Inputs

The effects of building downwash on facility emissions were included in the modeling assessment. The **P**lume **Ri**se **M**odel **E**nhancements to the USEPA **B**uilding **P**rofile **I**nput **P**rogram (BPIP-PRIME, version 04274) was used to determine the direction-specific building downwash parameters. The PRIME enhancements in AERMOD calculate fields of turbulence intensity, wind speed, and slopes of the mean streamlines as a function of projected building shape. Using a numerical plume rise model, the PRIME enhancements in AERMOD determine the change in plume centerline location and the rate of plume dispersion with downwind distance. Concentrations are then predicted by AERMOD in both the near and far wake regions, with the plume mass captured by the near wake treated separately from the uncaptured primary plume and re-emitted to the far wake as a volume source. There were several nearby offsite structures that were also included in BPIP-PRIME inputs.

Receptor grids were generated along the fence line (≤10 meter spacing), from the fence line to 300 meters (20 meter spacing), from 300 meters to one kilometer (km) (50-meter spacing), from 1.0 to 5.0 km (200-meter spacing). If any of the maximum impacts occurred on receptors with spacing greater than 20 meters, a refined grid with 20 meter resolution would be created and extended outwards by 500 meters in all directions. All receptor and source locations are referenced in meters using the Universal Transverse Mercator (UTM) Cartesian coordinate system based on the North American Datum of 1983 (NAD83) for Zone 10.

The latest version of AERMAP (version 18081) was used to determine receptor elevations and hill-slope factors utilizing USGS's 1-degree square National Elevation Dataset (NED). NED spacings were 1/3" (~10 meters) for the fence line, 20-meter, 50-meter, and 100-meter spaced receptor grids and 1" (~30 meters) for 200-meter and 500-meter spaced receptor grids and sensitive receptors. Electronic copies of the BPIP-PRIME and AERMAP input and output files, including the NED data, are included with the application will be submitted to Staff electronically.

Source Data – Modeling Inputs

Emissions and stack parameters for the 46 Cummins diesel engines are presented in Appendix AQ-1 and were used to develop the modeling inputs. Stack parameters (e.g., stack height, exit temperature, stack diameter, and stack exit velocity) were based on the parameters given by the engine manufacturer and the Applicant. The stack heights and locations, based on the use of Tier 4 engines, have not changed but the stack exit temperatures and stack exit velocities have been revised. Stack base elevations were given a common base elevation based on the range of elevations calculated with AERMAP for the stack locations.

Source Data – Background Air Quality Data

The existing air quality conditions in the project area have been revised to reflect the 2019 data and are summarized in Tables 4.3-7 and 4.3-8, which provide the background ambient air concentrations of criteria pollutants for the previous three (3) years as measured at certified monitoring stations near the project site. To evaluate the potential for air quality degradation as a result of the project, modeled project air concentrations are combined with the respective background concentrations as presented in Table 4.3-8 and used for comparison to the NAAQS and CAAQS.

Table 4.3-7: Measured Ambient Air Quality Concentrations by Year

Pollutant	Units	AvgTime	Basis of Yearly/Design Concentrations	2017	2018	2019
Ozone	ppb	1-Hr	CAAQS-1st Highs/3-yr Max	121	78	95
Ozone	ppb	8-Hr	CAAQS-1st Highs/3-yr Max	99	61	82
Ozone	ppb	8-Hr	NAAQS-4th Highs/3-yr Avg	75	53	60
NO_2	ppb	1-Hr	CAAQS-1st Highs/3-yr Max	67	86	59
NO_2	ppb	1-Hr	NAAQS-98th%s/3-yr Avg	50	59	52
NO_2	ppb	Annual	CAAQS/NAAQS-AAM/3-yr Max	12	12	11
CO	ppm	1-Hr	CAAQS-1st Highs/3-yr Max	2.1	2.5	1.7
			NAAQS-2nd Highs/3-yr Max	2.0	2.4	1.6
CO	ppm	8-Hr	CAAQS-1st Highs/3-yr Max	1.8	2.1	1.3
			NAAQS-2nd Highs/3-yr Max	1.7	2.0	1.3
SO_2	ppb	1-Hr	CAAQS-1st Highs/3-yr Max	3.6	6.9	14.5
			NAAQS-99th%s/3-yr Avg	3	3	2
		24-Hr	CAAQS-1st Highs/3-yr Max	1.1	1.1	1.5
			NAAQS-2nd Highs/3-yr Max	1.0	1.1	0.6
		Annual	CAAQS/NAAQS-AAM/3-yr Max	0.20	0.21	0.14
PM10	µg/m^3	24-Hr	CAAQS-1st Highs/3-yr Max	70	122	77
			NAAQS-2nd Highs/3-yr 4th High	67	112	54
		Annual	CAAQS-AAM/3-yr Max	21.3	23.1	19.1
PM2.5	µg/m^3	24-Hr	NAAQS-98th%/3-yr Avg	34	73	21
		Annual	CAAQS –AAM/3-yr Max	9.5	12.8	9.1

			NAAQS-AAM/3-yr Avg		10.2	9.0
Notes: Values for 158 East Jackson Street, San Jose, CA, the nearest BAAQMD monitoring site (all applicable pollutants measured) **Data sources:** **BAAQMD website Air Pollution Summaries for CAAQS (2019 Summary Report) for CO and SO2 (6/2021).** **USEPA AIRS website for NAAQS (6/2021) for CO and SO2.** **CARB ADAM (6/2021) for Ozone, NO2, PM10, PM2.5**						

Table 4.3-8: **Background Air Quality Data Summary**

Pollutant and Averaging Time	Background Value (μg/m^3)
Ozone – 1-hour Maximum CAAQS	238
Ozone – 8-hour Maximum CAAQS/ 3-year average 4th High NAAQS	194/124
PM10 – 24-hour Maximum CAAQS/ 24-hour 3-year 4th High NAAQS	122/112
PM10 – Annual Maximum CAAQS	23.1
PM2.5 – 3-Year Average of Annual 24-hour 98th Percentiles NAAQS	43
PM2.5 – Annual Maximum CAAQS/ 3-Year Average of Annual Values NAAQS	12.8/10.5
CO – 1-hour Maximum CAAQS/ 1-hour High, 2nd High NAAQS	2,863/2,748
CO – 8-hour Maximum CAAQS/ 8-hour High, 2nd High NAAQS	2,405/2,290
NO_2 – 1-hour Maximum CAAQS/ 3-Year Average of Annual 98th Percentile 1-hour Daily Maxima NAAQS	162/101
NO_2 – Annual Maximum CAAQS/NAAQS	22.6
SO_2 – 1-hour Maximum CAAQS/ 3-Year Average of Annual 99th Percentile 1-hour Daily Maxima NAAQS	38/7
SO_2 – 3-hour Maximum NAAQS (Not Available - Used 1-hour Maxima)	38
SO_2 – 24-hour Maximum CAAQS 24-hour High, 2nd High NAAQS	3.9/2.9
SO_2 – Annual Maximum NAAQS	0.55
Values for 158 East Jackson Street, San Jose, CA, the nearest BAAQMD monitoring site (all applicable pollutants measured) Conversion of ppm/ppb measurements to μg/m^3 concentrations based on: μg/m^3 = ppm x 40.9 x MW, where MW = 48, 28, 46, and 64 for ozone, CO, NO_2, and SO_2, respectively.	

Impact Analysis Summary

Operational characteristics of the diesel engines, such as emission rate, exit velocity, and exit temperature, vary by operating loads. The engines could be operated over load conditions from one (1) to 100 percent. Thus, an air quality screening analysis was performed that considered these effects to determine the worst-case scenario to include in the refined modeling analyses. Based on similar projects, the 100% load case always produces the maximum ground-based concentrations. The engines were assumed to be tested anytime from 7 AM to 5 PM (controlled using the

EMISFACT/HROFDY model option). Although each of the engines will typically only be tested individually for up to one hour at any one time, each engine was assumed to operate up to 10 hours/day (7AM-5PM) to conservatively represent 10 different engines operating one hour each in any one day for 3-hour, 8-hour, and 24-hour averaging times. Thus, the worst-case stack condition and the worst-case engine location could be determined from the screening analysis. All 46 engines were assumed to be tested for annual averages, with emissions proportioned accordingly.

Based on the results of the screening analyses, all LBGF sources were modeled in the refined analyses for comparisons with the annual CAAQS and NAAQS and the short-term NAAQS with multi-year statistical forms (1-hour NO_2 and SO_2 and 24-hour PM2.5 and PM10). Impacts during normal testing operations were based on the 100% load stack condition.

For the 1-hour and annual NO_2 modeling assessments, the EPA Ambien Ratio Method 2 (ARM2) was used to calculate the conversion of NO_x into NO_2.

Based on the results of the modeling analyses, the modeled concentrations are presented in Table 4.3-9. The maximum impact locations are identical to the previous analysis using Tier 2 engines.

Table 4.3-9: Modeled Concentrations and Ambient Air Quality Standards

Pollutant	Averaging Period	Maximum Concentration ($\mu g/m^3$)	Background ($\mu g/m^3$)	Total ($\mu g/m^3$)	Ambient Air Quality Standards ($\mu g/m^3$) CAAQS	NAAQS
3-/8-/24-Hour Maxima shown for one engine operating up to 10 hours/day (7AM-5PM)						
NO_2*	1-hour maximum (CAAQS)	41.53	162	203.5	339	-
	3-year average of 1-hour yearly 98th % (NAAQS)	35.24	101	136.2	-	188
	Annual maximum	0.53	22.6	23.1	57	100
CO	1-hour maximum	352.61	2,863	3,215.6	23,000	40,000
	8-hour maximum	238.41	2,405	2,643.4	10,000	10,000
SO_2	1-hour maximum (CAAQS)	0.63	38.0	38.6	655	-
	3-year average of 1-hour yearly 99th % (NAAQS)	0.57	7.0	7.6	-	196
	3-hour maximum	0.57	38.0	38.6	-	1,300
	24-hour maximum	0.16	3.9	4.1	105	365
	Annual maximum	0.0058	0.6	0.61	-	80
PM10	24-hour maximum (CAAQS)	0.347	122	122.4	50	-
	24-hour 6^{th} highest over 5 years (NAAQS)	0.284	112	112.3	-	150
	Annual maximum (CAAQS)	0.012	23.1	23.1	20	-
PM2.5	3-year average of 24-hour yearly 98th %	0.171	43	43.2	-	35
	Annual maximum (CAAQS)	0.012	12.8	12.8	12	-
	3-year average of annual concentrations (NAAQS)	0.010	10.5	10.5	-	12.0

*1-hour NO_2 and annual impacts evaluated with ARM2., with USEPA-default minimum/maximum NO_2/NOx ambient ratios of 0.5/0.9.

