INITIAL STUDY

PROJECT TITLE: East Slag Pile Landfill Area Remedial Action Plan		**CALSTARS CODING**: PCA 11140 Site Code 400081 Work Phase 00
PROJECT LOCATION: 13301 San Bernardino Avenue	**CITY**: Fontana	**COUNTY**: San Bernardino
PROJECT SPONSOR: CCG Ontario, LLC	**CONTACT**: Karla Mika	**PHONE**: (949) 251-6164

APPROVAL ACTION UNDER CONSIDERATION BY DTSC:

☐ Initial Permit Issuance ☐ Permit Renewal ☐ Permit Modification ☐ Closure Plan
☐ Removal Action Workplan ☒ Remedial Action Plan ☐ Interim Removal ☐ Regulations
☐ Other (specify):

STATUTORY AUTHORITY:

☐ California H&SC, Chap. 6.5 ☒ California H&SC, Chap. 6.8 ☐ Other (specify):

DTSC PROGRAM/ ADDRESS: Southern California Cleanup Operations 5796 Corporate Avenue Cypress CA 90630	**CONTACT**: Greg Sweel	**PHONE**: (714) 484-5413

PROJECT DESCRIPTION:

The project involves the remediation of the East Slag Pile (ESP) Landfill Area, which is owned by CCG Ontario, LLC (CCG) and located within Operable Unit No. 3 on the former Kaiser Steel Mill site in Fontana, California. The project site is located approximately 40 miles east of downtown Los Angeles, 15 miles west of downtown San Bernardino, and 30 miles northeast of central Orange County. The ESP Landfill Area is located on a portion of the former Kaiser Steel Mill site in an unincorporated area of San Bernardino County, south of the foothills of the San Gabriel Mountains (Figure 1). It is bounded by Valley Boulevard to the south, a commercial warehouse to the west, Mulberry Ditch to the east, and the Consolidated Waste Cell, Chrome Ponds and Wastewater Treatment Plant to the north (Figure 2). The CCG draft Remedial Action Plan (RAP), January 2007, and the Health Risk Assessments (Shaw, 2006) are incorporated by reference.

Site Background and History

Operations at the former Kaiser Steel Mill included coke manufacturing, coke by-product recovery, iron production, primary steel production and steel finishing and fabricating operations. After the mill closed, the larger Kaiser Site was divided into four operable units pursuant to a 1988 Consent Order. Operable Units No. 1 and 2 have been remediated, and remedial action is pending in Operable Unit 4. The ESP Landfill Area is part of Operable Unit No. 3. The East Slag Pile, on which the ESP Landfill Area lies, was used to store slag, a by-product of iron and steel production, from the inception of plant operations in 1942 until 1983. Slag is a rock-like material consisting mostly of calcium oxide (lime).

A landfill operated on the surface of the East Slag Pile as early as 1943 to dispose of the industrial wastes generated by the steel mill. The ESP Landfill operated under California Solid Waste Management Board Permit No. 36-SS-018, issued on November 2, 1979. Waste Discharge Requirements for the facility were issued as Santa Ana Regional Water Quality Control Board (SARWQCB) Order No. 79-112, adopted on August 31, 1979. The site was permitted as a Class III landfill to receive inert wastes, including industrial inert solids, blast furnace gas washer water sludge, waste firebricks, construction debris, metal scraps, and wood. Very little waste was disposed of at the site after 1983, and no waste was accepted at the site after June 30, 1985; however, in 2001 and 2002 two instances where contaminated materials were relocated onsite during ongoing remediation activity. The first case involved materials encountered during aggregate-mining operations at the nearby West Slag Pile. Approximately 135,000 cubic yards of waste materials was placed over the ESP landfill. The second instance involved an area of dispersed waste removed from a lobe of discontinuous piles of waste material located in the northwestern portion of the landfill. Approximately 175,000 cubic yards of waste materials was placed over the ESP landfill.

Historical records indicate that approximately 59,100 cubic yards of blast furnace gas washer water sludge and 532,000 cubic yards of industrial wastes (including coke waste) were disposed of at the ESP Landfill. These wastes included the following types of sludges: limy; oily; and cooling tower sludges. The landfill also contains an estimated 600,000 cubic yards of other solid wastes (such as bricks, scrap metal, plastic, concrete rubble, wood, gravel, and soil). The total volume of waste within the landfill is approximately 1,510,000 cubic yards.

The ESP Landfill Area consists of a 25.5-acre landfill and a 10.9-acre surrounding area. The entire ESP Landfill Area is located on part of the ESP, a steep-sloped, flat-topped, man-made hill. The ESP covers approximately 90 acres. Several investigations of the ESP (Shaw, 2006) were conducted from 1989 to 2003, including a 1990 Phase I Remedial Investigation, a 1990 Water Quality Solid Waste Assessment Test, a 1990 and 1997 sampling and testing of landfill waste, a 1990 Phase 2 Remedial Investigation, a 2000 Supplemental Investigation of ESP Waste Management Unit Western Boundary, and a 2003 Landfill Soil-Gas Survey.

Borings extending 20 feet below the landfill and into native soils have been analyzed for pH, cyanide, metals, polychlorinated biphenyls (PCBs), polycyclic aromatic hydrocarbons (PAHs), electrical conductivity and chloride. Surface soils have been analyzed for pH, electrical conductivity, cyanide, metals, and PAHs. No organic chemicals were detected in the native soil samples. Levels of some metals (lead and zinc) exceed hazardous waste criteria in samples collected from sludge waste. The concentrations of metals routinely associated with slag, particularly chromium, are at background levels, lead and zinc which are also characteristic of slag, are at elevated levels in native surface soil samples. These elevated levels could be the result of runoff from the ESP. In addition, a low pH value (5.4) found in a native surface soil sample could be the result of runoff from the ESP, considering that the native soils are alkaline (ranging from 8.5 to 12.2).

A soil-gas survey has been conducted to determine the nature and extent of LFG and VOCs in the ESP Landfill Area. Methane was detected at a concentration equal to or greater than 5 percent by volume (which is equal to or greater than the lower explosive limit [LEL] of methane in air) in certain samples, primarily those located in the central portion of the landfill. Benzene was detected at concentrations of up to 1,400 µg/L within the same area where methane was detected.

Collectively, the results of the various studies conducted at the site suggest that there were two areas of the landfill: the primary landfill area and an area of dispersed waste extending northwest from the primary landfill. The dispersed waste consisted of discontinuous piles of material with thicknesses of up to 12 feet. As described above, during previous grading activities, these dispersed wastes were removed and placed in the primary landfill area. The primary landfill extends to a maximum depth of 43 feet. The landfill materials consist of a variety of waste sludges, coke waste and mixed debris (bricks, wood, scrap metal, and concrete rubble). The western boundary of the main landfill was defined by test pits and borings.

As described above, impacted waste material was encountered in 2002 during grading operations to excavate slag as part of the ongoing development along the western edge of the East Slag Pile, outside the ESP Landfill Area. Discolored soil and slag with a strong odor were found just west of the western boundary of the ESP Landfill Area and south of the Consolidated Waste Cell area of Operable Unit No. 4. The impacted material is thought to have been entirely removed and placed into the West Chrome Pond. However, further investigation is planned at the base of the ESP's west slope to confirm this removal.

Five human health risk assessments (Shaw, 2006) were conducted for the site in 1991, 1995, 2002, 2003 and 2005. These risk assessments found arsenic, beryllium, benzene, chromium, lead, polychlorinated biphenyls (PCBs), polycyclic aromatic hydrocarbons (PAHs), toluene, and zinc to be the chemicals requiring risk management. The media of concern are the industrial waste materials in soil and the landfill gas, including volatile organic compounds (VOCs). Future site workers are the potential receptors of greatest concern. If no remedial actions are taken, adults could be exposed to chemicals of concern through direct contact and inhalation of wind-eroded wastes. In soil-gas, benzene and methane are the chemicals of greatest concern, by posing a threat to a person working on top of the site in a building, if one were allowed. The 2005 risk assessment concluded that the cancer risk from benzene in the worst case (maximum concentration of 1400 micrograms per liter) is 4×10^{-3} (four excess cancers in 1,000 population), and in the reasonable maximum exposure (concentration of 250 micrograms per liter) is 7×10^{-4} (seven excess cancers in 10,000 population).

The human health risk assessments concluded that engineering and administrative controls to prevent wind and water erosion of the wastes, and to prevent people from coming in contact with the wastes, should be implemented. Landfill gas collection is also necessary, to prevent VOC exposure and ignition hazards from excessive methane accumulation. It was also concluded that land use restrictions prohibiting future residential use of the ESP are appropriate.

An Ecological Risk Assessment Report was prepared by Pacific Southwest Biological Services (PSBS) and reviewed by DTSC's Human and Ecological Risk Division (HERD). The report stated that the surface layers of the East Slag Pile Landfill Area consist primarily of slag. This is a very coarse mixture and does not have the consistency of soil. Because this type of material covers almost the entire site surface, the potential for chemicals to be contacted via the direct contact exposure pathways by animal species (that is, ingestion of the waste materials, dermal absorption of chemicals, and the inhalation of fugitive dust) is considered to be negligible and represents an incomplete exposure pathway. For water, the site offers no contact with surface water; therefore, exposure to onsite sediments is an incomplete exposure pathway. Likewise, no migration of surface water exists at the site; therefore, surface water runoff represents an incomplete exposure pathway. Groundwater is located at an average depth of approximately 380 feet beneath the ground surface. Consequently, onsite groundwater use by ecological species is also considered to be an incomplete exposure pathway.

Based on the site ecological investigation, it was concluded that the ecological receptors would have limited potential to contact the waste materials and chemicals, air, water, sediments or affected biota at the East Slag Pile Landfill Area. The exposure pathways relevant for ecological receptors are incomplete.

The Project is being conducted pursuant to the California Health and Safety Code, Division 20, Chapter 6.8 and the Consent Order between CCG and DTSC dated August 10, 2000.

The Project involves:

- Constructing, monitoring and maintaining a remedial cover (a.k.a. "cap") which will permanently cover the contaminated soil within the 36.4-acre ESP Landfill Area;
- Operating and maintaining a landfill gas collection system for the ESP Landfill Area; and
- Recording a deed restriction to limit future land uses on the site.

The Project is expected to take approximately 16 weeks to complete and is currently scheduled to begin in May 2007, after the design plans are approved.

A future project in an adjacent area is planned during the implementation of the subject project. The City of Fontana will be installing a new sewer line within San Bernardino Avenue beginning in March 2007 and continuing through December 2007. One lane of San Bernardino Avenue will be closed during this period. Potential cumulative effects analyses of air quality and traffic impacts are included in the relevant sections below.

Remedial Alternatives Considered:

1. No Action
2. Prescriptive Cover (Title 27) with Deed Restrictions, Landfill Gas Collection System
3. Monolithic Cover with Deed Restrictions, Landfill Gas Collection System
4. Enhanced Monolithic Cover with Deed Restrictions, Landfill Gas Collection System
5. Prescriptive Cover (Title 22) with Deed Restrictions, Landfill Gas Collection System

Selected Alternative: Alternative 4, Enhanced Monolithic Cover with Deed Restrictions, Landfill Gas Collection System

Elements of the Project:

1. *Construction*

a. *Remedial Cap*

The cap will cover the 25.5-acre landfill and a 10.9-acre surrounding area (total of 36.4-acres) and be designed to include the following layers:

- a foundation layer at the base of the cover, consisting of proof-rolled waste or soil that provides a firm base for constructing the rest of the cover;

- a minimum 3-foot thick soil layer with low permeability which will be compacted to a medium density at a water content somewhat below the soil's field capacity;

- an upper layer consisting of one of the following:
    - on the slopes, a minimum 1-foot thick vegetative layer, which is less densely compacted and amended with nutrients as needed to support vegetation growth, and which includes materials to limit biotic intrusion; or
    - on the relatively flat top after grading (about 19 acres), an asphalt-concrete pavement for vehicular parking or storage that is designed and constructed to prevent direct contact with the waste, and to reduce the permeability of the surface to minimize chemical migration to groundwater.

The cap will prevent wind and water erosion of the wastes, prevent people from coming into contact with the wastes, and minimize infiltration which could cause chemical migration to groundwater.

b. *Landfill Gas Collection System*

The gas collection system will be designed to be an active system. Horizontal collection trenches will be constructed under the final cap foundation layer and piped to a blower for extraction of the landfill gas. The landfill gas will be monitored for methane and volatile organic compounds (VOCs) and treated using carbon canisters, if necessary.

The actual field work, which includes limited grading and construction of an access road and is subject to the site's *Environmental Grading and Construction Plan*, is expected to be completed within 9 months. The engineering specifics of the remedial cap and gas collection system will be determined in the design plans. The remedial cap will be designed to prevent direct contact with the waste, control infiltration of rainfall through the waste/soil interface, and prevent rainfall runoff from spreading waste beyond the landfill boundary. The gas collection system will be designed to control, if not eliminate, the emission of LFG. The gas collection system will be operated actively at the outset and the need for continued active operation will be determined based on the maintenance and monitoring criteria discussed below.

2. *Maintenance and Monitoring of the Cap and Gas Collection System*

The monitoring and maintenance of the cap and gas collection system will be conducted in compliance with an Operation and Maintenance Plan (O&M Plan) between CCG and DTSC. The O&M Plan for the project will be developed after the design plans are approved by DTSC and will include criteria for conversion of the LFG collection system from active to passive. LFG probes will be installed around the perimeter of the landfill to monitor the effectiveness of the cap and gas collection system.

3. *Deed Restriction*

As a part of this project, the site will also be required to record a land use covenant that prohibits the development of the site for certain uses such as residential housing, day care centers, long-term care hospitals, or public or private schools.

The remedial activity proposed is a limited project restricted to the boundaries of the project site. Contractors will use appropriate traffic control to direct trucks in and out of the site, minimizing the chance of interfering with local community traffic. The actions of capping the existing landfill and installing a LFG control system are unlikely to require the excavation or handling of hazardous wastes. There will be a worker health and safety plan in place, but there are not foreseen conditions that would require an emergency response plan or emergency evacuation plan.

The Worker Health and Safety Plan elements will include the following; responsibilities; project hazards and control procedures; general hazards and control procedures; personal protective equipment; site control; decontamination; site monitoring; employee training; medical surveillance; exposure control plan; and emergency procedures. Air monitoring will be included as part of the site monitoring section. Trigger levels will be as follows:

Volatile organic compounds by PID (sustained concentrations above background in the breathing zone)

0 – 10 ppm	Level D required
10 – 100 ppm	Increase ventilation and upgrade to Level C
> 100 ppm	Stop work and contact project manager and health & safety officer for guidance

Combustible gas by hand-held instrument (sustained concentrations at the source)

< 10% LEL	Acceptable conditions
> 10% LEL	Ventilate area and contact project manager and health & safety officer for guidance

References: (1) IT Corporation (2003), *Environmental Grading and Construction Contingency/Health and Safety Plan Addendum, East Slag Pile, Former Kaiser Steel Mill Site, Fontana, California.*

(2) Shaw (2007), *Draft Remedial Action Plan, East Slag Pile Landfill, Former Kaiser Steel Mill Site, Fontana, California*, January.

(15) Shaw (2006), *Remedial Investigation/Feasibility Study, East Slag Pile Landfill Area, Former Kaiser Steel Mill Site, Fontana, California*, revision 3, April.

ENVIRONMENTAL IMPACT ANALYSIS:

1. Aesthetics

Project Activities Likely to Create an Impact:

- Constructing, monitoring and maintaining a remedial cap permanently covering the contaminated soil within the ESP Landfill Area.
- Operating and maintaining a landfill gas collection system for the ESP Landfill Area.

Description of Baseline Environmental Conditions:

The ESP Landfill Area, consisting of a 25.5-acre landfill and a 10.9-acre surrounding area, is located on the East Slag Pile at the former Kaiser Steel Mill site. The East Slag Pile forms a man-made hill approximately 90 to 100 feet in height and is the dominant topographic feature in the vicinity. The ESP has the appearance of a gravel and soil hill with discontinuous vegetation and is otherwise vacant. The land use surrounding the ESP Landfill Area is zoned mixed industrial/commercial. There are no parks, recreational areas or other scenic areas in the vicinity. The nearest industrial/commercial operations are warehouse and commercial buildings located immediately to the west of the site which were constructed in 2004. The remediation of the former ESP landfill will result in a cap that will improve the site appearance. The project will not result in significant adverse project-related or cumulative aesthetic impacts.
Analysis as to whether or not project activities would:

a. Have a substantial adverse effect on a scenic vista.

Impact Analysis:

This project is located in an industrialized area of the county within an area zoned as commercial/industrial. It is not located on or near a scenic vista.

Conclusion:
☐ Potentially Significant Impact
☐ Potentially Significant Unless Mitigated
☒ Less Than Significant Impact
☐ No Impact

b. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings and historic buildings within a state scenic highway.

Impact Analysis:

The project is not located within or in proximity to a scenic highway corridor. The nearest highways are Interstate Highways 10 and 15, which are approximately 0.3 and 2.2 miles, respectively, from the project. Neither Highway 10 or 15 is listed as a scenic highway by the California Department of Transportation. All project activities will occur

within the confines of the existing project site and will not impact trees, rock outcroppings or historic buildings within a state scenic highway corridor.

Conclusion:
☐ Potentially Significant Impact
☐ Potentially Significant Unless Mitigated
☒ Less Than Significant Impact
☐ No Impact

c. Substantially degrade the existing visual character or quality of the site and its surroundings.

Impact Analysis:

The ESP Landfill Area is located on the East Slag Pile, a gravel and soil hill with discontinuous vegetation. It is the dominant topographic feature in the vicinity. The area surrounding the ESP Landfill Area is zoned commercial/industrial and multi-story warehouses have been constructed to the east, south, and west of the ESP. The project will enhance the visual character of the site by construction of a remedial cap over the contaminated soil. The project site will become more aesthetically pleasing as a result of the landfill capping. The project will not result in an adverse visual change in the project area and will not result in a change in views open to the public or create an aesthetically offensive site open to public view.

Conclusion:
☐ Potentially Significant Impact
☐ Potentially Significant Unless Mitigated
☒ Less Than Significant Impact
☐ No Impact

d. Create a new source of substantial light of glare that would adversely affect day or nighttime views in the area.

