C.15 Water Resources

This section analyzes whether the Revised Project and PG&E transmission system upgrades result in any new significant impacts to water resources that were not previously identified and disclosed in the 2010 Final EIR, or whether there has been a substantial increase in the severity of any previously identified impacts to water resources. As part of this analysis, the section considers changes to the revised construction and operational use of water, described in Sections B.4.6 and B.5.4 (Project Description). The section also recommends changes to two mitigation measures.

New studies completed in 2014 include updated reports prepared by Applicant consultants Geologica, evaluating the revised proposal for water use. In July of 2014, Geologica prepared the "*Panoche Valley Solar Project, Groundwater Extraction Impact Evaluation*," and in December 2014 Geologica prepared the **"***Panoche Valley Solar Project, Groundwater Extraction Impact Evaluation, Revised*."

C.15.1 Environmental Setting

The following section describes changes to the environmental setting that have occurred since 2010. Section C.15.1.1 describes any changes to the environmental setting that was presented in the 2010 Final EIR. Section C.15.1.2 describes the environmental setting for the area surrounding the PG&E Upgrades.

C.15.1.1 Revised Solar Project

The hydrology and drainage patterns of the project area have not changed, and no new waters have been listed as impaired. No new groundwater demands have been introduced, and the basin is not in an overdraft condition. Grazing remains the primary land use in the area. However, the current drought in California has reduced recharge to the Panoche Valley Groundwater Basin and caused the water level in several wells to drop over the last several years.

The July 2014 Geologica report, ***Groundwater Extraction Impact Evaluation,*** updated the data used for analysis of impacts to water resources in the 2010 Final EIR. The analysis evaluates the ability of the aquifer and existing on-site wells to support water needs of the Revised Project. It also evaluates the potential impacts of groundwater extraction for the Revised Project, and presents recommendations for additional groundwater analysis and monitoring. On May 16, 2014, Geologica staff visited the project site and measured the depth to water in 17 wells on the project site. Geologica also reviewed a Department of Water Resources (DWR) water level database and found that water level elevations in a number of wells in Panoche Valley have declined over the last 5 years by approximately 5 to 15 feet. However, water level elevations in other wells within the Panoche Valley have risen during the same period. The Geologica water level measurements and the DWR data were used to create a groundwater elevation contour map for the spring of 2014. The map shows that groundwater generally flows southeasterly toward the narrows at the east end of Panoche Valley. Generally lower groundwater gradients were observed in 2014 compared to 2010, reflecting reduced groundwater recharge in the last few years. (Geologica, 2014a)

The December of 2014 Geologica report, ***Groundwater Extraction Impact Evaluation, Revised*****,** included updates and revisions to the water use data that was analyzed in the July of 2014 report. The revised report did not include any additional on-site well evaluation or revisions to the groundwater elevation contour map for the spring of 2014. The only changes in the revised report were updates to the analysis as a result of changes in the estimated amount of water use for project construction and the duration of

the construction period (18 months vs. a 24-month maximum that was included in the July of 2014 report). The revised water usage and potential impacts to Panoche Valley groundwater wells is presented in Section C.15.3, below (Geologica, 2014b).

C.15.1.2 PG&E Upgrades

The PG&E Upgrades associated with the Revised Project include installation of approximately 17 miles of optical ground wire (OPGW) and ADSS primarily on existing transmission towers between the Panoche Valley Solar Project site and the existing Panoche Substation in Fresno County, as well as ~~installation~~ replacement of approximately ~~9~~ 12 ~~new~~ wood distribution poles within PG&E right-of-way (ROW) where the existing 230 kV line crossing existing 500 kV transmission lines. The telecommunications system upgrades also include construction of ~~up to three~~ 2 new microwave communication towers and upgrades to ~~an~~ 2 existing microwave towers. The PG&E Upgrades would include ~~eight~~ up to 12 new transmission structures that are required to tie the existing Moss Landing–Panoche 230 kV transmission line into the proposed PG&E switching station ~~yard~~, located within the Revised Project site boundaries. The new transmission structures would be installed by PG&E after site preparation is completed by the Applicant.

The environmental setting for these upgrades includes the area surrounding the Moss Landing–Panoche 230 kV transmission line between the project site and the Panoche Substation, the Call Mountains (west of the Panoche Valley), Panoche Mountain (east of the Panoche Valley), and the area surrounding the Helm Substation (approximately 13 miles southwest of the City of Fresno).

Groundwater resources would not be affected by the PG&E Upgrades and therefore only surface water is described in this section.

