



San Joaquin Valley

AIR POLLUTION CONTROL DISTRICT



DEC 30 2014

Jalayna Bolden
New Cingular Wireless PCS, LLC (DBA AT&T)
2600 Camino Ramon, Room 3E000V
San Ramon, CA 94583

Re: Notice of Preliminary Decision - Authority to Construct
Facility Number: C-8746
Project Number: C-1142799

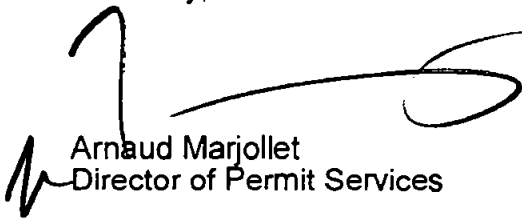
Dear Ms. Bolden:

Enclosed for your review and comment is the District's analysis of New Cingular Wireless PCS, LLC (DBA AT&T)'s application for an Authority to Construct for the revision of the NOx and CO emission factors on the permit for a 56 horsepower LPG/propane fired emergency-standby IC engine, at 2515 South DeWolf Avenue, Fresno.

The notice of preliminary decision for this project will be published approximately three days from the date of this letter. After addressing all comments made during the 30-day public notice period, the District intends to issue the Authority to Construct. Please submit your written comments on this project within the 30-day public comment period, as specified in the enclosed public notice.

Thank you for your cooperation in this matter. If you have any questions regarding this matter, please contact Mr. Brian Clerico of Permit Services at (559) 230-5892.

Sincerely,



Arnaud Marjollet
Director of Permit Services

AM:bkc

Enclosures

cc: Mike Tollstrup, CARB (w/ enclosure) via email

Seyed Sadredin
Executive Director/Air Pollution Control Officer

Northern Region
4800 Enterprise Way
Modesto, CA 95356-8718
Tel: (209) 557-6400 FAX: (209) 557-6475

Central Region (Main Office)
1990 E. Gettysburg Avenue
Fresno, CA 93726-0244
Tel: (559) 230-6000 FAX: (559) 230-6061

Southern Region
34946 Flyover Court
Bakersfield, CA 93308-9725
Tel: 661-392-5500 FAX: 661-392-5585

San Joaquin Valley Air Pollution Control District

Authority to Construct

Application Review

LPG/Propane Emergency Standby IC Engine

Facility Name: New Cingular Wireless PCS, LLC (DBA AT&T) Date: December 14, 2014

Mailing Address: 2600 Camino Ramon, Room 3E000 V Engineer: Brian Clerico
San Ramon, CA 94583 Lead Engineer: Carlos Garcia

Contact Person: Edward Krisnadi, Consultant

Telephone: (714) 282-8240

Application #: C-8746-1-1

Project #: C-1142799

Complete: November 18, 2014

I. Proposal

New Cingular Wireless PCS, LLC (DBA AT&T) has submitted an Authority to Construct (ATC) application to modify the NOx and CO emission factors on an existing 56 bhp LPG/propane fired emergency IC engine. The engine was installed in 1997 without obtaining an ATC. Recently, the District issued an ATC for the engine under ATC C-8746-1-0, project C-1142123. The reason for the proposed modification is to substitute what EPA deems to be more accurate NOx and CO emission factors in place of the NOx and CO emission factors on the current permit. The NOx and CO emission factors on the current Permit to Operate (PTO) were based on the standard emission factors used in the District's Guidelines for Expedited Application Reviews (GEAR) for emergency standby LPG/propane-fired IC engines at the time of original permitting of ATC C-8746-1-0, project C-1142123. See Appendix A for ATC C-8746-1-0, which has not yet been converted into a PTO.

Background:

US EPA conducted a national audit of AT&T Mobility IC engines to determine their compliance status with permit conditions and SIP rules.¹ For a number of emergency-standby LPG/propane IC engines, manufacturer's emissions data were unavailable, incomplete, or otherwise regarded as unreliable. In the absence of reliable manufacturer's emissions data, the audit called for an estimate of emission rates using

¹ See Appendix B for letter of explanation submitted by AT&T's agent.

the US EPA's NONROAD Model.² The model results indicate that some of AT&T's engines may not meet the emission factors indicated on their permits.

The audit findings suggest one of two courses of action to ensure that the engines are in compliance with permit conditions. The first option would be to conduct emissions tests on the engines to demonstrate that the engines are in fact meeting their permitted limits. The testing protocol that EPA requires to satisfy the audit includes Method 100 sampling for NO_x and CO and an EPA VOC test method at multiple loads. The emissions testing protocol does not allow for hand-held portable emissions measurement devices. The second option would be to modify the permits to reflect the emission factors that US EPA's NONROAD engine model indicated were more accurate or representative for the engine make, model, and year.

Because source testing so many engines would be cost prohibitive, AT&T preferred to revise the emission factors. At AT&T's request, the District agreed to revise the emission factors according to EPA's NONROAD Model. In evaluating the modification to the emission factors, this application review will show that had the proposed revised factors been used at the time of original permitting, the District would have applied the same Best Available Control Technology (BACT) requirements. In addition, although the engine in this project is not new, for purposes of determining whether this project triggers public notice for a new emission units having a potential to emit greater than 100 lb/day of any pollutant, the revised emission factors (i.e. NO_x and CO) will be evaluated as if they were for a new unit to avoid any appearance of circumventing the public notice requirement in the original approval by using emission factors which EPA's NONROAD Model indicates are too low. The emission factors that are not being revised (i.e. PM₁₀, SO_x, and VOC) will not be reevaluated as new under this section.

This project will trigger a 30-day public notification for having a potential to emit for CO greater than 100 lb/day.

II. Applicable Rules

Rule 2201 New and Modified Stationary Source Review Rule (4/21/11)
Rule 2520 Federally Mandated Operating Permits (6/21/01)
Rule 4001 New Source Performance Standards (4/14/99)
Rule 4002 National Emission Standards for Hazardous Air Pollutants (5/20/04)
Rule 4101 Visible Emissions (2/17/05)
Rule 4102 Nuisance (12/17/92)
Rule 4201 Particulate Matter Concentration (12/17/92)
Rule 4701 Internal Combustion Engines - Phase 1 (8/21/03)
Rule 4702 Internal Combustion Engines (11/14/13)
Rule 4801 Sulfur Compounds (12/17/92)
CH&SC 41700 Health Risk Assessment
CH&SC 42301.6 School Notice

² According to Karl Lany of SCEC, the consulting firm representing AT&T, EPA's NONROAD Model is not limited to engines regulated by the 40 CFR 89 and 40 CFR 1039 nonroad certification program.

California Environmental Quality Act (CEQA)
Public Resources Code 21000-21177: California Environmental Quality Act (CEQA)
California Code of Regulations, Title 14, Division 6, Chapter 3, Sections 15000-15387:
CEQA Guidelines

III. Project Location

The IC engine is located at 2515 South DeWolf Avenue in Fresno. The District has verified with aerial maps that this engine is not located within 1,000 feet of a school. Therefore, pursuant to California Health and Safety Code 42301.6, a school notice is not required.

IV. Process Description

The emergency-standby engine powers an electrical generator that serves a remote cell phone tower site. Other than emergency standby operation, the engine may be operated up to 100 hours per year for maintenance and testing purposes.

V. Equipment Listing

Current PTO Equipment Description

C-8746-1-0: 56 HP GENERAC MODEL 4.3GN LPG/PROPANE-FIRED EMERGENCY
STANDBY IC ENGINE POWERING AN ELECTRICAL GENERATOR

ATC Modification

C-8746-1-1: MODIFICATION OF 56 BHP GENERAC MODEL 4.3GN RICH-BURN³
LPG/PROPANE-FIRED EMERGENCY STANDBY IC ENGINE
POWERING AN ELECTRICAL GENERATOR: REVISE NOX AND CO
EMISSION FACTORS PER EPA NONROAD MODEL

Post-project PTO Equipment Description

C-8746-1-1: 56 BHP GENERAC MODEL 4.3GN RICH-BURN LPG/PROPANE-FIRED
EMERGENCY STANDBY IC ENGINE POWERING AN ELECTRICAL
GENERATOR

VI. Emission Control Technology Evaluation

The engine is equipped with Positive Crankcase Ventilation (PCV). The PCV system reduces crankcase VOC and PM₁₀ emissions by at least 90% over an uncontrolled crankcase vent.

