



**Environmental Effects of Gravel Mining in Irwindale, CA:
Basic Information Is Not Available to Assess
Health and Environmental Risks to the Community**

**Prepared for
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EXECUTIVE SUMMARY

An extensive gravel mining industry operates in the San Gabriel Valley. Gravel mining in the area has been in existence for more than 100 years and has supplied the sand and gravel that has built over 70% of the roads in California. Most of the mining operations are located in Irwindale, which has 17 gravel pits. Seven of these are active quarries. The others are inert landfills, have been reclaimed, or sit dormant.

Almost 260,000 people live in Irwindale and the nearby communities affected by the mining operations, which include Baldwin Park, Azusa, and El Monte. The residents of the area have become increasingly concerned about the effects of the mining operations on their air and water. The mines generate substantial quantities of dust from mining and processing activities, as well as emissions from diesel-powered trucks and heavy machinery. Residents worry that the resulting air pollution may be linked to respiratory problems, such as asthma and lung cancer, suffered by members of the community. Parents are especially concerned about the effects of these emissions on their children's health.

In response to these concerns, Congresswoman Hilda L. Solis, who represents the residents of this area, and Congressman Henry A. Waxman, Ranking Member of the House Committee on Government Reform, initiated an investigation. The Representatives asked the U.S. Environmental Protection Agency (EPA) to provide specific information on the health and environmental effects of gravel mining operations in and around the cities of Irwindale, Baldwin Park, Azusa, and El Monte, California. In addition, they asked the Special Investigations Division of the Government Reform Committee to work with Congresswoman Solis's staff to analyze the health and environmental impacts of the gravel mining operations. This report presents the results of this investigation.

Key Findings

The mining operations in the Irwindale area contribute to the air pollution problems affecting the Irwindale area. Irwindale and the surrounding communities are located in an area that currently exceeds the health-based National Ambient Air Quality Standards for two air pollutants: fine particulate matter (PM_{2.5}) and ozone. The area also has high levels of toxic air pollutants. **The mining operations generate large quantities of dust, including PM_{2.5}, in the process of digging, transporting, and processing the gravel. In addition, the heavy machinery and trucks used in the mining operations burn diesel fuel, emitting large additional quantities of PM_{2.5} and toxic air pollutants, as well as pollutants that form ozone.**

Federal and state regulators lack basic information needed to assess the magnitude of air pollution risk generated by the mining operations. Reps. Solis and Waxman wrote the U.S. Environmental Protection Agency on March 18, 2002, to request information on the health and environmental effects of the mining operations. The Special Investigations Division and Rep. Solis's staff made additional inquiries of local regulatory bodies. The responses to these

inquiries reveal that environmental officials do not know basic information about the impacts of the operations. Specifically, the report finds:

- **Environmental regulators could not identify all of the air pollutants released by the mining operations.** Although the mining operations are a significant source of numerous air pollutants, EPA could not provide a list identifying all of the air pollutants they produce.
- **Environmental regulators do not know how much air pollution the mining operations generate.** The mining operations conduct little monitoring and reporting of their pollution releases. Moreover, air quality monitoring stations in the area are not situated to allow regulators to track emissions from the mining operations. As a result, EPA and state officials cannot say how much air pollution is generated by specific mining operations in the area or to what extent the mining operations contribute to the area's air quality problems.
- **In key respects, the air emissions from the mining operations are not overseen by environmental regulators.** Some regulatory requirements simply do not apply to gravel mines, while others could apply but are not required by regulatory agencies. As a result, many of the mining operations apparently do not hold permits for their air pollution emissions. Also, it is difficult to tell whether the operations are complying with applicable requirements and whether the regulatory agencies are monitoring and enforcing compliance.

Many of the same data gaps and lack of information that exist in the case of air pollution also exist in the case of water pollution from the mining operations.

Environmental regulators do not know what types or quantities of pollutants the mining operations may release to surface water or groundwater in the area. The mining operations dig near and in some cases below the level of the water table, which means that pollutants from leaks and spills or from material placed in the pits (which may be used as landfills) may rapidly reach the groundwater. But many of the mining operations do not monitor the groundwater in or below the pits. Also, much of the groundwater in the area is heavily contaminated from other industrial activities, which makes it more difficult to identify contributions from the mining operations.

What little information is available about the impacts of the mining operations is inaccessible to residents of the local communities. This report is based on information held by numerous separate offices in local, state, and federal agencies. Extensive follow-up with numerous agency personnel was required to obtain even minimal explanations of the information provided. An average citizen or community group would be unlikely to have the access, expertise, and time to conduct the investigation necessary to obtain even the basic data used for this report. As a result, the people most directly affected by the gravel mining operations do not have access to meaningful health and environmental information about a dominant industry in their community.

I. BACKGROUND

Almost 260,000 people live in Irwindale and nearby communities, which include Baldwin Park, Azusa, and El Monte. The city of Irwindale is 20 miles east of Los Angeles. Irwindale was incorporated in 1957 and is approximately 9.5 square miles. It has a daytime population of 35,000 and a nighttime population of 1,400. Ninety-three percent of Irwindale's land is zoned for heavy industry.¹

Irwindale is known for its gravel mining industry, which has supplied the gravel and sand that has built more than 70% of the roads in California. Mining has occurred in the area for more than 100 years, and some of the gravel pits have been continuously operated for over 75 years.² Irwindale has 17 gravel pits, of which seven are active quarries.³ The others are inert landfills, have been reclaimed, or sit dormant.⁴ In addition, there are four aggregate processing plants associated with the mining operations, each of which has a capacity of over 1,000 tons per hour.⁵ The annual production from the mining operations ranges from 9 to 18.5 million tons.⁶

II. PURPOSE OF THIS REPORT

Local residents have voiced concerns about how the gravel mining operations may be affecting the health of their families. In particular, they worry that the dust and other air pollution produced by the mining operations may be linked to respiratory and cardiopulmonary problems, such as asthma, lung cancer, strokes, and heart attacks. Parents are especially

¹City of Irwindale, *About Our City* (on line at: <http://www.irwindale.org/government.shtml>).

²Greystone, *City of Irwindale, Mining and Reclamation Impact Study, Vol. II*, 145 (March 1999).

³Greystone, *City of Irwindale, Mining and Reclamation Impact Study, Vol. I* (March 1999, revised). Although most sources indicate that there are seven active pits, in discussions with congressional staff, EPA and SCAQMD have indicated that there may be only six active pits. In addition, most sources reference a total of 17 pits, but the Regional Water Quality Control Board identifies 18. See *Water Quality Data for Gravel Pits in the City of Irwindale and Immediately Adjacent Areas that are Regulated by the Regional Board as Inert Landfills* (undated) (attachment to Letter from Dennis Dickerson, Executive Officer, California Regional Water Quality Control Board, Los Angeles Region to Nathan Lau, Region IX, US EPA (May 14, 2002) (hereinafter *Water Quality Data Document*)).

