Cannabis Regulatory Program
Central Coast Regional Water Quality Control Board
Site Management Plan

April 4, 2019 Version

County:	Humboldt	**Tier:**	
Operation Name:	Kinsey Ridge Farm	**Risk:**	
Site Name:	Kinsey ridge farm	**Disturbed Area (ft²):** 13,000	13,000
Site Address:	1 mile E of Willow Ck CA	**Cultivation Area (ft²):** 13,000	13,000
APN(s):	315 045 004	**Cumulative Disturbed Area (ft²)*:**	13,000
Application ID #:		**Cumulative Cultivation Area (ft²)*:**	13,000

**For sites with multiple enrollments on the same property, report the combined disturbed area and cultivation area of all cannabis cultivation on the property. If this does not apply, leave this section blank.*

This plan describes how the cultivator is implementing the best practical treatment or control (BPTC) measures listed in Attachment A of the Cannabis General Order. Refer to Attachment D of the General Order for further technical report guidance. If the sections below do not provide sufficient space, you may attach additional pages.

Fill out the form electronically, save as a PDF file, and email the completed electronic form along with maps and photos to CentralCoast.Cannabis@waterboards.ca.gov. Please do not submit forms that have been printed and scanned.

1. Sediment Discharge BPTC Measures

A. Site Characteristics

i. Site Map

Attach a map of the site. The map should contain the following features with labels:

- Access roads
- Vehicle parking areas
- Streams
- Stream crossings
- Cultivation site(s)
- Disturbed areas
- Buildings
- Other site features that are referenced in this plan. (e.g. BPTC measures, pesticide/ fertilizer storage, trash/ refuse storage, etc.)

The map should also include:

- A legend
- A north arrow
- A scale bar
- Topographic lines

ii. Access Road Conditions

a. What is the road surface type(s)? Check all that apply.

☑ Asphalt ☑ Gravel ☑ Dirt ☐ Concrete ☐ Other (describe): _____

b. Is there evidence of erosion, such as gullies or rills? If yes, describe current conditions and how they will be remediated in the space below.

☐ Yes ☑ No

c. Does any portion of the access road(s) act as a conveyance for water? If yes, describe in the space below.

☐ Yes ☑ No

d. What is the estimated vehicle traffic on these roads?

Commuter vehicles: 1 per Day

Commercial vehicles: 0 per

Heavy equipment: 0 per

Other 0 : ____ per

e. How is storm water drained from the roads? Check all that apply. Refer to *The Handbook for Forest Ranch and Rural Roads* for information on the methods listed below. (Available at http://www.pacificwatershed.com/PWA-publications-library.)

☐ Crowned ☑ Out slope ☐ Armored ditch ☑ Culverts ☑ Rolling dips ☑ Other (describe below)

1 culvert

waterbars

f. Describe the number, spacing, and discharge location of water drainage features.

One culvert
waterbars approx every 50 ft

g. Select the erosion control and sediment capture measures used on the access roads and water drainage features. Check all that apply.

Erosion Control Measures

☐ Erosion control blankets ☐ Geotextiles ☐ Straw mulch ☐ Hydromulch ☑ Wood mulch
☑ Vegetation Preservation ☐ Vegetation Planting ☐ Hydroseeding ☐ Vegetated channels
☐ Check dams ☐ Other: _____

Sediment Capture Measures

☐ Fiber Rolls ☐ Silt fences ☐ Other: _____

Describe the selected measures in the space below:

h. What activities are done to maintain the roads? What activities are done to maintain erosion control measures? What is the maintenance schedule?

Seasonal maintance of water bars and gravel placement
& proposed seeding of native grasses acquired from on site

iii. Streams

a. Do you have any streams, drainages, or channels on or adjacent to your property?

☒ Yes ☐ No 1 Drainage w/culvert

b. If applicable, provide the name(s) of the stream(s). If the stream, drainage, or channel doesn't have a name, write "Unnamed Stream":

c. If there is a stream, what is the distance between the edge of the stream bank and the edge of the disturbed area at the closest point? How did you take this measurement?

_____ feet Measurement method:

d. Do you have any stream crossings?

☐ Yes ☒ No

e. If yes, what types of crossings are they? If there are multiple crossings, check all that apply.

☐ Bridge ☐ Culvert ☐ Low water ☐ Other, Describe: _____

f. If yes, was the crossing designed by a Qualified Professional (e.g. licensed engineer)?

