4.3 Air Resources

	Potentially Significant Impact	Less-Than-Significant With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations.				
Would the project:				
a) Alter air movement, moisture, or temperature, or cause any change in climate?	☐	☐	☐	☒
b) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☐	☒
c) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☐	☐	☐	☒
d) Result in a 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)?	☐	☐	☐	☒
e) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐
f) Create objectionable odors affecting a substantial number of people?	☐	☒	☐	☐

ENVIRONMENTAL SETTING

Regional Setting

The MGSF and its assets are located in the central portion of the metropolitan region of Los Angeles. Atmospheric conditions, physical features, and land use collectively contribute to the ambient air quality in Los Angeles County (the South Coast Air Basin, SCAB), considered to be the worst in the U.S. Climate, winds and temperature inversion layers in the atmosphere concentrate industrial and vehicular emissions within the Los Angeles Basin (Basin) south of the San Gabriel Mountains. Abundant sunlight in the

presence of oxides of nitrogen (NO_X) and hydrocarbons causes reactions that generate photochemical smog. The MGSF Project area lies more than 35 mi inland from either the Santa Monica Bay or the Long Beach shore and thereby receives little or no clearing and experiences typical or worse than typical air quality conditions for the Basin.

Climatic Conditions

The climate is mild and tempered by cool sea breezes. The annual average temperature is about 75°F. January is usually the coolest month, and July and August are the hottest months. Most of the rainfall occurs between November and April. The average annual rainfall in downtown Los Angeles is 14 in.

Wind speeds in Los Angeles average 5.7 mph with little seasonal variation. The dominant daily pattern is an onshore daytime sea breeze and an offshore nighttime land breeze. This regime is broken only by occasional winter storms and infrequent strong northeasterly Santa Ana flows from the mountains and desert. The light average wind speeds limit horizontal dispersion of air contaminants in the Los Angeles Coastal Plain (Coastal Plain). On most spring and early summer days, the pollution produced is moved out of the Plain through mountain passes or is lifted by the warm, vertical currents produced by heated mountain slopes. The flushing is less pronounced from late summer through winter because of lighter wind speeds and the earlier appearance of offshore winds. With the stagnant air flow, the drainage winds may begin by late afternoon. Pollutants remaining in the Montebello-Coastal Plain are then trapped and accumulate.

The vertical dispersion of air contaminants in the Montebello-Long Beach Plain is hampered by the presence of a persistent inversion in the temperature of the atmosphere. Temperature usually decreases with altitude; the reversal of this pattern is called an inversion. Inversions limit the vertical mixing and hence dilution of contaminants, which become more concentrated in the lower atmosphere. The combination of low wind speeds and low inversions produces the greatest concentration of pollutants in the more inland areas, especially the San Gabriel Valley, just to north of the Montebello Plain. In summer, the longer daylight hours and the brighter sunshine combine to cause a reaction between hydrocarbons and oxides of nitrogen to form photochemical smog.

Air Quality

Examination of air quality trends in the SCAB through 1999 shows that the number of exceedances of air quality standards recorded in 1999 is consistent with a continuation of the downtrends reported in previous years. National Ambient Air Quality Standards (NAAQS) for ozone ($O_{3)}$ were exceeded more than 40 days / year in 1990, 1991 and 1992, but the 1 hour concentration was not exceeded in 1999.

Between 1976-78 and 1997-99, the 3-year average number of days exceeding the 1 and 8 hour NAAQS for O_3 decreased by 71% and 44% respectively. The 3-year average number of days exceeding the NAAQS for O_3 was reduced by 91% between 1976-78 and 1997-99. The 3-year average number of days exceeding the 24 hour NAAQS for O_3 decreased by 79% between 1985-87 and 1997-99.

