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Stormwater Control Plan

A. S. Vineyards Use Permit Modification – P19-00273
Zoning Administrator Hearing Date (January 27, 2021)

DRAFT

Stormwater Control Plan
For a Regulated Project for
Sodhani Winery

April 26, 2019

This plan was prepared using the instructions, criteria, and minimum requirements in the Bay Area Stormwater Management Agencies Association's (BASMAA's) *Post-Construction Manual*.

Prepared for:

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Project Data

Table 1. Project Data Form

Project Name/Number	Sodhani Winery
Application Submittal Date	April 2019
Project Location	3283 St. Helena Highway North St. Helena, CA 94574 APN 022-080-028
Project Phase No.	N/A
Project Type and Description	New Winery Facility
Total Project Site Area (acres)	2 +/-
Total New and Replaced Impervious Surface Area	43,740 square feet (approximate, onsite only)
Total Pre-Project Impervious Surface Area	24,400 square feet (approximate, onsite only)
Total Post-Project Impervious Surface Area	58,425 square feet (approximate, onsite only)

I. Setting

I.A. Project Location and Description

Arvind Sodhani is applying for a Use Permit Modification for his permitted but not yet constructed new winery at the property located at 3283 St. Helena Highway North in Napa County, California. The subject property, known as Napa County Assessor's Parcel Number 022-080-028, is located along the west side of State Route 29 (St. Helena Highway North) approximately three miles northwest of downtown St. Helena.

The roughly 12.1 acre parcel is zoned Agricultural Watershed (AW). Topography can be described as moderately sloping with average slopes less than 30%. The United States Department of Agriculture Soil Conservation Service Soils Map for Napa County shows the entire property mapped as Boomer gravelly loam, 15 to 30 percent slopes (Hydrologic Soil Group B).

Existing improvements on the property include a residence, two water tanks, approximately 6.3 acres of vineyard and the associated access and utility infrastructure that support the existing residential and agricultural uses.

Proposed onsite improvements include two winery buildings, a winery cave, a water treatment and pump house, water tanks, wastewater systems, driveway improvements and parking. Offsite improvements include a new driveway connection to State Route 29. The planned site improvements are illustrated on the Sodhani Winery Use Permit Modification Conceptual Site Plans prepared by Applied Civil Engineering Incorporated.

I.B. Opportunities and Constraints for Stormwater Control

Opportunities for stormwater control include

1. Permeable soils (HSG B)
2. Large vegetated buffer (vineyard with cover crop between building site area drainage ways.

Constraints for stormwater control include:

1. Moderately sloping topography.
2. Lack of undeveloped areas given that most of the site is developed in vineyard or residential uses.

II. Low Impact Development Design Strategies

II.A. Optimization of Site Layout

II.A.1. Limitation of development envelope

The building footprints have been minimized and caves have been utilized to minimize visual impact and minimize impervious surfaces.

Furthermore, the proposed site layout has been designed to utilize the existing driveway and vineyard roads that currently provide access to the existing residence and vineyards. The driveway connection to State Route 29 has to be relocated and the driveway has to be widened to meet County standards but utilizing the existing driveway alignment for a majority of the driveway minimizes the development envelope.

The proposed buildings and access roads have been carefully designed to preserve most of the existing mature trees on the property.

II.A.2. Preservation of natural drainage features

All natural drainage features on the property will be preserved.

II.A.3. Setbacks from creeks, wetlands, and riparian habitats

There are no drainages that are classified as streams by the Napa County Conservation Regulations within the immediate vicinity of the project area.

II.A.4. Minimization of imperviousness

The building has been designed to be 100% below ground to minimize the creation of new impervious surfaces.

All access ways and parking areas will be designed to the minimum width standards required for safe access to ensure that excess impervious surfaces are not created.

II.A.5. Use of drainage as a design element

Drainage design will be coordinated with the landscape design to provide an aesthetically pleasing site layout that addresses stormwater control requirements.

II.B. Use of Permeable Pavements

Permeable pavements have not been designated at this time. If permeable pavements are incorporated into the final design they will be designed in accordance with manufacturers' recommendations and the BASMAA Post-Construction Manual requirements.

II.C. Dispersal of Runoff to Pervious Areas

The site layout and topography will allow for dispersal of runoff from impervious surfaces to pervious areas.