☐ Yes ☐ No

g. Provide a description of all stream crossings, including who designed them, number of crossings, material, size, frequency of use, and any other relevant details. Indicate the location of stream crossings on your site map. Attach photos of all stream crossings and cross-sectional areas of all engineered flow conveyances (e.g. culverts and ditches) used at crossings.

B. Sediment Erosion Prevention and Sediment Capture

If you are classified as Moderate Risk Tier 1 or Moderate Risk Tier 2 and are submitting a Site Erosion and Sediment Control Plan that includes the following information, you may skip this section.

i. Erosion Prevention BPTC Measures

On your site map, indicate the location of erosion prevention BPTC measures described below. Describe erosion prevention BPTC measures around all disturbed areas and features. Include BPTC measures implemented to address erosion resulting from storm water runoff from impervious surfaces, including but not limited to parking lots and roofs of greenhouses, warehouses, or storage facilities. Attach photos documenting implemented measures and locations for planned implementation.

a. How is storm water drained from buildings, greenhouses, and other structures? How are storm water conveyance systems monitored and maintained to protect water quality?

Storm water is collected from all roofs in 37 gallon containers and pumped to water tanks for cultivation purposes

b. What physical BPTC measures have been implemented to prevent or limit erosion? Check all that apply.

☐ Straw mulch ☑ Wood mulch ~~☑ Hydromulch~~ ☐ Plastic covers ☐ Slope stabilization ☐ Soil binders
☐ Erosion control blankets ☐ Geotextiles ☑ Culvert outfall armoring ☐ Other:

seeding of native grasses harvested from site

Describe the physical BPTC measures checked above, including when they are used and where they are placed.

c. What biological BPTC measures have been implemented to prevent or limit erosion? (e.g. vegetation preservation/ replacement, hydro seeding, etc.)? Check all that apply.

☑ Vegetation preservation ☑ Vegetation planting ☐ Hydroseeding ☐ Other:

Describe the biological BPTC measures checked above, including when they are used and where they are employed.

d. What physical and biological BPTC measures do you plan to implement to prevent or limit erosion? Check all that apply.

Physical BPTC measures:

☐ Straw mulch ☐ Wood mulch ☐ Plastic covers ☐ Slope stabilization ☐ Soil binders
☐ Culvert outfall armoring ☐ Other:

Biological BPTC measures:

☐ Vegetation preservation ☐ Native vegetation planting ☐ Hydroseeding ☐ Other:

Describe the planned BPTC measures and provide an implementation schedule below.

ii. Sediment Control BPTC Measures

On your site map, indicate the location of sediment control BPTC measures described below. Describe sediment control BPTC measures around all disturbed areas and features. Attach photos documenting implemented measures and locations for planned implementation.

a. What physical BPTC measures have been implemented to capture sediment that has been eroded? Check all that apply.

☐ Silt fences ☐ Fiber rolls ☐ Settling ponds/ areas ☐ Other:

Describe the physical BPTC measures checked above, including when they are used and where they are placed.

b. What biological BPTC measures have been implemented to capture sediment that has been eroded? Check all that apply.

☐ Vegetated outfalls ☐ Hydro seeding ☒ Other:

Describe the biological BPTC measures checked above, including when they are used and where they are employed.

c. What physical and biological BPTC measures do you plan to implement to prevent or limit erosion? Check all that apply.

Physical BPTC measures:

☐ Silt fences ☐ Fiber rolls ☐ Settling ponds/ areas ☐ Other:

Biological BPTC measures:

☐ Vegetated outfalls ☐ Hydro seeding ☐ Other:

Describe the planned BPTC measures and provide an implementation schedule below.

iii. Maintenance Activities- Erosion Prevention and Sediment Control

a. How will erosion prevention BPTC measures, sediment control BPTC measures, and stormwater conveyance systems be monitored and maintained to protect water quality? Describe all required maintenance tasks and a schedule for implementation.

b. How will captured sediment be handled? Check all that apply.

☒ Stabilized in place. ☐ Excavated and stabilized on site. ☐ Removed from the site.

