Lehigh Southwest Cement Company
Permanente Cement Plant

Fugitive Dust

Control Plan

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Introduction:

The Fugitive Dust Control Plan (FDCP) at the LEHIGH SOUTHWEST CEMENT COMPANY—Permanente Plant (Lehigh) consists of dust mitigation measures to control fugitive dust emissions generated by activities at the facility and to reduce their potential impacts on the environment and the surrounding community. This plan does not address[1] *particulate matter* or gaseous emissions from the *kiln*, *clinker cooler*, or other permitted point sources. The purpose of this plan is to establish and implement dust control measures to limit *particulate matter* emissions from material handling operations, non-point sources, and area sources that may occur during operation and maintenance activities.

Preventing fugitive dust emissions is the primary objective. Some of the newest and most efficient pollution control equipment is being used at the Permanente Plant. This plan is intended to work in conjunction with the Plant's Operations and Maintenance (O&M) Plan per the National Emission Standard for Hazardous Air Pollutants (NESHAPs) requirements, the Compliance Assurance Monitoring (CAM) Plan, and current and future operating permit regulations and requirements.

The FDCP is intended to provide guidelines for the implementation of control procedures and the creation of a training program at the cement plant and quarries. The plan, upon acceptance by the Bay Area Air Quality Management District (BAAQMD, District), will further enable the facility to comply with the District's visible emissions regulation and Public Nuisance Rule. The FDCP outlines techniques and practices for monitoring and preventing dust emissions, guidelines for employee training, and procedures that can be used during operations and maintenance activities.

[1] NOTE that words in *italics* are words for which definitions are listed in the BAAQMD rules.

Fugitive Dust Control Plan

Background

Site Location and Description:

Lehigh Southwest Cement Company's Permanente Plant is located on a 3600(+) acre parcel at 24001 Stevens Creek Boulevard, in an unincorporated area of Santa Clara County, in the foothills approximately 2 miles west of the Cityof Cupertino (Figure 1). The main access road to the facility is at the west end of Stevens Creek Boulevard. The nearest freeway is Interstate 280, which lies approximately one mile to the north, or two miles from the main access gate via Foothill Boulevard.

The Portland cement manufacturing process at this site involves the mining and processing of raw materials, raw material milling, *kiln* feed preparation, pyroprocessing, coal/coke preparation, *clinker* cooling, and finish milling. Additionally, the site supplies the local market with commercial bulk and bagged Portland cement. Local transportation of these materials, and incoming supply of fuel and raw materials used in the production of Portland cement, is predominately via bulk truck. Lehigh does not own or operate any of the bulk transportation trucks; they are owned and operated by the facility's customers or third-party independent contractors.

The facility area consists of gently to steeply sloped terrain, and a series of ridges and valleys which build in elevation following a general east/west direction. Elevations range from about 500 to 2,000 feet above sea level. The prevailing climate conditions feature rainfall averaging between 20 and 25 inches annually, the majority of which occurs during the wet season (October through April). Temperatures range from approximately 40 to 65 degrees Fahrenheit from November through April, and high 40s through high 80s during the remainder of the year. There is not a prevailing wind direction, and wind speeds rarely approach 25 mph except during winter wet weather conditions. The facility maintains a 10 meter metrological station on-site, sharing the data with BAAQMD. A wind rose pattern from 2008 indicates the site varied wind directions (Figure 3)

Site History:

The site's quarry has been in operation for over a century. A California State Geologist's report dated 1906 indicates that the quarry was in operation and producing limestone as early as 1903. In 1939, the quarry site and surrounding 1,300 acres were purchased by the Permanente Corporation, an enterprise headed by industrialist Henry J. Kaiser. The Permanente Corporation limestone mine and subsequent Portland cement facility supplied the major building supplies for

the Shasta Dam. In the 1940s, the facility provided cement and limestone to support the U.S. Military effort in World War II.

After the war, production levels for cement and aggregates increased, and the Bay Area commercial and residential population swelled. The plant went through a major permitting and cement manufacturing modification effort from 1979 through 1982, utilizing high heat and energy efficient preheater / preacalciner rotary *kiln* cooler process technology. Additionally, the use of dynamic separators on the raw finish grinding circuits, in addition to minimizing the mobile transportation of materials, makes this facility a leader in cement quality energy efficiency.

The Permanente facility is strategically located within the San Francisco Bay Area Market, supplying the majority of the area's cement supplied. Lehigh, the current operator, accounts for an estimated 65% of all cement used in Santa Clara County, 55% of all cement used in the Bay Area, and 18% of all cement used in Northern California.

Fugitive Dust Control Plan

SECTION I -- LOCAL AND STATE REGULATIONS APPLICABLE TO FUGITIVE DUST

In 2008, during initial discussions with BAAQMD pursuant to Title V operating permit renewal, Lehigh agreed to define and implement an FDCP for the Permanente Plant. This plan addresses sources of fugitive dust, lists control measures and actions that will reduce or minimize fugitive dust, and implements an employee training program to recognize potential sources of and best management practices to avoid fugitive dust occurrences.

The Plan was designated and designed to supplement the facility's Federal requirements for a NESHAPs O&M Plan and additional CAM applicability. The FDCP addresses fugitive dust emissions associated with material handling equipment, non-point and area sources.

I. BAAQMD Rules and Regulations

Note: The following District Rules and Regulations are enforced for the facility regardless of CEQA lead agency or Board approved project CEQA control requirements.

REGULATION 1 – General Provisions and Definitions

1-301 Standard

Public Nuisance: No person shall discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance or annoyance to any considerable number of persons or the public; or which endangers the comfort, repose, health or safety of any such persons or the public, or which causes, or has a natural tendency to cause, injury or damage to business or property. For purposes of this section, three or more violation notices validly issued in a 30 day period to a facility for public nuisance shall give rise to a rebuttable presumption that the violations resulted from negligent conduct.