From 1976-99, the highest O_3 levels occur in June, July and August. Until the late 1980's, days exceeding the NAAQS for O_3 were common as early as February and as late as November and December. Since 1996, no NAAQS exceedances for O_3 were recorded in

the months of January-March and November-December and the frequency of exceedances in September-October declined significantly. The NAAQS for O_3 has been exceeded continually during spring and summer months at all test stations within 20 mi of the MGSF project area for over two decades according to AQMD Web data for the South Coast Air Basin (SCAB) (hhtp://www.aqmd.gov/smog/aqscr99/Oz1999.jpg). Summer ozone levels are frequently unhealthy for the receptor populations of inland communities.

The 1-hour NAAQS for O_3 was exceeded on over 40 days in 1999 at the downtown Los Angeles test station (ID# 52 075, less than 10 mi to WNW). The 3-year average 8-hour concentration nearest the MGSF project area at Station#85 (corresponds to ID#53 114) during 1997-99 remained below the NAAQS of 0.12 ppm, but exceeded the California standard of 0.9 ppm. During the period from 1976-99 the Stage 1 episode level for O_3 (0.20 ppm) was exceeded on < 20 days, but on more days than in 1996 or 1997. No Stage 1 episode level smog alerts occurred during 1999 in downtown Los Angeles.

In 1999, the $PM_{2.5}$ standard (annual arithmetic mean-AAM-ug/m3, US Standard-USS-of 15 $\mu g/m^3$) was exceeded with highs of 25 $\mu g/m^3$, while the PM_{10} in 1999 (AAM-USS 50 ug/m_3) was exceeded by levels of 50-60 $\mu g/m^3$. The NAAQS for $PM_{2.5}$ was exceeded at many stations in the SCAB, including the closest stations between the Project area and downtown Los Angeles.

The data show that improvement has occurred throughout the 1990s in the reduction of most air pollutants. Air quality, however, has not attained U.S. standards in the SCAB, which is considered as having the worst air quality of any area in the United States and classified as “extreme” (the only extreme occurrence in the U.S.). The South Coast Air Quality Management District (SCAQMD) has proposed and implemented an aggressive air quality improvement program for the SCAB in order to attain U.S. standards, and begin approaching the California Air Quality Standards. The SCAQMD has enforced many stringent rules and reduced fixed sources of emissions, but all specialists recognize that air quality improvements must depend on increasing reductions of vehicle emissions for a growing population.

Local Setting

The MGSF Project area lies on the south flanks of the Montebello Hills (Montebello Plain) which extend southward to the Long Beach shoreline; the hills separate the Project area from the main San Gabriel Valley.

The Project area receives air pollutants during most of the day from the Long Beach-El Segundo coastal plains and air quality would be expected to be more similar to that of Whittier than San Gabriel Valley. Existing levels of ambient air quality and historical trends in the MGSF project area are documented by measurements of criteria pollutants made by the SCAQMD at its closest air monitoring station, the Whittier test station (Station #85) in the San Gabriel Valley source/receptor area (Receptor #11).

The Montebello Hills and the OII Landfill form somewhat of a low level barrier to emissions arising from the Pomona and San Gabriel Freeways. The Montebello Oil Field to the east of the MGSF forms a low-source of NO_X emissions for the area, although the field contributes fugitive hydrocarbon emissions and thereby supports ozone formation.

Local air emissions arise primarily from vehicular use associated with the major arterial roads, intersections, and commercial centers. The residential estates surrounding the primary MGSF sites contribute significant local air pollutant loads, compared to the normal operations and especially to the last 2 years inactive status for the MGSF.

Emissions produced at the MGSF during typical operation resulted from fixed sources and vehicle trips associated with worker commutes, deliveries to the Main Facility, maintenance trips to water and space heaters, and also to the wells on the East Site and Townsite Lots. Nine compressors with their gas-fuelled engines are currently permitted for operational use at MGSF. Fugitive emissions occurred from wells, oil water separators, and various gas-system piping and equipment.

Continued use of the MGSF for gas storage, even at an increased operational level, would be within existing permit allowances for air emissions and would not violate any air emissions requirement but would contribute to continuing non-attainment in the SCAB.

Some methane-related emissions are not regulated by the SCAQMD when non-methane hydrocarbon gases represent less than 500 ppm. Such emissions may include odorants and other non-methane hydrocarbons that are perceptible as odors to surrounding residents or visitors.

