

**APPENDIX H**

**GLOSSARY OF TERMS**

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### GLOSSARY OF TERMS

**AB 1807 (Tanner):** [Glossary]<sup>1</sup> A California state law (Health and Safety Code Section 39650 et seq.) which became effective in January of 1984 and established the framework for California's toxic air contaminant identification and control program.

**Activity Factor:** [ARB, 2003b. Preliminary Draft OFFROAD Modeling Change Technical Memo, July 18, 2003] Activity expressed in hour per year or hours per day of engine run time.

**Acute Exposure:** [Glossary] One or a series of short-term exposures generally lasting less than 24 hours.

**Acute Health Effect:** [Glossary] A health effect that occurs over a relatively short period of time (e.g., minutes or hours). The term is used to describe brief exposures and effects which appear promptly after exposure.

**Additives:** [DieselNet]<sup>2</sup> Chemicals added to fuel in very small quantities to improve and maintain fuel quality and/or to lower emissions. See also "fuel additives"

**Aftertreatment Devices:** [DieselNet] Devices which remove pollutants from exhaust gases after the gas leaves combustion chamber (e.g., catalytic converters or diesel particulate filters). The term "exhaust gas aftertreatment" is considered derogatory by some in the emission control industry, but there is no consensus on the use of such alternatives as "post-combustion treatment" or "exhaust emission control".

**Airborne Toxic Control Measure (ATCM):** [Glossary] A control measure adopted by the ARB (Health and Safety Code Section 39666 et seq.), which reduces emissions of toxic air contaminants.

**Air Quality Simulation Model:** [Glossary] A mathematical relationship between emissions and air quality which simulates on a computer the transport, dispersion, and transformation of compounds emitted into the air.

**Air Toxics:** [Glossary] A generic term referring to a harmful chemical or group of chemicals in the air. Substances that are especially harmful to health, such as those considered under U.S. EPA's hazardous air pollutant program or California's AB 1807 and/or AB 2588 air toxics programs, are considered to be air toxics. Technically, any compound that is in the air and has the potential to produce adverse health effects is an air toxic.

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<sup>1</sup> From Air Resources Board's *Glossary of Air Pollution Terms*, available at <http://www.arb.ca.gov/html/gloss.htm>

<sup>2</sup> From DieselNet's *Glossary of Terms*, available at <http://www.dieselnet.com/glossary.html>

**Ambient Air:** [Glossary] The air occurring at a particular time and place outside of structures. Often used interchangeably with "outdoor air."

**American Society for Testing and Materials (ASTM):** [Glossary] A nonprofit organization that provides a forum for producers, consumers, and representatives of government and industry, to write laboratory test standards for materials, products, systems, and services. ASTM publishes standard test methods, specifications, practices, guides, classifications, and terminology

**Area-Wide Sources:** [Glossary] Sources of pollution where the emissions are spread over a wide area, such as consumer products, fireplaces, road dust and farming operations. Area-wide sources do not include mobile sources or stationary sources.

**Best Available Control Technology (BACT):** [Glossary] The most up-to-date methods, systems, techniques, and production processes available to achieve the greatest feasible emission reductions for given regulated air pollutants and processes. BACT is a requirement of NSR (New Source Review) and PSD (Prevention of Significant Deterioration).

**Biodiesel:** [DieselNet] The mono alkyl esters of long chain fatty acids derived from renewable lipid feedstocks, such as vegetable oils and animal fats, for use in compression ignition (diesel) engines. Manufactured by transesterification of the organic feedstock by methanol.

**B100 Biodiesel Fuel:** [TRU]<sup>3</sup> 100% biodiesel fuel derived from vegetable oil or animal fat and complying with ASTM D 6751-02 (or most current version) and commonly or commercially known, sold, or represented as "neat" biodiesel or B100.

**Brake Power or Brake Horsepower:** [ISO]<sup>4</sup> The observed power measured at the crankshaft or its equivalent, the engine being equipped only with the standard auxiliaries necessary for its operation on the test bed.

**California Air Resources Board (CARB):** [Glossary] The State's lead air quality agency consisting of an eleven-member board appointed by the Governor and several hundred employees. CARB is responsible for attainment and maintenance of the state and federal air quality standards, and is fully responsible for motor vehicle pollution control. It oversees county and regional air pollution management programs.

