

2.1 PROJECT SITE

Troesh Materials, Inc. (Troesh) is proposing a new sand and gravel mining operation and aggregate processing facility that will be known as Diamond Rock Sand and Gravel Mine and Processing Facilities (Diamond Rock). The property and mineral rights owner is Triangle E Farms of Maricopa, California. Troesh is seeking approval of a 30-year Conditional Use Permit (CUP) and approval of a Reclamation Plan to mine aggregate from the Cuyama River and process the mined materials at an adjacent upland location to produce marketable Portland cement concrete-grade (PCC-grade) aggregate. PCC-grade aggregate is an essential high-grade building material used for the construction of bridges, dams and other major infrastructure, as well as for the construction of building foundations, drainage structures, and other public and private construction projects.

As noted in Section 1.0, the Diamond Rock site is located in the Cuyama Valley, an unincorporated portion of Santa Barbara County (Figure 1-1). The mine site is located along State Route 33 approximately 5.9 miles southeast of its intersection with State Route 166 (Figure 1-2). The proposed mining area occurs in the riverbed of the Cuyama River. The site encompasses about 133 acres, including portions of three parcels noted in Table 2-1 below (see Figure 2-1). One parcel, APN 149-220-65, was previously under Land Conservation Act (LCA) Contract No. 76AP82A. This LCA contract, also called Williamson Act Contract or Agricultural Preserve Contract, expired on December 31, 2004, pursuant to the Board of Supervisors approval of a nonrenewal request in 1994.

**TABLE 2-1
PARCEL INFORMATION**

Assessor's Parcel #	Total Acres	CUP Acres	General Plan	Zoning
149-220-02	117.40	22.58	A-II (Agricultural)	U (Unlimited Agricultural) Ordinance 661
149-220-11	80.19	80.38	A-II (Agricultural)	U (Unlimited Agricultural) Ordinance 661
149-220-65	82.35	29.69	AC (Agricultural Commercial)	AG-II-40 (Agricultural, 40 Acre Minimum)

2.2 MINING PLAN

2.2.1 Quantity and Type of Minerals to be Mined

Troesh would extract aggregate from a pit located in the Cuyama River (Figures 2-1 and 2-2). Mined materials would be mechanically crushed, sorted by size and type using triple-deck and double-deck dry scalping screens. Sand would be washed to remove fine material. All finished products would be stockpiled, and products would be transported offsite via haul

trucks with a 29½-ton capacity (~20 cubic yards). An overview of the mining and processing areas is presented on Figure 2-3.

The average annual production (based on a rolling average) over the 30-year life of the project is estimated to be 500,000 tons of product per year. Under this annual rate, the average hourly and daily production would be about 103 tons per hour (16 hours of operation per day) and 1,650 tons per day (six days per week), based on 303 processing days per year. The maximum annual production from the mine would be 750,000 tons. The higher production would be achieved by higher daily production. Peak daily production would be limited to the physical capabilities of the processing equipment, which is capable of processing 9,600 tons per day (600 tons per hour). To produce 750,000 tons in a year with 303 processing days, the average hourly and daily production would increase to 154 tons per hour (16 hours of operation per day) and 2,475 tons per day (six days per week).

The actual production levels would vary over time and would be a direct function of the general regional economic conditions, the number and type of contracts obtained, and equipment usage rate and maintenance requirements. However, the maximum annual mine production would not exceed 750,000 tons per year.

Based on initial testing of the riverbed area, the deposits to be mined consist of the following materials: 38 percent gravel, 60 percent sand (estimated 55 percent marketable, 5 percent excess), and 2 percent fines. Gross volume of the aggregate proposed to be excavated from the 83.76-acre mining area is estimated to be 9,210,000 cubic yards, which is estimated to be 13,820,000 tons of material (based on an assumed density of 1.5-tons per cubic yard). The net reserves are estimated at 12,850,000 tons, assuming seven percent of the material will be unsuitable for sale as PCC-grade aggregate.

At the proposed average extraction rate of 500,000 tons per year, the aggregate resource would last for 27.7 years, assuming that the river does not replenish material over time. As such, Troesh is requesting a 30-year permit.

Finished products would be PCC-grade aggregate and other aggregate products. Processing also creates “scalped fines” as a byproduct, which would be sold or placed in the mining pit as backfill. Some of the fines may also be used as a soil amendment by the landowner and others in the area.

It should be noted that the assumed material composition and quantities are based on limited data. As the deposit is mined, Troesh may encounter material that does not match these assumptions. Troesh would modify its product line accordingly. However, the overall operations at Diamond Rock would not change.

2.2.2 Mining Depth and Phases

As noted above, mining would occur in the bed of the Cuyama River where a pit would be created and excavated. The mining plan has two phases. The maximum extent of mining at the end of Phase 2 is shown on Figure 2-4. The entire pit could encompass about 84 acres. The maximum anticipated depth would be 90 feet below ground surface (see Figure 2-5). Phase 1 would encompass about 46 acres (see Figure 2-6), and would be divided into a series of cuts and lifts as shown below in Table 2-2. Phase 2 would involve a single cut.

**TABLE 2-2
SUMMARY OF MINING PHASES**

Phase	Duration ¹	Tonnage ²	Cubic Yards
Pre-Production	1.4 years	690,000	460,000
Phase 1 Cut 1 Lift 1	3.3 years	1,640,000	1,090,000
Phase 1 Cut 1 Lift 2	2.5 years	1,230,000	820,000
Phase 1 Cut 1 Lift 3	1.9 years	960,000	640,000
Phase 1 Cut 2	5.9 years	2,970,000	1,980,000
Phase 2	12.7 years	6,330,000	4,220,000
Total	27.7 years	13,820,000	9,210,000

¹ Assumes a mining rate of 500,000 tons per year

² Assumes 1.5 tons per cubic yard

The above description of the mining phases is based on ideal conditions, and the assumptions that the mine pit would not be flooded during the life of the project and that excavation would proceed in an orderly manner throughout the life of the project. However, it is expected the Cuyama River will periodically flood the mine pit during the life of the project, which would deposit sediment back into the mining pit. The addition of new material and water to the pit would modify the location, depth, and rate of excavation. Mining would continue in accordance with the proposed plan and within the proposed mining limits. However, it is unlikely that the full mine pit shown on Figure 2-4 would ever be achieved due to the likelihood of periodic flooding.

