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5.5 WATER RESOURCES

The existing conditions in the project area and the water demands for Pio Pico Energy Center (PPEC) have been evaluated and are presented in this section. The water resources data and information for the area, as well as the water demand data, were used to identify and evaluate the potential effects of the project on local water resources and to identify mitigation measures that will reduce potential significant impacts (if any) to a level of insignificance. Details of this evaluation are presented below with supporting information provided in Appendix I, Water Resources (PPEC Will-Serve Letters, Reclaimed Water Quality Analyses, and Draft Drainage, Erosion, and Sediment Control Plan [DESCP]). With proposed conditions of certification outlined in this section, the project will have no significant environmental impacts and will comply with all applicable laws, ordinances, regulations, and standards (LORS).

5.5.1 Affected Environment

5.5.1.1 Project Site, Linears and Temporary Laydown Area

PPEC consists of the project site, linears, and a temporary laydown area (Figure 3.3-1, Facility Plot Plan and Figure 3.3-3, Potential Linears). The project site is located in an unincorporated area of San Diego County known as Otay Mesa. It is comprised of a 9.99 acre parcel located in the southeast quadrant of the Alta Road and Calzada de la Fuente intersection. The proposed project site comprises the entire parcel with Assessor's Parcel Number (APN) 648-040-45, and the laydown area is 6.00 acres of an adjacent parcel to the south (APN 648-040-46) (Figure 3.3-2, Project Location). The existing setting within one-mile of the project site and potential transmission line routes are presented on Figure 3.3-4. The project affects the following areas:

- Plant site – 9.99 acres.
- Temporary laydown and parking area – 6.00 acres, on an adjacent parcel that is contiguous to the project site.
- Natural Gas pipeline – There are two possible routes for the gas supply pipeline. Both routes would connect to an existing SDG&E natural gas pipeline, but at different locations. Route A would extend approximately 8,000 feet south along Alta Road to near the U.S.–Mexico border, at which point it would connect to the existing SDG&E natural gas pipeline. Route B would extend approximately 2,375 feet south along Alta Road, turn west on Otay Mesa Road, and continue approximately 7,920 feet to Harvest Road at which point it would connect to the existing SDG&E natural gas pipeline (Figure 3.3-3, Potential Linears) for a total of approximately 10,300 feet. The pipeline will be constructed, owned, and operated by SDG&E.
- Sewer pipeline – A short connection will be made to an existing 12-inch sewer main along Calzada de la Fuente along the north project site boundary, or to an existing 15-inch sewer main along Alta Road, along the west project site boundary.

- Stormwater pipeline – A short connection will be made from a detention pond located at the northwest corner of the project site to an existing 30-inch stormwater pipeline located along Calzada de la Fuente, adjacent to the project site.

- Power line – Two possible routes are provided for a 230kV transmission line that will connect the project into the existing 230kV Otay Mesa switchyard. Route A would begin as an overhead power line along Calzada de la Fuente, extend approximately 1,700 feet east where it would then be routed underground for approximately 400 feet into the Otay Mesa switchyard (total length of Route A would be approximately 2,100 feet). Route B would begin as an overhead power line from the eastern edge of the project site, run south approximately 550 feet, then turn east along the northern border of the parcels with APN 648-040-48 and APN 648-040-43 for 1,400 feet, and finally turn north for approximately 700 feet into the Otay Mesa switchyard (total length of Route B would be approximately 2,650 feet). The power line will be owned and maintained by the Applicant.

- Water supply pipelines – The project will make a short connection to the potable service system, either at an existing 12-inch main along Calzada de la Fuente, or at an existing 24-inch main along Alta Road. Upon the Otay Water District (OWD)'s completion of the planned Otay Mesa area recycled water system, the project will make a connection to an existing 8-inch recycled water main along Calzada de la Fuente or a new recycled water main to be constructed in Alta Road.

These features are illustrated on Figure 3.3-1, Facility Plot Plan and Figure 3.3-3, Potential Linears.

5.5.1.2 Physiographic Setting

As shown on Figure 5.5-1, the PPEC site is in the Otay River watershed, which is part of the San Diego Bay watershed. The site is approximately ten miles inland, or east, of San Diego Bay. The southern portion of gas pipeline Route A, western portion of gas pipeline Route B and transmission line Route B, however, are located within the Tijuana River watershed that drains to Mexico (SDRWQCB, 2007).

Figure 3.4-2, Baseline Site Topography, shows the PPEC site's topography as anticipated after the industrial park developer completes the grading plan. A detention basin designed to accommodate a 100-year, 24-hour storm event will be located in the northwest corner of the site. Elevation at the project site will be approximately 635 feet above mean sea level (msl) once the grading is completed. Grading and construction of the detention basin is expected to be completed in first quarter 2011, under the 2009-2010 County of San Diego Grading Permit 2700-1555.

5.5.1.3 Climate

The climate in PPEC's vicinity can be characterized as semi-arid. The Otay Mesa area experiences long, mild, dry summers and relatively mild winters. Monthly average, maximum, and minimum temperature data based on historical records for El Cajon, California, which is the most representative of the project site, are presented in Table 5.5-1. Based on 31 years of records, the average annual temperature for El Cajon is 65.2°F. The El Cajon Western Regional Climatic Center station, at an elevation 400 feet above msl, is

located approximately 15 miles north of the project site. The climate station in Chula Vista, California, is near the coast and at a lower elevation (60 feet above msl) and is not considered representative of the project site. Given that the project site is about ten miles inland and will be at 635 feet above msl, the El Cajon data is more representative than the Chula Vista station, even though it is a shorter distance from the project site.

TABLE 5.5-1
MONTHLY TEMPERATURE DATA (°F) FOR EL CAJON, CALIFORNIA

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Mean Monthly	56.0	57.1	59.3	62.9	66.5	70.1	75.3	76.5	74.3	68.0	60.4	55.4	65.2
Average Maximum	69.6	69.9	71.3	75.5	77.5	81.8	87.7	89.0	87.4	81.2	74.8	69.5	77.9
Average Minimum	42.3	44.3	47.3	50.5	55.5	58.5	62.9	64.1	61.2	54.9	46.1	41.3	52.4
Maximum	92	95	98	104	104	106	113	107	109	106	99	93	113
Minimum	26	28	30	36	43	46	50	50	49	40	29	25	25

Source: Western Regional Climatic Center; El Cajon, Station Number 042706, Period of Record November 1, 1979, to August 31, 2009.
Notes:
ºF = degrees Fahrenheit

Precipitation in the area is characterized by long dry summers and intermittent wet periods. Based on the 31-year record of precipitation, the average annual precipitation is approximately 12 inches, of which, approximately 90 percent occurs from November through April. See Table 5.5-2.

TABLE 5.5-2
AVERAGE MONTHLY PRECIPITATION
(EL CAJON, CALIFORNIA)
(INCHES)

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Annual
2.34	2.75	2.37	0.78	0.15	0.08	0.10	0.02	0.16	0.61	1.30	1.41	12.07

Source: Western Regional Climatic Center; El Cajon, Station Number 042706, Period of Record November 1, 1979, to August 31, 2009.

5.5.1.4 Surface Water

Surface Water Features

The PPEC site is within the Otay River watershed, which is part of the 415-square-mile San Diego Bay watershed (see Figure 5.5-1). The Otay River watershed is approximately 145 square miles (Aspen, 2006), of which, approximately 85 square miles are above Lower Otay Dam (City of Chula Vista, 2005; Otay Ranch GDP, 1993). The Otay River originates at San Miguel Mountain. It generally flows westward and ultimately discharges into the south end of San Diego Bay.

Upper and Lower Otay Reservoirs are water supply reservoirs owned by the City of San Diego. Upper Otay Reservoir is formed by Upper Otay Dam, built in 1901. Lower Otay Reservoir was created by Savage Dam, which was initially constructed as a rock-fill dam in 1897 and rebuilt in 1919 as a concrete-gravity-arch dam. The original dam was washed away

during the heavy storms in January 1916, which caused extensive flooding in the San Diego region. The spillway crest elevation for Savage Dam is 491 feet. The storage capacity of Lower Otay Reservoir is 48,510 acre-feet. Lower Otay Reservoir is also the terminus for Pipeline 3 of the San Diego Second Aqueduct, which delivers water from the Colorado River via the Colorado River Aqueduct. The 94-mile-long Pipeline 3 starts at the Colorado River Aqueduct near Hemet, California, and ends at Lower Otay Reservoir. Construction of Pipeline 3 was completed in 1960 (USBR, 2009).

The surface water features surrounding PPEC are shown on Figure 5.5-2 at a scale of 1:24,000. The project site is approximately two miles southwest of Savage Dam. The project site's topography prior to project construction is shown on Figure 3.4-2, Baseline Site Topography. The project site is previously disturbed, undeveloped and has negligible impervious surface areas. The project site is relatively flat and drains to an existing County stormwater system that discharges west towards Johnson Canyon and ultimately to the Otay River. The confluence between Johnson Canyon and the Otay River is approximately three miles downstream of the project site.

An unnamed intermittent drainage, which flows from Otay Mountain into Mexico, is in the vicinity of the proposed Route B transmission line located southeast of the PPEC site. This drainage is within the Tijuana River watershed. The total drainage area of the Tijuana River watershed is approximately 1,750 square miles, of which approximately 470 square miles or approximately 27 percent is within California (Project Clean Water, 2010). Most of the watershed area is located in Mexico.

Surface Water Quality

In accordance with Section 303(d) of the federal Clean Water Act (CWA), states are required to identify waters that do not meet applicable water quality standards. The California State Water Resources Control Board (SWRCB) maintains and updates a Section 303(d) list of impaired water bodies in compliance with the CWA. According to the currently available Section 303(d) list, the inland surface waters of the Otay River watershed, with the exception of Lower Otay Reservoir, are free of any substantial impairment (SWRCB, 2010). As of 2008, Lower Otay Reservoir had been listed on the 303(d) list for segments that require total maximum daily loads (TMDLs) to improve water quality with respect to iron, manganese, nitrogen, and pH. TMDL limits are expected to be established for Lower Otay Reservoir by 2019.

The SWRCB categorizes the Tijuana River as impaired for a variety of water quality problems, which are mostly due to non-point agricultural sources on the United States side and both point and non-point sources on the Mexican side (Project Clean Water, 2010).

PPEC will not be impacted by, or have any significant impacts on water quality for either of these surface features.

Surface Water Beneficial Uses

The Water Quality Control Plan for the San Diego Basin, as most recently amended in 2007, sets forth water quality objectives for constituents that could potentially cause an adverse effect or impact on the beneficial uses of water. Existing beneficial uses of the Otay River downstream of the Lower Otay Dam include agriculture, noncontact water recreation (REC2),

warm freshwater habitat, and wildlife habitat. The San Diego Regional Water Quality Control Board (SDRWQCB) has also identified potential beneficial uses of industrial and contact water recreation (REC1). (SDRWQCB, 2007).

For the unnamed drainage east of the PPEC site that flows to Mexico, existing beneficial uses include agriculture, noncontact water recreation, warm freshwater habitat and wildlife habitat. Potential beneficial uses include industrial and contact water recreation (SDRWQCB, 2007).

PPEC will not be impacted by, or have any significant impacts on current beneficial uses of these surface drainage features.

5.5.1.5 Flooding

During severe rain seasons, low-lying areas along the floodplains of the Otay River and its tributaries, including Johnson Canyon, as well as certain drainage facilities, may experience flooding. Dams, levees, reservoirs, and drainage channels have been constructed to control the drainage of much of the watershed for the downstream areas, thereby reducing the potential for hazardous flooding of developed areas. The Federal Emergency Management Agency (FEMA) has delineated inundation areas for 100- and 500-year floods. Areas designated to be within the 100-year flood hazard zone in the project vicinity are shown on Figure 5.5-2. According to the FEMA Flood Insurance Rate Maps (FIRM), the project site and linears are not within an area identified as having flood hazards (FEMA, 1997).

Figure 5.5-2 also depicts areas subject to flood inundation in the event of failure of the Lower Otay Dam. Dams typically fail because of overtopping by reservoir water during heavy rainfall episodes, structural damage, and earthquake-related hazards such as landsliding, ground shaking, and seiches, which are waves in an enclosed or semi-enclosed body of water, such as a lake or bay. The project site and linears are outside the dam breach flood inundation area.

Although tsunamis could adversely affect the coastal areas of San Diego County, the protective nature of San Diego Bay minimizes the potential for significant wave damage. The likelihood of a tsunami reaching the project site, which is approximately ten miles inland and at an elevation of approximately 635 feet above msl, is considered low.