The air quality modeling support data will be submitted to Staff electronically.

Based on the modeling results in Table 4.3-16, the only combined modeled impacts and background concentrations greater than the standards are for the 24-hour and annual PM10 CAAQS and the 24-hour PM2.5 NAAQS and annual PM2.5 CAAQS. These exceedances are only because the background concentrations already exceed the standards. Modeled project impacts in these instances are less than significance levels. Thus, the project will not cause or contribute to an exceedance of any air quality standard for any averaging time period. Thus, and the project will comply with the CAAQS and NAAQS. Additionally, the project impacts for PM2.5 are less than the BAAQMD CEQA significant impact levels.

PUBLIC HEALTH AND HEALTH RISK ASSESSMENT

This section presents the methodology and results of a human health risk assessment performed to assess potential impacts and public exposure associated with airborne emissions from the routine operation of the LBGF project.

Air will be the dominant pathway for public exposure to chemical substances released by the project. Emissions to the air will consist primarily of combustion by-products produced by the diesel-fired emergency standby engines. Potential health risks from combustion emissions will occur almost entirely by direct inhalation. To be conservative, additional pathways were included in the health risk modeling; however, direct inhalation is considered the most likely exposure pathway. The risk assessment was conducted in accordance with guidance established by the California Office of Environmental Health Hazard Assessment (OEHHA 2015) and the California Air Resources Board.

Combustion byproducts with established CAAQS or NAAQS, including oxides of nitrogen (NOx), carbon monoxide, sulfur dioxide, and fine particulate matter were addressed in the previous Air Quality section.

Affected Environment

Sensitive receptors are defined as groups of individuals that may be more susceptible to health risks due to chemical exposure. Schools (public and private), day care facilities, convalescent homes, and hospitals are of particular concern. The nearest sensitive receptors, by type, are listed in Table 4.3-10. There are no sensitive receptors of any type within 1,000 ft. of the facility boundary. HAPs emissions evaluations are presented in Appendix AQ1.

Table 4.3-10: Sensitive Receptors Nearfield of the LBGF Site

Receptor Type	UTM Coordinates	Distance from Site, ft.	Elevation, AMSL ft.
Nearest Residence	593024.94, 4135677.42	3,486	56
Nearest Hospital	589321, 4136778	12,750	51
Nearest School	592005.25, 4136664.00	3,418	54
Nearest Daycare	594941, 4139336	10,200	58
Nearest College/Univ.	593425, 4138352	5,290	24
Source: Google Earth Image 09/2020			

The nearest residences are located to the north of the site at a distance of approximately 4,806 ft.

Air quality and health risk data presented by CARB in the 2013 Almanac of Emissions and Air Quality (latest version available, CARB 2013) for the state shows that over the period from the mid-1990s through 2013, the average concentrations for DPM have been substantially reduced, and the associated health risks for the state are showing a steady downward trend as well. This same trend has occurred in the BAAQMD.

Environmental Consequences

Significance Criteria

Cancer Risk

Cancer risk is the probability or chance of contracting cancer over a period of time normally defined as either 30 or 70-years depending on the project type and agency risk procedures. Carcinogens are not assumed to have a threshold below which there would be no human health impact. In other words, any exposure to a carcinogen is assumed to have some probability of causing cancer; the lower the exposure, the lower the cancer risk (i.e., a linear, no-threshold model). Under various state and local regulations, an incremental cancer risk greater than 10-in-one million due to a project is considered to be a significant impact on public health. For example, the 10-in-one-million risk level is used by the Air Toxics Hot Spots (AB 2588) program and California's Proposition 65 as the public notification level for air toxic emissions from existing sources.

Non-Cancer Risk

Non-cancer health effects can be either chronic or acute. In determining potential non-cancer health risks (chronic and acute) from air toxics, it is assumed there is a dose of the chemical of concern below which there would be no impact on human health. The air concentration corresponding to this dose is called the Reference Exposure Level (REL). Non-cancer health risks are measured in terms of a hazard quotient, which is the calculated exposure of each contaminant divided by its REL. Hazard quotients for pollutants affecting the same target organ are typically summed with the resulting totals expressed as hazard indices for each organ system. A hazard index of less than 1.0 is considered to be an insignificant health risk. For this health risk assessment, all hazard quotients were summed regardless of target organ. This method leads to a conservative (upper bound) assessment. RELs used in the hazard index calculations were those published in the CARB/OEHHA listings dated October 2020.

Chronic toxicity is defined as adverse health effects from prolonged chemical exposure, caused by chemicals accumulating in the body. Because chemical accumulation to toxic levels typically occurs slowly, symptoms of chronic effects usually do not appear until long after exposure commences. The lowest no-effect chronic exposure level for a non-carcinogenic air toxic is the chronic REL. Below this threshold, the body is capable of eliminating or detoxifying the chemical rapidly enough to prevent its accumulation. The chronic hazard index was calculated using the hazard quotients calculated with annual concentrations.

Acute toxicity is defined as adverse health effects caused by a brief chemical exposure of no more than 24 hours. For most chemicals, the air concentration required to produce acute effects is higher than the level required to produce chronic effects because the duration of exposure is shorter. Because acute toxicity is predominantly manifested in the upper respiratory system at threshold exposures, all hazard quotients are typically summed to calculate the acute hazard index. One-hour average concentrations are divided by acute RELs to obtain a hazard index for health effects caused by relatively high, short-term exposure to air toxics. Since this assessment considers only DPM, and DPM has no acute REL, acute HI values were not calculated. The following receptor descriptors are used herein:

PMI – Point of maximum impact – this receptor represents the highest concentration and risk point on the receptor grid for the analysis under consideration.

MEIR – Maximum exposed individual residential receptor – this receptor represents the maximum impacted actual residential location on the grid for the analysis under consideration.

MEIW - Maximum exposed individual worker receptor – this receptor represents the maximum impacted actual worker location on the grid for the analysis under consideration.

MEIS - Maximum exposed individual sensitive receptor – this receptor represents the maximum impacted actual sensitive location on the grid for the analysis under consideration. This location is a non-residential sensitive receptor, i.e., school, hospital, daycare center, convalescent home, etc.

Construction Phase Impacts

The proposed project would be a source of air pollutant emissions during project construction. The BAAQMD CEQA Air Quality Guidelines considers exposure of sensitive receptors to air pollutant levels that result in an unacceptable cancer risk or hazard to be significant. BAAQMD recommends a 1,000-foot zone of influence around project boundaries. Results of the construction related health risk assessment indicate that the cancer risk at the construction PMI would be 7.95E-6. This value is well below the significance threshold for construction health risk impacts. Since construction activities are temporary and would occur well over 1,000 feet from the nearest sensitive receptor community risk impacts from construction activities would be *less than significant*.

Operational Phase Impacts

Environmental consequences potentially associated with the project are potential human exposure to chemical substances emitted into the air. The human health risks potentially associated with these chemical substances were evaluated in a health risk assessment. The chemical substance potentially emitted to the air from the proposed facility is DPM. DPM is the approved surrogate compound for diesel fuel combustion pursuant to CARB and EPA.

Emissions of criteria pollutants will adhere to NAAQS or CAAQS as discussed in the Ambient Air Quality section. The proposed facility emergency electrical backup engines will be certified as EPA Tier 4 units and as such they meet the BACT requirements of the BAAQMD. These engines are equipped with DPFs. Finally, air dispersion modeling results show that emissions will not result in concentrations of criteria pollutants in air that exceed ambient air quality standards (either NAAQS or CAAQS). These standards are intended to protect the general public with a wide margin of safety.

Therefore, the project is not anticipated to have a significant impact on public health from emissions of criteria pollutants.

Potential impacts associated with emissions of toxic pollutants to the air from the proposed facility were addressed in a health risk assessment, with support data presented in Appendix AQ5. The risk assessment was prepared using guidelines developed by OEHHA and CARB, as implemented in the latest version of the HARP model (ADMRT21081). The BAAQMD risk assessment options in HARP were used for all analyses (BAAQMD 2016).

Public Health Impact Study Methods

Emissions of toxic pollutants potentially associated with the facility were estimated using emission factors for PM10 derived from the New Source Performance Standards for compression ignited engines (40 CFR 60 Subpart IIII-EPA Tier 4 emissions standards).

Concentrations of these pollutants in air potentially associated with the emissions were estimated using dispersion modeling as discussed in the Air Quality section. Modeling allows the estimation of both short-term and long-term average concentrations in air for use in a risk assessment, accounting for site-specific terrain and meteorological conditions. Health risks potentially associated with the estimated concentrations of pollutants in air were characterized in terms of excess lifetime cancer risks, or comparison with reference exposure levels for non-cancer health effects. The following receptor descriptors are used herein:

> PMI – Point of maximum impact – this receptor represents the highest concentration and risk point on the receptor grid for the analysis under consideration.
>
> MEIR – Maximum exposed individual residential receptor – this receptor represents the maximum impacted actual residential location on the grid for the analysis under consideration.
>
> MEIW - Maximum exposed individual worker receptor – this receptor represents the maximum impacted actual worker location on the grid for the analysis under consideration.
>
> MEIS - Maximum exposed individual sensitive receptor – this receptor represents the maximum impacted actual sensitive location on the grid for the analysis under consideration. This location is a non-residential sensitive receptor, i.e., school, hospital, daycare center, convalescent home, etc.