³ According to the supplemental application submitted with project C-1142123, the engine is rich-burn. The District's GEAR for emergency-standby LPG/propane-fired IC engines includes this designation in the equipment description.

VII. General Calculations

A. Assumptions

Emergency operating schedule: 24 hours/day
Non-emergency operating schedule: 100 hours/year
EPA F-factor (adjusted to 60 °F): 8,578 dscf/MMBtu (from EPA Method 19)
Fuel heating value: 94,000 Btu/gal (AP-42, Appendix A, pg. 5, dated 9/85)
BHP to Btu/hr conversion: 2,542.5 Btu/bhp-hr
Thermal efficiency of engine: commonly \approx 35%

B. Emission Factors

The current PTO emission factors for NO_x and CO are presented for reference purposes only. They will not be used to assess the pre-project emissions. Both the pre-project and post-project emissions will be based on the revised emission factors since the revised emission factors represent a correction and not a change in the expected emissions.

Current PTO Emission Factors		
Pollutant	Emission Factor (g/bhp-hr)	Source
NO _x	4.87	Current PTO, GEAR
SO _x	0.012	From application review for C-1142123.
PM ₁₀	0.175	Current PTO, GEAR
CO	4.52	Current PTO, GEAR
VOC	2.91	Current PTO, GEAR

Other than NO_x and CO, EPA did not identify any other emission as needing revision.

Revised Emission Factors		
Pollutant	Emission Factor (g/bhp-hr)	Source
NO _x	13.0	Proposed by applicant, EPA NONROAD Model (see Appendix B)*
SO _x	0.012	GEAR
PM ₁₀	0.175	Current PTO, GEAR
CO	39.0	Proposed by applicant, EPA NONROAD Model (see Appendix B)*
VOC	2.91	Current PTO, GEAR

*The model assumptions include the fuel type, horsepower category, type of service (e.g. generator), and model year (which contributes to a deterioration factor, assuming 500 hours per year operation)

C. Calculations

Since the premise of this project is that the current emission factors for NO_x and CO are inaccurate, the revised emission factors merely represent a correction and not an actual modification of emissions or in a change in the mode of operation, the pre-project (PE1) and post-project (PE2) potential to emit will be equal.

1. Pre-Project Emissions (PE1)

The daily and annual PE1 are calculated as follows:

$$\text{Daily PE1 (lb-pollutant/day)} = \text{EF (g-pollutant/bhp-hr)} \times \text{rating (bhp)} \\ \times \text{operation (hr/day)} / 453.6 \text{ g/lb}$$

$$\text{Annual PE1 (lb-pollutant/yr)} = \text{EF (g-pollutant/bhp-hr)} \times \text{rating (bhp)} \\ \times \text{operation (hr/yr)} / 453.6 \text{ g/lb}$$

PE1						
Pollutant	Emissions Factor (g/bhp-hr)	Rating (bhp)	Daily Hours of Operation (hr/day)	Annual Hours of Operation (hr/yr)	Daily PE1 (lb/day)	Annual PE1 (lb/yr)
NO _x	13.0	56	24	100	38.5	160
SO _x	0.012	56	24	100	0.0	0
PM ₁₀	0.175	56	24	100	0.5	2
CO	39.0	56	24	100	115.6	481
VOC	2.91	56	24	100	8.6	36

2. Post-Project PE (PE2)

The daily and annual PE2 are calculated as follows:

$$\text{Daily PE2 (lb-pollutant/day)} = \text{EF (g-pollutant/bhp-hr)} \times \text{rating (bhp)} \times \text{operation (hr/day)} / 453.6 \text{ g/lb}$$

$$\text{Annual PE2 (lb-pollutant/yr)} = \text{EF (g-pollutant/bhp-hr)} \times \text{rating (bhp)} \times \text{operation (hr/yr)} / 453.6 \text{ g/lb}$$

PE2						
Pollutant	Emissions Factor (g/bhp-hr)	Rating (bhp)	Daily Hours of Operation (hr/day)	Annual Hours of Operation (hr/yr)	Daily PE2 (lb/day)	Annual PE2 (lb/yr)
NO _x	13.0	56	24	100	38.5	160
SO _x	0.012	56	24	100	0.0	0
PM ₁₀	0.175	56	24	100	0.5	2
CO	39.0	56	24	100	115.6	481
VOC	2.91	56	24	100	8.6	36

3. Pre-Project Stationary Source Potential to Emit (SSPE1)

Pursuant to Section 4.9 of District Rule 2201, the Pre-Project Stationary Source Potential to Emit (SSPE1) is the Potential to Emit (PE) from all units with valid ATCs or PTOs at the Stationary Source and the quantity of Emission Reduction Credits (ERCs) which have been banked since September 19, 1991 for Actual Emissions Reductions that have occurred at the source, and which have not been used on-site.

SSPE1 is summarized in the following table. This facility has only one permit unit. The annual PE values for C-8746-1 were taken from Section VII.C.1 of this application review.

SSPE1					
Permit Unit	NO _x (lb/yr)	SO _x (lb/yr)	PM ₁₀ (lb/yr)	CO (lb/yr)	VOC (lb/yr)
C-8746-1	160	0	2	481	36
SSPE1	160	0	2	481	36

4. Post-Project Stationary Source Potential to Emit (SSPE2)

Pursuant to Section 4.10 of District Rule 2201, the Post-Project Stationary Source Potential to Emit (SSPE2) is the Potential to Emit (PE) from all units with valid ATCs or PTOs, except for emissions units proposed to be shut down as part of the Stationary Project, at the Stationary Source and the quantity of Emission Reduction Credits (ERCs) which have been banked since September 19, 1991 for Actual Emissions Reductions that have occurred at the source, and which have not been used on-site.

SSPE2 is summarized in the following table. This facility has only one permit unit. The annual PE values for C-8746-1 were taken from Section VII.C.2 of this application review.

SSPE2					
Permit Unit	NO _x (lb/yr)	SO _x (lb/yr)	PM ₁₀ (lb/yr)	CO (lb/yr)	VOC (lb/yr)
C-8746-1	160	0	2	481	36
SSPE2	160	0	2	481	36

5. Major Source Determination

Rule 2201 Major Source Determination:

Pursuant to District Rule 2201, a Major Source is a stationary source with a SSPE2 equal to or exceeding one or more of the following threshold values. For the purposes of determining major source status the following shall not be included:

- any ERCs associated with the stationary source

- Emissions from non-road IC engines (i.e. IC engines at a particular site at the facility for less than 12 months)
- Fugitive emissions, except for the specific source categories specified in 40 CFR 51.165

Rule 2201 Major Source Determination (lb/year)					
	NO _x	SO _x	PM ₁₀	CO	VOC
Facility emissions pre-project	160	0	2	481	36
Facility emissions post-project	160	0	2	481	36
Major Source Threshold	20,000	140,000	140,000	200,000	20,000
Major Source?	No	No	No	No	No

As seen in the table above, the facility is not an existing Major Source and is not becoming a Major Source as a result of this project.

Rule 2410 Major Source Determination:

The facility is not an existing major source for PSD for at least one pollutant. Therefore the facility is not an existing major source for PSD.

6. Baseline Emissions (BE)

BE = Pre-project Potential to Emit for:

- Any unit located at a non-Major Source,
- Any Highly-Utilized Emissions Unit, located at a Major Source,
- Any Fully-Offset Emissions Unit, located at a Major Source, or
- Any Clean Emissions Unit, located at a Major Source.

otherwise,

BE = Historic Actual Emissions (HAE), calculated pursuant to Section 3.23

Since the facility is a non-Major Source, BE = PE1 for all criteria pollutants.

BE					
Permit Unit	NO _x (lb/yr)	SO _x (lb/yr)	PM ₁₀ (lb/yr)	CO (lb/yr)	VOC (lb/yr)
C-8746-1	160	0	2	481	36

7. SB 288 Major Modification

SB 288 Major Modification is defined in 40 CFR Part 51.165 as "any physical change in or change in the method of operation of a major stationary source that would result in a significant net emissions increase of any pollutant subject to regulation under the Act."

Since this facility is not a Major Source for any of the pollutants addressed in this project, this project does not constitute an SB 288 major modification.

8. Federal Major Modification

District Rule 2201, Section 3.18 states that Federal Major Modifications are the same as "Major Modification" as defined in 40 CFR 51.165 and part D of Title I of the CAA.