Describe the procedure for handling captured sediment below:

2. Fertilizer, Pesticide, Herbicide, and Rodenticide BPTC Measures

A. Product List	
In the sections below, list all products used and describe how they are delivered to the site, how they are stored, and how they are used at the site. Also describe how products will be removed from the site or stored to prevent discharge if they are not consumed before the winter season. If there is not enough space, list remaining products on a separate sheet.	
i. Fertilizers	
Product Name	*Product Description*
Stu-Z-mans	
Rainbow mix	
ii. Pesticides	
Product Name	*Active Ingredient and Product Description*

iii. Herbicides	
Product Name	*Active Ingredient and Product Description*
iv. Rodenticides	
Product Name	*Active Ingredient and Product Description*

B. Product Storage Location

i. Do you use secondary containment for the storage of fertilizers, pesticides, herbicides, and rodenticides?

☑ Yes ☐ No

ii. Where are products stored on site? Indicate the storage location on your site map.

Ag Building

C. Bulk Fertilizers and Chemical Concentrates

i. How are bulk fertilizers and chemical concentrates stored, mixed, and applied?

Storage in Ag building

Mixed Directly in Soil

Applied from measured container & placed on soil before mixed

ii. How are empty containers disposed of?

Store in plastic Bags to Eureka Dump

Burlap and paper Bags used in winter to start/tend fires

D. Spill Prevention and Cleanup Plan

i. What procedures are in place to prevent spills of fertilizers, pesticides, herbicides, and rodenticides?

Measured Container and

measurements are done directly above site to be amended

Zero waste or spills

ii. What procedures are in place to clean up spills if they occur?

all organic fertilizers used – if spills occur matrix scraped up with topsoil & mixed into planted area
Zero pesticides, rodenticides, herbicides

3. Petroleum Product BPTC Measures

A. Product List	
In the sections below, list all products used and describe how they are delivered to the site, how they are stored, and how they are used at the site. Also describe how products will be removed from the site or stored to prevent discharge if they are not consumed before the winter season.	
Product Name	*Product Description*
gasoline	
Diesel	
motor oil	
2-stroke mix	

B. Product Storage Location

i. Do you use secondary containment for the storage of petroleum products?

☒ Yes ☐ No

ii. Where are products stored on site? Indicate the storage location on your site map.

Ag building

C. Product Use

i. How are fuels, lubricants, and other petroleum products stored, mixed, and applied?

Stored in Securing Container 37 gallon Bins
Mixed directly in California Compliant Fuel Containers
Applied Directly In Equipment

ii. How are empty containers disposed of?

Eureka Dump

D. Spill Prevention and Cleanup Plan

i. What procedures are in place to prevent spills of petroleum products?

Equipment to be filled is placed in 37 gallon Bin

ii. What procedures are in place to clean up spills if they occur?

Paper Towels used to clean small spills
Kitty litter on site in case of large spills

4. Trash/ Refuse, and Domestic Wastewater BPTC Measures

A. Type of Trash/ Refuse

i. What types of trash/ refuse will be generated at the site? Include a description of all solid waste materials (e.g. spent hydroponic growing media, organic materials, plastic, paper, glass, clay, etc.)

Organic materials are composted
plastic containers saved for next season

ii. How will trash/ refuse be contained and properly disposed of?

Contained in Bags and in secondary trash cans
Disposed of at Elbert Dump

iii. Where will trash/ refuse be stored? Indicate the location of trash/ refuse storage on your site map.

B. Personal Waste

i. How many employees, visitors, and residents will you have at the site?

Employees: none

Residents: 2

Visitors: none per

ii. What types of domestic wastewater will be generated at the site? Check all that apply.

☒ Household generated wastewater ☐ Chemical toilet waste ☐ Other:

iii. How will domestic wastewater be disposed? Check all that apply.

☐ Sewer

☒ Permitted onsite wastewater treatment system (e.g. septic tank and leach lines) Provide a schematic and a copy of your permit for the system.

☐ Chemical toilets or holding tank. If so, provide the name of the servicing company and frequency of service:

☐ Outhouse, pit privy, or similar. (Use of this alternative requires approval from the Regional Board Executive Officer. Attach the approval from the Executive Officer and any conditions imposed if using this alternative. Indicate the location of any domestic wastewater treatment, storage, or disposal areas on your site map, as well as the locations of all water wells (e.g. drinking water, irrigation water, commercial water, etc.) inside or within 0.5 mile of the site boundary.)

5. Winterization BPTC Measures

A. Winterization Activities Performed

What activities will be performed to winterize the size and prevent discharges of waste?