Health risks potentially associated with concentrations of carcinogenic pollutants in air were calculated as estimated excess lifetime cancer risks. The excess lifetime cancer risk for a pollutant is estimated as the product of the concentration in air and a unit risk value. The unit risk value is defined as the estimated probability of a person contracting cancer as a result of constant exposure to an ambient concentration of 1 $\mu g/m^3$ over a 70-year lifetime. In other words, it represents the increased cancer risk associated with continuous exposure to a concentration in air over a pre-defined period, i.e., usually a 30 or 70-year lifetime. Evaluation of potential non-cancer health effects from exposure to short-term and long-term concentrations in air was performed by comparing modeled concentrations in air with the RELs. An REL is a concentration in air at or below which no adverse health effects are anticipated. RELs are based on the most sensitive adverse effects reported in the medical and toxicological literature. Potential non-cancer effects were evaluated by calculating a ratio of the modeled concentration in air and the REL. This ratio is referred to as a hazard quotient. The unit risk values and RELs used to characterize health risks associated with modeled concentrations in air were obtained from the *Consolidated Table of OEHHA/ARB Approved Risk Assessment Health Values* (CARB10/2020) and are presented in Table 4.3-11.

Table 4.3-11: Toxicity Values Used to Characterize Health Risks

TAC	Unit Risk Factor (µg/m3)-1	Chronic Reference Exposure Level (µg/m3)	Acute Reference Exposure Level (µg/m3)
DPM	.0003	5	--
Source: CARB/OEHHA,10/2020.			

Table 4.3-12 delineates the maximum hourly and annual emissions of the identified air toxic pollutants (DPM) from the emergency backup engines.

Table 4.3-12: Maximum LBGF Hourly, Daily, and Annual Air Toxic Emissions

Emergency Standby Engines (per engine basis)				
Engine Model	**Toxic**	**Max Hour Emissions, Lbs**	**Max Daily Emissions, Lbs**	**Max Annual Emissions Lbs**
QSK95	DPM	0.095	-	4.75
QST30	DPM	0.065	-	3.25
Note: Based on Scenario 2.				

Characterization Of Risks From Toxic Air Pollutants

The excess lifetime cancer risk associated with concentrations in air estimated for the LBGF PMI location is estimated to be 7.14E-6 or 7.14per million. Excess lifetime cancer risks less than 10 x 10^{-6}, for sources with T-BACT, are unlikely to represent significant public health impacts that require additional controls of facility emissions. Risks higher than 1 x 10^{-6} may or may not be of concern, depending upon several factors. These include the conservatism of assumptions used in risk estimation, size of the potentially exposed population and toxicity of the risk-driving chemicals. Health effects risk thresholds are listed on Table 4.3-13. Risks associated with pollutants potentially emitted from the facility are presented in Tables 4.3-14 and 4.3-15. The chronic hazard indices for all scenarios are well below 1.0. It should be noted that DPM does not currently have an acute hazard index value, and as such, acute health effects were not evaluated in the HRA. Further description of the methodology used to calculate health risks associated with emissions to the air can be found in the HARP User's Manual dated 12/2003 and the ADMRT Manual dated 3/2015 (CARB 2015). As described previously, human health risks associated with emissions from the proposed facility are unlikely to be higher at any other location than at the location of the PMI. If there is no significant impact associated with concentrations in air at the PMI location, it is unlikely that there would be significant impacts in any other location in the vicinity of the facility.

Table 4.3-13: Health Risk Significance Thresholds

Risk Category	Significance Thresholds		
	BAAQMD Project Risk	BAAQMD Net Project Risk	State of California
Cancer Risk	10 in one million	10 in one million	<= 1 in a million w/o TBACT <=10 in a million w/TBACT
Chronic Hazard Index	1.0	1.0	1.0
Acute Hazard Index	1.0	1.0	1.0
Cancer (T-BACT required)	>1 in a million Chronic HI > 0.20		See above.
Cancer Burden	NA		1.0
Source: Regulation 2 Rule 5, NSR for Toxic Air Contaminants			

Table 4.3-14: LBGF Residential/Sensitive Health Risk Assessment Summary

Location	Receptor #	UTM	Cancer Risk	Chronic HI	Acute HI	Cancer Burden
PMI	51	593354.91, 4136644.49	7.14E-06	0.00192	NA	NA
MEIR	3628	593024.94, 4135677.43	1.12E-07	0.00005	NA	NA
MEIS	4531	592005.25, 4136664.00	1.27E-07	0.000034	NA	NA
Notes: See acronym definitions above.						

Table 4.3-15: LBGF Worker Health Risk Assessment Summary

Location	Receptor #	UTM	Cancer Risk	Chronic HI	Acute HI	Cancer Burden
PMI	51	593354.9, 4136644.49	2.49E-06	0.00192	NA	NA
MEIW	1608	593397, 4136613	2.41E-06	0.00186	NA	NA
Notes: See acronym definitions above.						

Cancer risks potentially associated with facility emissions also were not assessed in terms of cancer burden. Cancer burden is a hypothetical upper-bound estimate of the additional number of cancer cases that could be associated with emissions from the facility. Cancer burden is calculated as the worst-case product of excess lifetime cancer risk, at the 1 x 10^{-6} isopleth and the number of individuals at that risk level. Cancer burden evaluations are not required by the BAAQMD.

The chronic non-cancer hazard quotient associated with concentrations in air are shown in Tables 4.3-14 and 4.3-15. The chronic non-cancer hazard quotient for all target organs fall below 1.0. As described previously, a hazard quotient less than 1.0 is unlikely to represent significant impact to public health. Since DPM does not have an acute REL, no acute hazard index or quotient was calculated. As described previously, human health risks associated with emissions from the proposed facility are unlikely to be higher at any other location than at the location of the PMI. If there is no significant impact associated with concentrations in air at the PMI location, it is unlikely that there would be significant impacts in any other location in the vicinity of the facility.

Detailed risk and hazard values are provided in the HARP output which will be submitted to Staff electronically.

The estimates of excess lifetime cancer risks and non-cancer risks associated with chronic or acute exposures fall below thresholds used for regulating emissions of toxic pollutants to the air. Historically, exposure to any level of a carcinogen has been considered to have a finite risk of inducing cancer. In other words, there is no threshold for carcinogenicity. Since risks at low levels of exposure cannot be quantified directly by either animal or epidemiological studies, mathematical models have estimated such risks by extrapolation from high to low doses. This modeling procedure is designed to provide a highly conservative estimate of cancer risks based on the most sensitive species of laboratory animal for extrapolation to humans (i.e., the assumption being that humans are as sensitive as the most sensitive animal species). Therefore, the true risk is not likely to be higher than risks estimated using unit risk factors and is most likely lower, and could even be zero (USEPA, 1986; USEPA, 1996).

An excess lifetime cancer risk of 1 x 10-6 is typically used as a screening threshold of significance for potential exposure to carcinogenic substances in air. The excess cancer risk level of 1 x 10-6, which has historically been judged to be an acceptable risk, originates from efforts by the Food and Drug Administration (FDA) to use quantitative risk assessment for regulating carcinogens in food additives in light of the zero tolerance provision of the Delany Amendment (Hutt, 1985). The associated dose, known as a “virtually safe dose” (VSD) has become a standard used by many policy makers and the lay public for evaluating cancer risks. However, a study of regulatory actions pertaining to carcinogens found that an acceptable risk level can often be determined on a case-by-case basis. This analysis of 132 regulatory decisions, found that regulatory action was not taken to control estimated risks below 1 x 10-6 (one-in-one million), which are called de minimis risks. De minimis risks are historically considered risks of no regulatory concern. Chemical exposures with risks above 4 x 10-3 (four-in-ten thousand), called de manifestis risks, were consistently regulated. De manifestis risks are typically risks of regulatory concern. The risks falling between these two extremes were regulated in some cases, but not in others (Travis et al, 1987).

The estimated lifetime cancer risks to the maximally exposed individual located at the LBGF PMI, MEIR, MEIW, and MEIS do not exceed the 10 x 10-6 significance level for T-BACT sources. These engines are EPA certified Tier 4 units equipped with diesel particulate filters, and are used only for emergency power backup, therefore BACT or T-BACT for DPM is satisfied. The chronic hazard index value is also well below the significance threshold of 1.0. These risk estimates were calculated using assumptions that are highly health conservative. Evaluation of the risks associated with the LBGF emissions should consider that the conservatism in the assumptions and methods used in risk estimation considerably over-state the risks from LBGF emissions. Based on the results of this risk assessment, there are no significant public health impacts anticipated from emissions of toxic pollutant to the air from the LBGF.

Operation Odors

The facility is not expected to produce any contaminants at concentrations that could produce objectionable odors.

Summary of Impacts

The health risk assessment for the LBGF indicates that the maximum cancer risk will be approximately 7.14E-6 (versus a significance threshold of 10 x 10^{-6} with T-BACT) at the PMI to air toxics from LBGF emissions. This risk level is considered to be not significant. Non-cancer chronic effects for all scenarios are well below the chronic hazard index significance value.

Results from an air toxics risk assessment based on emissions modeling indicate that there will be no significant incremental public health risks from the modification and operation of the LBGF. Results from criteria pollutant modeling for routine operations indicate that potential ambient concentrations of NO_2, CO, SO_2, and PM_{10} will not significantly impact air quality. Potential concentrations are below the federal and California standards established to protect public health, including the more sensitive members of the population.

Cumulative Impacts

As of June 2021, the BAAQMD is currently updating the CEQA Cumulative Modeling Impact Guidelines. LBGF will submit, under separate cover, a cumulative impact assessment once the BAAQMD provides the updated procedures.