Impact Analysis:

There are no existing sources of light on the site, other than natural sunlight. Streetlights along Valley Boulevard are adjacent to the site to the south. Because work will be conducted during daylight hours, the project will not create a new source of substantial light or glare which would adversely affect day or nighttime views in the area. Any light impacts related to construction will be temporary, and the project will add no permanent, significant sources of light. Therefore the proposed project will not result in project-related or cumulative significant aesthetic impacts.

Conclusion:
☐ Potentially Significant Impact
☐ Potentially Significant Unless Mitigated
☒ Less Than Significant Impact
☐ No Impact

References Used: (3) California Department of Transportation, *The California Scenic Highway System: A List of Eligible and Officially Designated Routes* (http://www.dot.ca.gov/hq/LandArch/scenic/cahisys.htm)

2. Agricultural Resources

Project Activities Likely to Create an Impact:

NONE

Description of Baseline Environmental Conditions:

The ESP Landfill Area is located in an industrialized area, and there are no agricultural lands within 2 miles of the project site. Therefore, the proposed project will not result in significant adverse project-related or cumulative impacts to agricultural resources.

Analysis as to whether or not project activities would:

a. Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland) as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use.

Impact Analysis:

The project site has been subject to extensive industrial and landfill use. No Prime, Unique, or Farmland of Statewide Importance exists on or near the site, which is mapped as Urban and Built Up Land on the 2002 *Map of Important Farmlands of California*. Therefore, no adverse impact will result from converting farmland to non-agricultural uses.

Conclusion:
☐ Potentially Significant Impact
☐ Potentially Significant Unless Mitigated
☐ Less Than Significant Impact
☒ No Impact

b. Conflict with existing zoning or agriculture use, or Williamson Act contract.

Impact Analysis:

The project site is designated Regional Industrial in the County's General Plan. Because no land within the project area is designated or used for agricultural production, no conflict with agricultural zoning, operation, or Williamson Act contracts will occur.

Conclusion:
☐ Potentially Significant Impact
☐ Potentially Significant Unless Mitigated
☐ Less Than Significant Impact
☒ No Impact

c. Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural uses.

Impact Analysis:

The project will not involve activities or actions which could result in conversion of Farmland to non-agricultural uses.

Conclusion:
☐ Potentially Significant Impact
☐ Potentially Significant Unless Mitigated
☐ Less Than Significant Impact
☒ No Impact

References Used (4) San Bernardino County *General Plan*.

(5) Department of Conservation, Division of Land Resource Protection, 2002, *Farmland Mapping and Monitoring Program Survey Area Map* (htpp://www.consrv.ca.gov/dlrp/FMMP/overview/survey_area_map.htm).

3. Air Quality

Project Activities Likely to Create an Impact:

- Constructing, monitoring and maintaining a remedial cap permanently covering the contaminated soil within the ESP Landfill Area.
- Operating and maintaining a landfill gas collection system for the ESP Landfill Area.

Description of Baseline Environmental Conditions:

The project site is located in the South Coast Air Basin (Basin) which has a "Mediterranean" climate (semi-arid, with mild winters, warm summers, and moderate rainfall). The Basin is a 6,600 square mile area bounded by the Pacific Ocean to the west and south and the San Gabriel, San Bernardino and San Jacinto Mountains to the north and east. Its terrain and geographical location determine the distinctive climate of the Basin, which is a coastal plain with connecting broad valleys and low hills. The region lies in the semi-permanent high-pressure zone of the eastern Pacific. As a result, the climate is mild and tempered by cool sea breezes, but interrupted infrequently by periods of extremely hot weather, winter storms, or Santa Ana winds. The extent and severity of the air pollution problem in the Basin is a function of the area's natural physical characteristics (weather and topography) and man-made influences (development patterns and lifestyle). Factors such as wind, sunlight, temperature, humidity, rainfall and topography all affect the accumulation and dispersion of pollutants throughout the Basin.

Moderate temperatures and comfortable humidity characterize the climate with precipitation limited to a few storms during the winter season (November through April). The average annual temperature varies little throughout the Basin, averaging 75 degrees Fahrenheit. However, with a less pronounced oceanic influence, the eastern inland portions of the Basin show greater variability in annual minimum and maximum temperatures. All portions of the Basin have recorded temperatures over 100 degrees F in recent years. January is usually the coldest month at all locations, while July and August are usually the hottest months of the year. Although the Basin has a semiarid climate, the air near the surface is moist because of the presence of a marine layer. Except for infrequent periods when dry, continental air is brought into the Basin by off-shore winds, the ocean effect is dominant. Periods with heavy fog are frequent, and low stratus clouds, occasionally referred to as "high fog," are a characteristic climatic feature. Annual average relative humidity is 70 percent at the coast and 57 percent in the eastern part of the Basin.

SCAQMD monitors air quality in the Basin and compares it to state and federal ambient air quality standards. Air quality standards for ozone, carbon monoxide, nitrogen dioxide, sulfur dioxide, particulate matter (PM10 and PM2.5), and lead have been set by both the state and federal governments. The state has set standards for sulfate and visibility. The standards and the 2005 conditions for ozone, carbon monoxide, nitrogen oxide, and sulfur dioxide in the Basin are summarized below, as are the standards and 2004 conformity for particulates (PM10 and PM2.5), lead, and sulfate. As of April 2006, the 2005 pollutant data are not yet publicly available.

Pollutant	Units	California Standard	Federal Standard	Days in 2005 or 2004 Exceeding Standards
Ozone	ppm	0.09 (1 hour) and 0.07 (8 hour)	0.12 (1 hour), 0.08 (8 hours)	80 days for the 1-hour California standard and 102 days for the 8-hour California standard
Carbon monoxide	ppm	9.0 (8 hours)	9.5 (8 hours)	None
Nitrogen dioxide	ppm	0.25 (1 hour)	0.0534 (annual arithmetic mean)	None
Sulfur dioxide	ppm	0.25 (1 hour), 0.04 (24 hours)	0.50 (3 hour), 0.04 (24 hours), 0.03 (annual arithmetic mean)	None
PM_{10}	µg/m³	50 (24 hours)	150 (24 hours)	72 days for CA standard and 7 days for federal standard (2004)
$PM_{2.5}$	µg/m³	12 (24 hour)	65 (24 hour)	22 days for CA standard and 7 days for federal standard (2004)
Lead	µg/m³	1.5 (monthly average)	1.5 (quarterly average)	None
Sulfate	µg/m³	25 (24 hour)	NA	None

Source: 2004 and 2005 SCAQMD Air Quality Data (available at http://www.aqmd.gov/smog/historicaldata.htm)

PM_{10} – Particulate matter, 10 micron $PM_{2.5}$ – Particulate matter, 2.5 micron

ppm – Parts per million µg/m³ – micrograms per cubic meter

Analysis as to whether or not project activities would:

a. Conflict with or obstruct implementation of the applicable air quality plan.

Impact Analysis:

The project will comply with all South Coast Air Quality Management District (SCAQMD) rules and regulations, including monitoring the LFG collection system. There are no sensitive receptors within 1/4 mile of the project. The project's air impacts, consisting of temporary construction impacts and LFG emissions, do not trigger any SCAQMD thresholds of significance. Therefore, the proposed project would not have significant adverse project-related or cumulative impacts on air quality.

Conclusion:
☐ Potentially Significant Impact
☐ Potentially Significant Unless Mitigated
☒ Less Than Significant Impact
☐ No Impact

b. Violate any air quality standard or contribute substantially to an existing or projected air quality violation.

Impact Analysis:

The project will not result in any violation of air quality standards or contribute substantially to an existing or projected air quality violation.

Conclusion:
☐ Potentially Significant Impact
☐ Potentially Significant Unless Mitigated
☐ Less Than Significant Impact
☒ No Impact

c. Result in cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors).

Impact Analysis:

The project will comply with all applicable air quality rules and regulations as discussed below. Any project impacts will be mitigated through compliance with conditions imposed through the SCAQMD Permit to Construct and Permit to Operate permitting processes.

Rule 401 – Visible Emissions: This rule prohibits single source emissions to the atmosphere that would create unacceptably opacity levels set forth by SCAQMD. There will be no such emissions.

Rule 402 – Nuisance: This rule prohibits the discharge of emissions from any source in which quantities of air contaminants may cause injury, detriment, nuisance or annoyance to the public. The rule also prohibits emissions that may endanger the comfort, repose, health or safety of the public. The emissions of LFG will be controlled through the proposed gas collection system and routine monitoring.

Rule 403 – Fugitive Dust: This rule provides for minimizing fugitive dust emissions beyond the property line of the emission source. The measures required to control fugitive dust will be employed during construction.

Rule 404 – Particulate Matter: This rule prohibits discharge into the atmosphere of particulate matter in exceed of specified concentrations. The measures to control diesel and particulate matter emissions will be employed during construction.

Rule 407 – Liquid and Gaseous Air Contaminants: This rule limits carbon monoxide and sulfur dioxide emissions from any equipment other than that used for mobile equipment propulsion or stationary equipment engines. Equipment used during construction will comply with this rule.

Rule 1110.2 – Emissions from Gaseous- and Liquid-Fueled Internal Combustion Engines: This rule sets emissions standards for nitrous oxides, volatile organic compounds, and carbon monoxide from gaseous and liquid fueled portable engines. Equipment used during construction will comply with this rule.

Rule 1150 – Excavation of Landfill Sites: For excavation of landfills, this rule requires the identification of project measures to ensure that a public nuisance does not occur. The design, construction and monitoring of the remedial cap and LFG collection system will prevent public nuisance. The requirement to prepare an Excavation Management Plan may be applicable if any grading is performed which exposes waste materials. This requirement may also apply

to the planned installation of horizontal landfill gas collection wells because they would be excavated into the waste materials.

Rule 1150.1(h) – Inactive Landfill Requirements: This rule requires inactive landfills to implement a landfill gas collection system. The project is implementing the requirements of this rule.

Rule 1166 – VOC Emissions from Decontamination from Soils: This rule provides for requirements to control the emission of Volatile Organic Compounds (VOC) from excavating, grading, handling and treating VOC contaminated soil as a result of leakage from storage or transfer operations, accidental spillage, or other deposition. Any handling or disturbance of VOC contaminated soil will conform to the requirements of this rule.

Rule 1303 – New Sources: This rule requires that all new sources of air pollution that may result in a new emission increase of any non-attainment air contaminant or any halogenated hydrocarbons are to employ Best Available Control Technology, and limits emissions of non-methane organic compounds to less than 1 pound/day. This rule is not applicable since the gas collection system will not cause an increase in emissions. The collected landfill gas will be sent through a control device that will reduce the amount of non-methane organic compounds that would otherwise be emitted directly to the atmosphere. As a result, the landfill gas collection system will create a net emission decrease.

Rule 1401 – New Source Review of Toxic Air Contaminants: This rule defines a health risk assessment methodology and exempts non-methane organic compounds from controls if the health risk is less than 1 in 1 million. A screening health risk analysis was performed using SCAQMD procedures. The results of the analysis for this site show that the health risk of this project is less than 1 in 1 million and will meet the requirements of this rule.

Conclusion:
☐ Potentially Significant Impact
☐ Potentially Significant Unless Mitigated
☒ Less Than Significant Impact
☐ No Impact

d. Expose sensitive receptors to substantial pollutant concentrations.

Impact Analysis:

Substantial air emissions are not expected from remediation activities for this project. The site is vacant and uninhabited. Short-term impacts would include increased dust from construction and truck traffic. Use of mobile equipment will take place on a temporary basis. During cap construction and related activities, air emissions will be generated by the trucks importing materials and the earthmoving equipment used to place materials. Air emissions will primarily be diesel engine exhaust emissions. Actual field work will likely be completed in a period of about 6 months. The proposed project will require the importation to the site of approximately 21,100 truckloads of materials over a 14 to 16 week period. The daily truck traffic would average approximately 280 vehicles per day averaged over a 15 week period. It is assumed that the borrow soil will be obtained from a source in Riverside which is no more than 19.5 miles distant from the project. Therefore, the off-site round-trip mileage will be 39 miles while the on-site mileage will be 1.2-miles for each truck.

Other equipment that may be used in the construction of the cap is described below:

Deep Dynamic Compaction (if used, 100 day duration)
1 Manitowoc Model 1015 crane with a 600 horsepower (hp) Cummins diesel engine.
1 pickup

Grading (3 week duration)
1 615C Scraper
1 D8 bulldozer
1 815 compactor
2 pickup trucks

LFG System Construction (3 week duration)
430E Backhoe Loader
2 pickup trucks

Soil Cover Construction (15 week duration)
1 D6 bulldozer
1 D8 bulldozer
1 815 compactor
1 16G motor grader
1 8,000 gallon water truck
3 pickup trucks

Asphalt Paving (45 day duration)
1 Ingersoll-Rand PF-3200, powered by a Cummins QSB 5.9-30TAA 188 hp diesel engine
1 Dynapac CC322 tandem, vibratory, steel-drum roller, powered by a Deutz BF4L 2011 82 hp diesel engine
16 Dump Trucks with 355 hp diesel engine per day (5 40-mile round trips per day)

Concurrent Work to be performed on another nearby project:

Installation of New Trunk Sewer Line on San Bernardino Ave (10 month duration)
2 excavators
2 dump trucks
3 pickups

A summary of the estimated maximum emissions from diesel engine exhaust is provided below. The results represent a worst-case scenario assuming that the construction of the new sewer line, the cover, and the asphalt paving occur at the same time. The results represent totals of the on-site and off-site emissions, and show that the emissions are all within the SCAQMD thresholds. Results of emissions for individual pieces of equipment, their emission factors, and the sources of the factors are provided on the attached tables (Tables).

Emission Constituent	Emissions from Diesel Combustion		SCAQMD Significance Thresholds
	lb/hr	lb/day	lb/day
NOx	11.57	92.57	100
VOC	3.27	26.17	75
PM_{10}	15.47	123.79	150
$PM_{2.5}$	4.45	35.59	---
SOx	2.34	18.72	150
CO	14.81	118.52	550

lb/hr – pounds per hour
lb/day – pounds per day
NOx – Nitrogen oxides
VOC – Volatile organic compounds
PM_{10} – Particulate matter, 10 micron
$PM_{2.5}$ – Particulate matter, 2.5 micron
SOx – Sulfur oxides
CO – Carbon monoxide

Notes: Sources of emission factors are provided on the attached tables. NOx and PM values assume that diesel trucks comply with 2007 emission standards and bulldozer diesel engines comply with Tier III emission controls.

Dust air emissions will be controlled during remediation activities through soil wetting to comply with SCAQMD Rule 403. A foam suppressant material, if necessary, will be used on the soil to control volatile emissions to comply with SCAQMD Rule 1166. Additional dust control measures will be employed during soil transportation activities, including keeping exposed soil moistened (at least twice daily) in areas of activity, and covering trucks or maintaining at least 2 feet of freeboard above truck loads to comply with Rule 403. No person shall conduct an active operation with a disturbed surface of five or more acres, or with a daily import or export of 100 cubic yards or more of bulk material without utilizing at least one of the measures listed in subparagraphs (d)(5)(A) through (e)(5)(E) of Rule 403 at each vehicle egress from the site to a paved public road. It is anticipated that a paved surface extending at least 100 feet and at least 20 feet wide will be employed. These measures will reduce fugitive dust emissions to less than significant levels, and will allow the site to comply with SCAQMD Rules 401, 402, and 403.

Onsite Emissions from Unpaved Roads (with controls)	Particulate Dust Emissions from Construction Activities		SCAQMD Significance Thresholds
	lb/hour	lb/day	lb/day
PM_{10} Emissions	9.94	79.52	100
$PM_{2.5}$ Emissions	2.11	16.86	—

Controls: Dust suppression using water routinely sprayed or surfactant as required on road surfaces reduces emissions by 90%.

Notes: Sources of emission factors are provided on the attached tables.

Air emissions from truck traffic during construction will be controlled by preventing trucks from idling more than 5 minutes [SCAQMD Rule 404]. Fugitive dust caused by truck traffic will be minimized by applying water or surfactant spray as needed [SCAQMD Rules 401, 402, and 403]. Additionally, the roads least used by residents will be used to route truck traffic, minimizing any increase in traffic or air emissions experienced by nearby residents [SCAQMD Rule 402]. As shown in the tables above, emissions from short-term construction activities are not expected to exceed SCAQMD significance thresholds.

Air monitoring during construction of the final cover will include:

- Monitoring wind velocity by hand-held instrument;
- Monitoring dust by visual observations;
- Monitoring volatile organic compounds by photo-ionization detector (PID) during intrusive activities into the waste materials (excavation or drilling/sampling); and
- Monitoring combustible gases by hand-held instrument.

Air emissions after landfill closure will be controlled by an active landfill gas collection system providing full coverage under the final cover. The proposed active LFG system may ultimately be converted to a passive system, depending on monitoring results. Horizontal wells will consist of perforated pipe in trenches filled with gravel or slag. The trenches will be located below the foundation layer of the cover system, and the piping will be manifolded and piped to a blower. If necessary, the gases will be treated prior to discharge to atmosphere. To monitor potential lateral migration of gas past the ESP Landfill Area cap boundaries, a series of landfill gas probes will be installed. In general, the probes will be installed on 200-foot centers around the north side of the landfill perimeter. In the areas to the south, west and east of the ESP Landfill where nearby buildings have recently been constructed, the spacing between probes will be 100 feet. Specific LFG system configuration and monitoring will be addressed in the design document.

The landfill gas (LFG) collection system is being installed to comply with SCAQMD Rule 1150.1. Specifically, the LFG collected by the system will be sent to a treatment system that will reduce the non-methane organic compounds (NMOCs) in the landfill gas by at least 98 percent by weight or reduce the outlet NMOC concentration to less than 20 parts per million by volume (ppmv) dry basis as hexane at 3 percent oxygen. The LFG collection system will be operated to prevent the concentration of total organic compounds (TOCs), measured as methane, from exceeding 5 percent by volume in the subsurface. Landfill perimeter boundary sampling probes will be installed for the purpose of detecting lateral migration of LFG away from the waste mass, as determined from collected samples. The LFG collection system will be operated to prevent the concentration of TOC, measured as methane, from exceeding 50 ppmv as determined by integrated samples taken on numbered grids. The LFG collection system will be operated to prevent the concentration of TOC, measured as methane, from exceeding 500 ppmv above background concentrations as determined by instantaneous monitoring at any location on the landfill, except at the outlet of the control device. The LFG collection system will be monitored routinely in accordance with SCAQMD Rule 1150.1 to verify compliance with the above requirements. Such monitoring includes:

- Instantaneous surface sampling (TOC measured as methane no more than 500 ppmv);
- Integrated surface sampling (TOC measured as methane no more than 50 ppmv);
- Perimeter probe sampling (TOC measured as methane no more than 5 percent by volume);
- LFG treatment system destruction efficiency of greater or equal to 98 percent reduction in NMOCs, or reduction in outlet NMOC concentration to 20 ppmv, as hexane at 3 percent oxygen;

- Sampling of LFG from the header pipe entering the treatment system.