REGULATION 6 - PARTICULATE MATTER - RULE 1 GENERAL REQUIREMENTS

6-1-100 GENERAL

6-1-101 Description: The purpose of this Regulation is to limit the quantity of *particulate matter* in the atmosphere through the establishment of limitations on emission rates, concentration, visible emissions and opacity.

6-1-110 Exemption, Temporary Sandblasting Operations: Temporary Sandblasting operations are exempt from the provisions of this Rule. Such operations are subject to the provisions of Regulation 12, Rule 4.

6-1-111 Exemption, Open Outdoor Fires: The limitations of this rule shall not apply to emissions arising from open outdoor fires.

6-1-200 DEFINITIONS

6-1-201 Exhaust Gas Volume: The volume of gases discharged from an operation; or an emission point.

6-1-202 Particulate Matter: Any material which is emitted as liquid or solid particles or gaseous material which becomes liquid or solid particles at the testing temperatures specified in the Manual of Procedures, excluding uncombined water.

6-1-203 Process Weight: The total weight of all material introduced into an operation, excluding liquids and gases used solely as fuels, air which is not consumed as a reactant, and combustion air.

6-1-204 Process Weight Rate: A rate established as follows:

204.1 For continuous or long-run steady-state operations, the total process weight for the entire period of continuous operation or for a typical portion thereof, divided by the number of hours of such period or portions thereof.

204.2 For cyclical or batch operations, the total process weight for a period which covers a complete operation or an integral number of cycles, divided by the hours of actual process operation during such period. Where the nature of any process or operation or the design of any equipment is such as to permit more than one interpretation of this section, that interpretation which results in the minimum value for allowable emission shall apply.

6-1-300 STANDARDS

6-1-301 Ringelmann No. 1 Limitation: Except as provided in Sections 6-1-303, 6-1-304 and 6-1-306, a person shall not emit from any source for a period or periods aggregating more than three minutes in any hour, a visible emission which is as dark or darker than No. 1 on the Ringelmann Chart, or of such opacity as to obscure an observer's view to an equivalent or greater degree.

6-1-302 Opacity Limitation: Except as provided in Sections 6-1-303, 6-1-304 and 6-1-306, a person shall not emit from any source for a period or periods aggregating more than three minutes in a any hour an emission equal to or greater than 20% opacity as

perceived by an opacity sensing device, where such device is required by District regulations.

Enforcement: The District has trained staff capable of performing a Visible Emissions Evaluation (VEE). VEE courses are offered to regulators and the regulated community (for a fee) at regular intervals by staff of the California Air Resources Board.

REGULATION 9 – INORGANIC GASEOUES POLLUTANTS – RULE 13 NITROGEN OXIDES, PARTICULATE MATTER, AND TOXIC AIR CONTAMINANTS FROM PORTLAND CEMENT MANUFACTURING[2]

9-13-100 GENERAL

9-13-101 Description: This rule limits the emissions of *nitrogen oxides, particulate matter,* and toxic air contaminants form the manufacture of *Portland cement*.

9-13-200 DEFINITIONS

9-13-201 24-Hour Rolling Average: The arithmetic mean of the emissions as prescribed in Section 9-13-301 of the most recent 24 hours of operation of the *kiln*. Each hour initiates a new rolling average period.

9-13-202 30-Operating Day Rolling Average: The arithmetic mean of the emissions as prescribed in Section 9-13-301 of the most recent 30 *operating days*. Each *operating day* initiates a new rolling average period.

9-13-203 Adequately Wetted: Sufficiently moistened with water to minimize the release of *particulate matter* into the ambient air as determined by the provisions of Section 9-13-611.

9-13-204 Clinker: The product of feedstock sintered in a *kiln*, which is then ground and mixed with additives to make cement.

9-13-205 Clinker Cooler: Equipment into which *clinker* leaving the *kiln* is placed to be cooled by air supplied by a forced draft or natural draft supply system.

9-13-206 Dioxins and Furans (D/F): Tetra-, penta-, hexa-, hepta-, and octa-chlorinated dibenzodioxins and furans.

9-13-207 HEPA Filter: High Efficiency Air filter used to remove particles less than 1 micron in diameter operating at removal efficiencies of 99.9 per cent or greater.

[2] The following sections of the rule are omitted as they do not pertain to fugitive emissions: 301, 303, 500-608, and 610-611.

9-13-208 Kiln: Any device, including associated preheater and precalciner devices, that produces *clinker* by heating limestone and other raw materials for subsequent production of Portland cement.

9-13-209 Miscellaneous Operations: Any activity performed at the facility that could generate emissions of fugitive dust. Examples of miscellaneous operations include: material conveyance and transporting, vehicular traffic, shoveling and sweeping, and material storage.

9-13-210 Nitrogen Oxides (NO_x) Emissions: The sum of nitric oxide (NO) and nitrogen dioxide (NO_2) in the flue gas, collectively expressed as nitrogen dioxide.

9-13-211 Operating Day: A calendar day during which Portland cement is manufactured by the *kiln*. An operating day includes all valid data obtained in any daily 24-hour period during which the *kiln* operates and excludes any measurements made during the daily 24-hour period when the *kiln* was not operating, or was in *startup* or *shutdown.*

9-13-212 Particulate Matter: Any material that is emitted as liquid or solid particles or gaseous material which becomes filterable at the testing temperatures specified in the reference test method.

9-13-213 Portland Cement Manufacturing Facility: Any facility that produces Portland cement or associated products, as defined in the Standard Industrial Classification Manual as Industry Number 3241, Portland Cement manufacturing.

9-13-214 Shutdown: The period of time between when *kiln* raw material feed and fuel to the *kiln* begin to be decreased to reduce the *kiln* operating temperatures until both feed and fuel are no longer fed into the *kiln* and it has ceased operation. A *shutdown* period shall not last more than 24 hours.