Appendix AQ-1

Engine Emissions Data

Table AQ3-1 Emissions Estimates for Emergency Standby Generators

Engine Mfg:	**Cummins**	# of Units:	45			Max # of Engines Tested per Day:			10						
Model #:	**QSK95**					*(engines are not tested concurrently)*									
Fuel:	ULSD	**Engine Data**												*METRIC UNITs*	
Fuel S, %wt:	0.0015	**BHP**	**kWe**	**Load %**	**RPM**	**Fuel, gph**	**Stk Ht, ft**	**Stk Diam, in**	**Stk Temp, F**	**mmbtu/hr**	**Stk Flow, ACFM**	**Stack Vel, f/s**	**Stk Diam, m**	**Stk Temp, Kelvins**	**Stk Vel, m/s**
Fuel wt, lb/gal:	7.05	4309	3000	100	1800	207	75	22	912	28.77	26265	165.8263	0.5588	762.04	50.5439
Btu/gal:	139000														
Lbs S/1000 gal:	0.10575														
Lbs SO2/1000 gal:	0.2115														
EPA Tier:	4														
Control System:	Miratech Catalyst/DPF														
Turbocharged:	Yes						Stack Exit Area (sq.ft) =		2.63981						
Aftercooled:	Yes														

Scenarios	**NOx**	**CO**	**VOC**	**SO2**	**PM10**	**PM2.5**	**CO2e lb/mmbtu**
	Emissions Factor Scenarios (all values in g/bhp-hr)						
Declared Emergency Ops, 100 hrs/yr, Miratech Tier 4 EFs, 100% Load	0.5	2.6	0.14	0.005	0.01	0.01	163.052
Maint/Readiness Testing, 50 hrs/yr, Miratech Tier 4 EFs, 100% Load	0.5	2.6	0.14	0.005	0.01	0.01	163.052
****	0	0	0	0	0	0	163.052
****	0	0	0	0	0	0	163.052

	NOx	**CO**	**VOC**	**SO2**	**PM10**	**PM2.5**	**CO2e lb/mmbtu**
	Controlled Emissions Factor Scenarios (all values in g/bhp-hr)						
Declared Emergency Ops, 100 hrs/yr, Miratech Tier 4 EFs, 100% Load	0.500	2.600	0.140	0.005	0.010	0.010	163.052
Maint/Readiness Testing, 50 hrs/yr, Miratech Tier 4 EFs, 100% Load	0.500	2.600	0.140	0.005	0.010	0.010	163.052
****	0.000	0.000	0.000	0.000	0.000	0.000	163.052

Scenario 1: **Declared Emergency Ops, 100 hrs/yr, Miratech Tier 4 EFs, 100%** *(Exempt from NSR Applicability)*

Max Hourly Runtime: 1
Max Daily Runtime: 24
Max Annual Runtime: 100

	NOx	**CO**	**VOC**	**SO2**	**PM10**	**PM2.5**	**CO2e**
Single Engine							
lbs/hr	4.750	24.699	1.330	0.047	0.095	0.095	na
lbs/day	113.997	592.786	31.919	1.140	2.280	2.280	na
TPY	0.237	1.235	0.066	0.002	0.005	0.005	234.6
All Engines	**NOx**	**CO**	**VOC**	**SO2**	**PM10**	**PM2.5**	**CO2e**
lbs/hr	213.74	1111.47	59.85	2.14	4.27	4.27	na
lbs/day	5129.87	26675.35	1436.36	51.30	102.60	102.60	na
TPY	10.69	55.57	2.99	0.11	0.21	0.21	10555.9

Scenario 2: **Maint/Readiness Testing, 50 hrs/yr, Miratech Tier 4 EFs, 100% Load**

Max Hourly Runtime: 1
Max Daily Runtime: 1
Max Annual Runtime: 50

	NOx	**CO**	**VOC**	**SO2**	**PM10**	**PM2.5**	**CO2e**
Single Engine							
lbs/hr	4.750	24.699	1.330	0.047	0.095	0.095	na
lbs/day	4.750	24.699	1.330	0.047	0.095	0.095	na
TPY	0.119	0.617	0.033	0.001	0.002	0.002	117.3
10 Engines	**NOx**	**CO**	**VOC**	**SO2**	**PM10**	**PM2.5**	**CO2e**
lbs/hr	4.750	24.699	1.330	0.047	0.095	0.095	na
lbs/day	47.499	246.994	13.300	0.475	0.950	0.950	na
All Engines							
TPY	5.34	27.79	1.50	0.05	0.11	0.11	5277.9

BAAQMD 150 Hrs/Yr Emissions Totals, TPY:	**NOx**	**CO**	**VOC**	**SO2**	**PM10**	**PM2.5**	**CO2e**
	16.031	83.360	4.489	0.160	0.321	0.321	15833.8

Table AQ3-2 Emissions Estimates for Emergency Standby Generators

Engine Mfg:	Cummins	# of Units:	1	Max # of Engines Tested per Day:	1
Model #:	**QST30**			*(engines are not tested concurrently)*	
Fuel:	ULSD	**Engine Data**			

METRIC UNITs

		BHP	kWe	Load %	RPM	Fuel, gph	Stk Ht, ft	Stk Diam, in	Stk Temp, F	mmbtu/hr	Stk ACFM	Stack Vel, f/s	Stk Diam, m	Stk Temp, Kelvins	Stk Vel, m/s
Fuel S, %wt:	0.0015														
Fuel wt, lb/gal:	7.05	1482	1105	100	1800	72.2	75	20	890	10.04	7540	57.60	0.5080	749.82	17.5569
Btu/gal:	139000														
Lbs S/1000 gal:	0.10575														
Lbs SO2/1000 gal:	0.2115														
EPA Tier:	4														
Control System:	Miratech Catalyst/DPF														
Turbocharged:	Yes														
Aftercooled:	Yes														

Stack Exit Area (sq.ft) = 2.181662

Emissions Factor Scenarios (all values in g/bhp-hr)

Scenarios	**Nox**	**CO**	**VOC**	**SO2**	**PM10**	**PM2.5**	**CO2e lb/mmbtu**
Declared Emergency Ops, 100 hrs/yr, Miratech Tier 4 Efs, 100% Load	0.5	2.6	0.14	0.005	0.02	0.02	163.052
Maint/Readiness Testing, 50 hrs/yr, Miratech Tier 4 Efs, 100% Load	0.5	2.6	0.14	0.005	0.02	0.02	163.052
****	0	0	0	0	0	0	163.052
****	0	0	0	0	0	0	163.052
***							

Controlled Emissions Factor Scenarios (all values in g/bhp-hr)

	Nox	**CO**	**VOC**	**SO2**	**PM10**	**PM2.5**	**CO2e lb/mmbtu**
Declared Emergency Ops, 100 hrs/yr, Miratech Tier 4 Efs, 100% Load	0.500	2.600	0.140	0.005	0.020	0.020	163.052
Maint/Readiness Testing, 50 hrs/yr, Miratech Tier 4 Efs, 100% Load	0.500	2.600	0.140	0.005	0.020	0.020	163.052
****	0.000	0.000	0.000	0.000	0.000	0.000	163.052
****	0.000	0.000	0.000	0.000	0.000	0.000	163.052
***							

#REF!

Scenario 1: **Declared Emergency Ops, 100 hrs/yr, Miratech Tier 4 Efs, 100% Lo** *(Exempt from NSR Offsets)*

Max Hourly Runtime:	1								
Max Daily Runtime:	24				**Single Engine**				
Max Annual Runtime:	100		**Nox**	**CO**	**VOC**	**SO2**	**PM10**	**PM2.5**	**CO2e**
		lbs/hr	1.634	8.495	0.457	0.016	0.065	0.065	na
		lbs/day	39.207	203.878	10.978	0.392	1.568	1.568	na
		TPY	0.082	0.425	0.023	0.001	0.003	0.003	81.818
					All Engines				
			Nox	**CO**	**VOC**	**SO2**	**PM10**	**PM2.5**	**CO2e**
		lbs/hr	1.63	8.49	0.46	0.02	0.07	0.07	na
		lbs/day	39.21	203.88	10.98	0.39	1.57	1.57	na
		TPY	0.08	0.42	0.02	0.00	0.00	0.00	81.82

Scenario 2: **Maint/Readiness Testing, 50 hrs/yr, Miratech Tier 4 Efs, 100% Loa**

Max Hourly Runtime:	1								
Max Daily Runtime:	1				**Single Engine**				
Max Annual Runtime:	50		**Nox**	**CO**	**VOC**	**SO2**	**PM10**	**PM2.5**	**CO2e**
		lbs/hr	1.634	8.495	0.457	0.016	0.065	0.065	na
		lbs/day	1.634	8.495	0.457	0.016	0.065	0.065	na
		TPY	0.041	0.212	0.011	0.000	0.002	0.002	40.9
					All Engines				
			Nox	**CO**	**VOC**	**SO2**	**PM10**	**PM2.5**	**CO2e**
		lbs/hr	1.634	8.495	0.457	0.016	0.065	0.065	na
		lbs/day	1.634	8.495	0.457	0.016	0.065	0.065	na
					All Engines				
		TPY	0.041	0.212	0.011	0.0004	0.002	0.002	40.9

	Nox	**CO**	**VOC**	**SO2**	**PM10**	**PM2.5**	**CO2e**
BAAQMD 150 Hrs/Yr Emissions Totals, TPY	0.123	0.637	0.034	0.001	0.005	0.005	122.7
BAAQMD 150 Hrs/Yr Emissions Totals All Engines, TPY	16.15	84.00	4.52	0.16	0.33	0.33	15957

Appendix AQ-2

Engine Specifications and Certification Data

Exhaust emission data sheet
C3000 D6e
60 H□Diesel generator set
EPA Tier 2

Engine Information:			
Model:	Cummins Inc. QSK95-G9	Bore:	7.48 in. (190 mm)
Type:	4 Cycle, VEE, 16 cylinder diesel	Stroke:	8.27 in. (210 mm)
Aspiration:	Turbocharged and Aftercooled	Displacement:	5816 cu. in. (95.3 liters)
Compression Ratio:	15.5:1		
Emission Control Device:	Turbocharged and Aftercooled		
Emission Level:	Stationary Emergency		