Transmission Line Upgrades. The upgraded portion of the Moss Landing–Panoche transmission line runs east to west, beginning at the Panoche Substation and ending adjacent to the project substation. The line first heads west-southwest, crossing flat to gently sloping agricultural land. As the line leaves the San Joaquin Valley floor, it continues west crossing between the Panoche and Tumey Hills roughly parallel to the Panoche Creek valley. Finally, the line turns slightly northwest, leaving the Panoche Hills and entering Panoche Valley, terminating at the project ~~substation~~ switching station.

The Transmission Line Survey Report provided by PVS (Transmission Line Natural Resources Assessment Report, October 2014) indicated that there are three small unnamed drainages located within the upgraded portion of the PG&E ROW. There are no drainages that meet federal criteria for U.S. Army Corps of Engineers (Corps) jurisdiction within the upgraded portion of the PG&E ROW. The three unnamed drainages within the PG&E ROW may be considered waters of the State; however, no work is proposed below the top of bank of the features or within the bed and bank of the drainages. The delineation of jurisdictional waters within the PG&E ROW is described in the Transmission Line Natural Resources Assessment Report, dated October 20, 2014. The delineation of jurisdictional waters is also described in Section C.6.1.2.6.

A total of 2.16 acres of PG&E related work areas fall within Zone A designated 100-year floodplains (PVS, 2014a and 2014b).

Microwave Towers or Equipment. Four microwave communication sites would be required for secondary communications: Panoche Valley, Call Mountain, Panoche Mountain, and Helm Substation.

A new microwave communication tower would be constructed within the fence line of the proposed Panoche Valley Solar Project Substation. For this new tower, the environmental setting for water resources remains the same as described in the 2010 Final EIR.

The Call Mountain site is in an area of uninhabited mixed forest and shrubland open space located west of the Panoche Valley. At this location, microwave equipment would be added to an existing microwave communication tower. The Call Mountain site (at approximately 3,900 feet of elevation) is located on a broad ridge near the summit of Call Mountain. No surface water resources are present at this site. The headwaters of an unnamed tributary to Tres Pinos Creek begin approximately 700 feet from the existing tower site.

Panoche Mountain (at approximately 2,100 feet of elevation), northeast of the project site, consists of uninhabited grassland and shrubland open space. At this location, microwave equipment would be added to an existing microwave communication tower. ~~Panoche Mountain currently has at least two existing microwave communication towers, and a new tower (up to 300 feet tall) is proposed within the developed site of one existing tower.~~ The site is located at the summit of Panoche Mountain and is surrounded by steeply sloped ridges and valleys. The headwaters of several unnamed streams begin in the valleys that descend from the summit of Panoche Mountain. The nearest headwaters are located approximately 500 feet from the proposed tower site.

PG&E's Helm Substation is surrounded by agricultural lands, 13 miles southwest of the City of Fresno. There is currently no microwave communication tower at the substation. A new tower would be constructed within the fence line of the substation, and would be approximately 100 feet tall. No surface water resources are present on or near the Helm Substation site.

C.15.2 Applicable Regulations, Plans, and Standards

No changes have occurred to the regulatory setting for water resources since 2010.

Jurisdictional waters are subject to the provisions of the Clean Water Act (1972) and the River and Harbors Act (1899). The EIS being prepared by the Corps will analyze the impacts of the Revised Project on the jurisdictional waters of the U.S.

C.15.3 Environmental Impacts and Mitigation Measures

This section addresses whether the changes to the Approved Project would result in any new significant water resources impacts or increase the severity or previously identified water resources impacts. Section C.15.3.1 restates the significance criteria used in 2010 to determine whether any project changes result in new or more severe significant impacts to the Revised Project or the PG&E transmission system upgrades. Section C.15.3.2 summarizes the impacts and mitigation measures presented in the 2010 Final EIR for ease of reference. Section C.15.3.3 presents the updated impact analysis for the Revised Project, and Section C.15.3.4 addresses two County proposed changes to the previously adopted mitigation measures. Section C.15.3.5 addresses the environmental impacts that would occur as a result of the PG&E transmission system upgrades, and Section C.15.3.6 describes cumulative impacts.

C.15.3.1 Significance Criteria

The following significance criteria for water resources were derived from the Environmental Checklist in CEQA Appendix G. These significance criteria have been amended or supplemented, as appropriate, to address the nature of solar photovoltaic facilities in general, and the full range of potential impacts related to the Revised Project in particular. An impact of the Revised Project or the PG&E Upgrades would be considered significant and would require mitigation if it would meet one of the following criteria.

- Violate any water quality standards or waste discharge requirements, create any substantial new sources of polluted runoff, or otherwise degrade surface water or groundwater quality.
- Substantially deplete groundwater supplies or interfere with groundwater recharge, such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted).
- Place within a watercourse or flood hazard area structures which would impede or redirect flood flows, or otherwise substantially alter the existing drainage pattern of an area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion, siltation, or flood-related damage on- or offsite.
- Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite.
- Result in or be subject to damage from inundation by mudflow.

