4.8 Hydrology and Water Resources

Would the project:	Potentially Significant Impact	Less-Than-Significant With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a) Violate any water quality standards or waste discharge requirements?	☐	☐	☐	☒
b) Otherwise substantially degrade water quality?	☐	☒	☐	☐
c) 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?	☐	☐	☒	☐
d) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	☐	☐	☒	☐
e) 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?	☐	☐	☒	☐
f) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit 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)?	☐	☐	☒	☐
g) Place housing within a 100-year flood hazard area as mapped on a Federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☐	☐	☐	☒

	Potentially Significant Impact	Less-Than-Significant With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
h) Place within a 100-year flood hazard area structures, which would impede or redirect flood flows?	☐	☐	☐	☒
i) 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?	☐	☐	☐	☒
j) Create inundation by seiche, tsunami, or mudflow?	☐	☐	☐	☒

ENVIRONMENTAL SETTING

Regional

The southern flanks of the Montebello (or Repetto) Hills (Montebello Plains) drain to the Rio Hondo branch of the Los Angeles River and to the San Gabriel River, generally upstream of the recharge basins in Pico Rivera, part of the Montebello Forebay below the Whittier Narrows. The main drainage divide passes to the north of the MGSF and across the central portion of the OII Landfill, immediately to the north of the Main Facility site.

Water supply for the region typically originates from numerous groundwater sources or is conveyed from distant water sources in aqueducts. Some water may be supplied by local wells.

Local

Surface Water

The drainage across the MGSF flows generally from north to south and surface runoff is diverted to pipe flows at the major streets. The major streets are Howard for the Main Facility, Jefferson for the Monterey Park Lots, and Montebello Blvd. for the East Site. Other Townsite Lots drain directly to the adjacent streets and then to the nearest stormwater inlets.

Drainage for the Main Facility has been altered by previous earthworks for:

- Oil field and quarry operations
- OII Landfill and subsequent Superfund Site remediation
- Development of gas storage facilities on the two main terraces
- Howard Ave. and Texcoco St. construction and adjacent estate development

The earlier stream channel (“blue-line stream”) has been removed and replaced by lined channels. The channels are located along the side-wall of the site road and Howard Ave. and by pipe drains south of the entry road to the Main Facility site. The only remnant of

the stream lies between the upper access road into the Main Facility to the Howard / Jefferson intersection site.

The hydrology of the East Site has been similarly altered, although the drainage was never formally recognized as a "blue-line stream" south of Jefferson Blvd. The primary drainage north of Jefferson was indicated as "blue-line streams" on USGS topographic maps. The drainages on the East Site were tributaries to the primary stream east of Montebello Blvd.

None of the parcels included in the proposed sale are located in a flood zone as defined by the FEMA FIRM Program (SCG 2000).

Groundwater

DOGGR lists the base of freshwater in the Montebello field at 1,600 ft deep (SCG 2000). The Storage Zone is located at 7,200 ft deep and is separated from the freshwater aquifer by dozens of layers of alternating shale and oil bearing sands. SCG reported no connection between the storage zone and the freshwater aquifer. The salinity of the brine in the Storage Zone is 25,677 ppm. The Storage Zone is also connected to brine aquifers of the Shallow Zones of the same salinity. The brine aquifers appear to be very limited in both volume and transmissivity based on the low amount of water influx into the reservoir over the years of production and storage.

The MGSF removes brine water along with residual crude oil from the Storage Zone during natural gas withdrawal and from Shallow Zones as part of the pressure maintenance and monitoring program. This oil and water is pumped to the surface and separated. Pursuant to the SCG permit, separated and treated water is released to the Los Angeles County Sanitation District industrial sewer system or sold to other field operators. Residual oil is collected and sold.

Wastewater service for the facility is supplied by Los Angeles County Sanitation District.

Water Use

California Water Service supplies the domestic water from imported water. Water is used onsite for fire protection, compressor cooling, landscape maintenance, and employee purposes. A local reservoir supplies potable water and holds 2 million gallons, which is constantly fed by Metropolitan Water (SCG 2000).

REGULATORY SETTING

Federal

The Clean Water Act (CWA) sets up the framework through which permits to discharge waste to surface waters are authorized. This National Pollutant Discharge Elimination System permit typically has conditions specific to the permitted operation and may set limits on acidity (pH), chemical concentrations, oil and grease, dissolved and suspended solids, and temperature. The CWA also prohibits the discharge of pollutants to stormwater. The CWA is administered by the United States Environmental Protection Agency (USEPA). The USEPA has delegated some authority for implementing the CWA to the State of California.

State

The State Water Resources Control Board (SWRCB), the nine Regional Water Quality Control Boards (RWQCBs), and the USEPA are the agencies responsible for water quality affected by generating station operations. The SWRCB is the primary state agency responsible for formulating policies to protect water supplies and approving water quality control plans. Once approved, these water quality control plans are implemented and enforced by the nine RWQCBs. The various regional boards have developed water quality control plans to protect the beneficial uses of surface water and groundwater within their respective regions. The regional board that regulates the MGSF is the Los Angeles Regional Water Quality Control Board (LARWQCB).

California Water Code (CWC) regulations also govern operations at the Montebello Gas Storage Facility. The CWC includes provisions of the federal CWA and water quality programs specific to California. The CWC requires reporting, investigation, and cleanup of hazardous material releases that could affect waters of the state (including stormwaters).

Local

The *Montebello General Plan Elements* contain policies related to water. The policies include:

- Policy 3: Disposal of liquid wastes should be through the sewer system or by transport to approved disposal sites.
- Policy 4: Promote wastewater treatment and utilization for purposes such as irrigation, tooling and groundwater recharge where feasible.

ENVIRONMENTAL IMPACTS

Significance Criteria

The significance criteria utilized to assess potential environmental effects are based on the checklist questions and are described below. An effect would be significant if it would:

- Degrade water quality below standards for the basin and discharges
- Substantially degrade water quality
- Substantially alter the existing drainage pattern of the area or cause flooding
- Create or contribute runoff that would exceed drainage system capacity or result in substantial additional sources of polluted runoff
- Substantially alter existing drainage and result in substantial erosion or siltation
- Substantially deplete groundwater supplies or substantially interfere with recharge
- Place housing within a 100-year flood zone
- Impede or redirect flood flows in a 100-year flood zone through placement of structures
- Expose people or structures to significant risk due to flooding
- Create inundation by seiche, tsunami or mudflow

Gas Recovery and Decommissioning

No significant amount of water is required for recovery of cushion gas, surface facility removal, or historic spill remediation. Small amounts of water would be used for mixing cement and mud for plugs used in well abandonment and for dust suppression during decommissioning. These amounts are far less than would normally be used at the operating facility for daily activities.

Depletion of the Storage Zone might influence leachate or gas migration from the Operating Industries Inc. (OII) Landfill. Removal of the cushion gas could cause changes in groundwater and gas/liquid pressures in the deep Storage and Shallow Zones and any pathways to the surface. As part of its well abandonment oversight, the DOGGR is responsible for ensuring that abandoned wells do not provide communication between Shallow Zones and the Storage Zone. Proper well abandonment is accomplished by installing a series of mechanical, cement, and drilling mud plugs at appropriate levels in each well. The plugs serve to seal off and isolate hydrocarbons from water-bearing formations. Certain portions of the well's casing could be perforated or cut to assure adequate zonal isolation. Several wells had been reported to leak and had required re-abandonment.

Checklist Question a) SCG would comply with current discharge permits for the Main Facility during the decommissioning of its facilities; the Project would not violate any water quality standards or waste discharge requirements.

Checklist Question b) The proposed Project may cause a minor degradation in water quality if runoff from the site, potentially causing increased nutrient, debris, and sediments, reaches the Rio Hondo and San Gabriel Rivers, and ultimately the ocean. This degradation is expected to be minor and less than significant.

Reduced deep zone pressures may simulate downward migration of fresh groundwater (along the same pathways as those releasing high pressure deep gas to the Michael Collins Circle area) and changes in freshwater movements and water quality. This induced migration would be a potentially significant impact. Mitigation measures 4.8-1, 4.8-2, and 4.8-3 are defined to avoid significant impacts.

Checklist Question c) The Project would not substantially alter the existing drainage pattern of the site or area or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site. Nevertheless, the quantity and route of surface water runoff would increase once the surface facilities are cleared from the land. This is expected to increase the flow of uncontrolled surface water runoff from the site but is not expected to result in such uncontrolled runoff as to create substantial flooding. The runoff may, in some locations, create shallow pools of standing water on- or off-site in depressions on the land, especially the upper terraces of the Main Facility. The impacts would be less than significant.

Checklist Question d) The proposed project would not increase runoff such that the capacity of stormwater drainage systems would be exceeded. Runoff during decomissioning would be similar to the existing runoff, which is adequately contained with the existing systems, in accordance with existing SCG permit conditions. The runoff would not provide substantial additional sources of polluted runoff. Water from the site is and would continue to be discharged to the Los Angeles County Sanitation District

industrial sewer system. The sewer system has existing, adequate capacity (City of Montebello Assistant City Engineer, personal communication 2001). The permit to discharge water from the Main Facility would be transferred to the new owner(s). This impact would be less than significant. Mitigation Measure 4.8-1 would also ensure that no significant impacts would occur.

Checklist Question e) The proposed Project would not substantially alter the existing drainage pattern of the site or area. As part of the proposed Project decommissioning, the land would be cleared of surface facilities. The cleared, non-vegetated land would be susceptible to erosion by surface water runoff that would transport soil and pollutants primarily from the Main Facility, the East Site, and lesser so from the Monterey Park Lots. Townsite Lots are scattered and few in number and small in area and would not contribute a significant runoff or sediment load to existing stormwater systems. There would be no significant impacts related to drainage or runoff.