In the unlikely event of the development of noticeable seiches, it is conceivable that local areas adjacent to Upper and Lower Otay Reservoirs and San Diego Bay could be impacted by wave activity (City of Chula Vista, 2005). The project site, however, will not be impacted because it is not close to any large reservoirs or the ocean.

5.5.1.6 Hydrogeology

In San Diego County, groundwater basins underlie approximately 11 percent of the surface area and are generally located near the coast and along rivers. The Otay Valley Groundwater Basin has a surface area of approximately 11 square miles and is adjacent to the Pacific Coast, but it extends inland within the alluvium along the Otay River (DWR, 2004). The project site is located upgradient and outside the boundary of the Otay Valley Groundwater Basin.

Groundwater basins in the San Diego region are generally small and shallow. However, for basin planning and regulatory purposes, the SDRWQCB considers all subsurface waters that occur in fully saturated zones within soils and other geologic formations as groundwater.

A geotechnical investigation was conducted in 1997 for the neighboring Otay Mesa Generating Plant. Results from that investigation indicate that the groundwater table in the vicinity of the project site is below elevation 580 feet (See Appendix G, Geotechnical Engineering Investigation in URS Greiner Woodward Clyde, 1999).

5.5.1.7 Water Supply History and Future Projections

The majority of the region's water supply must be imported to provide for demands from agriculture, population, commercial/industrial development, and public entities. The San Diego County Water Authority (SDCWA) has historically been the major water supplier in the region. According to the County Water Authority Act, Section 5 subdivision 11, the SDCWA "as far as practicable, shall provide each of its member agencies with adequate supplies of water to meet their expanding and increasing needs." (SDCWA, 2008) The SDCWA generally imports 75 to 95 percent of this water from the Metropolitan Water District (MWD) of Southern California. Water imported to the region comes from two primary sources: 1) the Colorado River, through the 240-mile Colorado River Aqueduct, and 2) the State Water Project from Northern California, through the Sacramento-San Joaquin River Delta and the 444-mile California Aqueduct. These systems deliver water to the MWD, which then distributes water supplies to districts throughout the Southern California region, including the SDCWA. The SDCWA comprises 23 member water agencies and water districts, including Otay Water District, which serves East Otay Mesa (County of San Diego, 2010).

The Otay Water District (OWD), which comprises five water service areas, is responsible for delivering potable and recycled water to customers within its jurisdictional area of approximately 80,320 acres (125.2 square miles) (PBSJ, 2005). OWD is in southwestern San Diego County, inland from the cities of San Diego, Chula Vista, and National City. In 2005, OWD delivered 37,618 acre-feet of potable water to its service area. Projected potable water demands for OWD are approximately 57,000 afy in 2015 and 82,400 afy by 2030. Since OWD has no local supply of raw water, potable water or groundwater resources, it expects to meet projected demands for potable water from SDWCA. (OWD and MHW, 2007).

To reduce its reliance on imported water, maximize the use of local water supplies, substitute recycled water for potable water, and provide a continuous and dependable source of supplemental water for the area, OWD maintains and operates a recycled water system. OWD distributes recycled wastewater that meets California Title 22 requirements for reuse. Two treatment facilities provide recycled water for users within OWD's service area. The Ralph W. Chapman Water Recycling Facility (Chapman) is operated by OWD. Operation began in 1970, and the facility was expanded in 1990 (PBSJ, 2008). Currently, Chapman can produce approximately 1.3 million gallons per day (mgd) of recycled water. Chapman, which is near the intersection of Campo Road/Highway 94 and Singer Lane, is approximately ten miles north of the project site. Recycled water is pumped southward to storage ponds in OWD's use area and is distributed to various users. Current recycled water customers include residential developments and golf courses (PBSJ, 2005). Wastewater that is untreated by the facility for

beneficial reuse continues to be discharged to the City of San Diego Metropolitan Wastewater System. OWD has estimated the total projected sewage generation that could be treated at Chapman, if it were to be expanded, to be approximately 3.84 mgd (PBSJ, 2008).

Since 2003, OWD also has had an agreement with the City of San Diego for purchase of up to 6 mgd of recycled water produced at the South Bay Water Reclamation Plant (SBWRP), operated by the City of San Diego (OWD and City of San Diego, 2003). The SBWRP became operational in May 2002 and currently has a wastewater treatment design capacity of 15 mgd. The SBWRP is located at the intersection of Dairy Mart and Monument Roads in San Diego, approximately nine miles west of the project site. The plant relieves the South Metro Sewer Interceptor System and provides local wastewater treatment services and recycled water to the South Bay. As part of its agreement with the City of San Diego, OWD is responsible for distribution and quality of the recycled water that it delivers to its customers.

In 2008 OWD's recycled water system included over 77 miles of recycled water pipelines, pump stations, and storage reservoirs (PBSJ, 2008). Recycled water from the SBWRP is conveyed via a 30-inch-diameter pipeline to OWD's 12-million-gallon 450-1 Reservoir. This reservoir is one of several reservoirs within the OWD system that provide storage capability and allow OWD to regulate flows to meet demands. OWD has an ongoing capital improvement program to expand its recycled water system (OWD, 2010a).

In 2009, the demand for OWD's recycled water was 4,533 acre-feet per year (afy) (OWD, 2010a). The biggest user was the City of Chula Vista (1,026 afy). Currently recycled water is primarily used for irrigating landscaping and golf courses. (PBSJ, 2008). Demands for recycled water within the OWD are projected to reach approximately 7,800 afy by 2030 (PBSJ, 2008) and are estimated to approach 10,000 afy at ultimate build-out of the region (OWD, 2010a). Chapman will be responsible for approximately 1,300 afy, and the SBWRP is expected to supply the remainder (OWD, 2009 and OWD et al, 2010). OWD has an ongoing program to further develop and expand its recycled water system to the Otay Mesa area as documented in OWD's water resources master plan (PBSJ, 2010a) and capital improvement plan (OWD, 2010a) to ultimately provide for the annual use of an estimated 10,000 acre-feet of recycled water (OWD, 2009 and OWD et al, 2010).

5.5.1.8 Wastewater

The County of San Diego provides sewer service for approximately 50,000 customers in unincorporated areas of the county. The Wastewater Management Section of the County Department of Public Works (DPW) is responsible for operations and overall administration of the County's sanitation and maintenance districts' wastewater systems. There are nine districts within the county that are separate entities, each with its own budget, sewerage infrastructure, operational permits, and environmental compliance criteria created to provide wastewater service.

The PPEC project area is served by the East Otay Mesa Maintenance District. At present, the backbone sewer system consists of one sewer outfall, approximately four miles in length, which was constructed as part of the Otay Mesa Generating Station project. Wastewater flows from the district are conveyed to the City of San Diego's Metro system for treatment. The district has rights to 1.0 mgd of the Metro system's treatment and disposal capacity.

The district, which was formed in 2001, includes residential, commercial and industrial land uses and encompasses approximately 4.1 square miles. The East Otay Mesa Sewer Maintenance District's Master Plan was completed by PBS&J in 2006. It is anticipated that an Update to the 2006 Master Plan will be completed in the next few years.

5.5.2 Project Water and Wastewater Needs

Otay Water District plans to complete the construction of a new recycled water distribution system in the Otay Mesa area. The project will connect to an existing 8-inch recycled water main along Calzada de la Fuente or a new recycled water main that OWD plans to install in Alta Road. Additional components of OWD's expanded water distribution system will include a four-million-gallon reservoir, various distribution pipelines and a pump station. According to OWD's Capital Improvement Program for fiscal years 2011 through 2016, adopted in September 2010, OWD expects to complete the various elements of the expanded recycled water distribution system by June 2013 (OWD, 2009a).

Construction of the PPEC is anticipated to begin in February 2013 and the estimated commercial online date is May 2014. At this time, it is anticipated that the expanded recycled water system will be in service at the time the project commences construction activities that require recycled water. In the event that the expanded recycled water system has not been completed and is not operational, PPEC would rely on potable water as supplied by Otay Water District until such time that recycled water became available. Recycled water will be the primary source of PPEC's process water during operations. The water balance for the proposed project as presented throughout this section and the AFC in general, is based on the 'recycled water' scenario, not the 'potable water' scenario, because the 'recycled water' scenario provides a worst-case on a volume basis and for purposes of project design characteristics. Applicant has done sufficient analysis to confirm that potable water use volumes would be lower than recycled water volumes. Therefore, and because the project is designed for and will use recycled water once it is supplied, this worst-case design and analysis approach is appropriate.

The water balance flow diagram and values (refer to Figures 3.5-4A and 3.5-4B) show the potable (for domestic and safety needs) and process water (recycled water), flow streams for the maximum use day and the average day. The water balances correspond to the heat balances summarized in Table 3.5-2. Refer to Figures 3.5-2A through 3.5-2D showing the seasonal and peak heat and mass balance operating characteristics. Table 5.5-3 shows the maximum daily, average daily, and average annual water supply and wastewater disposal flows.

TABLE 5.5-3
DAILY AND ANNUAL WATER FLOWS

Flow Stream	Maximum Daily (1,000 gpd)	Average Daily (1,000 gpd)	Annual (afy)
Process Water Supply (Recycled Water)			
Cooling System Makeup	248	124	139
UF and RO Systems	315	147	165
Evaporative Cooler Makeup	255	64	71
Service Water	7	3	4
Total Process Water Requirements	825	338	379

Flow Stream	Maximum Daily (1,000 gpd)	Average Daily (1,000 gpd)	Annual (afy)
Domestic Water Supply	3	1	1
Process Wastewater			
Cooling System Blowdown	124	57	64
Oil-water-separator	26	12	13
Total Process Wastewater	150	69	77
Sanitary Wastewater	3	1	1
Total Wastewater to County Sewer	153	70	78

afy = acre-feet per year
gpd = gallons per day
UF = ultra filtration
RO = reverse osmosis
See Figure 3.5-4A for water balance flow diagram

5.5.2.1 Source of Project Water Supply

OWD has plans to construct, own and operate an extension of its existing recycled water system. This capital improvement project is designed to meet present and future recycled water demands in the Otay Mesa area and is expected to be completed by June 2013. Presently, the Otay Mesa area's recycled water demands are being met by OWD's potable water supply. OWD will provide PPEC with recycled water for process water and a back-up firewater supply. Potable water will be used for sanitary purposes, fire protection system and emergency back-up supply for process needs. A copy of the will-serve letter is provided in Appendix I-1.

The expected average water qualities of the recycled water and potable water to be provided by OWD are presented in Table 5.5-4.

TABLE 5.5-4
EXPECTED AVERAGE WATER QUALITY OF RECYCLED WATER, POTABLE WATER, AND PROCESS WASTEWATER

Constituent	Units	Recycled Water[1]	Potable Water[2]	Process Wastewater[3]	Industrial Wastewater Limits[4]
Conductivity	µS/cm	1,450	895	8.080	NA
pH		6.9	8.1	7.8	5 to 12.5
Total Suspended Solids	ppm	2	NA	30	100[5]
Total Dissolved Solids	ppm	887	545	5,252	NA
Ion Chemistry, as $CaCO_3$					
Total Alkalinity	mg/L	85	122	150	NA
Hardness	mg/L	279	249	1,851	NA
Calcium	mg/L	167	59	950	NA
Cations					
Magnesium	mg/L	112	24	900	NA
Sodium	mg/L	332	87	1,882	NA
Potassium	mg/L	22	4.6	123	NA
Bicarbonate	mg/L	85	NA	151	NA
Sulfate	mg/L	245	180	1,715	NA
Chloride	mg/L	326	89	1,850	NA
Nitrate-Nitrite	mg/L	52	ND	294	NA
Trace Metals					
Aluminum	mg/L	0.057	NA	-	NA

Constituent	Units	Recycled Water[1]	Potable Water[2]	Process Wastewater[3]	Industrial Wastewater Limits[4]
Antimony	mg/L	<0.001	NA	-	NA
Arsenic	mg/L	0.0015	ND	-	NA
Barium	mg/L	0.086	NA	-	NA
Beryllium	mg/L	<0.001	NA	-	NA
Boron	mg/L	0.41	125	-	NA
Cadmium	mg/L	<0.0005	NA	-	1.0
Chromium	mg/L	0.0024	NA	-	5.0
Cyanide	mg/L	<0.005	NA	-	1.9
Copper	mg/L	0.05	<1.3	0.28	11.0
Fluoride	mg/L	0.525	0.9	-	NA
Iron	mg/L	0.03	NA	0.17	NA
Lead	mg/L	0.00078	NA	-	5.0
Manganese	mg/L	<0.002	NA	-	NA
Mercury	mg/L	<0.0002	NA	-	NA
Nickel	mg/L	<0.005	NA	-	13
Selenium	mg/L	<0.005	NA	-	NA
Silver	mg/L	0.0012	NA	-	NA
Thallium	mg/L	<0.001	NA	-	NA
Zinc	mg/L	0.09	NA	0.51	24
Silica, SiO2	mg/L	12	NA	68	NA

