

## SECTION 01 35 66

### GREEN CONSTRUCTION POLICY SPECIFICATIONS

#### **PART 1 - GENERAL**

##### **1.01 SECTION INCLUDES**

- A. Contractor's responsibilities and obligations relative to the Los Angeles County Metropolitan Transportation Authority (Metro) Green Construction Policy. The Green Construction Policy establishes requirements for identifying and mitigating air emission impacts on human health and the environment; for reducing on-road and off-road mobile sources, as well as ancillary diesel-fueled equipment used during construction activities administered by Metro; for implementing feasible and appropriate Best Management Practices (BMPs); and for monitoring to ensure compliance with this policy.

##### **1.02 RELATED SECTIONS**

- A. Section 01 33 00: Submittal Procedures
- B. Section 01 43 20: Project Quality Program Requirements - Design/Bid/Build

##### **1.03 REFERENCES**

- A. California Code of Regulations (CCR):
  - 1. Title 13: Section 2485 - CARB Airborne Toxic Control Measures to Limit Diesel-Fueled Commercial Motor Vehicle Idling.

##### **1.04 QUALITY ASSURANCE**

- A. Comply with Project Quality Program Requirements (see 1.02 above).
- B. The Contractor will designate a qualified person on the Contractor's staff to be responsible for compliance with this Section and providing the submittals.
- C. The Metro Technical Representative or its designee will monitor Contractor's performance of tasks specified, and will inspect necessary records, reports and procedures to ensure compliance with this Section.

##### **1.05 SUBMITTALS**

- A. Refer to Section 01 33 00 - Submittal Procedures, for submittal requirements and procedures.
- B. The Contractor shall submit the following documents prior to the issuance of a Notice to Proceed (NTP) to commence work on a construction project:

1. A certified statement signed and printed on the Contractor's letterhead by the Contractor's qualified person confirming that all construction equipment, on-road equipment and generators comply with the requirements in the Section. The certified statement will also include the Contractor's qualified person's name, title, business address, e-mail address, phone number and fax number. The Contractor's qualified person will be responsible for compliance with this section and providing all the submittals listed in the Section. Use the attached Certification of Compliance sample form attached to this Section.
2. A list of all the construction equipment, on-road vehicles and generators, required under this section, with the following information:
  - a. Construction Equipment including generators: Name of contractor or subcontractor responsible for equipment, equipment name and description, manufacturer, equipment serial number, engine model year, EPA Tier rating, horsepower rating, fuel type, type of emission control technology installed, manufacturer, device serial #, CARB-VDECS level and CARB Equipment ID number.
  - b. On-Road Equipment: Name of contractor or subcontractor responsible for equipment, equipment name and description, make, model, year, vehicle identification number, engine model year, EPA Tier rating, horsepower rating, fuel type, type of emission control technology installed, manufacturer, device serial #, CARB-VDECS level and CARB Equipment ID number.
3. A copy of the certified EPA rating, CARB registration, or SCAQMD / AVAQMD permit for each applicable piece of equipment to be used onsite.
4. A monthly fuel usage log for all construction equipment, on-road equipment and generators. The monthly log shall be submitted in electronic format (in MS Word or Excel) and hard copy by the 7th day of each month during the project. Use the attached Monthly Fuel Usage forms attached to this Section.
5. Provide and attach copies of fuel delivery receipts identifying source of supply, quantity of fuel, and quality of fuel to the Construction Equipment Monthly Fuel Usage form.
6. If an unanticipated need for the use of construction equipment, on-road equipment or generators arises after construction has commenced or after the Contractor has submitted the information required by the above subsections, the Contractor shall provide such information for the unanticipated equipment within 14 days after an identified emergency or when the need arises and prior to the use of the equipment or vehicle.

## **1.06 DEFINITIONS**

- A. Best Available Control Technology (BACT): technology, verified by CARB, for an off-road vehicle that achieves reductions in PM emissions at the highest applicable classification level for diesel emission control strategies. A summary of CARB-verified diesel emission control strategies may be found at <http://www.arb.ca.gov/diesel/verdev/vt/cvt.htm>. Where this Section requires BACT, this requirement can be satisfied by a factory installed equivalent device, such as a diesel particulate filter.