II.D. Stormwater Control Measures

Runoff from most of the building site area impervious areas will be routed to a bioretention facility as shown on the Stormwater Control Plan Exhibit. The facility will be designed and constructed to the criteria in the BASMAA Post-Construction Manual (July 2014), including the following features:

- Surrounded by a level concrete curb, wood header, steel edge or compacted soil berm. Where adjacent to pavement, curbs will be thickened and an impermeable vertical cutoff wall will be included if required by the soils engineer.
- Each layer built flat, level, and to the elevations specified in the plans:
    - o Bottom of Gravel Layer (BGL)
    - o Top of Gravel Layer (TGL)
    - o Top of Soil Layer (TSL)
    - o Overflow Grate
    - o Facility Rim
- 12 inches of Class 2 permeable rock, Caltrans specification 68-2.02F(3)
- 18 inches sand/compost mix meeting BASMAA specifications
- 4 inch diameter SDR 35 PVC perforated pipe underdrain, installed with the invert at the top of the Class 2 permeable rock layer with holes facing down, and connected to the overflow structure at that same elevation
- 6-inch-deep reservoir between top of soil elevation and overflow elevation
- Concrete drop inlet with frame overflow structure, with grate set to specified elevation, connected to storm drain (overflow used where storm drain connection is available and omitted where no storm drain exists)
- Vertical cutoff walls where needed to protect adjacent pavement
- Plantings selected for water conservation
- Irrigation system on a separate zone, with drip emitters and "smart" irrigation controllers
- Sign identifying the facility as a stormwater treatment facility.

The only significant new and reconstructed impervious areas on the site which do not drain to a bioretention facility are the long linear driveway and the water pump house/wastewater treatment system pad/water tank area. These areas drain to adjacent vineyards and vegetated areas and runoff is dispersed via sheet flow. The vegetated areas will filter, disperse and infiltrate runoff before it reaches the receiving waters.

III. Documentation of Drainage Design

III.A. Descriptions of Each Drainage Management Area

III.A.1. Table of Drainage Management Areas

DMA Name	Surface Type	Area (square feet)
DMA #1	AC Paving, Concrete, Roofs	15,734 +/-
DMA #2	AC Paving	8,484 +/-
DMA #3	AC Paving	7,570 +/-
DMA #4	AC Paving	3,500 +/-
DMA #5	AC Paving	3,590 +/-
DMA #6	AC Paving	6,350 +/-

III.A.2. Drainage Management Area Descriptions

DMA #1, totaling 15,734 square feet, drains the building roofs, parking and fire truck turnaround area in front of the winery. DMA #1 drains to Bioretention Area #1.

DMA #2, totaling 8,484 square feet of impervious area, drains a portion of the driveway. DMA #2 drains to Vegetated Receiving Area #2.

DMA #3, totaling 7,570 square feet, drains a portion of the driveway. DMA #3 drains to Vegetated Receiving Area #3.

DMA #4, totaling 3,500 square feet, drains a portion of the driveway. DMA #4 drains to Vegetated Receiving Area #4.

DMA #5, totaling 3,590 square feet, drains a portion of the driveway. DMA #5 drains to Vegetated Receiving Area #5.

DMA #6, totaling 6,350 square feet, drains a portion of driveway. DMA #6 drains to Vegetated Receiving Area #6.

III.B. Tabulation and Sizing Calculations

III.B.1. Information Summary for Bioretention Facility Design

Total Project Area (Square Feet)	
DMA #1	15,734 +/-

III.B.2. Self-Treating Areas

DMA Name	Area (square feet)
None	

III.B.3. Self-Retaining Areas

DMA Name	Area (square feet)
None	

III.B.4. Vegetative Receiving Areas

DMA Name	Area (square feet)
DMA #2	8,484 +/-
DMA #3	7,570 +/-
DMA #4	3,500 +/-
DMA #5	3,590 +/-
DMA #6	6,350 +/-

III.B.5. Infiltration Trench Areas

DMA Name	Area (square feet)
N/A	

III.B.6. Areas Draining to Self-Retaining Areas

DMA Name	Area (square feet)	Post-project surface type	Runoff factor	Product (Area x runoff factor)[A]	Receiving self-retaining DMA	Receiving self-retaining DMA Area (square feet) [B]	Ratio [A]/[B]
None							

III.B.7. Areas Draining to Bioretention Facilities

DMA Name	DMA Area (square feet)	Post-project surface type	DMA Runoff factor	DMA Area × runoff factor	Facility Name		
					Bioretention Area #1		
#1	15,734	Paving	1	15,734	Sizing factor	Minimum Facility Size	Proposed Facility Size
Total=				15,734	0.04	629	650