Performance Data	**1/4 Standby**	**1/2 Standby**	**3/4 Standby**	**Full Standby**	**Full Prime**	**Full Continuous**
BHP @ 1800 RPM (60 Hz)	1145	2185	3225	4308	3919	3572
Fuel Consumption L/Hr (US Gal/Hr)	254 (67)	443 (117)	602 (159)	787 (208)	719 (190)	659 (174)
Exhaust Gas Flow m^3/min (CFM)	282 (9963)	45 (15921)	55 (19592)	662 (23369)	623 (21997)	588 (20776)
Exhaust Gas Temperature °C (°F)	331 (628)	354 (670)	377 (711)	443 (830)	417 (783)	396 (745)
Exhaust Emission Data						
HC (Total Unburned Hydrocarbons)	0.3 (114)	0.18 (76)	0.1 (48)	0.07 (33)	0.08 (37)	0.09 (42)
NOx (Oxides of Nitrogen as NO_2)	3.4 (1290)	3.3 (1350)	4.2 (1900)	5.2 (2440)	4.9 (2250)	4.5 (2080)
CO (Carbon Monoxide)	0.5 (170)	0.2 (90)	0.1 (60)	0.2 (100)	0.2 (80)	0.2 (70)
PM (Particulate Matter)	0.21 (69)	0.1 (37)	0.06 (23)	0.04 (18)	0.05 (19)	0.05 (21)
SO_2 (Sulfur Dioxide)	0.006 (1.8)	0.005 (1.8)	0.005 (1.8)	0.005 (1.8)	0.005 (1.8)	0.005 (1.8)
Smoke (FSN)	0.92	0.62	0.46	0.44	0.44	0.45

All values (except smoke) are cited: g/BHP-hr (mg/Nm^3 @ 5% O_2)

Test Conditions

Steady-state emissions recorded per ISO8178-1 during operation at rated engine speed (+/-2%) and stated constant load (+/-2%) with engine temperatures, pressures and emission rates stabilized.

Fuel Specification:	40-48 Cetane Number, 0.0015 Wt.% Sulfur; Reference ISO8178-5, 40 CFR 86, 1313—98 Type 2-D and ASTM D975 No. 2-D. Fuel Density at 0.85 Kg/L (7.1 lbs/US Gal)
Air Inlet Temperature	25 °C (77 °F)
Fuel Inlet Temperature:	40 °C (104 °F)
Barometric Pressure:	100 kPa (29.53 in Hg)
Humidity:	NOx measurement corrected to 10.7 g/kg (75 grains H_2O/lb) of dry air
Intake Restriction:	Set to 20 in of H_2O as measured from compressor inlet
Exhaust Back Pressure:	Set to 1.5 in Hg
Note:	mg/m^3 values are measured dry, corrected to 5% O_2 and normalized to standard temperature and pressure (0°C, 101.325 kPa)

The NOx, HC, CO and PM emission data tabulated here are representative of test data taken from a single engine under the test conditions shown above. Data for the other components are estimated. These data are subjected to instrumentation and engine-to-engine variability. Field emission test data are not guaranteed to these levels. Actual field test results may vary due to test site conditions, installation, fuel specification, test procedures and instrumentation. Engine operation with excessive air intake or exhaust restriction beyond published maximum limits, or with improper maintenance, may results in elevated emission levels.

2019 EPA Tier 2 Exhaust Emission Compliance Statement C3000 D6e Stationary Emergency

60 H□Diesel Generator Set

Compliance Information:

The engine used in this generator set complies with Tier 2 emissions limit of U.S. EPA New Source Performance Standards for stationary emergency engines under the provisions of 40 CFR 60 Subpart IIII when tested per ISO8178 D2.

Engine Manufacturer:	Cummins Inc.
EPA Certificate Number:	KCEXL95.0AAA-015
Effective Date:	10/01/2018
Date Issued:	10/01/2018
EPA Engine Family (Cummins Emissions Family):	KCEXL95.0AAA

Engine Information:

Model:	QSK95-G9	Bore:	7.48 in. (190 mm)
Engine Nameplate HP:	5051	Stroke:	8.27 in. (210 mm)
Type:	4 cycle, Vee, 16 Cylinder Diesel	Displacement:	5816 cu. in. (95.3 liters)
Aspiration:	Turbocharged and Aftercooled	Compression Ratio:	15.5:1
Emission Control Device:	Turbocharged and Aftercooled	Exhaust Stack Diameter:	14 in.

Diesel Fuel Emissions Limits

D2 Cycle Exhaust Emissions

	Grams per BHP-hr			Grams per kW_m-hr		
	NO_X □ NMHC	CO	PM	NO_X □ NMHC	CO	PM
Test Results	4.6	0.5	0.11	6.2	0.7	0.15
EPA Emissions Limit	4.8	2.6	0.15	6.4	3.5	0.20

Test methods: EPA nonroad emissions recorded per 40CFR89 (ref. ISO8178-1) and weighted at load points prescribed in Subpart E, Appendix A for constant speed engines (ref. ISO8178-4, D2)

Diesel fuel specifications: Cetane number: 40-48. Reference: ASTM D975 No. 2-D, <15 ppm Sulfur

Reference conditions: Air inlet temperature: 25°C (77°F), Fuel inlet temperature: 40°C (104°F). Barometric pressure: 100 kPa (29.53 in Hg), Humidity: 10.7 g/kg (75 grains H2O/lb) of dry air; required for NOx correction, Restrictions: Intake restriction set to a maximum allowable limit for clean filter; Exhaust back pressure set to a maximum allowable limit.

Tests conducted using alternate test methods, instrumentation, fuel or reference conditions can yield different results. Engine operation with excessive air intake or exhaust restriction beyond published maximum limits, or with improper maintenance, may result in elevated emission levels.

October 3rd, 2019

To Whom It May Concern:

With regards to Cummins Power Systems (CPS) manufactured diesel generator set model **C3000D6e** rated for 60 Hz operation and equipped with Cummins **QSK95-G9** engine:

When tested under the following conditions:

Table 1	
Fuel Specification:	ASTM D975 No. 2-D S15 diesel fuel with 0.0015% sulfur content (by weight), and 42-48 cetane number.
Air Inlet Temperature:	77 °F
Fuel Inlet Temperature:	104 °F (at fuel pump inlet)
Barometric Pressure:	29.53 in. Hg
Humidity:	NOx measurement corrected to 75 grains H2O/lb. dry air

Based on engine emissions validation testing, the table below represents the nominal performance and exhaust emissions data for the generator set listed above:

	Standby					
PERFORMANCE DATA	**1%**	**10%**	**25%**	**50%**	**75%**	**100%**
BHP @ 1800 RPM (60 Hz)	152	528	1154	2199	3243	4288
Power Output (KWe)	30	300	750	1500	2250	3000
Fuel Consumption (US Gal/Hr.)	26	41	68	118	160	207
Exhaust Gas Flow (CFM)	5480	7024	10020	16016	19646	23299
Exhaust Gas Temperature (°F)	427	533	629	670	712	828
NMHC (Nonmethane Hydrocarbons)	2.82	0.62	0.30	0.18	0.10	0.07
NOx (Oxides of Nitrogen)	11.8	4.8	3.4	3.3	4.2	5.2
CO (Carbon Monoxide)	7.2	1.4	0.5	0.2	0.1	0.2
PM (Particulate Matter)	0.52	0.30	0.21	0.10	0.06	0.04
All emissions values are cited as g/BHP-hr						

Steady-State emissions recorded per ISO8178-1 during operation at rated engine speed (+/-2%) and stated constant load (+/-2%) with engine temperatures, pressures and emission rates stabilized.

The NOx, HC, CO, and PM emission data tabulated here are representative of test data taken from a single engine under the test conditions shown above. Data for the other components are estimated. This data is subject to instrumentation and engine-to-engine variability. Field emissions test data is not guaranteed to these levels. Actual field test results may vary due to test ambient, site conditions, installation, fuel specification, test procedures, instrumentation and ambient correction factors. Engine operation with excessive air intake or exhaust restriction beyond published maximum limits, or with improper maintenance, may result in elevated emission levels.

Values provided in the table below are representative of "Potential Site Variation" for the Digital Realty 2825 Lafayette site in Santa Clara, CA. These values account for variances as indicated above without consideration of improper generator set maintenance.

	Standby					
PERFORMANCE DATA	**1%**	**10%**	**25%**	**50%**	**75%**	**100%**
BHP @ 1800 RPM (60 Hz)	152	528	1154	2199	3243	4288
Power Output (KWe)	30	300	750	1500	2250	3000
NMHC (Nonmethane Hydrocarbons)	4.79	1.05	0.51	0.31	0.17	0.12
NOx (Oxides of Nitrogen)	15.3	6.2	4.4	4.3	5.5	6.8
CO (Carbon Monoxide)	14.4	2.8	1.0	0.4	0.2	0.4
PM (Particulate Matter)	1.30	0.75	0.53	0.25	0.15	0.10
All emissions values are cited as g/BHP-hr						
Potential Site variation values provided above account for Engine, Ambient and Measurement variation with no correction factors.						

This letter does not supersede any of the commercial terms of sale, including, but not limited to, warranty coverage and compliance with law obligations. THE INFORMATION IN THIS LETTER IS PROVIDED "AS IS" AND WITH ALL FAULTS AND DEFECTS. CUMMINS DOES NOT WARRANT THE ACCURACY OF THE INFORMATION PROVIDED AND THIS LETTER SHOULD NOT BE SHARED WITH THIRD PARTIES WITHOUT CUMMINS PRIOR WRITTEN CONSENT. For further questions on this product or application, please contact the local Cummins Sales and Service representative.