9-13-216 TEQ: The international method of expressing toxicity equivalents for dioxins and furans as defined in U. S. EPA, Interim Procedures for Estimating Risks Associated with Exposures to Mixtures of Chlorinated Dibenzo-p-dioxins and dibenzofurans (CDDs and CDFs) and 1989 Update, March 1989.

9-13-217 Total Hydrocarbon (THC): For the purposes of this rule, total hydrocarbon emissions measured as propane, that also serve as a surrogate for the emission of organic HAP compounds, as measured in accordance with Section 9-13-606.

9-13-218 Total Organic HAP: For the purposed of this rule, the sum of the concentrations of compounds of formaldehyde, benzene, toluene, styrene, m-xylene, p-xylene, o-xylene, acetaldehyde, and naphthalene as measured in accordance with Section 9-13-607.

9-13-219 Track-Out: Any bulk material that adheres to or agglomerates on the exterior surfaces of motor vehicles, haul trucks, and/or mobile equipment, including tires and that has fallen or been deposited onto a paved public roadway.

9-13-300 STANDARDS

9-13-302 Opacity: Effective September 9, 2013, no person shall operate a *Portland cement plant manufacturing* facility with emissions to atmosphere from any *miscellaneous operation* or emission point other than from the *kiln* or *clinker cooler* that are equal to or greater than ten percent opacity for more than three minutes aggregated in any one-hour period, determined in accordance with Section 9-13-609, or half as dark in shade as that designate as Number 1 on the Ringelmann Chart, as published by the United States Bureau of Mines. Emissions to the atmosphere from the *kiln* and *clinker cooler* are subject to the opacity limit in Regulation 6, Rule 1.

9-13-304 Fugitive Dust Control Measures: Any person operating a *Portland cement manufacturing facility* shall, at a minimum, implement the following measures to mitigate emissions of fugitive dust:

304.1 Accessed disturbed open areas and unpaved roads shall be watered as needed to maintain adequate wetness.

304.2 In areas that have not had vehicular traffic for more than 7 days, the exposed soils shall be stabilized by the use of water, aggregate, or non-toxic soil stabilizers. Vehicular access to these designated areas shall be limited through the use of signage and vehicular access barricades.

304.3 Ground covering on disturbed areas shall be reestablished as soon as reasonably possible through the use of aggregates, berms, or permanent blockage in combination with hydro-seeding or seeding and watering.

304.4 An operational water truck shall be onsite at all times to prevent fugitive dust emissions. Water shall be applied as needed to comply with Section 9-13-302 for all mining, aggregate, and cement plant operations. All water truck operations shall be recorded in a District-approved log and include date, times, locations, and activities.

304.5 Material Storage Piles: Fugitive dust emissions from material storage piles shall be controlled by one or more of the following methods:

5.1 Fine, dry material not amenable to water applied dust suppression shall be covered and have wind breaks installed;

5.2 Water and/or soil stabilizers shall be employed to reduce windblown dust. Water may be supplied by water truck or water spray equipment; or

5.3 In areas surrounding material storage piles, soils shall be stabilized by the use of water, aggregate, or non-toxic soil stabilizers.

304.6 Material Transfer Processes: Fugitive dust emissions resulting from all transfer processes, including, but not limited to, the transfer of material to or from stockpiles, belt conveyors, front end loading equipment, vehicular transport, and bin transfer which involves a free fall of mined, purchased, or manufactured materials, shall be controlled by one or more of the following mitigation methods:

6.1 Drop heights shall be minimized for all front end loaders transferring materials for mobile transport (quarry truck, transfer truck, bulk truck);

6.2 Incorporation of wind breaks, enclosures, and area covers;

6.3 Installation of temporary or permanent water spray systems, or water truck incorporation to increase material moisture content and suppress fugitive dust emissions from infrequent material transfer operations; or

6.4 *HEPA filter* vacuuming of any spilled cement powder during cement bulk loading operations into mobile equipment.

304.7 Track-Out Prevention and Control: The following mitigation methods shall be employed to prevent fugitive dust emissions from *track-out*:

7.1 All vehicles and equipment owned or operated by the *Portland cement* manufacturing facility shall be washed prior to exit onto public paved streets if they have traveled on unpaved roads on the facility.

7.2 All other vehicles shall be washed prior to exit onto public paved streets if they have traveled on unpaved roads on the facility.

7.3 A street sweeper shall be operated at least once a day to remove visible *track-out* from the paved roadway between the plant entrance and the facility boundary.

304.8 Vehicle Traffic Speed: The speed of all vehicles and mobile equipment traveling within the facility shall be limited to 15 miles per hour (mph) or less. The operator of the facility shall provide training, signage, and maintain video and photographic monitoring, and speed sensors to ensure compliance with the posted speed limit. The operator of the facility shall maintain records demonstrating compliance with this provision through enforcement of the following actions in progressive order.

8.1 Customers or visitors found to be travelling in excess of the posted speed limit: (1) issue verbal warning; (2) facility access to be limited; and (3) facility access to be denied.

8.2 Employees found to be travelling in excess of the posted speed limit: (1) issue verbal warning; (2) progressive discipline up to and including termination.

8.3 Contractors and subcontractors deemed to be travelling in excess of the posted speed limit: (1) issue verbal warning; (2) site removal and future facility access denied.

304.9 Quarries: All quarried and graded materials shall be kept *adequately wet* to minimize airborne dust; blasting shall not occur if hourly averaged wind speeds are 25 mph or greater.

304.10 Material Handling Equipment: At the start of each shift or material handling equipment start-up, the operators shall assess the operational status of the water spray abatement equipment or confirm that the materials are sufficiently wet as not to require water spray abatement and record these determinations in a district-approved log.

304.11 Housekeeping and Material Cleanup: All housekeeping activities shall be performed so as to minimize fugitive dust emissions.