Under the proposed mining plan, excavation would begin at the southwest corner of the mining area by excavating a narrow pit parallel to the flow direction of the river. As each 30- to 50-foot-wide pit is completed, the next pit would be excavated parallel to and on the east side of the previous pit, incrementally further away from the river's main channel, which ensures areas of completed mining are located west of active mining areas. This eastward progression of mining also allows mining to occur in previously un-mined areas during periods where there is standing water in active excavation areas.

Within each pit, the excavation would proceed through a series of cuts and lifts until excavated to final depth. Each lift would involve an excavation depth of approximately 30 feet. As the excavation of one pit drops into the second lift (approximately 31 to 60 feet), excavation on the first lift of the adjacent parallel pit to the east would commence. In this manner, when the final depth is reached on the first pit, the second pit would be at a depth of approximately 60 feet, and the third pit would be at a depth of approximately 30 feet.

It is expected that pit excavation would proceed as described above until the Cuyama River reaches flood stage, when the river floods bank-to-bank and would fill the excavated pits. In advance of such flooding, mining activities would be suspended and equipment would be moved out of the riverbed and onto the Processing Area. Following the flooding, the mine pits would be inspected. If the deposited material contains marketable aggregate, the flooded pits would be re-excavated after drying. If there is a high percentage of unmarketable fine materials, excavation would commence in the next narrow pit.

A low flood control berm would be constructed around the perimeter of the active mine pit, as shown on Figure 2-4. The berm would be constructed of riverbed material, and would be approximately four feet high and 10 feet wide at the base. The berm would not be an engineered structure designed for a specific design storm. Several times each year, there are light rains in the watershed that cause sheet flows within the riverbed that may be several inches deep. The berm would divert those low flows from the mine pit. However, flooding from substantial rain events would wash away the berms or overtop them. The berm would be maintained on an as-needed basis, and would be repaired after flooding events.

Another earthen flood control berm would be constructed at the mouth of Deer Park Creek, as shown on Figure 2-4. An earthen berm, 4 to 6 feet tall, would be constructed across the mouth of the drainage to direct flows into the mine pit in a controlled manner, most likely along the access ramp. The berm would prevent erosion of the sides of the mine pit. The berm would not be an engineered structure; it would be constructed of on-site materials. The berm would be maintained on an as-needed basis, and would be repaired after flooding events. During the initial mining phase when the mine pit is not located at the mouth of the creek, the berm would divert flows downstream, away from the mine pit (Figure 2-6).

The proposed mining pit would be set back at least 50 feet from all property lines to assure that offsite property is not affected by slope failures and erosion of the pit slope cuts (see Figure 2-4). Slopes adjacent to property lines would be no steeper than 2:1 (H:V), with an overall slope (including benches) no greater than 3:1 (H:V), as shown on Figure 2-4. Active mine area slopes not along property lines would have a maximum 2:1 (H:V).

The Phase 2 mining pit would be set back a minimum of 100 feet from the confluence of Deer Park Creek (an ephemeral tributary) and the Cuyama River (Figure 2-4).

Access from the Processing Area into the riverbed would be provided by a 24-foot-wide all-weather road constructed of riverbed materials. The ramp would extend from the riverbank to the mining pit. Its length and location would vary depending on the location of the mining pit. Hence, during the initial mining phase, the road would extend across the riverbed (Figure 2-6). At the full mine pit phase, the road would serve as a ramp from the existing riverbank into the adjacent pit (Figure 2-4).

2.2.3 Topsoil Salvage

The topsoil directly under the 14.2-acre Processing Area (Figure 2-7) would be excavated to a depth of approximately one foot prior to installation of equipment and structures. The amount of topsoil to be salvaged at the Processing Area is estimated to be 22,900 cubic yards. Approximately 12,300 cubic yards would be used to construct temporary 6-foot-high visual screening berms along State Route 33 (see Figure 2-7). The remaining 10,600 cubic yards of topsoil would be applied to the agricultural field immediately north of the Processing Area, bounded by Highway 33 on the east, Deer Park Creek to the north, and the river channel to the west. The topsoil is expected to increase the productivity of this existing field. Based on a 75-foot setback from Deer Park Creek, there would be 18.14 acres on which to spread the 10,600 cubic yards of topsoil. This would equate to a depth of six (6) inches. The material would not be applied during crop production but after a harvest, when tilling would be required anyway.

At the end of the project, 10,600 cubic yards of topsoil would be removed from the field and placed at the Processing Area, along with the topsoil stored in the berms. At that time, the Processing Area would be returned to pre-project grades and available for agricultural production. If the topsoil underlying the Processing Area has sufficient depth, it may only be necessary to apply the topsoil stored in the landscaping berms and soil amendments, and leave the previously removed topsoil in the adjacent field where it was placed over the past 30 years.

The following materials would be stored in stockpiles in the mining area and the Processing Area: 1) excess topsoil from the Processing Area that is not spread on nearby agricultural fields; 2) unsuitable fines encountered in the mining process, particularly materials deposited from flooding in active mine pits; and 3) unmarketable fines and excess sands generated from processing. Unmarketable fines would be generated at the Processing Area from the scalping screens and from the sediments that settle within the water retention basins (estimated to comprise about two percent of mined material). Excess sand is non-marketable sand derived from processing which is estimated to be up to 5 percent of mined material, or 25,000 cubic yards over the life of the permit.