- B. Best Management Practices (BMP): methods determined to be the most effective, practical means of preventing or reducing pollution.
- C. CARB: California Air Resources Board.
- D. CARB Classification Levels: levels of diesel emission control retrofit technologies, with Level 3 being the highest classification level, and the only level acceptable for a retrofit under this Section, except as provided for in this Section.
  - 1. Level 3 is defined as retrofit technology that reduces diesel PM emissions by eighty-five percent (85%) or greater or reduces engine emissions to less than or equal to 0.01 grams diesel PM per brake horsepower-hour;
  - 2. Level 2 is defined as retrofit technology that reduces diesel PM emissions by between fifty and eighty-four percent (50-84%);
  - 3. Level 1 is defined as retrofit technology that reduces diesel PM emissions by between twenty-five and forty-nine percent (25-49%).
- E. Construction Equipment: A vehicle or equipment that is powered by a non-road engine, fifty horsepower (50 HP) and greater, and that is not a motor vehicle or a vehicle used solely for competition, which shall include, but not be limited to, excavators, backhoes, cranes, compressors, generators, bulldozers and similar equipment.
- F. Construction Project: A project that is performed on Metro properties or rights-of-way and involves the construction, alteration or repair of buildings, structures, or other real property. For the purposes of this definition, the terms "buildings, structures, or other real property" include, but are not necessarily limited to, improvements of all types to bridges, highways, parkways, streets, subways, tunnels, rail lines, sewers, and utilities. If the project is performed in collaboration with another agency or agencies or parties, including where the other agency or agencies or parties have the lead responsibility for construction, the Metro shall discuss with those agencies or parties the incorporation of the provisions of this Section into all agreements, including Memoranda of Understanding, between the Metro and the other agency or agencies or parties. Until such time, provisions of this Section shall only be used as a guideline in performing construction projects that receive/program Metro funds in whole or in part.
- G. DECS: Diesel Emission Control Strategy.
- H. EPA: U.S. Environmental Protection Agency.
- I. Generator: An internal combustion engine used for power generation.
- J. Metro Green Construction Policy: The Green Construction Policy approved by the Metro Board of Directors on August 4, 2011 ([http://www.metro.net/projects\\_studies/sustainability/images/Green\\_Construction\\_Policy.pdf](http://www.metro.net/projects_studies/sustainability/images/Green_Construction_Policy.pdf)).
- K. On-Road Equipment: typically vehicles intended by their manufacturer for use on public highways. On-road vehicles must be certified by their manufacturer with the U.S. Department of Transportation (DOT), National Highway Traffic Administration (NHTSA), as compliant with on-highway safety standards as well as certified to all applicable ARB

and U.S. EPA on-road emission standards. Compliance with these standards is indicated by separate safety and emissions labels on the vehicle (e.g., worker commute vehicles, light-duty trucks, heavy-heavy duty trucks, delivery trucks, water trucks, vacuum trucks).

L. PM: Particulate Matter.

M. SCAQMD: South Coast Air Quality Management District.

N. Sensitive Receptor Site: a site that is within the definition provided in the CARB Air Quality and Land Use Planning Guidelines (2005) (<http://www.arb.ca.gov/ch/landuse.htm>) such as schools, daycares, playgrounds, and hospitals.

O. VDECS: Verified Diesel Emission Control Strategy.

## **1.07 COSTS**

- A. Contractor shall be responsible for the costs associated with the use of construction equipment associated with the project. The Contractor shall be responsible for the costs associated with the use of construction equipment by any and all sub-contractors associated with the project, unless stated otherwise in a contractual document between Contractor and sub-contractor(s). Costs include, but are not limited to, the cost of compliant equipment, retrofit technologies, pollution control technologies, leased construction equipment and applicable permits/certifications for certain equipment.
- B. Metro is not responsible for the costs associated with the use of construction equipment associated with the project.

## **PART 2 - PRODUCTS (Not Used)**

## **PART 3 - EXECUTION**

### **3.01 CONSTRUCTION EQUIPMENT AIR EMISSION CONTROL REQUIREMENTS**

- A. Construction Equipment:
  - 1. The Contractor will incorporate, where feasible, construction equipment with approved emission-reducing technology such as hybrid drives and specific fuel economy standards.
  - 2. Construction Equipment idling in excess of five (5) consecutive minutes will be prohibited, or except as allowed under Title 13 of the California Code of Regulations §2485 (CARB's Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling).
  - 3. The contractor will establish truck-staging zones for vehicles waiting to load or unload material at the construction site. Such zones will be located where diesel emissions have the least impact on abutters and the general public.