III.B.8. Areas Draining to Vegetative Receiving Areas

DMA Name	Area (square feet)	Post-project surface type	Runoff factor	Product (Area x runoff factor)[A]	Receiving self-retaining DMA	Receiving self-retaining DMA Area (square feet) [B]	Ratio [A]/[B]
DMA #2	8,484 +/-	Impervious	1	8,484 +/-	#2	10,855	0.78
DMA #3	7,570 +/-	Impervious	1	7,570 +/-	#3	12,895	0.59
DMA #4	3,500 +/-	Impervious	1	3,500 +/-	#4	8,860	.40
DMA #5	3,590 +/-	Impervious	1	3,590 +/-	#5	7,440	.48
DMA #6	6,350 +/-	Impervious	1	6,350 +/-	#6	4,560	1.4

III.B.9. Areas Draining to Infiltration Trenches

DMA Name	Area (square feet)	Post-project surface type	Runoff factor	Product (Area x runoff factor)[A]	Receiving self-retaining DMA	Receiving self-retaining DMA Volume (cubic feet) [B]

Note: Infiltration trenches are sized to handle one inch of runoff from the impervious surface area.

IV. Source Control Measures

IV.A. Site activities and potential sources of pollutants

IV.B. Source Control Table

Potential source of runoff pollutants	Permanent source control BMPs	Operational source control BMPs
☒Storm Drain Inlets	☒Mark all inlets with the words "No Dumping! Drains to Waterway" or similar.	☒Maintain and periodically repaint or replace inlet markings. ☒Provide stormwater pollution prevention information to all onsite personnel. ☒See applicable BMPs in Fact Sheet SC-44, "Drainage System Maintenance" in the CASQA Stormwater Quality Handbook at: www.casqa.org/resources/bmp-handbooks ☒Include the following in lease agreements (if facility is leased): "Tenant shall not allow anyone to discharge anything to the storm drains or to store or deposit materials so as to create a potential discharge to storm drains."
☒Interior Floor Drains and Elevator Shaft Pumps	☒All interior floor drains will be plumbed to the sanitary sewer.	☒Inspect and maintain drains to prevent blockage and overflow.
☐Interior Parking Garages	☐Parking garage floor drains will be plumbed to the sanitary sewer	☐Inspect and maintain drains to prevent blockage and overflow.
☒Indoor and Structural Pest Control	☒Buildings will be designed to meet applicable code requirements to discourage entry of pests.	☒Provide Integrated Pest Management information to Owners, lessees and operators.
☒Landscape / Outdoor Pesticide Use / Building and Grounds Maintenance	☒Landscape will be designed to accomplish the following: Preserve existing native trees, shrubs and groundcover to the maximum extent	☒Maintain landscaping using the minimum required or no pesticides and fertilizers. ☒See applicable operational BMPs in Fact Sheet SC-41, "Building and Grounds Maintenance" in the CASQA Stormwater Quality Handbook at: www.casqa.org/resources/bmp-handbooks

	practicable. Minimize irrigation and runoff, promote surface infiltration where appropriate and to minimize the use of fertilizers and pesticides that can contribute to stormwater pollution. Where landscape areas are used to retain or detain stormwater plants that are tolerant of saturated soil conditions will be used. Pest resistant plants will be specified where practicable. Plants will be selected for site soils, slopes, climate, sun, wind, rain, land use, air movement, ecological consistency and plant interactions.	☒Provide IPM information to new owners, lessees and operators.
☐Pools, Spas, Ponds, Decorative Fountains and other Water Features	☐Do not connect to onsite wastewater disposal systems. Drain to landscape area for infiltration	☐See applicable operational BMPs in Fact Sheet SC-72, "Fountain and Pool Maintenance" in the CASQA Stormwater Quality Handbook at: www.casqa.org/resources/bmp-handbooks
☒Food Service	☒Restaurants, grocery stores and other food service operations will have a floor sink or other area for cleaning floor mats, containers and equipment located either indoors or in a covered area outdoors.	☒Drain must be connected to grease interceptor and grease interceptor must be pumped whenever solids accumulate to 35% of total tank capacity.
☒Refuse Areas	☒Refuse and recycling will be collected in a trash enclosure. The enclosure	☒Refuse area must be patrolled and cleaned regularly.