There may be one or more stockpiles of topsoil, fines, and excess sand. Prior to the discovery of the blunt-nosed leopard lizard at the project site and the need to protect its habitat, this

material was planned to be used in improving soil conditions at the leopard lizard protection area (Figure 2-4) for its conversion to agriculture. Material would be added to the stockpile(s) on a continuous basis, as fines are encountered during mining and/or produced during processing. Over time, stockpiles of unmarketable fines and excess sand would be placed into the finished portions of the mine pit. More than half of the topsoil would be stockpiled within the landscaping berm throughout the mining period. The remaining topsoil would either be used to further enhance the agricultural field directly north of the Processing Area; and/or used in final reclamation of the mine pit and Processing Area as a top dressing.

Topsoil stored within the 6-foot-high landscape berm would be planted to prevent wind and water erosion and to preserve soil microbes. The plant palette is shown in Table 2-3. Supplemental irrigation will be applied, as needed, to establish this vegetation. These berms would also be used for visual screening, as described in Section 2.5.2.

**TABLE 2-3
LANDSCAPE BERM PLANT PALETTE**

Botanical Name	Common Name	Size	Quantity
<i>Calocedrus decurrens</i>	Incense cedar	15 gallons	68
<i>Pinus coulteri</i>	Coulter Pine	15 gallons	27
<i>Quercus douglasii</i>	Blue Oak	15 gallons	37
<i>Heteromeles arbutifolia</i>	Toyon	5 gallons	123

2.3 PROCESSING

The mined materials would be processed at the 14.2-acre Processing Area adjacent to State Route 33 (Figure 2-7). A description of the facilities and material processing is provided below.

2.3.1 Processing Equipment and Materials

Equipment, materials, and facilities that would be located at the Processing Area are listed below:

- Conveyors
- Triple deck dry scalping screen
- Double deck dry scalping screen
- Sand washer (screw type)
- Dewatering screen

- Load-out bins (auto-loader)
- Material stockpiles
- 20,000-gallon above-ground diesel fuel tank, with secondary containment and bermed fueling and maintenance pad
- 10,000-gallon domestic water storage tank with Fire Department drafting hydrant
- Water retention basins (three, each being 80 feet x 130 feet x 10 feet deep)
- Stormwater percolation swale (design capacity of 162,000 gallons, approximately 750 feet in length, depth and width vary with an average depth of 3.8 feet and an average width of 22.8 feet)
- Water reclamation system (three-stage clarifier – each concrete basin being 80’ wide x 130’ long x 10’ deep)
- Scale house (office and dispatch operations)
- Restroom facilities and septic system
- Truck scale (70’ above-ground Toledo)
- Well (electric pump)
- Office (7,500 square feet)
- 24-foot-wide, two-lane all-weather access road and turn-around to provide haul trucks with access to the loading bins and truck scale
- Parking spaces for 12 automobiles, plus one handicapped; parking spaces for 4 trucks
- Entrance sign and perimeter fencing (6-foot-high chain link fence) around the Processing Area
- Flagging around the perimeter of the mine pit
- Caretaker/security trailer
- Electricity supplied by the power grid (power pole already onsite)

Chemicals delivered to and stored at the Processing Area onsite are listed below in Table 2-4.

Onsite mobile equipment (most of which would be used in mining) would include the following:

- Three front-end loaders (two CAT 980s, one in the yard and one in the mining pit, and a CAT 988 in the mining pit)
- Water truck (4,000-gallon capacity)

**TABLE 2-4
ONSITE CHEMICALS**

Chemical	Quantity	Type
6 Guardol QLT 15W-40	2 x 55 gallons	Petroleum hydrocarbon
Diesel #2	20,000 gallons	Petroleum hydrocarbon
Hydraulic Oil AW 46	2 x 55 gallons	Petroleum hydrocarbon
Waste Motor Oil	55 gallons	Petroleum hydrocarbon
Acetylene	2 x 420 cu. ft.	Acetylene gas
Grease	3 x 35 gallons	Petroleum hydrocarbon
Oxygen	2 x 420 cu. ft.	Oxygen gas
Flocculant (e.g., Nalclear)	Unknown at this time	Flocculant (organic polymers)

- Two scrapers (33-ton capacity – CAT 633)
- Two haul trucks (40-ton capacity)
- Excavator (235 CAT)
- Man lift
- Backhoe (Case 535)
- CAT D-8 dozer
- Service truck (lubrication vehicles for periodic servicing of vehicles and equipment)
- Crane (25-ton lift)
- Welding unit

All vehicle fueling and maintenance would take place atop the fueling and maintenance pad within the Processing Area (Figure 2-7). The concrete pad would include a curbed containment berm and would be located adjacent to the fuel storage tank, which would be placed within a concrete secondary containment area.

2.3.2 Processing Operations

Processing would occur at an electrically-powered processing facility capable of processing 600 tons of material per hour. A detailed description of the sequence of processing is provided below.

- Material would be excavated from the riverbed using heavy mobile equipment and transported by trucks, scraper or conveyor to the loading hopper. From this point on, material would be moved throughout the Processing Area via a system of conveyors.