Best Regards,

Tochukwu Duru

Application Engineer – Strategic Accounts (Data Center)

Office: +1 (651) 787-6252

Exhaust emission data sheet 1000DQFAD

60 Hz Diesel generator set

Engine information:			
Model:	Cummins Inc. QST30-G5 NR2	Bore:	5.51 in. (139 mm)
Type:	4 Cycle, 50° V, 12 cylinder diesel	Stroke:	6.5 in. (165 mm)
Aspiration:	Turbocharged and low temperature after-cooled	Displacement:	1860 cu. in. (30.4 liters)
Compression ratio:	14.7:1		
Emission control device:	After-cooled (air-to-air)		

Performance data	**1/4 Standby**	**1/2 Standby**	**3/4 Standby**	**Full Standby**	**Full Prime**
BHP @ 1800 RPM (60 Hz)	371	741	1112	1482	1322
Fuel consumption (gal/Hr)	19.1	35.8	54.1	72.2	63.9
Exhaust gas flow (CFM)	2780	4500	6370	7540	6950
Exhaust gas temperature (°F)	620	760	814	890	873
Exhaust emission data					
HC (Total unburned hydrocarbons)	0.12	0.10	0.08	0.07	0.08
NOx (Oxides of nitrogen as NO2)	4.17	5.20	3.87	3.95	4.00
CO (Carbon monoxide)	0.66	0.36	0.48	0.66	0.58
PM (Particular matter)	0.19	0.15	0.12	0.11	0.11
SO2 (Sulfur dioxide)	0.11	0.10	0.10	0.11	0.10
Smoke (Bosch)	0.88	0.80	0.79	0.73	0.75

All values are Grams/HP-Hour, Smoke is Bosch #

Test conditions

Data was recorded during steady-state rated engine speed (± 25 RPM) with full load (± 2%). Pressures, temperatures, and emission rates were stabilized.

Fuel specification:	46.5 Cetane Number, 0.035 Wt.% Sulfur; Reference ISO8178-5, 40CFR86. 1313-98 Type 2-D and ASTM D975 No. 2-D.
Fuel temperature:	99 ± 9 °F (at fuel pump inlet)
Intake air temperature:	77 ± 9 °F
Barometric pressure:	29.6 ± 1 in. Hg
Humidity:	NOx measurement corrected to 75 grains H2O/lb dry air
Reference standard:	ISO 8178

The NOx, HC, CO and PM emission data tabulated here were taken from a single engine under the test conditions shown above. Data for the other components are estimated. These data are subjected to instrumentation and engine-to-engine variability. Field emission test data are not guaranteed to these levels. Actual field test results may vary due to test site conditions, installation, fuel specification, test procedures and instrumentation. Engine operation with excessive air intake or exhaust restriction beyond published maximum limits, or with improper maintenance, may results in elevated emission levels.

2019 EPA Tier 2 Exhaust Emission Compliance Statement 1000DQFAD Stationary Emergency,

60 H□Diesel Generator Set

Compliance Information:

The engine used in this generator set complies with Tier 2 emissions limit of U.S. EPA New Source Performance Standards for stationary emergency engines under the provisions of 40 CFR 60 Subpart IIII.

Engine Manufacturer:	Cummins Inc.
EPA Certificate Number:	KCEXL030.AAD-028
Effective Date:	10/10/2018
Date Issued:	10/10/2018
EPA Engine Family (Cummins Emissions Family):	KCEXL030.AAD

Engine Information:

Model:	QSK30/QST30-G/QST30-G5 NR2	Bore:	5.51 in. (140 mm)
Engine Nameplate HP:	1490	Stroke:	6.50 in. (165 mm)
Type:	4 Cycle, 50°V, 12 Cylinder Diesel	Displacement:	1860 cu. in. (30.5 liters)
Aspiration:	Turbocharged & CAC	Compression Ratio:	14.0:1
Emission Control Device:	Electronic Control	Exhaust Stack Diameter:	2 – 8 in. (2 – 203 mm)

Diesel Fuel Emissions Limits

D2 cycle exhaust emissions	Grams per BHP-hr			Grams per kW_m-hr		
	NO_x □ NMHC	CO	PM	NO_x □ NMHC	CO	PM
Test Results	4.4	0.5	0.10	5.9	0.7	0.13
EPA Emissions Limit	4.8	2.6	0.15	6.4	3.5	0.20

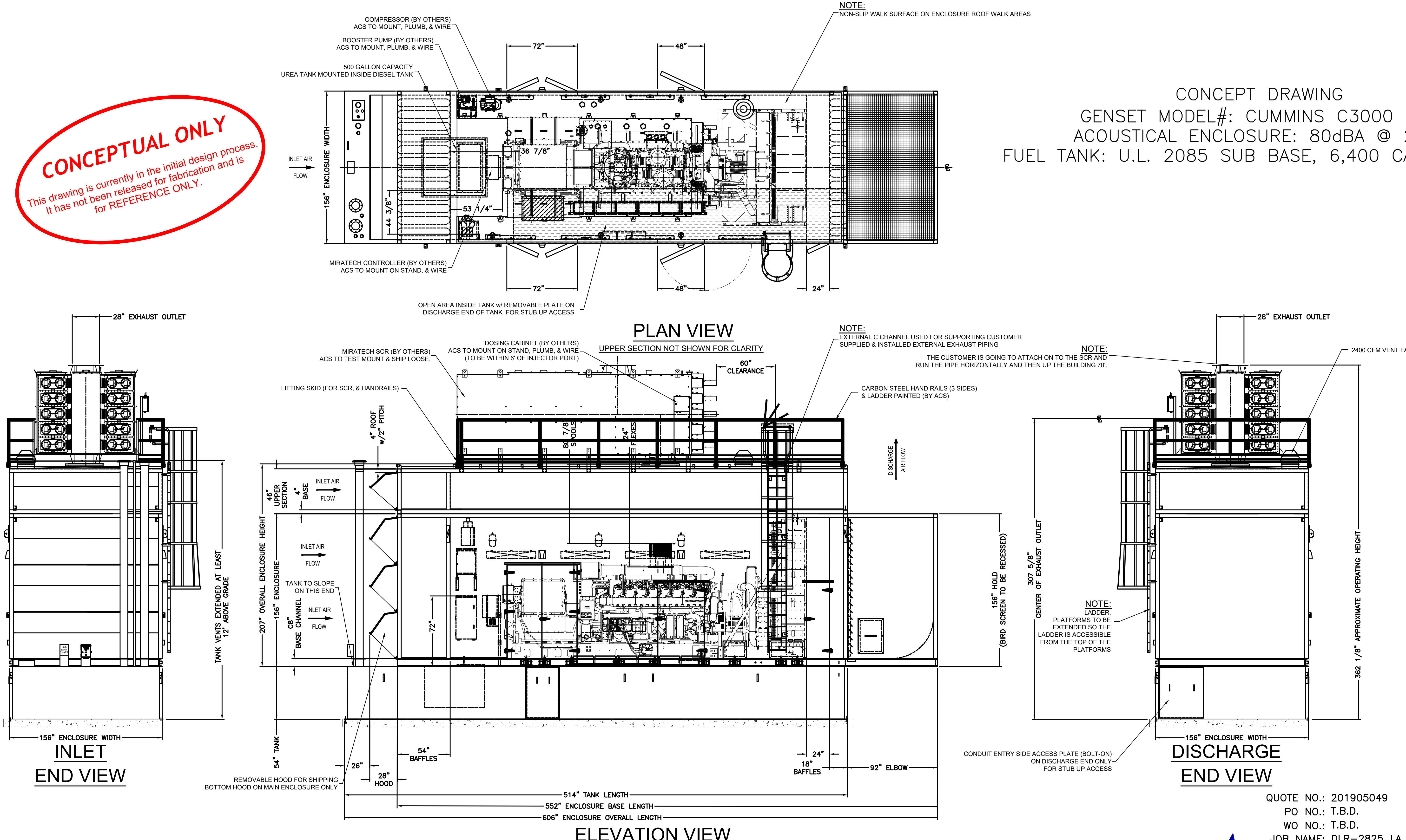
Test methods: EPA nonroad emissions recorded per 40 CFR 89 (ref. ISO8178-1) and weighted at load points prescribed in Subpart E, Appendix A for constant speed engines (ref. ISO8178-4, D2)

Diesel fuel specifications: Cetane number: 40-48. Reference: ASTM D975 No. 2-D, 300-500 ppm Sulfur.

Reference conditions: Air inlet temperature: 25°C (77°F), Fuel inlet temperature: 40°C (104°F). Barometric pressure: 100 kPa (29.53 in Hg), Humidity: 10.7 g/kg (75 grains H_2O/lb) of dry air; required for NOx correction, Restrictions: Intake restriction set to a maximum allowable limit for clean filter; Exhaust back pressure set to a maximum allowable limit.

Tests conducted using alternate test methods, instrumentation, fuel or reference conditions can yield different results. Engine operation with excessive air intake or exhaust restriction beyond published maximum limits, or with improper maintenance, may result in elevated emission levels.