Notes:

1. Water quality for recycled water is based on data for the Ralph W. Chapman Water Recycling Facility for 2007, 2008, and 2009 (OWD, 2008, 2009b, and 2010b), as provided in Appendix I-2. Information on the seasonal variability of the recycled water quality is not available; however, the recycled water distributed by OWD has received tertiary treatment that meets California Title 22 requirements for reuse. In addition, the recycled water system includes storage facilities for blending and reducing variability in quality and flows.
2. Water quality for potable water is from Otay Water District, 2009 and 2010. No margin has been added to the two samples used to estimate potable water quality.
3. Estimated by Kiewit and based on a worse-case use of recycled water, not potable water. Process wastewater quality assumes chemical addition and materials upgrades to equipment in contact with wastewater. Trace metals given at their minimum detection limit were not propagated throughout the system. Conductivity is a field measurement but is estimated in the table.
4. Based on City of San Diego Metropolitan Wastewater Department's Industrial Wastewater Control Program's Current Local Limits (MWD, 2006)
5. Federal pretreatment standards for power plant discharges to a sewer system limit total suspended solids for a maximum one day at 100 mg/L and average 30-day to 30 mg/L (40 CFR 423)

mg/L = milligrams per liter
NA = not available
ND = not detected, detection limit not available
ppm = parts per million
µS/cm = microsiemens per centimeter
- = not estimated

5.5.2.2 Process Water Supply and Uses

PPEC is designed to have all of its process water needs met with recycled water. As noted in Section 5.5.2 above, the worst-case water use by volume is based on sole use of OWD recycled water for both the construction phase and the operational phase. OWD expects to have its expanded recycled water system to the East Otay Mesa area operational by June 2013. Until the recycled water can be delivered, OWD has agreed to meet PPEC's near-term process water demands using potable water. Given the future timing of the availability of the recycled water, PPEC is taking a dual water connection path as follows:

- The project will make a short connection to the potable service system, either at an existing 12-inch main in Calzada de la Fuente, or at an existing 24-inch main in Alta Road.

- Upon OWD's completion of the planned Otay Mesa area recycled water system, the project will make a connection to and existing 8-inch recycled water main along Calzada de la Fuente or the new recycled water main to be constructed in Alta Road. (See Section 5.5.2.1 above).

Process water uses include plant service water, cooling system makeup, combustion turbine generator (CTG) nitrogen oxide (NO_x) injection (after treatment), and combustion turbine inlet air evaporative cooler makeup. The CTG injection water will be produced by processing OWD water using an ultra filtration (UF) system, a reverse osmosis (RO) system, and skid-mounted ion exchange vessels. The PPEC does not include a steam cycle and will not use water for steam condensation purposes. The amount of water used for each purpose is summarized in Table 5.5-3 and presented in Figure 3.5-4B, and again, assumes a worse-case volume scenario based on the use of recycled water, not potable water.

Process water will also serve as a secondary source of fire protection water.

Backup for the project's process water supply will initially be provided by water stored on the PPEC site. If the recycled water deliveries were temporarily interrupted, the PPEC facility could still continue to operate at full load for approximately 24 hours using water stored on site. A potable water connection on site can be used as an emergency back-up water supply.

5.5.2.3 Project Water Treatment

Cooling System Makeup Water

The closed-loop cooling water systems will provide cooling water to each combustion turbine's intercoolers and lube oil coolers. Three 50-percent-capacity cooling water pumps will be the prime movers for these systems.

The makeup water for the cooling system will be from the OWD water supply as described above. The makeup water supplied by OWD will be stored in a 750,000-gallon raw water storage tank.

The plant will use a partial dry-cooling system (PDCS) in a closed-loop configuration. By doing this, the heat will be rejected by first using ambient air, followed by an external water evaporation portion of the loop. This allows the plant water consumption to be dramatically decreased in two ways. First, the dry-cooling section will reduce the total amount of water evaporated during the cooling process. Second, the closed-loop cooling allows the constituents in the evaporative water to be concentrated to a much greater extent than in a traditional open-loop cooling system because that water does not go into the combustion turbine equipment.

Compared to a typical open-loop system with no dry cooling, the PDCS will decrease the annual plant water consumption by approximately 53% and the wastewater production rate by approximately 59%.

The PDCS makeup water will be pumped from the tank to the cooling system basin as required to replace water lost from evaporation, blowdown, and drift. The cooling system will have up to approximately five cycles of concentration (see Figure 3.5-3B).

A chemical feed system will supply water-conditioning chemicals to the cooling water to minimize corrosion, bio-fouling, and the formation of mineral scale. Sulfuric acid is anticipated to be fed into the cooling water system in proportion to makeup water flow for alkalinity reduction to control the scaling tendency of the cooling water. The acid feed equipment will consist of a bulk sulfuric acid storage tank and two full-capacity sulfuric acid metering pumps.

To further inhibit scale formation, a scale-inhibiting solution will be fed into the cooling water system as a sequestering agent in an amount proportional to the cooling water blowdown flow. The scale inhibitor feed system will consist of two full-capacity scale inhibitor metering pumps.

To prevent bio-fouling, a sodium hypochlorite solution will be fed into the cooling water system. The hypochlorite feed system will consist of two full-capacity hypochlorite metering pumps. Two full-capacity metering pumps will be provided for feeding either stabilized bromine or sodium bromide as supplemental biocides.

In general, the cooling system water treatment system will be used to maintain the cooling water quality within the requirements of the cooling system manufacturer, as shown in Table 3.5-4, Cooling Water Quality Limits.

5.5.2.4 Demineralized Water

Raw water will be filtered and sent through an ultrafiltration and two-pass RO system to remove all of the suspended solids and most of the dissolved solids from the water. The RO system rejects approximately 28 percent of the feed water, along with the impurities that were removed. The product water from the RO system will be sent through skid-mounted mixed-bed ion exchange demineralizers and then to a 240,000-gallon demineralized water storage tank. In addition to being used for CTG NO_x control, a portion of the demineralized water will be used for CTG compressor washing.

5.5.2.5 Domestic Water

The OWD will provide potable water (See Appendix I-1, Will-Serve Letter) for facility drinking water, showers, sinks, toilets, eye wash stations and safety showers in hazardous chemical areas. Potable water consumption for personnel is estimated to be approximately 1,000 gpd for an average day. Estimated average annual consumption is approximately 1 afy. See Table 5.5-3. In addition, potable water will be used for the fire protection system. As described in Section 5.5.2.2 above, potable water might be used initially if OWD does not have its planned recycled water system expansion project in service when PPEC begins construction.

5.5.2.6 Project Wastewater Management Plan

The two-process wastewater streams are cooling system blowdown and RO reject. Both of these streams will be routed to a single connection with the existing sewer system. A short connection will be made to an existing 12-inch sewer main in Calzada de la Fuente along the north project site boundary or to an existing 15-inch sewer main in Alta Road along the west project site boundary.

The County has confirmed that it has capacity in its existing sewer system to accommodate the project's wastewater discharge. See the will-serve letter from the County provided in Appendix I-1.

The PDCS external water will be concentrated by evaporative losses and include the residues of chemicals added to the water. These chemicals control scaling and biological growth in the cooling system and corrosion of the heat exchanger tubes. Cooling water treatment will require the addition of a pH control agent (acid), a mineral scale dispersant (polyacrylate polymer or equivalent), corrosion inhibitors (phosphate based), and biocide (sodium hypochlorite and sodium bromide or equivalent). The blowdown will then be removed from the cooling system to prevent mineral scale formation on heat transfer surfaces. Table 5.5-4 shows the expected quality of the resultant wastewater for disposal. Refer to the water balances on Figure 3.5-4A, Water Balance Flow Diagram, and Figure 3.5-4B, Water Balance Flow Values.

5.5.2.7 Project Wastewater Streams

The combined industrial wastewater discharge from the plant will consist of cooling tower blowdown, RO rejects, evaporative cooler blowdown, and water effluent from the oil-water separator.

Table 5.5-3 shows the major wastewater streams and the resultant wastewater for disposal. Refer to the water balances, Figures 3.5-4A and 3.5-4B. The expected wastewater composition is shown in Table 5.5-4.

The project will use an RO system to recycle process wastewater for reuse on site. This treatment and reuse of the process wastewater on site has an overall recovery rate of approximately 72 percent. The project will incorporate water recycling from the intercooler condensate blowdown and the evaporative cooling blowdown and reuse this water in the cooling water system.

The project evaluated the use of zero liquid discharge (ZLD) technology. It was determined that the use of this technology for PPEC will not be viable for the following reasons:

- Increases capital costs on the order of $15 million.
- Increases annual operation costs on the order of $2 million.
- Requires transport and disposal of sludge to an off-site landfill.
- Consumes energy, which reduces power plant output and efficiency.

- Requires continuous operation, which is not compatible with peaking generation.
- Handicaps the plant's operating requirements by limiting plant readiness on demand.

The project will use recycled water for process and cooling water needs through a hybrid cooling system that reduces the amount of water required for cooling purposes and reusing water to reduce the amount of wastewater generated; therefore, the adverse impacts and additional costs associated with a ZLD system will outweigh the marginal additional benefits that may be realized.

Process wastewater will be collected in the 240,000-gallon wastewater storage tank, combined with the sanitary wastewater, and then discharged to the East Otay Mesa Sewer Maintenance District's sewer system. A short connection will be made to an existing 12-inch sewer main in Calzada de la Fuente along the north project site boundary or to an existing 15-inch sewer main in Alta Road along the west project site boundary.

5.5.2.8 Domestic/Sanitary Wastewater

The sanitary sewer system will consist of a collection system designed to handle the sanitary sewer flow from the administration and control building and other restrooms, if any, located on the project site. The sanitary wastewater will be discharged with the process wastewater to the East Otay Mesa Sewer Maintenance District sewer system as described in Section 5.5.2.6 above.

For purposes of designing the wastewater system, it is assumed that sanitary wastewater discharge rates will be the same as the potable water demand, i.e., 1,000 gpd for average daily discharge and 1 afy for average annual discharge. See Table 5.5-3.

5.5.2.9 Stormwater Runoff

The project site and facilities will encompass 9.99 acres of permanent improvement and will temporarily utilize 6.00 acres of temporary laydown area.

A Stormwater Pollution Prevention Plan (SWPPP) will be prepared prior to construction of PPEC. This plan will include best management practices (BMPs) to control stormwater during the facility's construction. As described in the draft DESCP (see Appendix I-3), the project will use a variety of BMPs, such as stabilized construction entrances, silt fencing, berms, hay bales, and detention basins, to control runoff and prevent discharge of pollutants from all construction areas.

The project will comply with the National Pollutant Discharge Elimination System (NPDES) General Permit for Discharges of Storm Water Associated with Construction Activity, Order 2009-0009-DWQ (General Construction Permit). To apply for coverage, a Licensed Responsible Person (LRP) must electronically submit Permit Registration Documents (PRDs) through the Stormwater Multi-Application Report Tracking System (SMARTS) prior to commencing construction activities. PRDs consist of the Notice of Intent, risk assessment, post-construction calculations, a site map, the SWPPP, a signed certification statement by the LRP, and the first annual fee.

During operations, stormwater will be managed by employing BMPs that prevent soil erosion and impacts to surrounding vegetation. The plant facilities have been arranged for optimum use of the property and ease of operation and maintenance, as well as to minimize impervious surface areas. The plant site will use gravel instead of concrete or asphalt paving, where possible, to maximize pervious surface area and infiltration. The grading and drainage facilities will be designed per the County of San Diego's Drainage Design Manual, Hydrology Manual and Standard Urban Stormwater Mitigation Plan (San Diego County Department of Public Works, 2005, 2003, and 2010 respectively), as well as the East Otay Specific Plan Comprehensive Flood Control Master Plan (San Diego County Department of Public Works, 1993).

The site grading and drainage plan for PPEC is shown on Figure 3.4-3, Preliminary Grading and Drainage Plan. The project will increase the amount of impervious surface area from negligible to approximately 2.8 acres, or approximately 29 percent of the 9.99-acre site. Stormwater runoff from the project site will be collected in a detention pond located in the northwest corner of the site and discharged to an existing storm water system. The drainage system will be designed such that the peak runoff for the developed conditions will not exceed the peak runoff rate of the existing conditions. Appendix I-3 contains the draft DESCP, which includes stormwater calculations, the proposed BMPs, and sizing of the detention basin.

