



**NATURAL RESOURCES GEOLOGIST RESPONSE TO COMMENTS**

**DATE:** 19 January 2021  
**TO:** Permit Sonoma Contract Planner  
ATTN: Sou Garner  
**FROM:** Robert Pennington, P.G., Natural Resources Geologist  
**PROJECT TYPE:** Cannabis Use Permit

**SUBJECT**  
File Numbers: UPC19-0002  
Applicant Name: WWCMC, Inc: Joseph E. Pearson  
CSCF, LLC: Timothy Crites  
Owner Name: Gordenker Turkey Farm, Inc.  
Site Address: 101 Trinity Road, Glen Ellen  
APN: 053-100-017

**Project Description:**

Request for a Use Permit to allow 1) 20,000 square feet of Cannabis Processing in an existing barn; and, 2) 28,560 square feet of outdoor Cannabis Cultivation, 5,000 square feet of Wholesale Cannabis Nursery, 10,000 square feet of Mixed-Light greenhouse canopy, and 10,890 square feet of Propagation for the Mixed-Light greenhouse located on a 27.67 acre parcel.

**Comment:**

Permit Sonoma received a comment letter from Rick Rodgers of the NOAA National Marine Fisheries Service dated January 13, 2021 (NMFS Letter). The NMFS Letter provided comments regarding the methods and findings of the hydrogeologic report prepared for the project by PJC & Associates Inc., revised date June 28, 2019 (PJC Report). This letter addresses and responds to specific comments in the NMFS Letter. A copy of the NMFS Letter is attached.

**NMFS Comment 1:**

“The analysis used what was described as a “conservative” cumulative impact area (CIA) described as including “parcels adjacent, or within 1500 feet, of the subject property.”



However, the cumulative impact boundary does not extend a distance of 1500 feet consistently around the parcel boundary, as can be seen in Plate 2 where the west and northwest corners of the property appear to be less than half that distance. Furthermore, the CIA does not consider any groundwater use by the significant agricultural operations occurring on the northwest side of Calabazas Creek directly opposite the subject property. Streamflow depletion impacts would manifest from cumulative pumping on both sides of the creek, and the CIA analysis should be expanded to address this fact”

**Response 1:**

The CIA was defined in the PJC Report as an area extending roughly 1500 feet from the project parcels and considered factors such as topography, geologic formations, hydrologic divides/watersheds, aquifer conditions and proximity to nearby wells. The area of the CIA was reviewed and found to have been defined using a method consistent with that described in PRMD Policy and Procedure #8-1-14, Procedures for Groundwater Analysis and Hydrogeologic Reports:

*The geologist preparing the hydrogeologic report must identify a Cumulative Impact Area based on geologic, hydrologic, and groundwater characteristics and reviewed and approved by Permit Sonoma Registered Environmental Health Specialist or Professional Geologist and the project Planner.*

The western edge of the CIA is defined by Calabazas Creek which is consistent with using hydrology and topography. It is also noted that the main stem of Calabazas Creek does not intersect any project parcel.

**NMFS Comment 2:**

“The stream depletion analysis is largely based on a single 2003 flow measurement in Calabazas Creek. Furthermore, the flow measurement in question was recorded during the month of May, a time of year when streamflow volume is generally unaffected by groundwater pumping stress (i.e., groundwater levels are at their highest following winter/spring rains, and agricultural irrigation has yet to begin). Basing a streamflow depletion analysis on one single discharge data point from almost two decades ago is insufficient to meet any statistical rigor, nor can 2003 data be assumed to represent current hydrology even if it was statistically adequate. The analysis should be rejected until a proper streamflow evaluation is carried out that estimates current discharge consistent with the driest period of the year (i.e., early fall before rainfall)”.



**Response 2:**

Comment 2 does not summarize the project's most recent stream depletion analysis, prepared by PJC & Associates Inc., entitled Supplemental Groundwater Availability Evaluation, dated October 17, 2019 (Supplemental Report). The Supplemental Report reviewed streamflow data from the Sonoma Ecology Center collected in Calabazas Creek, near the project site at the Highway 12 bridge crossing and Dunbar Road Bridge crossing. Data was collected from June through September of 2017, and from June through October of 2018. Recorded minimum streamflows were roughly 0.2 cubic feet per second September of 2017, and 0.05 cubic feet per second in October of 2018. The lowest recorded streamflow during the two year record was used in the analysis of stream depletion in the Supplemental Report. Two years of data at the nearby locations in Calabazas Creek is considered representative of current hydrology. Use of the lowest observed streamflow for the analysis is considered conservative and appropriate. In addition, the Supplemental Report characterizes the findings as highly conservative because the analysis assumes direct interaction between the stream and the project aquifer. However, the project well is roughly 1000 feet from Calabazas Creek and screened below 200 feet within volcanic bedrock. The degree of hydraulic connectivity between the project aquifer and the shallow alluvial aquifer adjacent Calabazas Creek is unknown, thus the model assumption of an aquifer fully penetrated by the stream is considered conservative.