CONCEPT DRAWING
GENSET MODEL#: CUMMINS C3000 D6e
ACOUSTICAL ENCLOSURE: 80dBA @ 23FT
FUEL TANK: U.L. 2085 SUB BASE, 6,400 CAPACITY GAL



QUOTE NO.: 201905049
PO NO.: T.B.D.
WO NO.: T.B.D.
JOB NAME: DLR-2825 LA FAYETTE- SANTA CLARA

PROPRIETARY NOTICE

REV	ECO NUMBER	DESCRIPTION	BY	APPD	DATE
F	–	UPDATED PER SCR EXHAUST DESIGN	CE	TK	01/19/21
E	–	ADDED PLATFORM DETAIL PAGES	CE	TK	09/02/20
D	–	UPDATE TANK HEIGHT TO 44", & UPDATE STUB UP ACCESS	CE	TK	08/12/20
C	–	UPDATE TANK VENTS, EXTEND TANK, UPDATE ENCL LENGTH	CE	TK	08/04/20
B	–	UPDATE EXHAUST TO RYPOS DPF	CE	TK	08/20/19
A	–	UPDATE TANK GALLONS & TANK HEIGHT IN CHART	CE	TK	07/17/19

ACS MANUFACTURING, INC.
1601 COMMERCE BLVD. - DENISON, TEXAS - 75020

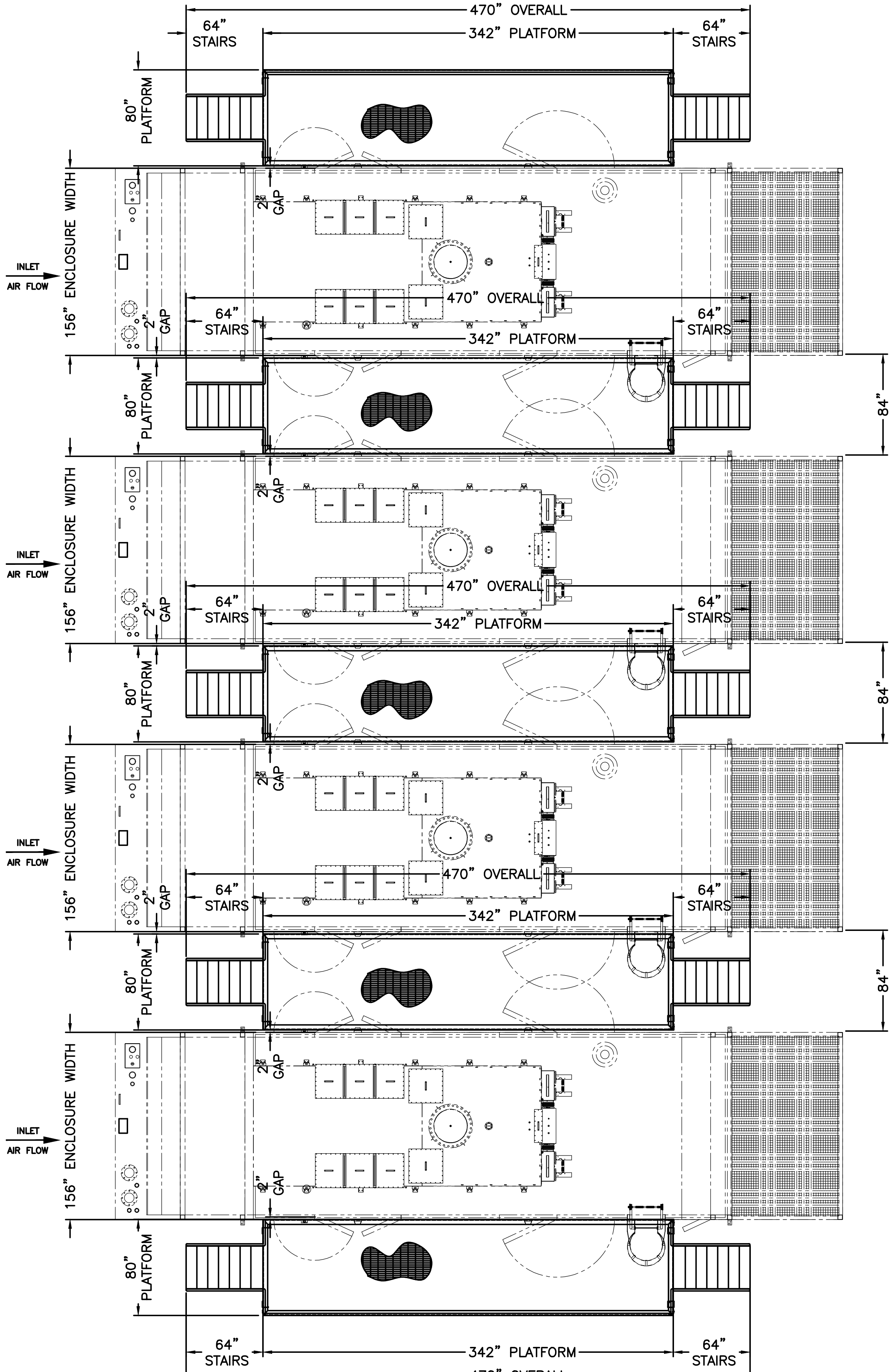
TOLERANCES (EXCEPT AS NOTED)
DECIMAL ± 0.125"
FRACTIONAL ± 1/8"
ANGULAR ± 3°
SCALE 48 TO 1
DATE 05/31/19

CUMMINS PACIFIC

TITLE GEN-SET ACOUSTICAL ENCLOSURE ASSEMBLY

DRAWING NUMBER QT-201905049

DRAWN BY: RL
CHECKED BY:
CHECKED BY:
APPROVED BY: TK
SHEET 1 OF 3
REV. F



PLAN VIEW

PLATFORM CONSTRUCTION

WALK SURFACE: GALVANIZED GRATING

CONSTRUCTION: CARBON STEEL–WELDED FRAME w/REMOVABLE STAIRS, & HANDRAILS.
S/S GROUNDING LUGS w/STRAPS FOR BONDING TO ENCLOSURE.
ALL PLATFORM LEGS TO BE ADJUSTABLE 1"–4" AND THE STAIRS TO BE SLOTTED FOR ADJUSTMENT.
ALL PLATFORM LEGS TO BE KICKED IN 6" SO THEY MISS THE GEN SLAB.
BUILT TO OSHA STANDARDS

FINISH: HOT DIPPED GALVANNIZED

CONCEPTUAL ONLY
This drawing is currently in the initial design process. It has not been released for fabrication and is for REFERENCE ONLY.

CUSTOMER TO CONFIRM PLATFORM LAYOUT

QUOTE NO.: 201905049
PO NO.: T.B.D.
WO NO.: T.B.D.
JOB NAME: DLR–2825 LA FAYETTE– SANTA CLARA

ACS MANUFACTURING, INC.
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TOLERANCES (EXCEPT AS NOTED)	
DECIMAL	± 0.125"
FRACTIONAL	± 1/8"
ANGULAR	± 3°
SCALE	48 TO 1
DATE	09/02/20