A Stormwater Management Plan, which includes an SWPPP for operations and the associated monitoring and reporting program, will be prepared in accordance with the NPDES Industrial Storm Water General Permit Order 97-03-DWQ (General Industrial Permit) requirements and will include BMPs to protect water resources. Proposed BMPs are described in the draft DESCP (see Appendix I-3). The Stormwater Management Plan will be consistent with the County of San Diego's requirements for a Stormwater Management Plan.

5.5.2.10 Construction Water Use and Wastewater Discharge

The construction water source will be recycled or potable water provided by Otay Water District (OWD) as described above in Sections 5.5.1 and 5.5.2 above.

During construction of the project, water will be required for dust suppression, soil compaction and hydrostatic testing. It is anticipated that the peak daily construction water demand for dust suppression and soil compaction will be approximately 30,000 gallons. The average monthly consumption will be approximately 700,000 gallons or about 26 acre-feet per year (afy). The project's total construction water demand will be approximately 28 acre-feet (AF) over the entire 16-month construction period, which includes approximately 840,000 gallons of water for hydrostatic testing.

Construction water used for dust control and soil compaction will not result in discharge offsite. The water used for hydrostatic testing will be discharged to the existing sewer system. Assuming that the total volume of hydrostatic testing water will be discharged into the sewer over three days, the estimated peak daily discharge rate will be approximately 0.28 million gallons per day. The project will coordinate with the County on how to handle discharge of the hydrostatic test water to the sewer.

5.5.3 Environmental Consequences

5.5.3.1 Water Supply Effects

The primary use of water for site construction will be dust control and soil compaction. PPEC will use approximately 26 acre-feet per year and 28 AF total, of potable water from OWD for these uses. As such, the project's construction demand for potable water will be considered a *de minimis* quantity of water compared to the total amount of water that OWD distributes (i.e., 26 afy compared to approximately 40,000 afy). The will-serve letter from OWD (see Appendix I-1) confirms that adequate water supply is available for the project. Therefore, the impact on water supply or other users of this source will be considered less than significant. Given the short duration of the construction activities, the relatively small volume of water needed during project construction, and the availability of a sufficient supply of water from OWD as confirmed by OWD, potential impacts to area water supplies from project construction water use will be expected to be less than significant.

PPEC will use recycled water provided by OWD to meet process water demands. The PPEC facility will include a 500,000-gallon raw water storage tank to equalize the flows needed for plant operations and provide storage for up to 24 hours of interrupted recycled water supply.

The project's annual demand for recycled water will be approximately five percent of OWD's 6,600 afy supplied from the SBRWP or approximately four percent of OWD's projected 9,217 afy of recycled water. The will-serve letter from OWD (see Appendix I-1) confirms that adequate water supply is available for the project. Therefore, the impact on water supply or other users of this source will be considered less than significant.

PPEC will use partial dry-cooling technology to reduce water consumption. Compared to a typical open-loop cooling system with no dry cooling, it is estimated that the PDCS will decrease the annual water consumption by approximately 53 percent. The project is making use of recycled water to the maximum extent practicable and available.

In the event that OWD does not have its planned recycled water system expansion project in service when PPEC begins operation, OWD has confirmed that it has adequate potable water supply to meet the project's demands during this interim period (see will-serve letter in Appendix I-1). The project's annual process demand would be less than one percent of the total amount of potable water that OWD distributes to its customers. Therefore, the impact on potable water supply or other users of this source would be considered less than significant.

5.5.3.2 Water Quality Effects – Surface Water

Construction, operation, and maintenance of PPEC, without the use of best engineering practices and best management practices could potentially affect surface-water quality of the Otay River and its tributary, Johnson Canyon, or the unnamed drainage southeast of the PPEC site through inadvertent spills or discharges. Construction activities could also potentially increase the potential for erosion and uncontrolled runoff of stormwater contaminated with sediments or other pollutants that could impact surface-water quality and sedimentation. The existing topography at the project site and vicinity is shown on Figure 5.5-2 and on the predevelopment drainage map included in the draft DESCP (Appendix I-3). The preliminary

site drainage and grading plans of the proposed facility after construction are shown on Figure 3.4-3, Preliminary Grading and Drainage Plan, and in the draft DESCP (Appendix I-3).

With the exception of a small portion of the natural gas pipeline Route A, the gas line will not cross intermittent streams or CWA jurisdictional features (see AFC Section 5.6.3 for more information regarding jurisdictional features). The gas line will be constructed by excavating a trench, laying the pipe, and then reusing the excavated soil to backfill the trench. BMPs which could include sediment trapping devices and limiting the amount of exposed areas at a given time will be implemented during construction to minimize erosion and discharge of pollutants. See the DESCP in Appendix I-3 for more details on the types of BMPs and proposed placement. Once construction is completed, the ground surface will be returned to the condition prior to construction and no new impervious surface area will be created. Impacts to the CWA jurisdictional feature along the natural gas pipeline Route A would be temporary and could be avoided by using other methods of installation such as jack-and-bore. Project implementation will likely require a CWA Section 404 permit for any temporary impacts to jurisdictional drainage features within the Project footprint (also see AFC Section 5.6.3 and the preliminary Jurisdictional Determination Report included in AFC Appendix J for additional information regarding temporary impacts to this feature). Therefore, impacts to water quality for construction and operation of the gas line will be less than significant.

Construction activities for new transmission line towers and footings will not occur within watercourses or CWA jurisdictional features. BMPs similar to those used during the gas line construction will be implemented to minimize erosion and discharge of pollutants. New foundations will not substantially increase impervious surfaces. If any section of the transmission line will be constructed underground, the ground surface will be returned to pre-construction conditions. Therefore, impacts to water quality for construction and operation of the transmission lines will be less than significant.

Examples of BMPs that could be used during construction to minimize the potential for erosion and discharge of pollutants are described in the draft DESCP (see Appendix I-3). A construction SWPPP will be prepared and implemented in accordance with the General NPDES Permit for Construction Activities.

Construction water used for dust control and soil compaction will not result in discharge offsite. BMP practices will ensure optimum water is applied, resulting in effectively no chance for off-site runoff. Therefore, dust control and soil compaction will be result in no impact to water resources in the region. As described in Section 5.5.2.10, tank and pipeline hydrostatic testing will require approximately 840,000 gallons (or approximately 2.6 acre-feet), which is considered a *de minimis* quantity in comparison to OWD's 2007 annual potable water distribution of approximately 40,000 afy. As described previously, following testing, the hydrostatic test water will be discharged to the County sewer. The peak daily wastewater discharge from PPEC will be approximately 0.28 mgd, assuming that all of the hydrostatic testing water is discharged over three days, or less than approximately one percent of the County's 19.843 mgd allotment and about 0.1 percent of the wastewater treatment capacity at the Point Loma Wastewater Treatment Plant.

Given the short duration of the construction activities, the relatively small volume of water needed during project construction, and the water quality protection requirements that will be applied during project construction as part of the erosion control and storm water management requirements, potential impacts to surface or groundwater resources from project construction water use will be expected to be less than significant.

During operations, stormwater collected in curbed areas of the plant will be routed through an oil-water separator and discharged with the process wastewater. Stormwater within the curbed areas has the highest likelihood of coming into contact with potential contaminants. Stormwater runoff from the remaining portion of the project site will be directed to the onsite detention basin. Discharge from the basin will be directed into the existing County stormwater system. A preliminary stormwater plan that describes proposed BMPs to be included in the facility design and the performance of the detention basin is described in the draft DESCP (see Appendix I-3). The stormwater detention basin will adequately accommodate a 100-year, 24-hour storm event such that the discharge to the County stormwater system will be the same or less than baseline conditions. A Stormwater Management Plan, which includes an SWPPP for operations and the associated monitoring and reporting program, will be prepared in accordance with the NPDES industrial general permit requirements and will include BMPs to protect water resources. The Stormwater Management Plan will also be consistent with the County of San Diego's requirements, as defined in the County's Drainage Manual and Hydrology Manual.

With implementation of BMPs during construction and operation, incorporation of project design elements, and mitigation measures proposed in Section 5.5.4, the impacts to surface water quality will be less than significant.

5.5.3.3 Wastewater Discharge Effects

The project will use a PDCS in a closed-loop configuration, which reduces wastewater production. Compared to a typical open-loop system with no dry cooling, it is estimated that the annual plant wastewater production will decrease by approximately 59 percent.

Process wastewater will be discharged to PPEC's wastewater system, which will discharge to the East Otay Mesa Sewer Maintenance District's existing wastewater system under a sewer connection permit with the District. The project will also obtain an industrial discharge permit from the San Diego MWD. The estimated composition of the PPEC wastewater is shown in Table 5.5-4. The wastewater composition shown on the table is based on the recycled water scenario and assumes that the recycled water delivered to PPEC will meet California Title 22 requirements for reuse. Table 5.5-4 also provides MWD's current limits for accepting industrial wastewater. Comparison of the expected composition of the PPEC's wastewater with MWD's limits shows that the PPEC would comply with the industrial discharge permit requirements. Therefore, no adverse impact will occur to the District to meet the discharge water quality requirements.

PPEC will discharge process and sanitary wastewater to the East Otay Mesa Sewer Maintenance District's existing sewer system, which will be conveyed via the existing system to the San Diego MWD sewage system for treatment and disposal. A short connection will be made to an existing 12-inch sewer main in Calzada de la Fuente along the north project site boundary or to an existing 15-inch sewer main in Alta Road along the west project site

boundary. The East Otay Mesa Sewer Maintenance District currently owns 1.0 mgd capacity in the MWD system (County of San Diego, 2010).

The MWD sewage system treats wastewater from the City of San Diego and 15 other cities and districts, including the East Otay Mesa Sewer Maintenance District. Currently, the system treats approximately 180 mgd. The Point Loma Wastewater Treatment Plant has a treatment capacity of 240 mgd.

The peak daily wastewater discharge from PPEC will be approximately 0.15 mgd, or approximately 15 percent of the East Otay Mesa Sewer Maintenance District's 1.0 mgd allotment and less than one percent of the wastewater treatment capacity at the Point Loma Wastewater Treatment Plant. The project will comply with all permit requirements set forth in the permit and stipulated in San Diego MWD's discharge permit. Therefore, impacts will be less than significant.

5.5.3.4 Flooding

PPEC is not located in a FEMA-designated floodplain. The project site will be graded, as shown on Figure 3.4-3, Preliminary Grading and Drainage Plan, to promote drainage to prevent on-site flooding. No significant impacts related to flooding are expected as a result of the project.

5.5.3.5 Effect on Groundwater

Construction, operation, and maintenance of PPEC will not use groundwater. However, construction, operation, or maintenance of the facility could potentially affect groundwater quality through inadvertent spills or discharge that could then infiltrate and percolate down to groundwater or drain off site and percolate into downstream groundwater basins. The project site is upstream of the Otay Valley Groundwater Basin.

Pollutants generated by construction activities could potentially be carried in runoff that could drain off site and percolate into downstream groundwater basins. Stormwater pollutants associated with construction activities could include, but are not limited to, sediments, oil and grease, and organic compounds. However, implementation of BMPs as described in the draft DESCP (see Appendix I-3) will reduce potential groundwater quality impacts due to stormwater runoff pollution associated with construction of the project to a less than significant level.

The maximum depth of excavation for project construction is expected to be approximately five feet. Trenching will be required to install the new gas line. Dewatering during construction is not anticipated because the depth to groundwater is expected to be more than 50 feet. Therefore, no impacts to groundwater are expected.

During construction, sanitary wastewater will be handled by portable chemical toilets (see AFC Table 3.5-6).

Following construction of the project, pollutants generated by operational activities could potentially be carried in runoff that could drain off site and percolate into the downstream groundwater basins. Such stormwater pollutants could include, but are not limited to,

sediment discharges, heavy metals, organic compounds, trash and debris deposited in drain inlets, oil and grease, bacteria and viruses in sanitary wastewater, and fertilizers and pesticides associated with landscaping. Sanitary wastewater will be discharged to the East Otay Mesa Sewer Maintenance District's sewer system and not to an on-site septic system. Process wastewater will also be discharged to the East Otay Mesa Sewer Maintenance District's sewer system. Pipelines will be constructed in accordance with local standards. Project design elements and implementation of BMPs will reduce potential groundwater quality impacts due to stormwater runoff pollution associated with development and long-term operations to a less than significant level.