- Once in the loading hopper, gravel and boulders would be conveyed from the river's edge to the jaw crusher where they are reduced in size, then conveyed for placement onto the surge pile.
- From the surge pile, crushed aggregate would fall into tunnels and be conveyed to the triple deck dry scalping screen to remove oversized material.
- Material too large for the triple deck dry scalping screen would be diverted and conveyed to the adjacent cone crusher for additional crushing, and is conveyed back through the triple deck dry scalping screen. Material leaving the triple deck dry scalping screen would be conveyed onto the ¾" rock, ⅜" rock or scalped fines stockpiles, or into the double deck dry scalping screen.
- Material entering the double deck dry scalping screen is separated into birds-eye rock and concrete sand. The bird-eye rock is conveyed onto a stockpile and the concrete sand is passed through a sand washer.
- Concrete sand would then be conveyed through the dewatering screen before being conveyed onto the concrete sand stockpile.
- Wash water from the sand washer and dewatering screen would flow by gravity back to the water retention basins where a flocculant is added (i.e., a triple basin clarifier, with three concrete basins 80 feet x 130 feet and 10 feet deep). While in the water retention basins, the flocculated fine material would "settle out" and 61 percent the water would be reclaimed for re-use in material washing. Fine material deposited in these basins would be removed and deposited on the fines stockpile by a front-end loader.
- The finished product placed on the birds-eye rock stockpile would be available for sale from that location. Material placed on the scalped fines stockpile would be hauled offsite for use as soil amendments, landfill top cover, or placed within the mine pit.
- The finished product would be placed in the concrete sand or ¾" rock stockpiles where it would fall into tunnels and be conveyed to the loading bins.
- On-road haul trucks entering Diamond Rock would be loaded either at the loading bins (concrete sand or ¾" rock), a load-out area (⅜" rock), or by front-end loader at the birds-eye rock or scalped fines stockpiles.
- Concrete rubble accepted for recycling would be stockpiled and a portable crusher brought onsite to periodically crush the concrete rubble. A conveyor (or radial stacker) would transfer the crushed product into a second stockpile. On-road haul trucks entering Diamond Rock would proceed to the recycled concrete stockpile where they are loaded by a front-end loader.

In the future, Troesh may find it operationally advantageous to place the jaw crusher at the bottom of the mine pit and convey the mined materials to the surge pile from that location (Step 2).

2.3.3 Water Source and Use

Drinking water for employees and visitors at the Processing Area would be supplied by bottled water. Water for the project operations would be provided from a currently idle well (Well # 4), which is located along the southern boundary of the site near Well #5 (Figure 2-7). This non-potable water would be used for the purposes listed below:

- Replenish water trucks, which would be used to control dust on the access road to the mining pit, and in the mining pit
- Washing aggregate materials at the Processing Area
- Dust control using spray bar nozzles on the conveyors to wet aggregate materials being transported to the surge pile
- Dust control by ground watering (from a watering truck) the area where loaders operate within the Processing Area and between the mining pit and the crusher
- Dust control using sprayers at the three-deck and two-deck dry scalping screens
- Restroom facilities

Water would be introduced into the processing system from the on-site well. Most of the water would be used and then re-used as it is recycled through the aggregate processing system. Approximately 74 percent of the water used in washing and dust control would be collected and conveyed to the water retention basins (Figure 2-7) where suspended solids would be removed and clarified water returned to the processing system. Water would be consumed by: 1) evaporation to the atmosphere, and 2) water included in products trucked from the project site. Water would be removed from the processing cycle through percolation, although this water would eventually become available as groundwater.

Troesh estimated the total annual water demand for average and maximum production rates. The estimates were developed using the following assumptions:

- Conveyance to Surge Pile:
 - 6 material drop points (conveyance system to surge pile)
 - 6 conveyor spray bars, each with 2 nozzles spraying at a rate of 0.5 gallons per hour, operated 25 percent of the time given the inherent moisture of the mined material (i.e., operated during the hottest daylight hours)

- 100 percent of this water is assumed lost to evaporation or held within mined material
- Aggregate Washing (Scalp Screening, Washing and Conveyance to Stockpiles):
 - 31,200 square foot surface area for water retention basins
 - 207 gallons of water used per ton for aggregate washing
 - Water used for fugitive dust control is consumed
 - Water used in the product is consumed
 - Water that returns to the Water Retention Basins, less evaporation, is recovered
 - Water that percolates is recovered
- Dust Suppression:
 - 3.5 acres where loaders operate in the Processing Facilities Area and to and from the mining area to the crusher
 - 0.43 gallons per square yard per day
 - Surge pile watering during periods of high winds
 - 100 percent of this water is assumed lost to evaporation

Based on the above assumptions, Diamond Rock would use approximately 351,016 gallons of water per day if operated at its average production rate of 500,000 tons per year. Approximately 74 percent would be recycled and reused. About 17 percent (approximately 59,686 gallons of water per day) would be consumed during the processing, and 9 percent would percolate into the ground.

Operating at a peak production rate of 750,000 tons per year, Diamond Rock would use approximately 522,161 gallons of water per day. Recycled water would account for approximately 75 percent of the water used, with the remainder being replaced from Well #4. This equates to the consumption of approximately 83,346 gallons of water per day.

2.3.4 Administration, Security, and Public Safety

Diamond Rock would include an administration office and dispatch/operations building for normal everyday business (depicted as shop on Figure 2-7). Nighttime and weekend security at the Processing Area would be provided by perimeter fencing, locked gates, nighttime lighting, and a person living in a caretaker/security trailer. The office area may be alarmed. Equipment would be disabled daily at the end of the shift.

Precautionary fencing and signs would be placed around the mining pit, where needed, for mine safety. In some areas, fencing may be used with wooden or metal posts with wire,

flagging, or other materials to alert people to the presence of the mining pits. Metal fencing would be placed in areas that would not be susceptible to flooding (and possibly conveyance downstream to other properties), or would be removed prior to the winter season. Alternative barriers that meet mine safety standards would also be used, such as simple sand berms.