**CARB Diesel Fuel:** [TRU] Any diesel fuel that meets the specifications defined in 13 CCR 2281 and 13 CCR 2282.

**Carbon Dioxide (CO<sub>2</sub>):** [Glossary] A colorless, odorless gas that occurs naturally in the Earth's atmosphere. Significant quantities are also emitted into the air by fossil fuel combustion.

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<sup>3</sup> As defined in the proposed TRU ATCM.

<sup>4</sup> International Standards Organization 8178, Parts 1 and 4.

**Carbon Monoxide (CO):** [Glossary] A colorless, odorless gas resulting from the incomplete combustion of hydrocarbon fuels. CO interferes with the blood's ability to carry oxygen to the body's tissues and results in numerous adverse health effects. Over 80% of the CO emitted in urban areas is contributed by motor vehicles. CO is a criteria air pollutant.

**Carcinogen:** [Glossary] A cancer-causing substance.

**Carl Moyer Fund:** [Glossary] A multi-million dollar incentive grant program designed to encourage reduction of emissions from heavy-duty engines. The grants cover the additional cost of cleaner technologies for on-road, off-road, marine, locomotive and agricultural pump engines, as well as forklifts and airport ground support equipment. Note: Proposed revision would also include TRUs.

**Catalyst:** [Glossary] A substance that can increase or decrease the rate of a chemical reaction between the other chemical species without being consumed in the process.

**Cetane Number:** [DieselNet] A measure of ignition quality of diesel fuel. The higher the cetane number the easier the fuel ignites when injected into an engine. Cetane number is determined by an engine test using two reference fuel blends of known cetane numbers. The reference fuels are prepared by blending normal cetane (n-hexadecane), having a value of 100, with heptamethyl nonane, having a value of 15.

**Chronic Exposure:** [Glossary] Long-term exposure, usually lasting one year to a lifetime.

**Chronic Health Effect:** [Glossary] A health effect that occurs over a relatively long period of time (e.g., months or years).

**Cloud Point (CP):** [DieselNet] A measure of the ability of a diesel fuel to operate under cold weather conditions. Defined as the temperature at which wax first becomes visible when diesel fuel is cooled under standardized test conditions (ASTM D2500).

**Cold Curtains:** [TK]<sup>5</sup> Flexible vinyl curtains used to reduce air exchange between the refrigerated compartment and the outside during door openings.

**Cold Plate:** [TK] Eutectic plate. A refrigeration unit consisting of a condenser section and several large "plates" containing a eutectic solution. Usually at night (when the vehicle is parked), the electric-powered condenser section is operated to freeze the eutectic solution in the plates. During the day, these plates absorb heat from the refrigerated compartment without reliance on an diesel engine or electric motor. (See *Eutectic Solution*)

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<sup>5</sup> ThermoKing Corporation's "Terms of Industry"

**Common Carrier:** [TLI]<sup>6</sup> A transportation company which provides service to the general public at published rates.

**Compression Ignition (CI) Engine:** [TRU] An internal combustion engine with operating characteristics significantly similar to the theoretical diesel combustion cycle. The regulation of power by controlling fuel supply in lieu of a throttle is indicative of a compression ignition engine.

**Compressed Natural Gas (CNG):** [DieselNet] Natural gas compressed to a volume and density that is practical as a portable fuel supply.

**Consignee:** [PONL]<sup>7</sup> The party such as mentioned in the transport document by whom the goods, cargo or containers are to be received.

**Container:** [TLI] A truck trailer body that can be detached from the chassis for loading into a vessel, a rail car, or stacked in a container depot. Containers may be ventilated, insulated, refrigerated, flat rack, vehicle rack, open top, bulk liquid, or equipped with interior devices. A container may be 20 feet, 40 feet, 45 feet, 48 feet, or 50 feet in length, 8'0" or 8'6" in width, and 8'6" or 9'6" in height.

**Container Number:** [PONL] Identification number of a container consisting of prefix and serial number and check digit. (e.g. KNLU 123456-7)  
See also: Container Serial Number and Container Prefix

**Container Prefix:** [PONL] A four letter code that forms the first part of a container identification number indicating the owner of a container.

**Container Serial Number:** [PONL] A seven digit serial number (6 plus 1 Check Digit) that forms the second part of a container identification number.