5.5.3.6 Cumulative Impacts

The following analysis evaluates the potential for PPEC's incremental contribution to water resources-related impacts, when considered in conjunction with projects identified in Section 5.18, to result in cumulatively considerable impacts. Impacts on water supply reliability resulting from past, present, and reasonable anticipated future projects could potentially be considered cumulatively significant because of the limited water resources in the region. PPEC, however, will use approximately 380 afy of recycled water, which is about five percent of OWD's current allotment or four percent of OWD's projected supply of recycled water. Other proposed uses of recycled water in the area are primarily landscaping, but also include commercial and industrial. As explained in Section 5.5.2, OWD expects to complete the various elements of its expanded recycled water distribution system by June 2013, and it is anticipated that the recycled water system will be in service during the project construction timeframe. In the event that during PPEC operation (i.e., second quarter 2014) the recycled water is not yet supplied to the project area, the project would rely on potable water as supplied by OWD. In this scenario, the project would use potable water for makeup water until such time that recycled water is available. This potable use would constitute less than one percent of the 40,000 afy of potable water that OWD distributes to its customers. Once recycled water is used for process water, only a small amount of potable water will be used (approximately one afy). Therefore, whether the project relies on potable water for makeup temporarily or completely, the project will not contribute to a cumulatively significant impact to potable water supplies or recycled water supplies.

The project and all cumulative projects listed in Section 5.18 are located within the OWD jurisdictional service area. The planning area addressed in the OWD 2009 Water Resources Master Plan (2009 WRMP) (PBSJ, 2010a) and 2005 Urban Water Management Plan (2005 UWMP) (OWD and MWH, 2007) includes the land within OWD's jurisdictional boundary and those areas outside of the current boundary but within the area of influence of OWD. The OWD 2005 UWMP, and as supplemented in the 2009 WRMP, includes projected water supplies required to meet future demands for the planning area through 2030. These projected water demands form the basis for OWD's capital improvement program that includes the expanded recycled water system for the Otay Mesa area.

As such, these projects along with PPEC will not have a cumulatively significant impact on potable or recycled water supplies. Cumulative impacts of the project with regard to water resources will be less than significant.

5.5.4 Mitigation Measures and Conditions of Certification

The analysis of PPEC's effect on water resources indicates that the project will have no significant effect on water resources. This section discusses mitigation measures proposed by Pio Pico Energy Center, LLC (Applicant) that will be implemented to ensure project-related impacts to water resources are less than significant. The Applicant proposes the following conditions of certification so that PPEC has no significant impacts and conforms to all LORS.

Soil and Water 1: Stormwater Pollution Prevention Plan - Construction

Prior to beginning any clearing, grading, or excavating activities associated with project construction, and as required by the General Construction Permit, the Applicant will develop and implement an SWPPP prepared under the requirements of the general construction activity stormwater permit.

Verification. At least 30 days prior to the start of construction, the Applicant will submit a draft SWPPP to the Compliance Project Manager (CPM) for review and comment. Two weeks before beginning construction, the Applicant will submit a copy of the final SWPPP for review and approval to the CPM. The final SWPPP will contain all the elements of the draft plan with changes made to address staff comments and the final project design. The CPM's approval of the plan must be received prior to initiating any clearing, grading, or excavation activities associated with project construction.

Soil and Water 2: Drainage, Erosion and Sedimentation Control Plan

Prior to beginning clearing, grading or excavation activities associated with project construction, the Applicant will submit a DESCP to the CPM for approval. The final plan will contain all the elements of the draft plan with changes made to address the final project design.

Verification. Two weeks prior to initiating any clearing, grading, or excavation activities associated with project construction, the Applicant will submit the final Erosion and Sedimentation Control Plan to the CPM for review and approval. The CPM's approval of the plan must be received before initiating any clearing, grading, or excavation activities associated with project construction.

Soil and Water 3: Stormwater Pollution Prevention Plan - Operation

Prior to the start of operations, and as required by the General Industrial Permit, the Applicant will develop and implement an operations SWPPP prepared in accordance with the permit requirements.

Verification. At least 30 days prior to the start of operation, the Applicant will submit an operation SWPPP to the CPM for review and comment. The CPM's approval of the plan must be received prior to the start of operations.

5.5.5 Laws, Ordinances, Regulations, and Standards

The construction and operation of PPEC will be in accordance with all federal, state, county, and local LORS applicable to water resources. Applicable LORS are discussed in this section and are summarized in Table 5.5-5.

5.5.5.1 Federal Authorities and Administering Agencies

Clean Water Act of 1977 (including 1987 amendments) § 402; 33 United States Code (USC) § 1342; 40 Code of Federal Regulations (CFR) Parts 122 – 136. The CWA requires an NPDES permit for any discharge of pollutants from a point source to waters of the United States. This law and its regulations apply to stormwater and other discharges into waters of the United States. The CWA requires compliance with a general construction activities permit for the discharge of stormwater from construction sites disturbing one acre or more. This federal permit requirement is administered by the SWRCB.

Construction activities at the project site will be performed in accordance with an SWPPP and associated monitoring plan, which are required under the NPDES General Permit for Storm Water Discharges Associated with Construction Activities issued by the SWRCB. The SWPPP will include control measures, including BMPs, to reduce erosion and sedimentation as well as other pollutants associated with vehicle maintenance, material storage and handling, and other activities occurring at the project site.

Administering Agencies: The administering agencies for the above authority are the SWRCB and SDRWQCB.

Clean Water Act § 311; 33 USC § 1342; 40 CFR Parts 122-136. This portion of the CWA requires reporting of any prohibited discharge of oil or hazardous substance. The project will conform by proper management of oils and hazardous materials during construction and operation as discussed in more detail in Section 5.15 Hazardous Materials Handling.

Administering Agencies: The administering agencies are the SDRWQCB and California Department of Toxic Substances Control.

Clean Water Act § 404; 33 USC § 1251-1376; 30 CFR Section 330.5(a) (26). The USACE regulates the discharge of dredged and/or fill material into Water of the U.S. (WoUS) pursuant to Section 404 of the CWA. The USACE has authority to permit the discharge of dredged or fill material in WoUS under Section 404 of the CWA and to permit work and the placement of structures in navigable WoUS under the Rivers and Harbors Act of 1899 (RHA) The project will include measures requiring compliance with the Clean Water Act to minimize impacts to jurisdictional features..

Administering Agencies: The administering agency is the USACE.

5.5.5.2 State Authorities and Administering Agencies

Water Code Section 13552.6. This portion of the California Water Code (CWC) relates to the use of potable domestic water for cooling towers. Use of potable domestic water for cooling towers is unreasonable if suitable recycled water or brackish groundwater is available. The project will use recycled water provided by OWD as the primary source of cooling and process water, when this source becomes available with OWD's expansion of its recycled water system. SWRCB Resolution 75-58 addresses this issue.

Administering Agency: The administering agency is SDRWQCB.

State Water Resources Control Board, Resolution 75-58 (June 18, 1975). The SWRCB prescribes state water policy on the use and disposal of fresh inland waters that should only be used for power plant cooling if other sources or other methods of cooling will be environmentally undesirable or economically unsound. This policy requires that power plant cooling water should come from, in order of priority: wastewater being discharged to the ocean, ocean water, brackish water from natural sources or irrigation return flow, inland waste waters of low total dissolved solids, and other inland waters.

In addition, the policy prohibits the discharge of blowdown water to land disposal sites and prohibits discharge of wastewater from once-through powerplant cooling facilities to inland waters.

The project will comply with this resolution by using recycled water from municipal wastewater for process and cooling water that will otherwise be discharged to the ocean. The project will discharge process wastewater to the public sanitation district.

Administering Agencies: The administering agencies for this resolution are the SWRCB and the SDRWQCB.

State Water Resources Control Board, Resolution 2009-0011 (May 14, 2009). The purpose of the Recycled Waters Policy is to increase the use of recycled water from municipal wastewater sources to support the sustainable use of groundwater and surface water. It also encourages the use of recycled water to the fullest extent possible, consistent with state and federal water quality laws. The project will comply with this resolution by using recycled water for process and cooling water.

Administering Agencies: The administering agencies for this resolution are the SWRCB and the SDRWQCB.

California Porter-Cologne Water Quality Control Act 1998; California Water Code § 13000-14957; Division 7, Water Quality. The Porter-Cologne Water Quality Control Act authorizes the state to develop and implement a statewide program for the control of the quality of all waters of the state. The Porter-Cologne Act establishes the SWRCB and the nine RWQCBs as the principal state agencies with primary responsibility for the coordination and control of water quality. Under § 13172, siting, operation, and closure of waste disposal sites are regulated. The SWRCB requires classification of the waste and the disposal site. Discharges of waste must comply with the groundwater protection and monitoring requirements of the Resource Conservation and Recovery Act of 1976 (RCRA), as amended (42 USC Sec. 6901 et seq.), and any federal acts which amend or supplement RCRA, together with any more stringent requirements necessary to implement this revision or Article 9.5 (commencing with Section 25208) of Chapter 6.5 of Division 20 of the Health and Safety Code. The project will comply with the requirements of the Porter-Cologne Act and its implementing regulations, as described in more detail below.

Administering Agencies: The administering agencies for the above authority are the California Energy Commission (CEC), SWRCB, and SDRWQCB.

California Public Health Code, 17 CCR, Chapter 5. This regulation requires prevention measures for backflow and cross connection of potable and non-potable water lines. Because the project will use both recycled water and potable water, the project will comply with this regulation by installing the required backflow and cross connection measures.

Administering Agency: The administering agency is the County department of health services.

Title 22, CCR Division 4, Chapter 3. This regulation requires maximum use of recycled water in the satisfaction of requirements for beneficial uses of water. The project satisfies this requirement because it will use recycled water as the primary source of process and cooling water. PPEC also meets this requirement as it relates to SWRCB Resolution 75-58.

Administering Agency: The administering agency is the SDRWQCB.

California Water Code §§ 13271-13272; 23 CCR §§ 2250-2260. These code sections require reporting of releases of specified reportable quantities of hazardous substances or sewage (§ 13272) when the release is into, or where it will likely discharge into, waters of the state. For releases into or threatening surface waters, a "hazardous substance" and its reportable quantities are those specified in 40 CFR § 116.5, pursuant to § 311(b)(2) of the CWA, 33 USC § 1321(b)(2). For releases into or threatening groundwater, a "hazardous substance" and its reportable quantities are those specified in 40 CFR § 116.5, pursuant to § 311(b)(2) of the CWA, 33 USC § 1321(b)(2). For releases into or threatening groundwater, a "hazardous substance" is any material listed as hazardous pursuant to the California Hazardous Waste Control Act, Health & Safety Code §§ 25100-2520.24, and the reportable quantities are those specified in 40 CFR Part 302. Although such releases are not anticipated, the project will comply with the reporting requirements for hazardous substances associated with the project.

Administering Agencies: The administering agencies for the above authority are the SDRWQCB and the California Office of Emergency Services.

California Water Code § 13260-13269; 23 CCR Chapter 9. The code requires filing a Report of Waste Discharge (ROWD) and provides for the issuance of waste discharge requirements (WDRs) with respect to the discharge of any waste that can affect the quality of the waters of the state other than into a community sewer system. The WDRs will serve to enforce the relevant water quality protection objectives of the San Diego Region Basin Plan and federal technology-based effluent standards applicable to the proposed project. With respect to potential water pollution from construction activities, the WDRs may incorporate requirements based on CWA § 402(p) and implementing regulations in 40 CFR Parts 122 seq., as administered by the SDRWQCB.

PPEC will discharge all construction wastewater, process and sanitary wastewater to the public sanitation district.

Administering Agency: The administering agency for the above authority is the SDRWQCB.

California Water Code (CWC) § 13550 et seq. Requires use of recycled water for industrial purposes where available and appropriate.

The project will use a partial dry-cooling system, which will reduce the amount of water used by the plant. The project will also use recycled water as its primary source of process and cooling water.

Administering Agencies: The administering agencies are SWRCB and SDRWQCB.

California Environmental Quality Act (CEQA), Public Resources Code § 21000 et seq.; CEQA Guidelines, 14 CCR § 15000 et seq.; Appendix G. The CEQA Guidelines (Appendix G) contain definitions of projects that can be considered to cause significant unmitigated impacts to water resources. The project is not expected to cause significant impacts to water resources, as described in Section 5.5.2.

Administering Agency: The administering agency of the above authority is the CEC.