2.3.5 Hours and Days of Operation and Employment

With the exception of truck loading operations, Diamond Rock would operate up to 303 days per year, employing eight people fulltime (i.e., five during the day shift, three during the night shift). Proposed operating hours are as follows:

- **Mining/Primary Crushing.** Monday through Saturday: 5 a.m. to 6 p.m. (during daylight hours)
- **Processing/Secondary Crushing.** Monday through Saturday: 5 a.m. (during morning daylight hours) to 10 p.m.
- **Truck Loading.** Daily: 24 hours per day, ~~per demand, and on occasional Sundays~~

The co-occurrence of the various activities at the project site is summarized in Table 2-5 below.

**TABLE 2-5
ACTIVITIES AT THE PROJECT SITE**

Hours	Mining/Primary Crushing	Processing ²	Truck Loading ³
Daytime: 5 a.m. – 6 p.m. ¹	X	X	X
Evening: 6 p.m. – 10 p.m.		X	X
Night: 10 p.m. – 5 a.m.			X

¹ As daylight is available.

² Total processing time is expected to be up to 16 hours per day, within this 17 hour period.

³ Loading will occur per demand, which is typically met during the day, but could occur at night for unusually larger orders.

Nighttime operations include as-needed processing until 10 p.m., and truck loading and hauling (using stockpiles at the Processing Area) on a 24-hour basis if required to meet demand (e.g., nighttime road work). No mining would occur at night. It is expected that up to 50 percent of deliveries from Diamond Rock would occur at night, primarily toward Santa Maria, to provide the PCC-grade aggregate needed for Caltrans and public works projects, night paving, and industrial and commercial buildings.

Contract requirements often require the producers of PCC-grade aggregate to provide materials on a 24-hour basis. These contracts involve large-scale projects, such as highway

resurfacing by Caltrans, major public works road projects, and Corps of Engineer projects to reinforce dam toes or dikes, among others. In some instances, it may be necessary to conduct processing and loading, or only loading, on Sundays (5 a.m. to 6 p.m.).

2.3.6 Project Generated Traffic

Truck traffic would vary with production. An estimate of the average daily truck trips associated with the proposed project is provided below based on information from Troesh. Estimates based on average annual production (500,000 tons) and maximum annual production (750,000 tons) are provided below for year-round operations (365 days per year) and the use of 29½-ton capacity hauls trucks to deliver finished products to destinations:

- Average production year (500,000 tons) – 46 exit loads, which equates to 92 one-way truck trips ~~(to and from the mine)~~
- Maximum production year (750,000 tons) – 69 exit loads, which equates to 138 one-way truck trips ~~(to and from the mine)~~

Truck trips would primarily occur during the daylight hours (5 a.m. to 6 p.m.) with up to 12 hours of loading. For certain orders, truck loading may occur through the night.

Over the life of the permit, Troesh estimates that Diamond Rock material would be delivered to the following areas in the percentages shown. These are long-term projections, and the distribution of products may vary from week to week and from year to year. In general, approximately 50 percent will be hauled to the north to the Santa Maria area on a regular basis. The other destinations will vary based on demand. The routes for haul trucks using these destinations are shown on Figure 2-8.

- 50 percent northwest to Santa Maria and vicinity, or to San Luis Obispo County
- 20 percent to Kern County
- 20 percent to Ventura County
- 5 percent to project sites within five miles of Diamond Rock (e.g., primarily road repairs)
- 5 percent to nearby communities, i.e. (Cuyama and Taft)

The Diamond Rock mine would also accept an average of 25,000 tons per year of concrete rubble for recycling, using 25-ton capacity trucks, which would generate an estimated 6 average daily truck trips (ADT) over the year.

Diamond Rock-related traffic would also include an estimated 16 ADT from the four employees working each of two shifts, and the estimated 4 ADT associated with Diamond Rock-related deliveries and service vehicles.

Total estimated Diamond Rock-related vehicle trips are summarized in Table 2-6 below.

**TABLE 2-6
ESTIMATED VEHICLE TRIPS**

Truck Trips ¹	Average Daily Trips	Maximum Daily Trips
Aggregate deliveries	92	138
Recyclable concrete	6	6
Other Trips	4	4
Employees	16	16
Total=	118	164

¹ In general, most of the truck trips would occur during daylight hours. However, there may be orders which involve truck trips at night. The total number of daily truck trips would not increase. Instead, the frequency of truck trips per hour would be less.

2.4 RIVER BANK RESTORATION AND MINE RECLAMATION

2.4.1 River Bank Restoration

2.4.1.1 Bank Stabilization

The eastern riverbank has historically been disturbed by various erosion control measures such as tree planting, placement of riprap and old automobiles, and the establishment of berms. Tree planting included *Tamarix ramosissima* (saltcedar, an invasive species) and *Populus fremontii* (cottonwoods, a desirable species). Some of the cottonwoods are now 30 feet in height while others have not received regular irrigation and are under stress or have already died.

Troesh would restore a 1,400-foot long portion of the eastern river bank containing buried cars (see Figure 2-3) within the first five years of operation. Buried automobiles would be removed and disposed offsite in compliance with local ordinances and other applicable regulations, including those of Santa Barbara County Department of Environmental Health Services. The riverbank would be reconstructed, as necessary, into a stable configuration. The bank would be graded to match the elevation of the existing adjacent bank with a 2- to 4-foot-wide top. The overall slope of the riverbank would be no greater than 3:1 (H:V), unless the use of rip-rap is permitted in the construction. The bank would be constructed of on-site materials, free of debris.

2.4.1.2 Revegetation - Trees

Existing saltcedar would be removed and an eradication program implemented to ensure they do not become re-established. Existing cottonwood currently growing on or near the riverbank would be retained, as feasible. Additional cottonwood trees (1- or 5-gallon) would

be planted on 20 to 30 foot centers along the top of the riverbank or near the toe of the restored bank.