The Health Risk Assessment (ENSR 1998) concluded that all exposure risks and hazard indices do not exceed the significance levels where notification is required (SCAQMD Rule 2588, AB2588).

REGULATORY SETTING

Federal

At the national level, the U.S. Environmental Protection Agency (USEPA) is involved in local air quality planning through the federal Clean Air Act (FCAA) as updated by the Clean Air Act Amendments of 1990 (CAAA). The USEPA has established NAAQS for ozone (O_3), nitrogen dioxide (NO_2), carbon monoxide (CO), sulfur dioxide (SO_2), particulate matter less than 10 microns in diameter (PM_{10}), particulate matter less than 2.5 microns in diameter ($PM_{2.5}$), and airborne lead (Pb). An area where the NAAQS for a pollutant is exceeded can be designated as a non-attainment area, subject to planning and pollution control requirements that are more stringent than those areas which attain the NAAQS.

The NAAQS consist of two parts: an allowable concentration of a pollutant and an averaging time over which the concentration is to be measured. The allowable concentrations are based on the potential effects of the pollutants on human health, crops and vegetation, and, in some cases, damage to paint and other materials. The averaging times are based on whether the damage caused by the pollutant is more likely to occur during exposures to a high concentration for a short time (e.g., 1 hour), or to a relatively low average concentration over a longer period (e.g., 8 hour, 24 hour). For some pollutants, there is more than one air quality standard, reflecting both its short-term and long-term effects.

State of California

At the regional level in Southern California, the SCAQMD and the Southern California Association of Governments (SCAG) address air pollution affecting the SCAB through the 1994 and 1997 Air Quality Management Plan (AQMP) and amendments.

SCG currently holds a facility permit to operate the MGSF under the SCAQMD's RECLAIM program.

The SCAQMD requested that a Health Risk Assessment (HRA) be prepared for emissions from equipment located at the MSGS, pursuant to the Air Toxics Hot Spots Information and Assessment Act and corresponding Health and Safety Code Sections 44300, et seq. A draft Health Risk Assessment was submitted by the MGSF to the SCAQMD in January 1998.

All demolition projects in the Basin, including the removal of buildings at the MGSF, must be permitted by the SCAQMD in order to ensure that appropriate dust suppression methods are followed. The SCAQMD has established air pollution thresholds against which a proposed project can be evaluated. Separate impact criteria have been established for both short-term and long-term operations. The daily threshold for a single-family residential development to cause significant impact to air quality is placed at greater than 166 single-family residences (Table 6-2, CEQA Handbook 1993).

An accepted quarterly threshold of significance for construction presents 1,309,000 square feet of gross floor area as the trigger for potential significance in exceeding acceptable construction emissions (Table 6-3, CEQA Handbook 1993).

Air Quality Standards for Criteria Pollutants

Table 4.3-1 shows the federal and state air quality standards for criteria pollutants that are considered safe, with an added margin of safety, to protect the public health and welfare.

Ozone

Ozone (O_3) is an end product of complex reactions between reactive organic gases (ROG) or non-methane hydrocarbons (NMHC) and NO_x in the presence of intense ultraviolet radiation. ROG and NO_x emissions from both mobile and stationary sources, in combination with daytime wind flow patterns, mountain barriers, a persistent temperature inversion, and intense sunlight, can result in high O_3 concentrations. O_3 is a powerful oxidant in the form of photochemical smog. A new, more stringent 8-hour ozone standard was adopted by the USEPA in 1997, replacing the previous 1-hour standard.

Nitrogen Dioxide

Nitrogen dioxide (NO_2) is formed in the atmosphere primarily from a reaction between nitric oxide (NO) and oxygen (O_2). NO_x, including both NO and NO_2, are formed during high-temperature combustion processes when N_2 and O_2 in the combustion air combine.

