5.15 Water Resources

This section provides a discussion of the existing water resources near the proposed Turlock Irrigation District (TID) Almond 2 Power Plant (A2PP) project site and assesses the potential effects of project construction and operations on water resources. Specifically, this chapter discusses the A2PP and its potential effects in the following areas:

- Water supply and quality
- Disposal of wastewater
- Compliance with laws, ordinances, regulations, and standards
- Stormwater discharge
- Flooding

Section 5.15.1 discusses the existing hydrologic environment. Potential environmental effects of the A2PP construction and operation on water resources are assessed in Section 5.15.2. A discussion of potential cumulative project effects is presented in Section 5.15.3. Section 5.15.4 discusses proposed mitigation measures that will avoid or minimize potentially significant impacts. Section 5.15.5 presents applicable laws, ordinances, regulations and standards (LORS) related to water resources. Section 5.15.6 lists contacts with relevant regulatory agencies, permits that relate to water resources, and a schedule for obtaining permits. References cited are listed in Section 5.15.7.

5.15.1 Affected Environment

5.15.1.1 Water Features, Rainfall, and Drainage

The A2PP project site is an approximately 4.6-acre parcel located at 4500 Crows Landing Road in Ceres, Stanislaus County, California. The A2PP project site is located on land owned by TID and located within the City of Ceres. The A2PP project site is adjacent to the existing TID Almond Power Plant to the south, a WinCo distribution warehouse to the west, a farm supply facility to the north, and a modular building distributor and drilling equipment storage facility to the east. In addition to the A2PP site, the project includes an approximately 1.85-acre laydown and parking area to the north of the project site. The project includes a natural gas pipeline,[1] two transmission corridors, and the reconductoring of an existing 69-kV transmission line (Figure 1.1-3).

Major rivers in Stanislaus County include the San Joaquin, the Stanislaus, and the Tuolumne. The San Joaquin River originates in Fresno County, crossing southwestern San Joaquin County before terminating in the Sacramento-San Joaquin River Delta. The Stanislaus and the Tuolumne rivers terminate in the San Joaquin River west of project site. All of the major rivers in Stanislaus County have been modified by impoundments or diversion channels. The project site is approximately 3 miles south of the Tuolumne River and approximately 8 miles to the east of the San Joaquin River (Figure 5.15-1).

[1]Natural gas will be provided via one of two routes: an approximately 9.1-mile-long gas pipeline that runs south along Crows Landing Road (Alternate A), or an approximately 11.1-mile-long gas pipeline that runs south along Carpenter Road (Alternate B). Pacific Gas & Electric Company (PG&E) is currently examining the relative strengths of the two alignments. In order to allow the AFC to proceed, the two possible alternatives are presented in this AFC with same level of detail to allow complete evaluation of both alternatives. TID anticipates that PG&E will select a preferred route in late spring or early summer 2009. At that time, the route not selected will provide information for the California Energy Commission's Alternatives analysis.

The A2PP project site is within the boundary of the Central Valley Regional Water Quality Control Board (RWQCB). The RWQCB implements water quality regulations, such as setting water quality standards, issuing waste discharge requirements, determining compliance with those requirements, and taking appropriate enforcement actions. The RWQCB adopts water quality control plans, or Basin Plans, which establish water quality objectives to ensure the reasonable protection of beneficial uses and a program of implementation for achieving water quality objectives within the Basin Plans. For those waters not attaining water quality standards, the RWQCB establishes total maximum daily loads (TMDLs) and a program of implementation to meet the TMDL.[2]

Water quality objectives for the Tuolumne and San Joaquin rivers are contained in the Water Quality Control Plan for the Sacramento River and San Joaquin River Basins (Basin Plan; RWQCB, 1998). The lower Tuolumne River between Don Pedro Reservoir and the San Joaquin River is considered an impaired water body. The San Joaquin River between the Merced and Tuolumne rivers is considered an impaired water body. Table 5.15-1 lists the pollutants for which the Tuolumne and San Joaquin rivers do not meet water quality objectives and proposed TMDL completion dates.

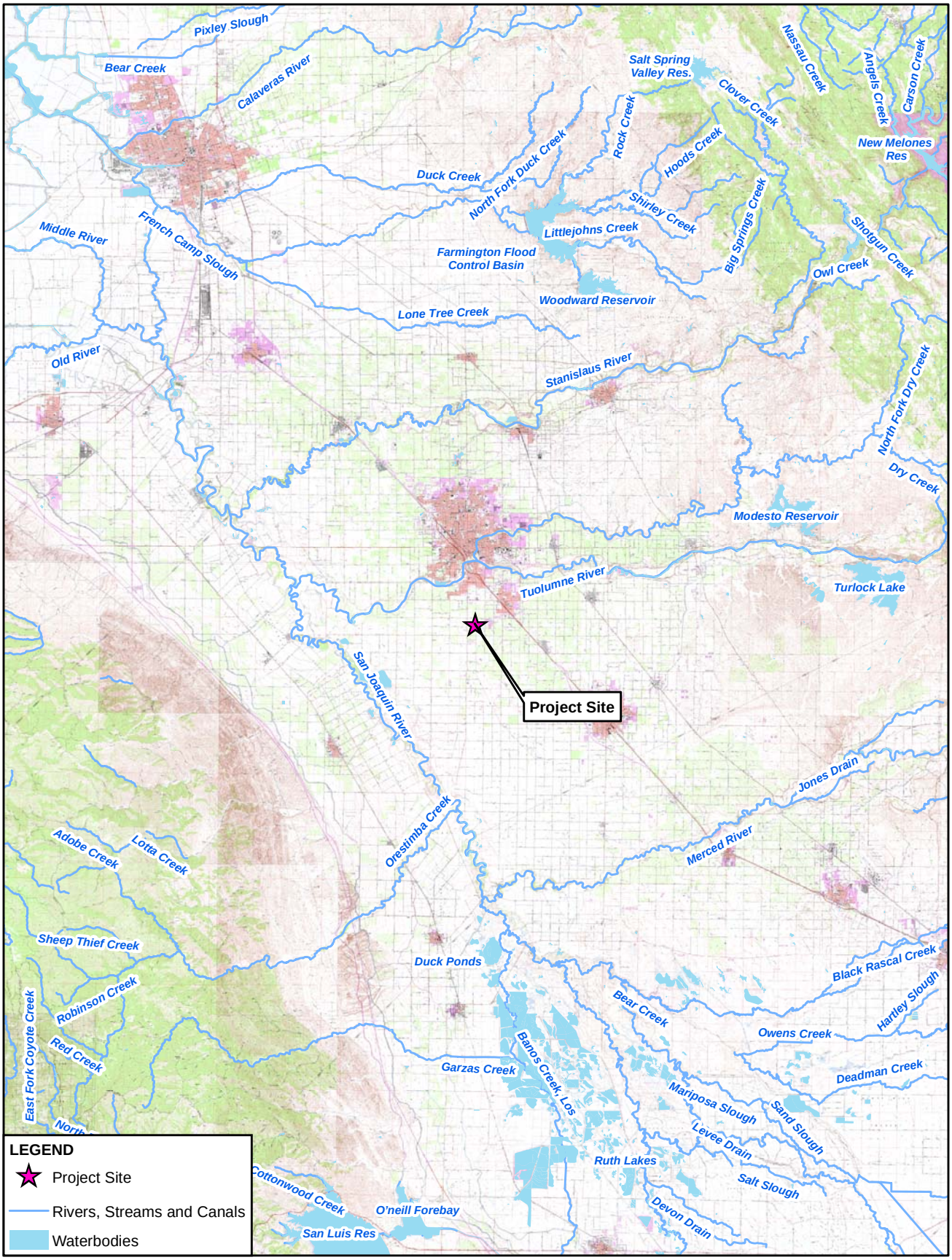
TABLE 5.15-1
Clean Water Act Section 303(d) List of Water Quality Impairments

Pollutant/Stressor	Potential Sources	Proposed TMDL Completion
Lower Tuolumne River (Don Pedro Reservoir to San Joaquin River)		
Diazinon	Agriculture	2008*
Group A Pesticides	Agriculture	2011
Unknown Toxicity	Unknown	2019
San Joaquin River (Merced River to Tuolumne River)		
Boron	Agriculture	2006*
DDT	Agriculture	2011
Electrical Conductivity	Agriculture	2006*
Group A Pesticides	Agriculture	2011
Mercury	Resource Extraction	2020
Unknown Toxicity	Unknown	2019