B. Maintenance of Drainage and Sediment Capture Features
What maintenance activities will be performed to remove debris and soil blockages from drainage and sediment capture features (e.g. drainage culverts, drainage trenches, settling ponds, etc.) and ensure adequate capacity exists? Include a description of how all solid waste materials are managed.
C. Revegetation Activities
What revegetation activities will occur at the beginning or end of the precipitation season?
D. Compliance Schedule
If any Winterization BPTC measure cannot be completed before the onset of winter period, contact the Regional Water Board to establish a compliance schedule.
Provide a timeline for implementation of these measures:

6. Cannabis Cultivation Details

A. Growing Methods

i. Where is cannabis grown?

☒ Fully outdoor ☐ Hoophouse ☐ Greenhouse with permeable floors ☐ Other (please describe):

ii. What type of container is cannabis grown in? Check all that apply.

☒ In ground ☐ Raised beds ☒ Pots/ grow bags/ trays on the ground
☐ Pots/ grow bags/ trays elevated off the ground ☐ Other (describe):_____

iii. If cannabis is grown in containers elevated off the ground, is irrigation tailwater collected?

☐ Yes ☐ No ☐ A portion of it is collected ☐ N/A

If yes, describe what you do with the captured irrigation tailwater:

B. Irrigation Water Treatment

i. Is irrigation water filtered prior to use?

☐ Yes ☒ No

If irrigation water is filtered, answer the questions below:

ii. What type of filtration is used (i.e. reverse osmosis, ion exchange, etc.)?

iii. What is the maximum volume of water filtered per day?

iv. How are filter residuals (i.e. brines, etc.) disposed of?

v. What is the volume of residual produced?
_____ gallons per

7. Certification

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

☐ I have read and accept the above terms.

Operator/Responsible Party _____ Date Prepared _____

DIRECTIONS FOR USE

- Vegetable Gardens
  1 bag per 200sq. ft. Work in, then apply layer over rows after seeding.
- New Lawns
  1 bag per 200 sq. ft. Work in, then apply a fine layer as mulch after seeding prior to rolling. Keep moist.
- Established Lawns
  1 bag per 200 sq. ft.
- Flower Beds
  Work in 1 bag per 200 sq. ft.
- Established Shrubs, Trees, Roses, etc.
  Apply a generous layer from trunk to outer edge of foliage.

Double the above amount for overworked, rundown, compacted or clay type soils.

PRODUCT SPECS

UPC	Bag Wt.	Pallet Wt.
25993-00001	25#	2000
Bags/Pallet		**High & Tigh**
80		16 x 5

Manufactured in the USA by:

D. Stutzman FARMS

P.O. Box 307, Canby, OR 97013
888-877-7665

Please visit our website at www.stutzman-environmental.com for information about our other organic fertilizer products or our line of premium pet care products.

100% Natural Organic Fertilizer

D Stutzman FARMS

SUP'R GREEN 3-2-2

CHICKEN MANURE

A ground, 100% natural organic composted mixture of sawdust and chicken manure for superior mulching, feeding and water retention.

ALL PURPOSE GARDEN AND PLANT FERTILIZER

A HIGH PERFORMANCE, ENVIRONMENTALLY FRIENDLY, SLOW NITROGEN RELEASE PLANT FOOD

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CHICKEN MANURE

- Over 5 times more plant food value than steer manure
- Guaranteed weed and dirt free
- Will not burn
- Excellent for retaining moiture
- Loosens and aerates soil
- Ground for uniform texture
- Special slow release makes it last and last
- Really makes your vegetables, flowers and lawn grow

MORE RESULTS FOR DOLLARS SPENT!

Until **SUP'R GREEN** was formulated, chicken manure had a reputation of being too strong to be used by the average gardener. It is true, pure chicken manure will burn young and tender plants. Raw manure releases nitrogen into the soil too rapidly, causing burning. Beware of 100% pure or uncomposted manure products.

SUP'R GREEN consists of 100% broiler litter. Broilers are fed a higher protein diet which results in a higher nitrogen content in the litter. The elements are suspended in the sawdust compost providing a natural slow nutrient release that promotes lush and hearty growth in vegetable gardens, lawns, flowers and shrubs. One annual application of **SUP'R GREEN** improves long term soil quality and improves beneficial microbial growth.

Here at D. Stutzman Farms, we take great pride in packaging **SUP'R GREEN** a consistently high quality product. We can honestly say that our customers gain more result for less dollars spent.

