

4.7 Water Resources

This section addresses the potential impacts related to increased water use and the impacts on the availability of groundwater for other groundwater uses in connection with the Proposed ConocoPhillips Santa Maria Facility Expansion Project (Proposed Project). This section addresses:

- Current and future water demand for the Refinery;
- Current and future water demand of the uses in the surrounding area, including agricultural, industrial, and residential;
- The capability of the ground water basins to supply the demand; and
- The potential impacts of increased pumping on neighboring wells.

This section will also address the Project's potential impacts to water quality. This discussion includes:

- Evaluating whether increased use of water from onsite wells could lead to seawater intrusion or subsidence.
- Assessing the potential for pipeline leakage along the existing pipeline route to impact water quality.
- Estimating potential impacts related to increased effluent disposed through the existing Regional Water Quality Control Board (RWQCB) permit.

In addition to any potential impacts, this section identifies mitigation measures that can reduce water usage to less than current levels and alternative methods to mitigate any impacts.

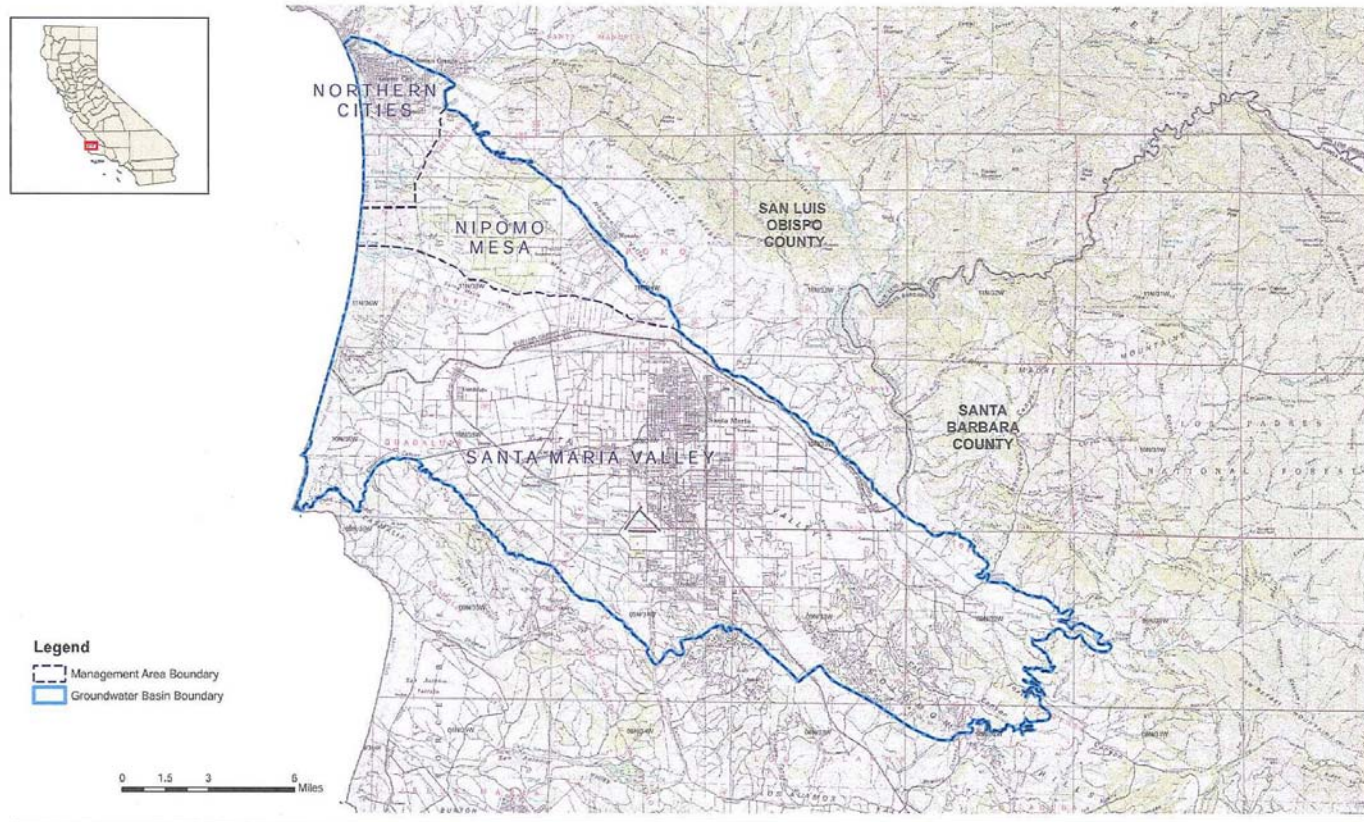
4.7.1 Environmental Setting

4.7.1.1 Water Quantity

The ConocoPhillips Santa Maria Facility (SMF) is approximately 2.5 square miles on the Arroyo Grande Mesa, west of State Route 1 in the County of San Luis Obispo. The facility is currently in use and bounded by industrial and residential uses to the north; industrial, agricultural and recreational (golf course) uses to the east; agricultural uses to the south; and open space and recreational uses to the west.

The site is on the coastal plain with little topographical relief. The site includes operational refining facilities, coastal dunes, and coastal dune vegetation. The Project Site is accessed via State Route 1 along the northern property boundary. The site is within the Santa Maria Groundwater Basin (SMGB). Figure 4.7-1 illustrates the approximate limits of the SMGB. Figures 4.7-2 and 4.7-3 depict the location of shallow groundwater wells and deep groundwater wells.

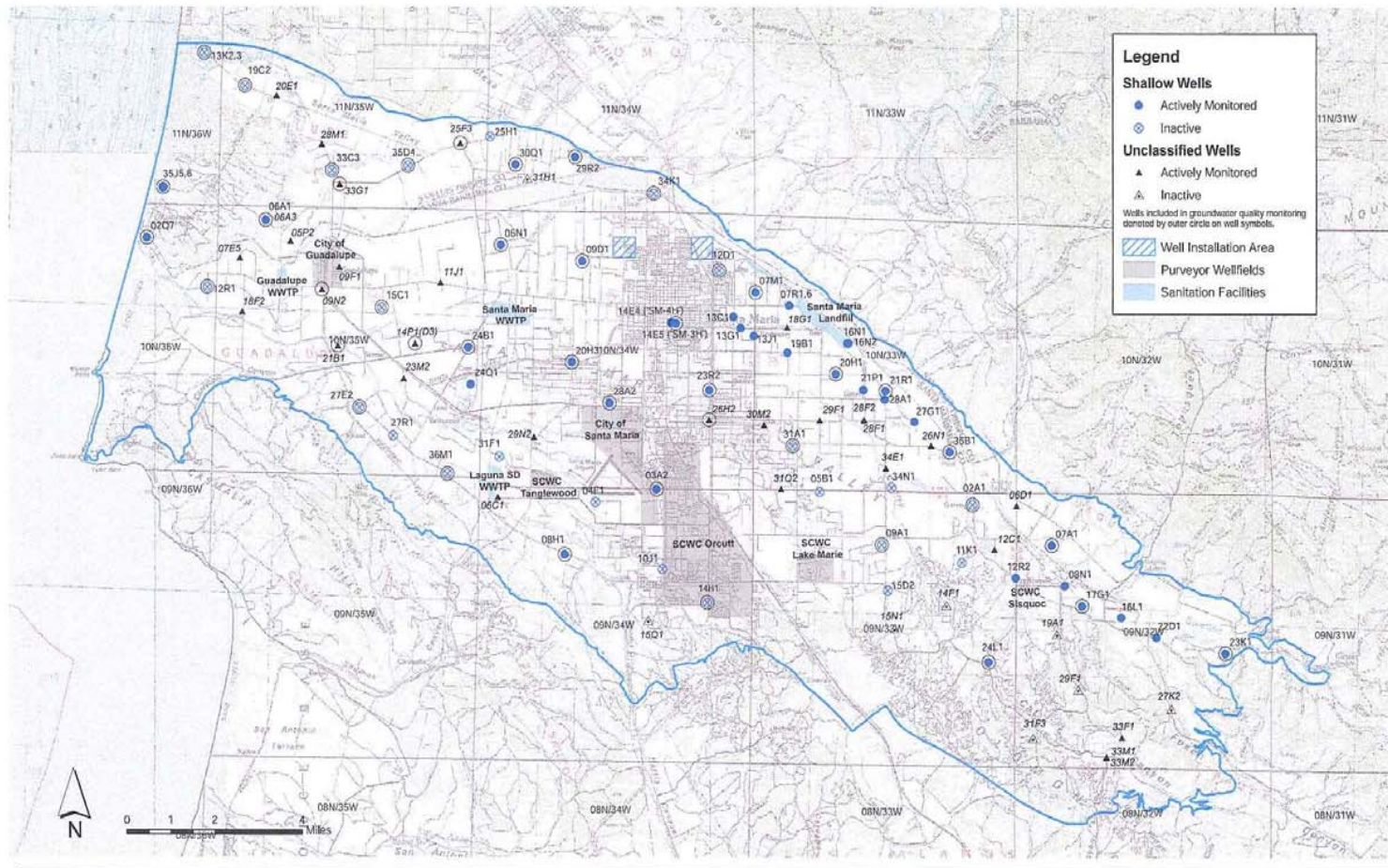
Figure 4.7-1 Santa Maria Groundwater Basin and Management Area



Santa Maria Valley Groundwater Basin and Management Areas
Santa Maria Valley Management Area 2008 Annual Report

Source: SMVMA 2008

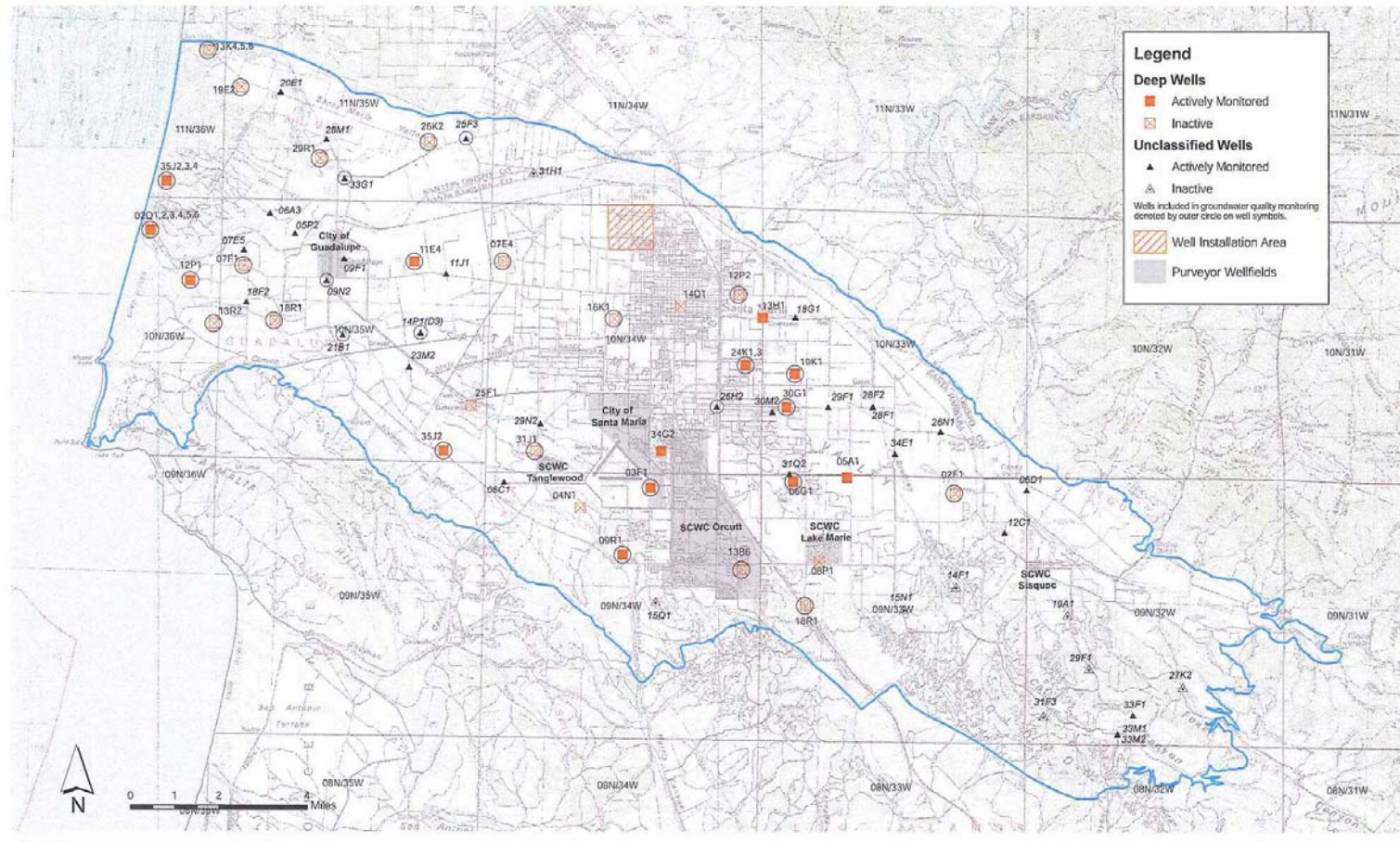
Figure 4.7-2 Santa Maria Basin – Well Network for Monitoring Shallow Groundwater



Well Network for Monitoring Shallow Groundwater
Santa Maria Valley Management Area

Source: SMVMA 2008

Figure 4.7-3 Santa Maria Basin – Well Network for Monitoring Deep Groundwater



Well Network for Monitoring Deep Groundwater
Santa Maria Valley Management Area

Source: SMVMA 2008

Most of the SMGB is within the Santa Maria River Watershed, which extends eastward into the coastal range region and covers more than 453,000 acres. The basin is bound on the north by the San Luis and Santa Lucia Ranges, on the east by the San Rafael Mountains, on the south by the Solomon Hills and the Casmalia Hills, and on the west by the Pacific Ocean. The Santa Maria Valley is drained by the Sisquoc, Cuyama and Santa Maria Rivers and Orcutt Creek. Annual precipitation ranges from 13 to 17 inches with an average annual precipitation of 15 inches per year (California Groundwater Bulletin 118 2004). Natural recharge to the basin comes from seepage losses from the major streams, percolation of rainfall, and subsurface flow (CDWR 2002).