Significance conclusions are presented regarding the significance of each identified water resources impact, using the impact significance classification system provided in Section C.1 (Introduction to Environmental Analysis).

C.15.3.2 Approved Project Impacts and Mitigation Measures

Table C.15-1 presents a summary of the impacts and mitigation measures applicable to the Approved Project.

Table C.15-1. Summary of Impacts and Mitigation: Water Resources

Impact No. and Text	Mitigation Required	CEQA Conclusion
Impact WR-1: Substantially deplete local groundwater supplies or interfere with groundwater recharge.	WR-1.1: Groundwater Monitoring and Reporting Plan. WR-1.2: Aquifer Testing and Well Interference Analysis.	Class II
Impact WR-2: Substantially alter the existing drainage pattern of the site in a manner that results in flooding on- or offsite.	None.	Class III
Impact WR-3: Construction activity and excavation could degrade water quality due to erosion and sedimentation.	None.	Class III
Impact WR-4: Creation of new impervious areas could cause increased runoff resulting in flooding or increased erosion downstream.	None.	Class III
Impact WR-5: Project features located in a floodplain or watercourse could result in flooding, flood diversions, or erosion.	None.	Class III
Impact WR-6: Construction or operation of the project could result in accidental releases of contaminants that could degrade water quality.	WR-6.1: Accidental spill control and environmental training. WR-6.2: No storage of fuels and hazardous materials near sensitive water resources. WR-6.3: Maintain vehicles and equipment.	Class II
Impact WR-7: Contribute to cumulatively considerable effects on water resources.	None.	Class III

C.15.3.3 Revised Solar Project Impacts

Six water resources impacts are addressed in this section; cumulative impacts are evaluated in Section C.15.3.6.

Impact WR-1: Substantially deplete local groundwater supplies or interfere with groundwater recharge (Class II)

The Applicant's consultant, Geologica, analyzed whether the increased water pumping during the shorter, 18-month, construction period would substantially deplete local groundwater supplies or interfere with recharge (Geologica, 2014b). The report concluded that three of the on-site wells are likely capable of supplying sufficient water to meet project needs either individually or in combination. The assessment of available water supply is based on the thickness of the available water column for each of the wells that were evaluated and the predicted amount of drawdown that would be caused by groundwater extraction for construction and operation.

Geologica assessed the thickness of the available water column for three of the wells on-site. The locations of wells are shown on Figure C.15-1, included at the end of this section.

- Well #4 has approximately 375 feet of available water column.
- Well #20 has approximately 331 feet of available water column.
- Well #19 has approximately 96 feet of available water column.

Geologica predicted that the maximum amount of drawdown at a water supply well for the Revised Project would be 5 feet. Based on that prediction, Geological determined that the three wells listed here would have sufficient water column available to supply the water needs of the Revised Project.

Construction Water Demand. As stated in Section B.5.4, the peak daily water use during construction would be 1.72 acre-feet (approximately 581,250 gallons per day [gpd]), and peak annual use would be approximately 314.87 acre-feet (102.6 million gallons per year). The total construction usage is stated at 385.15 acre-feet (or 125,500,500 gallons). This amount of peak groundwater use during Revised Project construction activity is 1.585 acre-feet per year (afy) greater per day and 276.3 afy greater per year than what was analyzed in the 2010 Final EIR for the Approved Project. Note that the peak daily water usage of approximately 581,250 gpd is the maximum water that will be used, not the maximum amount extracted from the onsite wells per day. The maximum volume to be pumped from onsite wells will remain at approximately 450,000 gpd as described in the Geologica report dated December 15, 2014. In order to accommodate water usage during construction, the Project proposes to construct three temporary construction water ponds with a combined capacity of approximately 4,433,000 gallons, along with three temporary 20,000-gallon water tanks near existing or new wells. This provides for up to 4,493,000 gallons of stored water capacity that is available for use during construction. This water storage capacity will allow groundwater extraction to continue at a relatively constant level throughout the construction period, while maintaining the ability for construction to meet peak daily demands.

Construction Excavation and Grading. Geologica developed estimates of potential groundwater usage for the Revised Project. According to Geologica, the total amount of water needed for dust control during mass excavation and grading operations would total approximately 18.6 million gallons. The mass excavation and grading operations would occur over a period of 1 to 6 months, depending on the allowable rate of daily soil disturbance. Peak production of groundwater would not exceed a rate of approximately 450,000 gpd.