Guaranteed Analysis

Total Nitrogen (N).....3.00%
2% Water Insoluble Nitrogen
1% Water Soluble nitrogen
Available Phosphate (P_2O_5).....2.00%
Soluble Potash (K_2O).....2.00%

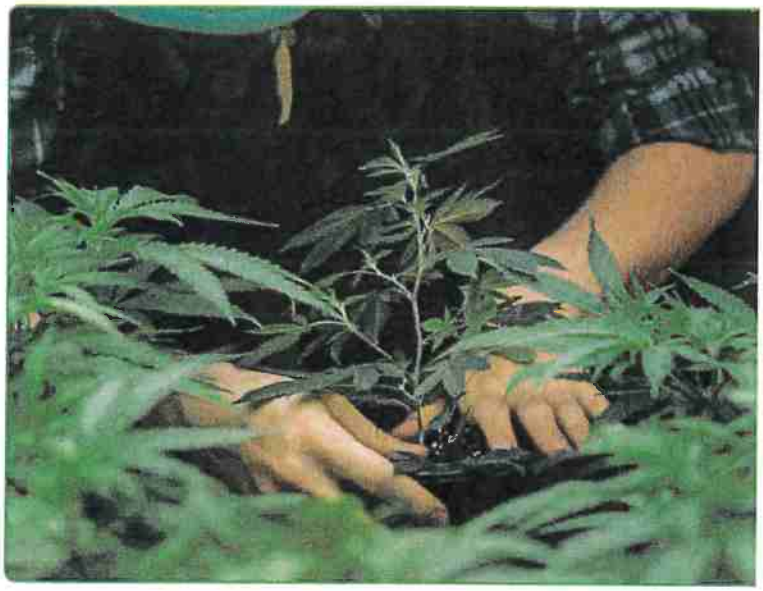
BioWorks®

phone: (888) 335-9044
email: cannabis@bioworksinc.com
www.bioworkscannabis.com

SuffOil-X®

SuffOil-X is an organic insecticide (Spray Oil Emulsion Insecticide, Miticide, Fungicide) that effectively controls a broad range of insects, mites and fungi - including powdery mildew. Effective control of Russet mites. SuffOil-X is an OMRI listed product.

Active Ingredients: Mineral Oil



FOR TECHNICAL ASSISTANCE CALL (888) 335-9044

If you are a professional grower and have a question, or if you just want to discuss a particular issue, **contact us**.

Our team is ready to discuss your crop-specific issues or any questions you have about our products. We will provide you with rapid, comprehensive and personalized support.

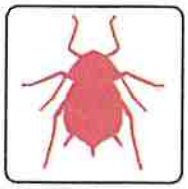
SAFE. PROVEN. EFFECTIVE.

For 25 years BioWorks has been helping customers in the horticulture and specialty agriculture markets to develop effective and efficient programs using products that are safe, proven and effective.

We are continuously reinventing the way our customers work by providing biologically based, integrated, safe solutions and programs.

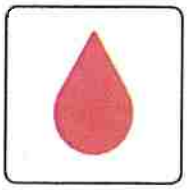
INSECT CONTROL

SuffOil-X is an organic insecticide that effectively controls a broad range of insects, mites and fungi. Effective control of Russet mites.



SUPERIOR FORMULATION

SuffOil-X's pre-emulsification process breaks down the oil particle, reducing the droplet size. Emulsifiers are then added in the final step of the manufacturing process. The small oil droplets ensure that a very thin, uniform coating of oil is applied to the plant surface.



RUSSET MITE CONTROL

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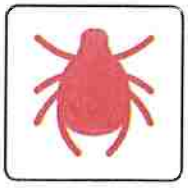

SuffOil-X®

BioWorks®

AN ORGANIC INSECTICIDE (SPRAY OIL EMULSION INSECTICIDE, MITICIDE, FUNGICIDE)

PRODUCT INFORMATION

- Mineral Oil
- Available Sizes: 2.5 gal, 30 gal
- Registered for use in the USA except: AK, DC

REI & PHI

- 4-hour REI, 0-day PHI

SHELF LIFE

Below 32 °F:	Do *NOT* freeze
Refrigerate 40 °F:	Not needed
70° - 75 °F:	2 years
Above 75 °F:	Store cool

APPLICATION RATES

FOLIAR SPRAY

- Spray to glisten for complete coverage. Avoid runoff.
- Apply with a fine droplet size
- Ensure drying within 2 hours, lights off
- DO NOT FOG
- DO NOT apply to stressed plants (example: water or temperature stressed)
- Refer to product label for full instructions

RATES

- 1% v/v for greenhouse application
- Up to 2% v/v for outdoor prodcution
- Refer to product label for complete instructions

APPLICATION SCHEDULE

FOLIAR SPRAY

- Make applications on a 7-day interval or as needed

FOR TECHNICAL ASSISTANCE CALL (888) 335-9044

Please refer to product labels for complete applications. Always read and follow label directions.