4. All construction equipment shall comply with the following EPA engine specification requirements (<http://www.epa.gov/otaq/standards/allstandards.htm>):
  - a. Prior to December 31, 2011: All off-road diesel-powered construction equipment greater than 50 horsepower (hp) shall meet Tier-2 off-road emission standards at a minimum. In addition, all construction equipment greater than 50 hp shall be retrofitted with a CARB-verified Level 3 Diesel Emissions Control Device system (DECS).
  - b. From January 1, 2012, to December 31, 2014: All off-road diesel powered construction equipment greater than 50 hp shall meet Tier-3 off road emission standards at a minimum. In addition, all construction equipment greater than 50 hp shall be retrofitted with a CARB-verified Level 3 DECS. Any emissions control device used by the Contractor shall achieve emissions reductions that are no less than what could be achieved by a Level 3 diesel emissions control strategy for a similarly sized engine as defined by CARB regulations.
  - c. From January 1, 2015 and onwards: All off-road diesel-powered construction equipment greater than 50 hp shall meet Tier-4 off-road emission standards at a minimum. In addition, if not already supplied with a factory-equipped diesel particulate filter, all construction equipment shall be outfitted with Best Available Control Technology (BACT) devices certified by CARB. Any emissions control device used by the Contractor shall achieve emissions reductions that are no less than what could be achieved by a Level 3 diesel emissions control strategy for a similarly sized engine as defined by CARB regulations.

B. On-Road Equipment:

1. Trucks or equipment hauling material such as debris or any fill material shall be fully covered while operating at, to and from the Metro construction project.
2. Individual truck idling in excess of five (5) consecutive minutes will be prohibited, or except as allowed under Title 13 of the California Code of Regulations §2485 (CARB's Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling).
3. All on-road equipment will comply with the following engine specification requirements:
  - a. Prior to December 31, 2013: All on-road heavy-duty diesel trucks or equipment with a gross vehicle weight rating (GVWR) of 19,500 pounds or greater shall meet or exceed the EPA 2007 on-road emission standards for PM (0.01 g/bhp-hr); or shall be equipped with a CARB verified Level 3 diesel particulate filter.
  - b. From January 1, 2014 and beyond: All on-road heavy-duty diesel trucks or equipment with a GVWR of 19,500 pounds or greater shall comply with EPA 2007 on-road emission standards for PM and NO (0.01 g/bhp-hr and at least 1.2 g/bhp-hr, respectively).

C. Generators:

1. Every effort shall be made by the Contractor to utilize grid-based electric power at any construction site, where feasible.
2. Where access to the power grid is not available, on-site generators must:

- a. Meet a 0.01 gram per brake-horsepower-hour standard for PM; or
- b. Be equipped with BACT for PM emissions reductions.

D. Best Management Practices:

1. In addition to the equipment requirements, the Best Management Practices (BMPs) listed below are imposed on all construction projects and shall include, at a minimum:
  - a. Use of diesel particulate traps or best available control technology, as feasible;
  - b. Maintain equipment according to manufacturers' specifications;
  - c. Individual truck idling in excess of five consecutive minutes will be prohibited, or what is allowed under Title 13 of the California Code of Regulations §2485 (CARB's Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling);
  - d. Maintain a buffer zone that is a minimum of 1,000 feet between truck traffic and sensitive receptors, where feasible;
  - e. Where applicable and feasible, work with local jurisdictions to improve traffic flow by signal synchronization;
  - f. If feasible and as allowed by local jurisdictions, configure construction parking to minimize traffic interference;
  - g. Enforce truck parking restrictions, where applicable;
  - h. Prepare haul routes that conform to local requirements to minimize traversing through congested streets or near sensitive receptor areas;
  - i. Provide dedicated turn lanes for movement of construction trucks and equipment on- and off-site, as feasible;
  - j. Schedule construction activities that affect traffic flow on the arterial system to off-peak hours to the extent practicable;
  - k. Use electric power in lieu of diesel power where available; and
  - l. Traffic speeds on all unpaved roads to be 15 mph or less.
  - m. Suspend the use of all construction equipment during first-stage smog alerts.
  - n. Suspend all excavating and grading operations when wind speeds (as instantaneous gusts) exceed 25 miles per hour.

E. Sensitive Receptors:

1. The Contractor shall ensure that diesel emissions do not cause harmful effects to adjacent sensitive receptors.
  - a. Contractors performing construction activities that are located within 1,000 feet of sensitive receptors shall notify each of these sites in writing at least thirty (30) days before construction activities begin. Notification shall include the name of the project, a description of the location, the acreage of the construction site, the type and quantity of equipment and vehicles that will be operating at or near the site, the start date and reasonably anticipated duration of the construction, and contact information for a Metro community liaison who can answer any

questions. The Contractor will include the Metro on the notification distribution list and will provide the Metro with a copy of all responses to the letter within ten (10) days of receipt of responses.