	will be fenced to prevent dispersal of materials. If covered, the area will be drained to the sanitary sewer system. If not covered, all bins will have water tight lids. Adjacent areas will be graded to prevent run-on.	
☒Industrial Processes	☒All winery processing activities to be performed indoors or outdoors under roof. No processes to drain to exterior or to storm drain system.	☒See Fact Sheet SC-10, "Non-Stormwater Discharges" in the CASQA Stormwater Quality Handbooks at: www.casqa.org/resources/bmp-handbooks
☒Outdoor Storage (Equipment or Materials)	☒All winemaking materials to be used onsite are to be unloaded and immediately moved to a covered area to minimize exposure to rainfall. ☒Material deliveries shall be scheduled for times when it is not raining to minimize exposure to rainfall. ☒Facility shall comply with Napa County	☒See the Fact Sheets SC-31, "Outdoor Liquid Container Storage" and SC-33, "Outdoor Storage of Raw Materials" in the CASQA Stormwater Quality Handbooks at: www.casqa.org/resources/bmp-handbooks

	requirements for Hazardous Waste Generation, Storage and Disposal, Hazardous Materials Release Response and Inventory, California Accidental Release (CalARP) and Uniform Fire Code Article 80 Section 103(b) & (c) 1991	
☒Vehicle and Equipment Cleaning	☒No vehicle or equipment washing will be performed onsite. All employees will be informed that car washing is prohibited.	☒Not Applicable
☒Vehicle and Equipment Repair and Maintenance	☒No vehicle or equipment repairs will be performed onsite. All employees will be informed that vehicle maintenance onsite is prohibited.	☒Notify all future owners, lessees and operators that the following restrictions apply to this site: ☒No person shall dispose of, nor permit the disposal, directly or indirectly of vehicle fluids, hazardous materials, or rinse water from parts cleaning into storm drains. ☒No vehicle fluid removal shall be performed outside a building, nor on asphalt or ground surfaces, whether inside or outside a building, except in such a manner as to ensure that any spilled fluid will be in an area of secondary containment. Leaking vehicle fluids shall be contained or drained from the vehicle immediately. ☒No person shall leave unattended parts or other open containers containing vehicle fluid, unless such containers are in use or in an area of secondary containment.
☐Fuel Dispensing Areas	No vehicle fueling will be performed onsite. All employees will be informed that vehicle fueling onsite is prohibited.	☐The property owner, lessee or operator, as applicable, shall dry sweep the fueling area routinely. ☐See the Business Guide Sheet, "Automotive Service—Service Stations" in the CASQA Stormwater Quality Handbooks at: www.casqa.org/resources/bmp-handbooks

☐Loading Docks	☐Loading docks shall be covered and graded to minimize run-on to and runoff from the loading area. ☐Roof downspouts shall be positioned to direct stormwater away from the loading area. ☐Water from loading dock areas shall be drained to a containment system that is pumped regularly to avoid overflows.	☐Move loaded and unloaded items indoors as soon as possible. See Fact Sheet SC-30, "Outdoor Loading and Unloading" in the CASQA Stormwater Quality Handbooks at: www.casqa.org/resources/bmp-handbooks
☒Fire Sprinkler Test Water	☒Provide a means to drain fire sprinkler test water to infiltrate into landscaping and not discharge to the storm drain.	☒See the note in Fact Sheet SC-41, "Building and Grounds Maintenance," in the CASQA Stormwater Quality Handbooks at: www.casqa.org/resources/bmp-handbooks
Miscellaneous Drain, Wash Water or Other Sources ☒Boiler Drain Lines ☒Condensate Drain Lines ☐Rooftop Equipment ☐Drainage Sumps ☒Roofing, Gutters and Trim	☒Boiler drain lines shall be directly or indirectly connected to the sanitary sewer system and may not discharge to the storm drain system. ☒Condensate drain lines may discharge to landscaped areas if the flow is small enough that runoff will not occur.	If architectural copper is used, implement the following BMPs for management of rinsewater during installation: ☐If possible, purchase copper materials that have been pre-patinated at the factory. ☐If patination is done on-site, prevent rinse water from entering storm drains by discharging to landscaping or by collecting in a tank and hauling off-site. ☐Consider coating the copper materials with an impervious coating that prevents further corrosion and

☐Other:	☒Condensate drain lines may not discharge to the storm drain system. ☐Rooftop equipment with potential to produce pollutants shall be roofed and/or have secondary containment. ☐Any drainage sumps on-site shall feature a sediment sump to reduce the quantity of sediment in pumped water. ☐Include controls for other sources as specified by local agency.	runoff. ☐Implement the following BMPs during routine maintenance: ☐Prevent rinse water from entering storm drains by discharging to landscaping or by collecting in a tank and hauling offsite.
☒Plazas, Sidewalks and Parking Lots	None.	☒Sweep plazas, sidewalks, and parking lots regularly to prevent accumulation of litter and debris. Collect debris from pressure washing to prevent entry into the storm drain system. Collect wash water containing any cleaning agent or degreaser and haul offsite to municipal waste treatment plant for disposal, do not discharge to a storm drain.