⁴Greystone, *City of Irwindale, Mining and Reclamation Impact Study, Vol. I* at 16 (March 1999, revised).

⁵*Id.*

⁶*Id.*

concerned about asthma, as approximately 6.6% of the children in the area suffer from this disease.⁷

In response to these concerns, Congresswoman Hilda L. Solis, who represents California's 32nd District, including Irwindale, Baldwin Park, Azusa, and El Monte, and Congressman Henry A. Waxman, the Ranking Member of the Committee on Government Reform, began an investigation. The Representatives asked the U.S. Environmental Protection Agency (EPA) to provide specific information on the health and environmental effects of gravel mining operations in and around the cities of Irwindale, Baldwin Park, Azusa, and El Monte, California. In addition, they asked the Special Investigations Division of the Government Reform Committee to work with Congresswoman Solis's staff to analyze the health and environmental impacts of the gravel mining operations.

Reps. Solis and Waxman wrote the U.S. Environmental Protection Agency on March 18, 2002, asking EPA to:

1. Identify and quantify the specific pollutants released to the air and water from the mining operations;
2. Provide all available monitoring data regarding air and water quality in the area;
3. Describe any air and water permit requirements applicable to the mining operations and the operations' compliance with such requirements; and
4. Estimate the cumulative exposures of residents of the identified area from all sources of air and water pollution in the area, and specifically from releases associated with gravel mining operations.⁸

EPA responded on June 28, 2002, by providing a variety of information held by EPA and the State of California related to the mining operations and environmental conditions in the area.⁹

⁷See Department of Health Services, County of Los Angeles, *Key Indicators of Public Health by Service Planning Area, 1999/2000*. This source states that 6.6% of children ages 0-17 in Service Planning Area 3 had asthma in 1999. *Id.* This figure is based on children who have been diagnosed by a provider with asthma and who have had an asthma episode/attack within the last 12 months. *Id.* Service Planning Area 3 includes the following localities: Pasadena, Arcadia, Azusa, Alhambra, El Monte, San Dimas, Pomona, Diamond Bar, and Irwindale. *Id.*

⁸Letter from Rep. Henry A. Waxman and Rep. Hilda L. Solis to Christine Todd Whitman, Administrator, U.S. EPA (March 18, 2002).

⁹See Letter from Edward D. Krenik, Associate Administrator, U.S. EPA to Rep. Henry A. Waxman and Rep. Hilda L. Solis (June 28, 2002) (hereinafter EPA June 28 Response).

However, the agency's response gave little context for the information, conducted virtually no analysis, and failed to answer the specific questions posed by Congresswoman Solis and Congressman Waxman. Thus, the Special Investigations Division and Rep. Solis's staff supplemented the information through inquiries to the local air pollution regulatory authority, the South Coast Air Quality Management District (SCAQMD), and the local water pollution control authority, the California Water Quality Control Board for the Los Angeles Region ("Regional Board").

This report summarizes what was learned during the course of the investigation.

III. FINDINGS

The results of this investigation indicate that the mining operations are likely to have effects on health and the environment in the Irwindale area. However, there is a disturbing lack of specific information on this matter. Neither the state nor EPA appear to have certain basic information about the environmental effects of the operations. In the absence of such basic information, it is impossible to assess either the cumulative environmental impacts of the mining operations or the risks such cumulative impacts may pose to the health of local residents.

A. The Mining Operations Contribute to Air Pollution in the Irwindale Area

Irwindale and the surrounding communities are located in an area that currently exceeds the National Ambient Air Quality Standards for two air pollutants: fine particulate matter (PM_{2.5}) and ozone (commonly known as smog).¹⁰ EPA regulates two sizes of particulate matter, PM₁₀ and PM_{2.5}. Since 1988, PM_{2.5} levels measured at the Azusa monitor have consistently exceeded limits recently adopted by EPA and the state.¹¹ Prior to 1995, there were violations of the particulate matter (PM₁₀) standard in the area.¹² With respect to smog, the Los Angeles basin has long suffered from some of the worst ozone pollution in the country.

The health effects linked to PM_{2.5} include alterations in lung tissue, lung structure, and respiratory tract defense mechanisms; decreased lung function, particularly in children and individuals with asthma; and increased respiratory symptoms and disease, particularly in children

¹⁰Indications of violations of the new PM_{2.5} standard are still preliminary, as EPA has not yet designated areas as nonattainment for PM_{2.5}.

¹¹See U.S. EPA, *EPA Aerometric Information Retrieval System (AIRS), Air Quality Subsystem, Quick Look Report* (March, 28, 2002) (EPA June 28 Response).

¹²U.S. EPA, *Table A, General Information*, at 4 (EPA June 28 Response).

and individuals with cardiopulmonary disease, such as asthma.¹³ PM_{2.5} is associated with tens of thousands of premature deaths and tens of thousands of increased hospital admissions and emergency room visits, primarily in the elderly and individuals with cardiopulmonary disease.¹⁴

Ozone is a powerful respiratory irritant, which can cause shortness of breath, chest pain, and wheezing and coughing.¹⁵ Exposure to ambient ozone concentrations has been linked to increased hospital admissions for respiratory ailments, such as asthma.¹⁶ Repeated exposure to ozone can make people more susceptible to respiratory infection and lung inflammation, and can aggravate preexisting respiratory diseases, such as asthma.¹⁷ Children are most at risk from exposure to ozone because they are active outside, playing and exercising, during the summertime when ozone levels are at their highest.¹⁸ Long-term exposures to ozone can cause repeated inflammation of the lung, impairment of lung defense mechanisms, and irreversible changes in lung structure, which could lead to premature aging of the lungs or chronic respiratory illnesses such as emphysema and chronic bronchitis.¹⁹

In addition, there are relatively high levels of toxic air pollutants throughout the Los Angeles basin, which result in an elevated cancer risk for residents. According to the Multiple Air Toxics Exposure Study II (MATES-II), the lifetime risk of cancer from toxic air pollutants in the Los Angeles basin is over one in 1,000, which is generally considered an unacceptable level

¹³U.S. EPA, *EPA's Revised Particulate Matter Standards* (July 17, 1997) (Fact Sheet) (available on line at: <http://www.epa.gov/ttn/oarpg/naaqsfm/pmfact.html>).

¹⁴U.S. EPA, *EPA's Revised Particulate Matter Standards* (July 17, 1997) (fact sheet) (available on line at: <http://www.epa.gov/ttn/oarpg/naaqsfm/pmfact.html>); U.S. EPA, Office of Air Quality Planning and Standards, *Update on Implementation Programs for 8-Hour Ozone and Fine Particle Standards* (May 1, 2002) (briefing for Senate and House Staff).