*In progress
Source: RWQCB, 2006

Average annual rainfall is about 12 inches in the City of Modesto, just north of the project site. Most of the precipitation occurs between November and April, while the summer

[2] Section 303(d) of the Clean Water Act requires that the states make a list of waters that are not attaining water quality standards. For waters on this list, the states are to develop total maximum daily loads or TMDLs. A TMDL must account for all sources of the pollutants that caused the water to be listed. Federal regulations require that the TMDL, at a minimum, account for contributions from point sources (federally permitted discharges) and contributions from nonpoint sources. TMDLs are established at the level necessary to implement the applicable water quality standards. In California, the State Water Resources Control Board (SWRCB) has interpreted state law (Porter-Cologne Water Quality Control Act, California Water Code Section 13000 et. seq.) to require that implementation be addressed when TMDLs are incorporated into Basin Plans. The Porter-Cologne Act requires each RWQCB to formulate and adopt Basin Plans for all areas within its region. It also requires that a program of implementation be developed that describes how water quality standards will be attained. TMDLs can be developed as a component of the program of implementation, thus triggering the need to describe the implementation features, or alternatively as a water quality standard. When the TMDL is established as a standard, the program of implementation must be designed to implement the TMDL (SWRCB, n.d.).



Notes:
1. The Department of Water Resources, Groundwater Basin Map, 2004

This map was compiled from various scale source data and maps and is intended for use as only an approximate representation of actual locations.

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FIGURE 5.15-1
SURFACE WATER RESOURCES
ALMOND 2 POWER PLANT
CERES, CALIFORNIA

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months are virtually rainless. Table 5.15-2 provides average historical rainfall from the meteorological station in Modesto.

TABLE 5.15-2
Average Rainfall near the Proposed Project Site (Modesto, California) (1906-2007)

Precipitation	Annual	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Average	12.26	0.62	1.25	2.07	2.45	2.07	1.96	1.03	0.46	0.12	0.03	0.04	0.18

Source: WRCC, 2009.

5.15.1.2 Groundwater

The A2PP project site is within the San Joaquin Valley Groundwater Basin within the Turlock Subbasin (DWR, 2006) (Figure 5.15-2). The Turlock Subbasin lies between the Tuolumne and Merced rivers and is bounded on the west by the San Joaquin River and on the east by crystalline basement rock of the Sierra Nevada foothills (DWR, 2006). The Turlock Subbasin is drained by the San Joaquin River and several major tributaries, including the Tuolumne and the Merced rivers. Groundwater in the Turlock Subbasin flows primarily to the southwest following the regional dip of basement rock and sedimentary units towards the San Joaquin River (DWR, 2006).

Groundwater levels in the Turlock Subbasin have steadily declined over time, with a steep decline of approximately 15 feet between 1970 and 1992 (DWR, 2006). The primary hydrogeologic units in the Turlock Subbasin include both consolidated and unconsolidated sedimentary deposits (DWR, 2006). Well yields in the Turlock Subbasin range from 200 to 4,500 gallons per minute, with an average yield of 1,000 to 2,000 gallons per minute (DWR, 2006). Well depths in the subbasin range from 50 to 350 feet (DWR, 2006).

Groundwater in the Turlock Subbasin is predominately of the sodium-calcium bicarbonate type. The California Department of Public Health (CDPH), which monitors Title 22 water quality standards, reports total dissolved solids values in 71 wells ranging from 100 to 930 milligrams per liter (mg/L), with an average value of 335 mg/L (DWR, 2006). There are localized areas of hard groundwater, nitrate, chloride, boron, and dibromochloropropane (DBCP; DWR, 2006). Unless otherwise designated by the Central Valley RWQCB, all ground waters are considered suitable or potentially suitable, at a minimum, for municipal and domestic water supply, agricultural supply, industrial service supply, and industrial process supply.

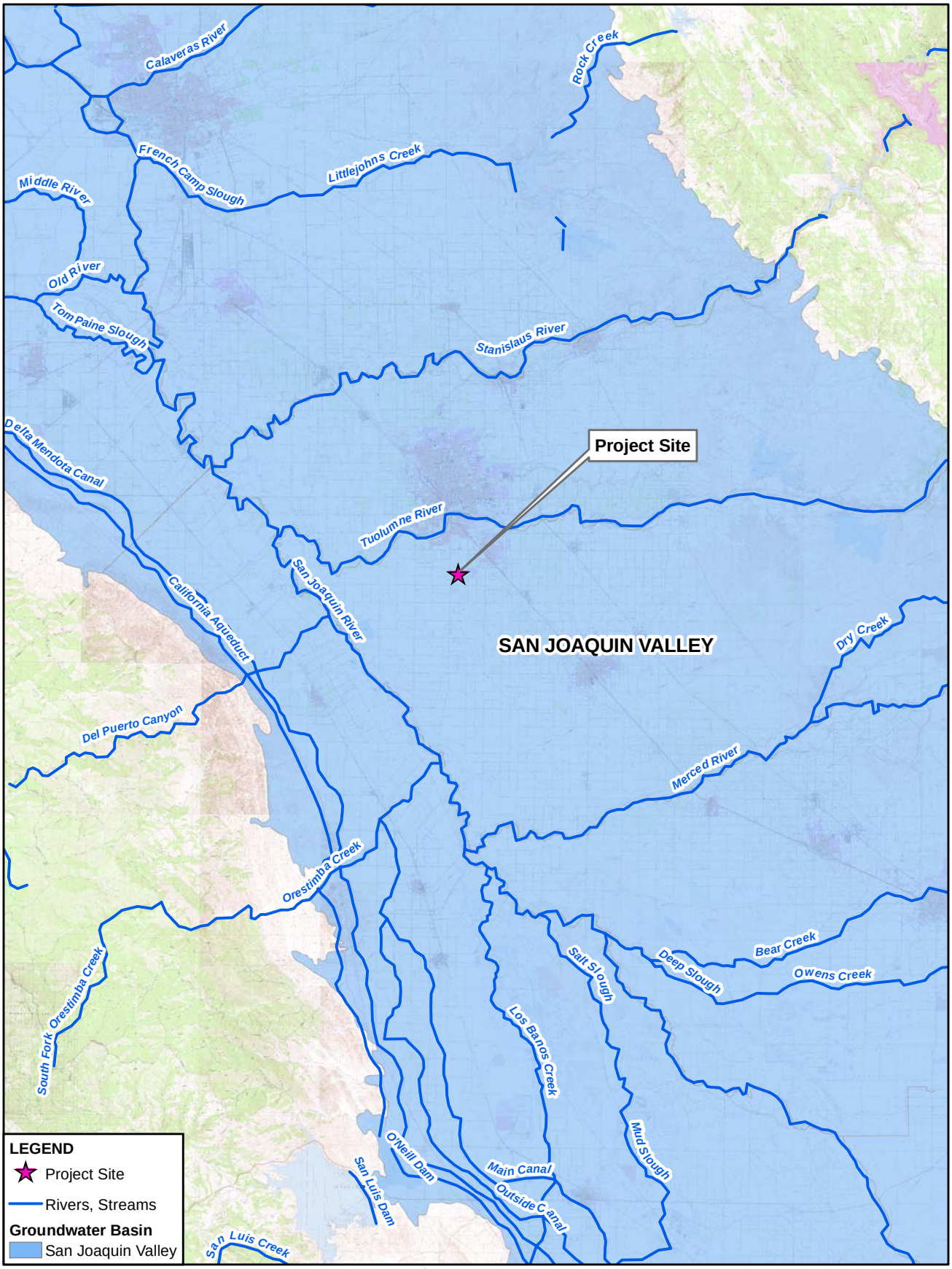
The City of Ceres relies on groundwater as its municipal water supply (City of Ceres, 1997). The city maintains ten wells, eight of which are active (City of Ceres, n.d). One of the City's municipal wells is located adjacent to the Ceres wastewater treatment plant (WWTP). Other uses of groundwater in the vicinity of the A2PP include the existing Almond Power Plant, which uses approximately 16,000 gpd groundwater for service water to the plant, and local agriculture. Table 15.5-3 presents groundwater quality from the existing Almond Power Plant's onsite well. Local groundwater levels are maintained at 6 to 10 feet below ground surface by TID pumps;[3] however, none of these ag pumps are located within 0.5 mile of the A2PP (Tucker, 2009). The agricultural pump waters are discharged to irrigation water canals for agricultural use (Central Valley RWQCB, 1993).