Since this facility is not a Major Source for any pollutants, this project does not constitute a Federal Major Modification. Additionally, since the facility is not a major source for PM₁₀ (140,000 lb/year), it is not a major source for PM_{2.5} (200,000 lb/year).

9. Rule 2410 - Prevention of Significant Deterioration (PSD) Applicability Determination

Rule 2410 applies to any pollutant regulated under the Clean Air Act, except those for which the District has been classified nonattainment. The pollutants which must be addressed in the PSD applicability determination for sources located in the SJV and which are emitted in this project are: (See 52.21 (b) (23) definition of significant)

- NO₂ (as a primary pollutant)
- SO₂ (as a primary pollutant)
- CO
- PM
- PM₁₀

I. Project Emissions Increase - New Major Source Determination

The post-project potentials to emit from all new and modified units are compared to the PSD major source thresholds to determine if the project constitutes a new major source subject to PSD requirements.

The facility or the equipment evaluated under this project is not listed as one of the categories specified in 40 CFR 52.21 (b)(1)(i). The PSD Major Source threshold is 250 tpy for any regulated NSR pollutant.

PSD Major Source Determination: Potential to Emit (tons/year)						
	NO2	VOC	SO2	CO	PM	PM10
Total PE from New and Modified Units*	0	0	0	0	0	0
PSD Major Source threshold	250	250	250	250	250	250
New PSD Major Source?	N	N	N	N	N	N

* PE values that are less than 0.5 tons/year are rounded to 0.

As shown in the table above, the potential to emit for the project, by itself, does not exceed any PSD major source threshold. Therefore Rule 2410 is not applicable and no further analysis is required.

10. Quarterly Net Emissions Change (QNEC)

The QNEC is calculated solely to establish emissions that are used to complete the District's PAS emissions profile screen. Since the PE1 and PE2 are equal, the QNEC = 0 lb/qtr for all pollutants.

VIII. Compliance

Rule 2201 New and Modified Stationary Source Review Rule

A. Best Available Control Technology (BACT)

1. BACT Applicability

BACT requirements are triggered on a pollutant-by-pollutant basis and on an emissions unit-by-emissions unit basis for the following*:

- Any new emissions unit with a potential to emit exceeding two pounds per day,
- The relocation from one Stationary Source to another of an existing emissions unit with a potential to emit exceeding two pounds per day,
- Modifications to an existing emissions unit with a valid Permit to Operate resulting in an AIPE exceeding two pounds per day, and/or
- Any new or modified emissions unit, in a stationary source project, which results in an SB288 Major Modification or a Federal Major Modification, as defined by the rule.

*Except for CO emissions from a new or modified emissions unit at a Stationary Source with an SSPE2 of less than 200,000 pounds per year of CO.

The original BACT determination for C-8746-1 was based on project C-1142123, with ATC C-8746-1-0 issued July 14, 2014. In order to demonstrate that the

District's basis of approval would not have changed, BACT applicability will be re-examined as if the District had the revised emission factors at the time of original permitting.

As determined in Sections VII.C.7 and VII.C.8, this project does not result in an SB288 Major Modification or a Federal Major Modification, respectively. Therefore, BACT can only be triggered if the daily emissions exceed 2.0 lb/day for any pollutant.

The daily emissions from the engine are compared to the BACT threshold levels in the following table:

BACT Applicability				
Pollutant	PE2 (lb/day)	BACT Threshold (lb/day)	SSPE2 (lb/yr)	BACT Triggered?
NO _x	38.5	> 2.0	n/a	Yes
SO _x	0.0	> 2.0	n/a	No
PM ₁₀	0.5	> 2.0	n/a	No
CO	115.6	> 2.0 and SSPE2 ≥ 200,000 lb/yr	0	No
VOC	8.6	> 2.0	n/a	Yes

As shown above, BACT will be triggered for NO_x and VOC emissions from the engine for this project.

2. BACT Guideline

The District based its BACT determination in project C-1142123 on BACT Guideline 3.1.5, Emergency Gas-Fired IC Engine < 132 hp, Rich Burn, 3rd quarter 2014 (see Appendix C). The BACT guideline in use at the time of installation of this engine, which was 1997, would be the same in all material respects as the guideline used in project C-1142123.

3. Top Down BACT Analysis

Pursuant to the attached Top-Down BACT Analysis, which appears in Appendix C of this report, BACT is satisfied with:

- NO_x: BACT for NO_x is satisfied with no controls. The revised NO_x emission factor does not alter the District's original BACT determination in project C-1142123.
- VOC: BACT for VOC is satisfied with positive crankcase ventilation (PCV), which agrees with the District's original BACT determination in project C-1142123.

B. Offsets

Since emergency IC engines are exempt from the offset requirements of Rule 2201, per Section 4.6.2, offsets are not required for this engine, and no offset calculations are required.

C. Public Notification

1. Applicability

Public noticing is required for:

- a. New Major Sources, Federal Major Modifications, and SB 288 Major Modifications,
- b. Any new emissions unit with a Potential to Emit greater than 100 pounds during any one day for any one pollutant,
- c. Any project which results in the offset thresholds being surpassed, and/or
- d. Any project with an SSIPE of greater than 20,000 lb/year for any pollutant.
- e. Any project which results in a Title V significant permit modification

a. New Major Sources, SB288 Major Modifications, and Federal Major Modifications

As shown in Sections VII.C.5, VII.C.7, and VII.C.8, this facility is not a new Major Source, not an SB 288 Major Modification, and not a Federal Major Modification, respectively.

b. Any new emissions unit with a Potential to Emit greater than 100 pounds during any one day for any pollutant

Although the engine in this project is not new, for purposes of determining whether this project triggers public notice under this section, the revised emission factors (for NO_x and CO) will be evaluated as if they were for a new unit to avoid any appearance of circumventing the public notice requirement in the original approval by using emission factors which were erroneously low. The emission factors that are not being revised (i.e. PM₁₀, SO_x, and VOC) will not be reevaluated as new under this section.

PE > 100 lb/day Public Notice Thresholds			
Pollutant	PE2 (lb/day)	Public Notice Threshold	Public Notice Triggered?
NO _x	38.5	100 lb/day	No
CO	115.6	100 lb/day	Yes

Therefore, public noticing for a new unit having a PE > 100 lb/day is required.

c. Any project which results in the offset thresholds being surpassed

The SSPE1 and SSPE2 are compared to the offset thresholds in the following table.

Offset Thresholds				
Pollutant	SSPE1 (lb/year)	SSPE2 (lb/year)	Offset Threshold	Public Notice Required?
NO _x	160	160	20,000 lb/year	No
SO _x	0	0	54,750 lb/year	No
PM ₁₀	2	2	29,200 lb/year	No
CO	481	481	200,000 lb/year	No
VOC	36	36	20,000 lb/year	No

As detailed above, there were no thresholds surpassed with this project; therefore, public noticing is not required for offset purposes.

d. Any project with a Stationary Source Project Increase in Permitted Emissions (SSIPE) greater than 20,000 lb/year for any pollutant

Since the PE2 is well below 20,000 lb/year for all pollutants (See Section VII.C.2), the SSIPE for this project will be below the public notice threshold.

e. Any project which results in a Title V significant permit modification

This facility is not a Title V source, so this project cannot result in a significant modification to a Title V permit.

2. Public Notice Action

As demonstrated above, this project will require public noticing for CO emissions greater than 100 lb/day for a "new" emissions unit. Therefore, public notice documents will be submitted to the California Air Resources Board (CARB) and a public notice will be published in a local newspaper of general circulation prior to the issuance of the ATC(s) for this equipment.

D. Daily Emissions Limits

Daily Emissions Limitations (DELs) and other enforceable conditions are required by Rule 2201 to restrict a unit's maximum daily emissions to a level at or below the emissions associated with the maximum design capacity. Per Sections 3.16.1 and 3.16.2, the DEL must be contained in the latest ATC and contained in or enforced by the latest PTO and enforceable, in a practicable manner, on a daily basis. Therefore, the following conditions will be listed on the ATC to ensure compliance:

- Emissions from this IC engine shall not exceed any of the following limits: 13.0 g-NO_x/bhp-hr, 0.175 g-PM₁₀/bhp-hr, 39.0 g-CO/bhp-hr, or 2.91 g-VOC/bhp-hr. [District Rule 2201]
- {1897} This engine shall be equipped with either a positive crankcase ventilation (PCV) system that recirculates crankcase emissions into the air intake system for combustion, or a crankcase emissions control device of at least 90% control efficiency. [District Rule 2201]
- {modified 3505} This IC engine shall be fired on LPG/propane gas only. [District Rules 2201 and 4801]
- {modified 3806} This engine shall be operated only for testing and maintenance of the engine, required regulatory purposes, and during emergency situations. Operation of the engine for maintenance, testing, and required regulatory purposes shall not exceed 100 hours per calendar year. [District Rules 2201 and 4702]

E. Compliance Assurance

1. Source Testing

Pursuant to District Policy APR 1705, source testing is not required for emergency standby IC engines to demonstrate compliance with Rule 2201.

2. Monitoring

No monitoring is required to demonstrate compliance with Rule 2201.

3. Recordkeeping

Recordkeeping requirements, in accordance with District Rule 4702, will be discussed in Section VIII, *District Rule 4702*, of this evaluation.

4. Reporting

No reporting is required to ensure compliance with Rule 2201.

F. Ambient Air Quality Analysis (AAQA)

An AAQA shall be conducted for the purpose of determining whether a new or modified Stationary Source will cause or make worse a violation of an air quality standard. The District's Technical Services Division conducted the required analysis. Refer to Appendix D of this document for the AAQA summary sheet.

The proposed location is in an attainment area for NO_x, CO, and SO_x. As shown by the AAQA summary sheet the proposed equipment will not cause a violation of an air quality standard for NO_x, CO, or SO_x.

The proposed location is in a non-attainment area for the state's PM₁₀ as well as federal and state PM_{2.5} thresholds. As shown by the AAQA summary sheet the proposed equipment will not cause a violation of an air quality standard for PM₁₀ and PM_{2.5}.

Since an unimpeded vertical exhaust was assumed in the AAQA, the following permit condition will be included on the ATC:

- {1898} The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap (flapper ok), roof overhang, or any other obstruction. [District Rule 4102]

Rule 2520 Federally Mandated Operating Permits

Since this facility's potential to emit does not exceed any Major Source thresholds of Rule 2201, this facility is not a Major Source, and Rule 2520 does not apply.

Rule 4001 New Source Performance Standards (NSPS)

40 CFR 60 Subpart JJJJ - Standards of Performance for Stationary Spark Ignition Internal Combustion Engines

The District has not been delegated the authority to implement Subpart JJJJ requirements for non-Major Sources; therefore, no Subpart JJJJ requirements shall be included on the permit.

Rule 4002 National Emission Standards for Hazardous Air Pollutants

40 CFR 63 Subpart ZZZZ - National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Emissions (RICE)

The District has not been delegated the authority to implement NESHAP regulations for non-Major (i.e. Area) Sources; therefore, no Subpart ZZZZ requirements shall be included on the permit.

Rule 4101 Visible Emissions

Rule 4101 states that no air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. Therefore, the following condition will be listed on the ATC to ensure compliance:

- {15} No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. [District Rule 4101]

Rule 4102 Nuisance

Rule 4102 states that no air contaminant shall be released into the atmosphere which causes a public nuisance. Public nuisance conditions are not expected as a result of operation of this engine, provided the engine is well maintained. Therefore, the following condition will be listed on the ATC to ensure compliance:

- {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]

California Health & Safety Code 41700 (Health Risk Assessment)

District Policy APR 1905 - Risk Management Policy for Permitting New and Modified Sources (dated 3/2/01) specifies that for an increase in emissions associated with a proposed new source or modification, the District perform an analysis to determine the possible impact to the nearest resident or worksite.

The risk assessment for LPG/propane fired IC engines is based on fuel use or hours of operation. Since neither of these variables is increasing as a result of this project, no risk assessment is required.

Rule 4201 Particulate Matter Concentration

Rule 4201 limits particulate matter emissions from any single source operation to 0.1 g/dscf.

$$0.175 \frac{g - PM_{10}}{bhp - hr} \times \frac{1 bhp - hr}{2,542.5 Btu} \times \frac{10^6 Btu}{8,578 dscf} \times \frac{0.35 Btu_{out}}{1 Btu_{in}} \times \frac{15.43 grain}{g} = 0.04 \frac{grain - PM}{dscf}$$

Since 0.04 grain-PM/dscf is \leq to 0.1 grain per dscf, compliance with Rule 4201 is expected.

Therefore, the following condition will be listed on the ATC to ensure compliance:

- {14} Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201]

Rule 4701 Internal Combustion Engines - Phase 1

The purpose of this rule is to limit the emissions of nitrogen oxides (NO_x), carbon monoxide (CO), and volatile organic compounds (VOC) from internal combustion

engines. Except as provided in Section 4.0, the provisions of this rule apply to any internal combustion engine, rated greater than 50 bhp, that requires a PTO.

The proposed engine(s) are also subject to District Rule 4702, Internal Combustion Engines. Since the emissions limits and all other requirements of District Rule 4702 are equivalent or more stringent than the requirements of District Rule 4701 for emergency engines, compliance with District Rule 4702 requirements will satisfy requirements of District Rule 4701.

Rule 4702 Internal Combustion Engines

Section 1.0 Purpose

The purpose of this rule is to limit the emissions of nitrogen oxides (NOx), carbon monoxide (CO), volatile organic compounds (VOC), and sulfur oxides (SOx) from internal combustion engines.

Section 2.0 Applicability

This rule applies to any internal combustion engine rated at 25 brake horsepower or greater.

The engine in this project is rated at greater than 25 bhp and is therefore subject to this rule.

Section 3.0 Definitions

The engine in this project is an emergency-standby engine. Rule 4702, Section 3.15 defines an emergency-standby engine as follows:

An internal combustion engine which operates as a temporary replacement for primary mechanical or electrical power during an unscheduled outage caused by sudden and reasonably unforeseen natural disasters or sudden and reasonably unforeseen events beyond the control of the operator. An engine shall be considered to be an emergency standby engine if it is used only for the following purposes:

- (1) periodic maintenance, periodic readiness testing, or readiness testing during and after repair work;*
- (2) unscheduled outages, or to supply power while maintenance is performed or repairs are made to the primary power supply; and*
- (3) if it is limited to operate 100 hours or less per calendar year for non-emergency purposes.*

An engine shall not be considered to be an emergency standby engine if it is used:

(1) to reduce the demand for electrical power when normal electrical power line service has not failed, or

(2) to produce power for the utility electrical distribution system, or

(3) in conjunction with a voluntary utility demand reduction program or interruptible power contract.

The following standard ATC conditions will ensure compliance with the emergency-standby criteria of the rule:

- {modified 3806} This engine shall be operated only for testing and maintenance of the engine, required regulatory purposes, and during emergency situations. Operation of the engine for maintenance, testing, and required regulatory purposes shall not exceed 100 hours per calendar year. [District Rules 2201 and 4702]
- {3807} An emergency situation is an unscheduled electrical power outage caused by sudden and reasonably unforeseen natural disasters or sudden and reasonably unforeseen events beyond the control of the permittee. [District Rule 4702]
- {3808} This engine shall not be used to produce power for the electrical distribution system, as part of a voluntary utility demand reduction program, or for an interruptible power contract. [District Rule 4702]

Section 4.0 Exemptions

Per Section 4.2, provided that the engine is operated with an operating nonresettable elapsed time meter, emergency-standby engines are exempt from the requirements of Rule 4702 except for the requirements of Sections 5.9 (Monitoring) and 6.2.3 (Recordkeeping).

Section 5.9 Monitoring

Section 5.9.2 requires the permittee to properly operate and maintain each engine as recommended by the engine manufacturer or emission control system supplier.

Section 5.9.3 requires the permittee to monitor the operational characteristics of each engine as recommended by the engine manufacturer or emission control system supplier.

Section 5.9.4 requires the permittee to install and operate a non-resettable elapsed time meter.