¹⁵American Lung Association, *American Lung Association Fact Sheet, Ozone Air Pollution* (April 2000 update) (on line at: http://www.lungusa.org/air/ozone_factsheet00.html).

¹⁶U.S. EPA, *EPA's Revised Ozone Standard* (July 17, 1997) (fact sheet) (available on line at: <http://www.epa.gov/ttn/oarpg/naaqsfm/o3fact.html>).

¹⁷*Id.*

¹⁸*Id.*

¹⁹*Id.*

of carcinogenic risk.²⁰ The sites with the greatest risk levels are in south-central and east-central Los Angeles County, and the latter area includes Irwindale and the surrounding communities.²¹

The mining operations contribute to all of these air pollution problems. Moreover, given the scale and particular activities of the operations, the contribution is probably significant.

The gravel mining and processing produce large quantities of particulate matter from activities such as blasting, digging, crushing, screening, and conveying aggregate over haul roads.²² Open pit excavations, such as the operations being carried out in this region, are commonly done with power shovels, drag lines, front end loaders, and bucket wheel excavators.²³ The mined material is transported to the processing plant, where it may be conveyed, screened, crushed, and stored, before being transported again.²⁴ The particulate matter produced includes both PM₁₀ and PM_{2.5}. SCAQMD provided a very rough estimate that 20 tons per year of particulate matter (size unspecified) may be emitted from these gravel mining operations, exclusive of heavy machinery emissions (it is unclear whether emissions from processing are included in this estimate).²⁵

The heavy machinery and heavy-duty trucks used in mining and transporting gravel are fueled by diesel and emit harmful air pollutants.²⁶ These include additional particulate matter, as well as nitrogen oxides (NO_x) and hydrocarbons, which combine in the atmosphere to form ozone, and carbon monoxide. The quantity of these emissions is likely to be high. For example, SCAQMD estimated that there might be 800,000 annual truck trips associated just with hauling

²⁰See SCAQMD, *Final Multiple Air Toxics Exposure Study II (MATES-II)*, ES-3 (undated) (EPA June 28 Response) (available on line at: <http://www.aqmd.gov/matesiidf/matestoc.htm>).

Carcinogenic risk in this context refers to the increased probability that an individual exposed to an average air concentration of a chemical will develop cancer when exposed over 70 years. *Id.* at ES-2.

²¹See *id.* at ES-5.

²²U.S. EPA, *Compilation of Air Pollutant Emission Factors, AP-42, Fifth Edition, Volume 1: Stationary Point and Area Sources, Chapter 11: Mineral Products Industry*, 11.19.1-3 (Jan. 1995, updated 2001) (available on line at: www.epa.gov/ttn/chief/ap42/ch11/final/c11s19-1.pdf).

²³*Id.* at 11.19.1-1.

²⁴*Id.* at 11.19.1-3.

²⁵*Azusa/Irwindale Aggregate Information* (May, 2002), Attachment to Letter from David E. Schwien, SCAQMD to Gerardo Rios, U.S. EPA (May 2, 2002) (EPA June 28 Response).

²⁶See *id.* at 2.

an assumed 20 million tons of materials off site.²⁷ The actual number may be even higher, as a study commissioned by the city of Irwindale estimates that the mining operations generate around 3,902 truck trips per day.²⁸ Using the conservative assumption that the plants operate five days a week, this would amount to over one million truck trips per year.

The mining operations' heavy machinery and heavy-duty trucks also appear to be a significant source of toxic air pollutants. The particulates formed by burning diesel are toxic. The MATES-II study attributes about 70% of the risk from air toxics in the area to diesel particulate emissions. This year, EPA formally identified diesel engine exhaust as "likely to be carcinogenic to humans by inhalation" for lung cancer, "based on the totality of evidence from human, animal, and other supporting studies."²⁹

B. Federal and State Regulators Lack Basic Information about the Magnitude and Effect of the Air Emissions from the Mining Operations

Despite indications that the mining operations emit large quantities of air pollutants, none of the regulatory agencies were able to provide data on the local impacts of these emissions. The regulators could not identify all of the air pollutants emitted by these operations, could not quantify the pollutants, and do not appear to be exercising adequate oversight of these emitting activities.

1. EPA Did Not Identify the Full Set of Air Pollutants Associated with the Mining Operations

The mining operations disturb the land, convey materials, process materials, and operate heavy machinery and vehicles, all of which generate air pollution. As EPA points out, the first step for conducting any assessment of cumulative exposures to these sources of pollution is to "Identify Compounds of Potential Concern (COPCs) associated with the specific activity under study (i.e., determine which compounds are used or present and therefore available for potential release into the environment)."³⁰ However, EPA was unable to identify a complete list of air pollutants released by the mining operations.

²⁷*See id.*

²⁸Greystone, *City of Irwindale, Mining and Reclamation Impact Study, Vol. II* at 23 (March 1999).

²⁹U.S. EPA, *Health Assessment Document for Diesel Engine Exhaust*, 1-4 to 1-5 (May 2002) (EPA/600/8-90/057F) (available on line at: <http://cfpub.epa.gov/ncea/cfm/recordisplay.cfm?deid=29060>).

³⁰U.S. EPA, *Cumulative Exposure Assessment re: Gravel Mining Operations in the Azusa, Baldwin Park, El Monte, Irwindale Area*, 1 (undated) (EPA June 28 Response).

2. Little Information Is Available on the Quantity of Air Pollutants Released by the Mining Operations

Similarly, EPA and the local air pollution authority, the South Coast Air Quality Management District, were unable to identify the quantity of pollutants released by the mining operations. The lack of information on the quantity of emissions appears to stem from problems in identifying the facilities, the fact that the facilities generally do not report their emissions, and the fact that the regulators appear to conduct little monitoring of emissions from the mining operations. As a consequence of this absence of data, EPA and SCAQMD do not know and cannot estimate the degree to which the mining operations contribute to local air quality problems.

The state does have some extremely limited emissions information for a few years from some facilities that conduct mining or processing.³¹ However, from the information provided, it is impossible even to identify the complete list of mining and processing facilities. Many of the facilities' names and addresses do not match up across the various materials provided by EPA, making it impossible to compare or correlate information.³² It is not clear whether all of the mining and processing facilities are listed in the state's database or SCAQMD's records. Of those facilities in the database that can be identified as associated with mining, many have no air emissions information available.³³ It is also entirely unclear which of the facilities listed are the mine sites, which are processing plants, and which are both.

It appears that the mining operations conduct little or no monitoring and reporting of the air emissions that they produce through mining-specific activities. The aggregate processing plants, which are associated with the mining operations, appear to provide the state with some emissions data, but it is not clear whether this data is comprehensive, accurate, or timely.

