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## MEMORANDUM

**TO:** DR. MEHTA & NINA MEHTA

**FROM:** MARK KALNINS, SOL ECOLOGY, INC.  
DANA RIGGS, SOL ECOLOGY, INC.

**SUBJECT:** **SUPPLEMENTAL WETLAND DELINEATION STUDY  
685 AVIATION BLVD., SANTA ROSA (APN 059-340-056)**

**DATE:** AUGUST 27, 2020

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This Technical Memorandum provides additional information to support a previous wetland delineation study conducted by Sol Ecology of the property located at 685 Aviation Boulevard (APN 059-340-056) in unincorporated Sonoma County. A *Design Review With Hearing and Use Permit* for a 59,066 square foot, two-story warehouse on a 1.53-acre parcel are currently under review by the County's PRMD staff (File Number: DRH19-0007; Applicant: Alisha & Natasha Properties LLC). The additional information provided in this Memorandum is being provided to support the prior conclusion provided by Sol Ecology that potentially-jurisdictional wetlands are not present on the property.

The prior wetland evaluation and delineation was conducted by Sol Ecology in November of 2019, and found no potentially-jurisdictional wetlands on the property. PRMD staff have reviewed the Sol Ecology study and subsequently requested additional information, including documentation regarding an earlier delineation from 1998 that was referenced in a 2016 rare plant study of the subject property prepared by Ted Winfield & Associates, which reportedly concluded that wetlands are present. Unfortunately, the 1998 delineation study is no longer available, and no further information has been provided to the Applicant in support of the 1998 report's findings.

Sol Ecology met with County's PRMD staff and the Applicant's representatives on August 6, 2020, to review site conditions and to discuss the Sol Ecology wetland delineation study. The property had recently been mowed, however, the site's predominant plant communities remained intact, and could be easily identified and described despite the recent mowing. Subsequent to the site inspection with PRMD staff, Sol Ecology collected additional information regarding site conditions to further evaluate whether positive indicators of wetlands are present, and found no such indicators are present.

Sol Ecology's conclusion is based on the following: 1.) additional plot-based sampling was conducted in mapped uplands, and 2.) several small mulch piles were inspected for potential wetland fill.

#### Factors Considered to Conclude No Wetlands Are Present

1. Sol Ecology performed plot-based sampling in mapped uplands where County staff determined that wetlands may be present, in areas where very slight topographic depressions exist, or where discernible changes in vegetation were observed during the site inspection. Although the property had been recently mowed, vegetation communities remained visible and were able to be sampled. Plant species were able to be identified and % cover for each species in the sampling plots was able to be determined. It was therefore concluded that normal circumstances were present at the property during the study. No positive indicators of wetlands were found in the sample plots. Vegetation communities were found to include predominantly upland species, including *Phalaris aquatica* (FACU), Harding's grass; *Bromus hordeaceus* (FACU), soft brome; *Acmispon americanus* (UPL), deerweed; *Convolvulus arvensis* (NL), bindweed; *Sonchus oleraceus* (UPL), common sow-thistle; and *Medicago polymorpha* (FACU), toothed medic. Some hydrophyte species were observed in limited distribution in the dark stain area that can be seen in recent aerial imagery near the center of the site; these species included *Centromadia pungens* (FAC), pungent false tarplant; *Plantago lanceolata* (FAC), English plantain; and *Rumex crispus* (FAC), curly dock. However, a predominance of hydrophytic vegetation was not observed (i.e., the Hydrophytic Vegetation Basic Rule was not met) in the sample plot that was located in the dark stain area visible in the aerial imagery.

Soils sampled in all of the plots were predominantly gravelly, mixed soils, with bright colors (10YR 4/4, 10YR 3/2), and no visible redoximorphic features, thus positive hydric soil indicators were determined to not be present. Shovel refusal due to dense compacted soils occurred generally below six inches from the soil surface, which is indicative of a rapid runoff rate and low permeability. Further, although the property is mapped by the NRCS Web Soil Survey as being within the map unit for *Huichica loam, ponded, 0 to 5 percent slopes*, a California-listed hydric soil, characteristics of the soil classification for this map unit were not observed during the site visit, and this soil map unit is presumed to not be present.

Lastly, no positive indicators of wetland hydrology were found, including but not limited to the secondary hydrology indicators *Saturation Visible on Aerial Imagery, Drainage Patterns, and FAC-Neutral Test*.