304.12 Training: Employees and contracted and subcontracted personnel shall be initially and at least annually thereafter trained on techniques and best management practices to avoid fugitive dust emissions; training shall include all relevant procedures identified in facility plans including but not limited to the Fugitive Dust Control Plan, Operation and

Maintenance Plan, and Preventive Maintenance Program for Dust Control. Records shall be maintained to demonstrate compliance with this provision.

9-13-600 MANUAL OF PROCEDURES

9-13-609 Determination of Visible Emissions: Visible emissions shall be determined by Manual of Procedures, Volume 1 – Enforcement Procedures, Part 1: Evaluation of Visible Emissions.

9-13-611 Determination of *Adequately Wetted*: A sample of at least one quart in volume shall be taken from the top three inches from the surface of unpaved road, bare area, or from the surface of a stockpile. The sample shall be poured out from a height of four feet onto a clean hard surface. The material shall be considered to be *adequately wetted* if there is no observable dust emitted when the material is dropped.

Enforcement: The District has trained staff capable of performing a Visible Emissions Evaluation (VEE). VEE courses are offered to regulators and the regulated community (for a fee) at regular intervals by staff of the California Air Resources Board.

II. State Laws

California Health and Safety Code

Section 41700. Except as otherwise provided in Section 41705, no person shall discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health, or safety of any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property.

Section 41701. Except as otherwise provided in Section 41704, or Article 2 (commencing with Section 41800) of this chapter other than Section 41812, or Article 2 (commencing with Section 42350) of Chapter 4, no person shall discharge into the atmosphere from any source whatsoever any air contaminant, other than uncombined water vapor, for a period or periods aggregating more than three minutes in any one hour which is: (a) As dark or darker in shade as that designated as No. 2 on the Ringelmann Chart, as published by the United States Bureau of Mines, or (b) Of such opacity as to obscure an observer's view to a degree equal to or greater than does smoke described in subdivision (a).

California Vehicle Code

Section 23114 requires: No vehicle shall transport any aggregate material upon a highway unless the material is covered. Exception 23114(e) (4): Vehicles transporting loads of aggregate materials shall not be required to cover their loads if the load, where it contacts the sides, front, and back of the cargo container area, remains six inches from the upper edge of the container area, and if the load does not extend, at its peak, above any part of the upper edge of the cargo container area. For purposes of this section, "aggregate material" means rock fragments, pebbles, sand, dirt, gravel, cobbles, crushed base, asphalt, and other similar materials.

SECTION II – Sources and Controls

I. Potential Sources of Emissions

Facility activities that have the potential to generate fugitive dust emissions include, but are not limited to, the following:

- Material Stockpiles – Stockpiles of delivered solid fuels and raw materials, of intermediate limestone and cementicious materials, overburden, and of finished aggregate materials.

- Active Areas – Areas that are in process of being excavated or quarried, where soils or rock are being removed, or areas that are being graded for reclamation

- Materials handling stationary equipment – Conveyor belts, transfer points, crushers, and material screens.

- Inactive Areas – Areas that previously have been excavated, where soils or rock have been removed, or areas that have been graded for reclamation.

- Movement of personnel or material mining equipment on paved or unpaved roads.

- Fine material transportation – The loading, unloading, and transportation of fine material via mobile equipment.

- *Track-out* – The carrying out onto public roadways by trucks or other road-accessible vehicles of dry or wet material outside the facility, which may spill onto public roadways causing fugitive dust emissions.

- Maintenance activities – Accessing de-energized equipment for preventive maintenance activities, which may allow release of fine material into the atmosphere.

- Housekeeping and materials cleanup – The cleaning up of fine material that may accumulate in, around, and under moving machinery; also, the actions used in the cleanup procedures, including: clearing, shoveling, loading into or out of transporting equipment, disposal or reuse.

Fugitive Dust Control Plan

SECTION II – Sources and Mitigations

II. Fugitive Dust Mitigation Control Measures

This section presents mitigation measures to control sources of fugitive dust.

1. Disturbed open areas and unpaved roads – Fugitive dust emissions from disturbed open areas and unpaved roads will be controlled with the following mitigation measures. Inactive areas are defined as areas not having vehicular traffic for more than 7 days.

    a) Accessed open areas and unpaved roads shall be watered, as needed, to maintain *adequate wetness*.
    b) At inactive areas, the exposed soils will be stabilized by the use of water, aggregate, and/or approved non-toxic soil stabilizers.
    c) At inactive areas, limit vehicular access to these designated areas through the use of signage or vehicular access barricades.
    d) Reestablish ground covering on the disturbed area as soon as possible through use of aggregates, berms or permanent blockage in combination with hydroseeding or seeding and watering.
    e) Use of aggregated material to control and stabilize soil in limited vehicular locations.

2. Water truck.

    a) An operational water truck will be on site at all times to prevent fugitive dust emissions.
    b) Apply water as needed to control and to prevent excess visible emissions in from all mining, aggregate, and cement plant operations. Water truck operations may be curtailed during wet and inclement weather.
    c) Plant will incorporate a daily District-approved log of all water truck operations including date, time, locations, and activities.

3. Active Storage Piles – Fugitive dust emissions from active storage piles will be controlled by one or more of the following mitigation measures.

    a) Fine[3], dry[4] materials not amenable to water-applied dust suppression shall be covered and have wind breaks installed.

[3] "Fine Material" means fugitive dust emission may occur from wind speeds in excess of 10 mph.
[4] "Dry material" contains less than 5% moisture.

b) Water and/or soil stabilizers will be employed to reduce windblown dust. Water may be supplied by water truck or water spray equipment, either temporary or permanent.
c) In areas around the storage piles, the soils will be stabilized by the use of water, aggregate and/or non-toxic soil stabilizers.