IV.C. Features, Materials, and Methods of Construction of Source Control BMPs

Full design specifications for all source control BMPs will be submitted with the building permit drawing package.

V. Stormwater Facility Maintenance

V.A. Ownership and Responsibility for Maintenance in Perpetuity

The Applicant must commit to executing a Post Construction Stormwater BMP Maintenance Agreement which will be recorded with Napa County. This agreement will obligate the applicant to accept responsibility for operation and maintenance of stormwater treatment and flow-control facilities in perpetuity or until such time as this responsibility is formally transferred to a subsequent property owner. Refer to the Stormwater Treatment Facilities Operation and Maintenance Plan for Sodhani Winery for detailed requirements.

V.B. Summary of Maintenance Requirements for Each Stormwater Facility

The bioretention facilities will be maintained on the following schedule at a minimum. Details of maintenance responsibilities and procedures will be included in a Stormwater Facility Operation and Maintenance Plan to be submitted for approval prior to the completion of construction.

At no time will synthetic pesticides or fertilizers be applied, nor will any soil amendments, other than aged compost mulch or sand/compost mix, be introduced.

Daily: The facilities will be examined for visible trash during regular policing of the site, and trash will be removed.

After Significant Rain Events: A significant rain event is one that produces approximately a half-inch or more rainfall in a 24-hour period. Within 24 hours after each such event, the following will be conducted:

The surface of the facility will be observed to confirm there is no ponding.

- Inlets and outlets will be inspected, and any accumulations of trash or debris will be removed.
- The surface of the mulch layer will be inspected for movement of material. Mulch will be replaced and raked smooth if needed.

Prior to the Start of the Rainy Season: In September or each year, the facility will be inspected to confirm there is no accumulation of debris that would block flow, and that growth and spread of plantings does not block inlets or the movement of runoff across the surface of the facility.

Annual Landscape Maintenance: In December – February of each year, vegetation will be cut back as needed, debris removed, and plants and mulch replaced as needed. The concrete work will be inspected for damage. The elevation of the top of soil and mulch layer will be confirmed to be consistent with the 6-inch reservoir depth.

Refer to the Stormwater Treatment Facilities Operation and Maintenance Plan for Sodhani Winery for additional stormwater facility maintenance requirements.

VI. Construction Checklist

Stormwater Control Plan Page #	Source Control or Treatment Control Measure	See Plan Sheet #s
C5	Bioretention Area #1	N/A
C5	Vegetative Receiving Areas #2, #3, #4, #5 & #6	N/A
C5	Infiltration Trench #7	N/A
C5	Storm Drain Inlets	N/A
N/A	Interior Floor Drains and Elevator Shaft Pumps	N/A
N/A	Interior Parking Garages	N/A
C5	Indoor and Structural Pest Control	N/A

C6	Landscape / Outdoor Pesticide Use / Building and Grounds Maintenance	N/A
N/A	Pools, Spas, Ponds, Decorative Fountains and other Water Features	N/A
C6	Food Service	N/A
C6	Refuse Areas	N/A
C6	Industrial Processes	N/A
C6	Outdoor Storage (Equipment or Materials)	N/A
N/A	Vehicle and Equipment Cleaning	N/A
N/A	Vehicle and Equipment Repair and Maintenance	N/A
N/A	Fuel Dispensing Areas	N/A
N/A	Loading Docks	N/A
C6	Fire Sprinkler Test Water	N/A
C6	Miscellaneous Drain, Wash Water or Other Sources Boiler Drain Lines Condensate Drain Lines Rooftop Equipment Drainage Sumps Roofing, Gutters and Trim Other:	N/A
C6	Plazas, Sidewalks and Parking Lots	N/A

VII. Certifications

This preliminary design of stormwater treatment facilities and other stormwater pollution control measures in this plan are in intended to be in accordance with the current edition of the BASMAA *Post-Construction Manual* as required by Napa County.