**Contract Carrier:** [TLI] Any person not a common carrier who, under special or individual contracts or agreements, transports passengers or property for compensation.

**Cordierite:** [DieselNet] A ceramic material of the formula  $2\text{MgO} \cdot 2\text{Al}_2\text{O}_3 \cdot 5\text{SiO}_2$  which is used for automotive flow-through catalyst substrates and ceramic wall-flow diesel filters.

**Cost-Effectiveness:** [Glossary] The cost of an emission control measure assessed in terms of dollars-per-pound, or dollars-per-ton, of air emissions reduced.

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<sup>6</sup> The Logistics Institute of the Georgia Institute of Technology's *Logistics Glossary* at <http://www.tli.gatech.edu/apps/glossary/>

<sup>7</sup> P&O Nedlloyd, *A to Z of Shipping Terms* at [http://www.ponl.com/topic/home\\_page/about\\_us/useful\\_information/a-z\\_of\\_shipping\\_terms/a](http://www.ponl.com/topic/home_page/about_us/useful_information/a-z_of_shipping_terms/a)

**Cryogenic Temperature Control System:** [TK] A heating and cooling system that uses a cryogen, such as carbon dioxide or liquid nitrogen that is routed through an evaporator coil that cools air blown over the coil. The cryogenic system uses a vapor motor to drive a fan and alternator, and a propane-fired heater superheats the carbon dioxide for heating and defrosting.

**Cube Out:** [TL] When a container or vessel has reached its volumetric capacity before its permitted weight limit.

**Cycle Time/Cycle Factor:** Percent of TRU switch-on time that the engine is running. This time varies with type of load (set point and air flow needs), ambient temperature, trailer insulation and door seal condition, number of door openings, etc. Some units operate all of the time (e.g. deep frozen ice cream or products that need continuous air flow) while others shut off when set point is reached. The cycle factor is used when only the TRU switch-on time is known to get to engine operating hours. It is not used when actual engine hours are known.

**Data Logger:** [TK] An electronic device that monitors and stores unit operating and temperature data for later review. Examples: DMS, DAS, DRS and AccuTrac.

**Defrost:** [TK] The removal of accumulated ice from an evaporator coil. Periodic defrost is necessary when the evaporator coil is operating below freezing temperature and is especially frequent when air passing through the evaporator contains high humidity.

**Depot:** [PONL] The place designated by the carrier where empty containers are kept in stock and received from or delivered to the container operators or merchants.

**Diesel Engine:** [Glossary] A type of internal combustion engine that uses low-volatility petroleum fuel and fuel injectors and initiates combustion using compression ignition (as opposed to spark ignition that is used with gasoline engines).

**Diesel Oxidation Catalyst (DOC):** [TRU] The use of a catalyst to promote the oxidation processes in diesel exhaust. Usually refers to an emission control device that includes a flow-through substrate where the surfaces that contact the exhaust flow have been catalyzed to reduce emissions of the organic fraction of diesel particulates, gas-phase hydrocarbons, and carbon monoxide..

**Diesel Particulate Filter (DPF):** [TRU] An emission control technology that reduces PM emissions by trapping the particles in a flow filter substrate. Periodically, the collected particles are either physically removed or oxidized (burned off) in a process called regeneration.

**Diesel Particulate Matter (diesel PM):** [TRU] The particles found in the exhaust of diesel-fueled CI engines which may agglomerate and adsorb other species to form structures of complex physical and chemical properties

**Dispatch:** [PONL] The process of sending goods.

**Dispersion Model:** [Glossary] See air quality simulation model above.

**Distribution Center:** [PONL] A warehouse for the receipt, the storage and the dispersal of goods among customers.

**Document Holder:** [PONL] Usually fastened to the door on the front of a container. May contain e.g. a certificate of approval of the container.

**Dose-Response:** [Glossary] The relationship between the dose of a pollutant and the response (or effect) it produces on a biological system.

**Dual-Fuel Vehicle:** [DieselNet] A vehicle designed to operate on a combination of alternative fuel, such as compressed natural gas (CNG) or liquefied petroleum gas (LPG), and conventional fuel, such as diesel or gasoline. These vehicles have two separate fuel systems, which inject both fuels simultaneously into the engine combustion chamber.

**Economy of Scale:** [PONL] A phenomenon which encourages the production of larger volumes of a commodity to reduce its unit cost by distributing fixed costs over a greater quantity.

