

Western Tube & Conduit  
2001 E. Dominguez St.  
Carson, CA 90810  
ID#: 22092

**EQUIPMENT DESCRIPTION:**

**A/N 521682 (New construction – PC):**

INTERNAL COMBUSTION ENGINE, GENERAC, MODEL NO. 6.8GLPNGD-130, NATURAL GAS FUELED, EMERGENCY ELECTRICAL GENERATION, NATURALLY ASPIRATED, TEN CYLINDERS, 189 BHP, WITH A THREE-WAY CATALYTIC CONVERTER AND AN AIR-FUEL RATIO CONTROLLER, DRIVING A 130 KW ELECTRICAL GENERATOR.

**A/N 521683:**

TITLE V FACILITY PERMIT REVISION – DE MINIMIS

**CONDITIONS:**

**A/N 521682**

1. OPERATION OF THIS EQUIPMENT SHALL BE CONDUCTED IN COMPLIANCE WITH ALL DATA AND SPECIFICATIONS SUBMITTED WITH THE APPLICATION UNDER WHICH THIS PERMIT IS ISSUED UNLESS OTHERWISE NOTED BELOW.  
[RULE 204]
2. THIS EQUIPMENT SHALL BE PROPERLY MAINTAINED AND KEPT IN GOOD OPERATING CONDITION AT ALL TIMES.  
[RULE 204]
3. A NON-RESETTABLE TIMER SHALL BE INSTALLED AND MAINTAINED TO INDICATE THE ENGINE ELAPSED OPERATING TIME.  
[RULE 1304(a)(4)]
4. THIS EQUIPMENT SHALL NOT BE OPERATED IN EXCESS OF THE FOLLOWING EMISSION LIMITS:  
  
NO<sub>x</sub> = 1.5 G/BHP-HR  
VOC = 1.5 G/BHP-HR  
CO = 2.0 G/BHP-HR  
[RULE 1303(a)(1)-BACT]
5. THIS ENGINE SHALL NOT OPERATE MORE THAN 200 HOURS IN ANY ONE YEAR, WHICH INCLUDES NO MORE THAN 50 HOURS IN ANY ONE YEAR FOR MAINTENANCE AND TESTING PURPOSES.  
[RULE 1304(a)(4)]
6. OPERATION BEYOND THE 50 HOURS PER YEAR ALLOTTED FOR ENGINE MAINTENANCE AND TESTING SHALL BE ALLOWED ONLY IN THE EVENT OF A LOSS OF GRID POWER OR UP TO 30 MINUTES PRIOR TO A ROTATING OUTAGE, PROVIDED THAT: (A) THE UTILITY DISTRIBUTION COMPANY HAS ORDERED ROTATING OUTAGES IN THE CONTROL AREA

**APPLICATION PROCESSING AND CALCULATION**

WHERE THE ENGINE IS LOCATED OR HAS INDICATED THAT IT EXPECTS TO ISSUE SUCH AN ORDER AT A CERTAIN TIME AND (B) THE ENGINE IS LOCATED IN A UTILITY SERVICE BLOCK THAT IS SUBJECT TO THE ROTATING OUTAGE. ENGINE OPERATION SHALL BE TERMINATED IMMEDIATELY AFTER THE UTILITY DISTRIBUTION COMPANY ADVISES THAT A ROTATING OUTAGE IS NO LONGER IMMINENT OR IN EFFECT.

[RULE 1304(a)]

7. THIS ENGINE SHALL NOT BE OPERATED WITHOUT THE USE OF AN AUTOMATIC AIR-TO-FUEL RATIO CONTROLLER WHICH SHALL BE MAINTAINED AND KEPT IN PROPER OPERATING CONDITIONS AT ALL TIMES AS SPECIFIED BY THE MANUFACTURER.  
[RULE 3004(a)(4)]
8. THE CATALYTIC CONVERTER TEMPERATURE AND EXHAUST OXYGEN CONCENTRATION SHALL BE MAINTAINED WITHIN THE EFFECTIVE RANGE OF THE CATALYTIC CONVERTER AS SPECIFIED BY THE MANUFACTURER.  
[RULE 3004(a)(4)]
9. AN ENGINE OPERATING LOG SHALL BE KEPT AND MAINTAINED ON FILE TO RECORD WHEN THIS ENGINE IS STARTED MANUALLY. THE LOG SHALL LIST THE DATE OF OPERATION, THE TIMER READING IN HOURS AT THE BEGINNING AND END OF OPERATION AND THE REASON FOR OPERATION. THE LOGS SHALL BE MAINTAINED FOR A MINIMUM OF THREE YEARS FROM THE DATE OF ENTRY AND MADE AVAILABLE TO DISTRICT PERSONNEL UPON REQUEST. THE TOTAL HOURS OF OPERATION (INCLUDING HOURS FOR A MANUAL AND AUTOMATIC OPERATION) SHALL BE RECORDED SOMETIME DURING THE FIRST 15 DAYS OF JANUARY OF EACH YEAR.  
[RULE 1304(a)]