2.4.1.3 Revegetation - Seeding

Native shrubs and herbs from the region would be established on the stabilized banks by seeding. The preliminary list of plants to be seeded is presented in Table 2-7.

**TABLE 2-7
RIVERBANK RESTORATION SEEDING PRESCRIPTION**

Scientific Name	Common Name	Percent of Mix	Drill Rate PLS 1 / Acre
Shrubs			
<i>Atriplex canescens</i>	Four-wing saltbush	5.00	2.00
<i>Atriplex polycarpa</i>	Cattle spinach	5.00	1.50
<i>Chrysothamnus nauseosus</i>	Common rabbitbrush	5.00	0.33
<i>Ephedra californica</i>	California ephedra	5.00	4.00
<i>Eriogonum fasciculatum</i>	California buckwheat	6.00	0.50
<i>Lepidospartum squamatum</i>	California scalebroom	12.00	0.75
<i>Lupinus excubitus</i>	Bush lupine	Trace	Trace
<i>Yucca whipplei</i>	Chaparral yucca	Trace	Trace
Grasses			
<i>Festuca californica</i>	California fescue	10.00	0.50
<i>Achnatherum hymenoides</i>	Indian ricegrass	30.00	6.75
<i>Nassella cernua</i>	Needle grass	10.00	0.50
<i>Achnatherum speciosum (Hesperostipa comata)</i> ²	Desert needlegrass (Needle-and-Thread)	2.50	.36(1.75)
Forbs			
<i>Lasthenia glabrata</i>	Yellowray goldfields	Trace	0.25
<i>Lupinus bicolor</i>	Pigmy-leaved lupine	2.50	1.00
<i>Lupinus sparsiflorus</i>	Coulter's lupine	4.00	4.00
<i>Malacothrix californica</i>	Desert dandelion	2.50	0.25
<i>Oenothera californica</i>	California primrose	Trace	Trace
<i>Phacelia tanacetifolia</i>	Lacy Phacelia	0.25	0.25

PLS = Pure Live Seed

² *Achnatherum speciosum* may not be available commercially and there is no local seed source. This species will be replaced by *Hesperostipa comata* (Needle-and-Thread), which is found in the foothills of Central California and documented to be an excellent revegetation species (Wolfe and Associates, 1996, as referenced in the County approved Reclamation Plan for Southwest Ready Mix Ventucopa Rock Plant, now called General Production Services, 09-30-97).

All seeding would be conducted after the temporary drip irrigation system has been installed. After seed has been applied, clean straw would be placed over the seeded area at a rate of 2.5 tons per acre. Application would only occur when wind velocities are low enough to prevent

blowing the seed or straw off the slope. A tackifier would be applied, as specified below, on the same day the seed and straw are applied. The material would be mixed to form a slurry and applied with equipment equipped with a continuous agitation system of sufficient capacity to produce a homogeneous slurry.

Seeding would coincide with the late-spring rainy season. April and May are typically a good time to seed, although the final decision would be based on the weather conditions at the time of planting. It is often preferable to seed after the first rainfall when the ground is wet.

Irrigation would be used only as needed, although supplemental drip irrigation is expected to be necessary due to the semi-arid climate. Artificially supplied water would be slowly tapered off and would cease with cooler weather, usually in late-fall to early-winter. Additional water may be needed once or twice during extreme wind conditions if plants are experiencing critical wilt (i.e., a wilt that does not vanish or lessen with nightfall).

Prior to planting and seeding, all debris and any introduced weeds that have invaded the site would be removed. This can be accomplished by hand, since the area is relatively small.

All areas would be watered so that weed seeds that are already present in the soil would germinate. After germination, and when plants are in active growth, non-selective systemic herbicide (Roundup™ or equivalent) would be applied following manufacturer's specifications. This action would reduce the amount of weeds from the revegetation area prior to seeding with native plants.

Once irrigation is supplied, weeds from the soil and that are transported to the site by wind would compete with native plants for space and water. The presence of weeds could reduce extent of native seed germination. Hence, weeds would be controlled during the first growing season by the application of herbicide.

The success of the revegetation will be monitored for as many years as necessary to meet the performance criteria listed in Table 2-8 for two consecutive years without the use of supplemental irrigation and weed management.

2.4.2 Mine Reclamation

Under the proposed reclamation plan, the mining area in the Cuyama River would be returned to natural open space and the Processing Area would be returned to irrigated agriculture.

Upon termination of the mining operation, the mining pits that are present would be graded and contoured to reduce any slopes to a 2:1 (H:V) grade with an overall slope (including benches) no greater than 3:1 (H:V). The upstream low-flow berm would be removed and

**TABLE 2-8
REVEGETATION PERFORMANCE CRITERIA**

Seed Mix	
Goal	Native vegetation attaining similar cover, density and composition as nearby undisturbed areas.
Performance Criteria	Cover: Native shrub cover greater than 5 percent. Density: Native shrub density equal to or greater than one shrub per square meter. Overall vegetative cover of at least 80 percent. Diversity: At least five native shrub species present within 100 linear feet.
Contingency Action	Reseed if density and/or diversity of native plants is low.
Weeds	
Goal	No interference with native plant establishment. Eradication of <i>Tamarix</i> sp. (saltcedar).
Performance Criteria	No weedy exotics present two years after irrigation is discontinued. No <i>Tamarix</i> sp. (saltcedar) present for two years.
Contingency Action	Hand weed or remove with chemical herbicide if weeds interfere with native plant establishment. Annually inspect for <i>Tamarix</i> sp. (saltcedar) and, when encountered, cut the <i>Tamarix</i> at ground level with loppers, chainsaws, and brushhooks and treat the stumps with an herbicide and procedures acceptable to the CDFG.
Erosion	
Goal	Erosion does not interfere with native plant establishment. Loss of topsoil from wind erosion is minimal.
Performance Criteria	No specific criterion.
Contingency Action	Repair erosion.

disturbed areas surrounding the mine pits would be graded to match adjacent riverbed contours. The mining pits would remain open until natural flooding and sediment transport processes have filled them with sediments.