The following standard ATC conditions will ensure compliance with the requirements of this section:

- {3405} This engine shall be operated and maintained in proper operating condition as recommended by the engine manufacturer or emissions control system supplier. [District Rule 4702]
- {3478} During periods of operation for maintenance, testing, and required regulatory purposes, the permittee shall monitor the operational characteristics of the engine as recommended by the manufacturer or emission control system supplier (for example: check engine fluid levels, battery, cables and connections; change engine oil and filters; replace engine coolant; and/or other operational characteristics as recommended by the manufacturer or supplier). [District Rule 4702]
- {3404} This engine shall be equipped with an operational non-resettable elapsed time meter or other APCO approved alternative. [District Rule 4702]

Section 6.2.3 Recordkeeping

Section 6.2.3 requires the permittee to maintain annual operating records, to retain them for at least five years, and make them readily available to the APCO upon request. The records shall include, but are not limited to, the following:

6.2.3.1 Total hours of operation,

6.2.3.2 The type of fuel used,

6.2.3.3 The purpose for operating the engine,

6.2.3.4 For emergency standby engines, all hours of non-emergency and emergency operation shall be reported, and

6.2.3.5 Other support documentation necessary to demonstrate claim to the exemption.

The following standard conditions will ensure compliance with the recordkeeping requirements of Rule 4702:

- {modified 3500} The permittee shall maintain monthly records of emergency and non-emergency operation. Records shall include the number of hours of emergency operation, the date and number of hours of all testing and maintenance operations, the purpose of the operation (for example: load testing, weekly testing, rolling blackout, general area power outage, etc.), and records of operational characteristics monitoring. For units with automated testing systems, the operator may, as an alternative to keeping records of actual operation for testing purposes, maintain a readily accessible written record of the automated testing schedule. [District Rule 4702]

- {3498} All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. For units at unstaffed sites or operated remotely, records may be maintained and retained at a District-approved off-site location. [District Rule 4702]⁴

Rule 4801 Sulfur Compounds

Rule 4801 requires that sulfur compound emissions (as SO₂) shall not exceed 0.2% by volume. Using the ideal gas equation, the sulfur compound emissions are calculated as follows:

$$\text{Volume SO}_2 = (n \times R \times T) \div P$$

$$n = \text{moles SO}_2$$

$$T (\text{standard temperature}) = 60^\circ\text{F or } 520^\circ\text{R}$$

$$R (\text{universal gas constant}) = \frac{10.73 \text{ psi} \cdot \text{ft}^3}{\text{lb} \cdot \text{mol} \cdot ^\circ\text{R}}$$

$$0.35^5 \times \frac{\text{lb} - \text{S}}{1,000 \text{ gal}} \times \frac{1 \text{ gal}}{0.094 \text{ MMBtu}} \times \frac{1 \text{ MMBtu}}{8,578 \text{ scf}} \times \frac{\text{lb} - \text{mol}}{64 \text{ lb} - \text{S}} \times \frac{10.73 \text{ psi} \cdot \text{ft}^3}{\text{lb} - \text{mol} \cdot ^\circ\text{R}} \times \frac{520^\circ\text{R}}{14.7 \text{ psi}} \times 1,000,000 = 2.6 \text{ ppmv}$$

Since 2.6 ppmv is \leq 2,000 ppmv, this engine is expected to comply with Rule 4801. Therefore, the following condition (previously proposed in this engineering evaluation) will be listed on the ATC to ensure compliance:

- {modified 3505} This IC engine shall be fired on LPG/propane gas only. [District Rules 2201 and 4801]

California Health & Safety Code 42301.6 (School Notice)

The District has verified that this engine is not located within 1,000 feet of a school. Therefore, pursuant to California Health and Safety Code 42301.6, a school notice is not required.

California Environmental Quality Act (CEQA)

CEQA requires each public agency to adopt objectives, criteria, and specific procedures consistent with CEQA Statutes and the CEQA Guidelines for administering its responsibilities under CEQA, including the orderly evaluation of projects and

⁴ This cell phone tower site does not have staff on site.

⁵ Per the GEAR for emergency-standby LPG/propane IC engines, the 0.012 g/bhp-hr SO_x emission factor is equivalent to 0.35 lb-SO_x/1,000 gal:

$$0.35 \times \frac{\text{lb} - \text{SO}_x}{1,000 \text{ gal}} \times \frac{\text{gal}}{94,000 \text{ Btu}} \times \frac{2,542.5 \text{ Btu}}{\text{bhp} - \text{hr input}} \times \frac{1 \text{ bhp input}}{0.35 \text{ bhp out}} \times \frac{453.6 \text{ g}}{\text{lb}} = 0.012 \frac{\text{g} - \text{SO}_x}{\text{bhp} - \text{hr}}$$

preparation of environmental documents. The District adopted its *Environmental Review Guidelines* (ERG) in 2001. The basic purposes of CEQA are to:

- Inform governmental decision-makers and the public about the potential, significant environmental effects of proposed activities;
- Identify the ways that environmental damage can be avoided or significantly reduced;
- Prevent significant, avoidable damage to the environment by requiring changes in projects through the use of alternatives or mitigation measures when the governmental agency finds the changes to be feasible; and
- Disclose to the public the reasons why a governmental agency approved the project in the manner the agency chose if significant environmental effects are involved.

Greenhouse Gas (GHG) Significance Determination

It is determined that no other agency has prepared or will prepare an environmental review document for the project. Thus the District is the Lead Agency for this project.

The District's engineering evaluation (this document) demonstrates that the project would not result in an increase in project specific greenhouse gas emissions. The District therefore concludes that the project would have a less than cumulatively significant impact on global climate change.

District CEQA Findings

The District is the Lead Agency for this project because there is no other agency with broader statutory authority over this project. The District performed an Engineering Evaluation (this document) for the proposed project and determined that the activity will occur at an existing facility and the project involves negligible expansion of the existing use. Furthermore, the District determined that the activity will not have a significant effect on the environment. The District finds that the activity is categorically exempt from the provisions of CEQA pursuant to CEQA Guideline § 15301 (Existing Facilities), and finds that the project is exempt per the general rule that CEQA applies only to projects which have the potential for causing a significant effect on the environment (CEQA Guidelines §15061(b)(3)).

IX. Recommendation

Compliance with all applicable rules and regulations is expected. Pending a successful 30-day Rule 2201 Public Notification period, issue ATC C-8746-1-1 subject to the permit conditions on the attached draft ATC in Appendix E.

X. Billing Information

Billing Schedule			
Permit Number	Fee Schedule	Fee Description	Fee Amount
C-8746-1-1	3020-10-A	56 bhp IC engine	\$80

Appendices

- A. ATC C-8746-1-0
- B. Letter of Explanation of US EPA Audit of AT&T and Proposed Revised Emission Factors
- C. BACT Guideline and Top-Down BACT Analysis
- D. Ambient Air Quality Analysis Memo
- E. Draft ATC

Appendix A
ATC C-8746-1-0



AUTHORITY TO CONSTRUCT

PERMIT NO: C-8746-1-0

ISSUANCE DATE: 07/14/2014

LEGAL OWNER OR OPERATOR: NEW CINGULAR WIRELESS PCS, LLC DBA AT&T
MAILING ADDRESS: 2600 CAMINO RAMON, ROOM 3E000V
SAN RAMON, CA 94583

LOCATION: 2515 S. DEWOLF AVENUE
FRESNO, CA 93726

EQUIPMENT DESCRIPTION:
56 HP GENERAC MODEL 4.3GN LPG/PROPANE-FIRED EMERGENCY STANDBY IC ENGINE POWERING AN ELECTRICAL GENERATOR.

CONDITIONS

1. This engine shall be equipped with either a positive crankcase ventilation (PCV) system that recirculates crankcase emissions into the air intake system for combustion, or a crankcase emissions control device of at least 90% control efficiency. [District Rule 2201]
2. This engine shall only be fired on LPG/Propane. [District Rules 2201 and 4801]
3. Emissions from this engine shall not exceed any of the following limits: 4.87 g-NOx/hp-hr, 0.012 g-SOx/hp-hr, 0.175 g-PM10/hp-hr, 4.52 g-CO/hp-hr, or 2.91 g-VOC/hp-hr. [District Rule 2201]
4. This engine shall be equipped with an operational non-resettable elapsed time meter or other APCO approved alternative. [District Rule 4702]
5. No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
6. Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201]
7. No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. [District Rule 4101]
8. This engine shall be operated and maintained in proper operating condition as recommended by the engine manufacturer or emissions control system supplier. [District Rule 4702]

CONDITIONS CONTINUE ON NEXT PAGE

YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (559) 230-5950 WHEN CONSTRUCTION IS COMPLETED AND PRIOR TO OPERATING THE EQUIPMENT OR MODIFICATIONS AUTHORIZED BY THIS AUTHORITY TO CONSTRUCT. This is NOT a PERMIT TO OPERATE. Approval or denial of a PERMIT TO OPERATE will be made after an inspection to verify that the equipment has been constructed in accordance with the approved plans, specifications and conditions of this Authority to Construct, and to determine if the equipment can be operated in compliance with all Rules and Regulations of the San Joaquin Valley Unified Air Pollution Control District. Unless construction has commenced pursuant to Rule 2050, this Authority to Construct shall expire and application shall be cancelled two years from the date of issuance. The applicant is responsible for complying with all laws, ordinances and regulations of all other governmental agencies which may pertain to the above equipment.