**Periodic Monitoring:**

10. THE OPERATOR SHALL INSTALL AND MAINTAIN A TEMPERATURE GAUGE TO ACCURATELY INDICATE THE TEMPERATURE AT THE INLET AND OUTLET OF THE CATALYST. THE OPERATOR SHALL ALSO INSTALL AND MAINTAIN A DEVICE TO CONTINUOUSLY RECORD THE PARAMETER BEING MEASURED.  
[RULE 3004 (a)(4)]

**Emissions And Requirements:**

11. THIS EQUIPMENT IS SUBJECT TO THE APPLICABLE REQUIREMENTS OF THE FOLLOWING RULES AND REGULATIONS:

PM: RULE 404, SEE APPENDIX B FOR EMISSION LIMITS

NOX: 1.5 G/BHP-HR, RULE 1303(a)(1)-BACT

VOC: 1.5 G/BHP-HR, RULE 1303(a)(1)-BACT

CO: 2.0 G/BHP-HR, RULE 1303(a)(1)-BACT

**BACKGROUND:**

Western Tube & Conduit (Western) submitted A/N 521682 to permit a new natural gas-fueled internal combustion engine. The engine will be used to power a generator to provide emergency power to their galvanizing lines. The engine currently holds a District-certified permit under A/N 468191. Aside from operating the engine to no more than 200 hours per year

for emergency electrical generation, the engine will be operated no more than 50 hours per year for testing and maintenance purposes.

Western Tube & Conduit is a Title V facility. A Title V renewal permit was issued to this facility on October 1, 2006. Western Tube & Conduit has proposed to revise their Title V renewal permit with application no. 521683 by adding an ICE to their facility permit. This permit revision is considered as a "minor permit revision" to the initial Title V permit, as described in the Regulation XXX evaluation.

### **PROCESS DESCRIPTION:**

Western Tube & Conduit manufactures metal tubes, conduits and TV tubes. They form the tubes and conduits from coils of raw materials. The end product is varied, chain-linked fence poles, electric wire conduits, etc. The tubes and conduits are painted on the exterior and interior with protective coatings and after they are cut to size, the ends are additionally painted with touch-up coatings. After painting, the tubes and conduits are packaged and prepared for shipping. Western Tube & Conduit operate three separate tube-forming (galvanizing) lines. They operate under an existing 1,417 lb/day facility VOC emission limit and under the requirements of Rules 1107 and 1171. They operate up to 24 hrs/day and 365 days/yr.

### **EMISSION ESTIMATES:**

The engine has been designed to operate in compliance with BACT emission rates for emergency, natural gas-fueled internal combustion engines. The emission rates are as follows:

Pollutant	Mfg.-spec Emission Limits (g/bhp-hr)	BACT Emission Limits (g/bhp-hr)
NOx	0.01	1.5
CO	0.5	2
ROG	0.17	1.5

Emissions based on these rates are determined using a maintenance and testing operating schedule of 1 hr/wk.

$$\text{Hourly CO emissions} = 0.5 \text{ g/bhp-hr} * 1 \text{ lb/454 g} * 193.5 \text{ bhp} = 0.21 \text{ lb/hr}$$

$$\text{Daily CO emissions} = 0.21 \text{ lb/day}$$

$$\text{30-day average} = 0.21 \text{ lb/hr} * 200 \text{ hrs/yr} \div [(12 \text{ mon/yr})(30 \text{ days/mon})] = 0.12 \text{ lb/day}$$

$$\text{Hourly NOx emissions} = 0.01 \text{ g/bhp-hr} * 1 \text{ lb/454 g} * 193.5 \text{ bhp} = 0.005 \text{ lb/hr}$$

$$\text{Daily NOx emissions} = 0.005 \text{ lb/day}$$

$$\text{30-day average} = 0.005 \text{ lb/hr} * 200 \text{ hrs/yr} \div [(12 \text{ mon/yr})(30 \text{ days/mon})] = 0.003 \text{ lb/day}$$

$$\text{Hourly ROG emissions} = 0.17 \text{ g/bhp-hr} * 1 \text{ lb/454 g} * 193.5 \text{ bhp} = 0.07 \text{ lb/hr}$$

$$\text{Daily ROG emissions} = 0.07 \text{ lb/day}$$

30-day average =  $0.07 \text{ lb/hr} * 200 \text{ hrs/yr} \div [(12 \text{ mon/yr})(30 \text{ days/mon})] = 0.04 \text{ lb/day}$