[3] TID pumps are used to lower the water table from the root zone of agricultural crops in the area.

TABLE 15.5-3
Water Quality Characteristics from the Almond Power Plant Onsite Service Water Well

Parameter	Units	Value
Total Alkalinity ($CaCO_3$)	mg/L	379
Bicarbonate (HCO_3)	mg/L	462
Carbonate (CO_3)	mg/L	ND
Hydroxide (OH)	mg/L	ND
Chloride	mg/L	173
Color	Color Units	ND
Cyanide (total)	mg/L	ND
Specific Conductance	microsiemens per centimeter	1490
Fluoride	mg/L	0.10
Hardness	mg/L $CaCO_3$	420
Methylene Blue Active Substances	mg/L	ND
Nitrate (NO_3)	mg/L	50.7
Threshold Odor Number (TON)	TON	ND
pH	Standard units	7.4
Sulfate (SO_4)	mg/L	54.5
Total Dissolved Solids	mg/L	840
Turbidity	Nephelometric Turbidity Units	ND
Aluminum	µg/L	ND
Antimony	µg/L	ND
Arsenic	µg/L	ND
Barium	µg/L	225
Beryllium	µg/L	ND
Cadmium	µg/L	ND
Calcium	mg/L	110
Chromium	µg/L	50.0
Copper	µg/L	ND
Iron	µg/L	ND
Lead	µg/L	ND
Magnesium	mg/L	35.8
Manganese	µg/L	ND
Mercury	µg/L	ND
Nickel	µg/L	ND
Potassium	mg/L	5.7
Selenium	µg/L	ND
Silver	µg/L	ND
Sodium	mg/L	105
Thallium	µg/L	ND
Zinc	µg/L	ND
Total Coliform	n/a	Absent
Fecal Coliform	n/a	Absent

µg/L = micrograms per liter
ND = Analyte not detected at or above the reporting limit
Source: GeoAnalytical Laboratories Inc., 2008a



Notes:
1. Source: The Dept. of Water Resources, Groundwater Basin Map, 2004.

This map was compiled from various scale source data and maps and is intended for use as only an approximate representation of actual locations.

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FIGURE 5.15-2
GROUNDWATER RESOURCES
ALMOND 2 POWER PLANT
CERES, CALIFORNIA

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5.15.1.3 Flooding Potential

The project site is located within Zone X as defined by the Federal Emergency Management Agency (FEMA), which is not within the 100-year flood plain (FEMA, 2008; Figure 5.15-3). Zone X delineates areas that are determined to be outside the 0.2 percent annual chance (500-year) floodplain (FEMA, 2008).

5.15.1.4 Water Supply

This section describes process and cooling water usage, domestic and sanitary water use, construction water supply, wastewater disposal, and stormwater issues.

5.15.1.4.1 Process and Cooling Water

The A2PP project will use water that is currently delivered to the site by a 6-inch-diameter pipeline between the Almond Power Plant and the Ceres WWTP for water. Water is pumped from an extraction well located beneath the WWTP percolation ponds at approximately 35 to 65 feet below ground surface. Table 5.15-4 shows the expected water quality of the A2PP source water from the percolation ponds at the Ceres WWTP. A will-serve letter from the City of Ceres is included in Appendix 2A. Due to the high level of reliability of water from the Ceres WWTP, no backup water supply is required or planned for this project at this time.

TABLE 5.15-4
Ceres Wastewater Treatment Plant Water Quality Data (from the existing extraction well)

Parameter	Units	Value
Total Alkalinity ($CaCO_3$)	mg/L	256
Bicarbonate (HCO_3)	mg/L	313
Carbonate (CO_3)	mg/L	ND
Hydroxide (OH)	mg/L	ND
Barium	µg/L	233
Chloride	µg/L	233
Fluoride	mg/L	0.14
Calcium	mg/L	69
Magnesium	mg/L	23
Iron	µg/L	ND
Nitrate (NO_3)	mg/L	3.6
pH	Standard units	7.3
Phosphate	mg/L	ND
Potassium	mg/L	7.7
Silica	mg/L	48.6
Sodium	mg/L	162
Sulfate (SO_4)	mg/L	47.3
Total Dissolved Solids	mg/L	833
Specific Conductance	microsiemens per centimeter	1,570
Free CO_2	mg/L	15
Total Cations	mg/L $CaCO_3$	12.5
Total Anions	mg/L $CaCO_3$	12.7
Total Hardness	mg/L $CaCO_3$	270

ND = Analyte not detected at or above the reporting limit
Source: GeoAnalytical Laboratories Inc., 2008b

Water treatment will be provided onsite using an existing reverse osmosis and demineralizer system currently in place at the existing Almond Power Plant. The A2PP will tie into this system. Incoming water from the Ceres WWTP is sent through the reverse osmosis system and then stored in the reverse osmosis storage tank. Water from the reverse osmosis storage tank will be used for evaporative cooling or demineralized and will be stored in two approximately 240,000-gallon demineralized water storage tanks for use in the combustion turbine generators (CTGs). Figure 2.1-5 shows the water balance for the A2PP project.

As shown in Table 5.15-5, maximum daily water use for plant processes would be approximately 349 gallons per minute and average daily water use for plant processes would be approximately 319 gallons per minute. Assuming for purposes of illustration a 100 percent capacity factor (8,760 hours per year), the A2PP would be projected to use an annual average of approximately 514 acre-feet of water for plant processes. Of course, operating any project 24 hours a day, 7 days a week, 365 days a year is both unreasonable and impossible, given maintenance and outage requirements. Moreover, TID does not intend to run the A2PP as a baseload facility. Instead, assuming a more realistic operation scenario with a 57 percent capacity factor (5,000 hours per year), the A2PP would be projected to use an annual average of approximately 293 acre-feet per year (Table 5.16-5).

TABLE 5.15-5
Estimated Daily and Annual Water Use for A2PP Operations[a]

Water Use	Average Daily Use[b] (gpm)	Maximum Daily Use[c] (gpm)	Projected Annual Use[d] (acre-feet)
Process and cooling water	319	349	
8,760 hours per year			514
5,000 hours per year			293

gpm = gallons per minute

[a]Water requirements shown are estimated quantities based on the simple-cycle plant operating at full load, with evaporative cooling of the CTG inlet air and the SPRINT system in use.

[b]60°F heat balance case

[c]110°F heat balance case

[d]Annual use is based on 319 gpm for the maximum operating scenario of 8,760 hours of operation per year and 319 gpm for average operation of 5,000 hours per year.

5.15.1.4.2 Domestic and Sanitary Water Use

The A2PP will use a minimal amount of service water for eye-wash stations and safety showers. The A2PP will obtain its service water by tying into an existing onsite groundwater well currently in use for service water at the Almond Power Plant. The well is located on the southeast corner of the Almond Power Plant. Drinking water will be provided by an outside drinking water delivery service. The A2PP will tie into the existing fire system for the Almond Power Plant; fire water is provided by the onsite well.

NOTES TO USERS

This map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size. The **community map repository** should be consulted for possible updated or additional flood hazard information.

To obtain more detailed information in areas where **Base Flood Elevations** (BFEs) and/or **floodways** have been determined, users are encouraged to consult the Flood Profiles and Floodway Data and/or Summary of Stillwater Elevations tables contained within the Flood Insurance Study (FIS) report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded whole-foot elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS report should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.

Coastal Base Flood Elevations shown on this map apply only landward of 0.0' North American Vertical Datum of 1988 (NAVD 88). Users of this FIRM should be aware that coastal flood elevations are also provided in the summary of Stillwater Elevations table in the Flood Insurance Study Report for this jurisdiction. Elevations shown in the Summary of Stillwater Elevations table should be used for construction, and/or floodplain management purposes when they are higher than the elevations shown on this FIRM.

Boundaries of the **floodways** were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study report for this jurisdiction.

Certain areas not in Special Flood Hazard Areas may be protected by **flood control structures**. Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study report for information on flood control structures in this jurisdiction.

The **projection** used in the preparation of this map was California State Plane, Zone III. The **horizontal datum** was NAD83, GRS80 spheroid. Differences in datum, spheroid, projection or State Plane zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this FIRM.