Sayed Sadredin, Executive Director / APCO

Martin Keast for

Amaud Marjollet, Director of Permit Services

C-8746-1-0; Jul 14 2014 12:07PM - AYADEM - Joint Inspection NOT Required

9. During periods of operation for maintenance, testing, and required regulatory purposes, the permittee shall monitor the operational characteristics of the engine as recommended by the manufacturer or emission control system supplier (for example: check engine fluid levels, battery, cables and connections; change engine oil and filters; replace engine coolant; and/or other operational characteristics as recommended by the manufacturer or supplier). [District Rule 4702]
10. This engine shall be operated only for testing and maintenance of the engine, required regulatory purposes, and during emergency situations. Operation of the engine for maintenance, testing, and required regulatory purposes shall not exceed 100 hours per calendar year. [District Rule 4702]
11. An emergency situation is an unscheduled electrical power outage caused by sudden and reasonably unforeseen natural disasters or sudden and reasonably unforeseen events beyond the control of the permittee. [District Rule 4702]
12. This engine shall not be used to produce power for the electrical distribution system, as part of a voluntary utility demand reduction program, or for an interruptible power contract. [District Rule 4702]
13. The permittee shall maintain monthly records of emergency and non-emergency operation. Records shall include the number of hours of emergency operation, the date and number of hours of all testing and maintenance operations, the purpose of the operation (for example: load testing, weekly testing, rolling blackout, general area power outage, etc.) and records of operational characteristics monitoring. For units with automated testing systems, the operator may, as an alternative to keeping records of actual operation for testing purposes, maintain a readily accessible written record of the automated testing schedule. [District Rule 4702]
14. All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. For units at unstaffed sites or operated remotely, records may be maintained and retained at a District-approved off-site location. [District Rule 4702]

Appendix B

Letter of Explanation of US EPA Audit of AT&T and Proposed Revised Emission Factors



September 4, 2014

Mr. Jim Swaney
Permit Services Manager
San Joaquin Valley Air Pollution Control District
1990 East Gettysburg Avenue
Fresno, California 93726

Subject: Modification of Permits to Reflect More Reliable Emission Factors
SCEC #: 2178.2212b

Dear Mr. Swaney:

SCEC – Montrose Environmental Group is working on behalf of New Cingular Wireless PCS, LLC dba AT&T Mobility (AT&T Mobility). We are writing to ask for your guidance in resolving a permit discrepancy that has been identified through a compliance audit. Your colleague, Mr. Carlos Garcia, suggested that I contact you regarding this matter.

US EPA is currently overseeing a national audit of certain AT&T Mobility engines to determine compliance status with permit conditions and SIP rules. For the subject emergency propane engines listed in *Table 1*, manufacturer data was not readily available, complete or otherwise reliable. In the absence of manufacturer data, the audit called for an estimate of emission rates using the US EPA non-road engine model based upon protocol established by US EPA that specified a worst-case operating schedule. The results of the model suggest that the engines may not meet some of the emission rates selected by SJVAPCD at the time the permits were issued. Those emission rates do not appear to reflect BACT requirements that were established by the District, but instead appear to reflect default emissions rates, or rates determined by incomplete or inaccurate manufacturer data.

The audit findings suggest that only two courses of action are available to ensure that the engines can be in compliance with permit conditions. The first is to conduct emission tests on the engines in accordance with test protocol that was also established by US EPA for the purpose of the audit. The protocol includes Method 100 sampling for NO_x and CO and EPA VOC test methods at multiple loads, and does not allow for hand-held devices. Clearly, testing of these engines under this condition is a very expensive option, especially since the engines are used only for emergency purposes. The second option is to modify the existing permits to reflect more reliable emission factors that resulted from US EPA's non-road engine model.

September 4, 2014
 Mr. Jim Swaney
 San Joaquin Valley APCD

Table 1: Current Permitted Emission Rates

Permit #	Address	NOx (g/bhp-hr)	CO (g/bhp-hr)	VOC (g/bhp-hr)
S-6700-1-0	1115 Shafter Road, Bakersfield	4.87	4.52	
S-6442-1-0	1133 Wheeler Ridge Road, Bakersfield	4.87	4.52	
S-6741-1-0	7800 Fairfax, Bakersfield	4.87	4.52	
S-6699-1-0	Panama Lane & Enos Lane, Bakersfield	4.87	4.52	
S-3495-1-1	Road 16 & Avenue 128, Corcoran	3.39		1.82
S-3470-1-1	12683 Avenue 400, Cutler	11	-	-
S-6697-1-0	1023 Mettler Lane, Delano	4.87	4.52	
S-3468-1-1	5885 Road 148, Earlimart	11	-	-
C-3407-1-1	3393 North Parkway Drive, Fresno	3.39		
C-3432-1-1	1688 South Madera, Kerman		4.52	
S-6701-1-0	Highway 46 & Brown Material Road, Lost Hills	4.87	4.52	
C-3417-1-1	40757 Road 425A, Oakhurst		4.52	
S-3756-1-1	Lime/Republic Hill, Porterville		78.8 lb/day	
N-7357-1-0	20450 South Murphy Road, Ripon		4.52	2.91
S-6698-1-0	Jack Avenue & Mannel Avenue, Shafter	4.87	4.52	
S-3471-1-1	13609 Avenue 128, Tipton	11	-	-

AT&T Mobility is requesting that SJVAPCD allow the modification of the identified permits to reflect emission rates that were derived from the EPA's non-road engine model, in place of the rates selected by SJVAPCD at the time of permitting. I am compiling the rates identified through the audit and will forward them to you as soon as they are available along with permit applications.

US EPA has given only until late September to initiate our course of action, so I am requesting that SJVAPCD give this request due consideration in a timely manner. I will call you next week to determine if the permits can be modified. You can also reach me at (714) 282-8240.

Sincerely,
 SCEC

A Montrose Environmental Group Company



Karl Lany
 Senior Vice President

2178.2212bltrAuditResolution.doc



RECEIVED

OCT 21 2014

AT&T Services, Inc
Environment, Health & Safety
2600 Camino Ramon, Room 3E000V
San Ramon, CA 94583

Permits Services
SJVAPCD

October 16, 2014

Mr. Brian Clements
PSD Supervisor
San Joaquin Valley APCD
1990 E. Gettysburg Avenue
Fresno, California 93726-0244

**Subject: Modification Application for AT&T Mobility,
Permit to Operate No. C-8746-1-0**

Dear Mr. Clements,

New Cingular Wireless PCS, LLC dba AT&T Mobility (AT&T Mobility) is submitting the enclosed modification application to update the emission limits on a SJVAPCD Permit to Operate for an existing LPG/propane-fired emergency IC engine located at 2515 S. Dewolf Avenue in Fresno.

When this permit was originally issued, SJVAPCD selected default emission factors for similar engine technology. These emission factors were used to quantify emissions from the engine, and were placed into the permit as emission limits. However, these emission limits do not reflect BACT requirements that were in-place at the time the engine was installed.

Based on our discussions with Mr. Brian Clerico of SJVAPCD, AT&T Mobility has agreed to modify the existing permit. The proposed modification will adjust emission limits in the permit to reflect more appropriate emission factors. These factors were generated using US EPA's non-road engine model, with a slight adjustment to ensure an adequate compliance margin.

AT&T Mobility is submitting this application to update the permitted emission limits on the existing permit (Permit No. C-8746-1-0) as follows:

- CO: from 4.52 g/bhp-hr to **39 g/bhp-hr**
- NO_x: from 4.87 g/bhp-hr to **13 g/bhp-hr**

There will not be a change to the engine rating or other engine/operational specifications submitted for this equipment under the original application.