F. Enforcement:

1. Any violations of the requirements set forth in this Section shall be deemed to be a material breach of the Contractor agreement, and the Metro will use all available remedies including warnings, fines, requirement to remove equipment, institution of special assessments, and termination of contract.
2. Metro will conduct inspections of construction sites and affected construction equipment, on-road equipment and generators for compliance with this Section. The inspections will be conducted as part of existing Metro staff functions and without advance notice to the Contractor. The results of the inspections will be verified consistent with project contract requirements and in accordance with the enforcement provisions above.

G. Exceptions:

1. All construction equipment requirements within this Section shall apply unless any of the following circumstances exist and the contractor provides a written finding consistent with project contract requirements that:
  - a. The Contractor intends to meet the requirements of this policy as to a particular vehicle or piece of equipment by leasing or short-term rental, and the Contractor has attempted in good faith and due diligence to lease the vehicle or equipment that would comply with this policy, but that vehicle or equipment is not available for lease or short-term rental within 200 miles of the project site, and the Contractor has submitted documentation to the Metro showing that the requirements of this Exception provision apply.
  - b. The Contractor has been awarded funding by SCAQMD or another agency that would provide some or all of the cost to retrofit, repower, or purchase a piece of equipment or vehicle, but the funding has not yet been provided due to circumstances beyond the Contractor's control, and the Contractor has attempted in good faith and due diligence to lease or short-term rent the equipment or vehicle that would comply with this policy, but that equipment or vehicle is not available for lease or short-term rental within 200 miles of the project site, and the Contractor has submitted documentation to the Metro showing that the requirements of this Exception provision apply.
  - c. Contractor has ordered a piece of equipment or vehicle to be used on the construction project in compliance with this policy at least 60 days before that equipment or vehicle is needed at the project site, but that equipment or vehicle has not yet arrived due to circumstances beyond the Contractor's control, and the Contractor has attempted in good faith and due diligence to lease or short-term rent a piece of equipment or vehicle to meet the requirements of this policy, but that equipment or vehicle is not available for lease or short-term rental within 200 miles of the project, and the Contractor has submitted documentation to the Metro showing that the requirements of this Exception provision apply.
  - d. Construction-related diesel equipment or vehicle will be used on a Metro construction project site for fewer than ten (10) calendar days per calendar year.

The Contractor shall not consecutively use different equipment or vehicles that perform the same or a substantially similar function in an attempt to use this Exception to circumvent the intent of this Section. In any of the situations described above, the Contractor shall provide the next cleanest piece of equipment or vehicle as provided by the step down schedules in Table A for Construction Equipment and Table B for On-Road Equipment.

<b>Table A. Construction Equipment Compliance Step Down Schedule*</b>		
<b>Compliance Alternative</b>	<b>EPA Engine Standard</b>	<b>CARB-verified DECS (VDECS)</b>
1	Tier 4	N/A**
2	Tier 3	Level 3
3	Tier 2	Level 3
4	Tier 1	Level 3
5	Tier 2	Level 2
6	Tier 2	Level 1
7	Tier 2	Uncontrolled
8	Tier 1	Level 2
<i>Equipment less than Tier 1, level 2 shall not be permitted.</i>		

<b>Table B. On-Road Equipment Compliance Step Down Schedule*</b>		
<b>Compliance Alternative</b>	<b>Engine Model Year</b>	<b>CARB-verified DECS (VDECS)</b>
1	2010	N/A
2	2007	N/A**
3	2004	Level 3
4	1998	Level 3
5	2004	Uncontrolled
6	1998	Uncontrolled
<i>Equipment with a model year earlier than Model year 1998 shall not be permitted.</i>		

**\*Table A and Table B Use Instructions:**

For example, if Compliance Alternative #3 is required by this Section, but a Contractor cannot obtain an off-road vehicle that meets the Tier 2 engine standard that is equipped with a Level 3 DECS (Compliance Alternative #3 in Table A) and meets one of the above exceptions, then the Contractor shall use a vehicle that meets the next compliance alternative (Compliance Alternative #4) which is a Tier 1 engine standard equipped with a Level 3 DECS. Should the Contractor not be able to supply a vehicle with a Tier 1 engine equipped with a Level 3 DECS in accordance with Compliance Alternative #4 and has satisfied the requirements of one of the above exceptions as to the Contractor's ability to obtain a vehicle meeting Compliance Alternative #4, the Contractor shall then supply a vehicle meeting the next compliance alternative (Compliance Alternative #5), and so on. If the Contractor is proposing an exemption for on-road equipment, the step down schedule in Table B should be used. A Contractor must demonstrate that it has satisfied one of the exceptions listed in the selected Compliance Alternative # before it



can use a subsequent Compliance Alternative. The goal is to ensure that the Contractor has exercised due diligence in supplying the cleanest fleet available.

\*\*Tier 4 or 2007 Model Year equipment not already supplied with a factory-equipped diesel particulate filter shall be outfitted with Level 3 VDECS.

**END OF SECTION 01 35 66**

SAMPLE

CERTIFICATION OF COMPLIANCE  
WITH  
GREEN CONSTRUCTION POLICY SPECIFICATION  
SPECIFICATION SECTION 01 35 66

I hereby certify:

1. That the equipment(s) identified in the attached Contractor Construction Equipment List and Contractor On-Road Equipment List includes all equipment that will be utilized at the site and complies with all of the requirements within the TITLE Section 01 35 66.
2. If an unanticipated need for the use of construction equipment, on-road equipment or generators arises after construction has commenced or after we have submitted the information required by Construction Equipment Air Emission Control Specification Section 01 35 66, we shall provide such information using either the Contractor Construction Equipment List or the Contractor On-Road Equipment List, as appropriate within 14 days after an identified emergency or when the need arises and prior to the use of the equipment or vehicle.
3. That any discrepancy to the above will be reported to Metro point of contact within 10 business days.
4. That all of the above conditions will be followed. Any deviation will be considered a breach in the agreement.
5. I understand that my equipment(s) are subject to random and scheduled inspections to verify that the device(s) are installed and operating properly.

CERTIFICATION

I certify to the best of my knowledge that I will comply with the items listed in TITLE Specification Section 013XX and that I am the authorized signatory or designee for the Contractor.

_____ Signature	_____ Title
_____ (Print Name)	_____ Date
_____ Company Name	_____ Phone Number
_____ Company Address	_____ Email Address

# CONTRACTOR CONSTRUCTION EQUIPMENT LIST

SPECIFICATION SECTION 01 35 66

Project Name: \_\_\_\_\_

Page \_\_\_ of \_\_\_

Contractor/ Subcontractor Responsible For Equipment	Equipment Name and Description	Manufacturer	Equipment Serial #	Engine Model Year	EPA Tier Rating	HP Rating	Fuel Type	Emission Control Technology Installed	Manufacturer	Device Serial #	CARB VDECS Level	CARB ID No. (EIN)

\* I hereby certify that the above information is a true and accurate account of all construction equipment that is currently scheduled to be utilized at the site.

\_\_\_\_\_  
Signature Title

\_\_\_\_\_  
(Print Name) Date

\_\_\_\_\_  
Company Name Phone Number

\_\_\_\_\_  
Company Address Email Address

# CONSTRUCTION EQUIPMENT MONTHLY FUEL USAGE REPORT

SPECIFICATION SECTION 01 35 66

Project Name: \_\_\_\_\_

Page \_\_\_ of \_\_\_

Contractor/Subcontractor Name: \_\_\_\_\_

Month/Year: \_\_\_\_\_

	Equipment Name										
	Equipment Serial #										
Date Fueled	Day	Gal	Gal	Gal	Gal	Gal	Gal	Gal	Gal	Gal	Gal
	Sun										
	Mon										
	Tues										
	Wed										
	Thurs										
	Fri										
	Sat										
	Sun										
	Mon										
	Tues										
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	Sat										
	Sun										
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	Tues										
	Wed										
	Thurs										
	Fri										
	Sat										
<b>TOTAL GALLONS USED:</b>		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

# ON-ROAD EQUIPMENT MONTHLY FUEL USAGE REPORT

SPECIFICATION SECTION 01 35 66

Project Name: \_\_\_\_\_

Page \_\_\_ of \_\_\_

Contractor/Subcontractor Name: \_\_\_\_\_

Month/Year: \_\_\_\_\_

		Equipment Name										
		Equipment Serial #										
Date Fueled	Day		Gal	Gal	Gal	Gal	Gal	Gal	Gal	Gal	Gal	Gal
	Sun											
	Mon											
	Tues											
	Wed											
	Thurs											
	Fri											
	Sat											
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	Sat											
<b>TOTAL GALLONS USED:</b>			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00