### RULE ANALYSIS:

RULE 212 (c)(1): This section requires a public notice for all new or modified permit units that emit air contaminants located within 1,000 feet from the outer boundary of a school. The facility is not located within 1,000 feet of the outer boundary of a school.

RULE 212(c)(3): This section requires a public notice for all new or modified permit units with increases in emissions of toxic air contaminants listed in Table I of Rule 1401 resulting in a cancer risk equal or greater than one in a million. A cancer risk equal or greater than one in a million is not expected from operating the engine.

RULE 212(g): This section requires a public notice for all new or modified sources that result in emission increases exceeding any of the daily maximums as specified by Rule 212(g). The proposed project will result in a CO emission increase of 0.2 lb/day.

	Maximum Daily Emissions					
	ROG	NO <sub>x</sub>	PM <sub>10</sub>	SO <sub>2</sub>	CO	Pb
Emission increase	0	0	0	0	0.2	0
MAX Limit (lb/day)	<b>30</b>	<b>40</b>	<b>30</b>	<b>60</b>	<b>220</b>	<b>3</b>
Compliance Status	Yes	Yes	Yes	Yes	Yes	Yes

RULES 401 & 402: AQMD database has no records of any visible emissions or nuisance complaints against this facility for the last four years. Compliance with these requirements is expected with the proper operation of the equipment.

RULE 1110.2: Emergency ICEs are exempt from the requirements of this rule.

### REG. XIII

1303(a): To satisfy BACT requirements, the engine must operate at no greater than the following emission rates, CO = 2.0 g/bhp-hr, NO<sub>x</sub> = 1.5 g/bhp-hr and ROG = 1.5 g/bhp-hr. The engine is designed and manufactured to these specifications. Compliance with BACT is achieved.

1303(b)(1) & 1303(b)(2): Emergency ICEs are exempt from modeling requirements and emission offsets.

1303(b)(4): The facility is expected to be in full compliance with all applicable rules and regulations of the District.

RULE 1401: Not applicable to emergency ICEs.

### **REGULATION XXX:**

The proposed project is considered as a “minor permit revision” to the Title V permit issued to this facility. Rule 3000(b)(12) defines a “minor permit revision” as any Title V permit revision where the cumulative emission increases of non-RECLAIM pollutants or hazardous air pollutants (HAP) from these permit revisions during the term of the permit are not greater than any of the following emission threshold levels:

<b>Air Contaminant</b>	<b>Daily Maximum (lbs/day)</b>
HAP	30
VOC	30
NO <sub>x</sub>	40
PM <sub>10</sub>	30
SO <sub>x</sub>	60
CO	220

Rule 3003(j) specifies that a proposed permit for revision shall be submitted to EPA for review. To determine if a project qualifies for a “minor permit revision”, emission increases resulting from all permit revisions that are made after the issuance of the Title V renewal permit shall be accumulated and compared to the above threshold levels. This is the third permit revision of the Title V renewal permit. The cumulative emission increases resulting from this proposed permit revision are summarized as follows:

<b>Revision</b>	<b>HAP</b>	<b>VOC</b>	<b>NO<sub>x</sub></b>	<b>PM<sub>10</sub></b>	<b>SO<sub>x</sub></b>	<b>CO</b>
Previous Permit Revision Total	0	1	13	7	0	11
5 <sup>th</sup> Permit Revision; Add emergency internal combustion engine	0	0	0	0	0	0.2
Net Emission Total	0	1	13	7	0	11.2
Maximum Daily	30	30	40	30	60	220

### **REC OMMENDATION:**

The proposed project is expected to comply with all applicable District Rules and Regulations. Since the proposed project is considered as a “minor permit revision”, it is exempt from the public participation requirements under Rule 3006 (b). A proposed permit incorporating this permit revision will be submitted to the EPA for a 45-day review pursuant to Rule 3003(j). If the EPA does not raise any objections within the review period, a revised Title V permit will be issued to this facility.