Flood elevations on this map are referenced to the North American Vertical Datum of 1988. These flood elevations must be compared to structure and ground elevations referenced to the same **vertical datum**. For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at http://www.ngs.noaa.gov or contact the National Geodetic Survey at the following address:

NGS Information Services
NOAA, N/NGS12
National Geodetic Survey, SSMC-3, #9202
1315 East-West Highway
Silver Spring, Maryland 20910-3282
(301) 713-3242

To obtain current elevation, description, and/or location information for **bench marks** shown on this map, please contact the Information Services Branch of the National Geodetic Survey at **(301) 713-3242**, or visit their website at http://www.ngs.noaa.gov/.

Base map information shown on this FIRM was derived from multiple sources. This information was compiled from the National Geodetic Survey, 2002, Federal Emergency Management Agency, 2004, and U.S. Geological Survey, 1989 and 1993. Additional information was photogrammetrically compiled at a scale of 1:12,000 from aerial photography dated 2002.

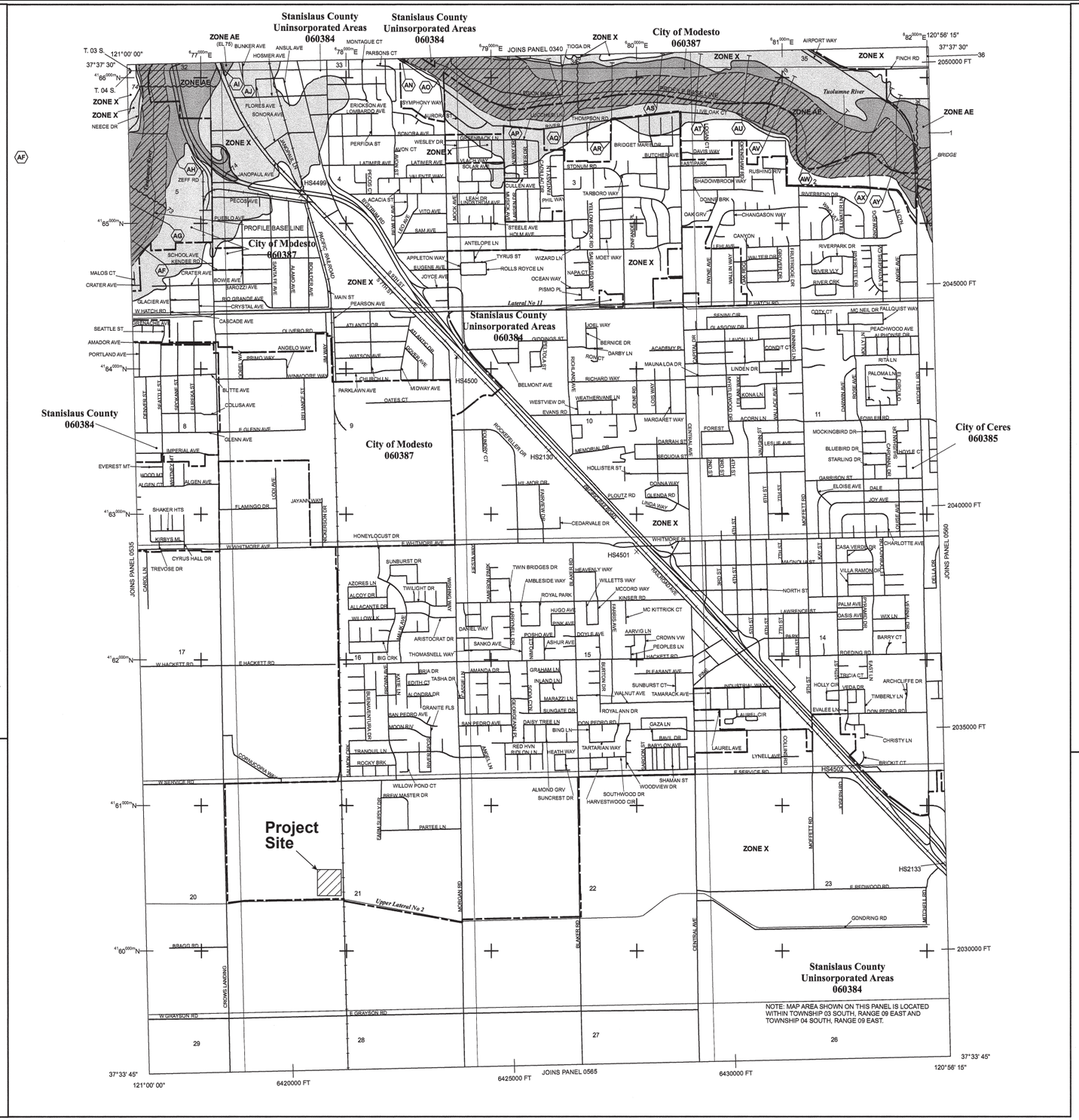
This map reflects more detailed and up-to-date **stream channel configurations** than those shown on the previous FIRM for this jurisdiction. The floodplains and floodways that were transferred from the previous FIRM may have been adjusted to conform to these new stream channel configurations. As a result, the Flood Profiles and Floodway Data tables in the Flood Insurance Study report (which contains authoritative hydraulic data) may reflect stream channel distances that differ from what is shown on this map.

Corporate limits shown on this map are based on the best data available at the time of publication. Because changes due to annexations or de-annexations may have occurred after this map was published, map users should contact appropriate community officials to verify current corporate limit locations.

Please refer to the separately printed **Map Index** for an overview map of the county showing the layout of map panels; community map repository addresses; and a Listing of Communities table containing National Flood Insurance Program dates for each community as well as a listing of the panels on which each community is located.

Contact the **FEMA Map Service Center** at 1-800-358-9616 for information on available products associated with this FIRM. Available products may include previously issued Letters of Map Change, a Flood Insurance Study report, and/or digital versions of this map. The FEMA Map Service Center may also be reached by Fax at 1-800-358-9620 and their website at http://www.msc.fema.gov/.

If you have **questions about this map** or questions concerning the National Flood Insurance Program in general, please call **1- 877- FEMA MAP** (1-877-336-2627) or visit the FEMA website at http://www.fema.gov/.



LEGEND

SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

- **ZONE A** No Base Flood Elevations determined.
- **ZONE AE** Base Flood Elevations determined.
- **ZONE AH** Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.
- **ZONE AO** Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
- **ZONE AR** Special Flood Hazard Area formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
- **ZONE A99** Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.
- **ZONE V** Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
- **ZONE VE** Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

- **ZONE X** Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

- **ZONE X** Areas determined to be outside the 0.2% annual chance floodplain.
- **ZONE D** Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

- Floodplain boundary
- Floodway boundary
- Zone D Boundary
- CBRS and OPA Boundary
- Boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or flood velocities.
- 513 (EL 987) Base Flood Elevation line and value; elevation in feet* / Base Flood Elevation value where uniform within zone; elevation in feet*
- *Referenced to the North American Vertical Datum of 1988
- A — A Cross section line
- 23 — 23 Transect line
- 97° 07' 30", 32° 22' 30" Geographic coordinates referenced to the North American Datum of 1983 (NAD 83), Western Hemisphere
- 4276000mE 1000-meter Universal Transverse Mercator grid values, zone 10
- 600000 FT 5000-foot grid ticks: California State Plane coordinate system, zone III (FIPSZONE 0403), Lambert Conformal Conic Projection
- DX5510 Bench mark (see explanation in Notes to Users section of this FIRM panel)
- M1.5 River Mile

MAP REPOSITORIES
Refer to Map Repositories list on Map Index.

EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP PANEL
SEPTEMBER 26, 2008

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL

For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

MAP SCALE 1" = 1000'
500 0 1000 2000 FEET
300 0 300 600 METERS

NFIP
NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0555E

FIRM
FLOOD INSURANCE RATE MAP
STANISLAUS COUNTY, CALIFORNIA AND INCORPORATED AREAS
PANEL 555 OF 1075

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
CERES, CITY OF	060385	0555	E
MODESTO, CITY OF	060387	0555	E
STANISLAUS COUNTY	060384	0555	E

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
06099C0555E

EFFECTIVE DATE
SEPTEMBER 26, 2008

Federal Emergency Management Agency

FIGURE 5.15-3
FEMA FLOOD ZONE MAP
ALMOND 2 POWER PLANT
CERES, CALIFORNIA

5.15.1.4.3 Water Supply during Construction

Construction of the A2PP project is scheduled to last 12 months. The entire approximately 4.6-acre project site will be graded during construction. There will be an approximately 1.85-acre laydown and parking area to the north of the project site (Figure 1.1-3). During construction of the project, water will be required primarily for dust suppression (8 hours per day for approximately 12 months). Construction activities would require a relatively limited amount of water (an average of approximately 50 gallons per minute and approximately 200 gallons per minute per 1 hour for dust control and soil compaction, at peak use). The construction water supply will come from the onsite fire system at the Almond Power Plant or the TID irrigation canal to the south. The average daily water use for construction would be 36,000 gallons per day and daily maximum water use would be 144,000 gallons per day. The maximum water use for the 12-month construction period would be 52.56 million gallons.