The access road and ramp to the mine pit would be removed. In the riverbed, this road would be graded to match existing riverbed contours. The road across the agricultural field between the Processing Area and the mine pit would be restored to agricultural uses. Gravel and base material used to construct the road would be removed and hauled off site. Topsoil and fines from the stockpile located in the mine pit would be placed on the road bed.

The stockpiled sand and gravel would be sold. Processing equipment, fencing, conveyors and most piping would be dismantled and removed from the site. Equipment, the fuel storage tank, and all materials stored onsite would be removed. The water well, restroom, septic system, concrete water retention basins, and a minor amount of piping would be retained to support agricultural uses on the property. Electrical service would be downsized to accommodate only that needed to support agricultural uses on the property.

The fines deposited in the water retention basins would be removed for proper use and/or disposal and the water retention basins retained for use by the landowner in support of agricultural uses. To facilitate fines removal, the ends of each basin would be sloped, approximately 3:1 (H:V), to permit the entry and exit of equipment. A chain link fence may be placed around the water retention basins for safety.

All base material and fines at the Processing Area would be removed. If the topsoil underlying the Processing Area is considerably deeper than the one foot removed, a six inch layer of sand would be applied, followed by the placement of topsoil stored in the landscape berm. This would restore the site to its original grade and subsequent ripping and tilling would prepare a suitable growing medium for carrot and other crops. If, the topsoil underlying the Processing Area was not considerably deeper than one foot, it would be necessary to either recover and apply the topsoil placed on the agricultural field to the north, or import and apply the supplemental topsoil needed to restore the site to its original grade. Reclamation of the site would be complete when productive capability of the former Processing Area is equivalent or better than the pre-mining condition for two consecutive years.

Financial assurances approved by County and Office of Mine Reclamation would be posted for the life of the project to guarantee reclamation consistent with SMARA minimum verifiable reclamation standards. Once reclamation is completed to the satisfaction of the County, financial assurances would be released.

Final mine reclamation may also require additional habitat restoration measures that would be conditions of the 404 permit issued by the Corps of Engineers and the Streambed Alteration Agreement with the California Department of Fish and Game.

2.5 OTHER ENVIRONMENTAL PROTECTION MEASURES

2.5.1 Blunt-nosed Leopard Lizard Protection

The blunt-nosed leopard lizard is designated an endangered species by the US Fish and Wildlife Service (USFWS). Critical habitat has not been designated by USFWS for this species. The blunt-nosed leopard lizard was listed as endangered by the State of California in 1971. It is also designated a California fully protected species. The fully protected species status of blunt-nosed leopard lizard directs that the species may not be taken or possessed at any time, nor can any permits for take or collection be authorized by the State of California unless collection is for scientific research.

The blunt-nosed leopard lizard occurs in the scrub habitat on the stream terrace at the north end of the project site, between the irrigated field and the river channel (Figure 2-9). To prevent the unauthorized take of individual blunt-nosed leopard lizards or their habitat, Troesh will implement the following exclusionary fencing measures.

Exclusionary fencing would be placed on either side of the leopard lizard habitat area to prevent travel by the lizard into the mining pit or agricultural field. The exclusionary fence would extend to the south as shown on Figure 2-9 to allow passage of the lizards to similar habitat areas at the south end of the project site. The fencing would be installed between March 15 and April 1 of the first year of operation, prior to the emergence of the leopard lizard from winter dormancy. The 2-foot-high fencing would consist of small-meshed hardwire cloth with a base of aluminum flashing. It would be buried 12 to 18 inches below the ground surface. A 12-inch-high metal flashing would be placed on the lower half of the fencing to prevent climbing by the lizard. The fencing would be left in place for the life of the project. It would be inspected periodically, and replaced or repaired as needed. The fence would be constructed to withstand strong winds that are common in the valley.

The fencing would direct leopard lizards to an undercrossing where the ramp to the mining pit is located (Figure 2-9). The undercrossing would be at least 1 to 2 feet high and 3 feet wide. It would be 24 feet long (the width of the ramp). The undercrossing would have native soils.

By April 1 of each year, temporary exclusionary fencing would be placed along the access road in the mine pit (wherever it is located) and the active mining area to prevent entry by the leopard lizard in work areas. The fencing would have the same design, material, and installation as the permanent fencing noted above. The temporary fencing would be maintained on a daily basis, and moved if necessary to accommodate new mining areas. It would be removed if flooding of the mine pit is anticipated. An “escape ramp” with a one-way entrance passage would be installed through the fencing to allow leopard lizards in the mining area to leave.

2.5.2 Visual Screening Berms

The topsoil berms along State Route 33 would be designed to screen the facilities from view of passing vehicles (Figure 2-7). The berms would be approximately 42 feet wide at the base, 6 to 7 feet high, 14 feet wide at the top, with 2:1 (H:V) slopes. The plants to be used in landscaping the berms are listed in Table 2-3. The berms would be planted upon reaching their design dimensions and would be irrigated until the landscape material is established.

2.5.3 Other Measures

Measures proposed by the applicant to reduce emissions include the following:

- Processing equipment is electrically powered to reduce stationary source emissions
- Off-highway mobile equipment would be recent model years

- Water spray would be used on unpaved roads to control fugitive dust. Dust control of on-site roads and within the mining area would be accomplished by one 4,000 gallon water truck, which would operate throughout the work day.
- BACT would be applied to aggregate processing equipment to control fugitive dust from stationary sources
- Water spray on stockpiles and in the mining pit to control fugitive dust
- Conveyors would be used occasionally to reduce truck trips between the mining pit and the Processing Area.