5.5.5.3 Local Authorities and Administering Agencies

San Diego Municipal Stormwater Permit. Per federal regulations, the state issues a municipal stormwater permit (also known as an NPDES permit) to municipalities and renews it every 5 years. Under this permit, each municipality must develop a stormwater management program designed to control the discharge of pollutants into and from the municipal separate storm sewer systems (MS4) (or to control pollutants from being discharged directly into the MS4). The purpose is to protect local waterbodies because storm drains typically discharge their water into streams, bays, and/or the ocean without treatment. Order R9-2007-01 (NPDES No. CAS 0108758) was adopted by the SDRWQCB on January 24, 2007, and established waste discharge requirements for discharge of urban runoff from the MS4 of the County of San Diego, the 18 incorporated cities of San Diego County, the San Diego Unified Port District, and the San Diego County Regional Airport Authority.

The project will prepare grading and drainage plans and design stormwater management in accordance with the County's *Low Impact Development Handbook*, which complies with Order No. R9-2007-0001.

Administering Agencies: The administering agency of the above authority for the project site is San Diego County.

San Diego County General Plan. *The San Diego County General Plan* provides guidance on the types of development activity and allowable uses within the county limits. The Conservation Element identifies and describes the natural resources of the County of San Diego and includes policies and action programs to conserve those resources. Chapter 3, Water, Finding 21 under Drainage and Flood Control, addresses the effects of land use changes on the hydrology of an area, including changes in peak flow characteristics (floods), total run-off, the quality of water, and the appearance of the area.

The project will comply with the policies of this plan by complying with specific County requirements related to drainage design and water quality protection.

Administering Agency: The administering agency for the above authority is San Diego County.

County of San Diego Flood Damage Prevention Ordinance, Title 8, Division 11. This ordinance was established to promote the pubic health, safety, and general welfare and to minimize public and private losses due to flood conditions in specific areas throughout the County of San Diego. Pursuant to this ordinance, Special Flood Hazard Areas (SFHAs) in the County are identified as areas having a special flood or flood-related erosion/sedimentation hazard and shown on a FIRM, a County floodplain map as within a 100-year floodplain, or an alluvial fan map within an alluvial fan area. This ordinance defines methods to accomplish the goals of reducing flood losses, including restricting uses that are dangerous to health, safety, and property because of erosion or water hazards; requiring uses vulnerable to floods to be protected against flood damage at the time of construction; controlling the alteration of natural floodplains; controlling filling, grading, or dredging, which may increase flood damage; and preventing construction of flood barriers that will divert flood waters or increase flood hazards in other areas.

This ordinance also provides for provisions for standards of construction and standards for subdivisions in areas of special flood hazards. By complying with the requirements of the Flood Damage Prevention Ordinance, projects are considered to be in compliance with FEMA regulations.

The project is not located in and will not impact any special flood hazard areas.

Administering Agency: The administering agency for the above authority is San Diego County.

County of San Diego Resource Protection Ordinance (RPO), Title 8, Division 6. The RPO prohibits development of permanent structures for human habitation or as a place of work in a floodway. PPEC is not located within a floodway and will not place structures in a floodway.

Administering Agency: The administering agency for the above authority is San Diego County.

County of San Diego Grading Ordinance Title 8, Division 7. The revised Grading Ordinance was adopted by the Board of Supervisors and became effective on April 23, 2004. The purpose of the ordinance is to combine regulations affecting the grading and clearing of land and activities affecting watercourses within the unincorporated County of San Diego. Chapter 6 (Section § 87.601- 87.608) of the ordinance covers watercourses and is intended to protect persons and property against flood hazards by identifying prohibited acts in watercourses and acts prohibited unless a permit is obtained.

The project will submit final grading plans and stormwater management plans to the County Engineer documenting measures that will implement compliance with this ordinance.

Administering Agency: The administering agency for the above authority is San Diego County.

County of San Diego Watershed Protection, Stormwater Management, and Discharge Control Ordinance (WPO) Chapter 8 of Division 7 of Title 6. The current WPO and the *Stormwater Standards Manual* (SSM) were adopted in August 2003. The stated purposes of these ordinances are to protect the health, safety, and general welfare of the County of San

Diego residents; to protect water resources and to improve water quality; to cause the use of management practices by the County and its citizens that will reduce the adverse effects of polluted runoff discharges on waters of the state; to secure benefits from the use of stormwater as a resource; and to ensure the County is compliant with applicable state and federal law. The WPO contains discharge prohibitions and requirements that vary depending on the land use activity and location in the county. The SSM is Appendix A of the WPO and sets out in more detail, by project category, what Dischargers must do to comply with the WPO and to receive permits for projects and activities that are subject to the WPO. The WPO and SSM define the requirements that are legally enforceable by the County in the unincorporated area of San Diego County. In addition, the County has adopted its Standard Urban Stormwater Mitigation Plan (SUSMP) for Land Development and Public Improvement Projects. The SUSMP is focused on project design requirements and related post-construction requirements for land development and capital improvement projects and addresses WPO requirements for these project types. Order R9-2007-01 directs the County and other copermittees to design and implement requirements of the Hydromodification Management Plan and Low-Impact Development BMPs to reduce stormwater runoff from project sites by promoting infiltration and minimizing impervious areas. The County WPO and SUSMP will be updated to fulfill the requirements of the new order.

The project will design its stormwater management system to comply with the requirements of the municipal stormwater permit.

Administering Agency: The administering agency for the above authority is San Diego County.

Water Quality Control Plans for the San Diego Basin. The basin plan was prepared by the SDRWQCB in accordance with the criteria in the California Porter-Cologne Water Quality Control Act and other pertinent state and federal rules and regulations. The regional plan that sets the standards for compliance is the San Diego Basin - Region 9, Water Quality Control Plan.

Construction activities at the project site will be performed in accordance with an SWPPP and associated monitoring plan, which are required under the NPDES General Permit for Storm Water Discharges Associated with Construction Activities issued by the SWRCB. Project operations will be performed in accordance with the NPDES General Permit for Storm Water Discharges Associated with Industrial Activities administered by the SDRWQCB. The project's compliance with these permit requirements also achieves compliance with the Basin Plan.

Administering Agency: The administering agency for the above authority is SDRWQCB.

Otay Watershed Management Plan. The Otay River Watershed Management Plan (Aspen, 2006) includes recommended strategies to protect, enhance, restore, and/or manage watershed resources.

The project will comply with the policies of this plan by complying with County requirements.

Administering Agencies: The administering agency is County of San Diego.

Otay Mesa Subregional Plan. The Otay Mesa Subregional Plan (County of San Diego, 2010) includes recommended strategies to protect, enhance, restore, and/or manage watershed resources.

The project will comply with the plan's policies because it will use recycled water for process water supply and will reuse water in the process system to the extent practicable. Wastewater will be discharged to the existing County sewer in compliance with the East Otay Mesa Sewer Maintenance District requirements. Stormwater will be managed in accordance with agency requirements

Administering Agencies: The administering agency is County of San Diego.

East Otay Mesa Business Park Specific Plan. The East Otay Mesa Business Specific Plan (County of San Diego, 2010) includes standards for development, environmental conservation and public facilities and complements the objectives, goals and policies of the County of San Diego General Plan and the Otay Mesa Subregional Plan.

The project will comply with the plan's policies because it will use recycled water for process water supply and will reuse water in the process system to the extent practicable. Wastewater will be discharged to the existing County sewer in compliance with the East Otay Mesa Sewer Maintenance District requirements. Stormwater will be managed in accordance with agency requirements

Administering Agencies: The administering agency is the County of San Diego.

5.5.5.4 Industry Codes and Standards

With regards to water resources and the related project facilities, all construction will be in compliance with the LORS mentioned in this report section and state and local building codes.

TABLE 5.5-5
LORS RELATED TO WATER RESOURCES

LORS	Applicability	Conformance and Timing
Federal		
CWA § 402; 33 USC § 1342; 40 CFR Parts 110, 112, 116	Requires NPDES permits for construction and industrial stormwater discharges. Requires preparation of an SWPPP and monitoring program.	PPEC will obtain coverage under the general NPDES construction and industrial stormwater permits. Permit Registration Documents for coverage under the NPDES construction stormwater permit will be filed prior to construction. An SWPPP will also be prepared for construction activity. A Notice of Intent for coverage under the NPDES industrial stormwater permit will be filed prior to plant operation. An SWPPP will also be prepared for operations. (Page 5.5-14 and Table 5.5-7)
CWA § 311; 33 USC § 1342; 40 CFR Parts 122-136	Requires reporting of any prohibited discharge of oil or hazardous substance.	The project will conform by proper management of oils and hazardous substances during construction and operation. (Section 5.15.5.1)

LORS	Applicability	Conformance and Timing
Clean Water Act of 1977: 33 USC Section 1251 - 1376; 30 CFR Section 330.5(a)(26)	The purpose of the Clean Water Act (CWA) (USA, 1977) is to "restore and maintain the chemical, physical, and biological integrity of the nation's waters." Section 404 of the CWA prohibits the discharge of dredged or fill material into "waters of the United States" without a permit from the U.S. Army Corps of Engineers (USACE). The definition of waters of the United States includes rivers, streams, estuaries, territorial seas, ponds, lakes, and wetlands. Wetlands are defined as those areas "that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions" (33 CFR 328.3 7b). The U.S. Environmental Protection Agency also has authority over wetlands and may override a USACE permit. Substantial impacts to wetlands may require an individual permit. Projects that only minimally affect wetlands may meet the conditions of one of the existing nationwide permits. A water quality certification or waiver pursuant to Section 401 of the CWA is required for Section 404 permit actions; this certification or waiver is issued by the Regional Water Quality Control Board (RWQCB) in California.	The project will include measures requiring compliance with the Clean Water Act to minimize impacts to jurisdictional features. (Page 5.5-17 and Appendix J)
State		
CWC § 13552.6	Use of potable domestic water for cooling towers is unreasonable use if suitable recycled water is available.	PPEC will use recycled water. (Page 5.5-10)
California Constitution Article 10 § 2	Avoid the waste or unreasonable uses of water. Regulates methods of use and diversion of water.	The project includes water conservation measures, such as the PDCS. The project will comply with this as well as State Water Resources Control Board Resolution 75-58. Page 5.5-11)
State Water Resources Control Board, Resolution No. 75-58	Addresses sources and use of cooling water supplies for power plants that depend on inland waters for cooling and in areas subject to general water shortages.	The project will use recycled water for industrial water supply. (Page 5.5-10)
State Water Resources Control Board, Resolution No. 2009-0011	Encourages the beneficial use of recycled water to promote sustainable local water supplies.	The project will use recycled water for industrial water supply. (Page 5.5-10)
Porter-Cologne Water Quality Act of 1972; CWC § 13000-14957, Division 7, Water Quality	Requires State and Regional Water Quality Control Boards to adopt water quality initiatives to protect state waters. Those criteria include identification of beneficial uses, narrative, and numerical water quality standards.	PPEC will conform to applicable state water standards, both qualitative and quantitative, prior to plant operation. Applicable permits will be obtained from the Regional Water Quality Control Board. (Page 5.5-14 and Table 5.5-7)
Title 22, CCR	Addresses the use of recycled water for cooling equipment.	PPEC will use recycled water. (Page 5.5-10)