2. Sol Ecology evaluated areas of the property where small piles of wood mulch were evident. These areas were investigated further during the wetland study to determine whether wetlands were present prior to placement of the mulch material. Review of aerial imagery for the property available in Google Earth indicates that several medium shrubs (likely *Baccharis pilularis*, coyote brush; or *Rubus armeniacus*, Himalayan blackberry) were removed between February and September, 2009, and the wood mulch piles were likely left behind when the shrubs were removed. Upon closer inspection, Sol Ecology determined that wetland indicators were not

present in the areas where wood mulch was observed. Mulch depth ranged from two- to four-inches in depth, and no buried vegetation was evident beneath the mulch. It was also determined that native soils beneath the mulch did not meet hydric soil field indicators, and wetlands were therefore not likely to be present at the time the shrubs were removed and the wood mulch was placed. Lastly, the areas immediately adjacent to the mulch were observed to be dominated by upland plants with no positive indicators of wetland hydrology. It was therefore concluded that the areas where mulch was observed were not likely to be wetlands prior to placement of the mulch.

# Figure 1: Location of Project Area

685 Aviation Blvd, Santa Rosa, CA



- Project Study Area
- Parcel Boundaries
- Roads and Streets
- Sample Point

## WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: \_\_\_\_\_ City/County: \_\_\_\_\_ Sampling Date: \_\_\_\_\_  
 Applicant/Owner: \_\_\_\_\_ State: \_\_\_\_\_ Sampling Point: \_\_\_\_\_  
 Investigator(s): \_\_\_\_\_ Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): \_\_\_\_\_ Local relief (concave, convex, none): \_\_\_\_\_ Slope (%): \_\_\_\_\_  
 Subregion (LRR): \_\_\_\_\_ Lat: \_\_\_\_\_ Long: \_\_\_\_\_ Datum: \_\_\_\_\_  
 Soil Map Unit Name: \_\_\_\_\_ NWI classification: \_\_\_\_\_

Are climatic / hydrologic conditions on the site typical for this time of year? Yes \_\_\_\_\_ No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes \_\_\_\_\_ No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

### SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes _____ No _____ Hydric Soil Present? Yes _____ No _____ Wetland Hydrology Present? Yes _____ No _____	<b>Is the Sampled Area within a Wetland?</b> Yes _____ No _____
Remarks: _____ _____ _____	

### VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)  Total Number of Dominant Species Across All Strata: _____ (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				<b>Prevalence Index worksheet:</b> _____ Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B)  Prevalence Index = B/A = _____
<b>Sapling/Shrub Stratum (Plot size: _____)</b>				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
<b>Herb Stratum (Plot size: _____)</b>				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
_____ = Total Cover				
<b>Woody Vine Stratum (Plot size: _____)</b>				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust _____				
<b>Hydrophytic Vegetation Indicators:</b> ___ Dominance Test is >50% ___ Prevalence Index is ≤3.0 <sup>1</sup> ___ Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)				
<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.				
<b>Hydrophytic Vegetation Present?</b> Yes _____ No _____				
Remarks: _____ _____ _____				

**SOIL**

Sampling Point: \_\_\_\_\_

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.      <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)	Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	
<input type="checkbox"/> Thick Dark Surface (A12)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	
<input type="checkbox"/> Sandy Redox (S5)	
<input type="checkbox"/> Stripped Matrix (S6)	
<input type="checkbox"/> Loamy Mucky Mineral (F1)	
<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Vernal Pools (F9)	

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<b>Restrictive Layer (if present):</b> Type: _____ Depth (inches): _____	<b>Hydric Soil Present? Yes _____ No _____</b>
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Remarks:

**HYDROLOGY**

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (2 or more required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)
	<input type="checkbox"/> Water Marks (B1) (Riverine)
	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)
	<input type="checkbox"/> Drift Deposits (B3) (Riverine)
	<input type="checkbox"/> Drainage Patterns (B10)
	<input type="checkbox"/> Dry-Season Water Table (C2)
	<input type="checkbox"/> Crayfish Burrows (C8)
	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
	<input type="checkbox"/> Shallow Aquitard (D3)
	<input type="checkbox"/> FAC-Neutral Test (D5)

<b>Field Observations:</b> Surface Water Present? Yes _____ No _____ Depth (inches): _____ Water Table Present? Yes _____ No _____ Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes _____ No _____ Depth (inches): _____	<b>Wetland Hydrology Present? Yes _____ No _____</b>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: