4.10 Wastewater

The wastewater section addresses potential impacts to sanitary sewer capacity, as insufficient sewer capacity could ultimately result in adverse water quality impacts to surface waters and/or the ocean, at the point of effluent discharge. In addition, this section addresses potential surface water and groundwater impacts related to wastewater production and disposal. .

4.10.1 Environmental Setting

4.10.1.1 Sanitary Wastewater

The Sanitation Districts of Los Angeles County (LACSD) provide wastewater collection and treatment services to the City of Whittier, as well as approximately 5.7 million people in Los Angeles County, encompassing approximately 820 square miles. The City and the Project Area are within LACSD District Number 18 (LACSD 2010a).

The City owns and maintains sanitary sewer mains throughout the City. These local mains eventually connect to larger mains owned and operated by the LACSD. The wastewater flow originating from the proposed Project will discharge to a local sewer line, which is not maintained by the LACSD, for conveyance to the LACSD Laurel Avenue Trunk Sewer, located on Laurel Avenue at Oak Street. This 10-inch diameter trunk sewer has a design capacity of 2.2 million gallons per day (mgd) and conveyed a peak flow of 0.3 mgd when last measured in 2009 (LACSD 2011).

Maps in the office of the City Engineer indicate that the sewer mains eventually feed into the Los Coyotes Wastewater Reclamation Plant, located at 16515 Piuma Avenue, in the City of Cerritos, approximately 11 miles southwest of the Project Site. The Los Coyotes Wastewater Reclamation Plant provides primary, secondary, and tertiary treatment for 37.5 million gallons of wastewater per day and currently processes an average flow of 21.7 million gallons per day, serving approximately 370,000 people (LACSD 2010b).

Water that is not processed for reuse at the Los Coyotes Wastewater Reclamation Plant is sent to the Joint Water Pollution Control Plant in the City of Carson, where it is discharged into the Pacific Ocean through a network of outfalls that extend 2 miles off the Palos Verdes Peninsula, to a depth of 200 feet (LACSD 2010c).

4.10.1.2 Surface Waters

The drainages and creeks of the Puente Hills are part of the San Gabriel River Watershed. Several intermittent streams, as defined by the U.S. Geological Survey, are present in the Project area (Figure 4.8-1). La Canada Verde Creek traverses the base of the canyon immediately downslope of the Project Site. This creek is approximately 75 feet from the Project Site, at the closest point. The proposed sewer extension would traverse and then trend parallel and immediately northwest of this creek. In addition, Arroyo Pescadero Creek traverses the

proposed access road and pipeline route, which extends from the proposed drilling site to the Preserve boundary.

From the Preserve boundary to the proposed oil and gas pipeline tie-ins, the pipeline route follows a ridge with intermittent streams located on either side of the ridge. Unnamed streams trend parallel to the pipeline route, both to the west and the east, at a distance of approximately 200 and 300 feet, respectively, at the closest points. In addition, Arroyo San Miguel Creek runs along the east side of the roadway, approximately 500 feet at the closest point. Along the southern portion of the proposed pipeline route, Leffingwell Creek traverses the roadway along which the pipeline would be installed.

4.10.1.3 Groundwater

The Project Site is underlain at the surface by artificial fill, up to 10 feet thick, Pleistocene older alluvium, up to 25 feet thick, and the Pliocene Fernando Formation. Geotechnical borings drilled at the Project Site to a depth of 60 feet in 2009 and 2010 did not encounter groundwater (Heathcote Geotechnical 2011). Other than creek areas where localized perched groundwater may be present, historical groundwater is deeper than 100 feet beneath the Project Site (California Department of Conservation, Division of Mines and Geology 1998).

On a regional scale, the Project Site is located along the northeast perimeter of the Central Groundwater Basin, which comprises approximately the northeast half of the Coastal Plain of Los Angeles County (Figure 4.8-2). More specifically, the Project Site is located on the La Habra Piedmont Slope of the Puente Hills, within the Whittier Area of the Central Groundwater Basin. This groundwater basin is bound on the north, east, and west by emergent, less permeable rocks of the Elysian, Repetto, Merced, Puente, Signal, Dominquez, Rosecrans, Baldwin, and Hollywood hills. To the southeast, Coyote Creek denotes the boundary between the Central Basin and basins of Orange County (California Department of Water Resources 1961).

The Whittier Area of the Central Basin extends from the Puente Hills south and southwest to the axis of the Santa Fe Springs-Coyote Hills uplift (Figure 4.8-2). The known fresh water-bearing sediments in the Whittier Area, extending to a depth of about 1,000 feet (800 feet below sea level) beneath the alluvial basin floor, include Holocene alluvium and the Pleistocene Lakewood and San Pedro formations. Water-bearing units within these formations include the Gaspur, Artesia, Gage, Hollydale, Jefferson, Lynwood, Silverado, and Sunnyside aquifers. The Pliocene and Miocene sediments below these aquifers generally contain saline water in this area, but may locally contain fresh water (California Department of Water Resources 1961).

There are no domestic or industrial water supply wells located in the vicinity of the Project Site. The closest well (Los Angeles County well No. 1654K) is located approximately 2.5 miles southwest of the Project Site, at an elevation of 141 feet above mean sea level. Groundwater in this well, which was drilled in 1958, was measured in 1998 at a historic high elevation of 122 feet (depth of 19 feet). This groundwater elevation corresponds to a minimum depth to groundwater of approximately 330 feet at the topographically lowest point of the Project Site

boundary, which is approximately 450 feet above mean sea level (Los Angeles County Department of Public Works 2007).

4.10.2 Regulatory Setting

4.10.2.1 Federal Policies and Regulations

Safe Drinking Water Act of 1974

The Safe Drinking Water Act of 1974 was implemented by the Environmental Protection Agency (EPA) and is the primary federal regulation controlling drinking water quality in every public water system in the United States. The Safe Drinking Water Act authorized the EPA to establish and enforce guidelines for drinking water to protect against both naturally occurring and manmade contaminants.

The Safe Drinking Water Act was originally implemented in 1974 with significant amendments in 1986 and 1996. The Safe Drinking Water Act originally set standards for the treatment of individual constituents, including pesticides, trihalomethanes, arsenic, selenium, radionuclides, nitrates, toxic metals, bacteria, viruses, and pathogens. The amendments to the Safe Drinking Water Act made some significant changes, most of which resulted in more stringent protection of drinking water sources. The amended Safe Drinking Water Act also greatly enhanced the existing law by implementing operator training, funding for water system improvements, and public information as important components of safe drinking water.

The Clean Water Act

The Clean Water Act of 1972 establishes the basic structure for regulating discharges of pollutants into the waters of the United States and regulates quality standards for surface waters. Under the Clean Water Act, the EPA has implemented many pollution control standards for industries, as well as water quality standards for all contaminants in surface waters. The Clean Water Act made it unlawful to discharge any pollutant from a point source into navigable waters, unless a National Pollutant Discharge Elimination System (NPDES) permit is obtained from the EPA.

4.10.2.2 State Policies and Regulations

State Water Resources Control Board

The State Water Resources Control Board (SWRCB) and its nine Regional Water Quality Control Boards are the principal state agencies with primary responsibility for the coordination and control of water quality. The SWRCB enforces the water quality standards set forth in the Clean Water Act for the State of California on behalf of the federal EPA. Most SWRCB objectives are based on the California Code of Regulations, Title 22 State Drinking Water

Standards. The City of Whittier lies within Region 4, the Los Angeles Regional Water Quality Control Board.

In 2006, the SWRCB adopted Order Number 2006-003 that established General Waste Discharge Requirements for all publicly owned or operated sanitary sewer systems within the State of California. The Waste Discharge Requirements require owners and operators of sewer collection systems to report sanitary sewer overflows in the California Integrated Water Quality System and to develop and implement a Sewer System Management Plan. The Sewer System Management Plan details sewer collection system operations, maintenance, repair, and funding (LACSD 2009).

The Porter-Cologne Water Quality Control Act of 1987

The Porter-Cologne Water Quality Control Act governs water quality in California is by assigning the overall responsibility for water rights and water quality protection to the SWRCB to develop and enforce water quality standards. The EPA delegated to California the authority to issue NPDES permits for all areas within its boundaries, except Native American territories.

Safe Drinking Water and Toxic Enforcement Act of 1986

The Safe Drinking Water and Toxic Enforcement Act provides two ways to administratively list chemicals known to the state to cause cancer or reproductive toxicity. A chemical can be listed if a body considered to be authoritative by the state's qualified experts, such as the EPA or Food and Drug Administration, formally identifies the chemical as causing cancer or reproductive toxicity A chemical can also be listed if a state or federal agency has formally required labeling or identifying that chemical as causing cancer or reproductive toxicity. The criteria for the listing these chemicals are outlined in 22 CCR section 12902.