A Spill Prevention, Control, and Countermeasure Plan (SPCC) was prepared for the project to meet the requirements of: 1) Title 40, Code of Federal Regulations (CFR), Part 112; and 2) California H&S Code, Chapter 6.67, §25270 - Aboveground Petroleum Storage Act (1989). The purpose of the SPCC is to identify procedures and controls to prevent accidental releases of petroleum products and to minimize the impact if a release occurs.

A Storm Water Pollution Prevention Plan (SWPPP) was developed to comply with the requirements set forth in the State Water Resources Control Board General Permit No. CAS000001. The SWPPP identifies sources of pollution that may contaminate industrial storm water discharges; and described best management practices to reduce pollutants in storm water discharges. A “stormwater percolation swale” was incorporated into the project design to capture and percolate stormwater falling into the Processing Area (Figure 2-8). Silts from the swale would be periodically removed by front-end loader.

2.6 PERMITS

Permits, plans, licenses and certificates that may be required for the project are listed below in Table 2-9.

2.7 CONTRIBUTION TO REGIONAL AGGREGATE SUPPLIES

The County Conservation Element (County of Santa Barbara 1994:176) recognized that production of sand and gravel has ranged below the California Division of Mines and Geology estimated need for growing areas, and that some aggregate resources were imported from Ventura and Orange Counties to meet local demand. In the past 10 years, there has been a dramatic increase in the demand for aggregate resources. This is a direct result in the increased development rates of residential housing, commercial and public buildings, highways, roads, bridges, dams, airports, canals, military facilities, water and sewer facilities, railroads and other public transit facilities. In addition, there is a potential for unplanned demand in response to such catastrophic events such as the 1989 Loma Prieta and 1994 Northridge earthquakes. Following those earthquakes, the need for aggregate for highway, bridge and other reconstruction was greater than available aggregate supplies. Hence, there is

**TABLE 2-9
LIST OF FEDERAL, STATE, AND LOCAL PERMITS NEEDED**

Permit/Plan/License/Certificate	Issuing Agency
County of Santa Barbara	
Conditional Use Permit Reclamation Plan Building Permit	Planning & Development
Business Plan Hazardous Materials Inventory Above-Ground Storage Tank (diesel)	Environmental Health Services
Certificate of Compliance (Surveyor) Road Encroachment Permit	Public Works
Permit to Construct Permits to Operate (PTO)	Air Pollution Control District
Welding Permit Hazardous Materials Storage and Use	Fire
Certificate of Registration (re: truck scale) Weighmaster License (re: truck scale)	Agricultural Commissioner (Weights and Measures)
Business License Tax Registration Certificate	Tax Collector
State of California	
Mine ID Number Reclamation Plan	Department of Conservation
Section 1600 Streambed Alteration Agreements	Department of Fish and Game
Carrier Number Biennial Terminal Inspection	Highway Patrol
NPDES Permit (Industrial Permit) Spill Prevention, Control, and Countermeasure Plan Storm Water Pollution Prevention Plan Clean Water Act Section 401 Certification	Regional Water Quality Control Board
EPA ID number	Department of Toxic Substance Control
Vendor Use Fuel Tax Permit	Board of Equalization
Federal Government	
Clean Water Act Section 404 Permit(s)	U.S. Army Corps of Engineers
Radio License	Federal Communications Commission

an ongoing need to ensure that permitted aggregate reserves are sufficient to meet future local demand, with a capacity to ramp up production in response to the increased demand following a catastrophic event.

The California Geological Survey (CGS, Kohler 2002)) provides additional information regarding the estimated need for aggregate resources and the permitted sources for material in various regions throughout the state. Diamond Rock is centrally located to the three **Production-Consumption (P-C)** Regions – San Luis Obispo-Santa Barbara, Bakersfield, and Western Ventura County. Diamond Rock mine will contribute estimated net reserves of 12.85 million tons to these P-C Regions during the 30-year life of the permit as follows:

- San Luis Obispo-Santa Barbara (60 percent = 7.7 million tons)
- Bakersfield (40 percent, shared with Western Ventura County = up to 5.14 million tons)
- Western Ventura County (40 percent, shared with Bakersfield = up to 5.14 million tons)

The effect upon each P-C Region is noted in the right-most column of the Table 2-10 below.

**TABLE 2-10
CONTRIBUTION OF DIAMOND ROCK MINE TO REGIONAL AGGREGATE
SUPPLIES**

P-C Region	50-Year Demand (million tons)	Currently Permitted Aggregate Resources (million tons)	Increase in Permitted Aggregate Resources during Diamond Rock 30-Year Permit
San Luis Obispo-Santa Barbara	99	93	+9%
Bakersfield	246	167	+2%
Western Ventura County	141	0	+4%

The contribution of the proposed Diamond Rock mine on aggregate supplies will be limited to the first 30 years of the 50-year demand cycle. Within the San Luis Obispo-Santa Barbara P-C Region, Diamond Rock will supply the additional supplies to meet demand during those 30 years. Currently, two aggregate producers are the **dominated dominant** suppliers within this P-C Region and the Diamond Rock mine will serve to provide an alternative and competitive source of aggregate materials. Within the Bakersfield and Western Ventura County P-C Regions, Diamond Rock and other producers do not have sufficient permitted aggregate resources to meet the 50-year demand and the Diamond Rock mine would provide a small contribution.

The County Conservation Element recognizes the important contribution of mineral resource extraction to the local, state, and national economies (County of Santa Barbara 1994:181). At the same time, it is recognized that the County should have discretionary review over aggregate mining activities in order to minimize adverse direct and indirect environmental impacts. The Conservation Element identifies policies for the County to balance the protection of environmental resources with the identification and exploitation of rock, sand, and gravel mineral resources.