³¹See *List of Aggregate Processors*, attachment to Letter from David E. Schwien, SCAQMD to Gerardo Rios, U.S. EPA (May 2, 2002) (EPA June 28 Response); California Air Resources Board, *California Emission Inventory Data* (undated) (EPA June 28 Response) (on line at: <http://arbis.arb.ca.gov/emisinv/disclaim.htm>); U.S. EPA, *Tables B-1 through B-17* (EPA June 28 Response).

³²See *id.*

³³See, e.g., *List of Aggregate Processors*, attachment to Letter from David E. Schwien, SCAQMD to Gerardo Rios, U.S. EPA (May 2, 2002) (EPA June 28 Response); U.S. EPA, *Tables B-1 through B-17* (EPA June 28 Response). For example, EPA indicates that SCAQMD has records of only five of the 17 facilities that EPA lists. U.S. EPA, *Tables B-1 through B-17* (EPA June 28 Response).

For example, one document from the SCAQMD purports to be a list of aggregate processors, which may include both mine sites and processing plants.³⁴ Roughly half of the names provided have no associated information.³⁵ Furthermore, of the fourteen entities listed as “active,” annual emissions quantities are provided for only seven.³⁶ Also, of the emissions information provided, five entities have emissions quantities listed for PM (ranging from 1 to 15 tons), one lists emissions of nine tons of NO_x, and three have listed quantities for CO emissions (ranging from 1 to 1.5 tons).³⁷ The document indicates generally that this data is from 1998-1999 and 1999-2000, but does not identify the year in which a listed quantity was emitted.³⁸ A separate document from SCAQMD states that “the lack of other information indicates that all other facilities are below the reporting threshold.”³⁹ However, the poor quality of the available data provides no assurance that this is in fact the case.

SCAQMD provided a very rough estimate that the gravel mining operations may be emitting 20 tons per year of particulate matter, although SCAQMD did not specify whether this estimate covers PM_{2.5}, PM₁₀, or both.⁴⁰ This estimate does not include emissions from operation of heavy machinery or trucks, and it is unclear whether the estimate includes emissions from processing.⁴¹ This estimate was based on the assumption of a 20 million ton per year average throughput, but no basis for this assumption or any indication of its likely accuracy was provided.⁴² SCAQMD provided no estimate of the quantity of emissions of any pollutants from the heavy machinery and trucks, and no information on even the relative size of the contributions from these sources.

³⁴*List of Aggregate Processors*, Attachment to Letter from David E. Schwien, SCAQMD to Gerardo Rios, U.S. EPA (May 2, 2002) (EPA June 28 Response).

³⁵*Id.*

³⁶*Id.*

³⁷*Id.*

³⁸*See id.*

³⁹*Azusa/Irwindale Aggregate Information at 2* (May, 2002), Attachment to Letter from David E. Schwien, SCAQMD to Gerardo Rios, U.S. EPA (May 2, 2002) (EPA June 28 Response).

⁴⁰*Id.*

⁴¹*Id.*

⁴²*See id.*

EPA provided state data on the total 2001 estimated annual average emissions in the South Coast Air Basin from a category of activities termed “mineral processes.”⁴³ The total for PM is 4.91 tons/day, or 1,792.15 tons annually.⁴⁴ There is no indication of the basis for these estimates, what specific activities are considered mineral processes, or what percentage of these emissions might come from the Irwindale, Baldwin Park, Azusa, and El Monte area.

A 1991 study by the SCAQMD measured levels of fugitive dust emissions from three of the gravel mining operations and found that all three had high levels of dust, which exceeded regulatory limits.⁴⁵ There is no indication as to whether any monitoring of fugitive dust emissions has been conducted in the past decade.

There is also no other monitoring data available that directly reflects the emissions of the mining operations. The nearest air quality monitor is located in a canyon on the border of Duarte and Azusa, well over one mile northeast from the closest active gravel operation. Regional air generally flows in a southwesterly direction, which means that the Azusa monitor is unlikely to register accurately emissions from the mining operations.⁴⁶ Other air monitoring stations are in Burbank (northwest of Irwindale), Los Angeles (west of Irwindale), Long Beach (35 miles southwest of Irwindale), Riverside (southeast of Irwindale), Fontana (east of Irwindale) and Upland (east of Irwindale), as illustrated on the map below.⁴⁷ SCAQMD and EPA note that monitoring for particulate matter from a specific source should be as site-specific as possible.⁴⁸ It does not appear that readings from any of the air quality monitors in the Los Angeles basin could be used to accurately estimate particulate emissions from any of the gravel mining operations.

⁴³California Air Resources Board, *Emissions by Category: 2001 Estimated Annual Average Emissions, South Coast Air Basin* (on line at: http://www.arb.ca.gov/app/emisinv/emssumcat_query.php).

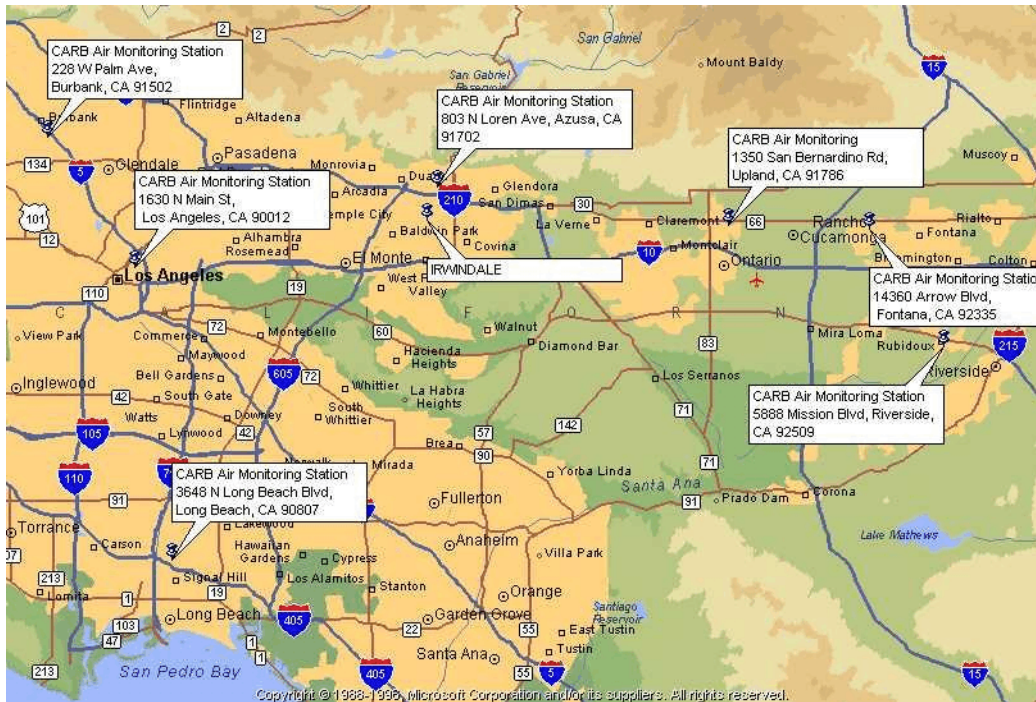
⁴⁴*Id.*

⁴⁵SCAQMD, *Report of the Micrometeorological and Ambient Air Quality Monitoring Conducted in Azusa in the Vicinity of Azusa Rock, Inc.* (Feb. 1993) (EPA June 28 Response). Fugitive dust is dust that does not originate from a point source, such as a smokestack, but from nonpoint sources, such as unpaved roads and storage piles.