Groundwater Management Act of 1992

The Groundwater Management Act, commonly referred to as Assembly Bill (AB) 3030, is designed to provide local public agencies with increased management authority over groundwater resources. Groundwater is a valuable natural resource within California, and AB 3030 ensures safe production and quality by encouraging local agencies to work cooperatively to manage groundwater resources within their jurisdictions (Water Code Section 10750).

4.10.2.3 Local Policies and Regulations

County of Los Angeles

The Los Angeles County Sanitation District serves approximately 5.7 million people in Los Angeles County through 24 independent special districts. The service area includes approximately 820 square miles in 78 cities and unincorporated areas within the county. Approximately 1400 miles of main trunk sewers and 11 wastewater treatment facilities serve the area.

The 23 independent special districts are governed by Boards of Directors, consisting of the mayors of each city within the Districts and the Chair of the Board of Supervisors for unincorporated territories. Seventeen of the Sanitation Districts are also part of a Joint Outfall Agreement that created a regional, interconnected system of facilities known as the Joint Outfall System. Under the joint agreement the Joint Outfall System prepared a Master Facilities Plan, which guides orderly development of the service area. The Whittier Main Oil Field site and the City of Whittier lie within Sanitation District number 18, which is a joint power under the Joint Outfall Agreement.

4.10.3 Significance Criteria

Wastewater impacts would be deemed significant if the proposed Project would:

- Exceed wastewater treatment requirements of the applicable RWQCB;
- Require construction or expansion of wastewater treatment facilities;
- Adversely affect the existing wastewater service provider or the existing wastewater facilities by exceeding current and future demands and capacity; or
- Change the quality of surface water or groundwater.

4.10.4 Project Impacts and Mitigation Measures

Impact #	Impact Description	Phase	Residual Impact
WAS.1	The proposed Project would generate sanitary wastewater that could exceed the existing capacity of downstream sewer and wastewater treatment facilities.	Design and Construction, Operations and Maintenance	Less Than Significant with Mitigation

During the Design and Construction Phase and Operations and Maintenance Phase, Project operations could impact the capacity of existing sanitation services, as a result of construction and use of new restrooms at the Project Site. In general, a maximum of 30 personnel is estimated to create 20 to 100 gallons per day of additional effluent (Uniform Plumbing Code 2009). Matrix would construct a new 4-inch cast iron sewer pipeline from the new facility office within the Project Site to the existing City of Whittier Sewer and Water District sewer system, along Catalina Avenue. The sewer pipeline would service two restrooms at the Project Site. Portable toilets would also be provided at other strategic locations throughout the Project Area.

It is unclear whether the existing sewer along Catalina Avenue, as well as downstream sewer and wastewater treatment facilities, have the capacity to support the increased sewage volume associated with the Project. Overloading sanitary sewer systems can ultimately result in releases of untreated sewage to surface waters and/or the ocean. Therefore, impacts are considered potentially significant.

Mitigation Measures

WAS-1 A Registered Civil Engineer shall evaluate the capacity of the existing sewer line system, beginning at the proposed tie-in at Catalina Avenue and continuing downstream to the County Sanitation Districts of Los Angeles County sewer system, prior to any connections. A seven-day capacity performance test shall be performed, based on County Sanitation Districts of Los Angeles County average wastewater generation factors, to determine baseline and peak flows, and to ensure the sewer has adequate capacity in the downstream areas. The capacity analysis shall be submitted to the District for review and approval. In the event that existing sanitary sewer facilities are insufficient to accommodate increased flows from the proposed Project Site, the Applicant shall provide temporary mobile sanitary facilities (i.e., toilet, sink, and urinal) for on-site personnel, as necessary.

Residual Impacts

Mitigation measure WAS-1 would reduce sanitary sewage impacts to less than significant with mitigation.

Impact #	Impact Description	Phase	Residual Impact
WAS.2	The proposed Project would generate wastewater that could impact water quality of nearby drainages and creeks.	Drilling and Testing, Design and Construction, Operations and Maintenance	Less Than Significant with Mitigation

During the Drilling and Testing Phase, up to 7,200 barrels per day of wastewater would be produced during oil well drilling. These liquids would be temporarily stored in onsite tanks and then transported offsite by trucks. Therefore, with the exception of possible spills, as discussed in Section 4.8, Hydrology and Water Quality, water quality impacts within adjacent drainages and creeks would be less than significant with mitigation.