This permit modification application is similar to the other sixteen (16) permit modification applications submitted within the last month.

**Exhaust Emission Factors
for Nonroad Engine Modeling--
Spark Ignition**

Report No. NR-010d
revised April 2004

Assessment and Standards Division
EPA, Office of Transportation and Air Quality

Purpose

This report describes and documents exhaust emission factors and brake specific fuel consumption (BSFC) estimates used for spark ignition (SI) engines in EPA's draft NONROAD2004 emission inventory model. It covers engines powered by gasoline, natural gas and liquefied petroleum gas.

Additional EPA reports describe other issues relating to emission factors including NONROAD emission factors for evaporative emissions, crankcase emissions, spillage and other non-exhaust emissions (NR-012b), adjustments to emission rates due to variations in fuel and temperature (NR-001b), speciation of hydrocarbon emissions (NR-002b), and adjustments to emission rates as equipment deteriorates due to time and use (NR-011b). Emission factors for compression ignition (diesel) engines are covered in a separate report (NR-009c).

Introduction

The U.S. EPA's NONROAD model computes county-level emission inventories for nonroad engines. These calculations rely on emission factors -- estimates of the amount of pollution emitted by a particular type of equipment during a unit of use. Typically emission factors for nonroad sources are reported in grams per horsepower-hour (g/hp-hr), but they also may be reported in grams per mile (g/mile), grams per hour, grams per gallon, etc. The SI exhaust emission factors in the NONROAD model are reported in g/hp-hr, with the exception of nonroad motorcycles and all-terrain vehicles, which are reported in g/mile. The SI BSFCs are reported in lb/hp-hr, with the exception of nonroad motorcycles and all-terrain vehicles, which are reported in lb/mile.

The pollutants covered by this report include exhaust total hydrocarbons (HC), carbon monoxide (CO), oxides of nitrogen (NO_x), total particulate matter (PM), carbon dioxide (CO₂), and sulfur dioxide (SO₂). For nonroad engines, all PM emissions are assumed to be smaller than 10 microns (PM₁₀), and 92% of the PM from gasoline and diesel fueled engines is assumed to be smaller than 2.5 microns (PM_{2.5}). For gaseous fueled engines (LPG/CNG), 100% of the PM

The emission factors below are the base emission factors from the model before applying a deterioration factor.

hp have recently been finalized. [8] Both uncontrolled and Phase 1 and 2 controlled emission factors are included in NONROAD2004.

Summaries of the precontrolled, Phase 1 controlled, and Phase 2 controlled emission factors used for this equipment category are provided in Tables 6 through 8. Emission factors for the gasoline 4-stroke, LPG, and CNG engines were taken from the regulatory support document for the final rule, and are based on a summary of available test data. [11]

Table 6. Emission Factors and BSFCs for Spark-Ignition Engines > 25 HP

Engine Tech Type	HC g/hp-hr	CO g/hp-hr	NO _x g/hp-hr	PM g/hp-hr	BSFC lb/hp-hr
Uncontrolled					
G4GT25 (gas, 4-stroke, baseline)	3.85	107.23	8.43	0.06	0.605
LGT25 (LPG, baseline)	1.68	28.23	11.99	0.05	0.507
NGT25 (CNG, baseline)	24.64	28.23	11.99	0.05	0.507
Phase 1					
G4GT251 (gas, 4-stroke)	0.59	29.86	1.51	0.06	0.484
LGT251 (LPG)	0.25	24.49	2.10	0.05	0.406
NGT251 (CNG)	3.69	24.49	2.10	0.05	0.406
Phase 2					
G4GT252 (gas, 4-stroke)	0.27	11.94	0.69	0.06	0.484
LGT252 (LPG)	0.10	3.92	0.85	0.05	0.406
NGT252 (CNG)	1.57	3.92	0.89	0.05	0.406

Motorcycles, All-Terrain Vehicles (ATVs), and Snowmobiles

These engines differ significantly from other SI engines in their basic design, operating characteristics, and emission rates. Emission standards have recently been finalized for these engines. [8]

A summary of the emission factors for these engines is provided in Table 7. The HC, CO, and NO_x emission data for ATVs and motorcycles were provided by a manufacturer and represent various makes, models, model years, and engine sizes. The emission factors for ATVs and motorcycles are expressed as gram/mile (lb/mile for BSFC). The HC, CO, and NO_x test data used for snowmobiles came from the International Snowmobile Manufacturers Association (ISMA) and Southwest Research Institute (SwRI). The emission factors for snowmobiles are

Appendix C

BACT Guideline and Top-Down BACT Analysis

San Joaquin Valley
Unified Air Pollution Control District

Best Available Control Technology (BACT) Guideline 3.1.5*

Last Update: 11/27/1996

Emergency Gas Fired I.C. Engine - < 132 hp, Rich Burn

Pollutant	Achieved in Practice or contained in the SIP	Technologically Feasible	Alternate Basic Equipment
VOC	Positive crankcase ventilation (PCV)	VOC catalyst (3 way), positive crankcase ventilation (PCV)	
PM10	Positive crankcase ventilation (PCV)	Positive crankcase ventilation (PCV)	
NOx		NOx Catalyst (3 way)	
CO		CO Catalyst (3 way)	

BACT is the most stringent control technique for the emissions unit and class of source. Control techniques that are not achieved in practice or contained in a state implementation plan must be cost effective as well as feasible. Economic analysis to demonstrate cost effectiveness is required for all determinations that are not achieved in practice or contained in an EPA approved State Implementation Plan.

***This is a Summary Page for this Class of Source**

Top Down BACT Analysis for NOx

BACT Guideline 3.1.5, Emergency Gas-Fired IC Engine < 132 hp, Rich Burn, 3rd quarter 2014 applies to this engine.

Step 1 - Identify all control technologies

BACT Guideline 3.1.5 identifies the following control option for NOx:

- *NOx catalyst (Technologically Feasible)*

Step 2 - Eliminate technologically infeasible options

There are no technologically infeasible options in the guideline.

Step 3 - Rank remaining options by control effectiveness

1. *NOx catalyst (Technologically Feasible)*

Step 4 - Cost Effectiveness Analysis

Technologically Feasible options are not required for a facility classified as a small emitter. The table below shows this facility qualifies as a small emitter; therefore, a cost effectiveness analysis of the 3-way catalyst is not required.

Small Emitter Thresholds ⁶			
Pollutant	SSPE2 (lb/day)	Small Emitter Threshold (lb/yr)	Small Emitter?
NOx	160	4,000	Yes
SOx	0	4,000	
PM10	2	4,000	
CO	481	4,000	
VOC	36	4,000	

Step 5 - Select BACT

With the elimination of the NOx catalyst as an option, BACT for NOx is satisfied with no controls. The revised NOx emission factor does not alter the District's BACT original determination in project C-1142123.

⁶ APR 1305, BACT Policy.

Top Down BACT Analysis for VOC

BACT Guideline 3.1.5, Emergency Gas-Fired IC Engine < 132 hp, Rich Burn, 3rd quarter 2014 applies to this engine.

Step 1 - Identify all control technologies

BACT Guideline 3.1.5 identifies the following control options for VOC:

- *VOC catalyst (3 way) (Technologically Feasible)*
- *Positive crankcase ventilation (PCV) (Achieved in Practice)*

Step 2 - Eliminate technologically infeasible options

There are no technologically infeasible options in the guideline.

Step 3 - Rank remaining options by control effectiveness

1. *VOC catalyst (3 way) (Technologically Feasible)*
2. *Positive crankcase ventilation (PCV) (Achieved in Practice)*

Step 4 - Cost Effectiveness Analysis

Technologically Feasible options are not required for a facility classified as a small emitter. The table below shows this facility qualifies as a small emitter; therefore, a cost effectiveness analysis of the VOC catalyst is not required.

Small Emitter Thresholds ⁷			
Pollutant	SSPE2 (lb/day)	Small Emitter Threshold (lb/yr)	Small Emitter?
NOx	160	4,000	Yes
SOx	0	4,000	
PM10	2	4,000	
CO	481	4,000	
VOC	36	4,000	

Step 5 - Select BACT

With the elimination of the VOC catalyst as a control option, BACT is satisfied with PCV, which agrees with the District's original BACT determination in project C-1142123.

⁷ APR 1305, BACT Policy.