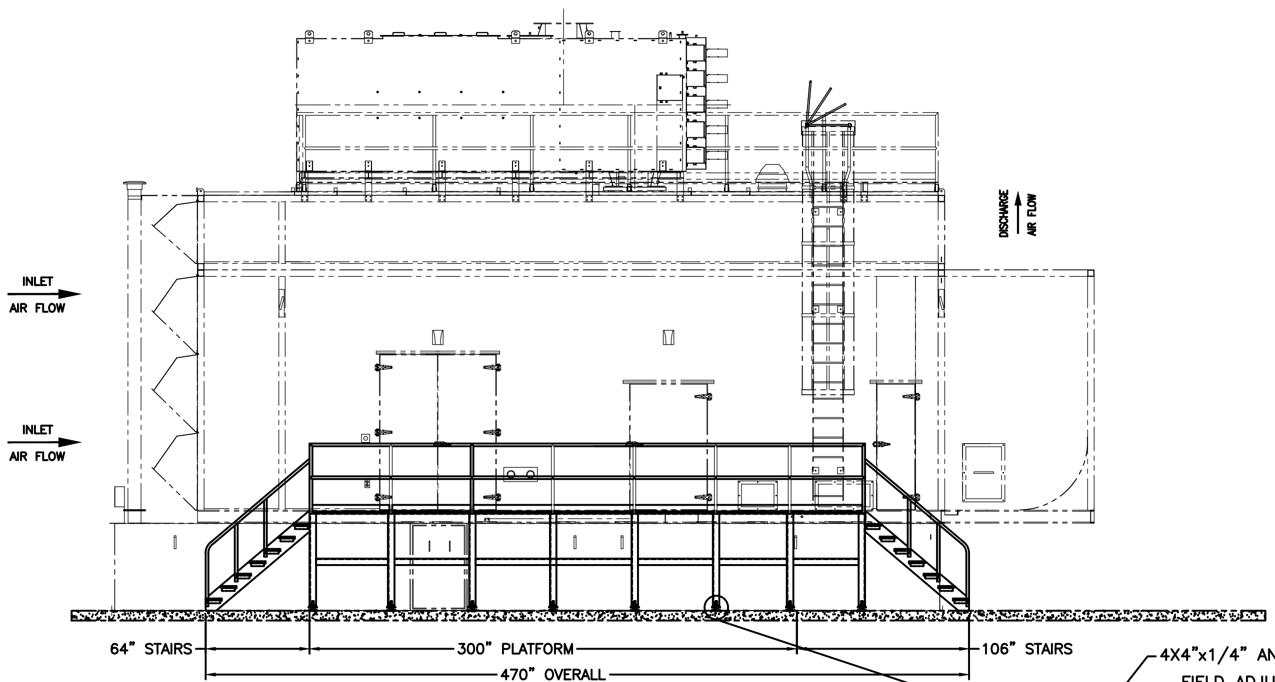
CUMMINS PACIFIC

TITLE: PLATFORM DETAIL SHEET

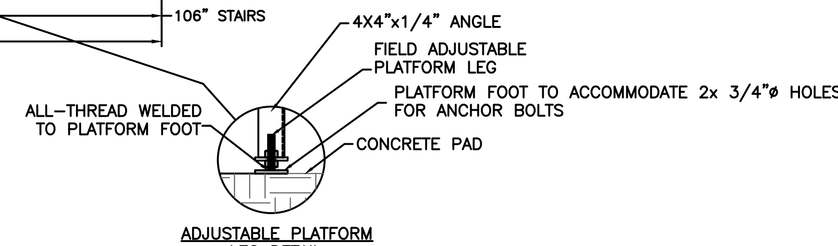
DRAWING NUMBER: QT–201905049

DRAWN BY: CE
CHECKED BY:
CHECKED BY:
APPROVED BY: TK
SHEET: 2 OF 3
REV.: F

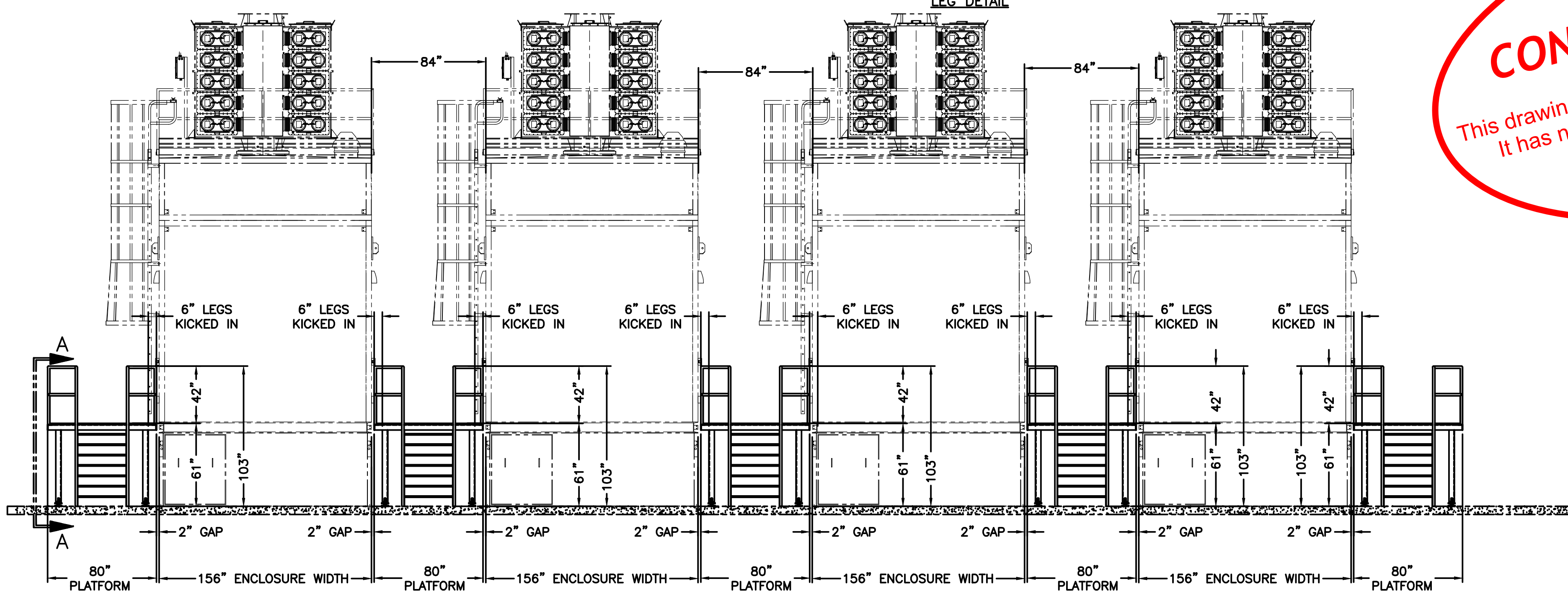
REV	ECO NUMBER	DESCRIPTION	BY	APPD	DATE
F	–	UPDATE PLATFORM DIMS & UPDATE ENCLOSURE VIEWS	CE	TK	01/19/21
E	–	ADDED PLATFORM DETAIL SHEET	CE	TK	09/02/20



SECTION A–A



ADJUSTABLE PLATFORM LEG DETAIL



END VIEW

PLATFORM CONSTRUCTION

WALK SURFACE: GALVANIZED GRATING
CONSTRUCTION: CARBON STEEL–WELDED FRAME w/REMOVABLE STAIRS, & HANDRAILS.
S/S GROUNDING LUGS w/STRAPS FOR BONDING TO ENCLOSURE.
ALL PLATFORM LEGS TO BE ADJUSTABLE 1"–4" AND THE STAIRS TO BE SLOTTED FOR ADJUSTMENT.
ALL PLATFORM LEGS TO BE KICKED IN 6" SO THEY MISS THE GEN SLAB.
BUILT TO OSHA STANDARDS
FINISH: HOT DIPPED GALVANNIZED

CONCEPTUAL ONLY

This drawing is currently in the initial design process. It has not been released for fabrication and is for REFERENCE ONLY.

QUOTE NO.: 201905049
PO NO.: T.B.D.
WO NO.: T.B.D.
JOB NAME: DLR–2825 LA FAYETTE– SANTA CLARA

CUSTOMER TO CONFIRM PLATFORM LAYOUT

PROPRIETARY NOTICE

REV	ECO NUMBER	DESCRIPTION	BY	APPD	DATE
F	–	UPDATE PLATFORM DIMS & UPDATE ENCLOSURE VIEWS	CE	TK	01/19/21
E	–	ADDED PLATFORM DETAIL SHEET	CE	TK	09/02/20

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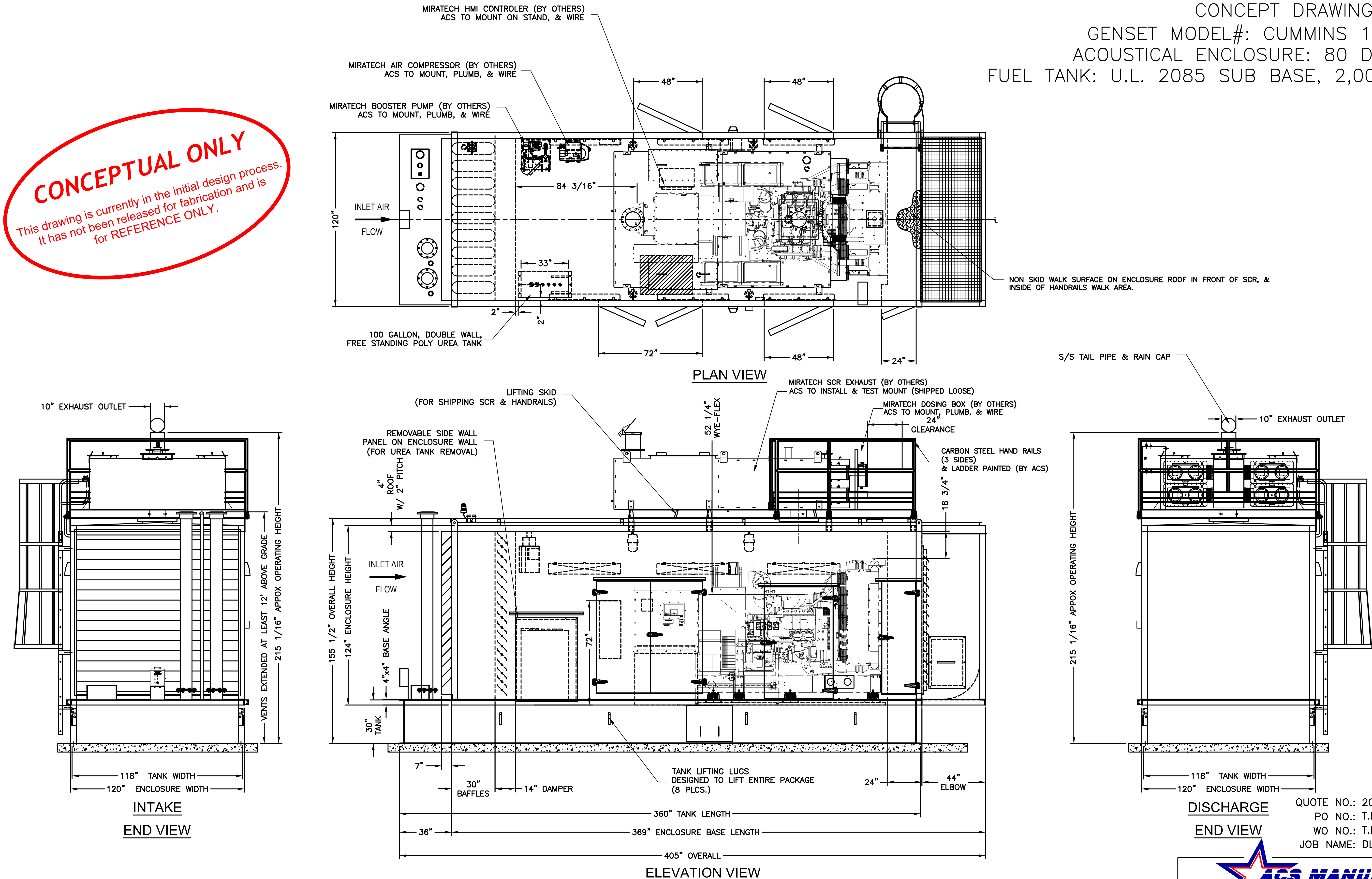
TOLERANCES (EXCEPT AS NOTED)	
DECIMAL	±0.125"
FRACTIONAL	±1/8"
ANGULAR	± 3°
SCALE	48 TO 1
DATE	09/02/20
CUSTOMER	CUMMINS PACIFIC
TITLE	PLATFORM DETAIL SHEET
DRAWING NUMBER	QT–201905049
DRAWN BY:	CE
CHECKED BY:	
CHECKED BY:	
APPROVED BY:	TK
SHEET	3 OF 3
REV.	F

CONCEPT DRAWING

GENSET MODEL#: CUMMINS 1000 DQFAD
ACOUSTICAL ENCLOSURE: 80 DBA @ 23 FT
FUEL TANK: U.L. 2085 SUB BASE, 2,000 CAPACITY GALLONS



QUOTE NO.: 201906023
PO NO.: T.B.D.
WO NO.: T.B.D.
JOB NAME: DLR–2825 LA FAYETTE– SANTA CLARA–PBB

ACS MANUFACTURING, INC.
1601 COMMERCE BLVD. - DENISON, TEXAS - 75020

TOLERANCES (EXCEPT AS NOTED)	CUMMINS PACIFIC	DRAWN BY:	CE
DECIMAL ± 0.125"		CHECKED BY:	
FRACTIONAL ± 1/8"		CHECKED BY:	
ANGULAR ± 3°	TITLE: GEN–SET ACOUSTICAL ENCLOSURE ASSEMBLY	APPROVED BY:	TK
SCALE 48 TO 1		SHEET	REV.
DATE 06/18/19	DRAWING NUMBER QT–201906023	1 OF 1	A

REV	ECO NUMBER	DESCRIPTION	BY	APPD	DATE
A	–	UPDATE DESIGN WITH SCR EXHAUST & COMPONENTS	CE	TK	01/21/21