4. All transfer processes involving a free fall of any mined, purchased, or manufactured materials – These operations or processes may involve material pile addition or reclamation utilizing fixed or mobile equipment. Examples are stockpiling from belt (tripper) conveyors, front end loading of materials to vehicular transport, and bin transfer to vehicular transport. Fugitive dust emissions will be controlled with the following mitigation measures.

a) Drop heights will be minimized when dropping any mined, purchased, or manufactured materials. This is a practice for all front end loaders transferring materials for mobile transportation (quarry haul truck, transfer truck, bulk truck).
b) Incorporate wind breaks, enclosures, and area covers.
c) Installation of temporary or permanent water sprays systems.
d) For infrequent material transfer operations, water truck may be incorporated to increase material moisture content and/or suppress fugitive dust emission from transfer operation.
e) *HEPA filter* vacuum available for vacuuming of any spilled cement powder (fine material) during cement bulk loading operations into mobile equipment.

5. Track-out Prevention and Control

a) Company vehicles and/or equipment shall be washed prior to each trip onto public paved streets; the washer is located on-site near the guard gated at 24001 Stevens Creek Boulevard, Cupertino, CA 95014.
b) Wheel and vehicle washers are installed such that customer vehicles and equipment must pass them prior to exit onto public streets.
c) Any visible *track-out* on the paved roadway between the plant entrance and the facility boundary will be removed using a street sweeper at least once per day (if needed).

6. Paved plant and public roads shall be swept frequently.

a) Third-party street sweeper utilization on Steven Creek and Foothill Boulevards on a weekly or more frequent basis as needed.
b) A facility-owned street sweeper will be used to clean up material (cement, aggregate limestone, other) on all facility paved roads. Emphasis will be on plant entrance and exit and corridors, as well as those areas used frequently by vehicles that travel off site (e.g., bulk transfer trucks, employee vehicles, and visitors' vehicles).

7. Minimize, maintain, and enforce vehicle traffic speeds on paved and unpaved roads, or any other location within the facility.

    a) The maximum speed limit inside the facility is 15 mph.
    b) Signs denoting the 25 mph truck speed limit have been posted on Stevens Creek Boulevard.
    c) The facility owns and maintains video and photographic monitoring, and speed sensors. All visitors and employees must abide by the posted speed limits.
    d) Provide appropriate training, onsite enforcement, and signage.
    e) For customers or visitors who are deemed to be travelling in excess of posted speed limits, the following actions are taken in progressive order: 1) warning, 2) facility access limited, and then 3) facility access denial.
    f) For employees who are deemed to be travelling in excess of posted speed limits, the following actions are taken in progressive order: 1) warning, 2) progressive discipline up to and including termination.
    g) Contractors and subcontractors who are deemed to be travelling in excess of posted speed limits, the following actions are taken in progressive order: 1) warning, and then 2) site removal with access denial.

8. Quarry

    a) Methods to minimize fugitive dust visible emissions generated during blasting, should they occur, will be researched for a period of (3) years from the effective date of the revised Major Facility Review Permit (Title V Operating Permit). Safe, economic, and technologically feasible methods will be trialed during the three-year study period. Interim progress reports will be sent to BAAQMD APCO every six months. At the end of the three-year study period, safe and viable dust control measures that take into account the degree of emissions reductions, environmental, energy, and economic impacts will be implemented after APCO approval and included in this Fugitive Dust Control Plan. If, at the end of the three-year study period, no additional dust control measures have been deemed cost effective, safe, or sufficient to limit visible emissions, the study shall be deemed complete and no additional dust control measures or further study shall be required during this Title V period.
    b) Blasting shall not occur if hourly averaged wind speeds are 25 mph or greater.
    c) Quarried and graded materials shall be kept adequately wet to minimize airborne dust.

9. Material-handling equipment – the facility employs a variety of dust mitigation techniques to prevent fugitive dust, such as spray bars on conveyors and shrouds on drop points.

    a) At the start of each shift or material handling equipment startup, the operators shall assess the operational status of the water spray abatement equipment or

confirm the materials are sufficiently wet as to not require water spray abatement and shall record these determinations in a District-approved log.

10. Housekeeping and material cleanup
    a) All housekeeping activities are to be performed so as to minimize fugitive dust emission.
    b) Plant personnel will be trained on techniques and Best Management Practices (BMPs) to avoid fugitive dust emissions.

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SECTION III -- TRAINING

PURPOSE

Training of employees (company employees, contracted, and subcontracted personnel) is an ongoing task. Employees frequently encounter new procedures and skill requirements. On some occasions, employees need to receive a refresher or reminder of proper procedures. Training will enhance each employee's job skills, especially those that involve safety and avoidance of dust emissions.

Training will deal with specific tasks/skills, addressing the specific problems associated with the job assigned to the employee, as opposed to the general approach taken in the sessions dealing with education. Education is attitude development. Training is skill development.

Many of the tasks that are outlined refer to the PM (Preventive Maintenance – Maintenance Work Order). Not all the tasks are listed in this program; however, many of the required checks and procedures are spelled out in the PM. A general outline is established which can be used on any selected task.

SCOPE

Training will point out specific pieces of equipment, operating procedures and activities which can cause dust emissions. It will outline steps to follow when considering a task which may create dust emissions. It will prescribe procedures to take when performing these tasks.

TASK/SKILL: Reporting a Dust Emission.

TAUGHT TO: All employees.

OBJECTIVE: The employee will take action when observing a dust emission by contacting the Control Room Operator (CRO) and/or his supervisor or other management personnel.

INSTRUCTIONS:

Point out to the employee that when a dust source cannot be stopped or corrected by simple means, it should be reported as soon as possible. The report should be made to the Control Room where it will be logged. The employee may report the dust emission to his supervisor or any other management personnel who will see that it is recorded in CRO log.

A dust source should never be ignored. It should be reported, even if the employee thinks that someone else has reported the same source earlier.

The employee should be sure to provide the following information when reporting a dust emission:

- Location - Where, in the plant, the rock plant or the limestone quarry is the dust emission? Is it continuous or intermittent?