The SCAQMD permit process requires applications for a Permit to Construct (PTC) and Permit to Operate (PTO) the landfill gas control system. The application package will require:

- SCAQMD application forms for a PTC/PTO, CEQA Questionnaire, specific equipment description list, etc.;
- Site address, site description, process description, hours of operation, responsible person, contact name, phone number and other pertinent information;
- Basic equipment descriptions including manufacturer name, make, model, dimensions, power or other rating;
- Control equipment descriptions including manufacturer name, make, model, dimensions, power or other rating;
- Description of automated controls that will prevent emissions in event of equipment shutdown or failure; and
- Emission type and amounts before and after control system.

Compliance with SCAQMD permits will prevent potential VOC and other LFG emissions from exceeding SCAQMD significance thresholds.

Conclusion:
☐ Potentially Significant Impact
☐ Potentially Significant Unless Mitigated
☒ Less Than Significant Impact
☐ No Impact

e. Create objectionable odors affecting a substantial number of people.

Impact Analysis:

The project is not expected to create any objectionable odors affecting a substantial number of people.

Conclusion:
☐ Potentially Significant Impact
☐ Potentially Significant Unless Mitigated
☐ Less Than Significant Impact
☒ No Impact

f. Result in human exposure to Naturally Occurring Asbestos (see also Geology and Soils, f.).

Impact Analysis:

Based on Department of Conservation (2000) maps, the site is not in an area of naturally occurring asbestos. The project therefore would not result in human exposure to naturally occurring asbestos.

Conclusion:
☐ Potentially Significant Impact
☐ Potentially Significant Unless Mitigated
☐ Less Than Significant Impact
☒ No Impact

References Used: (6) SCAQMD *2003 Air Quality Management Plan.*

(7) 2004 and 2005 SCAQMD *Air Quality Data* (http://ww.aqmd.gov/smog/AQSCR2005/aqcard.pdf).

(8) SCAQMD *Rules & Regulations.*

(9) USEPA, *Compilation of Air Pollutant Emission Factors, Fifth Edition, Volume I: Stationary Point and Area Sources*, Document AP-42, Chapter 13.2.2.

(10) SCAQMD, *EMFAC Model*, version 2.2.

(11) Department of Conservation, Division of Mines and Geology. 2000. *A General Location Guide for Ultramafic Rocks in California - Areas More Likely to Contain Naturally Occurring Asbestos.* Open File Report 2000-19.

4. Biological Resources

Project Activities Likely to Create an Impact:

- Constructing, monitoring and maintaining a remedial cap permanently covering the contaminated soil within the ESP Landfill Area.
- Operating and maintaining a landfill gas collection system for the ESP Landfill Area.

Description of Baseline Environmental Conditions:

The project site is heavily disturbed and consists of a slag pile and landfill. This area has been the site of industrial activity for many years and does not contain an undisturbed plant community. There are no rare, threatened or endangered plants, animals or natural communities at the project site. The foregoing statements are also supported by the conclusions contained in the Pacific Southwest Biological Services (PSBS) report of May 1, 1995. The PSBS report noted no sensitive plants or animals were confirmed on the extremely disturbed site. Two horned larks (*Eremophila alpestris*) were observed in the area. It is listed by the United States (U.S.) Fish and Wildlife Service (FWS) as a Federal Candidate List Species, and information exists that may warrant listing as an endangered or threatened species by the U.S. FWS. It is also a state species of special concern (SSC).

The California Department of Fish and Game Natural Diversity Database (Rarefind Report) dated September 5, 2006, for the Guasti quadrant was reviewed. The Rarefind Report identified two species that occur in the general vicinity, but outside the project site. The Los Angeles pocket mouse (*Perognathus longimembris brevinasus*), SSC, inhabits lower elevation grasslands and coastal sage communities in the Los Angeles basin. It was sighted on the east side of Etiwanda Avenue, 0.5 miles north of San Bernardino Avenue in 1999. The coast (San Diego) horned lizard (*Phrynosoma coronatum*) (blainvillii population); SSC, inhabits coastal sage scrub and chaparral in arid and semi-arid climate conditions. It was sighted along Etiwanda Avenue, extending from 2.0 to 3.5 miles north of the junction of Interstate Highways I-10 and I-15. As stated previously, the site does not provide habitat for these species due to its highly disturbed, industrialized history.

Therefore, the proposed project will not have significant adverse project-related or cumulative impacts on biological resources.

Analysis as to whether or not project activities would:

a. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service.

   Impact Analysis:

   There are no candidate, sensitive or special status species at or in close proximity to the project site. As noted in the baseline conditions above, species have been sighted outside of the project area.

   Conclusion:
   ☐ Potentially Significant Impact
   ☐ Potentially Significant Unless Mitigated
   ☒ Less Than Significant Impact
   ☐ No Impact

b. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service.

   Impact Analysis:

There is no riparian habitat located at the project site. As noted in the baseline conditions above, sensitive natural communities may exist outside the project site in suitable habitat.

Conclusion:
☐ Potentially Significant Impact
☐ Potentially Significant Unless Mitigated
☒ Less Than Significant Impact
☐ No Impact

c. Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.

Impact Analysis:

There are no federally protected wetlands present at or in close proximity to the project site.

Conclusion:
☐ Potentially Significant Impact
☐ Potentially Significant Unless Mitigated
☐ Less Than Significant Impact
☒ No Impact

d. Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.

Impact Analysis:

There are no known native resident, migratory fish, wildlife species, nursery sites or corridors present at or in close proximity to the project site.

Conclusion:
☐ Potentially Significant Impact
☐ Potentially Significant Unless Mitigated
☒ Less Than Significant Impact
☐ No Impact

e. Conflict with local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.

Impact Analysis:

There are no biological resources present or in close proximity to the project site which are subject to any local biological resource protection policies or ordinances.

Conclusion:
☐ Potentially Significant Impact
☐ Potentially Significant Unless Mitigated
☐ Less Than Significant Impact
☒ No Impact

f. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

Impact Analysis:

There is no Habitat Conservation Plan, Natural Community Conservation Plan or other conservation plan that applies to biological resources present at or in close proximity to the project site.

Conclusion:
☐ Potentially Significant Impact
☐ Potentially Significant Unless Mitigated
☐ Less Than Significant Impact
☒ No Impact

References Used: *(12)* California Department of Fish and Game, California Natural Diversity Database.

(4) San Bernardino County *General Plan.*

(34) Pacific Southwest Biological Services, 1995, *Biological Survey of the East Slag Pile Area*, May 1.

5. Cultural Resources

Project Activities Likely to Create an Impact:

- Constructing, monitoring and maintaining a remedial cap permanently covering the contaminated soil within the ESP Landfill Area.

Description of Baseline Environmental Conditions:

The project site was part of a former steel mill that operated beginning in the 1940s. This project will include a limited amount of excavation (approximately 1,000 linear feet) along the base of the slag pile to install a 5-foot deep v-shaped drainage feature.
A California Historical Resources Information System (CHRIS) inventory search was conducted by the San Bernardino County Museum as the designated Office of Historic Preservation (OHP) Information Center for the project site. No known cultural or historical resources have ever been identified at the site. No further archaeological work was recommended; however, if prehistoric or historic artifacts over 50 years in age are encountered during land modification, then activities in the immediate are of the finds should be halted and an on-site inspection should be performed immediately by a qualified archaeologist. This professional will assess the find, determine its significance, and make recommendations for appropriate mitigation measures within the guidelines of the California Environmental Quality Act. If human remains are encountered on the property, then the San Bernardino County Coroner's Office must be contacted within 24 hours of the find, and all work shall be halted until a clearance is given by that office and any other involved agencies. The OHP Information Center also requested that historical resource data and artifacts collected within this project area be permanently curated at a repository with the County of San Bernardino.

The Native American Heritage Commission (NAHC) performed a record search of its Sacred Lands File (SLF) for the affected project area. The SLF failed to indicate the presence of Native American cultural resources in the immediate project area. The NAHC acknowledged that the absence of specific site information in the SLF does not guarantee the absence of cultural resources in the project area. The NAHC provided DTSC with a list of the nearest tribes that may have knowledge of cultural resources in the project area. DTSC will include these Native American contacts in the project notification. The NAHC identified Sections 15064.5(f) and 15097.98 of the Public Resource Code and Section 7050.6 of the California Health & Safety Code which provide provisions for accidentally discovered archaeological resources during construction and mandate the processes to be followed in the event of an accidental discovery of any human remains.

The project area was not identified in the San Bernardino County General Plan or the recent Fontana General Plan Update (the project area is within the Fontana Sphere of Influence) as being in an area of high sensitivity for prehistoric archaeological resources or as having a high concentration of historic buildings. Additionally, the project will incorporate cultural resource and human remain measures as required by state law. Therefore, this project will not have significant adverse project-related or cumulative impacts on cultural resources.

Analysis as to whether or not project activities would:

a. Cause a substantial adverse change in the significance of a historical resource as defined in 15064.5.

Impact Analysis

There are no known historical resources, pursuant to section 15064.5 of the California Code of Regulations' CEQA Guidelines, present at or in close proximity to the project site.

Conclusion:
☐ Potentially Significant Impact
☐ Potentially Significant Unless Mitigated
☒ Less Than Significant Impact
☐ No Impact

b. Cause a substantial adverse change in the significance of an archeological resource pursuant to 15064.5.

Impact Analysis:

There are no known archeological resources, pursuant to section 15064.5 of the California Code of Regulations' CEQA Guidelines, present at or in close proximity to the project site.

Conclusion:
☐ Potentially Significant Impact
☐ Potentially Significant Unless Mitigated
☒ Less Than Significant Impact
☐ No Impact

c. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.

Impact Analysis:

There are no known unique paleontological or geologic resources present at or in close proximity to the project site.

Conclusion:
☐ Potentially Significant Impact
☐ Potentially Significant Unless Mitigated
☒ Less Than Significant Impact
☐ No Impact

d. Disturb any human remains, including those interred outside of formal cemeteries.

Impact Analysis:

There are no human remains known to be present at or in close proximity to the project site. The project will involve grading and excavation below the slag to construct a 5-foot deep v-shaped drainage feature for stormwater management. However, as required by state law, if human remains are discovered during construction, work at the construction site will halt and San Bernardino County Coroner's Office shall be immediately notified. If the remains are determined by the County coroner to be Native American, the Native American Heritage Commission shall be notified within 24 hours, and the guidelines of the Native American Heritage Commission shall be followed.

Conclusion:
☐ Potentially Significant Impact
☐ Potentially Significant Unless Mitigated
☒ Less Than Significant Impact
☐ No Impact

References Used: *(4)* San Bernardino County, *General Plan.*

(13) City of Fontana, 2003, *General Plan Update Draft Environmental Impact Report.*

(14) San Bernardino County Museum, Office of Historic Preservation Information Center, May 2006, *Historical Resources Record Search*, Kaiser Site.

(35) Personal communication with Robin Laska, Archaeological Information Officer, San Bernardino County Museum.

(37) Native American Heritage Commission, August 2006, *Sacred Lands File Records Search for the*

6. Geology and Soils

Project Activities Likely to Create an Impact:

- Constructing, monitoring and maintaining a remedial cap permanently covering the contaminated soil within the ESP Landfill Area.

Description of Baseline Environmental Conditions:

The project is located at a landfill resting within a pile of slag, a byproduct of steel-making. The slag, which is from 40 to 100 feet thick, is underlain by native soil that consists of two soils in the Tujunga series: a loamy sand and a gravelly loamy sand. These soils are derived from alluvial, granitic deposits washed out of the nearby San Gabriel Mountain foothills. Both soils exhibit slow to very slow runoff and low shrink-swell potential. The native soils have been extensively disturbed by many years of steel-making activities. Neither soil type poses significant constraints on the project.

The proposed cap will cover the 25.5-acre landfill and a 10.9-acre surrounding area (total of 36.4-acres) and be designed to include the following layers:

- a foundation layer at the base of the cover, consisting of proof-rolled waste or soil that provides a firm base for constructing the rest of the cover;
- a minimum 3-foot thick soil layer with low permeability which will be compacted to a medium density at a water content somewhat below the soil's field capacity;
- an upper layer consisting of one of the following:
    - on the slopes, a minimum 1-foot thick vegetative layer, which is less densely compacted and amended with nutrients as needed to support vegetation growth, and which includes materials to limit biotic intrusion; or
    - on the relatively flat top after grading (about 19 acres), an asphalt-concrete pavement for vehicular parking or storage that is designed and constructed to prevent direct contact with the waste, and to reduce the permeability of the surface to minimize chemical migration to groundwater.

The proposed cap will prevent wind and water erosion of the wastes, prevent people from coming into contact with the wastes, and minimize infiltration which could cause chemical migration to groundwater.

Southwestern San Bernardino County is seismically active, with the Cucamonga fault being the closest active fault to the site. Over the last 100 years, the nearby San Jacinto fault has produced three major earthquakes of estimated Richter magnitude (M) 7.0 in 1899, M6.8 in 1918, and M6.3 in 1923. The San Andreas, Elsinore, Newport-Inglewood, and San Fernando faults generated M6+ earthquakes in 1907, 1910, 1933, and 1971. These faults all pass within 14 to 57 miles from the site. Other notable historic earthquakes in the region include: the M8.25 Fort Tejon earthquake (1857); the M6.3 Long Beach earthquake (1933); the M5.9 Whittier-Narrows earthquake (1987); the M5.8 Sierra Madre earthquake (1991); the M6.1 Joshua Tree earthquake (1992); the M7.5 Landers earthquake (1992); the M6 Big Bear earthquake (1992); the M6.7 Northridge earthquake (1994); and the M7.1 Hector Mine earthquake (1999).

The principal seismic hazard at the site would likely be ground shaking. The project does involve limited grading and surface modifications of the slag pile to relatively shallow depths. Excavation of native soil will be performed to construct a 5-foot deep v-shaped drainage feature for stormwater management. The project does not include the construction of structures that would be affected by seismic activity. The soil modification activities will not increase the risk of injuries in case of strong ground shaking. Therefore, the proposed project will not have significant adverse project-related or cumulative impacts on geology and soils.

Analysis as to whether or not project activities would:

a. Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:

- Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault. (Refer to Division of Mines and Geology Special Publication 42).
- Strong seismic ground shaking.
- Seismic-related ground failure, including liquefaction.
- Landslides.

Impact Analysis:

The map of active faults in California does not show any such fault passing through or nearby the project site (Jennings, 1994), and the Alquist-Priolo earthquake fault zone nearest to the site is some 7 miles away on the Cucamonga fault (CDMG, 2000). An earthquake of concern occurring on a given fault can be described as either a maximum probable earthquake (MPE) or a maximum credible earthquake (MCE). The MPE is the largest earthquake likely to occur during a 100-year design life. The MCE is the largest earthquake that a fault is capable of producing, regardless of its likelihood of occurrence. Despite the large number of faults in the vicinity, the project site is close enough to a few large, active faults that the smaller faults may be neglected. The closest large faults to the project area that are capable of generating major earthquakes are tabulated below:

Fault Name	Distance & Direction	Earthquake Magnitudes	
		MPE	MCE
Red Hill Fault	5.6 miles NW	6.0 (?)	7.0 (?)
Cucamonga Fault	7.4 miles N	6.6	7.0
San Jacinto Fault Zone (San Bernardino segment)	9.6 miles NNE	6.7	7.0
San Andreas Fault Zone (San Bernardino segment)	13.2 miles NE	7.3	7.9
Whittier-Elsinore Fault	16.2 miles SW	---	6.8

Earthquakes of the above magnitudes can cause ground accelerations high enough to constitute seismic hazards in the project area.

The project is not expected to result in increased adverse risks associated with liquefaction or landslides.

Conclusion:
☐ Potentially Significant Impact
☐ Potentially Significant Unless Mitigated
☒ Less Than Significant Impact
☐ No Impact

b. Result in substantial soil erosion or the loss of topsoil.

Impact Analysis:

The construction of a 5-foot deep v-shaped drainage feature along the base of the slag pile will not result in substantial soil erosion or the loss of topsoil.

Conclusion:
☐ Potentially Significant Impact
☐ Potentially Significant Unless Mitigated
☒ Less Than Significant Impact
☐ No Impact

c. Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on or off-site landslide, lateral spreading, subsidence, liquefaction or collapse.

Impact Analysis:

Site reconnaissance indicates that the project site is not located on either an unstable geologic unit or soil that would become unstable as a result of the project.

Conclusion:
☐ Potentially Significant Impact
☐ Potentially Significant Unless Mitigated
☒ Less Than Significant Impact
☐ No Impact

d. Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property.

Impact Analysis:

The native soils at the project site are predominately sands lacking significant clay content. They therefore are not expansive in the sense of Table 18-1-B of the Uniform Building Code (1994). However, steel slag contains large amounts of un-hydrated lime. When exposed to water, the lime hydrates and expands in volume by up to 10 percent. This hydration reaction continues for many years and can resume after years of inactivity if conditions allow more water to contact previously un-hydrated lime. Such expansion is unlikely to be of concern because ultimate land uses at the site will not include buildings or other structures likely to be damaged by expansion. See IT (2001).

Conclusion:
☐ Potentially Significant Impact
☐ Potentially Significant Unless Mitigated
☒ Less Than Significant Impact
☐ No Impact

e. Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of water.

Impact Analysis:

No septic tanks or alternative wastewater disposal systems are located on or adjacent to the project site, nor have any such devices been proposed as part of this project.

Conclusion:
☐ Potentially Significant Impact
☐ Potentially Significant Unless Mitigated
☒ Less Than Significant Impact
☐ No Impact

f. Be located in an area containing naturally occurring asbestos (see also Air Quality, f.).