LORS	Applicability	Conformance and Timing
The Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65), Health and Safety Code 25241.5 et seq.	Prohibits the discharge or release of chemicals known to cause cancer or reproductive toxicity into drinking water sources.	The project will conform to all state water quality standards, both qualitative and quantitative. Project will discharge wastewater to POTW. (page 5.5-12)
CWC Section 461	Encourages the conservation of water resources and the maximum reuse of wastewater, particularly in areas where water is in short supply.	The project will use recycled water. (Page 5.5-10)
CWC §§ 13271 – 13272; 23 CCR §§ 2250 – 2260	Reporting of releases of reportable quantities of hazardous substances or sewage and releases of specified quantities of oil or petroleum products.	Project will conform to all state water quality standards, both qualitative and quantitative. (Section 5.14.5.2)
CWC §13260 – 13269; 23 CCR Chapter 9	Requires the filing of a Report of Waste Discharge and provides for the issuance of Waste Discharge Requirements with respect to the discharge of any waste that can affect the quality of the waters of the state.	Project will discharge wastewater to a publicly owned treatment works (POTW). (Page 5.5-12 and Table 5.5-7)
CEQA, Public Resources Code § 21000 et seq.; CEQA Guidelines, 14 CCR § 15000 et seq.; Appendix G	The CEQA Guidelines (Appendix G) contain definitions of projects that can be considered to cause significant impacts to water resources.	PPEC will comply with these requirements to protect water resources. (Pages 5.5-15 – 5.5-20)
Local		
RWQCB, San Diego Region Order No. R9-2007-0001	Establishes NPDES Municipal Storm Water Permit No. CAS0108758 requirements for urban runoff in San Diego County.	The project will prepare grading and drainage plans and design stormwater management in accordance with the County's *Low Impact Development Handbook*, which complies with Order No. R9-2007-0001. (Page 5.5-14 and 5.5-15, Table 5.4-7 and DESCP in Appendix I-3)
San Diego County General Plan		
Water Quality Policies and Programs	Nonpoint sources of water pollution, such as runoff from urban areas, grading, construction, and agricultural activities, shall be recognized as potentially significant impacts of development.	The project will conform to all water quality policies and programs. BMPs will be implemented during construction and operations to prevent off-site discharge of pollutants. (Pages 5.5-14, 5.5-17 – 5.5-21 and DESCP in Appendix I-3),
San Diego County Code of Regulatory Ordinances		
Title 6, Division 7 – Water and Water Supplies, Chapter 8	This ordinance establishes requirements for watershed protection, stormwater management and discharge control, and grading to protect water resources and improve water quality in San Diego County in conformance with the requirements of the municipal stormwater permit.	The project will comply with the requirements of the municipal stormwater permit. San Diego County is a co-permittee, along with other cities and districts. (Page 5.5-18)
Title 8 – Zoning and Land Use Regulations, Division 7	This ordinance establishes requirements for grading or clearing of properties in San Diego County. The ordinance includes requirements for erosion control and maintenance of drainage structures and protective devices. The ordinance also requires compliance with federal and state permits and plans addressing stormwater management.	The project will submit final grading plans and stormwater management plans to the County Engineer documenting measures that will implement compliance with this ordinance. (Page 5.5-14 and 5.5-15, Table 5.4-7 and DESCP in Appendix I-3)

LORS	Applicability	Conformance and Timing
Otay Mesa Subregional Plan		
Sewer Disposal Policies	The County will encourage and support studies and planning that create the most comprehensive and reasonable sewage disposal system for the entire region, including the south bay cities and the Tijuana area, and the County will encourage and support studies that lead to the efficient use of wastewater by onsite treatment and recycling	The project will use recycled water for process water supply and will reuse water in the process system to the extent practicable. Wastewater will be discharged to the existing County sewer in compliance with the East Otay Mesa Sewer Maintenance District requirements. (Pages 5.5-10 and 5.5-12)
Water Demand and Supply Policies	The County will encourage and support studies to determine ultimate water need, the most logical service provider, cooperation between agencies and the use of reclaimed water.	The project will use recycled water from OWD (Page 5.5-10)

Notes:
AFC = Application for Certification
BMP = Best Management Practices
CCR = California Code of Regulations
CEC = California Energy Commission
CEQA = California Environmental Quality Act
CFR = Code of Federal Regulations
CWA = Clean Water Act
LORS = Laws, Ordinances, Regulations, and Standards
NPDES = National Pollutant Discharge Elimination System
RWQCB = Regional Water Quality Control Board
SWPPP = Stormwater Pollution Prevention Plan
USC = United States Code

5.5.6 Agencies Involved and Agency Contacts

See the following Table 5.5-6, Agency Contacts, for agency contacts.

TABLE 5.5-6
AGENCY CONTACTS

Issue	Agency/Address	Contact	Title	Telephone/Email
Water Supply	Otay Water District 2554 Sweetwater Springs Blvd Spring Valley, CA 91978-2004	David Charles	Public Services Manager	(619) 670-2243 dcharles@otaywater.gov
Water Quality Industrial General Permit	California Regional Water Quality Control Board, San Diego Region 9	Christina Arias	Senior Water Resource Control Engineer	(858) 627-3931 CArias@waterboards.ca.gov
Wastewater Discharge	City of San Diego, Metropolitan Wastewater 9192 Topaz Way San Diego, CA 92123-1119	Cody Wilkinson	Pretreatment Inspector, Industrial Wastewater Control Program	(858) 654-4117 WilkinsonC@sandiego.gov
Stormwater Management	County of San Diego, Dept of Public Works 5201 Ruffin Road, Suite D, MSO336 San Diego, CA 92123	Ed Sinsay	DPW Project Manager	(858) 694-2486 Ed.Sinsay@sdcounty.ca.gov

Issue	Agency/Address	Contact	Title	Telephone/Email
Wastewater Discharge	County of San Diego, Dept of Public Works 5500 Overland Avenue Suite 315 San Diego, CA 92123	Daniel Brogadir	Land Use and Environmental Group (LUEG) Program Manager	(858) 694-2714 Daniel.Brogadir@sdcounty.ca.gov
Waters of the U.S.	United States Army Corps of Engineers (USACE) 911 Wilshire Blvd # 1525 Los Angeles, CA 90017	TBD	TBD	(213) 452-3908

5.5.7 Permits Required and Permit Schedule

The water-related permits that are required for the project and the timing are identified in Table 5.5-7, Permits Required.

TABLE 5.5-7
PERMITS REQUIRED

Responsible Party	Permit/Approval	Schedule
San Diego RWQCB	Construction Activities Stormwater General Permit; California RWQCB Water Quality (Addresses stormwater during construction)	30 days prior to construction
San Diego RWQCB	Industrial Activities Stormwater General Permit; California RWQCB Water Quality (Addresses stormwater during plant operation)	30 days prior to start of plant operations
East Otay Mesa Sewer Maintenance District	Sewer Connection Permit	Prior to discharge
City of San Diego	Industrial User Discharge Permit	90 days prior to discharge
USACE	404 Nationwide Permit	TBD

5.5.8 References

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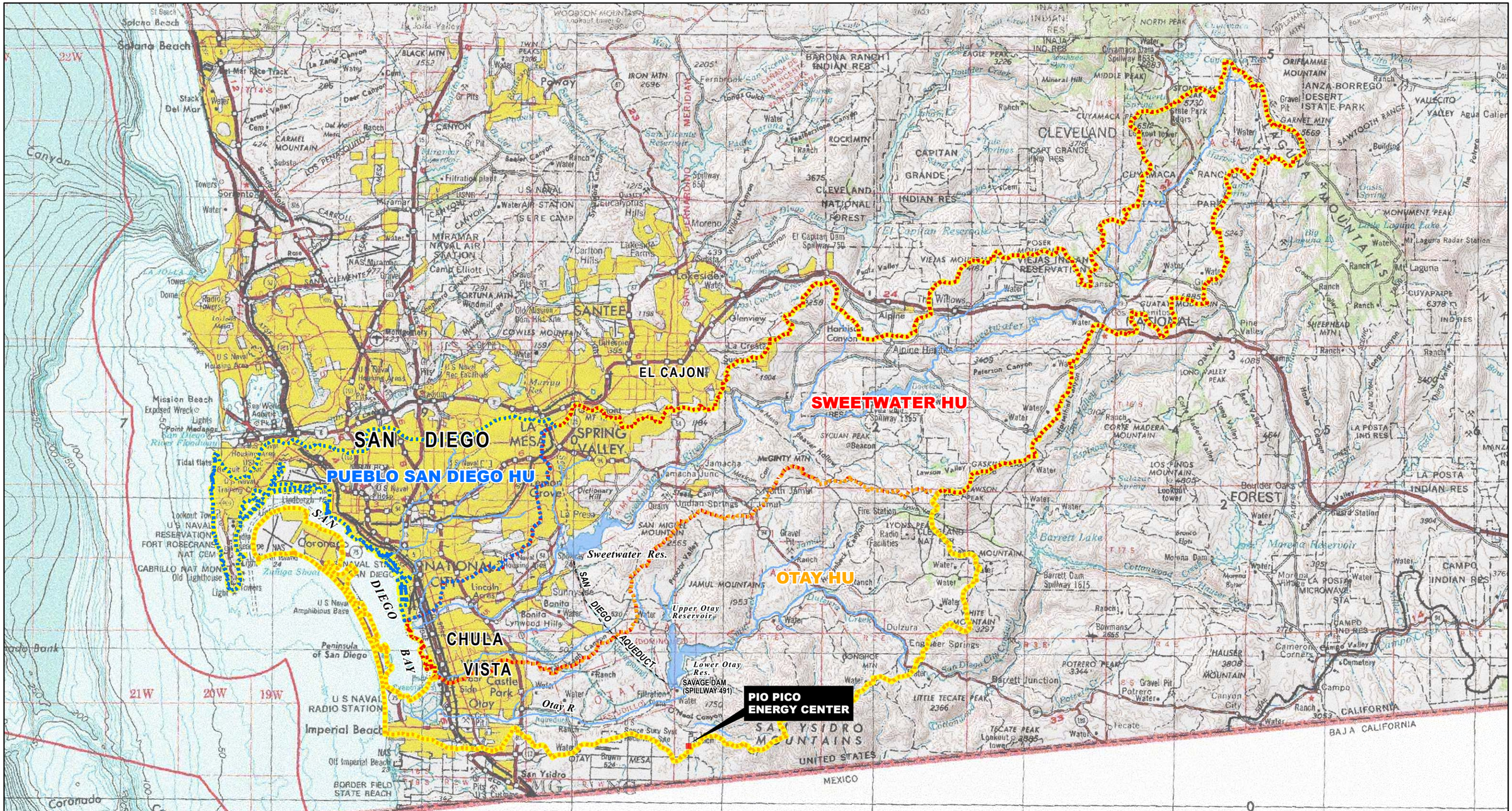


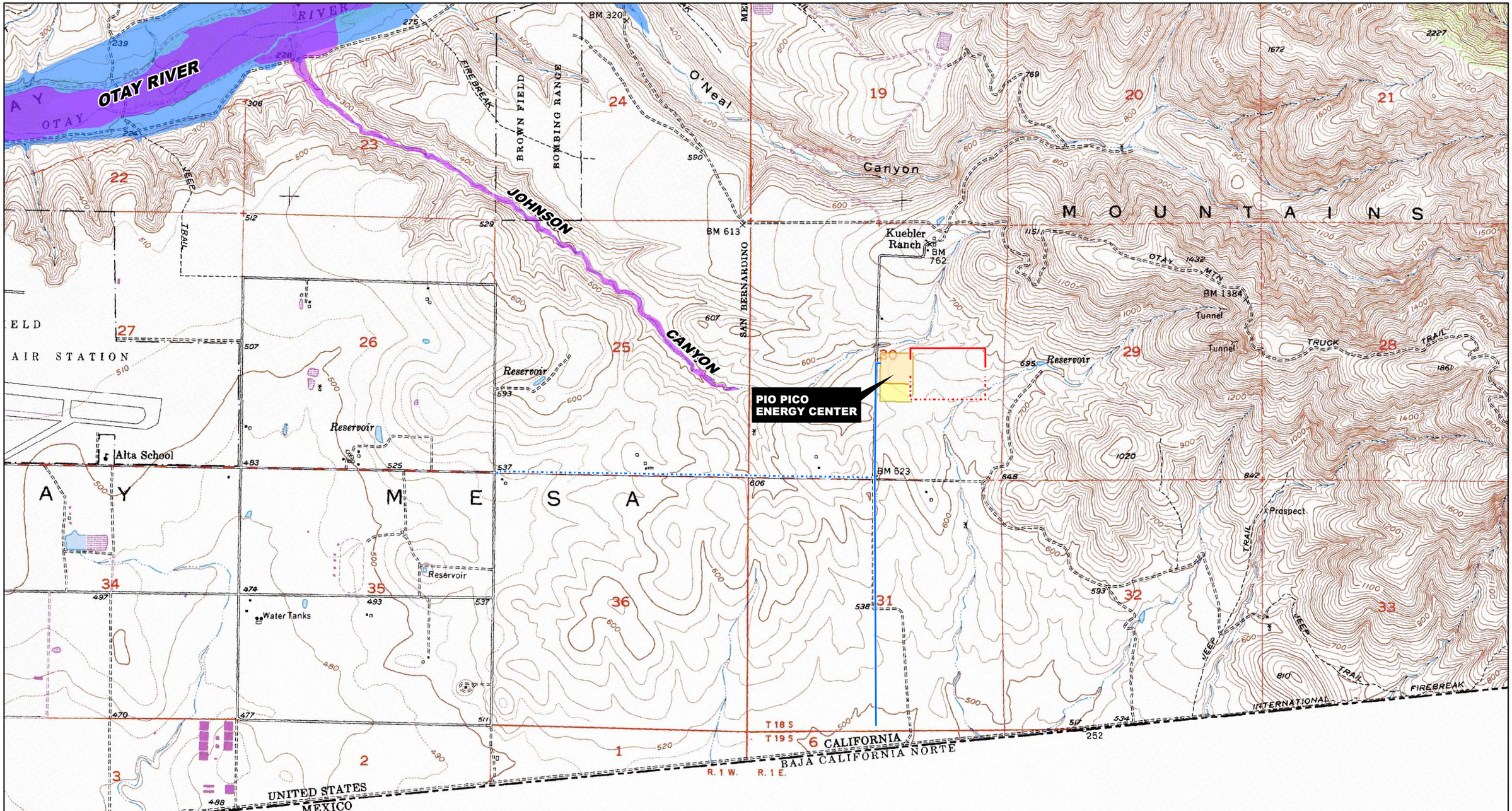
FIGURE 5.5-1
REGIONAL HYDROLOGIC SETTING

PIO PICO ENERGY CENTER

PROJECT NO.: 29874838
DATE: DECEMBER 2010

URS

Source: California Interagency Watershed Mapping Committe (CALWATER 2.2.1), 2004. SANDAG (Lakes and Lagoons), 2006. SANGIS (Rivers), 2004. CalAtlas (USGS 1x2 Degree Series), 1999.