- Source - What piece of equipment is causing the emission? Can you name it? Use equipment numbers when possible, i.e. the 6-BC-13 *Clinker* Conveyor Belt at the south transfer point. This will help the Control Room Operator to select which department should be alerted. By doing so, the problem can be corrected as soon as possible.

- Suggestions - What is the problem? Have you tried to correct the problem? What type of maintenance/repair is required?

Remember, when reporting a dust emission contact the CRO, by radio or telephone, or the Shift Supervisor, and tell him the location of the emission, what piece of equipment is the source and what suggestions you have to stop the emission.

TASK/SKILL: Receiving Dust Emission Reports.

TAUGHT TO: Control Room Operators (CRO), Shift Supervisor, And Supervisory Staff.

OBJECTIVE: The CRO who receives a dust emission report will record it in the operators log and will convey the information to the appropriate Department Supervisor and Shift Supervisor for the action needed to suppress the dust emission.

INSTRUCTIONS:

All employees should be made aware of the reporting procedure. It is as follows:

1. All fugitive dust emission events should be reported to the CRO or a supervisor.

2. The CRO or supervisor will contact the appropriate or assigned Department Supervisor responsible for the corrective actions. This should always include the Shift Supervisor.

3. The CRO will make a notation in the operators log. It should include: the name of the person reporting; the time and location; and what action was taken. The Shift Supervisor or Department Supervisor will also make an entry into their daily log, commenting on the origin and corrective action taken for each of the dust emissions reported.

4. The Quarry Department will report incidents to the Control Room Operator in addition to that department's supervisor.

TASK/SKILL: Initiating Appropriate Action for the Correction of Dust Emissions.

TAUGHT TO: Shift Supervisor, Quarry Supervisor, and Rock Plant Supervisor.

OBJECTIVE: The Supervisor will contact the appropriate Department Supervisor and request that the necessary action be taken to correct or arrest the dust source.

INSTRUCTIONS:

The Supervisor will convey the information provided by the person who made the initial report to the appropriate Department Supervisor. It may be necessary to contact more than one department. The Department Supervisor should then dispatch the personnel needed to correct the dust problem.

Thorough instruction should be given to the persons who will be responsible for correcting the dust problem. All precautions should be taken to insure that said action will not worsen the situation. If necessary, the equipment should be taken out-of-service and a work order prepared which would specify what actions are required to correct the problem.

TASK/SKILL: Examination of the Operator Logs.

TAUGHT TO: Environmental Department & Production Department.

OBJECTIVE: Environmental & Production Departments to review Operator Logs

INSTRUCTIONS:

The Environmental & Production Departments have the responsibility of acting as an advisor on specific dust control problems and will act to coordinate on extensive and follow-up procedures. The Environmental & Production Departments will use the Supervisor meetings for communication with various supervisors.

TASK/SKILL: Reporting an Upset/Breakdown to the District.

TAUGHT TO: Plant Manager, Rock Plant Supervisor, Quarry Supervisor, Control Room Supervisor, Shift Supervisor, Environmental Department, Production Department.

OBJECTIVE: Persons responsible for reporting an upset, breakdown, or deviation will do so subsequent to examination of dust emissions related to breakdown/deviation conditions.

INSTRUCTIONS:

The decision to report an upset breakdown/deviation will be made by the Environmental Department and/or Control Room Supervisor (during normal business hours, Monday through Friday) or the Shift Supervisor (when the Control Room Supervisor or Environmental Department personnel are not at the plant). The Quarry Supervisor will contact the Environmental Department, Control Room Supervisor, or Shift Supervisor if a breakdown or deviation occurs in his department. If any employee has a question about an occurrence, he should contact his appropriate supervisor. Because upsets, breakdowns, and deviation conditions must be reported to the District in a timely manner, it is necessary to contact the appropriate person as soon as is reasonably possible after any such condition is observed.

TASK/SKILL: Abating a Point Source Emission – Emergency *Shutdown*.

TAUGHT TO: All Plant Personnel.

OBJECTIVE: The employee will take the necessary steps required to remove a piece of equipment emitting dust from service.

INSTRUCTIONS:

No piece of equipment should be removed from service without first consulting the Control Room Operator, Shift Supervisor and/or appropriate supervisor. A procedure for emergency *shutdown* has been outlined in the SOP for the Control Room Operators. Failure to follow established *shutdown* procedures could cause emissions to occur or to become worse.

TASK/SKILL: Operating Mobile Equipment.

TAUGHT TO: All Plant Personnel.

OBJECTIVE: Employees will operate mobile equipment in a manner which will minimize fugitive dust emissions.

INSTRUCTIONS:

Operating a vehicle in an environment where fugitive dust can be created requires the operator to exercise special caution. It is the operator's responsibility to (1) operate the vehicle so as to minimize the amount of dust created by the vehicle; (2) avoid areas laden with fugitive dust; and

(3) report dust problems to the Control Room Operator or his supervisor, as outlined previously; the supervisor should call for the water truck to wet down the area of concern.

TASK/SKILL: Transporting Fine[5] Dry[6] Materials.

TAUGHT TO: Mobile Equipment Operators.

OBJECTIVE: Mobile Equipment operators will exercise precaution while transporting fine materials.

INSTRUCTIONS:

When transporting fine, dry material that may contribute to, or be a possible source of, fugitive dust emission, operators must take special care to ensure that excessive dust is not emitted from the vehicle or vessel containing the material being transported. When operating a haul truck, check that the load is over full, thereby reducing the chance that material spills may occur. Material spills that spread out along the road may cause fugitive dust as a result of the subsequent vehicular traffic. Wet the load down if possible. Check that the dust abatement system on the belt conveyor unloading system is activated when raw, fuel and/or cementicious materials are transported. Check that skirting and suppression systems are in place while loading the haul truck. Operate the haul truck at a slow-to-moderate speed to prevent airborne dust.