Impact Analysis:

Based on Department of Conservation (2000) maps, the project site is not in an area of naturally occurring asbestos. The project therefore would not result in human exposure to naturally occurring asbestos.

Conclusion:
☐ Potentially Significant Impact
☐ Potentially Significant Unless Mitigated
☐ Less Than Significant Impact
☒ No Impact

References Used: (15) Shaw, 2006, *Remedial Investigation/Feasibility Study, East Slag Pile Landfill Area, Former Kaiser Steel Mill Site, Fontana, California*, revision 3, April.

(16) Shaw, 2003, *Basis of Design Report for Final Cover, East Slag Pile, Operable Unit 3, Former Kaiser Steel Site, Fontana, California* [Draft], unpublished report no 811872 to CCG Ontario, LLC,

March.

(17) Jennings, C.W., 1994, *Fault Activity Map of California and Adjacent Areas*, California Division of Mines and Geology Geologic Data Map No. 6, scale 1:750,000.

(18) California Division of Mines and Geology, 2000, *Digital Images of Official Maps of Alquist-Priolo Earthquake Fault Zones of California, Southern Region*, DMG CD 2000-003.

(19) IT, 2001, *Geotechnical Opportunities and Constraints Affecting Development of the East Slag Pile Landfill Area, Former Kaiser Steel Site, Fontana, California.*

7. Hazards and Hazardous Materials

Project Activities Likely to Create an Impact:

- Constructing, monitoring and maintaining a remedial cap permanently covering the contaminated soil within the ESP Landfill Area.

- Operating and maintaining a landfill gas collection system for the ESP Landfill Area.

Description of Baseline Environmental Conditions:

Operations at the former Kaiser Steel Mill included coke manufacturing, coke by-product recovery, iron production, primary steel production and steel finishing and fabricating operations. After the mill closed, the larger Kaiser Site was divided into four operable units pursuant to a 1988 Consent Order. Operable Units No. 1 and 2 have been remediated, and remedial action is pending in Operable Unit 4. The ESP Landfill Area is part of Operable Unit No. 3. The East Slag Pile, on which the ESP Landfill Area lies, was used to store slag, a by-product of iron and steel production, from the inception of plant operations in 1942 until 1983. Slag is a rock-like material consisting mostly of calcium oxide (lime).

A landfill operated on the surface of the East Slag Pile as early as 1943 to dispose of the industrial wastes generated by the steel mill. The ESP Landfill operated under California Solid Waste Management Board Permit No. 36-SS-018, issued on November 2, 1979. Waste Discharge Requirements for the facility were issued as Santa Ana Regional Water Quality Control Board (SARWQCB) Order No. 79-112, adopted on August 31, 1979. The site was permitted as a Class III landfill to receive inert wastes, including industrial inert solids, blast furnace gas washer water sludge, waste firebricks, construction debris, metal scraps, and wood. Very little waste was disposed of at the site after 1983, and no waste was accepted at the site after June 30, 1985; however, in 2001 and 2002 two instances where contaminated materials were relocated onsite during ongoing remediation activity. The first case involved materials encountered during aggregate-mining operations at the nearby West Slag Pile. Approximately 135,000 cubic yards of waste materials was placed over the ESP landfill. The second instance involved an area of dispersed waste removed from a lobe of discontinuous piles of waste material located in the northwestern portion of the landfill. Approximately 175,000 cubic yards of waste materials was placed over the ESP landfill.

Historical records indicate that approximately 59,100 cubic yards of blast furnace gas washer water sludge and 532,000 cubic yards of industrial wastes (including coke waste) were disposed of at the ESP Landfill. These wastes included the following types of sludges: limy; oily; and cooling tower sludges. The landfill also contains an estimated 600,000 cubic yards of other solid wastes (such as bricks, scrap metal, plastic, concrete rubble, wood, gravel, and soil). The total volume of waste within the landfill is approximately 1,510,000 cubic yards.

Several remedial and field investigations have been conducted at the ESP Landfill Area. Borings extending 20 feet below the landfill and into native soils have been analyzed for pH, cyanide, metals, polychlorinated biphenyls (PCBs), polycyclic aromatic hydrocarbons (PAHs), electrical conductivity and chloride. Surface soils have been analyzed for pH, electrical conductivity, cyanide, metals, and PAHs. No organic chemicals were detected in the native soil samples. Levels of some metals (lead and zinc) exceed hazardous waste criteria in samples collected from sludge waste. The concentrations of metals routinely associated with slag, particularly chromium, are at background levels, lead and zinc which are also characteristic of slag, are at elevated levels in native surface soil samples. These elevated levels could be the result of runoff from the ESP. In addition, a low pH value (5.4) found in a native surface soil sample could be the result of runoff from the ESP, considering that the native soils are alkaline (ranging from 8.5 to 12.2).

A soil-gas survey has been conducted to determine the nature and extent of LFG and VOCs in the ESP Landfill Area. Methane was detected at a concentration equal to or greater than 5 percent by volume (which is equal to or greater than

the lower explosive limit [LEL] of methane in air) in certain samples, primarily those located in the central portion of the landfill. Benzene was detected at concentrations of up to 1,400 µg/L within the same area where methane was detected.

Collectively, the results of the various studies conducted at the site suggest that there were two areas of the landfill: the primary landfill area and an area of dispersed waste extending northwest from the primary landfill. The dispersed waste consisted of discontinuous piles of material with thicknesses of up to 12 feet. As described above, during previous grading activities, these dispersed wastes were removed and placed in the primary landfill area. The primary landfill extends to a maximum depth of 43 feet. The landfill materials consist of a variety of waste sludges, coke waste and mixed debris (bricks, wood, scrap metal, and concrete rubble). The western boundary of the main landfill was defined by test pits and borings.

As described above, impacted waste material was encountered in 2002 during grading operations to excavate slag as part of the ongoing development along the western edge of the East Slag Pile, outside the ESP Landfill Area. Discolored soil and slag with a strong odor were found just west of the western boundary of the ESP Landfill Area and south of the Consolidated Waste Cell area of Operable Unit No. 4. The impacted material is thought to have been entirely removed and placed into the West Chrome Pond. However, further investigation is planned at the base of the ESP's west slope to confirm this removal.

Five risk assessments were conducted for the site in 1991, 1995, 2002, 2003 and 2005. These risk assessments found arsenic, beryllium, benzene, chromium, lead, polychlorinated biphenyls (PCBs), polycyclic aromatic hydrocarbons (PAHs), toluene, and zinc to be the chemicals requiring risk management. The media of concern are the industrial waste materials in soil and the landfill gas, including VOCs. Future site workers are the potential receptors of greatest concern. If no remedial actions are taken, adults could be exposed to chemicals of concern through direct contact and inhalation of wind-eroded wastes. In soil-gas, benzene and methane are the chemicals of greatest concern, by posing a threat to a person working on top of the site in a building, if one were allowed. The 2005 risk assessment concluded that the cancer risk from benzene in the worst case (maximum concentration of 1400 micrograms per liter) is 4×10^{-3} (four excess cancers in 1,000 population), and in the reasonable maximum exposure (concentration of 250 micrograms per liter) is 7×10^{-4} (seven excess cancers in 10,000 population).

The risk assessments concluded that engineering and administrative controls to prevent wind and water erosion of the wastes, and to prevent people from coming in contact with the wastes, should be implemented. Landfill gas collection is also necessary, to prevent VOC exposure and ignition hazards from excessive methane accumulation. It was also concluded that land use restrictions prohibiting future residential use of the ESP are appropriate.

The proposed project involves capping the waste in the ESP Landfill Area and installing a LFG control system. The proposed cap will substantially eliminate the threat to human health posed by the pathways of ingestion, dermal contact, and inhalation. The proposed cap, if properly maintained, is an effective way to contain the waste. The cap will prevent wind and water erosion of the wastes, prevent people from coming in contact with the wastes, and minimize infiltration which could cause chemical migration to groundwater.

The proposed project may involve grading of the landfill surface and construction of an access road which has the potential to expose contaminated waste materials and there is a potential for on-site workers to be exposed to health hazards during the course of the remedial activities. Therefore, a health and safety plan has been prepared to minimize potential health hazards to the on-site workers.

The site is currently uninhabited and vacant. The nearest schools are: Henry J. Kaiser High School, located at 11155 Almond Avenue (8,400 feet, or 1.6 miles from the project); Live Oak Elementary School, located at 9522 Live Oak Avenue (8,000 feet, or 1.5 miles from the project), and Sequoia Middle School, located at 9452 Hemlock Avenue (8,600 feet, or 1.6 miles from the project). The site is fenced, and the fence will be kept locked during non-working hours. Following completion of the remediation activities, a deed restriction will be recorded with conditions that will prohibit activities that could compromise the remedy or allow exposure to the waste. Because the project is intended to close a permitted landfill with DTSC oversight, the project will improve the impacts from contaminated waste materials. Therefore, the proposed project will not result in significant adverse project-related or cumulative impacts.

Analysis as to whether or not project activities would:

a. Create a significant hazard to the public or the environment throughout the routine transport, use or disposal of hazardous materials.

   Impact Analysis:

The project involves the capping of a landfill that contains certain hazardous materials; however, the project itself will not involve the transport, use or disposal of hazardous materials. (See the project description for additional information).

Conclusion:
☐ Potentially Significant Impact
☐ Potentially Significant Unless Mitigated
☒ Less Than Significant Impact
☐ No Impact

b. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.

Impact Analysis:

The site was permitted as a Class III landfill and investigations have concluded that, to protect health, safety and the environment, this site should be capped, with a landfill gas collection and control system along with deed restrictions, in order to eliminate potential pathways of exposure. Hazardous materials at the site will not be disturbed significantly; therefore, upset and accident conditions should not result in the release of such materials. (See the project description for additional information).

Conclusion:
☐ Potentially Significant Impact
☐ Potentially Significant Unless Mitigated
☒ Less Than Significant Impact
☐ No Impact

c. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances or waste within one-quarter mile of an existing or proposed school.

Impact Analysis:

Air monitoring will be conducted during the project to ensure that dust in excess of South Coast AQMD requirements is not created. Dust air emissions will be controlled during remediation activities through soil wetting, and using a foam suppressant material for volatile emissions. Additional dust control measures will be employed during soil transportation activities, including keeping exposed soil moistened (at least twice daily) in areas of activity, and covering trucks or maintaining at least 2 feet of freeboard above truck loads. These measures will reduce fugitive dust emissions to less than significant levels. The site is not within one-quarter mile of an existing or proposed school or other sensitive receptor. The nearest schools are: Henry J. Kaiser High School, located at 11155 Almond Avenue (8,400 feet, or 1.6 miles from the project); Live Oak Elementary School, located at 9522 Live Oak Avenue (8,000 feet, or 1.5 miles from the project); and Sequoia Middle School, located at 9452 Hemlock Avenue (8,600 feet, or 1.6 miles from the project). (See the Section 3 - Air Quality for additional information).

Conclusion:
☐ Potentially Significant Impact
☐ Potentially Significant Unless Mitigated
☒ Less Than Significant Impact
☐ No Impact

d. Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to public or the environment.

Impact Analysis:

The project site is listed on the Cortese List pursuant to Government Code Section 65962.5. The project is being conducted under DTSC oversight pursuant to a 2000 Consent Order and in accordance with applicable laws and regulations. Also see response to item "a" above.

Conclusion:
☐ Potentially Significant Impact
☐ Potentially Significant Unless Mitigated
☒ Less Than Significant Impact
☐ No Impact

e. Impair implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan.

Impact Analysis:

The remedial activity proposed is a limited project restricted to the boundaries of the project site. Contractors will use appropriate traffic control to direct trucks in and out of the site, minimizing the chance of interfering with local community traffic. The actions of capping the existing landfill and installing a LFG control system are unlikely to require the excavation or handling of hazardous wastes. There will be a worker health and safety plan in place, but there are not foreseen conditions that would require an emergency response plan or emergency evacuation plan.

The Worker Health and Safety Plan elements will include the following; responsibilities; project hazards and control procedures; general hazards and control procedures; personal protective equipment; site control; decontamination; site monitoring; employee training; medical surveillance; exposure control plan; and emergency procedures. Air monitoring will be included as part of the site monitoring section. Trigger levels will be as follows:

Volatile organic compounds by PID (sustained concentrations above background in the breathing zone)

0 – 10 ppm	Level D required
10 – 100 ppm	Increase ventilation and upgrade to Level C
> 100 ppm	Stop work and contact project manager and health & safety for guidance

Combustible gas by hand-held instrument (sustained concentrations at the source)

< 10% LEL	Acceptable conditions
> 10% LEL	Ventilate area and contact project manager and health & safety for guidance

Conclusion:
☐ Potentially Significant Impact
☐ Potentially Significant Unless Mitigated
☒ Less Than Significant Impact
☐ No Impact

References Used: (15) Shaw, 2006, *Remedial Investigation/Feasibility Study, East Slag Pile Landfill Area, Former Kaiser Steel Mill Site, Fontana, California*, revision 3, April

(20) DTSC, 2000, *Imminent and Substantial Endangerment Determination and Consent Order*, August 10

8. Hydrology and Water Quality

Project Activities Likely to Create an Impact:

Description of Baseline Environmental Conditions:

The project site is located in the upper Santa Ana Valley. The alluvium in the upper Santa Ana Valley is divided into three groups based on the relative age of the sediments. The upper 200 feet is Holocene younger alluvium that is relatively unweathered and typically found in stream beds and washes. It consists chiefly of alluvial deposits, with minor local dune sands. The dune sands are highly permeable and form a locally important recharge area for the groundwater basin. However, the dunes are of limited extent and thus do not receive sufficient amounts of precipitation to qualify as a major recharge source. Underlying the younger alluvium is approximately 1,100 feet of late Pleistocene older alluvium that consists of unconsolidated and semi-consolidated sediments. These sediments consist of interfingered layers and lenses of gravel, silt, sand, and clay mixtures containing variable amounts of cobbles and boulders. These deposits grade from one to another through a series of overlapping wedge-shaped layers. The alluvial sand deposits are generally found in the northern portion of the basin, north of Baseline Road. Beneath the older alluvium are approximately 100 feet of terrace deposits, also of late Pleistocene age.

According to the Santa Ana Regional Water Quality Control Board's (SARWQCB) Santa Ana River Basin Water Quality Control Plan (1994), the site is in the Chino No. 1 hydrological unit (801.21) of the upper Santa Ana river basin. The RWQCB has designated the Chino No. 1 unit as having Municipal and Domestic Supply, Agricultural Supply, Industrial Service Supply, and Industrial Process beneficial uses. This hydrologic unit is part of the Chino groundwater basin, a large structural depression that was filled by as much as 1,400 feet of Pleistocene and Holocene alluvium derived from erosion of the surrounding mountains. The older Pleistocene alluvium is the primary aquifer in the basin. Groundwater generally flows southwesterly from the San Gabriel and San Bernardino Mountains in the north and east toward Prado Dam in the southwest. Groundwater flow directions can be affected by local pumping wells.

The regional groundwater table near the site was found at elevations of about 702 to 705 feet above mean sea level (msl) (IT 2002), corresponding to depths of about 320 to 350 feet below the native ground surface. Perched groundwater was detected beneath the ESP Landfill Area, at a few boring locations at approximately 10, 40, 50 and 55 feet below the ESP surface (Shaw, 2006). The extent of the perched conditions is not been determined. The water quality within the perched zones has not been characterized. Earlier investigations determined that the regional groundwater flow is to the southwest at an estimated average linear velocity of 100 to 300 feet per year.

Storm-water runoff flows from the site to the County-maintained San Sevaine Channel to the west and to Mulberry Ditch to the east. The project site's surface water discharge is under the jurisdiction of the SARWQCB and the project will comply with all requirements of any National Pollution Discharge Elimination System permit requirements. The project site is within Zone 1 of the San Bernardino County Flood Control District and is not prone to flooding. The site is not within a 100-year flood hazard area as designated by the Federal Emergency Management Agency.

Per a preliminary characterization of groundwater quality, elevated concentrations of total dissolved solids (TDS) and total organic carbon (TOC) were detected. The TDS/TOC plume was estimated to be approximately 3.5 miles long, 0.7 mile wide, and extended 100 to 150 feet into the saturated zone (Wildermuth, 1995). The SARWQCB entered into a Salt Offset Agreement in 1993 requiring the payment of $1.5 million and surrendering of 25,000 acre-feet of groundwater rights in exchange for a release of future liability for TDS and TOC in the groundwater. The 2000 Consent Order requires a groundwater monitoring plan for the property purchased by CCG to evaluate whether constituents other than TDS and TOC have migrated to groundwater. A Remedial Investigation and Monitoring Work Plan for this purpose is under development with DTSC. Because closure of the landfill requires groundwater monitoring and because the project includes a remedial cap that will limit the infiltration of water through the vadose zone to groundwater and allow compliance with storm-water runoff requirements, the proposed project will not result in significant adverse project-related or cumulative impacts to water quality.

Analysis as to whether or not project activities would:

a. Violate any water quality standards or waste discharge requirements.

   Impact Analysis:

   The project site is within the jurisdiction of the SARWQCB. The project will comply with all applicable storm-water control requirements of NPDES General Permits CAS000002 (Waste Discharge Requirements for Discharges of Storm Water Runoff Associated with Construction Activity), and CAS618036 (Waste Discharge Requirements for the San Bernardino County Flood Control District, the County of San Bernardino, and the Incorporated Cities of San Bernardino County Within the Santa Ana Region). Site-wide remediation activities for groundwater contamination at the Kaiser Steel Mill site are being conducted pursuant to a 2000 Consent Order between the project proponent and DTSC, in coordination with the SARWQCB. A groundwater settlement signed with the SARWQCB in 1993 provides for mitigation of impacts to groundwater from TDS and TOCs. Other impacts to groundwater will be addressed through the groundwater investigation and monitoring program pursuant to the 2000 Consent Order.

   The NPDES General Permit for Storm Water Associated with Construction Activity does not have numeric effluent limitations and the site does not anticipate discharge of non-visible pollutants. A Storm Water Pollution Prevention Plan (SWPPP) is required that includes: site description addressing the elements and characteristics specific to the site; descriptions of Best Management Practices (BMPs) for erosion and sediment controls; BMPs for construction waste handling and disposal; implementation of approved local plans; proposed post-construction controls; and non-storm water management.

   The requirements of the General Permit are implemented on a year-round basis, especially during construction activity. A monitoring program will be implemented in accordance with the General Permit which requires inspections of the construction site prior to anticipated storm events and after actual storm events. Additionally, an annual

certification is conducted to certify that the construction activities are in compliance with the requirements of the General Permit.

Post-construction BMPs will include the following: vegetated slopes and benches; corrugated metal pipes serving as down drains which will discharge directly to concrete-lined ditches; and a sedimentation basin located at the southeast corner of the site.

Conclusion:
☐ Potentially Significant Impact
☐ Potentially Significant Unless Mitigated
☒ Less Than Significant Impact
☐ No Impact

b. Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficient in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted).

Impact Analysis:

The project site is located over the regional water-table aquifer of the Chino groundwater basin. The regional water table occurs at depths of about 320 to 350 feet below the native ground surface. The project does not require the extraction or recharge of groundwater, and impacts to groundwater beneath the project site will be addressed through the groundwater investigation and monitoring program pursuant to the 2000 Consent Order. See response to (a) above.

Conclusion:
☐ Potentially Significant Impact
☐ Potentially Significant Unless Mitigated
☒ Less Than Significant Impact
☐ No Impact

c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on or off-site.

Impact Analysis:

Storm water controls, including vegetated slopes and benches, corrugated metal pipes serving as down drains to discharge directly to concrete-lined ditches, and a sedimentation basin located at the southeast corner of the site will be incorporated into the design of the cap. It is anticipated that the storm water will be directed to either Mulberry Ditch (a privately owned and maintained ditch), the San Sevaine Channel (a drainage facility of the San Bernardino County Flood Control District), or both. Both of these drainage features are designed to manage storm water. The drainage features have sufficient capacity to receive runoff from the proposed cap, pending completion of the Flood Control District's project to improve the San Sevaine Channel. In the interim, arrangements have been made to provide adequate detention capacity for runoff from the site on the property west of the East Slag Pile. Neither Mulberry Ditch nor San Sevaine Channel would be altered by the project. Placement and maintenance of the proposed cap over the landfill will prevent erosion and siltation on and off-site.

Conclusion:
☐ Potentially Significant Impact
☐ Potentially Significant Unless Mitigated
☒ Less Than Significant Impact
☐ No Impact

d. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on or off-site.

Impact Analysis:

See response to (c) above.

Conclusion:
☐ Potentially Significant Impact
☐ Potentially Significant Unless Mitigated
☒ Less Than Significant Impact
☐ No Impact

e. Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff.

Impact Analysis:

Existing storm water drainage systems have sufficient capacity to receive runoff from the proposed cap, pending completion of the Flood Control District's project to improve the San Sevaine Channel. Additional sources of polluted runoff will be reduced by placement and maintenance of the proposed cap over the landfill.

Conclusion:
☐ Potentially Significant Impact
☐ Potentially Significant Unless Mitigated
☒ Less Than Significant Impact
☐ No Impact

f. Otherwise substantially degrade water quality.

Impact Analysis:

See response to (e) above.

Conclusion:
☐ Potentially Significant Impact
☐ Potentially Significant Unless Mitigated
☒ Less Than Significant Impact
☐ No Impact

g. Place within a 100-flood hazard area structures which would impede or redirect flood flows.

Impact Analysis:

The project site is not within a 100-year flood hazard area.

Conclusion:
☐ Potentially Significant Impact
☐ Potentially Significant Unless Mitigated
☒ Less Than Significant Impact
☐ No Impact

h. Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam.

Impact Analysis:

The project site is not subject to flooding as a result of the failure of a levee or dam.

Conclusion:
☐ Potentially Significant Impact
☐ Potentially Significant Unless Mitigated
☒ Less Than Significant Impact
☐ No Impact

i. Inundation by sieche, tsunami or mudflow.

Impact Analysis:

The project site is not subject to inundation by seiche, tsunami or mudflow.

Conclusion:
☐ Potentially Significant Impact
☐ Potentially Significant Unless Mitigated
☒ Less Than Significant Impact
☐ No Impact

References Used:

(15) Shaw, 2006, *Remedial Investigation/Feasibility Study, East Slag Pile Landfill Area, Former Kaiser Steel Mill Site, Fontana, California,* revision 3, April

(20) DTSC, 2000, *Imminent and Substantial Endangerment Determination and Consent Order,* August 10

(21) California Regional Water Quality Control Board, Santa Ana Region, 1995, *Water Quality Control Plan, Santa Ana River Basin (8),* adopted March 11, 1994, Resolution No. 94-1.

(22) Federal Emergency Management Agency, 1996, *Firm Flood Insurance Rate Map, San Bernardino County and Incorporated Areas, California,* map no. 0607IC8634 F, panel 8634 of 9400.

(23) October 1993 Settlement Agreement between California Regional Water Quality Control Board, Santa Ana Region, and Kaiser Resource, Inc.

(24) San Bernardino County Flood Control District, *San Bernardino County Map.*

(25) Wildermuth, M.J., 1995, *Supplemental Groundwater Investigation, Kaiser Mill Site, Work Plan,* prepared for Kaiser Ventures, Inc. July

9. Land Use and Planning

Project Activities Likely to Create an Impact:

Description of Baseline Environmental Conditions:

The project site is located northeast of the Interstate 10/Etiwanda Avenue Interchange and is adjoined by other parcels of the former Kaiser Steel Mill property on the north, south and west. The entire project site is within the jurisdictional boundaries of the County of San Bernardino and within the sphere of influence of the City of Fontana, which is located to the north and east of the project site.

Demolition of the Kaiser Steel Mill began in 1982. Since that time, substantial portions of the former steel mill infrastructure have been removed from the site, including the area now encompassing the California Speedway, located to the north of the project site, and the Kaiser Commerce Center located to the west. Smaller buildings and facilities have been removed from the project vicinity as part of ongoing demolition operations.

The site is subject to the following plans, policies and designations:

San Bernardino County General Plan
The San Bernardino County General Plan (General Plan) establishes land use designations for all land within unincorporated areas of the County. The project site is designated Regional Industrial by the General Plan. This land use designation is intended to permit the establishment of major industrial centers or large individual industrial uses, such as the former steel mill and related uses, such as the East Slag Pile. Directly to the west and south of the project site is the Kaiser Commerce Center Specific Plan area, designated for a mix of commercial and industrial uses. Other immediately adjacent areas are designated Regional Industrial and Community Industrial. The area further to the north encompassing the California Speedway is a Planned Development.

San Bernardino County Development Code
The San Bernardino County Development Code sets forth standards of land use and new development, including a description of uses permitted within each land use district. The Development Code is the County's primary mechanism for implementing the land use policies of the General Plan and all land use regulations must be consistent with the General

Plan.

San Sevaine Redevelopment Plan
The entire project site lies within the San Sevaine Redevelopment Project Area (SSRPA). The San Bernardino County Redevelopment Agency established the SSRPA in 1995. The land use and other controls for the SSRPA have an effective life of 30 years. Over this span of the time, the Redevelopment Agency may undertake a variety of activities to eliminate and prevent the spread of blight in accordance with the Redevelopment Plan. Typical redevelopment activities include selective land assembly and acquisition, site occupant relocation, removing or rehabilitating physically obsolete or substandard structures and other blighting influences, improving streets and other public infrastructure systems, and eliminating parcels of irregular form and shape which reduce or hinder development opportunities. The land uses designations for the SSRPA are consistent with those called out in the San Bernardino County General Plan and all development of property in the SSRPA must be in accordance with the land use policies of the General Plan. Additionally, the regulations of the San Bernardino County Development Code were adopted for the SSRPA.

City of Fontana
The project site is located within the Sphere of Influence of the City of Fontana, as designated by the San Bernardino County General Plan, for possible future annexation by the City of Fontana. In anticipation of such possible future annexation, the City of Fontana has applied a land use designation of General Industrial to the project site. However, since the project is not presently located within the jurisdiction of the City of Fontana, the City's land use policies and development regulations are not binding on the project. No annexation to the City of Fontana is proposed at this time.

The proposed project will remediate the ESP landfill. The project site would be available for possible post-remediation development scenarios such as parking and/or storage uses, which uses are consistent with all the plans and policies listed above. Therefore, the proposed project would not result in significant adverse project-related or cumulative significant impacts to land use.

Analysis as to whether or not project activities would:

a. Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect.
Impact Analysis:

As noted above the project site is designated as Regional Industrial. The proposed project will remediate the landfill, and portions of the site could be available for possible post-remediation development scenarios such as parking and/or storage uses, which uses are consistent with this designation and with requirements in the Development Code and the SSRP. The site will also be required to record a land use covenant (a.k.a. "Deed Restriction") that prohibits the development of the site for certain uses such as residential housing, day care centers, long-term care hospitals, or public or private schools. Additionally, land use restrictions will prohibit any use which might compromise the integrity of the cap.

Conclusion:
☐ Potentially Significant Impact
☐ Potentially Significant Unless Mitigated
☒ Less Than Significant Impact
☐ No Impact

b. Conflict with any applicable habitat conservation plan or natural community conservation plan.

Impact Analysis:

The project site is not within the area of any habitat conservation or natural community conservation plan.

Conclusion:
☐ Potentially Significant Impact
☐ Potentially Significant Unless Mitigated
☐ Less Than Significant Impact
☒ No Impact

References Used: (4) San Bernardino County, *General Plan.*

(26) San Bernardino County, *Development Code*

(27) City of Fontana, *General Plan.*
(28) San Sevaine Redevelopment Plan Area, *Second Amended and Restated Redevelopment Plan.*

10. Mineral Resources

Project Activities Likely to Create an Impact:

NONE

Description of Baseline Environmental Conditions:

Mineral resources include any form of natural rock materials that have commercial value. Remedial activities will primarily be conducted within the slag layer of the ESP Landfill Area and will not affect native soils or mineral resources. The project will therefore not result in any loss or availability of known mineral resources or locally important mineral resource recovery site. Therefore, the proposed project would not result in significant adverse project-related or cumulative significant impacts to mineral resources.

Analysis as to whether or not project activities would:

a. Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state.

   Impact Analysis:

   There are no known mineral resources of exploitable value at or under the project site or in the project vicinity. The project will not result in an increase in the rate or use of any mineral resources.

   Conclusion:
   ☐ Potentially Significant Impact
   ☐ Potentially Significant Unless Mitigated
   ☐ Less Than Significant Impact
   ☒ No Impact

b. Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan.

   Impact Analysis:

   The site is not delineated on any plan as a locally-important mineral resource recovery site.

   Conclusion:
   ☐ Potentially Significant Impact
   ☐ Potentially Significant Unless Mitigated
   ☐ Less Than Significant Impact
   ☒ No Impact

References Used: (29) R. V. Miller, 1994, *Mineral Land Classification of a Part of Southwestern San Bernardino County, the San Bernardino Valley Area, Part V* (OFR 94-08).

(30) R. V. Miller, 1987, *Mineral Land Classification of the Greater Los Angeles Area: Classification of Sand and Gravel Resource Areas, San Bernardino Production-Consumption Region, Part VII* (SR-143).

11. Noise

Project Activities Likely to Create an Impact:

Description of Baseline Environmental Conditions:

The project site is located within Operable Unit 3 and is adjacent to Operable Unit 4 in the south part of the former Kaiser Steel Mill site. To the north of project area, across San Bernardino Avenue, the surroundings are characterized by heavy industrial activity conducted by California Steel Industries. Remediation and mixed commercial and industrial redevelopment activities are currently underway on other portions of the former Kaiser Steel Mill directly to the west of the project site. Residential areas and local schools are not located close to the project site. The nearest residential areas are a little over 1/4 mile east of the project site, along Calabash Avenue. Two schools are located approximately 1.5 mile south and southeast of the site.

The County of San Bernardino has jurisdiction over local noise ordinances for the project. San Bernardino County Development Code, Title 8, Division 7, Chapter 9, Section 87.0905 (Appendix B) sets performance standards for noise. Industrial noise levels are not to exceed 70 dB for both day and night operating hours. The project site is surrounded by industrial use, and there is a considerable amount of ambient noise from these surrounding industrial uses, as well as from the nearby I-10 Freeway. Noises generated by temporary construction, repair or demolition activities between 7:00 am and 7:00 pm are exempt from these noise limitations under Section 87.0905(e)(1)(C).

Remedial activities will not result in sustained increases in noise levels. Equipment used during remediation is not expected to increase noise substantially over current levels at off-site locations. The highest noise level from earth moving equipment is not expected to exceed 90 DB at a distance of 50 feet from the source of the noise. Similarly, if deep dynamic compaction is used to densify the underlying materials, the noise level is not expected to exceed 90 DB at a distance of 50 feet from the diesel engine of the crane used to drop the weight. The sound made by the weight hitting the ground is less than the engine noise. At normal rates of noise attenuation of approximately 6 dB per doubling distance, noise levels at residences nearest areas where this type of equipment will operate are expected to be less than 60 dB. Noise at this level is generally compatible even with quiet residential neighborhoods and well below levels for industrial areas such as the project site. Noise levels will be further limited because project activities will generally occur between the hours of 7:00 a.m. and 5:00 p.m. The County of San Bernardino industrial noise level requirements will be observed during the project.

Design requirements for potential post-remediation land uses such a storage and/or heavy lay down may necessitate the use of deep dynamic compaction to reduce the risk of unconstrained settlement of existing landfill debris and uncompacted fill materials. Deep dynamic compaction causes soil densification by tamping with a heavy weight (pounder) dropped from a predetermined height in a repeated and systematic application of high energy. The imparted energy is transmitted from the ground surface to the deeper soil layers by propagating shear and compression waves which force the soil particles into a denser state. Dynamic compaction is carried out in several passes. During each pass, the weight is dropped repeatedly in a predetermined grid pattern. The distance between the compaction points is normally decreased in the subsequent passes and compaction is carried out in-between the previously compacted points. The final pass, also called an "ironing pass", usually performed with low compaction energy, is carried out with a reduced drop height. The objective is to densify the superficial soil layers without remolding the already densified deeper layers. Geotechnical considerations would be implemented to reduce excessive ground vibration and noise.

A project-specific health and safety plan will govern hearing protection standards and noise controls to protect on-site workers. Noise levels will be monitored on-site to evaluate the need for any protective equipment for on-site workers. Ear plugs or mufles may be used. If needed, preventive and control measures include reducing the number of noise-producing vehicles or pieces of equipment operating at any given time, adjusting the hours of vehicles and equipment operation to accommodate persons who are disturbed by the noise, and rerouting traffic.

It is anticipated that construction traffic noise will be less than the existing nearby I-10 Freeway noise. The travel speed of construction vehicles approaching the site can be reduced, if necessary, to reduce noise.

For all the reasons stated above, the proposed project would not result in significant adverse project-related or cumulative impacts.

Analysis as to whether or not project activities would:

a. Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.

   Impact Analysis:

   As stated in the description above, the highest noise level from earth moving equipment is not expected to exceed 90 DB at a distance of 50 feet from the source of the noise. At normal rates of noise attenuation of approximately 6 dB per doubling distance, noise levels at residences nearest areas where this type of equipment will operate are expected to be less than 60 dB.

Conclusion:
☐ Potentially Significant Impact
☐ Potentially Significant Unless Mitigated
☒ Less Than Significant Impact
☐ No Impact

b. Exposure of persons to or generation of excessive groundbourne vibration or ground-born noise levels.

Impact Analysis:

As stated in the description above, geotechnical considerations would be implemented to reduce excessive ground vibration and noise. If dynamic compaction is used, the heavy impacts applied to the ground surface will transmit vibrations out from the point of impact. In this project, because the tamping would be performed on the top of a slag pile mound that is over 50 feet above the elevation of the surrounding ground, the lateral travel distance will be less than if the tamping were done at ground level. To verify the effects of the dynamic compaction, all buildings within 500 feet of the top of slope of the ESP Landfill will be given a thorough preconstruction inspection to log the locations, lengths and widths of cracks, binding doors, peeling of wall coverings, floor sags, and tilt and lean of vertical members. Inspections of these buildings will be performed periodically throughout the duration of the dynamic compaction. In addition, ground vibrations at the buildings nearest the landfill will be monitored so that peak particle velocity can be documented. Based on the data presented by Lukas, modern buildings are not expected to have structural damage if maximum particle velocity is below 0.75 inch per second. If this value is exceeded at the nearest buildings, the dynamic compaction methodology may require modification to decrease its impact.

Conclusion:
☐ Potentially Significant Impact
☐ Potentially Significant Unless Mitigated
☒ Less Than Significant Impact
☐ No Impact

c. A substantial permanent increase in ambient noise levels in the vicinity above levels existing without the project.

Impact Analysis:

As stated in the description above, construction noise would be temporary. No permanent increase in ambient noise levels is expected.

Conclusion:
☐ Potentially Significant Impact
☐ Potentially Significant Unless Mitigated
☒ Less Than Significant Impact
☐ No Impact

d. A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.

Impact Analysis:

As stated in the description above, while there would be temporary noise impacts, they are not expected to be substantial in the project vicinity.

Conclusion:
☐ Potentially Significant Impact
☐ Potentially Significant Unless Mitigated
☒ Less Than Significant Impact
☐ No Impact

References Used: (26) San Bernardino County, *Development Code.*

(36) Lukas, R.G., 1986 *Dynamic Compaction for Highway Construction: Volume 1: Design and Construction Guidelines, Report No. FHWA/RD-86/133,* July.

12. Population and Housing

Project Activities Likely to Create an Impact:
NONE

Description of Baseline Environmental Conditions:

The project site and area bordering it were formerly used for steel-manufacturing activities. Areas to the immediate north (Operable Unit 4 – Consolidated Waste Cell and Chrome Ponds) currently contain hazardous substances that are in need of remediation. Further away from the immediate vicinity, the surroundings are characterized by heavy industrial use. The nearest residential area is a little over 1/4 mile away to the east. The project, which includes a deed restriction prohibiting the use of the site for residential purposes, day care centers, long-term care hospitals, or public or private schools, would not induce population growth or displace any housing. Therefore the proposed project would not result in significant adverse project-related or cumulative impacts.

Analysis as to whether or not project activities would:

a. Induce substantial population growth in area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure).

   Impact Analysis:

   The project does not involve demolishing or constructing housing and will not result in any change in human population distribution. The remediation activities are temporary and the potential post-remediation uses of the site for parking and/or storage will not impact population or housing resources.