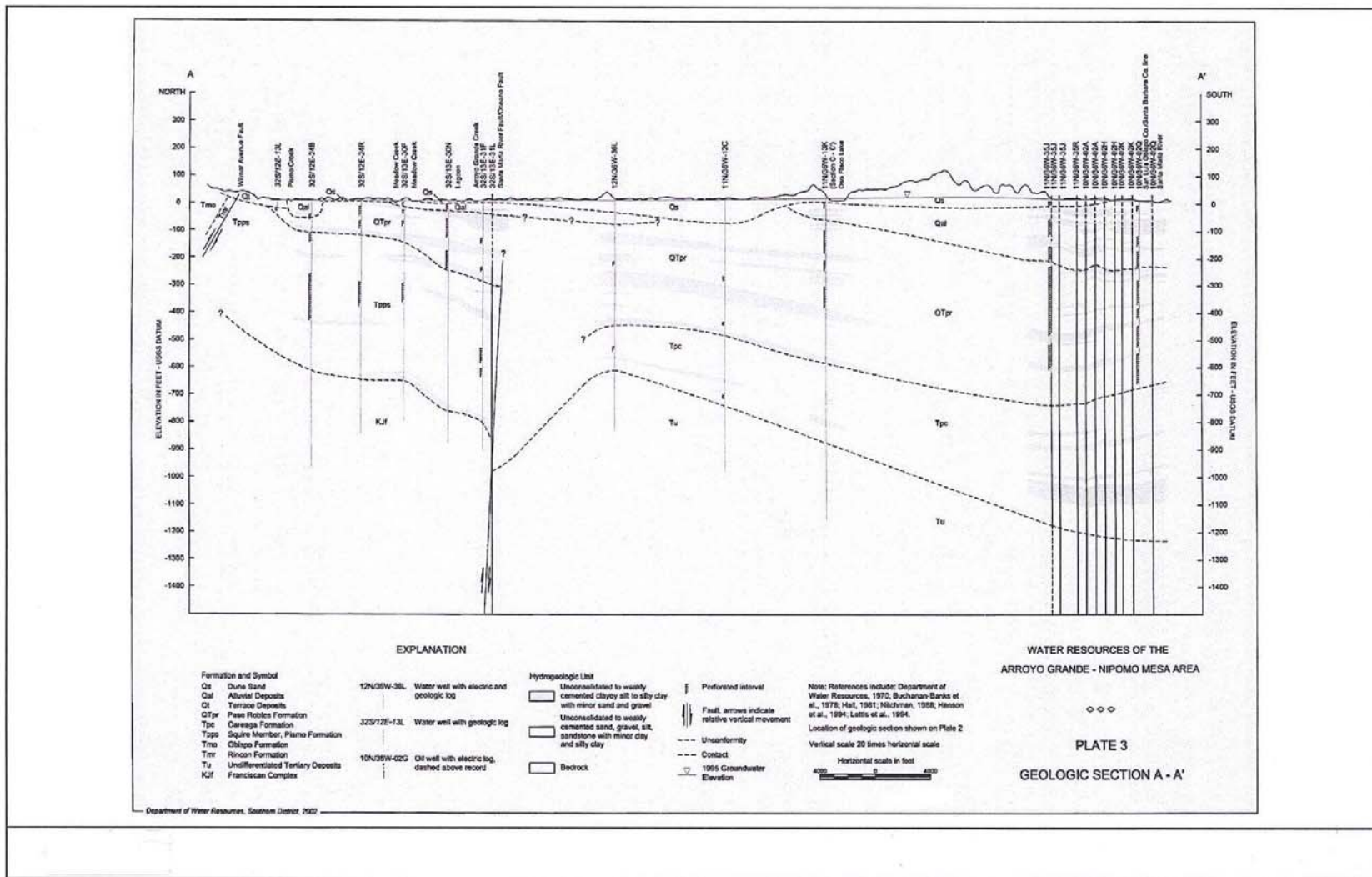
Over several million years during the middle Tertiary period, thick marine sediment deposition in a subsiding basin formed the SMGB. The basin was shaped and deformed by right-lateral, strike slip faulting. Subsequent tectonic compression of the basin resulted in large scale folding. Late Tertiary through relatively recent west-northwest trending reverse faults and thrust faults, local folding, uplift and tilting has further complicated the overall structure within the basin. The SMGB is the upper, water-bearing portion of the Santa Maria Geologic Depositional Basin. The aquifers are generally confined in the western portion of the basin by the Santa Maria River Fault.

The aquifer system in the basin consists of unconsolidated Plio-Pleistocene alluvial deposits including gravel, sand, silt, and clay that range in thickness from 200 to nearly 3,000 feet. The underlying consolidated rocks typically yield relatively insignificant quantities of water of poor quality in the local wells. Franciscan and Knoxville Formation of Jurassic and Cretaceous age, basement complex unconformably underlie the Tertiary and Quaternary deposits. The unconsolidated alluvial deposits in the SMGB comprising the aquifer system include the Careaga Sand, the Paso Robles Formation, the Orcutt Formation, the Quaternary Alluvium, and river channel deposits, sediments, terrace deposits, and wind-blown dune sands at or near the surface.

Figure 4.7-4 depicts the conceptual geology for the area. Figures 4.7-5 thru 4.7-7 represent the conceptual geologic subsurface conditions of the primary aquifer system. These cross sections do not depict offsets of the basement rocks and aquifer units by faults (CDWR 2002). The sections suggest and reports discuss significant differences in water levels on opposite sides of the estimated trace of the Santa Maria River Fault, suggesting that the fault is to some degree a hydraulic barrier along the eastern margin of the Nipomo Mesa (CDWR 2002).

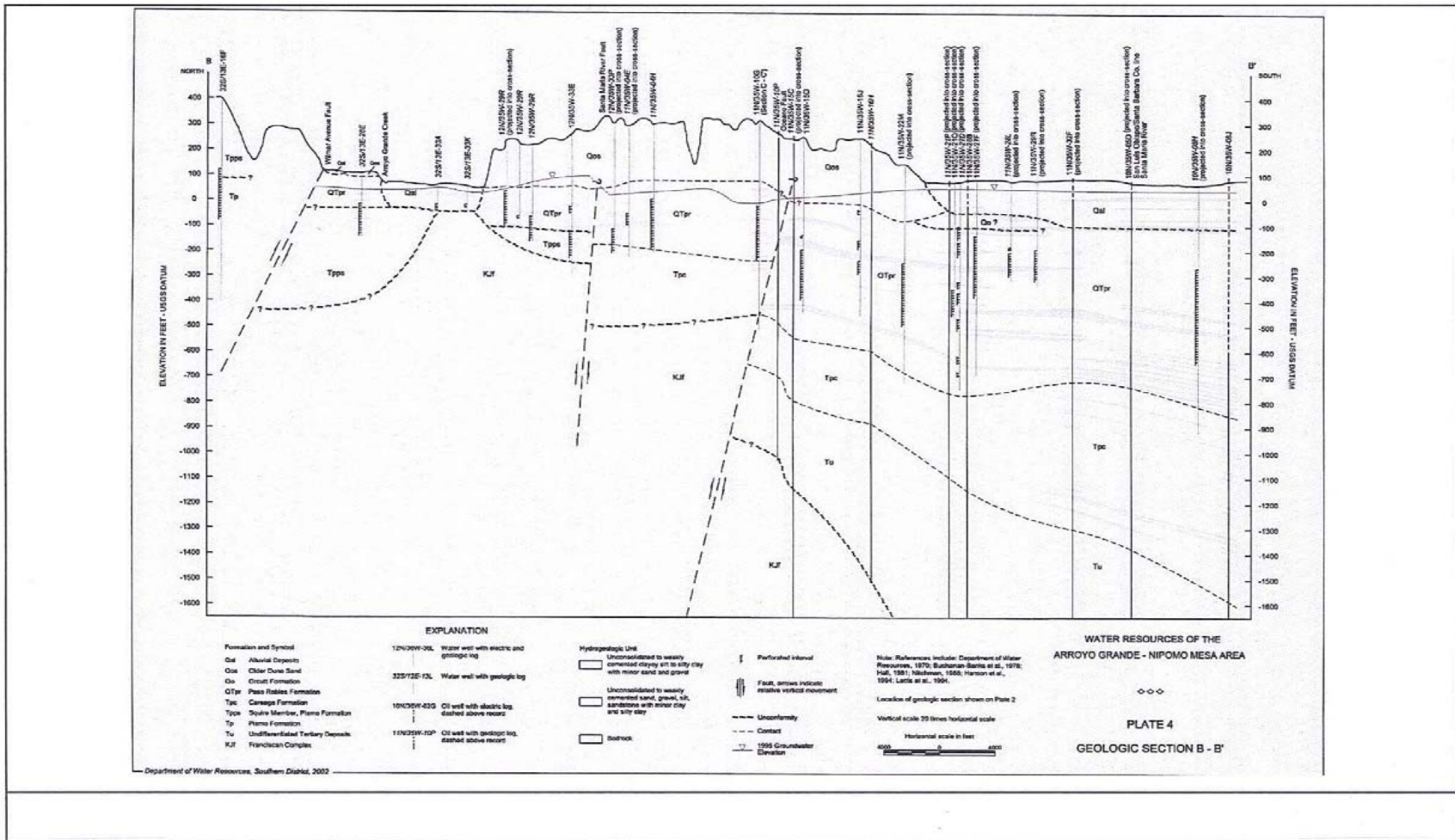
The aquifer characteristics of the SMGB are based on a review of several sources of information including the DWR report (CDWR 2002), a report on a ground water flow model and assessment of Santa Maria River Valley groundwater yield (Luhdorff & Scalmanini 2000), several reports regarding development of the Nipomo Mesa Areas (Cleath and Associates 1996a, 1998; ESA 1998). Many of these references rely heavily on estimates of aquifer properties reported by Worts (1951). Estimates of hydraulic conductivity are based on specific capacity values from driller's pumping tests and aquifer testing conducted on a few wells.

Figure 4.7-5 Geologic Cross Section A – A'



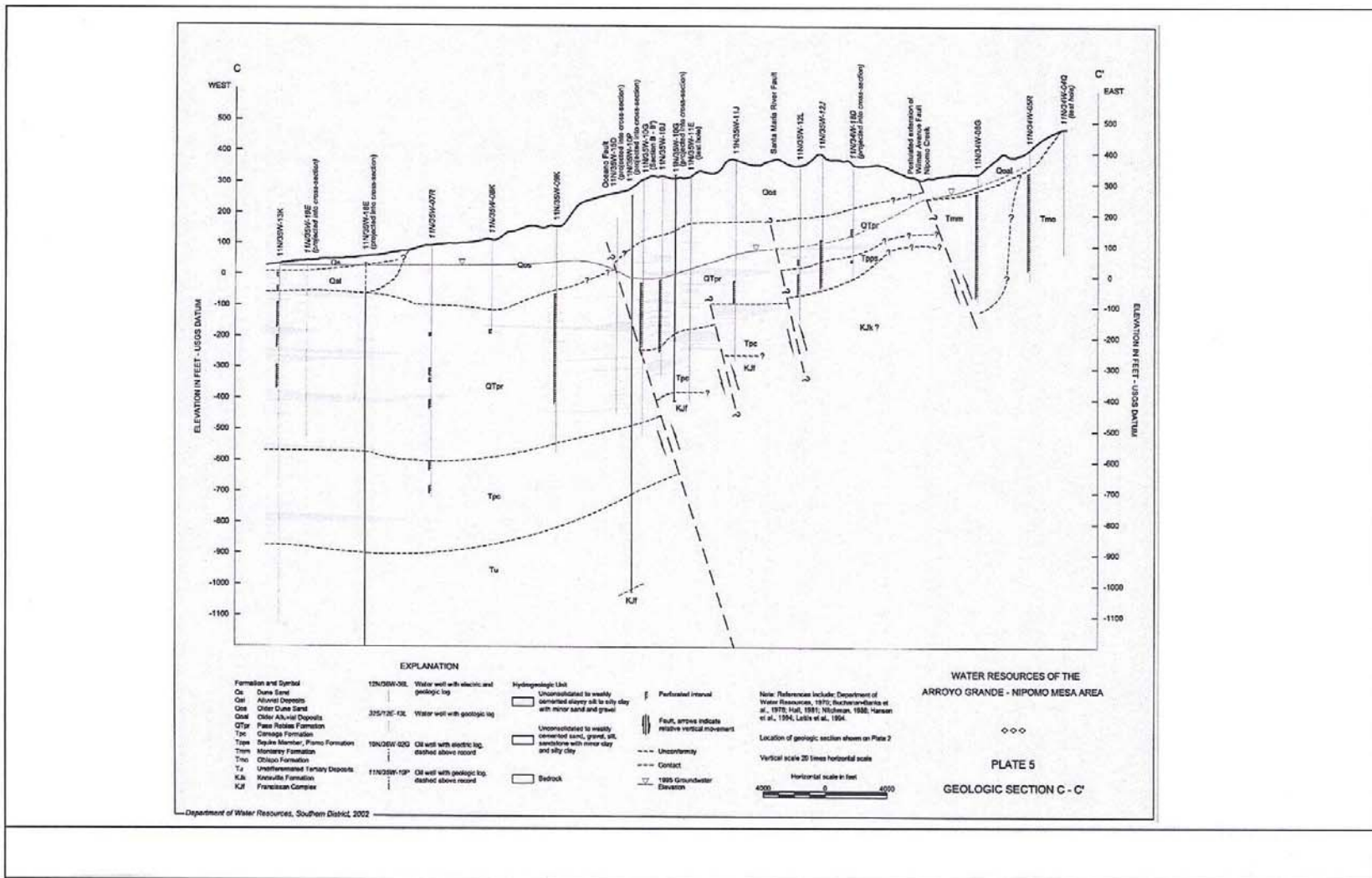
Source: CDWR 2002

Figure 4.7-6 Geologic Cross Section B – B'



Source: CDWR 2002

Figure 4.7-7 Geologic Cross Section C – C'



Source: CDWR 2002

Within the SMGB, the Paso Robles Formation is the thickest and most extensive aquifer in the basin. The report by Luhdorff and Scalmanini includes a map with hydraulic conductivity (K) values for the Paso Robles Formation at 20 locations (2000). In the Sisquoc plain, Orcutt Upland, and central Santa Maria River Valley, K ranges from 100 to 400 gallons per day per square foot (gpd/ft²) (13 to 52 feet per day [ft/d]). Values are lower in the western portion of the Santa Maria River Valley and beneath Nipomo Mesa, where the reported values range from 15 to 110 gpd/ft² (2 to 15 ft/d). The wells are typically screened over hundreds of feet of the Paso Robles Formation, so these values are bulk averages for the formation.

The Quaternary Alluvium is the most permeable aquifer, although few testing data seem to be available to estimate hydraulic conductivity. Luhdorff & Scalmanini show seven locations with estimates of hydraulic conductivities. As for the Paso Robles Formation, data indicate that the hydraulic conductivity of the Alluvium generally decreases to the west. Values of 4500 gpd/ft² (600 ft/d) are typical in the Sisquoc plain, while 2,000 gpd/ft² (265 ft/d) is typical for the lower portion of the alluvium near Guadalupe. Typical thickness for the Quaternary Alluvium in the Santa Maria River Valley is 100 to 200 feet. Near Guadalupe, the upper portion of the alluvium is generally fine-grained and acts as a hydraulic confining layer above the lower alluvium and Paso Robles Formation.

The California Department of Water Resources initially monitored groundwater levels in the SMGB in the 1930s. Most of the available water level data is from pumping wells, and operations and methodology details were not reported according to current standards. Therefore, the data is of limited use except where long time records are available for wells, in which case, trends can be established.

Major declines in groundwater levels in Santa Maria River Valley wells and decrease of the groundwater hydraulic gradient toward the ocean occurred again between the mid-1940s and late-1960s. Drops in water level of 40 to 60 feet were common in wells during this period (CDWR 2002, Luhdorff & Scalmanini 2000).

Over the years, the transition between unconfined and confined conditions had generally migrated west. Total dissolved solids (TDS) in groundwater east of Guadalupe were less than 1,000 milligrams per liter (mg/l) in the 1930s, but increased to greater than 3,000 mg/l by 1975 (Santa Barbara County Water Agency 1996, 1999). Increasing groundwater pumping and possible surface water diversions to support flourishing agricultural development in Santa Maria River Valley contributed to the drop in groundwater levels, the decrease in flows in the Santa Maria River, and the increase in TDS in groundwater. However, the most important factor appears to be a decrease in recharge due to a prolonged period of less than average rainfall from 1945 to 1970.

Substantial recovery of groundwater levels in the Santa Maria River Valley occurred in the 1970s and 1980s. Management of Cuyama River floodwater flows by Twitchell Dam began in 1959 and is credited with increasing recharge to the Santa Maria River Valley and helping to arrest the decline in groundwater levels. Reported estimates of supplemental recharge since construction of the dam range from 20,000 acre-feet per year (AF/Y) to 38,000 AF/Y (Dames and Moore 1991, Luhdorff & Scalmanini 2000). However, these estimates of supplemental recharge are much too large relative to the Cuyama River Flows. Supplemental recharge due to

control of storm water flows cannot exceed the total average flow below the dam, and is likely a relatively small portion of the total average flow. Available gauging data for Cuyama River below Twitchell Dam indicate average annual flow from 35,000 to 39,500 AF/Y.

Prior to, as well as after construction of Twitchell Dam, most of the water in the Santa Maria River infiltrated the Santa Maria Valley prior to reaching the mouth at the Pacific Ocean. River water flowed all the way to the ocean only during extended periods of high runoff. Even prior to the construction of the dam, this occurred on average only several days per year. Based on comparison of Santa Maria River flow records before and after construction of the dam, it is estimated that management of Cuyama River discharge at Twitchell Dam enhances average recharge to the Santa Maria River Valley aquifers by no more than 10,000 to 15,000 AF/Y. Based on the rainfall data, it appears that long-term variation of rainfall has had much more influence on groundwater levels in Santa Maria than Twitchell Dam.

Luhdorff & Scalmanini report that hydrograph records for the period from the early 1980s to late 1990s show successive periods of decline and recovery that are not consistent with perennial overdraft (2000). Reported estimates of the annual yield of the basin include 120,000 AF and 124,000 AF from 1968 to 1989, which Luhdorff & Scalmanini reports as the approximate sustainable perennial yield (Santa Barbara County 1996, 2000, 2002; Ahlroth 1995; Luhdorff & Scalmanini 2000). Based on estimates, average demand (groundwater pumping) in the Santa Maria River valley was 96,200 AF/Y from 1945 to 1970 and 140,000 AF/Y in 2000 (Luhdorff & Scalmanini 2000).

Water balance evaluations for SMGB using hydrologic conditions based on 45-year period from 1935 to 1979 are reported to indicate average annual deficits of 6,000 AF for historical water demand conditions, and 20,000 AF for water demands projected into the future from the late 1990s (Santa Barbara County 1992, 1994, 1996, 2000, 2002). However, this estimated deficit is reduced by importation of water to Santa Barbara County beginning in 1996 from the State Water Project (SWP). Santa Barbara County estimated that the SWP imported 12,000 AF of water to the SMGB in 1999. This reduces the estimated deficit from 20,000 to 8,000 AF/Y. Recharge enhancement by Twitchell Dam will essentially erase any deficit. However, the recharge enhancement provided by management of flood water discharge from Twitchell Dam may diminish in the future due to depletion of Cuyama River flows by groundwater pumping in Cuyama Valley and decrease in storage capacity with accumulation of sediment in Twitchell Reservoir (CDWR 2003, SAIC et al. 2003).

Luhdorff & Scalmanini report specific yield values in the range of 8 to 13 percent, and assume a reasonable value of storativity of 0.0001 for portions of the aquifers system under confined conditions (2000).

The Nipomo Community Services District (NCSD) was formed in 1965 to provide a domestic water source for the Nipomo area. The District is divided into the Blacklake and Town Divisions. Six wells serve the Town Division, approximately 3,000 accounts with an average consumption per account of 0.64 acre feet per year (AFY). Two wells serve the Blacklake Division, 580 accounts with an average consumption per account of 0.68 AFY.

From 1990 to 2003, water usage increased 58 percent (NCSD 2004). The water budget for the Nipomo Hydrologic Sub Area, the primary source of domestic water from the SMGB in this area, is in overdraft, which has created a groundwater depression (CDWR 2002, NCSD 2004). Table 4.7-1 provides the usage in 2006 and projected future build-out usage.

Table 4.7-1 Existing and Future Water Usage

	2006	Future Built-Out
Water Service Area	4,648 acres	9,178 acres
Average Water Duty Factor	0.65 AFY/acre ^a	0.68 AFY/acre
Average Day Demand	3,000 AFY	6,200 AFY
	2.67 MGD ^b	5.57 MGD

a. AFY = acre feet per year

b. MGD = million gallons per day

Sources: NCSD 2007, NMMA 2008, NCSD 2009, Wallace et al. 2010

The SMF currently uses 981,000 gallons of water per day. The proposed 10 percent increase in production is anticipated to increase water utilization by an additional one percent, which corresponds to 9,900 gallons per day. The Nipomo Hydrologic Sub Area has approximately 84,000 acre-feet of water storage above mean sea level (DWR 2002). At the present time, despite overdraft conditions and unconfined (or low head conditions), there are no reports of saltwater intrusion that would contaminate the groundwater supply.

Ground subsidence at the Refinery or the surrounding area has not been reported by either the Applicant or any available published records by the United States Geologic Survey related to groundwater pumping in the region.

4.7.1.2 Water Quality

The site currently houses the Refinery, pipelines, and related equipment. All crude oil is delivered by pipeline. The Refinery produces semi-refined liquid products, petroleum coke, elemental sulfur, and fuel gas. The two semi-refined liquid products, gas oil and pressure distillate, are sent via pipeline to a San Francisco Refinery. Petroleum coke is shipped via truck or railcar. Sulfur is shipped via truck and all produced fuel gas is recovered and used for energy at the Refinery.

The Proposed Project does not include any new construction or equipment, and the existing equipment will remain the same. The Proposed Project includes increased processing and refining crude oil by approximately 10 percent. The Project would not change the characteristics or quantity of any liquid or solid waste. Accordingly, any additional waste generated would be handled in accordance with all local, state, and federal regulations. However, a pipeline leak or spill related to shipping could be larger in volume as a result of increase in materials generated. Based on effluent monitoring results from the Applicant, daily effluent ranged from 0.001 million gallons per day (MGD) on several days to a maximum effluent flow of 0.544 MGD. Similar effluent flow rates were reported in 2007 and 2008. Onsite total coke volume is limited

to 4,000,000 cubic feet. Accordingly, coke is shipped daily to keep inventory below regulated thresholds.

Impacts to water quality would be significant if spill volume increased along the pipeline route due to the Proposed Project. The Refinery operates under the Environmental Protection Agency (EPA) National Pollutant Discharge Elimination System (NPDES) Permit No. CA0000051 to minimize potential pollutants to the groundwater and outfall areas.

The facility maintains two separate collection systems: one system processes wastewater and contact stormwater and the second system collects non-contact stormwater. The process water sewer system collects process wastewater and precipitation runoff from the oil storage tank dikes and the operating units. This wastewater flows by gravity to a waste treatment plant that also performs the groundwater remediation. The wastewater plant includes three oil-water separators, two surge tanks, dissolved air flotation, a trickling filter, an Orbal aeration system, and a secondary clarifier. The treated wastewater is discharged to the Pacific Ocean.

The NPDES permit summarizes the final effluent limitations for the discharge. In addition to the effluent limitations, additional mass loading credits for storm runoff, which is commingled with process wastewater, can be granted. During wet weather, runoff effluent credits are provided according to the NPDES facility permit. Effluent limitations are included in the NPDES permit depending on whether the effluent is less than or greater than 0.285 MGD, respectively with additional monthly average effluent limitations imposed in Table 9 of the NPDES facility permit.

A non-contact stormwater sewer system collects precipitation runoff from streets and unimproved areas, which are not subject to oil spills; the runoff then flows by gravity to an evaporation pond. The corresponding sludge is recycled at the adjacent coke facility.

Groundwater quality varies significantly across the basin (Santa Barbara County 1996, 1999). TDS in the groundwater generally increases from east to west. In the vicinity of the Santa Maria Valley, the basin is classified as vulnerable to nitrate contamination, and in places concentrations of nitrate have increased from less than 30 mg/l in the 1950s to more than 100 mg/l in the 1990s. The Careaga Sand, the basal member of the system of alluvial sand, is generally considered to have poor water quality (Dames and Moore 1991). In general, high TDS, sulfate, or chloride content impairs groundwater in some parts of the basin (CDWR 2002). However, no contaminants of hydrocarbons or heavy metals listed in the applicants effluents semi-annual effluent result for the past three years have been reported in the water sample testing to date.

4.7.2 Regulatory Setting

4.7.2.1 Federal Policies and Regulations

Safe Drinking Water Act of 1974

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

The SDWA was originally implemented in 1974 with significant amendments in 1986 and 1996. The SDWA 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 SDWA made some significant changes, most of which resulted in more stringent protection of drinking water sources. The amended SDWA 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 (CWA) 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 CWA, the EPA has implemented many pollution control standards for industries, as well as water quality standards for all contaminants in surface waters. The CWA 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.

4.7.2.2 State Policies and Regulations

Senate Bill 610, Water Supply Assessment.

Senate Bill (SB) 610 was passed on January 1, 2002, amending California law to require detailed analysis of water supply availability for large development projects. The primary purpose of SB 610 is to improve the linkage between water and land use planning by ensuring greater communication between water providers and local planning agencies, and ensuring that land use decisions for certain large development projects are fully informed as to whether sufficient water supplies are available to meet project demands.

SB 610 also requires the preparation of a Water Supply Assessment (WSA) for a project that is subject to CEQA. The lead agency for the project is required to identify the public water system that might supply water to the project and then to request a WSA from the water supplier. If there is no public water system and the project meets the definition of “project” as defined in SB 610, then the lead agency must prepare the assessment. The County addresses the requirements of SB 610 in the following discussion and also the analysis of impact WR-1.

Is the Proposed Project Subject to CEQA?

Yes. As presented in this EIR, the Proposed Project requires permits issued by a public agency and is, therefore, subject to CEQA.

Is the Proposed Project a “Project” under SB 610?