Construction Dust Control. The Geologica report states that maximum estimated water required for dust control during PV system construction would total approximately 481,250 gpd as a "worst case rate." Geologica evaluated a potential range of water usage for dust control during PV system construction and found that a total of approximately 106.8 million gallons of water would be required, with a continuous extraction rate of approximately 230,137 gpd during the 18-month construction period. This rate assumes that one 2,500 gallon water truck provides dust control for 7 to 8 acres, and that the water would be applied to that acreage three times per day, for a total of 875 gallons per acre. This rate also assumes that under average working conditions, a portion of the disturbed area will be crusted over and would not require constant watering for dust suppression.

Operational Water Use. The applicant estimated operational groundwater needs of approximately 812,000 gallons per year for panel washing and approximately 112,500 gallons per year for employee use. The operational water use is based on an assumed 15 full-time employees that would operate the plant, with up to 50 employees needed at certain times (e.g., panel washing). These operational totals would equate to a fixed continuous groundwater extraction rate of approximately 2,533 gpd or approximately 1.75 gallons per minute after the completion of project construction.

Effects of Groundwater Use – Construction. The Revised Project would use a substantially greater amount of groundwater during construction than would the Approved Project. This water use would be short-term (during the 18-month construction period) and would temporarily lower water levels for portions of the Panoche Valley Groundwater Basin. The greatest drawdown would occur at the extraction wells and would decrease with increasing distance from the pumped wells.

Pumping simulations performed by Geologica for Well #4 found that water level drawdown would be greatest at the end of the construction period, just before groundwater extraction rates would be reduced for operational needs. The simulations predicted that maximum drawdown (12 months after the start of pumping) in two wells near the southern boundary of the project site would be between 1.2 and 2.7 feet. Drawdown for a well that serves an organic farm southeast of the property was predicted to result in a maximum drawdown of approximately 0.45 to 1.5 feet. The maximum simulated drawdown for the pumped well (Well #4) was predicted to be 3-5 feet.

Due to uncertainties in aquifer parameters and unknown future rainfall recharge rates; the amount of time required for complete recovery of water levels after construction is uncertain but could take several years. The continuation of current drought conditions would extend the recovery time for Panoche Valley Groundwater Basin levels after drawdown caused by construction water use for the Revised Project. Careful and regular monitoring of groundwater levels in both on-site and off-site wells, as required in Mitigation Measure WR-1.1, would be required in order to prevent the creation of overdraft conditions in the Panoche Valley Groundwater Basin.

Effects of Groundwater Use – Operation. Water use for operation of the Revised Project would be reduced compared to operational water demand for the Approved Project.

Conclusions. Based on the current water levels in the groundwater basin, Geologica concluded that the predicted drawdown levels during the construction phase and long-term operation are unlikely to significantly impair existing water supply well use in the valley. They calculated a maximum drawdown for off-site wells of 2.7 feet (along the southern boundary of the site). The available water column for these wells (Well #14 and Well #16) is unknown. However, the minimum available water column reported by Geologica (for Wells #17 and #18) was approximately 30 feet. It is therefore assumed that a drawdown of 2.7 feet would not preclude the use of any off-site well for water supply. Moreover, groundwater

monitoring and well interference analysis required in mitigation measures would ensure that the use of off-site wells for water supply would not be adversely affected.

Geologica's report concludes that predicted drawdown levels during the construction phase and long-term operation are unlikely to significantly impair existing water supply well use in the valley. However, due to the lack of detailed information about the groundwater basin characteristics, the potential for the Revised Project's water use to negatively affect groundwater remains significant. There is a potential for project water use to lower the water levels in off-site wells (those outside the solar project boundaries). In order to ensure that this impact does not become severe, implementation of two comprehensive mitigation measures is required. Mitigation Measure WR-1.1 establishes a Groundwater Monitoring and Reporting Plan, and Mitigation Measure WR-1.2 requires Aquifer Testing and Well Interference Analysis. These mitigation measures have been modified based on the more aggressive groundwater withdrawal included in the Revised Project. Implementation of these measures would ensure that groundwater extraction for the Revised Project would be properly monitored and that drawdown at nearby private wells would not exceed five feet. As a result of implementing these two measures, the impact of the Revised Project's water use would be less than significant (Class II).

Impact WR-2: Substantially alter the existing drainage pattern of the site in a manner that results in flooding on- or offsite (Class III)

The total graded area for the project would increase from 200 acres (for the Approved Project) to approximately 392 acres (with the Revised Project). Because the majority of the project site occupies relatively flat terrain, it is not anticipated that the grading activities for the Revised Project would result in changes to drainage patterns, creating flooding on- or off-site.