**Elemental Carbon (EC):** [DieselNet] Inorganic carbon, as opposed to carbon in organic compounds, sometimes used as a surrogate measure for diesel particulate matter, especially in occupational health environments. Elemental carbon usually accounts for 40-60% of the total DPM mass.

**Emission Factor:** [Glossary] For stationary sources, the relationship between the amount of pollution produced and the amount of raw material processed or burned. For mobile sources, the relationship between the amount of pollution produced and the number of vehicle miles traveled. By using the emission factor of a pollutant and specific data regarding quantities of materials used by a given source, it is possible to compute emissions for the source. This approach is used in preparing an emissions inventory.

**Emission Inventory:** [Glossary] An estimate of the amount of pollutants emitted into the atmosphere from major mobile, stationary, area-wide, and natural source categories over a specific period of time such as a day or a year.

**Emission Rate:** [Glossary] The weight of a pollutant emitted per unit of time (e.g., tons/year).

**Emission Standard:** [Glossary] The maximum amount of a pollutant that is allowed to be discharged from a polluting source such as an automobile or smoke stack.

**Environmental Justice:** [Glossary] The fair treatment of people of all races and incomes with respect to development, implementation, and enforcement of environmental laws, regulations, and policies. Fair treatment implies that no person or group of people should shoulder a disproportionate share of negative environmental and economic impacts resulting from the execution of environmental programs.

**Epidemiology:** [Glossary] The study of the occurrence and distribution of disease within a population.

**Exposure:** [Glossary] The concentration of the pollutant in the air multiplied by the population exposed to that concentration over a specified time period.

**Exposure Assessment:** [Glossary] Measurement or estimation of the magnitude, frequency, duration and route of exposure to a substance for the populations of interest.

**Facility:** [TRU] Any facility where TRU-equipped trucks, trailers, containers or railcars are loaded or unloaded with perishable goods. This includes, but is not limited to, grocery distribution centers, good service distribution centers, cold storage warehouses, and intermodal facilities. Each business entity at a commercial development is a separate facility (for the purposes of the proposed ATCM) provided the businesses are independently owned and operated.

**Flash Point:** [DieselNet] The temperature at which a combustible liquid gives off just enough vapor to produce a vapor/air mixture that will ignite when a flame is applied. The flash point is measured in a standardized apparatus using standard test methods, such as ASTM D93 or ISO 2719.

**Fleet:** [PONL] Any group of means of transport acting together or under one control.

**Fuel Cell:** [Glossary] An electrochemical cell which captures the electrical energy of a chemical reaction between fuels such as liquid hydrogen and liquid oxygen and converts it directly and continuously into the energy of a direct electrical current.

**Generator Set (Gen Set):** [TLI] A portable generator which can be attached to a refrigerated container to power the refrigeration unit during transit.

**Health Risk Assessment (HRA):** [Glossary] A document that identifies the risks and quantities of possible adverse health effects that may result from exposure to emissions of toxic air contaminants. A health risk assessment cannot predict specific health effects; it only describes the increased possibility of adverse health effects based on the best scientific information available.

**"Hot Spot":** [Glossary] See toxic hot spot.



**Hybrid Cryogenic Temperature Control System:** [TK] A temperature control system that uses a cryogenic temperature control system in conjunction with a diesel engine.

**Hydrocarbons:** [Glossary] Compounds containing various combinations of hydrogen and carbon atoms. They may be emitted into the air by natural sources (e.g., trees) and as a result of fossil and vegetative fuel combustion, fuel volatilization, and solvent use. Hydrocarbons are a major contributor to smog. (See also Reactive Organic Gases).

**Independently Owned and Operated:** [TRU] A business concern that independently manages and controls the day-to-day operations of its own business through its ownership and management, without undue influence by an outside entity or person that may have an ownership and/or financial interest in the management responsibilities of the applicant business or small business.

**Indirect Source:** [Glossary] Any facility, building, structure, or installation, or combination thereof, which generates or attracts mobile source activity that results in emissions of any pollutant (or precursor) for which there is a state ambient air quality standard. Examples of indirect sources include employment sites, shopping centers, sports facilities, housing developments, airports, commercial and industrial development, and parking lots and garages.