Checklist Question f) Current operations do not deplete groundwater supplies. The continuation of current operations to decommission the facilities would not substantially deplete groundwater supplies or interfere substantially with groundwater recharge to the extent of creating a net deficit in aquifer volume or a lowering of the local groundwater table level.

Checklist Question g) There are no 100-year flood hazard zones in the project area. There would be no impacts related to flood hazards.

Checklist Question h) There are no 100-year flood hazard zones in the project area. There would be no impacts related to flood hazards that would impede or redirect flood flows.

Checklist Question i) The proposed Project would have no impacts that would expose people or structures to a significant risk of loss, injury or death involving flooding.

Checklist Question j) There would be no impacts related to seiche, tsunami, or mudflow caused by the proposed Project.

Future Development

Development of the project area to construct 22 houses, consistent with current zoning, would not result in significant impacts.

Checklist Question a) The development of 22 houses that may occur after decommissioning and sale would not be likely to violate any water quality standards or waste discharge requirements.

Checklist Question b) The residential development that may occur after decommissioning and sale would not be likely to violate any water quality standards or waste discharge requirements. The impact on water quality would be less than significant.

Checklist Question c) The development of 22 houses that may occur after decommissioning and sale would not be likely to substantially alter the existing drainage pattern of the site or area or increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site. The construction of 22 houses would not substantially increase the flow of uncontrolled surface water runoff from the site or result in uncontrolled runoff that would create substantial flooding.

Checklist Question d) The development of 22 houses that may occur after decommissioning and sale would not be likely to increase runoff such that the capacity of stormwater drainage systems would be exceeded. Runoff during decomissioning would be similar to the existing runoff, which is adequately contained with the existing systems. The runoff would not provide substantial additional sources of polluted runoff. This impact would be less than significant. Mitigation Measure 4.8-1 would also ensure that no significant impacts would occur.

Checklist Question e) The development of 22 houses that may occur after decommissioning and sale would not be likely to substantially alter the existing drainage pattern of the site or area. There would be no significant impacts related to drainage.

Checklist Question f) The development of 22 houses that may occur after decommissioning and sale would not be likely to deplete groundwater supplies or interfere substantially with groundwater recharge to the extent of creating a net deficit in aquifer volume or a lowering of the local groundwater table level.

Checklist Question g) There are no 100-year flood hazard zones in the project area. There would be no impacts related to flood hazards and the development of 22 houses.

Checklist Question h) There are no 100-year flood hazard zones in the project area. There would be no impacts related to flood hazards that would impede or redirect flood flows and the development of 22 houses.

Checklist Question i) The development of 22 houses would have no impacts that would expose people or structures to a significant risk of loss, injury or death involving flooding.

Checklist Question j) There would be no impacts related to seiche, tsunami, or mudflow caused by the development of 22 houses.

MITIGATION MEASURES

Mitigation and recommended measures for both groundwater and surface water impacts can be combined by infiltrating runoff to recharge the groundwater table while avoiding discharges to the storm drain systems.

Mitigation Measure 4.8-1 - Surface Water/Runoff

A storm water management plan for decommissioning shall be prepared by SCG and approved by the state or local agency having jurisdiction. A copy shall be provided to the CPUC. Stormwater runoff (see below) shall be reviewed by SCG in order to establish stormwater collection areas and to accommodate existing available capacity with urban development in the project sites.

Mitigation Measure 4.8-2 - Fresh Groundwater

Groundwater movements may be influenced by change in formation compression near or in the project area. Groundwater monitoring shall be conducted in order to assure that decommissioning does not influence groundwater movements and levels in the project area.

Reduced deep zone pressures may simulate downward migration of fresh groundwater (along the same pathways as those releasing high pressure deep gas to the Michael Collins

Circle area) and changes in freshwater movements and water quality. If monitoring identifies significant changes in deeper groundwater conditions that influence or may influence fresh groundwater resources (e.g., sudden depression of freshwater levels over or in the vicinity of wells or the field), changes would be required in decommissioning, gas recovery, and well abandonment or re-abandonment.

Mitigation Measure 4.8-3 - Saline Groundwater

Deep groundwater movements may be influenced by changes during decommissioning and during formation compression near or in the project area. Deep groundwater monitoring shall be conducted in order to assure that decommissioning does not influence deep groundwater movements and levels in the project area.

Major or sudden changes in deep zone field pressures or inflows of deep groundwater may indicate changes in regional groundwater formations, especially those used for secondary or enhanced recovery in the adjacent Montebello Oil Field for the Shallow Zones. If substantial changes are identified, SCG shall consult with DOGGR to determine if corrective actions are necessary. If monitoring identifies significant changes in deeper groundwater conditions that influence or may influence fresh groundwater resources (e.g., sudden depression of freshwater levels over or in the vicinity of wells or the field), changes would be required in decommissioning, gas recovery, and well abandonment or re-abandonment.