   Conclusion:
   ☐ Potentially Significant Impact
   ☐ Potentially Significant Unless Mitigated
   ☐ Less Than Significant Impact
   ☒ No Impact

b. Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere.

   Impact Analysis:

   As stated in the description above, the project will not displace any existing housing or require the construction of replacement housing elsewhere.

   Conclusion:
   ☐ Potentially Significant Impact
   ☐ Potentially Significant Unless Mitigated
   ☐ Less Than Significant Impact
   ☒ No Impact

c. Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere.

   Impact Analysis:

   As stated in the description above, the project will not displace any people or require the construction of replacement housing elsewhere.

   Conclusion:
   ☐ Potentially Significant Impact
   ☐ Potentially Significant Unless Mitigated
   ☐ Less Than Significant Impact
   ☒ No Impact

References Used: (4) San Bernardino County, *General Plan.*

13. Public Services

Project Activities Likely to Create an Impact:

Description of Baseline Environmental Conditions:

The project site does not provide, nor will the project require, significant use of public services. The site consists of a landfill that was formerly used to deposit industrial wastes related to steel manufacturing.. As the site is a closed landfill, it will not use any public services except the access road that adjoins the property and electrical service for the landfill gas collection system. The project will not result in the need for increased fire protection or police services. The site is fully fenced and any security concerns will be managed by the site owners. The project will comply with all applicable site security regulations in the Health and Safety Code.

Neither schools nor recreational facilities will be impacted since no additional persons will move into the area as a result of the temporary remediation activities.

The project has the potential to encounter situations which could be considered emergencies. A Health and Safety Plan has been prepared to anticipate and resolve any emergency issues that may arise.

The project does not create the need for public services. Alteration in the use of public services is not expected to change as a result of the project. Therefore, the proposed project would not result in significant adverse project-related or cumulative impacts to public services.

Analysis as to whether or not project activities would:

a. Result in substantial adverse physical impacts associated with the provision of new or physically altered government facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the following public services:

   - Fire protection
   - Police protection
   - Schools
   - Parks
   - Other public facilities

   Impact Analysis:

   Fire protection is provided by the Valley Division of the San Bernardino County Fire Department, which operates Fire Station No. 72 (15380 San Bernardino Avenue) located 3.0 miles from the site. It also operates Fire Station No. 73 (14360 Arrow Boulevard) located 3.5 miles from the site. Police protection is provided by the San Bernardino County Sheriff's Department, which operates the Fontana Station (17780 Arrow Boulevard) located 6.9 miles from the site. Electric service is provided by Southern California Edison. The Fontana Water Company provides water to the area. No school, park or other public facilities are used or impacted by this project. It is possible that emergencies could occur during implementation of the project. A Health and Safety Plan has been prepared to anticipate and resolve any emergency issues that may arise. The impact on public services would be less than significant.

   Conclusion:
   ☐ Potentially Significant Impact
   ☐ Potentially Significant Unless Mitigated
   ☒ Less Than Significant Impact
   ☐ No Impact

References Used: (4) San Bernardino County, *General Plan.*

(31) San Bernardino County, *Kaiser Commerce Center Specific Plan.*

14. Recreation

Project Activities Likely to Create an Impact:

NONE

Description of Baseline Environmental Conditions:
There are no parks or other recreational facilities located at or near the project area. Remediation activities are temporary and will not impact existing recreational facilities. Therefore, the proposed project will not result in significant adverse project-related or cumulative impacts to recreation.

Analysis as to whether or not project activities would:

a. Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated.

   Impact Analysis:

   As stated in the description above, the project will not result in any increased usage of existing parks or other recreational facilities.

   Conclusion:
   ☐ Potentially Significant Impact
   ☐ Potentially Significant Unless Mitigated
   ☐ Less Than Significant Impact
   ☒ No Impact

b. Include recreational facilities or require construction or expansion of recreational facilities which might have an adverse physical effect on the environment.

   Impact Analysis:

   As stated in the description above, the project does not include a recreational facility or the expansion of any recreational facility.

   Conclusion:
   ☐ Potentially Significant Impact
   ☐ Potentially Significant Unless Mitigated
   ☐ Less Than Significant Impact
   ☒ No Impact

References Used: (4) San Bernardino County, *General Plan*.

15. Transportation and Traffic

Project Activities Likely to Create an Impact:

Description of Baseline Environmental Conditions:

The project site is located in an unincorporated area of southwestern San Bernardino County, immediately west and south of the City of Fontana and east of the cities of Rancho Cucamonga and Ontario. The project site is within the area bounded by Etiwanda Avenue on the west, San Bernardino Avenue on the north, Cherry Avenue on the east, and Valley Boulevard and the San Bernardino Freeway (I-10) on the south. Ontario International Airport is located approximately 4.0 miles southwest of the project site.

The project site has excellent regional access, as it is located adjacent to Interstate Highway 10 (I-10) , and is close to the Ontario (I-15) and the Pomona (SR-60) Freeways. I-10 is the primary east-west link between Los Angeles metropolitan area and the central, southern and eastern portions of the United States. I-15 provides north-south regional circulation, connecting the Inland Empire to San Diego to the south, and the high desert areas, Las Vegas, Salt Lake City, and beyond to the northeast. SR-60 is also a major transportation route between Los Angeles to the west and the eastern

San Bernardino-Riverside metropolitan area. The recent extension of SR-210 from San Dimas to Fontana parallels I-10 and SR-60, and provides an additional east-west access to the vicinity of the project site.

Important north-south arterials in the area include (from east to west) Sierra Avenue, Citrus Avenue, Cherry Avenue, Commerce Drive, Etiwanda Avenue, Milliken Avenue, and Haven Avenue. All of these four-lane arterials have interchanges with the I-10. Important east-west arterials in the project area include (from south to north) Valley Boulevard, San Bernardino Avenue/Fourth Street, Arrow Highway, Foothill Boulevard, Baseline Avenue, and Highland Avenue. Valley Boulevard is a four-lane divided arterial located immediately north of I-10, with access to and from that freeway. San Bernardino Avenue, Arrow Highway, and Foothill Boulevard are regional arterials that run through developed commercial and residential areas. San Bernardino Avenue, Foothill Boulevard, Highland Avenue, and Baseline Avenues all provide access to I-15. There are existing bus routes on the I-10, south of the project site, and on San Bernardino Avenue, north of the project site.

The closest intersections monitored under the County of San Bernardino Congestion Management Program are Cherry Avenue-San Bernardino Avenue to the northeast; Cherry Avenue-Valley Boulevard to the southeast; Etiwanda Avenue-San Bernardino Avenue to the northwest; and the Etiwanda-Interstate 10 westbound and eastbound interchanges.

The project will temporarily increase truck traffic during an approximately 14-16 week cap construction period, but the truck routes from I-10 to Commerce Drive and then to San Bernardino Avenue; or from the site to San Bernardino Avenue, to Cherry Avenue, to Valley Boulevard, and then to I-10 will not adversely impact any failing intersections or cause any intersections operating at an acceptable level of service to fail. Contractor and employee parking will occur on site during the cap construction.

There is one other project to be performed concurrently that would impact the transportation routes proposed for this project. The City of Fontana is planning the installation of a new sewer line within San Bernardino Avenue which will likely force one lane of San Bernardino Avenue to be closed during this project (Figure 3). This will not change the truck routes proposed for this project, but may delay the traffic due to the use of flag men directing alternate flows of traffic. However, the use of Valley Boulevard will allow most of the traffic to easily detour the area affected by the City of Fontana's project.

Therefore, although the proposed remediation project will not result in significant adverse project-related traffic impacts, the installation of a new sewer line will cause traffic delays and will force traffic to use Valley Boulevard as an alternate route.

It is also recognized that motorcar racing events could be scheduled at the nearby California Speedway during the cap construction period. These racing events at the California Speedway occur over a single day usually on either a Saturday or Sunday. There would be no cap construction activities occurring on weekends; therefore, the proposed project will not result in significant adverse project-related traffic impacts.

Analysis as to whether or not project activities would:

a. Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections).

   Impact Analysis:

   The proposed project will require the importation of approximately 21,100 truckloads of landfill cap materials over a 14 to 16 week period. The daily truck traffic will average about 280 vehicles that will arrive and depart from the site (two-way traffic). The traffic increase due to project activities is expected to have little impact on the surrounding area. Ingress and egress from the site is available from two directions on San Bernardino Avenue with a short travel distance to I-10 (See Figure 1). On-site vehicle movement will be entirely on the former Kaiser Steel Mill site. The areas of the mill site to be affected by the project are rarely trafficked, and the project will not significantly increase traffic. Equipment to be used for the project will not all operate at the same time. The roads least used by residents in the area will be designated for truck traffic to minimize any traffic increase. The remedial activities are temporary, and the contractor will use appropriate traffic control measures. There are no rights of way encroachments under the project. There will be no construction activity on major race days at the California Speedway.

   Peak hour traffic loads for the County-monitored streets in the vicinity are as follows:

Street	Westbound	Eastbound	Northbound	Southbound
Cherry Ave.			877	1090
Valley Blvd.	793	1340		
San Bernardino Ave.	480	873		
Etiwanda Ave.			778	971

Conclusion:
☐ Potentially Significant Impact
☐ Potentially Significant Unless Mitigated
☒ Less Than Significant Impact
☐ No Impact

b. Exceed, either individually or cumulatively, a level of service standard established by the country congestion management agency for designated roads or highway.

Impact Analysis:

Cherry Avenue between I-15 and Jurupa Avenue is the only designated roadway in the project area listed in the San Bernardino County Congestion Management Program (CMP). However, the most recent CMP update (December 2003) does not list a level of service (LOS) for this road segment. LOS for CMP-listed intersections in the immediate vicinity of the project (Cherry & San Bernardino, Etiwanda & San Bernardino, Valley & Cherry, Valley & Etiwanda) were all listed as "C" for both AM and PM monitoring periods in the most recent (2003) CMP Update. There is no present or perceived need to increase the LOS for the area surrounding the project site, and the LOS is not expected to be exceeded by project activities.

Conclusion:
☐ Potentially Significant Impact
☐ Potentially Significant Unless Mitigated
☒ Less Than Significant Impact
☐ No Impact

c. Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).

Impact Analysis:

Traffic associated with the project will be consistent with the traffic related to the surrounding industrial uses, and there are no hazards or incompatible uses in the vicinity of the site that will affect the project.

Conclusion:
☐ Potentially Significant Impact
☐ Potentially Significant Unless Mitigated
☒ Less Than Significant Impact
☐ No Impact

d. Result in inadequate emergency access.

Impact Analysis:

Ingress and egress from the site is available from two directions on San Bernardino Avenue with a short travel distance to I-10 and other major thoroughfares. Remedial activities will be limited to the project site boundaries, so there will be no need to close off streets in the surrounding area.

Conclusion:
☐ Potentially Significant Impact
☐ Potentially Significant Unless Mitigated
☒ Less Than Significant Impact
☐ No Impact

e. Result in inadequate parking capacity.

Impact Analysis:

The project will not result in inadequate parking capacity, since all activities will take place inside the project site boundaries. There will only be only a small number of personnel on-site during the remedial activities, and there is an adequate amount of parking for these people on the site. Therefore, no additional parking will be needed.

Conclusion:
☐ Potentially Significant Impact
☐ Potentially Significant Unless Mitigated
☒ Less Than Significant Impact
☐ No Impact

f. Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks).

Impact Analysis:

The remedial activities will not create a conflict with adopted policies, plans or programs supporting alternative transportation (e.g. bus turnouts, bicycle racks). These plans and policies are not applicable to the project.

Conclusion:
☐ Potentially Significant Impact
☐ Potentially Significant Unless Mitigated
☒ Less Than Significant Impact
☐ No Impact

References Used: (4) San Bernardino County, *General Plan*

(32) San Bernardino County, 2003, *Congestion Management Program.*

(33) E-mail correspondence with Steven Smith, Traffic Engineer, San Bernardino County.

16. Utilities and Service Systems

Project Activities Likely to Create an Impact:

Description of Baseline Environmental Conditions:

Gasoline and diesel fuel will be the primary energy sources needed during construction of the project. Vehicles using these fuels will only be needed for specific tasks and will not all operate at the same time. The LFG control system will require electricity for the blowers. Sufficient electrical power exists to support the usage at the site, which is not expected to be substantial. Power will be run from existing transmission lines to the blower station.

The proposed remedial activities are not expected to use large quantities of electricity, water or other utilities, and thus substantial impacts to utility use will not occur. In addition to the permanent power line to the blowers, a temporary electrical line and meter and temporary use of water from a metered fire hydrant will be necessary for certain project activities. Nevertheless, the increased usage of energy or utilities will be insignificant.

Planned remedial activities will not increase need for wastewater treatment. Site sanitation facilities will be temporary. The proposed project will not generate significant amounts of waste that would exceed landfill capacities, and will comply with federal, state, and local statutes and regulations related to solid waste.

For all the reasons described above, the proposed project would not result in significant adverse project-related or cumulative impacts to utilities and service systems.

Analysis as to whether or not project activities would:

a. Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board.

Impact Analysis:

Planned remedial activities will not require wastewater treatment approvals from the SARWQCB. No wastewater discharges will be generated by the LFG treatment system. LFG condensate will be collected and properly disposed of at an offsite disposal facility. Therefore, there are no NPDES requirements associated with this aspect of the project.

Conclusion:
☐ Potentially Significant Impact
☐ Potentially Significant Unless Mitigated
☒ Less Than Significant Impact
☐ No Impact

b. Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.

Impact Analysis:

The Project will not require construction or expansion of water or wastewater treatment facilities.
Conclusion:
☐ Potentially Significant Impact
☐ Potentially Significant Unless Mitigated
☒ Less Than Significant Impact
☐ No Impact

c. Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.

Impact Analysis:

The only off-site drainage facilities required for this project have already been installed. These consist of storm-water detention capacity and storm sewers on the adjacent property to the east, installed as part of the development of that tract. Off-site facilities such as the San Sevaine Channel and Mulberry Ditch have adequate capacity to convey storm water from the site after it has passed through the detention system.

Conclusion:
☐ Potentially Significant Impact
☐ Potentially Significant Unless Mitigated
☒ Less Than Significant Impact
☐ No Impact

d. Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed.

Impact Analysis:

Limited amounts of water will be required for the project duration to suppress dust and for compaction purposes. The contractor will use the nearest existing fire hydrant, with metering, to obtain water for the project. The project will use water from the Fontana Water Company's public system and will not require new water supplies.

Conclusion:
☐ Potentially Significant Impact
☐ Potentially Significant Unless Mitigated
☒ Less Than Significant Impact
☐ No Impact

e. Result in determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the projects projected demand in addition to the providers existing commitments.

Impact Analysis:

The project will not require wastewater treatment. Site sanitation facilities will be temporary, and will be serviced by existing local providers of such services, in the normal course of their business.

Conclusion:
☐ Potentially Significant Impact
☐ Potentially Significant Unless Mitigated
☒ Less Than Significant Impact
☐ No Impact

f. Be served by a landfill with sufficient permitted capacity to accommodate the projects solid waste disposal needs.

Impact Analysis:

The project involves the in-place capping of a landfill and will not require material disposal in another landfill.

Conclusion:
☐ Potentially Significant Impact
☐ Potentially Significant Unless Mitigated
☒ Less Than Significant Impact
☐ No Impact

g. Comply with federal, state, and local statutes and regulations related to solid waste.

Impact Analysis:

The project will comply with federal, state, and local statutes and regulation related to solid waste.

Conclusion:
☐ Potentially Significant Impact
☐ Potentially Significant Unless Mitigated
☒ Less Than Significant Impact
☐ No Impact

References Used: (4). San Bernardino County, *General Plan.*

(2) Shaw (2006), *Draft Remedial Action Plan, East Slag Pile Landfill, Former Kaiser Steel Mill Site Fontana, California.*

MANDATORY FINDINGS OF SIGNIFICANCE:

Based on evidence provided in this Initial Study, DTSC makes the following findings:

a. The project ☐ has ☒ does not have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory.

b. The project ☐ has ☒ does not have impacts that are individually limited but cumulatively considerable. "Cumulatively considerable" means that the incremental effects of an individual project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.

c. The project ☐ has ☒ does not have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly.

DETERMINATION OF APPROPRIATE ENVIRONMENTAL DOCUMENT:

Based on evidence provided in this Initial Study, DTSC makes the following determination:

☒ The proposed project COULD NOT HAVE a significant effect on the environment. A **Negative Declaration** will be prepared.

☐ The proposed project COULD HAVE a significant effect on the environment. However, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A **Mitigated Negative Declaration** will be prepared.

☐ The proposed project MAY HAVE a significant effect on the environment. An **Environmental Impact Report** is required.

☐ The proposed project MAY HAVE a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An **Environmental Impact Report** is required, but it must analyze only the effects that remain to be addressed.

☐ The proposed project COULD HAVE a significant effect on the environment. However, all potentially significant effects (a) have been analyzed adequately in an earlier Environmental Impact Report or Negative Declaration pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier Environmental Impact Report or Negative Declaration, including revisions or mitigation measures that are imposed upon the proposed project. Therefore, nothing further is required.

APPROVALS:

Preparer's Signature		1-11-07 Date
Preparer's Name	Preparer's Title	Phone #
Greg Sweel	Project Manager	(714) 484-5413
Branch Chief Signature		1/11/07 Date
Branch Chief Name	Branch Chief Title	Phone #
Thomas Cota	Supervising Hazardous Substances Scientist	(714) 484-5459

ATTACHEMENT A

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(2) Shaw (2007), *Draft Remedial Action Plan, East Slag Pile Landfill, Former Kaiser Steel Mill Site, Fontana, California*.

(3) California Department of Transportation, *The California Scenic Highway System: A List of Eligible and Officially Designated Routes* (http://www.dot.ca.gov/hq/LandArch/scenic/cahisys.htm).

(4) San Bernardino County *General Plan*.

(5) Department of Conservation, Division of Land Resource Protection, 2002, Farmland Mapping and Monitoring Program Survey Area Map (http://ww.consrv.ca.gov/dlrp/FMMP/overview/survey_area_map.htm).

(6) SCAQMD *2003 Air Quality Management Plan*.

(7) 2004 and 2005 SCAQMD *Air Quality Data* (http://ww.aqmd.gov/smog/AQSCR2005/aqcard.pdf).

(8) SCAQMD *Rules & Regulations*.