⁴⁶See SCAQMD, *Report of the Micrometeorological and Ambient Air Quality Monitoring Conducted in Azusa in the Vicinity of Azusa Rock, Inc.* (Feb. 1993) (EPA June 28 Response).

⁴⁷See e-mail from Gerry Hyatt, U.S. EPA to staff, Rep. Hilda L. Solis, Aug. 28, 2002 (map attached).

⁴⁸See Letter from U.S. EPA, Region IX to James Kenna, Field Manager, Bureau of Land Management, Soledad Canyon DEIS EPA Comments, 3 (Jan. 6, 2000) (EPA June 28 Response). See also SCAQMD, *Final Multiple Air Toxics Exposure Study II (MATES-II)*, ES-6 (undated) (EPA June 28 Response) (available on line at: <http://www.aqmd.gov/matesiidf/matestoc.htm>).



3. Air Quality Regulators Appear to Exercise Little Oversight of the Mining Operations

In large part, the absence of data on air emissions from the mining operations appears to result from inadequate regulatory oversight of these operations. As a general matter, large industrial sources of air pollution must comply with federal and state requirements under the Clean Air Act. Generally, an entity subject to these requirements must obtain permits that specify limits on the entity's releases of air pollution. Entities are usually also required to monitor their compliance with permit limitations and report their compliance and pollution releases in some manner. These requirements allow the regulatory agency to evaluate the impact of each facility's operations on the environment. The regulatory agency is also able to monitor the facility's compliance with the permit limitations and enforce the regulatory requirements where necessary. In addition, this type of regulatory approach generates information that the public can use to understand the effects of industries on the environment and the health of local communities.

Despite the size and number of the mining operations in the Irwindale area, however, they appear to be subject to little state or federal environmental regulatory oversight. This may stem from a combination of gaps in the regulatory requirements, a lack of emphasis on these operations by the regulatory agencies, and, perhaps, noncompliance by the facilities.

The federal Clean Air Act requires major stationary sources of air pollution to hold operating permits under Title V.⁴⁹ None of the gravel mining operations, however, currently hold Title V permits.⁵⁰ The information provided by EPA does not indicate whether any of these facilities are required to hold Title V permits.

State law does not require an air pollution permit for the activity of mining, even though actions such as blasting and transporting material may generate substantial emissions.⁵¹ The air pollution permit requirements do apply, however, to installation and use of equipment “which may cause the issuance of air contaminants.”⁵² According to SCAQMD staff, all gravel processing facilities, but not the mining operations, must hold a permit to operate under these state law provisions.⁵³

The application of these state permitting requirements to the mining operations in the Irwindale area is confusing and appears inconsistent. For example, of the 17 gravel mining operations identified by EPA (some of which are inactive), EPA found three that EPA could confirm held SCAQMD permits.⁵⁴ EPA found four additional facilities listed as holding SCAQMD permits that EPA believes may be mining operations but could not match definitively with any of the 17 identified operations.⁵⁵ A SCAQMD document lists 32 aggregate processors, of which it indicates that 16 are listed under the SCAQMD permit program.⁵⁶ It is unclear from this information whether all of the processing facilities hold operating permits as required.

⁴⁹Telephone conversation between congressional staff and Robert Baker, Region IX, U.S. EPA (Oct. 16, 2002).

⁵⁰See U.S. EPA, *Tables B-1 through B-17* (EPA June 28 Response).

⁵¹Telephone conversation between congressional staff and Rod Millican, SCAQMD (Oct. 10, 2002).

⁵²SCAQMD, Rule 203 (on line at: <http://www.aqmd.gov/rules/rulesreg.html>).

⁵³Telephone conversation between congressional staff and Rod Millican, SCAQMD (Oct. 10, 2002).

⁵⁴See U.S. EPA, *Tables B-1 through B-17* (EPA June 28 Response). For two additional facilities, EPA indicates that a permit or document is “available,” but also states that there is “no record at AQMD under this site name or owner address,” which suggests that the notation regarding permit availability is an error. See *id.* at Table B-11, Table B-12.

⁵⁵See U.S. EPA, *Table C, Non-Specific Facility Information* (EPA June 28 Response).

⁵⁶See *List of Aggregate Processors*, Attachment to Letter from David E. Schwien, SCAQMD to Gerardo Rios, U.S. EPA (May 2, 2002) (EPA June 28 Response).

SCAQMD staff also stated that some permits specify permitted pollution limits, while others (primarily older permits) simply require the facility to comply with applicable requirements.⁵⁷

In addition to the federal and state permit requirements, the city of Irwindale has authority to require air quality monitoring in granting a conditional use permit, which most of the mines must obtain from the city pursuant to the city's zoning law.⁵⁸ However, it does not appear that the city has used its authority to impose any air quality-related requirements in permitting these operations.

Regardless of whether a mining operation is required to obtain an air pollution-related operating permit, under state law these operations must still comply with fugitive dust requirements.⁵⁹ The fugitive dust rule prohibits emissions of dust and PM₁₀ above specified levels and requires the use of best available control measures to minimize fugitive dust emissions.⁶⁰ A gravel mine may meet these requirements by complying with a fugitive dust emissions control plan prepared by the facility and approved by SCAQMD.⁶¹ It does not appear that the facility is required to monitor, keep records, or report under a fugitive dust control plan. It is unclear whether regulators could require any such elements in a fugitive dust control plan as a condition of approval, but such an approach might well be within SCAQMD's discretion.

There are also indications that regulators may not be vigorously enforcing other applicable requirements, although the available information is again inadequate to make a definitive determination. A SCAQMD document states that "all of the facilities in operation" are inspected "regularly," but does not indicate the frequency of such inspections or what they entail.⁶² Another source states that all SCAQMD monitoring of mining operations is done in response to complaints, which calls into question the regularity of inspections.⁶³ For example, SCAQMD found violations of fugitive dust requirements in 1991 through a detailed study that

⁵⁷Telephone conversation between congressional staff and Rod Millican, SCAQMD (Oct. 10, 2002).

⁵⁸Greystone, *City of Irwindale, Mining and Reclamation Impact Study, Vol. II* at 8, 73 (March 1999).

⁵⁹*Id.*; SCAQMD, Rule 403 (on line at: <http://www.aqmd.gov/rules/rulesreg.html>).