All mobile equipment operators should take precautions. When loads are laden with fine, dry material, the operator should travel at a speed that helps to keep the generation of airborne dust to a minimum. When transporting bins or hoppers care should be taken to ensure that the hopper or bins are not too full; when possible, wet the load down. When mobile equipment is used to transfer fin material, drop heights should be minimized to reduce visible emissions.

TASK/SKILL: Housekeeping.

TAUGHT TO: All Plant Personnel.

OBJECTIVE: Employees will exercise a conscious effort to reduce fugitive dust in the work place.

INSTRUCTIONS:

The need for housekeeping is ever present so that material does not accumulate and become a problem. When cleaning up a work area after a job has been completed take time to stack the material so that it is out of the way. This will prevent material from being scattered and creating a

[5] "Fine Material" means fugitive dust emission may occur from wind speeds in excess of 10 mph.
[6] "Dry material" contains less than 5% moisture.

safety hazard. However, be sure to place the material in a location that is accessible to the machinery and equipment used to finish the cleanup job. If, for example, a skid steer front-end loader ("Bobcat") may be used to do the final material transportation, place the pile in an area where it will not have to be moved more than twice. When the material has been accumulated, have it picked up and disposed of as soon as possible. Scrap material piles have a tendency to collect dust and are soon a source of dust, instead of just piles of scrap.

It is important to have this material cleaned up as soon as possible. It is not acceptable to wash this material down with excessive amount of water. In accordance with our storm water requirements, we must eliminate excessive runoff, erosion, and washing dust or settlements down the drains.

TASK/SKILL: Shoveling and Sweeping.

TAUGHT TO: Laborers, Process Utility, Packhouse, and Quarry.

OBJECTIVE: Employees will exercise caution when shoveling or sweeping dust and dust-laden materials.

INSTRUCTIONS:

Inform the employee that moving dust while using a shovel and broom requires care to keep fugitive dust to a minimum. The employee should not throw the dust from the shovel into a container or onto a lower work level; nor should the employee sweep so briskly that it creates airborne dust. Care in shoveling and sweeping can reduce a substantial amount of dust. After material has been accumulated into piles, it should be picked up as soon as possible. Material piles should not be left in the walkways and driveways where it can be scattered by passing pedestrian and vehicular traffic.

Material/dust spills in high places should never be tossed over the side. Containers should be used to lower the material or the vactor or sweeper should be used. To help eliminate material from entering the drains, please run the vactor or sweeper before utilizing the water truck.

TASK/SKILL: Preventive Maintenance (PM) Inspection/Service.

TAUGHT TO: All Plant Personnel.

OBJECTIVE: Employees who perform PM inspections and/or servicing will use the procedures outlined on the PM Task Sheet and in the EMPLOYEE AWARENESS PROGRAM, Section III - Training, TASK/SKILL: Equipment Maintenance.

INSTRUCTIONS:

Each piece of dust control equipment or material transport equipment is potentially a dust source. When such pieces of equipment are inspected or serviced they should be examined for dust emissions. The schedule for examining the equipment is noted on the PM Task Sheet sent out each week. There is a procedure outlined on the Standard Description attached to the PM Task Cover Sheet. The employee performing the inspection or service should review the procedure. Should a point source or fugitive dust problem exist, it should be reported, as outlined previously, and noted on the PM Task Cover Sheet.

TASK/SKILL: Equipment Maintenance.

TAUGHT TO: Dust Collector Personnel, Belt Person, Instrumentation, Electricians, Welders, Mechanics, Machinists, and Repair Personnel.

OBJECTIVE: Employees will take into consideration those aspects of the task that could cause dust emissions.

INSTRUCTIONS:

When performing routine service or periodic or scheduled repair, one of the employees' responsibilities is to prevent fugitive dust. Before beginning any job an employee should, after taking into consideration all safety requirements and material needs, look at the task and determine if there is a dust source. If there is a possibility that dust may be generated, the employee should ask, "What precautions can be taken?" Each of the following tasks is a dust source. Take the appropriate actions to prevent fugitive dust.

Elevator Inspection/Service -

1. Check that unit is locked out or in local mode, depending on the service being performed.
2. Check that the elevator is empty before opening any access doors.
3. Clean any material buildup from around doors. Use care not to create fugitive dust. Use a vactor if available.
4. Do not operate elevator at a rapid rate without doors in place. Use the jog button only.
5. When securing doors, check that they seal well. Use sealing material, such as silicone, to obtain a good seal.
6. Start equipment and check seal. Correct if needed.

Bin or Hopper Entry -

1. Check that the bin or hopper is empty before opening any doors or gates.
2. Clean any material buildup from around the doors and hoppers. Use a vactor if available.

3. Remove any material buildup near the door that will be used for bin entry. Use a vactor if available.
5. Wear appropriate respiratory equipment when entering bins and hoppers.
6. When securing doors check that they seal well. Use sealing material, such as felt, rubber, or silicone.
7. Start equipment and check for leaks.

Feed and Conveyor Screws -

1. Check that equipment is properly locked out.
2. Remove appropriate covers.
3. If possible, remove material from screw with vactor before pulling out the screw flight. If excessive spillage is expected, or if the material is hot and cannot be removed with a tractor, refer to the task - "Managing Dust During a Breakdown" and follow those procedures.
4. Make the necessary repairs.
5. Secure lids on the conveyor or feed screw. Do not leave lids off of the screws. Be sure to use proper sealing materials to insure a good seal on the lids or covers.

Airslides -

1. Check that the equipment is properly locked out.
2. Remove covers. Be certain that the area around the covers has been cleaned so that fugitive dust will not occur during repair of the device.
3. Remove the covers. Extract the material in the airslide by using the vactor if possible. If excessive spillage is expected, or if material is too hot to handle, refer to this task - "Managing Dust During a Breakdown."
4. Never blow an airslide out with a compressed airline. This would also apply to any other piece of dust-conveying equipment.
5. Since many of the airslides in the plant are in high places, take care not to allow the dust to cascade over the floor deck or through the grated floor plates.
6. Perform repairs.
7. Secure lids or covers. Use proper sealing material.