A Proposed Project meets the definition of “Project” according to Water Code Section 10912 if it is:

- A proposed residential development of more than 500 dwelling units;
- A proposed shopping center or business establishment employing more than 1,000 persons or having more than 500,000 square feet of floor space;

- A proposed commercial office building employing more than 1,000 persons or having more than 250,000 square feet of floor space;
- A proposed hotel or motel, or both, having more than 500 rooms;
- A proposed industrial, manufacturing, or processing plant, or industrial park planned to house more than 1,000 persons, occupying more than 40 acres of land, or having more than 650,000 square feet of floor area;
- A mixed-use project that includes one or more of the projects specified in this subdivision; or
- A project that would demand an amount of water equivalent to, or greater than, the amount of water required by a 500 dwelling unit project (DWR 2003b).

Based on these criteria, the Proposed Project is not a project according to the intent of the definition. While the Proposed Project would be within an industrial facility, it would not be an “industrial plant” with more than 1,000 persons or an “industrial park” planned to house more than 1,000 persons. Finally, the water demand for the Proposed Project would not be equivalent to or greater than the amount of water required by a 500 dwelling unit project. As proposed, the ConocoPhillips Santa Maria Refinery Throughput Increase Project would require up to a one percent increase in water use. Current water use averages approximately 981,000 gallons per day, and the one percent increase would be approximately 9,900 gallons per day. A project of 500 dwelling units would use approximately 134,000 gallons per day. Therefore, the Proposed Project increase in water use would be significantly less than the threshold amount to require the Water Supply Assessment according to SB610.

State Water Resources Control Board

The State Water Resources Control Board (SWRCB) and its nine Regional Water Quality Control Boards (RWQCB) 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 CWA 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.

The Porter-Cologne Water Quality Control Act of 1987

The Porter-Cologne Water Quality Control Act governs water quality in California 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 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).

4.7.2.3 Local Policies and Regulations

San Luis Obispo County

The County of San Luis Obispo encompasses approximately 3,300 square miles of land and has more than 260,000 residents. The San Luis Obispo County Water Resources Division is the County's management authority to ensure sustainable water uses, reliable water supplies, and better water quality. The Water Resources Division has incorporated the Integrated Regional Water Management Plan, which promotes coordination with statewide water planning efforts.

4.7.3 Significance Criteria

The following hydrology and water resources impacts would be deemed significant if the Proposed Project would:

- Violate any water quality standards or waste discharge requirements;
- Substantially change the quality of groundwater;
- 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 that would result in substantial erosion or siltation on or offsite;
- 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 of runoff in a manner that would result in flooding on or offsite; or
- Create, contribute, or alter hydrologic characteristics of the area producing runoff that would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff.

4.7.4 Project Impacts and Mitigation Measures

Impact #	Impact Description	Phase	Residual Impact
WR.1	The Proposed Project one percent increase in water usage may impact the current and future availability of groundwater for other users, including agricultural and residential users.	Operation	Class II

The rights to extract water from the SMGB have been disputed since the 1990s, resulting in several legal proceedings and culminating with a multi-pronged lawsuit resolved in 2008 (Lead Case No. 1-97-CV-770214). The Nipomo Mesa Management Area Technical Group (NMMATG), which represents various groups and organizations, was formed as a result of a legal judgment to monitor water usage and produce annual reports for the SMGB. To date, the TG has produced two reports for the Nipomo Mesa Management Area, one in 2008 and recently the second report for 2009 (included as Appendix C). These reports provide a breakdown of the available data for the SMGB, production records, and data presented herein.

Based on the 2009 report, the estimated production of groundwater was 12,200 acre-feet (AF) in 2009 (NMMATG 2009). Of the 12,200 AF of groundwater produced, the Applicant reported production of 1,200 AF, approximately 9.8 percent of the total production (NMMATG 2009). The Applicant's use was 17 percent of the total production from individual landowners, public water purveyors, and industrial uses, which constituted 6,740 AF, or 55 percent of total water production.

The groundwater production for all users steadily increased from 4,400 AF per year in 1975 to 10,500 AF per year in 2000. However, the 2009 estimated production rate is 400 AF less than 2008 (NMMATG 2009). The annual report suggests that the continued build-out of the Woodland Development would have resulted in higher production. However, reduced production by Golden State Water Company and Nipomo Community Service District as a result of conservation efforts and reduced climatic demands contributed to a lower than anticipated increase.

The NMMATG annual reports include provisions for the rights to use the groundwater, development of the groundwater monitoring programs, and development of plans and programs to respond to Potentially Severe and Severe Water Shortage Conditions. Table 4.7-2 lists the projected potential future water use in the basin. Currently, no projected increase is predicted for Rural Water Company, and no estimates are available for future agricultural uses.

Table 4.7-2 Potential Future Water Usage in the SMGB

Party	2009 Use	Projected 2030 Use
Nipomo Community Services District	2,560 AF	6,300 – 7,900 AF
ConocoPhillips Santa Maria Refiner (Applicant)	1200 AF	1400 AF
Woodlands Development	810 AF	1600 AF
Golden State Water Company	1290 AF	1940 AF

Source: NMMATG 2009

The Proposed Project increase in water demand is anticipated to increase water utilization to 1,400 AF (approximately 10,000 gallons per day). The 2009 annual report identified this increase in volume as less than the historical peak pumping rate for the Applicant. With the existing capacity of the Nipomo Hydrologic Sub Area, the existing reservoir can provide the additional water. The Proposed Project increase in water demand during normal to drier than average climatic conditions, given the current management plans and agreements, will be a less than significant impact.

If prolonged drought conditions cause potentially severe to severe water shortages, any increase in water use could pose a potentially significant, but mitigable impact. Mitigation measures reducing the potential impacts from water-supply demand during severe drought conditions are available. The Nipomo Community Service District is currently developing the Water Intertie Project to bring supplemental water to parties within the Nipomo Mesa Management Area. The water line project involves the construction of approximately 5 miles of new water main to transport up to 3,000 AF of new water from the City of Santa Maria. If this pipeline is built, the potential adverse impacts of water demand during potentially severe to severe water shortage periods would be reduced or eliminated.

Nonetheless, mitigation measures would be applicable during potentially severe water shortage conditions as defined by the Nipomo Mesa Management Area and the Nipomo Urban Water Management Plan.

Mitigation Measures

WR-1 The Applicant shall develop a Water Management Plan, which shall include best management practices and water conservation measures, including the use of reclaimed water and surface runoff retention basin water for Refinery uses, dust suppression, and landscaping uses, as available. The Applicant shall make changes to the Water Management Plan if requested by the County Director of Planning. The Water Management Plan shall include implementation of measures consistent with the Nipomo Mesa Management Area Water Shortage Conditions and Response Plan. The plan shall provide guidelines on managing all future water use during severe drought years. Once it is determined that a severe drought condition exists, restricted (drought) water usage measures shall remain in effect until it is shown satisfactorily to the County that the severe drought condition no longer exists. This plan shall include:

- *Designs for and implementation of modification of the existing facility, to re-use the existing water. The SMF currently implements two systems to treat runoff and water used during operations. The water could be further treated and re-used as part of additional conservation activities. Additional plans and reports would be required for the treatment activities.*
- *Identification of general measures available to reduce water usage for Refinery Operations.*
- *Other measures as appropriate to offset the increased use of water related to the Proposed Project during severe drought conditions, which may include purchase of water rights from other users, conservation efforts, use of reclaimed water, or additional water treatment and reuse as needed.*

Residual Impacts

The residual impacts from water demand would be adverse but not significant during all years except where potentially severe to severe drought climatic conditions exist. Under conditions of prolonged drought, the impact would be *less than significant with mitigation* (Class II).