Appendix D
Ambient Air Quality Analysis Memo

San Joaquin Valley Air Pollution Control District

Risk Management Review

To: Brian Clerico— Permit Services
From: Kou Thao – Technical Services
Date: November 23, 2014
Facility Name: AT&T Mobility
Location: 2515 S Dewolf Ave Fresno, CA
Application #(s): C-8746-1-1
Project #: C-1142799

A. RMR SUMMARY

RMR Summary			
Categories	LPG ICE (Unit 1-1)	Project Totals	Facility Totals
Prioritization Score	N/A ¹	N/A ¹	0.0
Acute Hazard Index	N/A ¹	N/A ¹	0.0
Chronic Hazard Index	N/A ¹	N/A ¹	0.0
Maximum Individual Cancer Risk (10 ⁻⁶)	N/A ¹	N/A ¹	0.0
T-BACT Required?	No		
Special Permit Conditions?	No		

¹This project was to determine if the modification to the existing equipment would cause or contribute significantly to a violation of the State and National AAQS. Health risk for this unit will not be evaluated under this project.

Proposed Permit Conditions

The following permit conditions must be included for:

Unit # 1-1

1. The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap (flapper ok), roof overhang, or any other obstruction. [District Rule 4102]
2. This engine shall be operated only for testing and maintenance of the engine, required regulatory purposes, and during emergency situations. Operation of the engine for maintenance, testing, and required regulatory purposes shall not exceed 100 hours per calendar year. [District Rule 4702 and 17 CCR 93115]

B. RMR REPORT

I. Project Description

Technical Services received a request on November 18, 2014 to perform an Ambient Air Quality Analysis for an existing 56 bhp LPG/propane fired emergency standby internal combustion engine powering an electrical generator.

II. Analysis

Technical Services performed modeling for criteria pollutants CO, NO_x, SO_x and PM₁₀; as well as a RMR. The emission rates used for criteria pollutant modeling were 4.81 lb/hr CO, 1.60 lb/hr NO_x, 0.001 lb/hr SO_x, and 0.02 lb/hr PM₁₀. The engineer supplied the maximum fuel rate for the IC engine used during the analysis.

The results from the Criteria Pollutant Modeling are as follows:

Criteria Pollutant Modeling Results*

Diesel ICE	1 Hour	3 Hours	8 Hours	24 Hours	Annual
CO	NA ¹	X	NA ¹	X	X
NO _x	NA ¹	X	X	X	Pass
SO _x	NA ¹	NA ¹	X	NA ¹	Pass
PM ₁₀	X	X	X	NA ¹	Pass ²
PM _{2.5}	X	X	X	NA ¹	Pass ²

¹The project is an intermittent source as defined in APR-1920. In accordance with APR-1920, compliance with short-term (i.e., 1-hour, 3-hour, 8-hour and 24-hour) standards is not required.

²The criteria pollutants are below EPA's level of significance as found in 40 CFR Part 51.165 (b)(2).

The following parameters were used for the review:

Analysis Parameters Unit 1-1			
Source Type	Point	Location Type	Rural
Stack Height (m)	1.82	Max Hours per Year	100
Stack Diameter (m)	0.063	Fuel Type	LPG/propane
Stack Exit Velocity (m/s)	52.60		
Stack Exit Temp. (°K)	838.55		
Engine HP rating	56		

III. Conclusion

The emissions from the proposed equipment will not cause or contribute significantly to a violation of the State and National AAQS

To ensure that human health risks will not exceed District allowable levels; the permit conditions listed on page 1 of this report must be included for this proposed unit.

These conclusions are based on the data provided by the applicant and the project engineer. Therefore, this analysis is valid only as long as the proposed data and parameters do not change.

IV. Attachments

- A. RMR request from the project engineer
- B. Additional information from the applicant/project engineer
- C. Toxic emissions summary
- D. Prioritization score
- E. Facility Summary

Appendix E

Draft ATC

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

PERMIT NO: C-8746-1-1

ISSUANCE DATE: DRAFT

LEGAL OWNER OR OPERATOR: NEW CINGULAR WIRELESS PCS, LLC DBA AT&T

MAILING ADDRESS: 2600 CAMINO RAMON, ROOM 3E000V
SAN RAMON, CA 94583

LOCATION: 2515 S. DEWOLF AVENUE
FRESNO, CA 93726

EQUIPMENT DESCRIPTION:

MODIFICATION OF 56 BHP GENERAC MODEL 4.3GN RICH-BURN LPG/PROPANE-FIRED EMERGENCY STANDBY IC ENGINE POWERING AN ELECTRICAL GENERATOR: REVISE NOX AND CO EMISSION FACTORS PER EPA NONROAD MODEL

CONDITIONS

1. {98} No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]
2. {14} Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201]
3. {15} No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. [District Rule 4101]
4. {3404} This engine shall be equipped with an operational non-resettable elapsed time meter or other APCO approved alternative. [District Rule 4702]
5. {1898} The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap (flapper ok), roof overhang, or any other obstruction. [District Rule 4102]
6. {3807} An emergency situation is an unscheduled electrical power outage caused by sudden and reasonably unforeseen natural disasters or sudden and reasonably unforeseen events beyond the control of the permittee. [District Rule 4702]
7. {3808} This engine shall not be used to produce power for the electrical distribution system, as part of a voluntary utility demand reduction program, or for an interruptible power contract. [District Rule 4702]

CONDITIONS CONTINUE ON NEXT PAGE

YOU **MUST** NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (559) 230-5950 WHEN CONSTRUCTION IS COMPLETED AND PRIOR TO OPERATING THE EQUIPMENT OR MODIFICATIONS AUTHORIZED BY THIS AUTHORITY TO CONSTRUCT. This is NOT a PERMIT TO OPERATE. Approval or denial of a PERMIT TO OPERATE will be made after an inspection to verify that the equipment has been constructed in accordance with the approved plans, specifications and conditions of this Authority to Construct, and to determine if the equipment can be operated in compliance with all Rules and Regulations of the San Joaquin Valley Unified Air Pollution Control District. Unless construction has commenced pursuant to Rule 2050, this Authority to Construct shall expire and application shall be cancelled two years from the date of issuance. The applicant is responsible for complying with all laws, ordinances and regulations of all other governmental agencies which may pertain to the above equipment.

Seyed Sadredin, Executive Director, APCO

Arnaud Marjollet, Director of Permit Services
C-8746-1-1: Dec 14 2014 5:41PM - CLERICOB : Joint Inspection NOT Required

8. {1897} This engine shall be equipped with either a positive crankcase ventilation (PCV) system that recirculates crankcase emissions into the air intake system for combustion, or a crankcase emissions control device of at least 90% control efficiency. [District Rule 2201]
9. Emissions from this IC engine shall not exceed any of the following limits: 13.0 g-NO_x/bhp-hr, 0.175 g-PM₁₀/bhp-hr, 39.0 g-CO/bhp-hr, or 2.91 g-VOC/bhp-hr. [District Rule 2201]
10. This IC engine shall be fired on LPG/propane gas only. [District Rules 2201 and 4801]
11. This engine shall be operated only for testing and maintenance of the engine, required regulatory purposes, and during emergency situations. Operation of the engine for maintenance, testing, and required regulatory purposes shall not exceed 100 hours per calendar year. [District Rules 2201 and 4702]
12. {3405} This engine shall be operated and maintained in proper operating condition as recommended by the engine manufacturer or emissions control system supplier. [District Rule 4702]
13. {3478} During periods of operation for maintenance, testing, and required regulatory purposes, the permittee shall monitor the operational characteristics of the engine as recommended by the manufacturer or emission control system supplier (for example: check engine fluid levels, battery, cables and connections; change engine oil and filters; replace engine coolant; and/or other operational characteristics as recommended by the manufacturer or supplier). [District Rule 4702]
14. The permittee shall maintain monthly records of emergency and non-emergency operation. Records shall include the number of hours of emergency operation, the date and number of hours of all testing and maintenance operations, the purpose of the operation (for example: load testing, weekly testing, rolling blackout, general area power outage, etc.), and records of operational characteristics monitoring. For units with automated testing systems, the operator may, as an alternative to keeping records of actual operation for testing purposes, maintain a readily accessible written record of the automated testing schedule. [District Rule 4702]
15. {3498} All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. For units at unstaffed sites or operated remotely, records may be maintained and retained at a District-approved off-site location. [District Rule 4702]

DRAFT