⁶⁰SCAQMD, Rule 403(d) (on line at: <http://www.aqmd.gov/rules/rulesreg.html>).

⁶¹SCAQMD, Rule 403(f) (on line at: <http://www.aqmd.gov/rules/rulesreg.html>).

⁶²*List of Aggregate Processors*, Attachment to Letter from David E. Schwien, SCAQMD to Gerardo Rios, U.S. EPA at 3 (May 2, 2002) (EPA June 28 Response).

⁶³Greystone, *City of Irwindale, Mining and Reclamation Impact Study, Vol. II* at 72 (March 1999).

monitored pollutant concentrations upwind and downwind of several gravel mining operations.⁶⁴ There is no indication that SCAQMD has conducted any similar monitoring since then. It is also unclear whether “inspections” would be sufficient to uncover most violations of the fugitive dust limits.

The only compliance information available is a list of violations for aggregate processors that appears to cover the period from 1986 through 2002.⁶⁵ Twenty-four violations relate to operating without a permit, usually with respect to a specific piece of equipment on site.⁶⁶ Eighteen violations relate to emissions violations, such as violations of limits on opacity of emissions and fugitive dust requirements.⁶⁷ This list of violations does not appear to include the results of SCAQMD’s 1991 study, which measured levels of fugitive dust emissions from three of the gravel mining operations and found that all three were exceeding regulatory limits.⁶⁸

The city of Irwindale has also received complaints about dust from residents, but the complaints have not been regularly documented.⁶⁹ A 1999 study that was commissioned by the city recommended that Irwindale establish a monitoring program for dust from the mining operations.⁷⁰ It does not appear that the city has instituted any such monitoring, however.

C. Many of the Same Data Gaps Also Exist in the Case of Water Pollution from the Mining Operations

Residents of Irwindale and neighboring communities are also concerned about the impact of the mining operations on water quality in the area. However, there is a similar lack of information on the types and quantities of water pollutants emitted by the mining operations, which precludes any meaningful analysis of their overall effects on surface water and groundwater in the area.

⁶⁴SCAQMD, *Report of the Micrometeorological and Ambient Air Quality Monitoring Conducted in Azusa in the Vicinity of Azusa Rock, Inc.* (Feb. 1993) (EPA June 28 Response).

⁶⁵*List of Violations for Aggregate Processors*, Attachment to Letter from David E. Schwien, SCAQMD to Gerardo Rios, U.S. EPA (May 2, 2002) (EPA June 28 Response).

⁶⁶*See id.*

⁶⁷*See id.* Limits on particulate matter emissions are sometimes set based on a permissible opacity (essentially darkness) of the emission plume.

⁶⁸SCAQMD, *Report of the Micrometeorological and Ambient Air Quality Monitoring Conducted in Azusa in the Vicinity of Azusa Rock, Inc.* (Feb. 1993) (EPA June 28 Response).

⁶⁹Greystone, *City of Irwindale, Mining and Reclamation Impact Study, Vol. II* at 81 (March 1999).

⁷⁰*Id.*

With respect to water quality, the most significant problem in the Irwindale area is that much of the groundwater is contaminated with toxic chemicals, specifically volatile organic compounds (VOCs), including carbon tetrachloride, perchlorate, and tetrachloroethene, among others.⁷¹ There are four areas in the San Gabriel Valley that have been designated as Superfund sites based on this groundwater contamination.⁷² Samples from drinking water wells in the area show VOC levels above EPA's drinking water standards, but the water is treated or diluted to meet drinking water standards before delivery to customers.⁷³ None of the materials provided by EPA indicate that the mining operations are a source of the VOCs in the groundwater, but EPA also did not address whether the mining operations might contribute in some part to the contamination problems.

The issue of groundwater contamination is of particular concern in this instance because the Irwindale area is highly sensitive to groundwater contamination. The ground there is highly permeable, the aquifer system has very rapid flow characteristics, and the area is upgradient relative to downstream water users.⁷⁴ In addition, the mining operations can increase the flow of any contamination by penetrating different aquifers and allowing mixing.⁷⁵

1. EPA Did Not Identify the Water Pollutants Associated with the Mining Operations

As with air emissions, EPA's response does not identify the types of pollutants that the mining operations might release to ground or surface water. Possible sources of releases to ground or surface water could include rainwater running off piles of waste or aggregate, leaks

⁷¹See Harding ESE, *Vertical Distribution of Carbon Tetrachloride, Cross Section A-A', Baldwin Park Operable Unit, San Gabriel Basin, California*, Figure 27 (Oct. 2001) (EPA June 28 Response); Harding ESE, *Vertical Distribution of Perchlorate, Cross Section A-A', Baldwin Park Operable Unit, San Gabriel Basin, California*, Figure 31 (Oct. 2001) (EPA June 28 Response); Harding ESE, *Vertical Distribution of Tetrachloroethene, Cross Section A-A', Baldwin Park Operable Unit, San Gabriel Basin, California*, Figure 35 (Oct. 2001) (EPA June 28 Response); U.S. EPA, Region 9 GIS Center, *San Gabriel Valley, Los Angeles County, CA* (June 2002) (map showing 1997 VOC plume) (EPA June 28 Response).

⁷²See U.S. EPA, Region 9 GIS Center, *San Gabriel Valley, Los Angeles County, CA* (May 2002) (map showing National Priority List Superfund Sites) (EPA June 28 Response).

⁷³San Gabriel Valley Central District, *Congressman Waxman Files* (undated) (EPA June 28 Response).

⁷⁴Greystone, *City of Irwindale, Mining and Reclamation Impact Study, Vol. II* at 86, 88-89 (March 1999).

⁷⁵Greystone, *City of Irwindale, Mining and Reclamation Impact Study, Vol. II* at 89 (March 1999).

and spills from heavy machinery and fuel tanks, the substances used for dust control, water washing discharges at processing plants, and leachate from fill placed in the pits.⁷⁶ Because a number of the mining operations have quarried close to or below the level of the water table, any releases into or near these pits could swiftly reach groundwater supplies with little or no soil filtration.⁷⁷ Where the water table is exposed, there is heightened potential for direct contamination through accidents or illegal dumping.⁷⁸ In addition, many of the inactive pits are being used as landfills for inert materials, which poses the risk that liquid leaching from the landfill may contaminate groundwater. The information provided gives almost no indication of the types of pollutants that might be released through these routes.

2. Little Information Is Available on the Quantity of Water Pollutants Released by the Mining Operations

Similarly, there is little information available regarding the quantity of pollutant releases to surface water or ground water from the mining operations. Potentially, pollutant releases could affect water quality through surface stormwater runoff, releases to exposed groundwater in the pits, or releases at the surface that seep into the groundwater in the area.⁷⁹

According to the Regional Board staff, only a few sites have indicated that they have any stormwater runoff.⁸⁰ These sites monitor very infrequently (less than once a year).⁸¹ EPA did not provide any information regarding the constituents or quantities of stormwater runoff from the mining operations.