In general, along the eastern perimeter road, the majority of surface flows from offsite upland areas will be intercepted by a channel (brow ditch) located on the upland side of the road. The flows are then conveyed to either a low water crossing, culvert, and/or discharged at the end of the channel. At the downstream end of the culvert or end of the channel, the surface grade will be transitioned and flatted from a channel shape to a level spread, so the flows are converted from concentrated flows to sheet flows. Similarly, the low water crossings will act as the spreader, and the proceeding surface grades will continue to spread and level out, promoting the transition to sheet flows. Rip rap or other energy dissipation BMPs will be used in the channel and surface grade transitions as needed to ensure the flows are converted from concentrated flows to sheet flows consistent with pre-development hydrologic conditions. In areas where no channel is adjacent to the perimeter road, upland offsite flows will sheet flow across the road in the same manner as pre-development.

Once in the main interior of the site, the storm water runoff will sheet flow to its respective main water course; either to Las Aguilas Creek, the unnamed north-south tributary into Las Aguilas Creek, one of four detention ponds, or Panoche Creek. The storm water detention ponds are located within the western half of the project footprint. These ponds are designed to intercept the sheet flows from respective sub-basin watershed and to attenuate the additional flows from the Project's added impervious surfaces. Attenuation from the ponds will be achieved by volume storage and discharge via a riser structure and outlet pipe. Full drawdown and discharge from each detention pond is to occur within 24 hours. The outlet pipe discharge will have outlet protection rip rap aprons that are designed in accordance with state and local standards. The rip rap aprons are designed to dissipate the energy and spread the flows.

Downstream discharge of flows from the western half of the Project Footprint will enter into its respective culvert or bridge along Little Panoche Road. Discharge from the eastern half of the Project

Footprint will sheet flow into the Las Aguilas Creek. Flows from both sides of the site will ultimately be conveyed to the confluence of Las Aguilas Creek and Panoche Creek. The culverts and bridges along Little Panoche Road as well as the confluence of the two major creeks will be designed so that post-development runoff flow rates do not exceed pre-development runoff flow rates.

Four detention basins will be constructed as a storm water control measures pursuant to County requirements and the National Pollutant Discharge Elimination System, Construction General Permit. These basins are designed to hold sheet flow from storm water for up to 24 hours to help decrease scour/erosion within the Project Footprint.

All basins were designed using HEC-HMS (Version 4.0) hydrologic modeling software developed by US Army Corps of Engineers, which modeled the overall watershed and proposed detention ponds. Storm frequencies analyzed in this report are the 2-, 10-, 25- and 100-yr 24-hour storm events. Three proposed detention ponds have been located on the west side of the site to meet peak rate attenuations. These three basins do not directly impact CDFW jurisdictional areas, as the detention basins do not divert flows. Another detention basin (the fourth detention basin) is proposed for the Las Aguilas Switching Station, which will be separately owned and operated by PG&E.

In accordance to San Benito County Flood Damage Prevention Ordinance Section 23.31.042(E):

- All detention ponds will have outlet facilities providing terminal drainage capable of emptying a full basin within 24 hours;
- Minimum one foot of freeboard is provided from the top of the pond to the 100-year ponding elevation;
- Maximum 5:1 side slopes, hence no fencing will be required;
- All detention ponds will exceed minimum required detention volume for the 100-year post-development runoff minus the 10-year pre-development runoff from impervious area.

The total area of permanent disturbance would decrease from 2,203 acres to 1,888 acres. For activities involving alteration of a jurisdictional drainage channel or construction within a floodplain (road crossings or other infrastructure), compliance with U.S. Army Corps of Engineers (Corps) regulations and implementation of Best Management Practices described in APM WR-3 would ensure that potential impacts remain less than significant (Class III).

Impact WR-3: Construction activity and excavation could degrade water quality due to erosion and sedimentation (Class III)

The total graded area for the Project would increase from approximately 200 acres to approximately 392 acres. This increased earth movement could potentially degrade water quality through erosion and sedimentation. Compliance with existing regulations, including implementation of a Storm Water Pollution Prevention Plan (SWPPP), and implementation of BMPs described in APMs WR-1 through WR-3 would ensure that potential impacts remain less than significant (Class III).

Impact WR-4: Creation of new impervious areas could cause increased runoff resulting in flooding or increased erosion downstream (Class III)

Although the total graded area for the Project would increase from approximately 200 acres to approximately 392 acres, the total area of permanent disturbance has decreased, and the amount of impervious surface associated with the substation, switchyard, and O&M building remains unchanged. Compli-

ance with existing regulations, including implementation of a SWPPP, would ensure that runoff is properly controlled. Therefore, this impact would remain less than significant (Class III).