**Individual Cancer Risk:** [Glossary] The probability, expressed as chances in a million, that a person experiencing 70 years of continuous area-wide outdoor exposure to a toxic air contaminant will develop cancer.

**Intermodal:** [TLI] Used to denote movements of cargo containers interchangeably between transportation modes (i.e motor, water, and air carriers) and where the equipment is compatible within the multiple systems.

**Intermodal Facility:** [TRU] A facility involved in the movement of goods in one and the same loading unit or vehicle which uses successively several modes of transport without handling of the goods themselves in changing modes. Such a facility is typically involved in loading and unloading shipping containers and trailer vans to and from railcars, trucks, and ocean-going ships.

**Intermodal Transport:** [PONL] The movement of goods (containers) in one and the same loading unit or vehicle which uses successively several modes of transport without handling of the goods themselves in changing modes.

**Internal Combustion Engine:** [Glossary] An engine in which both the heat energy and the ensuing mechanical energy are produced inside the engine. Includes gas turbines, spark ignition gas, and compression ignition diesel engines.

**Interruptible Service Contract:** [TRU] any arrangement in which a nonresidential electrical customer agrees to reduce or consider reducing its electrical consumption during periods of peak demand or at the request of the System Operator in exchange

for compensation, or assurances not to be blacked out or other similar non-monetary assurances.

**In Use (CI engine):** [TRU] Not a “new” CI engine.

**Lease:** [PONL] A contract by which one party gives to another party the use of property or equipment, e.g. containers, for a specified time against fixed payments.

**Leasing Company:** [PONL] The company from which property or equipment is taken on lease.

**Leasing Contract:** [PONL] A contract for the leasing of property or equipment.

**Lessee:** [PONL] The party to whom the possession of specified property has been conveyed for a period of time in return for rental payments.

**Lessor:** [PONL] The party who conveys specified property to another for a period of time in return for the receipt of rent.

**Liquefied Natural Gas (LNG):** [DieselNet] Natural gas that has been refrigerated to cryonic temperatures where the gas condenses into a liquid.

**Liquefied Petroleum Gas (LPG):** [DieselNet] A mixture of low-boiling hydrocarbons that exists in a liquid state at ambient temperatures when under moderate pressures (less than 1.5 MPa or 200 psi). LPG is a by-product from the processing of natural gas and from petroleum refining. Major components of LPG are propane (min. 85% content in the U.S.), butane and propylene.

**Load Factor:** [ARB, 2003b. Preliminary Draft OFFROAD Modeling Technical Change Memo, July 18, 2003] The average operation level in a given application expressed as a percent of the engine manufacturer's maximum horsepower ratings.

**Logistics:** [TLI] That part of the supply chain process that plans, implements, and controls the efficient flow and storage of goods, services, and related information from the point of origin to the point of consumption in to meet customers' requirements.

**Lubricity:** [Glossary] A measure of the ability of an oil or other compound to lubricate (reduce friction) between two surfaces in contact.

**Marking:** [TLI] Letters, numbers, and other symbols placed on cargo packages to facilitate identification. See Shipping Marks

**Mechanical Refrigeration:** [U.S. Department of Agriculture Handbook 669, Revised June 2000] Refrigerant is circulated through the refrigeration system by a compressor driven by a gasoline, diesel, or electrical motor.

**Mobile Sources:** [Glossary] Sources of air pollution such as automobiles, motorcycles, trucks, off-road vehicles, boats, and airplanes.

**Mode:** [ISO] An engine operating point characterized by the speed and a torque (or an output).

**Model Year (MY):** [TRU] A diesel-fueled engine manufacturer's annual production period, which includes January 1<sup>st</sup> of a calendar year, or if the manufacturer has no annual production period, the calendar year.

**Morbidity:** [Glossary] Rate of disease incidence.

**Mortality:** [Glossary] Death rate.

**Motor Carrier:** [Based Upon 13 CCR §1201(q) and TRU]: The registered owner, lessee, or licensee of one or more straight trucks, tractors, trailers, or semi-trailers.

**Mutagenic:** [Glossary] The ability of a chemical or physical agent to produce heritable changes in the DNA of living cells.

**Nitrogen Oxides (NO<sub>x</sub>):** [Glossary] A general term pertaining to compounds of nitric oxide (NO), nitrogen dioxide (NO<sub>2</sub>), and other oxides of nitrogen. Nitrogen oxides are typically created during combustion processes, and are major contributors to smog formation and acid deposition. NO<sub>2</sub> is a criteria air pollutant, and may result in numerous adverse health effects.

**Nitric Oxide (NO):** [Glossary] Precursor of ozone, NO<sub>2</sub>, and nitrate; nitric oxide is usually emitted from combustion processes. Nitric oxide is converted to nitrogen dioxide (NO<sub>2</sub>) in the atmosphere, and then becomes involved in the photochemical processes and/or particulate formation. (See Nitrogen Oxides.)

**Noncarcinogenic Effects:** [Glossary] Non-cancer health effects which may include birth defects, organ damage, morbidity, and death.

**Non-Methane Hydrocarbon (NMHC):** [Glossary] The sum of all hydrocarbon air pollutants except methane. NMHCs are significant precursors to ozone formation.

**No-Observed-Adverse-Effect-Level (NOAEL):** [Glossary] A term used in risk assessment. An exposure level at which there are no statistically or biologically significant increases in the frequency or severity of adverse effects between an exposed population and a comparable non-exposed population.

**No-Observed-Effect-Level (NOEL):** [Glossary] A term used in risk assessment. An exposure level at which there are no statistically or biologically significant difference or severity of any effect between an exposed population and a comparable non-exposed population.

**Nose:** [TL] The front of a container or trailer – opposite the tail.

**Office of Environmental Health Hazard Assessment (OEHHA):** [Glossary] A department within the California Environmental Protection Agency that is responsible for evaluating chemicals for adverse health impacts and establishing safe exposure levels. OEHHA also assists in performing health risk assessments and developing risk assessment procedures for air quality management purposes.

**Original Equipment Manufacturer (OEM):** [DieselNet] Manufacturers of equipment (such as engines, vehicles, etc.) that provide the original product design and materials for its assembly and manufacture. OEMs are directly responsible for manufacturing and modifying the products, making them commercially available, and providing the warranty.

**Owner/Operator:** [TRU] (For the purposes of the proposed ATCM) A requirement applies to the owner and/or operator of a TRU or TRU generator set, as determined by agreement or contract if the two are separate entities.

**Oxidation:** [Glossary] The chemical reaction of a substance with oxygen or a reaction in which the atoms in an element lose electrons and its valence is correspondingly increased.

**Ozone:** [Glossary] A strong smelling, pale blue, reactive toxic chemical gas consisting of three oxygen atoms. It is a product of the photochemical process involving the sun's energy and ozone precursors, such as hydrocarbons and oxides of nitrogen. Ozone exists in the upper atmosphere ozone layer (stratospheric ozone) as well as at the Earth's surface in the troposphere (ozone). Ozone in the troposphere causes numerous adverse health effects and is a criteria air pollutant. It is a major component of smog.

**Ozone Precursors:** [Glossary] Chemicals such as non-methane hydrocarbons and oxides of nitrogen, occurring either naturally or as a result of human activities, which contribute to the formation of ozone, a major component of smog.

**Particulate Matter (PM):** [Glossary] Any material, except pure water, that exists in the solid or liquid state in the atmosphere. The size of particulate matter can vary from coarse, wind-blown dust particles to fine particle combustion products.

**PM2.5:** [Glossary] Includes tiny particles with an aerodynamic diameter less than or equal to a nominal 2.5 microns. This fraction of particulate matter penetrates most deeply into the lungs.

**PM10 (Particulate Matter):** [Glossary] A criteria air pollutant consisting of small particles with an aerodynamic diameter less than or equal to a nominal 10 microns (about 1/7 the diameter of a single human hair). Their small size allows them to make

their way to the air sacs deep within the lungs where they may be deposited and result in adverse health effects . PM10 also causes visibility reduction.

**Polycyclic Aromatic Hydrocarbons (PAHs):** [Glossary] Organic compounds which include only carbon and hydrogen with a fused ring structure containing at least two benzene (six-sided) rings. PAHs may also contain additional fused rings that are not six-sided. The combustion of organic substances is a common source of atmospheric PAHs.

**Pour Point:** [DieselNet] A measure of the ability of a diesel fuel to operate under cold weather conditions. Defined as the temperature at which the amount of wax out of solution is sufficient to gel the fuel when tested under standard conditions (ASTM D97).