(9) USEPA, *Compilation of Air Pollutant Emission Factors, Fifth Edition, Volume I: Stationary Point and Area Sources*, Document AP-42, Chapter 13.2.2.

(10) SCAQMD, *EMFAC Model*, version 2.2.

(11) Department of Conservation, Division of Mines and Geology. 2000. *A General Location Guide for Ultramafic Rocks in California - Areas More Likely to Contain Naturally Occurring Asbestos.* Open File Report 2000-19.

(12) California Department of Fish and Game, 2006, *California Natural Diversity Database Rarefind Report*, September 5.

(13) City of Fontana, 2003, *General Plan Update Draft Environmental Impact Report.*

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(19) IT, 2001, *Geotechnical Opportunities and Constraints Affecting Development of the East Slag Pile Landfill Area, Former Kaiser Steel Site, Fontana, California*.

(20) DTSC, 2000, *Imminent and Substantial Endangerment Determination and Consent Order,* August 10

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(22) Federal Emergency Management Agency, 1996, *Firm Flood Insurance Rate Map, San Bernardino County and Incorporated Areas, California*, map no. 0607IC8634 F, panel 8634 of 9400.

(23) October 1993 Settlement Agreement between California Regional Water Quality Control Board, Santa Ana Region, and Kaiser Resource, Inc.

(24) San Bernardino County Flood Control District, San Bernardino County Map.

(25) Wildermuth, M.J., 1995 Supplemental Groundwater Investigation, Kaiser Mill Site, Work Plan, prepared for Kaiser Ventures, Inc. July.

(26) San Bernardino County, *Development Code.*

(27) City of Fontana, *General Plan.*

(28) San Sevaine Redevelopment Plan Area, *Second Amended and Restated Redevelopment Plan.*

(29) R. V. Miller, 1994, *Mineral Land Classification of a Part of Southwestern San Bernardino County the San Bernardino Valley Area, Part V* (OFR 94-08).

(30) R. V. Miller, 1987, *Mineral Land Classification of the Greater Los Angeles Area: Classification of Sand and Gravel Resource Areas, San Bernardino Production-Consumption Region, Part VII* (SR-143).

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(32) San Bernardino County, 2003, *Congestion Management Program.*

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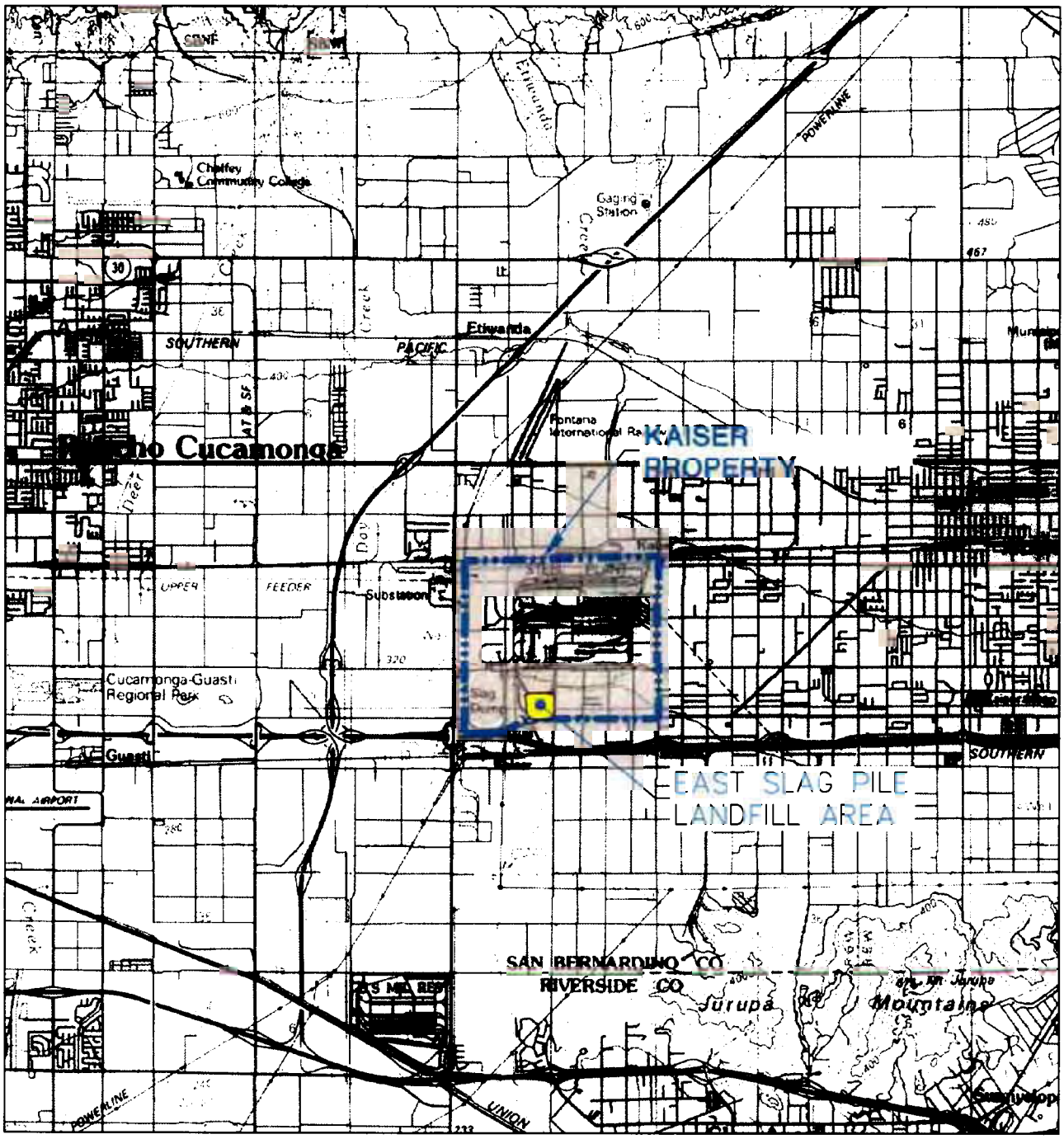

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Rev. by ICG 7/25/06	MEU 7/25/06	LOY 7/25/06	115008-A1

REFERENCE:
USGS TOPO!
NATIONAL GEOGRAPHIC 2001 EDITION

CCG ONTARIO, LLC
FONTANA, CALIFORNIA

FIGURE 1

KAISER PROPERTY AND ESP LANDFILL AREA SITE LOCATION MAP

FORMER KAISER STEEL MILL
FONTANA, CALIFORNIA

XREF Files: IMAGE Files: LOCATION MAP.TIF
File: S:\CAD_San Diego office\115008-CCG Ontario-RAP\RAP figures 7-06\115008-A1.dwg Layout: FIGURE 1 User: terry.schaeffer Jul 25, 2006 - 1:18pm

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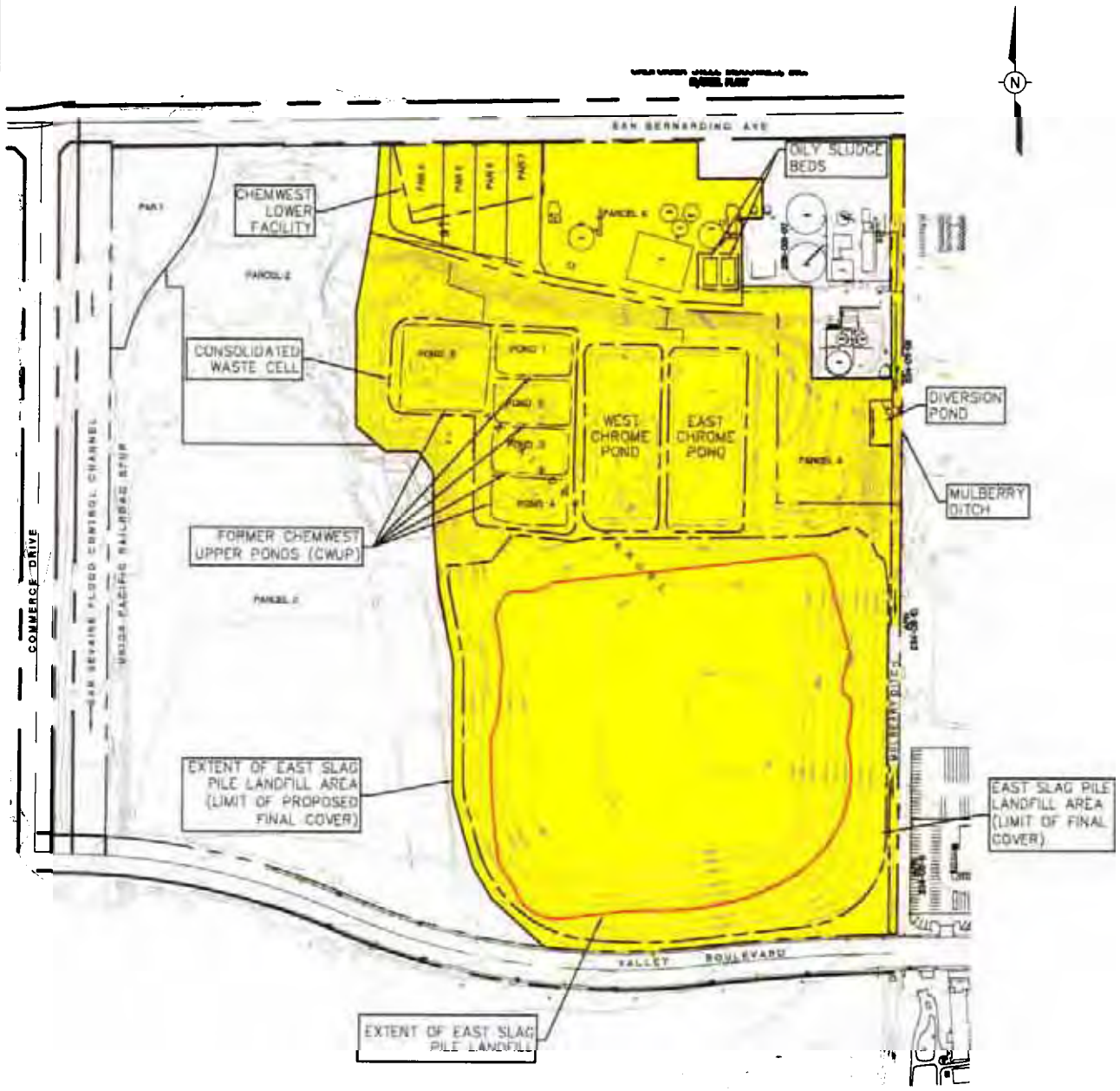
ICG 7/26/06	RNM 7/26/06	LOY 7/26/06	115008-A2



SITE OWNED BY CCG ONTARIO, L.L.C.

SCALE
0 500 1000 FEET

MAP REFERENCES:

1. EAST SLAG PILE TOPOGRAPHY BY TOWILL SURVEYING, MAPPING, AND GIS SERVICES. DATE: 12/12/03. JOB No. 10268
2. CWC AREA TOPOGRAPHY BY OLYMPIC MAPPING SYSTEMS DATE: 12/12/03. PROJECT TITLE: OMS23114
3. CHROME PONDS TOPOGRAPHY BY ASSOCIATED ENGINEERS, INC. FILE DATE: 09/13/02. FLIGHT DATE: 08/20/02
4. PARCEL NUMBERS AND BOUNDARIES ARE FROM COUNTY OF SAN BERNARDINO TENTATIVE PARCEL MAP No. 15640.

Shaw Environmental, Inc.

CCG ONTARIO, LLC
FONTANA, CALIFORNIA

FIGURE 2

LOCATION DIAGRAM FOR EAST SLAG PILE

FORMER KAISER STEEL MILL
FONTANA, CALIFORNIA

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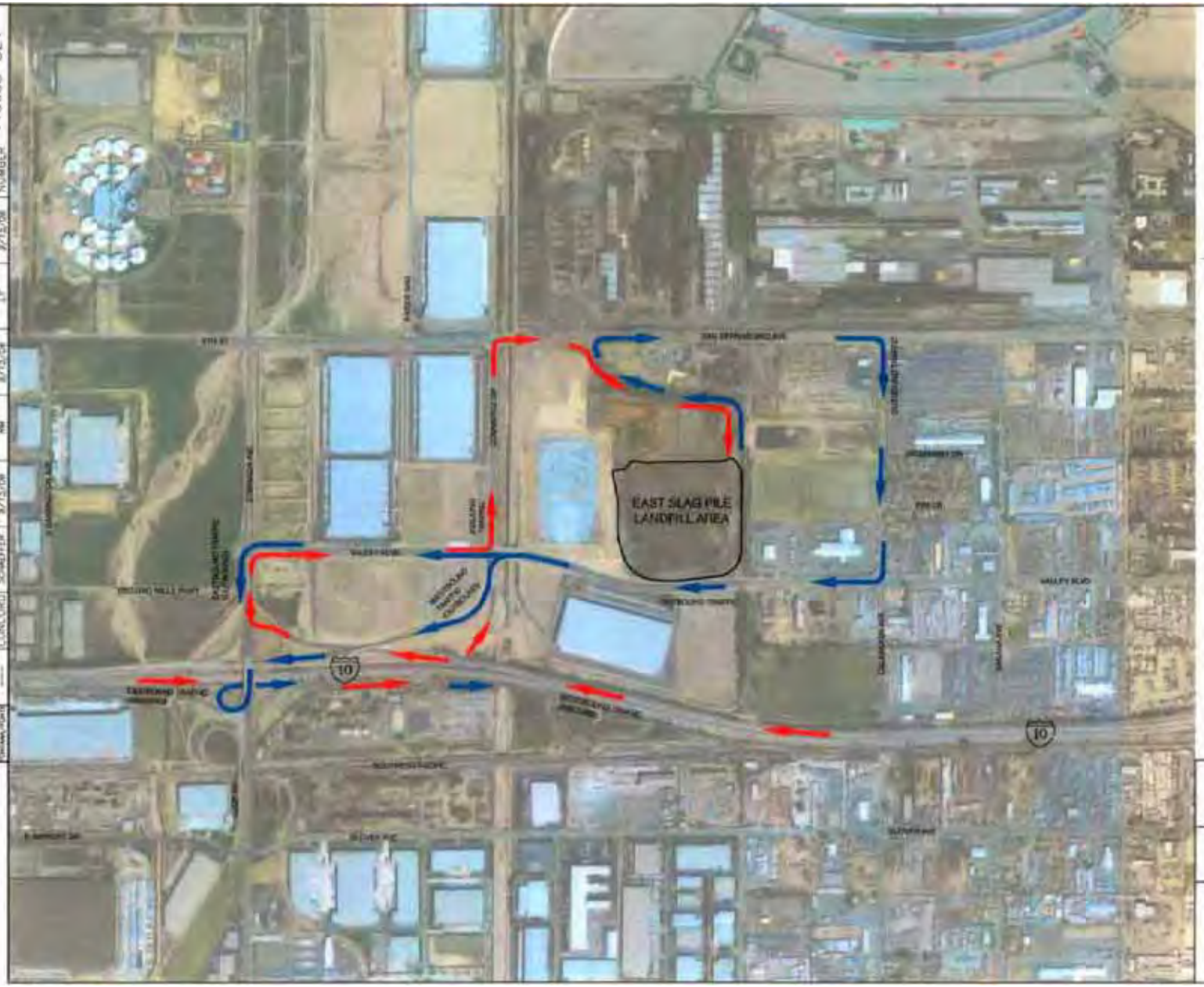

LEGEND

FLOW OF TRAFFIC TO SITE

FLOW OF TRAFFIC AWAY FROM SITE

SCALE

0 1000 2000FEET

Shaw Shaw Environmental, Inc.

CCG ONTARIO, LLC
FONTANA, CALIFORNIA

FIGURE 3

TRAFFIC FLOW MAP FOR
EAST SLAG PILE LANDFILL AREA

IMAGE	X-REF	OFFICE	DRAWN BY	CHECKED BY	APPROVED BY	DRAWING NUMBER
		CONCORD	SCHAEFFER 8/15/08	RW 8/15/08	LF 8/15/08	115008-B24

Kaiser East Slag Storage Pile
Emissions Calculation Summary

A summary of emissions from the Kaiser Steel Mill East Slag Storage Pile construction project are presented in the attached Table 1 with supporting calculations and documentation in Table 2 through Table 6. Emission factors, input parameters, and key assumptions are listed in the tables. This document includes additional description of the calculations used to create the summary of emissions.

Off Site Emissions from Haul Truck Diesel Combustion
This section includes emissions calculated in Tables 2 and 3 associated with haul trucks operating off-site in support of the project. The asphalt and soil hauling will not occur simultaneously. Therefore, the pounds per hour and pounds per day are from Table 2 for emissions from the cover soil haul trucks since this represents the worse case. Total emissions for the project include emissions from asphalt haul trucks (Table 3) as well as the soil hauling emissions.

On Site Emissions from Heavy Equipment Diesel Combustion
This part of the summary includes combustion emissions from haul trucks during the on-site portion of their trips as well as emissions from heavy diesel equipment operating at the site. The calculations are similar to those in the previous section. The short-duration emissions are based on the maximum that could occur on a single day. The total project emissions include the total emissions from all phases of the project. Worst case includes soil hauling as well as soil cover, asphalt paving, and new trunk line from Table 4.

Fugitive Haul Road Particulate Emissions
This portion of the summary presents the fugitive dust emissions from haul roads calculated in Table 5. As in the previous sections, the worst case (soil hauling) is presented for the short-term maximum emissions.

Fugitive Emissions from Heavy Equipment
This section summarizes emissions calculated in Table 6 for the fugitive dust emissions associated with heavy equipment operating on site. The worst case for these emissions includes cover soil and new trunk line operations occurring simultaneously. Asphalt paving could also occur but fugitive particulate emissions from the paving are expected to be minimal.

Final Summary
The final portion of the summary tables sums the maximum daily emissions and compares them to the significance thresholds. On-site emissions alone are shown in a separate column. Total maximum daily emissions from both on site and off site emissions are presented in the final column.