Legend

- Project Site
- Laydown Area
- Route A 230 kV Transmission Line
- Route B 230 kV Transmission Line
- Route A Natural Gas Line
- Route B Natural Gas Line
- FEMA 100-Year Flood Hazard Area
- Dam Inundation Area

N

0 1,000 2,000 Feet

FIGURE 5.5-2
SURFACE WATER FEATURES AND FLOOD INUNDATION AREAS

PIO PICO ENERGY CENTER

PROJECT NO.: 29874838
DATE: DECEMBER 2010

URS

Source: San Diego Geographic Information Source (SanGIS) in Cooperation with the Department of Public Works, 2004. Federal Emergency Management Act Q3 Flood Data, 1997. USGS 24K Digital Raster Graphic Mosaics (Cal-Atlas 2003).

Adequacy Issue: Adequate _____ Inadequate _____ **DATA ADEQUACY WORKSHEET** Revision No.: _____ Date: _____

Technical Area: **WATER** Project: Pio Pico Energy Center Technical Staff: _____
Project Manager: _____ Docket: _____ Technical Senior: _____

Appendix B (g) (1)	...provide a discussion of the existing site conditions, the expected direct, indirect and cumulative impacts due to the construction, operation and maintenance of the project, the measures proposed to mitigate adverse environmental impacts of the project, the effectiveness of the proposed measures, and any monitoring plans proposed to verify the effectiveness of the mitigation.	Sections 5.5.1, 5.5.2, 5.5.3 and 5.5.4		
Appendix B (g) (14) (A)	All the information required to apply for the following permits if applicable, including:			
Appendix B (g) (14) (A) (i)	Waste Discharge Requirements; National Pollutant Discharge Elimination System Permit; and/or a Section 401 Certification or Waiver from the appropriate Regional Water Quality Control Board (RWQCB);	Sections 5.5.2.9, 5.5.4, 5.5.5, and 5.5.7 Appendix I-3		
Appendix B (g) (14) (A) (ii)	Construction and Industrial Waste Discharge and/or Industrial Pretreatment permits from wastewater treatment agencies;	Sections 5.5.2.6, 5.5.2.7, 5.5.2.8, 5.5.3.3, and 5.5.7		
Appendix B (g) (14) (A) (iii)	Nationwide Permits and/or Section 404 Permits from the U.S. Army Corps of Engineers; and	Sections 5.5.3.2, 5.5.5.1, 5.5.6, and 5.5.7 Tables 5.5-5 and 5.5-7		
Appendix B (g) (14) (A) (iv)	Underground Injection Control Permit(s) from the U.S. Environmental Protection Agency, California Division of Oil and Gas, and RWQCB.	Not Applicable		
Appendix B (g) (14) (B)	A detailed description of the hydrologic setting of the project. The information shall include a narrative discussion and on maps at a scale of 1:24,000 (or appropriate scale approved by staff), describing the chemical and physical characteristics of the following nearby water bodies that may be affected by the proposed project:	Sections 5.5.1.4, 5.5.1.5, and 5.5.1.6 Figure 5.5-1 Figure 5.5-2 (1:24,000)		
Appendix B (g) (14) (B) (i)	Ground water bodies and related geologic structures;	Section 5.5.1.6		
Appendix B (g) (14) (B) (ii)	Surface water bodies;	Section 5.5.1.4		

Appendix B (g) (14) (B) (iii)	Water inundation zones, such as the 100-year flood plain and tsunami run-up zones;	Section 5.5.1.5		
Appendix B (g) (14) (B) (iv)	Flood control facilities (existing and proposed); and	Section 5.5.2.9		
Appendix B (g) (14) (B) (v)	Groundwater wells within ½ mile if the project will include pumping.	Not Applicable		
Appendix B (g) (14) (C)	A description of the water to be used and discharged by the project. This information shall include:	Section 5.5.2		
Appendix B (g) (14) (C) (i)	Source(s) of the primary and back-up water supplies and the rationale for their selection;	Sections 5.5.2.1 and 5.5.2.2		
Appendix B (g) (14) (C) (ii)	The expected physical and chemical characteristics of the source and discharge water(s) including identification of both organic and inorganic constituents before and after any project-related treatment. For source waters with seasonal variation, provide seasonal ranges of the expected physical and chemical characteristics. Provide copies of background material used to create this description (e.g., laboratory analysis);	Section 5.5.2.1 Table 5.5-4 Appendix I-2		
Appendix B (g) (14) (C) (iii)	Average and maximum daily and annual water demand and waste water discharge for both the construction and operation phases of the project;	Section 5.5.2, including Sections 5.5.2.7 and 5.5.2.10 Table 5.5-3 Figures 3.5-4A and 3.5-4B		
Appendix B (g) (14) (C) (iv)	A detailed description of all facilities to be used in water conveyance (from primary source to the power plant site), water treatment, and wastewater discharge. Include a water mass balance diagram;	Section 5.5.2 Figures 3.4-4A and 3.4-4B		
Appendix B (g) (14) (C) (v)	For all water supplies intended for industrial uses to be provided from public or private water purveyors, a letter of intent or will-serve letter indicating that the purveyor is willing to serve the project, has adequate supplies available for the life of the project, and any conditions or restrictions under which water will be provided. In the event that a will-serve letter or letter of intent can not be provided, identify the most likely	Sections 5.5.2.2 and 5.5.2.5 Appendix I-1		

	water purveyor and discuss the necessary assurances from the water purveyor to serve the project;			
Appendix B (g) (14) (C) (vi)	For all water supplied which necessitates transfers and/or exchanges at any point, identify all parties and contracts/agreements involved, the primary source for the transfer and/or exchange water (e.g., surface water, groundwater), and provide the status of all appropriate agencies' approvals for the proposed use, environmental impact analysis on the specific transfers and/or exchanges required to obtain the proposed supplies, a copy of any agency regulations that govern the use of the water, and an explanation of how the project complies with the agency regulation(s);	Not Applicable		
Appendix B (g) (14) (C) (vii)	Provide water mass balance and heat balance diagrams for both average and maximum flows that include all process and/or ancillary water supplies and wastewater streams. Highlight any water conservation measures on the diagram and the amount that they reduce water demand; and	Section 5.5.2 Figures 3.4-4A and 3.4-4B, and Figures 3.5-2A through 3.5-2D		
Appendix B (g) (14) (C) (viii)	For all projects which have a discharge, provide a copy of the will-serve letter, permit or contract with the public or private entity that will be accepting the wastewater and contact storm water from the project. The letter, permit or contract if possible, shall identify the discharge volumes and the chemical or physical characteristics under which the wastewater and contact storm water will be accepted. In the event that a will-serve letter, permit, or contract cannot be provided, identify the most likely wastewater/storm water entity and discuss why the applicant was unable to secure the necessary assurances to serve the project's wastewater/storm water needs. Also, discuss the term of the wastewater service to the project, whether the wastewater entity has adequate permit capacity for the volume of wastewater from the project and has adequate permit levels for the chemical/physical characteristics of the project's wastewater and storm water for the life of the project, and any issues or	Sections 5.5.3.2 and 5.5.3.3 Appendix I-1		

	conditions/restrictions the wastewater entity may impose on the project.			
Appendix B (g) (14) (D)	Identify all project elements associated with stormwater drainage, including a description of the following:	Sections 5.5.2.9 and 5.5.3.2 Appendix I-3		
Appendix B (g) (14) (D) (i)	Monthly and/or seasonal precipitation and stormwater runoff and drainage patterns for the proposed site and surrounding area that may be affected by the project's construction and operation;	Section 5.5.1.3 Table 5.5-2 Figure 3.4-3 Appendix I-3		
Appendix B (g) (14) (D) (ii)	Drainage facilities and the design criteria used for the plant site and ancillary facilities, including but not limited to capacity of designed system, design storm, and estimated runoff;	Sections 5.5.2.9 and 5.5.3.2 Figure 3.4-3 Appendix A and I-3		
Appendix B (g) (14) (D) (iii)	All assumptions and calculations used to calculate runoff and to estimate changes in flow rates between pre- and post construction; and	Appendix A and I-3		
Appendix B (g) (14) (D) (iv)	A copy of applicable regional and local requirements regulating the drainage systems, and a discussion of how the project's drainage design complies with these requirements.	Section 5.5.5		
Appendix B (g) (14) (E)	An impacts analysis of the proposed project on water resources and a discussion of conformance with water -related LORS and policy. This discussion shall include:	Sections 5.5.3 and 5.5.5		
Appendix B (g) (14) (E) (i)	The effects of project demand on the water supply and other users of this source including, but not limited to, water availability for other uses during construction or after the power plant begins operation, consistency of the water use with applicable RWQCB basin plans or other applicable resource management plans, and any changes in the physical or chemical conditions of existing water supplies as a result of water use by the power plant;	Sections 5.5.3.1, 5.5.3.2, 5.5.3.6, and 5.5.5.3		

Appendix B (g) (14) (E) (ii)	If the project will pump groundwater, an estimation of aquifer drawdown based on a computer modeling study shall be conducted by a professional geologist and include the estimated drawdown on neighboring wells within 0.5 mile of the proposed well(s), any effects on the migration of groundwater contaminants, and the likelihood of any changes in existing physical or chemical conditions of groundwater resources shall be provided;	Not Applicable		
Appendix B (g) (14) (iii)	The effects of construction activities and plant operation on water quality and to what extent these effects could be mitigated by best management practices;	Sections 5.5.3.2, 5.5.3.3, 5.5.3.5, and 5.5.4		
Appendix B (g) (14) (iv)	If not using a zero liquid discharge project design for cooling and process waters, include the effects of the proposed wastewater disposal method on receiving waters, the feasibility of using pre-treatment techniques to reduce impacts, and beneficial uses of the receiving waters. Include an explanation why the zero liquid discharge process is "environmentally undesirable," or "economically unsound;"	Sections 5.5.2.7 and 5.5.3.3		
Appendix B (g) (14) (v)	If using fresh water, include a discussion of the cumulative impacts, alternative water supply sources and alternative cooling technologies considered as part of the project design. Include an explanation of why alternative water and alternative cooling are supplies "environmentally undesirable," or "economically unsound";	Not Applicable		
Appendix B (g) (14) (vi)	The effects of the project on the 100-year flood plain, flooding potential of adjacent lands or water bodies, or other water inundation zones ; and	Section 5.5.3.4		
Appendix B (g) (14) (vii)	All assumptions, evidence, references, and calculations used in the analysis to assess these effects.	Section 5.5.5.4 Appendix A and I-3		

Appendix B (i) (1) (A)	Tables which identify laws, regulations, ordinances, standards, adopted local, regional, state, and federal land use plans, leases, and permits applicable to the proposed project, and a discussion of the applicability of, and conformance with each. The table or matrix shall explicitly reference pages in the application wherein conformance, with each law or standard during both construction and operation of the facility is discussed; and	Section 5.5.5 Table 5.5-5		
Appendix B (i) (1) (B)	Tables which identify each agency with jurisdiction to issue applicable permits, leases, and approvals or to enforce identified laws, regulations, standards, and adopted local, regional, state and federal land use plans, and agencies which would have permit approval or enforcement authority, but for the exclusive authority of the commission to certify sites and related facilities.	Section 5.5.7 Table 5.5-7		
Appendix B (i) (2)	The name, title, phone number, address (required), and email address (if known), of an official who was contacted within each agency, and also provide the name of the official who will serve as a contact person for Commission staff.	Section 5.5.6 Table 5.5-6		
Appendix B (i) (3)	A schedule indicating when permits outside the authority of the commission will be obtained and the steps the applicant has taken or plans to take to obtain such permits.	Section 5.5-7 Table 5.5-7		