Table 4.3-1: Ambient Air Quality Standards for Criteria Pollutants

Pollutant	Averaging Time	Federal Standards	California Standards
Ozone	8 hours	157µg/m^3 (0.08 ppm)	—
	1 hour	235 µg/m^3 (0.12 ppm)	180 µg/m^3 (0.09 ppm)
Carbon Monoxide	8 hours	10 mg/m^3 (9 ppm)	10 mg/m^3 (9 ppm)
	1 hour	40 mg/m^3 (35 ppm)	23mg/ m^3 (20 ppm)
Nitrogen Dioxide	Annual Arithmetric Mean	100 µg/m^3 (0.053 ppm)	—
	1 hour	—	470 µg/m^3 (0.25 ppm)
Sulfur Dioxide	Annual Arithmetric Mean	80 µg/m^3 (0.030 ppm)	—
	24 hours	365 µg/m^3 (0.14 ppm)	131 µg/m^3 (0.05 ppm)
PM_{10} - Fine Particulate Matter (<10 Microns)	24 hours	150 µg/m^3	>50 µg/m^3
$PM_{2.5}$- Fine Particulate Matter (<2.5 Microns)	24 hours	65 µg/m^3	—
	Annual Arithmetric Mean	15 µg/m^3	—
Lead	30 -day Average	—	1.5 µg/m^3
	Calendar Quarter	1.5 µg/m^3	—

SOURCE: CARB 1999

Although NO is much less harmful than NO_2, it can be converted to NO_2 in the atmosphere within hours or minutes under certain conditions. NO_2 (an O_3 precursor) is a reddish-brown gas; it gives smog its characteristic color and can cause a visible plume.

Carbon Monoxide

Carbon monoxide (CO) is a product of inefficient combustion, principally from small internal combustion engines such as those found in automobiles and other mobile sources of pollution. The highest levels of CO are typically recorded during evening hours from November through January. Winter inversions, which also occur during this time, trap cool air under a layer of warm air, allowing pollutants to build to unhealthy levels.

Sulfur Dioxide

Sulfur dioxide (SO_2) is produced when any sulfur-containing fuel is burned. It is also emitted by facilities that treat or refine sulfur or sulfur-containing chemicals. Peak concentrations of SO_2 occur at different times of the year in different parts of the state, depending on local fuel characteristics, weather, and topography.

Fine Particulate Matter

Particulate matter (PM) in the air is composed of a combination of wind-blown dust; particles directly emitted by combustion sources (e.g., soot); particles directly emitted by other sources (e.g., auto tires, carbon-black plants, etc.); and organic, sulfate, and nitrate aerosols formed in the air from emitted hydrocarbons, SO_x, and NO_x. In 1987, the USEPA replaced its total suspended particulate (TSP) NAAQS with a new NAAQS for PM_{10} (particulate matter <10 microns in size), since PM_{10} best reflects the size range of inhalable particles related to human health effects. In 1997, the USEPA adopted a new NAAQS for particles less than 2.5 microns in size ($PM_{2.5}$), owing to more recent scientific data indicating possible adverse health impacts from TSP in this smaller size range.

As indicated in this table, specific standards do not include general hydrocarbons nor specifically methane (simplest hydrocarbon gas). SCAQMD does regulate hydrocarbon emissions as ozone precursors and as toxic hydrocarbon gases and emissions.

Hazardous Air Pollutants (HAPs)

A substance is considered hazardous (toxic) if it has the potential to cause or contribute to an increase in mortality or an increase in serious illness, or if it may pose a present or potential hazard to human health. Title III of the 1990 CAAA identified 189 hazardous air pollutants. Control of toxic air emissions is implemented under Section 112 (Hazardous Air Pollutants) of the CAAA. (See Section 4.7 for further information on Hazardous Materials.)

ENVIRONMENTAL IMPACTS

Environmental impacts upon air resources generally relate to regional conditions, although some issues arise with regard to odors and local air circulation. An important issue relates to any contribution to conforming with air quality management plans. Current plans have not achieved U.S. standards for ambient air quality for the SCAB, and attainment of state standards appears to be more distant if possible at all. Although responsible agencies have recognized populations and related vehicular traffic as the primary source of continuing non-attainment of U.S. and California standards and increasing emissions, further contribution to the primary source of the non-attainment emissions has been accepted by both population and land use responsible agencies, SCAG, and the SCAQMD.