Impact #	Impact Description	Phase	Residual Impact
WR.2	The Proposed Project increase in groundwater pumping of onsite wells may exceed sustained pumping capacities of existing wells and drawdown onsite wells and wells on neighboring properties.	Operations	Class III

Water wells within the SMGB are screened over alluvial and bedrock approximately 1,500 feet below mean sea level under the Santa Maria River and approximately 200 feet above mean sea level under the northeastern edge of the Nipomo Mesa (DWR 2002). Wells in the Nipomo Mesa and Santa Maria area are screened for hundreds of feet within alluvial and Paso Robles Formation bedrock. Hydraulic conductivity is estimated to be approximately 15 to 110 gpd/ft² in the western portion of the Santa Maria River Valley increasing to 100 to 400 gpd/ft² in the central Santa Maria River Valley (Luhdorff and Scalmanini 2002).

The existing wells have considerably greater capacity and production capabilities than the current and projected uses. In addition, the NMMATG has adopted a Well Management Plan and protocol for establishing and measuring groundwater level measurements. To date, no drawdown or adverse effects have been noted and none are anticipated based on the available data and well conditions. However, the well monitoring program will continue to document and verify these findings. Therefore, the existing water wells have sufficient capacity to provide the additional water demand supply for the Proposed Project.

Impacts due to increased groundwater pumping on the adjacent properties would be *less than significant* (Class III).

Mitigation Measures

No mitigation measures are required.

Residual Impacts

There would be no residual impacts.

Impact #	Impact Description	Phase	Residual Impact
WR.3	The Proposed Project may have significant impacts on water quality.	Operations	Class II

The Proposed Project does not include any new construction or equipment and the existing equipment would remain the same. The Proposed Project includes increased processing and refining crude oil by approximately 10 percent. The Project would not change the characteristics or quantity of any liquid or solid waste. Accordingly, any additional waste generated would be handled in accordance with all local, state, and federal regulations. However, a pipeline leak or spill related to shipping could be larger in volume as a result of increase in materials generated.

Impacts to water quality would be significant if spill volume increased along the pipeline route due to the Proposed Project. The Refinery operates under the Environmental Protection Agency National Pollutant Discharge Elimination System (NPDES) Permit No. CA0000051 to minimize potential pollutants to the groundwater and outfall areas.

In addition, the facility maintains two separate collection systems: one system processes wastewater and contact stormwater and the second system collects non-contact stormwater. The process water sewer system collects process wastewater and precipitation runoff from the oil storage tank dikes and the operating units. This wastewater flows by gravity to a waste treatment plant that also remediates the groundwater. The wastewater plant includes three oil-water separators, two surge tanks, dissolved air flotation, a trickling filter, an Orbal aeration system, and a secondary clarifier. The treated wastewater is discharged to the Pacific Ocean.

The increased crude oil refined at the site would be managed under the same spill prevention guidelines currently in place at the Refinery. In addition, any increased process water shall be treated in the existing treatment system. Therefore, there will be a less than significant impact with implementation of the following mitigation measures.

Mitigation Measures

WR-3.1 Ensure that any additional increased process water is treated by the wastewater treatment system in conformance with the NPDES Permit.

WR-3.2 Existing spill management precautions shall be amended as needed to mitigate an increased spill size due to the increased amount of crude oil processing as reviewed and approved by San Luis Obispo County Planning and Building and San Luis Obispo County Water Resources Division.

Residual Impacts

There would be no residual impacts.

4.7.5 Cumulative Impacts and Mitigation Measures

Current operations at the Refinery pump approximately 1,200 AF per year, which is not the highest historic use by the Applicant (NMMATG 2009). The proposed one percent increase in water use, which corresponds to approximately 1,400 AF per year, has been included in the NCS D and NMMATG studies of future groundwater demands. These parties expect to provide the necessary groundwater demand increase from the SMGB. In general, the existing wells have adequate capacity to pump the additional water demand.

In the event of potentially severe to severe climatic drought conditions, parties in previous litigation adopted a Water Shortage Condition and Response Plan, and the measures included will provide the necessary contingencies to mitigate the water shortage. In addition, this document includes other alternatives that could be implemented to conserve or treat water as appropriate to compensate for the additional volumes needed as part of the Proposed Project during severe drought conditions. Finally, NCS D is developing plans for a pipeline to deliver additional water to the area to reduce or alleviate any future water shortages.

Finally, the SMF collects and treats stormwater and water used in the plant operations and discharges the treated water under an NPDES Permit. This treatment and permitting process ensures that the potential pollutants to the groundwater and outfall areas are minimized.

Thus, no cumulative significant impacts to the groundwater supply, existing wells, or water quality are expected.

4.7.6 Mitigation Monitoring Plan

Mitigation Measure	Requirements	Compliance Verification		
		Method	Timing	Responsible Party
WR-1	The Applicant shall develop a Water Management Plan, which shall include best management practices and water conservation measures, including the use of reclaimed water and surface runoff retention basin water for Refinery uses, dust suppression, and landscaping uses, as available. The Applicant shall make changes to the Water Management Plan if requested by the County Director of Planning. The Water Management Plan shall include implementation of measures consistent with the Nipomo Mesa Management Area Water Shortage Conditions and Response Plan. The plan shall provide guidelines on	Terms outlined in Water Shortage Conditions and Response Plan. Design documents and plans	During times of Potentially Severe to Severe climatic conditions where groundwater conditions are sufficient low as to permit seawater intrusion	County of San Luis Obispo Nipomo Mesa Management Area Technical Group

4.7 Water Resources

Mitigation Measure	Requirements	Compliance Verification		
		Method	Timing	Responsible Party
	managing all future water use during severe drought years. Once it is determined that a severe drought condition exists, restricted (drought) water usage measures shall remain in effect until it is shown satisfactorily to the County that the severe drought condition no longer exists.			
WR-3.1	Ensure that any additional increased process water is treated by the wastewater treatment system in conformance with the NPDES Permit.	Inspection	During operations	San Luis Obispo County Water Resources Division
WR-3.2	Existing spill management precautions shall be amended as needed to mitigate an increased spill size due to the increased amount of crude oil processing as reviewed and approved by San Luis Obispo County Planning and Building and San Luis Obispo County Water Resources Division.	Review of existing precaution measures	Prior to permit	San Luis Obispo County Water Resources Division