5.15.1.5 Wastewater Collection, Treatment, Discharge, and Disposal

Non-reclaimable process wastewater from the A2PP will be discharged via the existing 6-inch-diameter water line between the Almond Power Plant and the Ceres WWTP. The existing water line discharges directly to three percolation ponds at the WWTP via a grade-level distribution box capable of diverting wastewater to any of the percolation ponds as necessary. The wastewater will not be treated by the Ceres WWTP prior to discharge to the percolation ponds. Table 5.15-6 shows the expected wastewater quality from the A2PP project. A letter from the Ceres WWTP stating receiving wastewater from the A2PP is acceptable is included as Appendix 2A.

TABLE 5.15-6
Expected A2PP Wastewater Quality

Parameter	Units	Wastewater Discharge (Peak Flow[a])	Wastewater Discharge (Average Flow[b])
Total Alkalinity ($CaCO_3$)	mg/L	822.07	720.80
Alkalinity – Total Carbonate ($CaCO_3$)	mg/L	822.07	720.77
Alkali Metals	mg/L	544.5	477.5
Free CO_2	mg/L	5.9	6.56
Specific Conductance	microsiemens per centimeter	3877.7	3400.4
Total Hardness	mg/L $CaCO_3$	858.2	752.47
pH	Standard units	8.4	8.24
Silica	mg/L	156.1	136.83
Total Dissolved Solids	mg/L	2714.6	2380.44
Barium	mg/L	0.75	0.66
Calcium	mg/L	221.57	194.27
Magnesium	mg/L	73.86	64.76
Potassium	mg/L	24.73	21.68

TABLE 5.15-6
Expected A2PP Wastewater Quality

Parameter	Units	Wastewater Discharge (Peak Flow[a])	Wastewater Discharge (Average Flow[b])
Sodium	mg/L	519.77	455.78
Bicarbonate	mg/L	977.2	865.30
Carbonate	mg/L	12.55	6.84
Chloride	mg/L	747.6	655.54
Fluoride	mg/L	0.45	0.39
Nitrate	mg/L	11.56	10.14
Sulfate	mg/L	151.8	133.09
Total Cations ($CaCO_3$)	mg/L	2023	1774
Total Anions ($CaCO_3$)	mg/L	2045	1793

[a]100°F dry bulb temperature

[b]60°F dry bulb temperature

Source: Water Chemistry Analyses & Specifications Turlock Irrigation District (TID) Almond 2 Plant (CH2M HILL, 2009c)

As shown in Table 5.15-7, the A2PP would discharge up to a maximum of approximately 174,240 gallons per day and approximately 63.5 million gallons per year of process wastewater through the existing water line to the percolation ponds at the Ceres WWTP, assuming a 100 percent capacity factor (8,760 hours per year). The water balance diagram, Figure 2.1-5, shows the expected wastewater streams and flow rates for the A2PP for the annual average and maximum conditions, respectively.

TABLE 5.15-7
Estimated Peak and Average Discharge from A2PP Operations

Capacity Factor	Peak (Daily[a]/Yearly[b])		Average (Daily/Yearly)	
100 percent (8,760 hours per year)	174,240	63.5	139,680	50.9
57 percent (5,000 hours per year)	116,160	36.2	93,120	29

[a]gallons per day

[b]million gallons per year

Source: CH2M HILL, 2009a

General plant drains will collect containment area washdown, sample drains, and drainage from facility equipment drains. Water from these areas will be collected in a system of floor drains, hub drains, sumps, and piping and routed to the existing process wastewater collection system that discharges to the percolation ponds at the WWTP. Drains that could potentially contain oil or grease will first be routed through an oil-water separator.

Wastewater from combustion turbine water washes will be collected in holding tanks or sumps and will be trucked offsite for disposal at an approved wastewater disposal facility. There will be no sanitary waste output from the A2PP because the sanitary facilities of the existing Almond Power Plant, which has sufficient capacity, will be used.

5.15.1.6 Stormwater Runoff and Drainage

The existing A2PP site is a basin-like area that was previously used as a borrow area for dirt during construction of the nearby WinCo distribution warehouse. The borrow area was excavated approximately 6.5 feet below grade. The site was filled with commercial fill and compacted to 95 percent.

The existing Almond Power Plant stormwater system incorporates a series of inlets and drainage pipes that discharge to an onsite retention pond. This existing stormwater system would be expanded to the north to accommodate the A2PP. The stormwater system for the A2PP will include a series of inlets and storm drain pipes that convey runoff to the retention pond (Figure 5.15-4). Areas of potential oil contamination will use secondary containments that prevent the potential contaminants from traveling to the stormwater system. Runoff contained will be treated and disposed of offsite. As a result of the containment system, site runoff will be conveyed to the retention pond without additional treatment.

The retention pond will be sized at 2.41 acre-feet capacity to accommodate the 100-year peak runoff with 2.65 feet of freeboard (CH2M HILL, 2009b). Table 5.15-8 shows the criteria used to calculate capacity for the onsite stormwater system.

TABLE 5.15-8
Stormwater System Design Criteria

Design Storm	Computed Runoff (inches)	Peak Volume of Retention Pond (acre-feet)
2-year, 24-hour	1.33	0.31
10-year, 24-hour	1.9	0.59
100-year, 24-hour	2.7	1.03

Source: CH2M HILL, 2009b

5.15.2 Environmental Analysis

Project effects on water resources can be evaluated relative to significance criteria derived from the California Environmental Quality Act (CEQA) Appendix G checklist. Under CEQA, the project is considered to have a potentially significant effect on water resources if it would:

- Substantially alter the existing drainage pattern of the site or area, including the alteration of the course of a stream or river, in a manner which will result in substantial erosion or siltation on- or offsite, or in flooding on- or offsite.
- Create or contribute runoff water which will exceed the capacity of existing or planned stormwater drainage systems, or provide substantial additional sources of polluted runoff.

- Violate any water quality standards or waste discharge requirements, or otherwise substantially degrade water quality.
- Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there will be a net deficit in aquifer volume or a lowering of the local groundwater table level (for example, the production rate of pre-existing nearby wells will drop to a level which will not support existing land uses or planned uses for which permits have been granted).
- Place within a 100-year flood hazard area structures that will impede or redirect flood flows.
- Cause inundation by seiche, tsunami, or mudflow.

5.15.2.1 Construction Impacts

5.15.2.1.1 Drainage

The general site grading will establish a working surface for construction and plant operating areas, and will provide positive drainage from buildings and structures, as well as adequate ground coverage for subsurface utilities. During construction, approximately 4.6 acres of land associated with the A2PP project will be graded. In addition, there is an approximately 1.85-acre proposed project laydown and parking area that is located to the north of the proposed A2PP site. Surface water impacts are anticipated to be related primarily to short-term construction activity and would consist of increased turbidity due to erosion of newly excavated or placed soils. However, compliance with engineering and construction specifications, and following City-approved grading and drainage plans will effectively mitigate these short-term impacts.

Furthermore, as required under the General Permit for Stormwater Discharges Associated with Construction Activity (SWRCB Water Quality Order No. 99-08-DWQ; SWRCB, 1997), a Stormwater Pollution Prevention Plan (SWPPP) will be prepared for the construction site and will include best management practices (BMPs) for erosion and sediment control. The SWPPP will be prepared prior to construction of the A2PP project to prevent the offsite migration of sediment and other pollutants, and to reduce the effects of runoff from the construction site to offsite areas. Successful implementation of the SWPPP will ensure that construction impacts to drainage are mitigated to a less-than-significant level.

5.15.2.1.2 Water Quality; Waste Discharge Requirements

Potential construction-related water quality impacts include impacts to surface water runoff during excavation and construction. Also, construction materials could contaminate runoff or groundwater if not properly stored and used. Such construction impacts will be less than significant with implementation of a SWPPP and associated BMPs, including practicing proper housekeeping at the construction site. A SWPPP is required under the General Permit for Stormwater Discharges Associated with Construction Activity (SWRCB Water Quality Order No. 99-08-DWQ; SWRCB, 1997) for projects resulting in one or more acres of soil disturbance. SWPPP procedures include submitting a Notice of Intent (NOI) to the Central Valley RWQCB and developing the SWPPP prior to the start of construction activities. Implementation of the SWPPP will prevent the offsite migration of sediment and other pollutants, and will reduce the effects of runoff from the construction site to offsite areas, thereby reducing construction impacts to water quality to a less-than-significant level.

Label	Peak Flow 100-year cfs	Peak Flow 10-year cfs	Peak Flow 2-year cfs
Ex-1	1.03	0.56	0.26
Ex-2	2.42	1.32	0.62
Ex-3	1.30	0.70	0.33
S-1	0.06	0.03	0.01
S-2	0.14	0.07	0.03
S-3	0.11	0.06	0.03
S-4	0.12	0.06	0.03
S-5	0.14	0.08	0.04
S-6	0.11	0.06	0.03
S-7	0.12	0.06	0.03
S-8	0.14	0.07	0.03
S-9	0.05	0.03	0.01
S-10	0.12	0.06	0.03
S-11	0.17	0.09	0.04
S-12	0.12	0.07	0.03
S-13	0.15	0.08	0.04
S-14	0.12	0.07	0.03
S-15	0.15	0.08	0.04
S-16	0.12	0.07	0.03
S-17	0.29	0.16	0.07
S-18	0.16	0.09	0.04
S-19	0.09	0.05	0.02
S-20	0.76	0.41	0.19
S-21	0.34	0.18	0.09
S-22	0.34	0.19	0.09
S-23	0.27	0.15	0.07
S-24	0.51	0.28	0.13
S-25	0.48	0.26	0.12
Totals	**9.93**	**5.39**	**2.51**

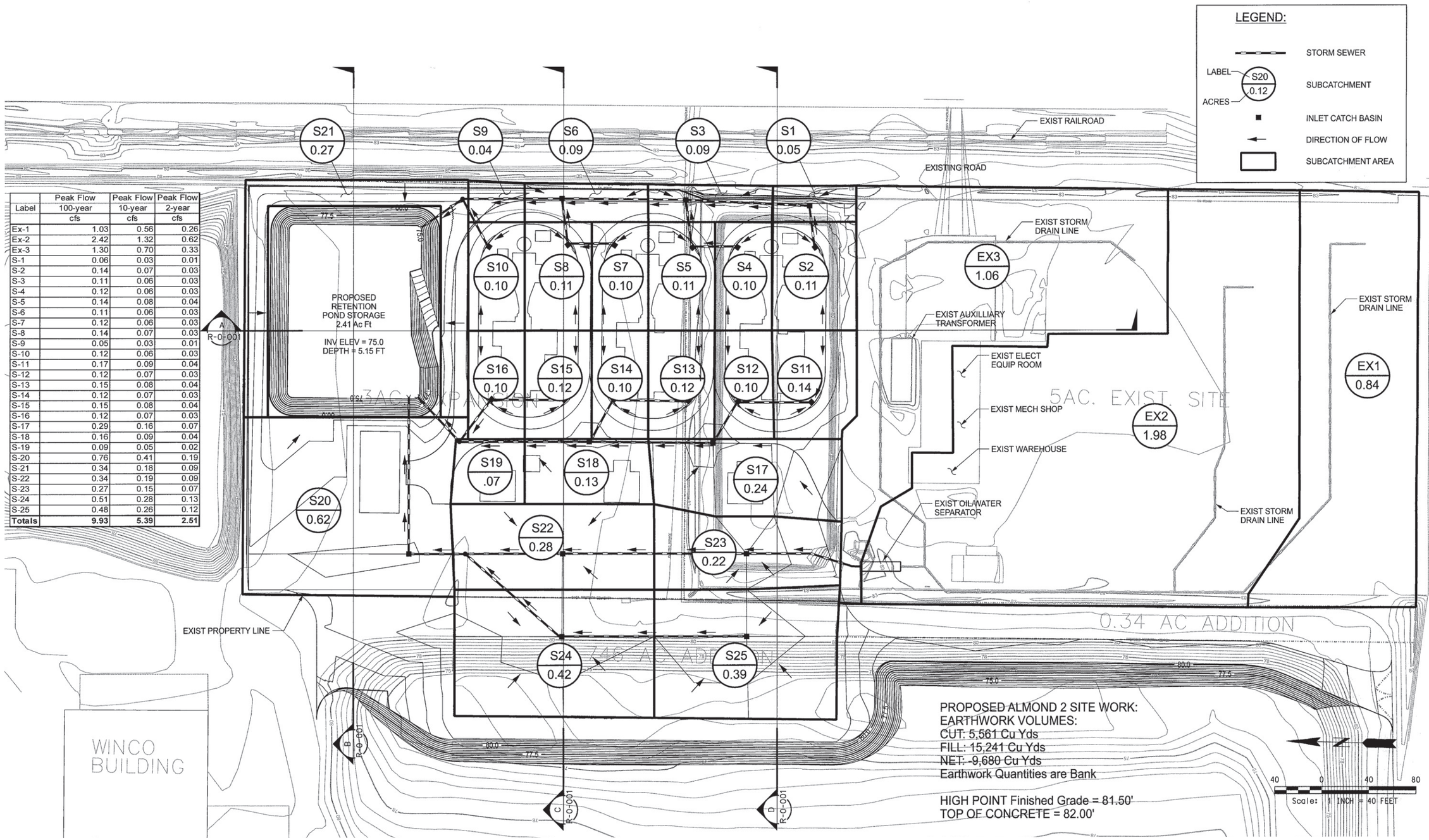


FIGURE 5.15-4
DRAINAGE PLAN
ALMOND 2 POWER PLANT
CERES, CALIFORNIA

Water used for dust control and soil compaction during construction will not result in discharge because only a minimal amount of water will be used for this purpose. Therefore, no impact to water quality would occur as a result of dust control and soil compaction during construction. During the construction period, sanitary waste will be collected in portable toilets supplied by a licensed contractor for collection and disposal at an appropriate receiving facility resulting in no onsite discharge. Equipment wash water will be collected and disposed of offsite.

5.15.2.1.3 Groundwater

Construction activities would require a relatively limited amount of water (an average of approximately 50 gallons per minute and approximately 200 gallons per minute per 1 hour for dust control and soil compaction, at peak use). Because the construction water supply will come from the onsite fire system at the Almond Power Plant or the TID irrigation canal to the south, no impacts to groundwater resources would occur.

5.15.2.1.4 Flooding Potential; Inundation

The A2PP project site is not located in the 100-year flood plain (Zone A) as defined by FEMA. Therefore, the potential for a 100-year flood event to impact the site is low and the project site is not located in a special flood hazard zone as designated by the City of Ceres. Flood risk as a result of construction of the A2PP project is less than significant. Furthermore, the A2PP project is not near the Pacific Ocean or on steep slopes, and there is no potential for inundation from seiches, tsunamis, or mudflows.

5.15.2.2 Operational Impacts

5.15.2.2.1 Drainage

The A2PP site is a basin-like area that has been backfilled will commercial fill and compacted to 95 percent. Development of the project will result in an increase of impervious surfaces and once developed, resulting in approximately 4.6 acres of impervious surfaces. The existing Almond Power Plant stormwater system incorporates a series of inlets and drainage pipes that convey runoff to an onsite retention pond. This existing stormwater system would be expanded to accommodate the A2PP. Areas of potential oil contamination will be sited inside containments that prevent the potential contaminates from traveling to the stormwater system. The increase in the amount of impervious surface is not expected to significantly change the amount or timing of runoff from the A2PP project site. Because stormwater would be collected and discharged to the onsite retention pond, the A2PP project would not result in substantial erosion, siltation, or flooding on- or offsite. Therefore, operational impacts to drainage patterns are less than significant.

5.15.2.2.2 Water Quality; Waste Discharge Requirements

Operation of the A2PP project will not result in any direct discharge offsite to receiving surface water. Therefore, operational impacts to surface water are less than significant. Process wastewater from the A2PP will be discharged directly to the percolation ponds at the Ceres WWTP using an existing discharge line between the Almond Power Plant and the Ceres WWTP. The City of Ceres and TID have a Water Services Agreement that permits the discharge of process wastewater from the A2PP to the percolation plants at the WWTP (Appendix 2A). Wastewater discharge from the A2PP will meet all requirements set forth in the Water Service Agreement. The Ceres WWTP operates under Waste Discharge Requirements (WDRs) set by the Central Valley RWQCB, which allow the WWTP to

discharge to the percolation ponds. Therefore, impacts to groundwater quality are less than significant. The agreement allows process wastewater be discharged directly to the percolation ponds at a maximum rate of 450,000 gallons per day. As shown in Table 5.15-7, the A2PP would discharge up to a maximum of approximately 174,240 gallons per day of process wastewater through the wastewater line to the percolation ponds at the Ceres WWTP, assuming a 100 percent capacity factor (8,760 hours per year). The quantity of wastewater discharge to the percolation ponds permitted under the Water Services Agreement with the City of Ceres, and therefore impacts as a result of waste discharge would be less than significant.

5.15.2.2.3 Groundwater

Groundwater in the vicinity of the A2PP is used for agriculture, industrial processes, and municipal supply. The A2PP will use a minimal amount of groundwater from an existing well at the Almond Power Plant for eye-wash stations and safety showers. The well development pump test report shows that at the time of installation of the well the standing water level was 12 feet and drawdown at the projected 800 gallons per minute was between 33 and 42 feet (Calwater Drilling Company, 2000). The well depth is estimated at approximately 140 to 160 feet. Well depths in the subbasin range from 50 to 350 feet (DWR, 2006).

The onsite well will draw from the Turlock Subbasin within the San Joaquin Valley Groundwater Basin. Well yields in the fresh water-bearing formation underlying the subbasin range from approximately 200 to 4,500 gallons per minute, with an average yield of 1,000 to 2,000 gallons per minute (DWR, 2006). The onsite well will pump at a rate of approximately 800 gallons per minute of service water as necessary for the A2PP. The overall volume of service water to be used by the A2PP will be consumptively used and no groundwater return flows are expected.

Given the low production rate of the onsite well relative to what the aquifer is capable of producing, the effect on local groundwater levels is expected to be negligible. A three-well monitoring network exists at the Ceres WWTP, which allows actual water level and water quality effects to be observed, if they are measurable. Quarterly testing for specific conductivity, pH, nitrate, chloride, and groundwater elevation is conducted by the Ceres WWTP. Operation of this well is not expected to have any measurable effect on production wells or surface water bodies within 0.5 mile of the existing well or contribute to the migration of groundwater contaminants.

Groundwater is available within the Turlock Subbasin to supply the very small amount of service water required for the intermittent use of safety showers and eye-wash stations at the A2PP. Because the A2PP project would not substantially deplete groundwater supplies such that there would be a substantial lowering of the local groundwater table, impacts to groundwater are less than significant.

Groundwater recharge in the vicinity of the A2PP occurs primarily from the Ceres WWTP. Once developed, the project would result in approximately 4.6 acres of impervious surfaces, which will not interfere substantially with groundwater recharge, and therefore impacts are less than significant. No changes in the existing physical or chemical conditions of groundwater resources are expected as a result of the use of groundwater at the A2PP project.

5.15.2.2.4 Flooding Potential; Inundation

The A2PP project site is not located in the 100-year flood plain (Zone A) as defined by FEMA. Therefore, the potential for a 100-year flood event to impact the site is low and the project site is not located in a special flood hazard zone as designated by the City of Ceres. Flood risk as a result of the A2PP project is less than significant. Furthermore, the A2PP project is not near the Pacific Ocean or on steep slopes, and there is no potential for inundation from seiches, tsunamis, or mudflows.

5.15.3 Cumulative Effects

A cumulative impact refers to a proposed project's incremental effect together with other closely related past, present, and reasonably foreseeable future projects whose impacts may compound or increase the incremental effect of the proposed project (Public Resources Code § 21083; California Code of Regulations, Title 14, Sections 15064(h), 15065(c), 15130, and 15355).

The A2PP will use groundwater for safety showers and eye-wash stations. This minimal and intermittent use of groundwater would not result in a cumulative impact when combined with other users of groundwater in the vicinity. Other uses include the Almond Power Plant, agriculture, and municipal (City of Ceres). Because the A2PP project, even in combination with other groundwater water uses in the area, would not substantially deplete groundwater supplies such that there would be a substantial lowering of the local groundwater table, cumulative impacts to groundwater are less than significant.

5.15.4 Mitigation Measures

This section presents mitigation measures proposed to reduce impacts to water resources to a less-than-significant level during construction. During operations, no mitigation measures are proposed.

5.15.4.1 Construction

The mitigation measures proposed are prescribed by stormwater and erosion control management programs mandated under the National Pollutant Discharge Elimination System (NPDES) permitting system. These programs have been in place for a number of years and the prescribed measures have proven effective. Under the General NPDES Permits for Construction, for example, various specific measures are prescribed, and a program of monitoring is required.

- In accordance with the construction SWPPP, implement BMPs designed to minimize soil erosion and sediment transport during construction of the plant site. Design appropriate erosion and sediment controls for slopes, catch basins, culverts, stream channels, and other areas prone to erosion.
- In accordance with the construction SWPPP, perform refueling and maintenance of mobile construction equipment only in designated lined and/or bermed areas away from stream channels. Prepare and implement spill contingency plans in areas where they are appropriate.

5.15.5 Laws, Ordinances, Regulations, and Standards

Federal, state, and local LORS applicable to water resources and anticipated compliance are discussed in this section and summarized in Table 5.15-9.

TABLE 5.15-9
Laws, Ordinances, Regulations, and Standards for Water Resources

LORS	Requirements/ Applicability	Administering Agency	AFC Section Explaining Conformance
Federal			
Clean Water Act/Water Pollution Control Act. P.L. 92-500, 1972; amended by Water Quality Act of 1987, P.L. 100-4 (33 USC 466 et seq.); NPDES (CWA, Section 402)	Prohibits discharge of pollutants to receiving waters unless the discharge is in compliance with an NPDES permit. Applies to all point-source discharges, including stormwater runoff from construction (including demolition).	See below under State and Local	See below under State and Local
State			
Federal Clean Water Act (implemented by State of California)	Implements and enforces the federal NPDES permit program.	Central Valley RWQCB 11020 Sun Center Drive #200 Rancho Cordova, CA 95670-6114 (916) 464-3291	Sections 5.15.2.1, 5.15.2.2
Porter-Cologne Water Quality Control Act	Controls discharge of wastewater to the surface and ground waters of California.	Central Valley RWQCB 11020 Sun Center Drive #200 Rancho Cordova, CA 95670-6114 (916) 464-3291	Sections 5.15.2.1, 5.15.2.2
California Water Code Sections 13550, 13551, 461, and 13751	Encourages the conservation of potable water resources and the maximum reuse of wastewater to conserve potable water, particularly in areas where recycled water of adequate quality is available at a reasonable cost.	Central Valley RWQCB 11020 Sun Center Drive #200 Rancho Cordova, CA 95670-6114 (916) 464-3291 Department of Water Resources 1416 9th Street Sacramento, CA 95814 (916) 653-5791	Section 5.15.1.4.1
Local			
Ceres Municipal Code	Provides requirements for development of land within the City limits and requirements for obtaining permits for water wells.	City of Ceres Community Development Department 2220 Magnolia Street Ceres, CA 95307 (209) 538-5774	Section 5.15.5.3.1
Ceres General Plan	Policies for water supply and delivery; wastewater collection, treatment, and disposal; stormwater drainage; and water resources.	City of Ceres Community Development Department 2220 Magnolia Street Ceres, CA 95307 (209) 538-5774	Sections 5.15.1.4, 5.15.2.1, 5.15.2.2

5.15.5.1 Federal LORS

In California, discharges of wastewater and stormwater into surface waters are regulated by the SWRCB and RWQCBs under the Clean Water Act and the Porter-Cologne Water Quality Control Act. Relevant NPDES permits for stormwater quality management are discussed below under state and local LORS.