Significance criteria have been established through many other reviews and CPUC and state guidelines. Significant impacts are assessed in this impact analysis based on the known environmental setting, the proposed Project actions (direct effects) and the reasonably foreseeable future connected actions (urban land development and associated increases in vehicular traffic and emissions).

Significance Criteria

Three groups of issues and criteria are included in the checklist: climatic changes, regional air quality, and local nuisances. In general, because of the anticipated relative small sizes of the proposed Project and connected actions, effects have been considered to be minor or less than significant. General guidelines do not provide any numerical levels of significance and thereby they may be assessed based on the specific conditions of the SCAB, NAAQS, and the California state standards.

Climate impacts should be considered significant if they caused:

- Changes in surface air circulation, moisture, or temperatures; or
- Perceptible changes resulting in increases in water, power, or other resources by adjacent receptors.

Checklist issues b), c), and d) relate to the Project emissions in the SCAB, which is a non-attainment basin for both U.S. and California standards. The following significance criteria involve the proposed Project and its connected actions. The air quality impact would be considered significant if the Project:

- Does not conform with the applicable air quality plan;
- Reduces the rate of improvement or prolongs the schedule of federal and state air quality attainment or scheduled attainment of air quality;
- Emits pollutants which cause or contribute to violation of air emissions or air quality standards within the recognized non-attainment SCAB;
- Contributes to or encourages emission of any criteria pollutants ($PM_{2.5-10}$) or their precursors (NO_X and hydrocarbons for O_3) that are not in attainment within the air basin;
- Exposes sensitive receptors (e.g., schools, hospitals, parks, and other major public facilities) to substantial pollutants (e.g., perceptible by the general public); or
- Produces objectionable odors perceptible for 100 residents (25 dwellings, 5-7 ac.)

Gas Recovery and Decommissioning

Gas recovery and decommissioning include numerous actions that have occurred in the past, and thereby would result in little net change or differences from permitted emissions. The dominant activity relative to air emissions from the MGSF would involve abandonment of the 25+ wells in the Main Facility which would require several months of continuing operations to complete.

Checklist Question a) During decommissioning, no major physical changes would occur to any of the MGSF sites. Removal of some structures may reduce local turbulence and promote more natural air flows. Decommissioning the MGSF preparatory to sale for residential development would not result in alterations of air movement, moisture, or temperature, or cause any changes in climate.

Checklist Questions b), c), d) Emissions during decommissioning and gas recovery would be less than or similar to those levels during normal operations. Decommissioning emissions would remain within existing permits and any additional permits required for various activities during decommissioning. Emissions from mobile equipment are

regulated by other regulations and permits specific to the equipment; these emissions should be well within limits. Compliance with AQMD and City of Montebello regulations would limit particulate emissions to less-than-significant levels.

Checklist Questions e), f) During decommissioning, various equipment and facilities would be shutdown, de-pressurized, purged, cleaned-out, and removed from the MGSF sites. More than 25 wells would be abandoned with purging and venting, along with emissions from operating diesel equipment. Such activities must be stringently controlled and any releases minimized and treated through standard measures. Most equipment and wells lie within the Main Facility. The greatest potential for unintentional releases of pollutants and odors would be at the Main Facility. These emissions would probably affect the Racquet Hill estate along the east side of Howard Ave. For decommissioning, this appears to be the most significant air resources-related impact and should be mitigated during field operations as part of the proposed Project actions.

The engines for compressors that would be used to remove working and cushion gas at the MGSF would emit air contaminants. Removal of surface facilities during demolition could generate particulate matter.

The large number of wells and extensive pipeline network within the Main Facility have the potential for release of air pollutants and odors during their de-pressurizing and purging; these facilities would require additional attention and measures to control emissions. No major public facility lies within 1000 ft downwind of the Main Facility; however, up to six sensitive receptors were identified to be located within 3500 ft (ENSR 1998, HRA Table 3-2).