Table 1
East Slag Pile Closure Emissions Summary
Emissions Summary

Off Site Emissions from Haul Truck Diesel Combustion

	lbs/hr	lbs/day	lbs/project duration
NOx	1.21	12.08	1029.83
VOC	1.68	16.80	1432.34
PM_{10}	0.06	0.60	51.49
$PM_{2.5}$	0.06	0.56	47.37
SOx	0.06	0.63	53.39
CO	7.56	75.62	6446.67

On Site Emissions from Heavy Equipment Diesel Combustion

	lbs/hr	lbs/day	lbs/project duration
NOx	10.06	80.49	9788.84
VOC	1.17	9.37	1028.33
PM_{10}	0.58	4.64	554.10
$PM_{2.5}$	0.58	4.63	554.07
SOx	2.26	18.10	2155.33
CO	5.36	42.90	4736.91

Fugitive Haul Road Particulate Emissions

	lbs/hr	lbs/day	lbs/project duration
Onsite PM_{10} Emissions from Unpaved Roads (with control) =	9.94	79.52	6981.53
Onsite $PM_{2.5}$ Emissions from Unpaved Roads (with control) =	2.11	16.86	1480.08

Fugitive Emissions from Heavy Equipment

	lbs/hr	lbs/day	lbs/project duration
Onsite PM_{10} Emissions from Heavy Equipment (with control) =	4.88	39.03	2516.11
Onsite $PM_{2.5}$ Emissions from Heavy Equipment (with control) =	1.69	13.54	816.87

	SCAQMD Significance Thresholds	Maximum On Site Project Emissions	Maximum On and Off-Site Project Emissions
Pollutant	lbs/day	lbs/day	lbs/day
VOC	75	9.37	26.17
NOx	100	80.49	92.57
CO	550	42.90	118.52
PM10	150	123.19	123.79
SOx	150	18.10	18.72

Table 2
Emissions from Cover Soil Trucks Diesel Combustion

	Road Miles (Round Trip)	Number of Truck Trips per Day	Total Daily Truck Miles
Onsite Truck Traffic	1.2	281	337.2
Offsite Truck Traffic	39	281	10959
Total Truck Traffic			11296.2

Emission Factors						
Equipment	NOx (g/mi)	VOC (g/mi)	PM_{10} (g/mi)	$PM_{2.5}$ (g/mi)[a]	SOx (g/mi)	CO (g/mi)
Heavy-Duty Trucks (diesel)	0.40	0.56	0.02	0.02	0.02	2.50

Truck emission factors from EMFAC 2002 (v2.2) Emission Factors (On-Road)
NOx and PM emissions based on 2007 on-road emissions standards

Heavy-Duty Trucks (diesel)
Off Site Fuel Combustion Emissions Due to Project

	NOx	VOC	PM_{10}	$PM_{2.5}$[a]	SOx	CO
gms/day	4383.6	6096.9	219.2	201.6	227.3	27440.9
lbs/hr	1.21	1.68	0.06	0.06	0.06	7.56
lbs/day	9.66	13.44	0.48	0.44	0.50	60.50

a PM_{10} consists of 92% $PM_{2.5}$ from diesel exhaust (CEIDARS)

Heavy-Duty Trucks (diesel)
On Site Fuel Combustion Emissions Due to Project

	NOx	VOC	PM_{10}	$PM_{2.5}$[a]	SOx	CO
gms/day	134.9	187.6	6.7	6.2	7.0	844.3
lbs/hr	0.04	0.05	0.00	0.00	0.00	0.23
lbs/day	0.30	0.41	0.01	0.01	0.02	1.86

a PM_{10} consists of 92% $PM_{2.5}$ from diesel exhaust (CEIDARS)

Table 3
Emissions from Asphalt Haul Trucks Diesel Combustion

	Road Miles (Round Trip)	Number of Truck Trips per Day	Total Daily Truck Miles
Onsite Truck Traffic	1.2	80	96
Offsite Truck Traffic	39	80	3120
Total Truck Traffic			3216

Emission Factors						
Equipment	NOx (g/mi)	VOC (g/mi)	PM_{10} (g/mi)	$PM_{2.5}$ (g/mi)[a]	SOx (g/mi)	CO (g/mi)
Heavy-Duty Trucks (diesel)	0.40	0.56	0.02	0.02	0.02	2.50

Truck emission factors from EMFAC 2002 (v2.2) Emission Factors (On-Road)
NOx and PM emissions based on 2007 on-road emissions standards

Heavy-Duty Trucks (diesel)
Off Site Fuel Combustion Emissions Due to Project

	NOx	VOC	PM_{10}	$PM_{2.5}$[a]	SOx	CO
gms/day	1248.0	1735.8	62.4	57.4	64.7	7812.4
lbs/hr	0.34	0.48	0.02	0.02	0.02	2.15
lbs/day	2.75	3.83	0.14	0.13	0.14	17.22

a PM_{10} consists of 92% $PM_{2.5}$ from diesel exhaust (CEIDARS)

Heavy-Duty Trucks (diesel)
On Site Fuel Combustion Emissions Due to Project

	NOx	VOC	PM_{10}	$PM_{2.5}$[a]	SOx	CO
gms/day	38.4	53.4	1.9	1.8	2.0	240.4
lbs/hr	0.01	0.01	0.00	0.00	0.00	0.07
lbs/day	0.08	0.12	0.00	0.00	0.00	0.53

a PM_{10} consists of 92% $PM_{2.5}$ from diesel exhaust (CEIDARS)

Table 4
Diesel Equipment Combustions Emissions

Deep Dynamic Compaction

Equipment Type	Fuel Type	Number of Units of like size	Emissions (lbs/hr)					Average number of hours operated per day	Emissions (lbs/day)					Days of Operation per year	Emissions (tpy)				
			CO	VOC	NOx	SOx	PM10		CO	VOC	NOx	SOx	PM10		CO	VOC	NOx	SOx	PM10
Crawler	diesel	1	0.35	0.08	0.941	0.199	0.049	8	2.80	0.64	7.53	1.57	0.39	100	0.14	0.03	0.38	0.08	0.02
Totals			0.35	0.08	0.94	0.20	0.05		2.80	0.64	7.53	1.57	0.39		0.14	0.03	0.38	0.08	0.02

Grading (3 weeks)

Equipment Type	Fuel Type	Number of Units of like size	Emissions (lbs/hr)					Average number of hours operated per day	Emissions (lbs/day)					Days of Operation per year	Emissions (tpy)				
			CO	VOC	NOx	SOx	PM10		CO	VOC	NOx	SOx	PM10		CO	VOC	NOx	SOx	PM10
Compactor	diesel	1	0.679	0.161	1.698	0.38	0.093	5	3.40	1.32	15.19	2.45	0.74	15	0.04	0.01	0.11	0.02	0.01
Bulldozer	diesel	1	1.824	0.214	1.39	0.442	0.117	5	8.19	1.89	11.12	3.62	0.90	15	0.06	0.01	0.08	0.03	0.01
Scraper	diesel	1	0.816	0.297	1.815	0.496	0.414	5	6.53	1.68	22.71	3.97	0.91	15	0.05	0.01	0.17	0.03	0.01
Totals			2.52	0.56	4.13	1.38	0.72		28.15	4.86	49.02	10.04	2.56		0.18	0.03	0.37	0.08	0.02

LFG System (3 weeks)

Equipment Type	Fuel Type	Number of Units of like size	Emissions (lbs/hr)					Average number of hours operated per day	Emissions (lbs/day)					Days of Operation per year	Emissions (tpy)				
			CO	VOC	NOx	SOx	PM10		CO	VOC	NOx	SOx	PM10		CO	VOC	NOx	SOx	PM10
Backhoe	diesel	1	0.419	0.125	0.816	0.115	0.085	5	3.35	1.00	6.53	0.920	0.684	15	0.02514	0.00750	0.04896	0.00690	0.00498
Totals			0.42	0.13	0.82	0.12	0.09		3.35	1.00	6.53	0.920	0.684		0.02514	0.00750	0.04896	0.00690	0.00498

Soil Cover (15 weeks)

Equipment Type	Fuel Type	Number of Units of like size	Emissions (lbs/hr)					Average number of hours operated per day	Emissions (lbs/day)					Days of Operation per year	Emissions (tpy)				
			CO	VOC	NOx	SOx	PM10		CO	VOC	NOx	SOx	PM10		CO	VOC	NOx	SOx	PM10
Grader	diesel	1	0.546	0.124	1.442	0.279	0.074	8	4.37	0.99	11.54	2.23	0.59	75	0.16	0.04	0.43	0.08	0.02
Bulldozer	diesel	2	2.048	0.427	2.78	0.884	0.234	8	16.38	3.38	22.24	7.23	1.79	75	0.61	0.13	0.83	0.27	0.07
Water Wagon	diesel	1	0.04508	0.0103	0.097258	0.0804	0.0804	8	0.27	0.06	0.58	0.00	0.00	75	0.01	0.00	0.02	0.00	0.00
Compactor	diesel	1	0.679	0.161	1.698	0.38	0.093	8	5.43	1.29	15.19	2.46	0.74	75	0.20	0.05	0.57	0.09	0.03
Totals			3.22	0.72	6.13	1.49	0.39		26.55	5.77	49.02	11.92	3.13		1.00	0.22	1.84	0.45	0.12

compactor - off highway tractor

Asphalt Paving

Equipment Type	Fuel Type	Number of Units of like size	Emissions (lbs/hr)					Average number of hours operated per day	Emissions (lbs/day)					Days of Operation per year	Emissions (tpy)				
			CO	VOC	NOx	SOx	PM10		CO	VOC	NOx	SOx	PM10		CO	VOC	NOx	SOx	PM10
PF-3200	diesel	1	0.411	0.097	0.909	0.144	0.040	8	3.29	0.78	7.27	1.15	0.33	45	0.07	0.02	0.16	0.03	0.01
Drum roller	diesel	1	0.344	0.077	0.637	0.134	0.03	8	2.91	0.62	5.54	1.11	0.00	45	0.07	0.01	0.13	0.03	0.00
Totals			0.76	0.18	1.55	0.28	0.07		6.20	1.47	12.85	2.26	0.53		0.14	0.03	0.29	0.05	0.01

New Trunk Line (18 months)

Equipment Type	Fuel Type	Number of Units of like size	Emissions (lbs/hr)					Average number of hours operated per day	Emissions (lbs/day)					Days of Operation per year	Emissions (tpy)				
			CO	VOC	NOx	SOx	PM10		CO	VOC	NOx	SOx	PM10		CO	VOC	NOx	SOx	PM10
Excavator	diesel	2	0.948	0.194	2.276	0.482	0.13	8	7.59	1.55	18.21	3.86	0.98	215	0.81	0.17	1.96	0.42	0.10
Dump Truck	diesel	2	0.092	0.028	0.045	0.001	0.001	8	0.74	0.16	0.12	0.01	0.01	215	0.08	0.02	0.01	0.00	0.00
Totals			1.04	0.21	2.29	0.48	0.12		8.29	1.72	18.33	3.86	0.97		0.89	0.18	1.97	0.42	0.10

worst case day (lb/hr)				
CO	VOC	NOx	SOx	PM10
5.13	1.12	10.02	2.26	0.58

worst case day (lb/day)				
CO	VOC	NOx	SOx	PM10
41.04	8.96	80.19	18.08	4.62

total project (tons)				
CO	VOC	NOx	SOx	PM10
2.34	0.51	4.89	1.08	0.28

Notes:
Emission factors taken from South Coast AQMD CEQA Handbook Supplemental Information Off-Road Mobile Source Emission Factors for model year 2007
Emission factors for off-highway tractors used to estimate compactor emissions
Dump Truck/water wagon emission factors from EMFAC 2002 (v2.2) Emission Factors (On-Road) using an average of 80 miles/day
Dozer NOx emission factors assume Tier III Emission Controls Implemented

Table 5
Haul Road Fugitive Particulate Emissions

Truck Activity	Number of Round Trips per Day	Distance per Trip on Unpaved Road	Total Unpaved Daily Truck Miles
Transport of Materials for Cap Construction	281.33	1.2	337.6
Alphalt Hauling	80.00	1.2	96
Total	281.33	1.2	337.6

Unpaved Road Emission Factor Algorithm[1]

$E = k * (s/12)^{**a} * (W/3)^{**b}$

Where E = emission factor in pounds per vehicle mile traveled (lbs/VMT)
k = empirical constant = 1.5 lbs/VMT for PM10[2]
a = empirical constant = 0.9 for PM10
b = empirical constant = 0.45
s = typical surface silt content[3] = 6.4%
W = mean vehicle weight = 28.75 tons

[1] Compilation of Air Pollutant Emission Factors, AP-42, Fifth Edition, Volume I: Stationary Point and Area Sources, Chapter 13.2.2
[2] ibid, Table 13.2.2-1
[3] ibid, Table 13.2.2-2

OnSite Fugitive PM_{10} and $PM_{2.5}$ Emissions Due to Project Truck Traffic

Cap Material Traffic	42.20 VMT/hr
Asphalt Paving Traffic	12.00 VMT/hr
Unpaved Road Emission Factor	2.36 lbs/VMT
Cap Material Traffic Fugitive PM_{10} Emissions	99.40 lbs/hr
Asphalt Paving Traffic Fugitive PM_{10} Emissions	28.27 lbs/hr
Cap Material Traffic Fugitive $PM_{2.5}$ Emissions[a]	21.07 lbs/hr
Asphalt Paving Traffic Fugitive $PM_{2.5}$ Emissions[a]	5.99 lbs/hr

a PM_{10} consists of 21.2% $PM_{2.5}$ from unpaved road dust (CEIDARS)

Fugitive Emissions with Dust Suppression

Dust suppression using water routinely sprayed or surfactant as required on road surfaces reduces emissions by 90%.

Note: Paved and unpaved roads are routinely sprayed with water; 90% reduction in emissions from uncontrolled levels applied.

	lb/hr	lb/day	total project (lbs)
Cap Material Traffic Fugitive PM_{10} Emissions (with control)	9.94	79.52	5964.0
Asphalt Paving Traffic Fugitive PM_{10} Emissions (with control)	2.83	22.61	1017.6
Cap Material Traffic Fugitive $PM_{2.5}$ Emissions (with control)	2.11	16.86	1264.4
Asphalt Paving Traffic Fugitive $PM_{2.5}$ Emissions (with control)	0.60	4.79	215.7

Table 6
Construction Equipment Fugitive Particulate Emissions

Grading (3 weeks) 15 days

Earth Moving						Un-controlled PM10 (lbs/day)	Un-controlled PM2.5 (lbs/day)	Control Efficiency	Controlled PM10 Emissions (lbs/day)	Controlled PM2.5 Emissions (lbs/day)	Controlled PM10 Emissions (lbs/project)	Controlled PM2.5 Emissions (lbs/project)
Scrapers removing topsoil [1]	0.029	lb/ton	20 load/day	27 ton/load		15.66	7.83	80%	3.132	1.566	46.98	23.49
Scrapers unloading topsoil [1]	0.02	lb/ton	1.35 ton/yd³	540 ton/day		10.8	5.4	80%	2.16	1.08	32.4	16.2
Bulldozing [3]	0.75*1*(s)^1.5/(M)^1.4	lb/hr	1 dozers	10 hr/day	7.9 % moisture [5]	7.53	6.01	0.80	1.51	1.20	22.56	18.02
Compactor [1]	0.006	lb/ton	1.35 ton/yd³	540 ton/day		3.24	1.62	80%	0.648	0.324	9.72	4.86
Total						33.99			6.80	3.65	101.96	57.71

LFG System (3 weeks) 15 days

Earth Moving						Un-controlled PM10 (lbs/day)	Un-controlled PM2.5 (lbs/day)	Control Efficiency	Controlled PM10 Emissions (lbs/day)	Controlled PM2.5 Emissions (lbs/day)	Controlled PM10 Emissions (lbs/project)	Controlled PM2.5 Emissions (lbs/project)
Backhoe [1]	0.0185	lb/ton	1.35 ton/yd³	540 ton/day		9.99	4.995	80%	2.00	1.00	29.97	14.99
Total						9.99			2.00	1.00	29.97	14.99

Soil Cover (15 weeks) 75 days

Earth Moving						Un-controlled PM10 (lbs/day)	Un-controlled PM2.5 (lbs/day)	Control Efficiency	Controlled PM10 Emissions (lbs/day)	Controlled PM2.5 Emissions (lbs/day)	Controlled PM10 Emissions (lbs/project)	Controlled PM2.5 Emissions (lbs/project)
Bulldozing [3]	0.75*1*(s)^1.5/(M)^1.4	lb/hr	2 dozers	10 hr/day	7.9 % moisture [5]	15.06	12.01	0.80	3.01	2.40	225.83	180.21
Motor Grading [3]	0.5*0.51*(s)^2.0	lb/VMT	1 grader	7.1 mph [4]	56.8 mile/day	87.62	9.46	0.80	17.52	1.89	1314.25	142.01
Compactor [1]	0.006	lb/ton	1.35 ton/yd³	540 ton/day		3.24	1.62	0.80	0.65	0.32	48.60	24.30
Trucks (water) [1]	k(s/12)^a(W/3)^b	lb/VMT	20 W (tons)	30 VMT/day		70.72	35.36	0.80	14.14	7.07	1060.78	530.39
Total						176.63			35.33	11.69	1598.68	345.42

New Trunk Line (10 months) 215 days

Earth Moving						Un-controlled PM10 (lbs/day)	Un-controlled PM2.5 (lbs/day)	Control Efficiency	Controlled PM10 Emissions (lbs/day)	Controlled PM2.5 Emissions (lbs/day)	Controlled PM10 Emissions (lbs/project)	Controlled PM2.5 Emissions (lbs/project)
Excavator [1]	0.0185	lb/ton	1.35 ton/yd³	500 ton/day		9.25	4.625	80%	1.85	0.925	397.75	198.88
Dump Trucks [1]	0.0185	lb/ton	1.35 ton/yd³	500 ton/day		9.25	4.625	80%	1.85	0.925	397.75	198.88
Total						18.50			3.70	1.85	795.50	397.75

[1] From AP-42 Table 11.9-4 (TSP emission factor multiplied by 50% for PM10 and by 25% for PM2.5)
[2] From AP-42 Table 11.9-1
[3] From AP-42 Equation 1a s=6.4[6] k=1.5, a=0.9, b-0.45 for PM10
[4] From AP-42 Table 11.9-3 s=6.9[4] S=7.1[4] M=7.9[4]

Worst Case Day (lbs)		Total Project (tons)	
PM10	PM2.5	PM10	PM2.5
39.03	13.54	2516.11	816.87