Similarly, during the Operations and Maintenance Phase, up to 7,200 barrels per day of wastewater would be produced during oil well drilling. However, up to eight injection wells would be drilled for disposal of produced water, which would be injected into the oil producing formations from which the water was originally derived. Therefore, with the exception of possible spills and groundwater impacts associated with injection activities, as discussed in Section 4.8, Hydrology and Water Quality, water quality impacts within adjacent drainages and creeks would be less than significant with mitigation.

As discussed in more detail in Section 4.8, Hydrology and Water Quality, surface wastewater could be generated during construction, drilling, oil processing, and truck loading. This wastewater could contain various pollutants associated with these activities. However, a pollution pan would be installed under the rig floor to contain and collect any oil-based drilling mud that may spill on the rig floor. The mud would be captured and contained in the catch pan

and then returned to the active mud pit system by a cellar pump. The drilling pad would be constructed to allow any fluids spilled directly around the rig to flow into the well cellar. In addition, a 6-inch berm, lined with an impermeable membrane, would be placed around the entire drilling rig after rig installation. In the event that a leak should occur in the mud handling system, the leak would be contained directly around the rig and flow toward the well cellar.

Rainwater accumulations within the bermed area around the rig would similarly flow into the well cellar, before being pumped into the active mud pit system. Stormwater from all other areas and facilities would be collected in a bermed water detention basin, located immediately adjacent to the Oil Processing Plant area and allowed to percolate into the ground. Excess stormwater would be hauled offsite in a vacuum truck .No stormwater would be allowed to drain from the Project Site into the surrounding area. As an extra precaution, a spill trailer at the drilling site would be equipped with absorbent material, small spill booms to contain and direct flow, plastic sheets, personal protective equipment, and rakes, shovels, and hand tool, to be used in the event of an oil spill. As a result, water quality within adjacent drainages and creeks would be less than significant with mitigation.

Mitigation Measures

Mitigation measures WR-3a through WR-3e, in Section 4.8, Hydrology and Water Quality, shall be implemented.

Residual Impacts

Implementing mitigation measures WR-3a through WR-3e would reduce the severity of wastewater spill impacts to less than significant with mitigation.

4.10.4.1 Other Issue Area Mitigation Measure Impacts

Mitigation measures proposed for other issues areas could increase impacts to wastewater if they are implemented. This section discusses those potential mitigation measure impacts.

None of the mitigation measures proposed for other issue areas would change the impacts discussed in this section. Therefore, the mitigation measures would not result in additional significant impacts and additional analysis or mitigation is not required.

4.10.5 Cumulative Impacts and Mitigation Measures

The residential and commercial/industrial projects in the region would produce wastes and wastewater in the same manner as the proposed Project. However, the existing projects use the City utilities and facilities, and the adequacy is evaluated on a project-specific basis, based on available capacity.

The proposed Project could connect to the existing sewer if the capacity of the existing system is deemed adequate. However, the Project could alternatively provide portable facilities to reduce the overall and cumulative impacts to a no impact classification.

All wastes would be properly disposed of via well reinjection, offsite disposal, re-use, or recycling. The proposed Project would not require the upgrade, modification, or alteration of any additional wastewater or waste handling facility. The various waste components are handled by different waste treatment facilities and landfills, each which are permitted to accept waste within established thresholds. Thus, no cumulatively significant impacts to the wastewater or solid waste facilities are expected.

4.10.6 Mitigation Monitoring Plan

Mitigation Measure	Requirements	Compliance Verification		
		Method	Timing	Responsible Party
WAS-1 A Registered Civil Engineer shall evaluate the capacity of the existing sewer line system, beginning at the proposed tie-in at Catalina Avenue and continuing downstream to the County Sanitation Districts of Los Angeles County sewer system, prior to any connections. A seven-day capacity performance test shall be performed, based on County Sanitation Districts of Los Angeles County average wastewater generation factors, to determine baseline and peak flows, and to ensure the sewer has adequate capacity in the downstream areas. The capacity analysis shall be submitted to the District for review and approval. In the event that existing sanitary sewer facilities are insufficient to accommodate increased flows from the proposed Project Site, the Applicant shall provide temporary mobile sanitary facilities (i.e., toilet, sink, and urinal) for on-site personnel, as necessary.	Capacity and Performance Analysis of the existing downstream sewer lines	Area study of the proposed sewer line and a 7-day performance capacity test should be performed at select downstream locations to verify the adequacy of the existing sewer.	Prior to issuance of permit	City of Whittier
WR-3a through WR-3e, in Section 4.8, Hydrology and Water Quality.	See WR-3a through WR-3e	See WR-3a through WR-3e	See WR-3a through WR-3e	See WR-3a through WR-3e