⁷⁶See Greystone, *City of Irwindale, Mining and Reclamation Impact Study, Vol. I* at 23 (March 1999, revised); Kitsap, Washington, Public Utility District, *Ground Water Management Plan, Volume IV, Issue Paper: Sand and Gravel Mining* (May 20, 1997) (on line at: [//www.kpud.org/reference/documents/sandgrav.pdf](http://www.kpud.org/reference/documents/sandgrav.pdf)).

⁷⁷See Greystone, *City of Irwindale, Mining and Reclamation Impact Study, Vol. I* at 23 (March 1999, revised).

⁷⁸Greystone, *City of Irwindale, Mining and Reclamation Impact Study, Vol. II* at 110 (March 1999).

⁷⁹See Kitsap, Washington, Public Utility District, *Ground Water Management Plan, Volume IV, Issue Paper: Sand and Gravel Mining* (May 20, 1997) (on line at: www.kpud.org/reference/documents/sandgrav.pdf).

⁸⁰Telephone conversation between congressional staff and Dennis Dickerson, Executive Officer, California Regional Water Quality Control Board, Los Angeles Region (Oct. 10, 2002).

⁸¹*Id.*

Several of the active pits have dug beneath the level of the water table and have exposed groundwater. One of these has created a lake covering several hundred acres.⁸² The groundwater monitoring wells for this facility have not detected any groundwater contamination.⁸³ However, one sampling of the exposed groundwater found low concentrations of MTBE.⁸⁴ The Regional Board believes that this pollution probably resulted from uses of the lake not associated with mining operations.⁸⁵ EPA's response does not indicate whether any of the other active pits are conducting groundwater monitoring.

A document from the Regional Board lists eight inactive pits that the Regional Board regulates as inert landfills.⁸⁶ Of these, groundwater monitoring data is available for five pits.⁸⁷ Of these five pits, the document indicates that two do not have groundwater contamination and a third probably does not have groundwater contamination.⁸⁸ The document does not indicate the results of the groundwater monitoring from the fourth pit.⁸⁹ The landfill at the fifth pit is a lesser contributor to heavily contaminated groundwater that is being addressed as a Superfund site.⁹⁰ This landfill is currently being remediated.⁹¹

Of the three listed inactive pits without groundwater monitoring data, two have exposed groundwater in the pit.⁹² Testing data from 1993 to 1996 for those pits indicated that the exposed

⁸²California Regional Water Quality Control Board, Los Angeles Region, *Water Quality Data for Gravel Pits in the City of Irwindale and Immediately Adjacent Areas that are Regulated by the Regional Board as Inert Landfills* (undated) (attachment to Letter from Dennis Dickerson, Executive Officer, California Regional Water Quality Control Board, Los Angeles Region to Nathan Lau, Region IX, US EPA (May 14, 2002) (EPA June 28 Response)) (hereinafter *Water Quality Data Document*).

⁸³*Id.*

⁸⁴*Id.*

⁸⁵*Id.*

⁸⁶*Id.*

⁸⁷*Id.*

⁸⁸*Id.*

⁸⁹*Id.*

⁹⁰*Id.*

⁹¹*Id.*

⁹²*Id.*

groundwater was not contaminated at that time.⁹³ There is no more recent data available.⁹⁴ No data is available for the third pit.⁹⁵

In addition, EPA provided information on discharges from one of the gravel processing plants.⁹⁶ No information was provided on discharges from the other processing plants. The Cemex processing plant, which is an aggregate and concrete batch plant, discharges up to 1.9 million gallons per day of wastewater consisting of sand and gravel wash waters, truck wash out waters, and truck wash off waters.⁹⁷ The wastewater is discharged to unlined percolation and evaporation ponds.⁹⁸ According to the information provided, the facility's operations use "small amounts of chemical products" that "do not adversely impact the effluent discharges to groundwater" and "do not contribute any additional pollutants to the groundwater."⁹⁹ The groundwater that the plant is using for washwater is from an aquifer that is already contaminated, so although the wastewater from the plant is contaminated, it is not clear how much, if any, pollution is added by the processing plant.¹⁰⁰

The Regional Board states that "all of these [mining] sites are located within the San Gabriel Valley Superfund study area, where past impacts from industrial activities unrelated to mining and landfilling operations have severely degraded the quality of the ground water, making any impacts from the gravel mining operations more difficult to determine. However, in some cases it appears that there may be some increase in inorganic constituents such as sulfates and chlorides that are possibly related to gravel mining operations."¹⁰¹ The Regional Board and EPA provided no additional information on the manner in which or the degree to which the mining operations might be contributing to these water quality problems.

⁹³*Id.*

⁹⁴*See id.*

⁹⁵*Id.*

⁹⁶*Cemex California Aggregates, Inc. (Southdown, Inc.) – Azusa Plant* (May 9, 2002) (EPA June 28 Response).

⁹⁷*Id.*

⁹⁸*Id.*

⁹⁹*Id.*

¹⁰⁰*Id.*

¹⁰¹Letter from Dennis Dickerson, Executive Officer, California Regional Water Quality Control Board, Los Angeles Region to Nathan Lau, Region IX, U.S. EPA (May 14, 2002) (EPA June 28 Response).

Overall, as with the air emissions, there appears to be little direct measurement of discharges of water pollutants from mining operations, including processing plants. Potential discharges from pits that are operating as inert landfills are tracked through monitoring groundwater quality at some but not all of the inactive pits. Groundwater monitoring is also occurring at perhaps only one of the active pits. The inadequate data makes it impossible to quantify the pollution released to groundwater and surface water from the gravel mining operations.

3. Water Quality Regulators Appear to Exercise Little Oversight of the Mining Operations

Discharges to surface water or groundwater are regulated by the Regional Water Quality Control Board. As with the air emissions, many aspects of the mining operations appear to fall through regulatory cracks, to be exempted through regulatory discretion, or to escape enforcement activity.

The act of digging a gravel mine, even into the water table, is not regulated under water pollution control authorities, as disturbance alone is not sufficient to constitute a discharge.¹⁰² The California Surface Mining and Reclamation Act requires mines to develop a reclamation plan and obtain a permit from the “lead agency,” in this case the city of Irwindale, prior to mining.¹⁰³ However, mines that began operation before 1976 do not have to obtain a permit, and although they must develop reclamation plans, the plans only apply to areas mined after 1976.¹⁰⁴ Most of the Irwindale mines began operation before 1976, and six do not have reclamation plans.¹⁰⁵ Also, where there are reclamation plans, they apparently generally do not focus on addressing potential water pollution impacts from the operation, even though regulators have authority to require reclamation plans to address water quality impacts if they chose to do so.¹⁰⁶

¹⁰²Telephone conversation between congressional staff and staff of the California Regional Water Quality Control Board, Los Angeles Region (Oct. 10, 2002).