Impact WR-5: Project features located in a floodplain or watercourse could result in flooding, flood diversions, or erosion (Class III)

Under the Revised Project, any permanent features that would be placed in a watercourse or FEMA-designated 100-year floodplain would be subject to permitting and development standards of the Corps, the Regional Water Quality Control Board, and the California Department of Fish and Wildlife. Bridges, culverts, or low water crossings would be installed at locations where new roads cross stream channels, including at several locations along the required new perimeter access road.

Portions of the perimeter road cross on-site federal jurisdictional washes. These crossings would be used only for emergency access or for limited maintenance access to cables within the bridge crossing at Las Aguilas. There are five planned crossings of federally jurisdictional washes. Crossings would be designed based on the United States Army Corps of Engineers 404(b)(1) analysis and the *Least Environmentally Damaging Practicable Alternative*. The two crossings on the western side of the project would utilize single-span bridges, whereas the three affected crossings on the eastern side of the project would involve installation of a pipe arch culvert, low water crossings and filling/grading of washes. The location of these crossings is shown on Figure B-3 (Project Roads). Federal crossings will be permitted through obtaining a Corps Section 404(b)(1) permit and 401 Certification by the Regional Water Quality Control Board. The federal crossings, as well as the crossings of washes, creeks, and drainages that are potentially waters of the state and regulated by the California Department Fish and Wildlife (CDFW), will be permitted through the submittal of a Lake and Streambed Alteration Agreement (LSAA) Notification. The crossings would be designed and engineered in conformance with Corps regulations and would not result in flooding or diversion of floodwaters. Erosion that would be caused by construction of these stream crossings would be controlled through implementation of a SWPPP. This impact would remain less than significant (Class III).

Impact WR-6: Construction or operation of the project could result in accidental releases of contaminants that could degrade water quality (Class II)

The same equipment that was described in the 2010 Final EIR would be used to construct the Revised Project. The Revised Project would compress the construction schedule from five years to approximately 18 months. Construction activities would be shorter but more intense. The risk of a leak or accidental spill of hazardous materials would be the same as described in the 2010 Final EIR, and the same APMs and mitigation measures would apply. Implementation of Mitigation Measures WR-6.1 (Accidental spill control and environmental training), WR-6.2 (No storage of fuels and hazardous materials near sensitive water resources), and WR-6.3 (Maintain vehicles and equipment) would ensure that impacts are less than significant (Class II).

C.15.3.4 Changes to Adopted Mitigation Measures

This section addresses changes to mitigation measures and APMs adopted in 2010.

Mitigation Measures

The mitigation measures adopted in 2010 that are not modified here are presented in Appendix 3, Section 3.1. The applicant has not proposed changes to the mitigation measures adopted from the 2010 Final EIR, but changes are proposed by the County to Mitigation Measures WR-1.1 and WR-1.2 to ensure

adequate protection for well owners due to the increased rate of water withdrawal in the 18-month construction timeframe. The revised measures are shown below.

MM WR-1.1 **Groundwater Monitoring and Reporting Plan.** The Applicant shall prepare and submit a Groundwater Monitoring and Reporting Plan to San Benito County for review and approval 60 days prior to commencing project-related pumping activities. The Groundwater Monitoring and Reporting Plan shall document the location of project well(s) and well construction details (diameter, total depth, depth of screen interval, depth of sanitary seal, pumping equipment).

The Groundwater Monitoring and Reporting Plan shall identify the procedures to install and monitor a water meter on a daily basis. The meter shall be equipped with a flow totalizer at each project well, and shall include requirements to document the gradient and directional flow of groundwater.

The Groundwater Monitoring and Reporting Plan shall also provide detailed methodology for monitoring groundwater levels in the valley based on readings taken on at least a monthly basis. The primary objective for the monitoring is to establish pre- and post-construction groundwater level trends that can be quantitatively compared against observed and calculated trends near the project pumping wells and near potentially impacted existing private wells. The monitoring well network shall include a minimum of three new or existing on site or off-site down-gradient wells near the southern project boundary.

Monthly reports summarizing daily pumping and monthly (minimum) water level monitoring data shall be submitted to San Benito County submitted throughout construction. Annual reports shall be submitted for the following three years. Each report shall include, at a minimum:

- Daily water usage, monthly range of usage, and monthly average of daily water usage in gallons per day;
- Total water used on a monthly and annual basis in acre-feet; summary of all water level data; and
- Identification of trends that indicate potential for off-site wells to experience deterioration of water level.

If results of the monthly trend analyses indicate that the project pumping has resulted in water level decline of 5 feet or more below the baseline trend at nearby private wells, the applicant shall be prohibited from using the well(s) as a water source for the project, or shall reduce groundwater pumping until water levels stabilize or recover.