**Primary Particles:** [Glossary] Particles that are directly emitted from combustion and fugitive dust sources. (Compare with Secondary Particle.)

**Proposition 65:** [Glossary] Safe Drinking and Toxic Enforcement Act of 1986, also known as Proposition 65. This Act is codified in California Health and Safety Code Section 25249.5, et seq. No person in the course of doing business shall knowingly discharge or release a chemical known to the state to cause cancer or reproductive toxicity into water or into land where such chemical passes or probably will pass into any source of drinking water, without first giving clear and reasonable warning to such individual.

**Rail Car:** [PONL] A wheeled wagon used for the carriage of cargo by rail.

**Rated Power:** [ISO] Power delivered, according to the statement of the manufacturer, at the rated speed.

**Rated Speed:** [ISO] Speed at which, according to the statement of the manufacturer, the rate power is delivered.

**Reference Exposure Level (REL):** [Glossary] A term used in risk assessment. It is the concentration at or below which no adverse health effects are anticipated for a specified exposure period.

**Refrigerated Shipping Container TRU:** [TRU] A shipping container equipped with a TRU.

**Residual Risk:** [Glossary] The quantity of health risk remaining after application of emission control.

**Risk Assessment:** [Glossary] An evaluation of risk which estimates the relationship between exposure to a harmful substance and the likelihood that harm will result from that exposure.

**Risk Management:** [Glossary] An evaluation of the need for and feasibility of reducing risk. It includes consideration of magnitude of risk, available control technologies, and economic feasibility.

**Scientific Review Panel (SRP):** [Glossary] Mandated by AB 1807, this nine-member panel advises the ARB, OEHHA, and the California Department of Pesticide Regulation on the scientific adequacy of the risk assessment portion of reports issued by those three agencies in the process of identifying substances as toxic air contaminants.

**Secondary Particle:** [Glossary] Particles that are formed in the atmosphere. Secondary particles are products of the chemical reactions between gases, such as nitrates, sulfur oxides, ammonia, and organic products.

**Semi Trailer:** [PONL] A vehicle without motive power and with one or more axles designed to be drawn by a truck tractor and constructed in such way that a portion of its weight and that of its load rest upon e.g. the fifth wheel of the towing vehicle.

**Set Point:** [TK] The temperature selected on a thermostat or microprocessor controller. This is normally the desired box temperature.

**Smog:** [Glossary] A combination of smoke and other particulates, ozone, hydrocarbons, nitrogen oxides, and other chemically reactive compounds which, under certain conditions of weather and sunlight, may result in a murky brown haze that causes adverse health effects. The primary source of smog in California is motor vehicles.

**Shipper:** [TL] The person or company who is usually the supplier or owner of commodities shipped. Also called Consignor.

**Soluble Organic Fraction (SOF):** [DieselNet] The organic fraction of diesel particulates. SOF includes heavy hydrocarbons derived from the fuel and from the engine lubricating oil. The term "soluble" originates from the analytical method used to measure SOF which is based on extraction of particulate matter samples using organic solvents.

**Soot:** [Glossary] Very fine carbon particles that have a black appearance when emitted into the air.]

**Source:** [Glossary] Any place or object from which air pollutants are released. Sources that are fixed in space are stationary sources and sources that move are mobile sources.

**Stakeholders:** [Glossary] Citizens, environmentalists, businesses, and government representatives that have a stake or concern about how air quality is managed.

**Stand-by Time** [Carrier]<sup>8</sup> Actual time that the electric standby motor operates – time when the TRU is under total electric power.

**Straight Truck:** [TK] A truck consisting of a driver's cab and attached box or bed for transporting cargo. Not a semi-truck which consists of a trailer pulled by a tractor.

**Sulfates:** [Glossary] (See Sulfur Oxides.)

**Sulfur Dioxide (SO<sub>2</sub>):** [Glossary] A strong smelling, colorless gas that is formed by the combustion of fossil fuels. Power plants, which may use coal or oil high in sulfur content, can be major sources of SO<sub>2</sub>. SO<sub>2</sub> and other sulfur oxides contribute to the problem of acid deposition. SO<sub>2</sub> is a criteria air pollutant.