¹⁰³California Public Resources Code § 2770.

¹⁰⁴California Public Resources Code § 2776. *See also* Greystone, *City of Irwindale, Mining and Reclamation Impact Study, Vol. II* at 115 (March 1999).

¹⁰⁵Greystone, *City of Irwindale, Mining and Reclamation Impact Study, Vol. II* at 121, 138 (March 1999).

¹⁰⁶*See* telephone conversation between congressional staff and staff of the California Regional Water Quality Control Board, Los Angeles Region (Oct. 10, 2002); *see, e.g.*, California State Mining and Geology Board Reclamation Regulations § 3706 (“[t]he quality of water, recharge potential, and storage capacity of ground water aquifers which are the source of water for domestic, agricultural, or other uses dependent on the water, shall not be diminished, except as allowed in the approved reclamation plan”), § 3710 (“[s]urface and groundwater shall be

It also appears that the city could address potential water quality impacts under the conditional use permits required for most of the mines under local zoning law, but the city does not seem to have focused on this in the conditional use permits.¹⁰⁷

If a mining operation discharges wastes to surface water, it must hold a National Pollutant Discharge Elimination System (NPDES) permit pursuant to the Federal Water Pollution Control Act. None of the mining operations hold individual NPDES permits, but three are covered by a general permit for stormwater discharges (i.e., run-off from the property due to precipitation), according to Regional Board staff.¹⁰⁸ Facilities without any surface flows that leave the property are not required to obtain a stormwater permit.¹⁰⁹ The presumption is that the other 14 facilities do not need to obtain coverage under the general stormwater permit. However, staff from the Regional Board indicated that they have not inspected those facilities to confirm that the facilities in fact have no run-off beyond the property boundaries.¹¹⁰ Regional Board staff indicated that facilities covered by the stormwater general permit are required to sample discharges very infrequently (only twice every five years for some facilities), but no information from any such sampling was provided.¹¹¹

The Regional Board also regulates discharges that may contaminate groundwater under the state waste discharge requirements (WDRs). In the case of these mining operations, WDRs may cover emplacement of fill in old mines, disposal of inert mining wastes back into a portion of the pit, and discharge of washwater from processing operations.¹¹² The Regional Board has substantial discretion to determine whether or not an activity must be regulated under a WDR to protect groundwater. The Regional Board has issued permits in the form of WDRs for eleven

protected from siltation and pollutants which may diminish water quality as required by the Federal Clean Water Act, sections 301 et seq. . . . 404 et seq. . . ., the Porter-Cologne Act, section 13000 et seq., County anti-siltation ordinances, the Regional Water Quality Control Board or the State Water Resources Control Board”).

¹⁰⁷See Greystone, *City of Irwindale, Mining and Reclamation Impact Study, Vol. II* at 121-142 (March 1999) (reviewing reclamation plans).

¹⁰⁸See Letter from Dennis Dickerson, Executive Officer, California Regional Water Quality Control Board, Los Angeles Region to Nathan Lau, Region IX, U.S. EPA (May 14, 2002) (EPA June 28 Response); Telephone conversation between congressional staff and staff of the California Regional Water Quality Control Board, Los Angeles Region (Oct. 10, 2002).

¹⁰⁹Telephone conversation between congressional staff and staff of the California Regional Water Quality Control Board, Los Angeles Region (Oct. 10, 2002).

¹¹⁰*Id.*

¹¹¹See *id.*

¹¹²See *Water Quality Data Document*.

gravel mining sites, of which one is an active mining operation.¹¹³ Apparently, the other six active mining operations do not have WDRs.

In the absence of a WDR or coverage under a stormwater permit, it does not appear that any pollutant discharges from a mining operation to surface water or groundwater are monitored or regulated. It is unclear how many mining facilities are not covered under either a WDR or the stormwater permit. EPA did not provide compliance records on whether facilities have violated their WDRs.¹¹⁴

D. Information about the Mining Operations Is Not Accessible to Local Residents

This investigation into the impact of the mining operations in and around Irwindale, Baldwin Park, Azusa, and El Monte also has revealed that the residents of this area have no effective access to information about the health and environmental effects of a dominant local industry. Not only do regulators lack information necessary to assess the overall health and environmental impacts of the mining operations, but even the minimal information cited in this report is not available to the affected communities.

This report is based on information held by numerous separate offices in local, state, and federal agencies. The basic data is dispersed and inaccessible. Even pursuant to a request from two Members of Congress to EPA, it took EPA over three months to gather the information and respond. An average citizen or community group would likely have experienced significantly more difficulty and delay in accessing the basic data.

Moreover, even for professional staff specializing in environmental law and regulation, the raw information provided by EPA was largely unintelligible without explanations and context, and virtually no such explanations were provided. Extensive follow-up with numerous agency personnel was required to obtain even minimal explanations of the information provided. Again, the need for environmental expertise and access to regulators to interpret the information effectively precludes an average citizen or community group from obtaining understandable information.

¹¹³Letter from Dennis Dickerson, Executive Officer, California Regional Water Quality Control Board, Los Angeles Region to Nathan Lau, Region IX, U.S. EPA (May 14, 2002) (EPA June 28 Response). In Tables B-1 through B-17 of EPA's response, however, EPA indicates that only seven of the 17 gravel mining operations have WDRs. U.S. EPA, *Tables B-1 through B-17* (EPA June 28 Response).

¹¹⁴EPA provided several groundwater monitoring reports from various facilities (without any supporting explanation or analysis), but without any information on the requirements in the WDRs, it is difficult to evaluate compliance based on such reports. See, e.g., *Appendix D Groundwater Database (Hanson Aggregates)* (Oct. 23, 2001) (EPA June 28 Response).

The result is that the residents of Irwindale and neighboring communities are denied important information necessary to assess the need for changes in the operation or regulation of the mines.

IV. **CONCLUSION**

It appears likely that the mining operations contribute significantly to air pollution in Irwindale and neighboring communities. But an accurate, comprehensive risk assessment of the effects of the gravel mining operations is currently not possible given the available data.

Data on pollutant releases from the mining operations to the air, surface water, and ground water does not exist, was not provided, or is outdated. Many of the mining operations do not appear to be required to report their air emissions or discharges to surface water or groundwater. There appears to be little direct monitoring of air emissions and water discharges from the gravel mines. Many of the mining operations do not appear to hold environmental permits for air emissions, water discharges, or both, which makes it difficult to discern what environmental standards apply to the facilities or whether they meet such standards.

Moreover, an average citizen or community group would be unlikely to have the access, expertise, and time to conduct the investigation necessary to obtain and analyze even the basic data used for this report. As a result, the people most directly affected by the gravel mining operations do not have access to any meaningful health and environmental information about a dominant industry in their community.