At the conclusion of project construction (the time of highest groundwater demand) the project owner and San Benito County shall jointly evaluate the effectiveness of the Groundwater Monitoring and Reporting Plan and determine if monitoring frequencies or procedures should be revised, extended into the operation period, or eliminated.

MM WR-1.2 **Aquifer Testing and Well Interference Analysis.** Prior to pumping or making operational any existing wells or construction of any new wells south of Well #19 (as depicted on Figure C.15-1), the applicant shall prepare and submit an Aquifer Testing and Well Interference Analysis Plan to San Benito County for review and approval 14 days prior to commencing the aquifer testing. The Aquifer Testing and Well Interference Analysis Plan shall

discuss the methodology for conducting a 72-hour aquifer test, analysis of aquifer parameters, and the analysis of well interference at nearby private wells. The primary objective of the aquifer test and well interference analysis is to evaluate potential adverse well interference effects prior to the onset of sustained pumping for the project.

The aquifer test duration shall be a minimum of 72-hours and will include measurement of water level drawdown and recovery in the pumping well and a minimum of two downgradient observation wells. Additional observation wells, including cross-gradient locations may be included. The use of existing wells for pumping or water level observation shall include research of well construction records to identify well depth, screen interval, and aquifer depth and thickness. Video surveys shall be performed on all existing wells lacking available well construction records (well depth and screen intervals). The aquifer test shall be performed at a pumping rate that will "stress" the aquifer and result in measurable drawdown at the nearest observation well after two to four hours. Drawdown and recovery water level data collected from the pumping and observation wells shall be analyzed to determine the local aquifer parameters that will in turn be used to calculate water level drawdown at nearby off-site wells. The calculation shall use the Theis equation or other acceptable approach to estimate water level lowering due to project pumping.

The results of the aquifer test and well interference analysis shall be submitted to San Benito County for review and approval of the proposed well for project water supply 15 days prior to the onset of sustained pumping for the project. If a new or existing well located south of existing Well #19 is approved for project use, the Groundwater Monitoring and Reporting Plan (Mitigation Measure WR-1.1) shall be amended to identify monitoring wells near the new project supply well.

Revised Applicant Proposed Measures

The applicant has proposed minor changes to four of the Applicant Proposed Measures (APMs) for water resources. These revised measures are shown below. APMs not shown in this section have not changed and are presented in Appendix 3, Section 3.2. The Applicant has suggested changes to APM WR-1 through APM WR-4; these changes would not result in more severe or more extensive impacts. The changes serve either to clarify the timing or applicability of the APM or to correct a typographic error. These changes would not reduce the level of protection for any water resources.

APM WR-1 If they are damaged or destroyed by construction activities, water facilities (i.e., physical damage to equipment or infrastructure) would be repaired or replaced to their pre-disturbed condition as required by the landowner or land management agency.

APM WR-2 In construction areas where ground disturbance is significant or where recontouring is required, surface restoration would occur as required by the landowner or land management agency as part of Project decommissioning. The method of restoration would normally consist of returning disturbed areas back to their natural contour, reseeding, installing cross drains for erosion control, placing water bars in the road, and filling ditches.

APM WR-3 Roads would be built as near as possible to right angles to the streams and washes or as required by Project permits. Culverts would be installed where necessary. All construction and maintenance activities shall be conducted in a manner that would minimize disturbance to vegetation, drainage channels, and intermittent or perennial stream banks. In addition, road construction would include dust-control measures during construction

in sensitive areas. All existing roads would be left in a condition equal to or better than their condition prior to the construction of the solar farm.

APM WR-4 The Applicant would limit the panel washing to two washings per year during project operation. Should this estimate need to be revised once the project is fully operational depending on soil/dust conditions, the Applicant would consult with the County and obtain the requisite approvals prior to any modifications to this schedule.

C.15.3.5 PG&E Upgrades Impacts

The temporary and permanent water resources impacts of the PG&E Upgrades are analyzed in this section. This analysis is based on the impact statements defined for the solar project, but only Impacts WR-3 and WR-6 apply to the PG&E Upgrades. Most impacts addressed for the solar project would not occur as a result of construction or operation of the PG&E transmission system upgrades due to the minimal amount of water needed to support construction activities because of the minimal acres of temporary disturbance and short construction period. Construction and operation of the PG&E Upgrades would not affect surface water drainage due to the very small area of permanent effect. Operation of the PG&E Upgrades would require no use of water and no permanent impacts to state or federal jurisdictional waters are anticipated. The following four impacts are not further addressed:

- Impact WR-1: Substantially deplete local groundwater supplies or interfere with groundwater recharge
- Impact WR-2: Substantially alter the existing drainage pattern of the site in a manner that results in flooding on- or offsite
- Impact WR-4: Creation of new impervious areas could cause increased runoff resulting in flooding or increased erosion downstream
- Impact WR-5: Project features located in a floodplain or watercourse could result in flooding, flood diversions, or erosion

Impact WR-3: Construction activity and excavation could degrade water quality due to erosion and sedimentation (Class III)

The PG&E Upgrades would involve a minor amount of soil disturbance for preparation of pulling/stringing sites and ~~construction~~ replacement of approximately ~~9 new~~ 12 wood distribution poles along the upgraded portion of the transmission line. PG&E would also construct up to 12 new tubular steel poles (TSPs) to tie the existing transmission line into the new PG&E switchyard located within the Revised Project boundaries. The new TSPs would be installed by PG&E after site preparation is completed by the Applicant. The PG&E Upgrades would also include excavation and construction of the new microwave communication towers. No surface water resources exist on or near the microwave communication tower sites. The three unnamed drainages within the ROW of the upgraded portion of the transmission line will not be disturbed by the upgrades, as no work will be performed within the bed and bank of the drainages. Any erosion caused by the PG&E Upgrades would be minimized through implementation of a required SWPPP. This impact would be less than significant (Class III).

Impact WR-6: Construction or operation of the project could result in accidental releases of contaminants that could degrade water quality (Class III)

Construction of the PG&E Upgrades would involve the use of heavy machinery, including helicopters and other motorized equipment. This machinery could leak potentially hazardous materials, including diesel fuel, gasoline, lubricant oils, hydraulic fluid, antifreeze, and transmission fluid. A leak or accidental spill

of these materials could contaminate nearby waterways, including Panoche Creek and the three unnamed drainages within the ROW of the upgraded portion of the transmission line. This risk of contamination would be reduced through compliance with existing regulations, including implementation of a SWPPP. In addition, PG&E has committed to implementation of Avoidance and Minimization Measure (AMM) WR-1 (Hazardous Material Spill Prevention and Response Plan). With implementation of this AMM, this impact would be less than significant (Class III).

C.15.3.6 Cumulative Impacts

The projects that have been constructed or proposed in the area of potential cumulative effects have changed since 2010, as described in Section D. Incremental impacts when compared to the impacts of other cumulative projects would be less than significant and not cumulatively considerable. The project would not interfere substantially with drainage patterns, nor would it create additional stormwater runoff. BMPs would be adopted to reduce the potential for stormwater runoff and pollution. Additionally, implementation of project-specific grading permits and a SWPPP would protect water quality. The Revised Project presents less than significant impacts related to groundwater withdrawals or flooding hazards. Many of the potentially incremental impacts are specific to the immediate vicinity of the project construction and operation locations (i.e., alteration of drainage patterns). Because the cumulative projects would not physically overlap with the Revised Project construction or infrastructure, the Revised Project's contribution to any cumulative impacts would not be cumulatively considerable. (Class III).

C.15.4 Summary of Impacts

The significance of impacts for water resources for the Revised Project and for the PG&E Upgrades is summarized in Sections C.15.4.1 through C.15.4.3.

C.15.4.1 Revised Solar Project

There are no changes to the significance of impacts from the conclusions of the 2010 Final EIR. The impacts summarized in Table C.15-1 remain accurate. While groundwater withdrawal for the Revised Project would occur at a faster rate, revised mitigation measures would ensure that there would be no effect on neighboring offsite wells, and impacts would be less than significant (Class II).

C.15.4.2 PG&E Upgrades

The PG&E Upgrades would result in adverse but less than significant impacts related to soil erosion and potential for accidental release of hazardous materials during construction. Both impacts would be controlled with existing regulations and implementation of an AMM.

C.15.4.3 Overall Significance of Impacts

Impacts to water resources from the Revised Project and the PG&E Upgrades would be less than significant with the implementation of previously adopted and newly proposed mitigation measures, APMs, and the PG&E AMM. Implementation of existing regulations and required permits from CDFW and the Corps would effectively prevent erosion and other surface water effects. Groundwater would be protected by implementation of two detailed mitigation measures requiring ongoing testing and monitoring.

C.15.5 References

Geologica. 2014a. Panoche Valley Solar Project Groundwater Extraction Impact Evaluation. July.

_____. 2014b. Panoche Valley Solar Project Groundwater Extraction Impact Evaluation, Revised. December 2014.

PVS (Panoche Valley Solar, LLC). 2014a. PG&E Baseline Information Attachment A – Panoche Impact Areas Acreage Overlay Analysis. November.

_____. 2014b. PG&E Baseline Information – Panoche FEMA Overview Map. November.

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Figure C.15-1. Active and Inactive Groundwater Well Locations