**NMFS Comment 3:**

"The analysis states that cumulative demand within the CIA is approximately 50% of average annual recharge, and represents less than 4 percent of groundwater storage. Given the limitations inherent with the chosen CIA described above, the extraction of one-half of the average annual recharge is troubling in that it may underestimate impacts should the CIA appropriately expand. Also, the analysis suffers from the use of an average recharge estimate. The analysis should instead investigate what the depletion percentage is during a dry year, when streamflow depletion impacts are likely greatest. Furthermore, the significance of cumulative demand representing "less than 4 percent of groundwater storage" is not explained. Finally, the analysis states the "aquifer is not expected to be in a state of overdraft", but includes no supporting data or analysis to validate this assumption".

**Response 3:**

As discussed in Comment 1, the area of the CIA was reviewed and found to be reasonable and consistent with standard methods. Groundwater storage is explained on page 7 of the PJC



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Report, and is based off aquifer area, thickness of the saturated aquifer, and specific yield. Given that extraction represents a small fraction (4%) of storage, use of the average recharge is considered reasonable. The small fraction of groundwater use relative storage buffers the aquifer from significant water level declines that could be associated with drought.

In regards to the statement of, “the aquifer is not expected to be in a state of overdraft”; this finding is supported by the water balance assessment of the PJC Report which estimated average year recharge to be roughly twice that of groundwater extraction at maximum development. Maximum development assumed full residential development under current zoning, as well as cannabis and vineyard expansion on all parcels within the CIA. Under current and proposed development, estimated recharge would be more than double groundwater extraction (See Table 3 of the PJC Report).

## General Response

The County of Sonoma appreciates the review by NMFS and attention to project and cumulative impacts of groundwater extraction on streamflow. Supporting studies have found the potential impacts of this project on streamflow of Calabazas Creek to be unlikely and less than significant. The CIA used for the project assessment was at a scale that staff consider appropriate for the project. A larger basin scale groundwater assessment, that includes a well calibrated and validated numeric hydrogeologic model capable of characterizing groundwater/surface water interaction, is considered beyond the scope of a single project. Fortunately, as NMFS is aware, the Sonoma Valley Groundwater Sustainability Agency (GSA) is in the process of developing a Groundwater Sustainability Plan (GSP) that will include characterization of streamflow depletion at basin and reach scales. The County of Sonoma will collaborate with the GSA, and use findings of the GSP (once complete and adopted) in project review. Furthermore, recommended conditions of approval for this project require groundwater and streamflow monitoring that will be useful in the assessment of groundwater/surface water interaction:

74. Groundwater and streamflow Monitoring and Meter Calibration
  - a. **Groundwater levels and quantities of groundwater extracted for the use shall be measured monthly on the last day of each month.** Data shall be reported to PRMD in January of the following year pursuant to Section WR-2d of the Sonoma County General Plan and County policies. Data should be provided on template monitoring forms provided by Permit Sonoma.



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- b. Water meters shall be calibrated, and copies of receipts and correction factors shall be submitted to Professional Geologist or Environmental Health Specialist staff at least once every five years.
- c. **Streamflow at Calabazas Creek at the Dunbar Road bridge crossing shall be measured monthly on the last day of June, July, August, September and October.** Streamflow data shall be reported, with groundwater monitoring data, to PRMD in January of the following year. Measurements shall be conducted by or under the direction of a Qualified Professional, subject to approval by Permit Sonoma Professional Geologist or Environmental Health Specialist.
- d. **If the County determines that groundwater levels are declining in the local groundwater basin or that streamflow in Calabazas Creek is negatively impacted by project specific or cumulative groundwater extraction, then the applicant shall submit and implement a Water Conservation Plan,** subject to approval by Permit Sonoma Professional Geologist or Environmental Health Specialist.

Please feel free to contact Robert Pennington, Professional Geologist, at (707) 565-1352, should you have any questions on the above information.

**Robert Pennington**  
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