Well and pipeline purging and abandonment often release hydrocarbon and sulfurous gases or vapors. These potential pollutant and odorous releases from MGSF Townsite Lots and East Site may occur in close proximity to existing residences, public thoroughfares, and high use public areas (e.g., public library, neighborhood tennis courts, four-lane roads, etc.). Prolonged use of mobile-equipment at Townsite Lots may increase the potential for emissions and odors to generate complaints from residents within less than 50-100 ft of the well sites.

The long history of the MGSF and prior uses of some well sites may have led to contamination by hydrocarbons and other hazardous substances which shall be remediated before future development on the site. During such remediation, odors or air emissions may affect surrounding areas and result in complaints by local residents.

Potential odors associated with the project would be from hydrocarbon fumes from fuels and equipment involved in abandonment, restoration and remediation operations, and residential construction. These impacts are potentially significant but can be mitigated.

Future Development

Future development for residential use could be immediately undertaken for the various Townsite Lots. Development of the Main Facility and East Sites could be developed to existing residential-agriculture and manufacturing (1.14 ac) zoning (see Section 3.5 for the potential effects of more intense development). This type of development would expose existing sensitive receptors to some additional pollutants from associated traffic, but would not cause any change in air movement or climate.

Types of pollutants released during the development phase would differ greatly from the current and past MGSF operations and the expected emissions during decommissioning. Hydrocarbon vapors, sulfurous gases, and some NO_X emissions would be replaced by vehicular emissions of higher levels of $PM_{2.5-10}$, CO, hydrocarbons, and NO_X.

Checklist Questions a)-d) Future development of 22 dwellings would generate typical construction-related dust and equipment-exhaust emissions near sensitive receptors. These activities could require City of Montebello and perhaps SCAQMD review and compliance with emissions requirements for the site and equipment depending on how many may be developed as a single project (maximum of four at Howard / Victoria represent possible candidate for review). Future development to existing zoning would result in less than significant impacts.

Checklist Questions e), f) Following construction, future developments on the Townsite Lots should have a lower potential for emissions affecting sensitive receptors than during decommissioning or construction.

Locally, dust, exhaust, and perhaps odors during construction phases could reach objectionable levels for immediately adjacent residents or major public areas, e.g., Maple / Victoria Townsite Lots and westerly portions of the upper terrace bench at the Main Facility. Odors from future developments would be virtually identical to those of the existing residential areas and no change or objections would be anticipated. Future developments impacts would be less than significant because it would not be likely to expose sensitive receptors to substantial pollutant concentrations or create objectionable odors.

MITIGATION MEASURES

Decommissioning, degassing of the field, abandonment of wells, and demolition of the physical facilities may generate hydrocarbon and particulate emissions. Temporary emissions related to well abandonment from mobile equipment and open wells are under the authority of DOGGR and the SCAQMD. Particulate and odor emissions related to demolition are usually under the requirements of demolition permits by the City of Montebello and the SCAQMD.

Mitigation Measure 4.3-1 - Gas Recovery and Decommissioning

If SCG conducts the full or major elements of the decommissioning, SCG shall take full responsibility for compliance with all SCAQMD and City of Montebello regulations and permit conditions regarding air emissions throughout the decommissioning. If SCG sells the MGSF or any facilities thereof, the transfer shall be conditioned so that the new owner(s) accept all approved and confirmed procedures and requirements set forth in the facility's permits and shall have sufficient financial assets set aside for such implementation and completion. If for any reason, the new owner(s) fails to perform such measures, SCG shall be responsible for such implementation throughout decommissioning.

SCG shall define and implement controls of odors and dust during decommissioning, degassing of the field, and abandonment of wells. The control shall be prepared in conjunction with the SCAQMD and City of Montebello, and approved by the SCAQMD prior to implementing the project. Controls of odors arising from H_2S and hydrocarbons

may include activated carbon or incineration by catalytic oxidizer/combustors as allowed by the SCAQMD and the City of Montebello Fire Department.