**Sulfur Oxides:** [Glossary] Pungent, colorless gases (sulfates are solids) formed primarily by the combustion of sulfur-containing fossil fuels, especially coal and oil. Considered major air pollutants, sulfur oxides may impact human health and damage vegetation.

**Switch On Time (SON):** [Carrier] Total time that the unit is switched on and cooling a load. The clock keeps running even when the engine is off

**Terminal:** [TRU] Any place where a TRU-equipped truck, trailer, container, railcar or TRU gen set is regularly garaged, maintained, operated, or dispatched from, including a dispatch office, cross-dock facility, maintenance shop, business, or private residence.

**Test Cycle:** [ISO] A sequence of engine test modes each with a defined speed, torque, and weighting factor, where the weighting factors only apply if the test results are expressed in g/kWh.

**Toxic Air Contaminant (TAC):** [Glossary] An air pollutant, identified in regulation by the ARB, which may cause or contribute to an increase in deaths or in serious illness, or which may pose a present or potential hazard to human health. TACs are considered under a different regulatory process (California Health and Safety Code Section 39650 et seq.) than pollutants subject to CAAQs. Health effects to TACs may occur at extremely low levels, and it is typically difficult to identify levels of exposure which do not produce adverse health effects. For more information, click [here](#).

**Toxic Hot Spot:** [Glossary] A location where emissions from specific sources may expose individuals and population groups to elevated risks of adverse health effects -- including but not limited to cancer -- and contribute to the cumulative health risks of emissions from other sources in the area.

**Tractor:** [TL] Unit of highway motive power used to pull one or more trailers/containers.

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<sup>8</sup> Provided by Carrier Transicold Corporation's Peter Guzman.

**Trailer:** [PONL] A vehicle without motive power, designed for the carriage of cargo and to be towed by a motor vehicle.

**Transponder:** [PONL] A device (chip) used for identification, which automatically transmits certain coded data when actuated by a special signal from an interrogator.

**Transport:** [TLI] To move cargo from one place to another.

**Transport Refrigeration Unit (TRU):** [TRU] Refrigeration systems powered by integral internal combustion engines designed to control the environment of temperature sensitive products that are transported in semi-trailer vans, truck vans, reefer railcars, or shipping containers. TRUs may be capable of both cooling and heating.

**TRU Generator Set:** [TRU] A generator set that is designed and used to provide electric power to electrically driven transport refrigeration units of any kind. This includes, but is not limited to generator sets that provide electricity to electrically powered trailer-mounted TRUs and shipping containers.

**Ultra-Low-Aromatic Synthetic Diesel Fuel:** [TRU] Fuel produced from natural gas by the Fischer-Tropsch gas-to-liquid chemical conversion process, or similar process that meets the following properties:

Property	ASTM	Value
Sulfur Content (ppmw)	D5453	<1
Aromatic Content (wt %)	D51876-99	1.5%
Polynuclear aromatic hydrocarbon (wt %)	-	0.5%
Cetane Number	D613	>74

**Unit Risk Number:** [Glossary] The number of potential excess cancer cases from a lifetime exposure to one microgram per cubic meter ( $\mu/m^3$ ) of a given substance. For example, a unit risk value of  $5.5 \times 10^{-6}$  would indicate an estimated 5.5 cancer cases per million people exposed to an average concentration of  $1 \mu/m^3$  of a specific carcinogen for 70 years.

**Verification Classification Level:** [TRU] The classification assigned to a Diesel Emission Control Strategy by the Executive Officer as defined in the *Verification Procedure, Warranty and In-Use Compliance Requirements for In-Use Strategies to Control Emission from Diesel Engines (13 CCR Sections 2700 – 2710)*. PM reductions correspond as follows: Level 1:  $\geq 25\%$ ; Level 2:  $\geq 50\%$ ; Level 3:  $\geq 85\%$  or 0.01 g/hp-hr.

**Verified Diesel Emission Control Strategy (VDECS):** [TRU] An emission control strategy designed primarily for the reduction of diesel particulate matter emissions that has been verified per the *Verification Procedure, Warranty and In-Use Compliance Requirements for In-Use Strategies to Control Emissions from Diesel Engines (13 CCR*



Sections 2700-2710). Examples of diesel retrofit systems that may be verified include, but are not limited to, diesel particulate filters, diesel oxidation catalysts, fuel additives (e.g., fuel-borne catalysts), alternative diesel fuels, and combinations of the above.