Bins, Hoppers, Pneumatic Transport Lines -

1. Shut down conveying equipment if possible. If line can be taken out-of-service, perform complete repair or replacement. If a line cannot be taken out-of-service, place a patch over the hole and secure it in place using duct tape.
2. Repair the damaged line or replace it with a new one. Take care to empty the line before replacing.
3. Secure the line in place, insuring that proper gaskets and seals are used at each joint if required.
4. Place the line into service and check for leaks.

Managing Dust During a Breakdown –

Since breakdowns are unplanned events, it is quite possible that the dust conveying system, whether it be a drag chain, elevator, screw, airslide, belt, chute or pneumatic transport line, could be filled with material when a breakdown occurs. In some instances, this material is extremely hot. Failure to take immediate action could result in extensive damage or create a hazardous situation. The prudent action at this time is to empty the conveying line. This does not relieve the employee of the responsibility to minimize the impact of the dust spill into the environment. Because each case is different, specific instructions cannot be given for every incident in advance. If it becomes necessary to empty a conveying system, the following actions should be taken:

1. Consider all options before taking action. The decision to empty a conveying system should be made after consultation with the Shift Supervisor and/or Production Manager. In cases where the decision is to be made by the Quarry Supervisor, the Environmental Department should be consulted prior to emptying any system or device. Immediate action should be taken to prevent equipment damage.

2. Minimize the impact on the environment by considering such items as:
   - Time of day—if the material can be emptied during day shift there is a larger workforce available to manage the spill.
   - The available equipment—it is always best to have equipment on hand that will be needed to clean the spill; in some cases, the water truck or vactor is all that may be required.
   - The size of the crew—the plant operates on a tight manpower basis; a skeleton crew may not be enough to manage a large spill; consider calling out additional help.

3. Contain the spill. If possible, place the material into containers, such as bins, barrels, or bags. For large spill areas it may be necessary to construct a barrier or windbreak to keep the material within a designated space until a cleanup crew or a cleanup equipment is available. Wet the fine material down with water, if possible, or cover small piles with plastic or other suitable material.

4. Monitor the activity. If emptying the conveying system constitutes an excessive emission it should be reported. Reference TASK/SKILL: Reporting an Upset-Breakdown to the District, outlined previously.

Material spills are undesirable. Good preventive maintenance will minimize the number of times breakdown spills will occur.

Fugitive Dust Control Plan

SECTION IV -- OPERATION AND MAINTENANCE PROCEDURES

PURPOSE

An Operation and Maintenance Procedures outline is an essential part of an effective Dust Control Program. There are some specific tasks that require special handling, such as evacuation of material from bins or hoppers, purging transport lines, and bag and filter medium removal from dust collectors. Most of these tasks are performed on a regular basis. These tasks are outlined in the PREVENTIVE MAINTENANCE PROGRAM FOR DUST CONTROL AT LEHIGH SOUTHWEST CEMENT COMPANY - PERMANENTE PLANT. Some other specific tasks are outlined in Section II - Training.

This section of the program is intended to provide general information for procedures involving possible dust emissions. Specific guidelines can be found in maintenance manuals and in Department SOPs.

SCOPE

This program is designed to provide a general outline or guide for dust control during operation and maintenance activities. The guidelines will include: methods of monitoring, provisions for detection of airborne dust, provisions for reporting and correcting dust emissions, and directions on how to clean up after a spill.

MONITORING -

During operations, equipment will be monitored on a regular basis. The frequency of the monitoring will be based on each piece of equipment's operating history. The information collected on the PM Notification is submitted to the Maintenance Department, which will input pertinent information into the PM work order system. Thus the history of each piece of equipment will be recorded.

DETECTION -

Detection of airborne dust is everyone's job. Dust sources can be classified as either “point source” or “fugitive dust” emissions. Point source emissions are emissions from a specific point, such as a stack, vent, or duct. They may be the result of damaged or faulty equipment, or carelessness in operation of said equipment. The key to minimizing point source emissions is early detection. Early detection will result from PM inspections, routine Departmental tours by operators and management, and by observant employees performing their regular tasks.

"Fugitive dust" is defined, for the purpose of this program, as dust which has does not originate from a stack, vent, duct, or other point source. This type of dust usually is a result of wind blowing, vehicular or pedestrian traffic, malfunctioning dust collection equipment, or poor/dirty work habits. Fugitive dust is difficult to control. There are, however, a number of ways to correct and prevent fugitive dust.

Once again, the key to controlling dust is detection. A detailed outline of the reporting procedures can be found in this program under Section II - Training, TASK/SKILL: Reporting a Dust Emission.

CORRECTION -

Point source and fugitive dust emissions are to be corrected as soon as possible. In some instances, shutting down a piece of equipment will be necessary; at other times, closing a hatch, sealing a hole, or just sweeping up a pile of dust is all that is required for correction.

Equipment shutdown and procedures for sealing ports and doors are covered in Section II - Training, TASK/SKILL: Equipment Maintenance.

REPORTING -

It is necessary to report fugitive dust emissions resulting from maintenance and/or servicing activities. The same rules apply as shown in Section II - Training, TASK/SKILL: Reporting a Dust Emission.

CLEANUP -

Prompt cleanup after an operational spill or maintenance job is the first line of defense in preventing fugitive dust emissions. The second line of defense is containment. If an employee realizes that a certain amount of material will be spilled, that employee should take immediate steps to contain such a spill, thereby, reducing the manpower and equipment needed to perform the cleanup. This also prevents fugitive dust.

Fugitive Dust Control Plan

Appendix: Figures

4. Regional Location Map
5. Vicinity Location
6. Wind Rose Diagram