5.15.5.2 State LORS

5.15.5.2.1 California Water Code Sections 13550, 13551, 461, and 13751

California Water Code Sections 13550, 13551, and 461 encourage the conservation of potable water resources and the maximum reuse of wastewater to conserve potable water, particularly in areas where recycled water of adequate quantity and quality is available at a reasonable cost.

5.15.5.2.2 Phase II NPDES Stormwater Permit Program

The General Permit for the Discharge of Storm Water from Small Municipal Separate Storm Sewer Systems WQO No. 2003-0005-DWQ (Small MS4 General Permit) requires that dischargers develop and implement a Stormwater Management Program that describes the BMPs, measurable goals, and time schedules of implementation. In accordance with the Clean Water Act, the City of Ceres has prepared a joint Stormwater Management Program (2003) with the cities of Oakdale, Patterson, and Riverbank. The Stormwater Management Program was prepared pursuant to the U.S. Environmental Protection Agency's Phase II Stormwater Permit Program for small municipal separate storm sewer systems (MS4s). The rule assumes the use of narrative, rather than numeric, effluent limitations requiring implementation of BMPs. The joint Stormwater Management Program (2003) requires the preparation and implementation of a SWPPP prior to issuance of a building or grading permit and post-construction BMPs as part of plan review and the building permit process. The A2PP will comply with these requirements.

5.15.5.2.3 Industrial Stormwater NPDES Permit

The SWRCB implements regulations under the federal Clean Water Act requiring that point source discharges of stormwater (which is a flow of rainfall runoff in some kind of discrete conveyance such as a pipe, ditch, channel, or swale) associated with industrial activity that discharges either directly to surface waters or indirectly through municipal separate storm sewers must be regulated by an NPDES permit (SWRCB, 1997). The SWRCB has issued WDRs for discharges of stormwater associated with industrial activities (SWRCB Order 97-03-DWQ), excluding construction activities. Facilities that do not discharge stormwater to surface waters or separate storm sewers are not required to obtain an Industrial Stormwater NPDES permit. The A2PP project would discharge stormwater directly to an onsite retention pond and is therefore not required to be covered under this permit.[4]

5.15.5.2.4 Construction Stormwater NPDES Permit

The federal Clean Water Act effectively prohibits discharges of stormwater from construction sites unless the discharge is in compliance with an NPDES permit. The SWRCB is the permitting authority in California and has adopted a statewide General Permit for Stormwater Discharges Associated with Construction Activity (SWRCB Water Quality

[4] Stormwater that is captured and treated and/or disposed of with the facility's NPDES permitted process wastewater and stormwater that is disposed of to evaporation ponds, percolation ponds, or combined sewer systems are not required to obtain a stormwater permit (SWRCB, 1997).

Order No. 99-08-DWQ; SWRCB, 1997) that applies to projects resulting in one or more acres of soil disturbance. The proposed project would result in disturbance of more than one acre of soil. Therefore, the project will require the preparation of a construction SWPPP that would specify site management activities to be implemented during site development. These management activities will include construction stormwater BMPs, dewatering runoff controls, and construction equipment decontamination. The Central Valley RWQCB requires an NOI to be filed prior to any stormwater discharge from construction activities, and that the SWPPP be implemented and maintained onsite. A Construction Drainage Erosion and Sediment Control Plan/SWPPP will be completed prior to the beginning of construction activities.

5.15.5.3 Local LORS

5.15.5.3.1 City of Ceres

Ceres Municipal Code, Title 13 (Water and Sewer), Chapter 13.05 (Well Standards) requires an application be submitted to the Ceres Public Works Department prior to placement of a well. A well or pump may be installed by property owners as long as work is accomplished in accordance with Chapter 13.05 of the Ceres Municipal Code. The A2PP will use groundwater pumped from the existing, currently permitted water well at the Almond Power Plant facility, and therefore it will not require a permit from the City of Ceres.

Sections of the Ceres General Plan that may be relevant to the A2PP project include Chapter 4 (Public Services and Utilities) and Chapter 6 (Agricultural and Natural Resources). Chapter 4 outlines policies for water supply and delivery; wastewater collection, treatment, and disposal; and stormwater drainage. Policy 4.D.3 that states the City shall review development proposals of the Ceres WWTP to ensure their safety and compatibility. Policy 4.D.4 states the City will investigate options for the reuse of treated wastewater. Stormwater drainage policies include requirements to collect and dispose of stormwater in a manner that minimizes inconvenience to the public, minimizes potential water-related damages, and enhances the environment. Chapter 6 outlines policies for water resources to protect and enhance the natural qualities of the Ceres area's rivers, creeks, and groundwater. The A2PP will comply with these requirements.

5.15.6 Agency Contacts, Permits Required, and Permit Schedule

Agency contacts for required permits are listed in Table 5.15-10.

TABLE 5.15-10
Permits and Permitting Agencies for Water Resources

Permit	Schedule	Agency
National Pollution Discharge Elimination System General Permit for Construction	Submit NOI to use the permit at least 30 days in advance of use, prepare SWPPP for construction.	Central Valley RWQCB 11020 Sun Center Drive #200 Rancho Cordova, CA 95670-6114 (916) 464-3291

5.15.7 References

California Department of Water Resources (DWR). 2006. San Joaquin Valley Groundwater Basin. Bulletin No. 118.

Calwater Drilling Company, Inc. 2000. Well Completion Report.

Central Valley Regional Water Quality Control Board (RWQCB). 1993. Order No. 93-237 Waste Discharge Requirements for City of Ceres Wastewater Treatment Plant Stanislaus County.

Central Valley Regional Water Quality Control Board (RWQCB). 1998. Fourth Edition of the Water Quality Control Plan (Basin Plan) for the Sacramento River and San Joaquin River Basins. http://www.waterboards.ca.gov/centralvalley/water_issues/basin_plans/sacsjr.pdf. Accessed January 20, 2009.

Central Valley Regional Water Quality Control Board (RWQCB). 2006. 2006 Clean Water Act Section 303(d) List of Water Quality Limited Segments. http://www.waterboards.ca.gov/water_issues/programs/tmdl/303d_lists2006.shtml. Accessed January 21, 2009.

CH2M HILL. 2009a. Preliminary Water Balance. Revision A. Dated January 20, 2009.

CH2M HILL. 2009b. Preliminary Drainage Calculations for Peak Runoff and Retention Pond Sizing. Dated January 23, 2009.

CH2M HILL. 2009c Water Chemistry Analyses & Specifications Turlock Irrigation District (TID) Almond 2 Plant.

City of Ceres. 1997. Ceres General Plan Policy Document.

City of Ceres. No Date (n.d.). Water Service Division. http://www.ci.ceres.ca.us/3111.html. Accessed February 2, 2009.

City of Ceres, Oakdale, Patterson, and Riverbank. 2003. Storm Water Management Program. Submitted to the Central Valley Regional Water Quality Control Board, March 10, 2003.

Federal Emergency Management Agency (FEMA). 2008. Flood Insurance Rate Map: Stanislaus, California, and Incorporated Areas (panel number 06099C0555E).

GeoAnalytical Laboratories, Inc. 2008a. Certificate of Analysis: Onsite Well at the Almond Power Plant (Report Number U8L1517). Date Sampled: December 15, 2008

GeoAnalytical Laboratories, Inc. 2008b. Certificate of Analysis: Ceres Extraction Well – Almond Power Plant (Report Number U8L1517). Date Sampled: December 15, 2008

LexisNexis Municipal Codes. 2008. Ceres Municipal Code [online]. Available at: http://municipalcodes.lexisnexis.com/codes/ceres. Accessed January 30, 2009.

Tucker, Greg. Turlock Irrigation District, Electrical Engineer Department Manager. 2009. Personal communication (email) with Catherine Lambert/CH2M HILL regarding TID wells near the project site.

State Water Resources Control Board (SWRCB). 1997. Water Quality Order No. 97-03-DWQ National Pollutant Discharge Elimination System (NPDES) General Permit No. CAS000001

(General Permit) Waste Discharge Requirements for Discharges of Storm Water Associated with Industrial Activities Excluding Construction Activities.

SWRCB. n.d. (no date). Total Maximum Daily Load Program Background. http://www.waterboards.ca.gov/water_issues/programs/tmdl/background.shtml. Accessed July 14, 2008.

Western Regional Climate Center (WRCC). 2009. Modesto, California (045032). Online Information: http://www.wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca5738. Accessed: January 12, 2009.