EXHIBIT F

Pesticide and Fertilizer Data Sheets

DIRECTIONS FOR USE

- **Vegetable Gardens**
  1 bag per 200sq. ft. Work in, then apply layer over rows after seeding.
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  Apply a generous layer from trunk to outer edge of foliage.

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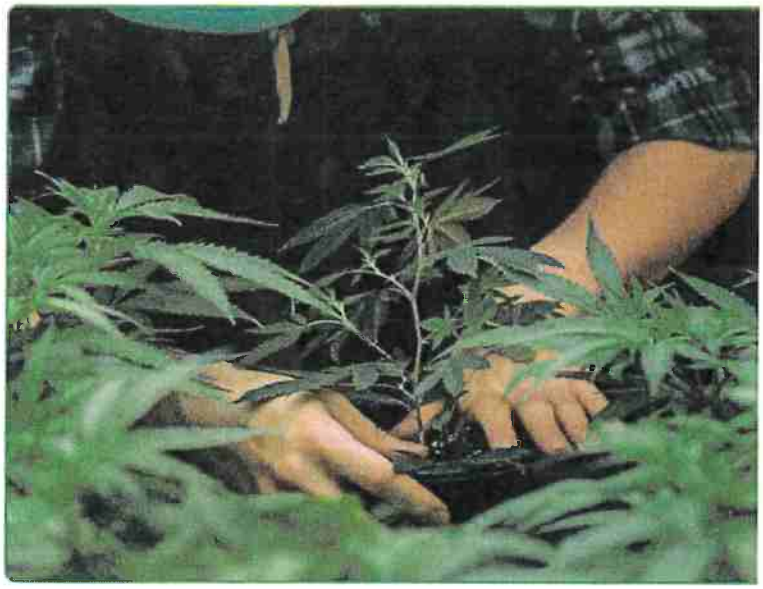

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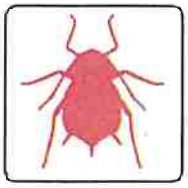

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- Up to 2% v/v for outdoor prodcution
- Refer to product label for complete instructions

APPLICATION SCHEDULE

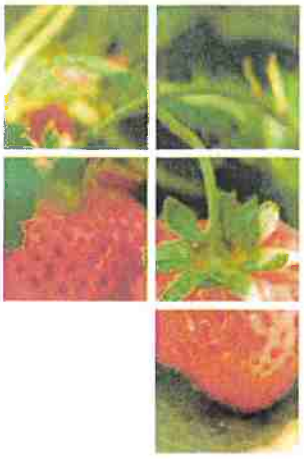
FOLIAR SPRAY

- Make applications on a 7-day interval or as needed

FOR TECHNICAL ASSISTANCE CALL (888) 335-9044

Please refer to product labels for complete applications. Always read and follow label directions.





Introducing ...

VENERATE™ XC

BIOINSECTICIDE

A new, liquid bioinsecticide from Marrone Bio Innovations that's active against a wide variety of chewing and sucking insects and mites...and easy on beneficials.

VENERATE™ XC is an ideal tool for conventional and organic growing operations and offers a number of key benefits.

VENERATE XC is an excellent addition to existing IPM and resistance management programs...

- ✓ Broad-spectrum protection against sucking and chewing insects and mites
- ✓ Activity against adults and nymphs
- ✓ Multiple modes of action
- ✓ Nontoxic to fish, birds, and most beneficial insects...including honey bees

Managing residues to meet your customers' requirements is easy with VENERATE XC...

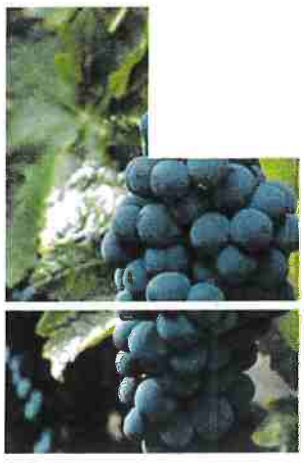
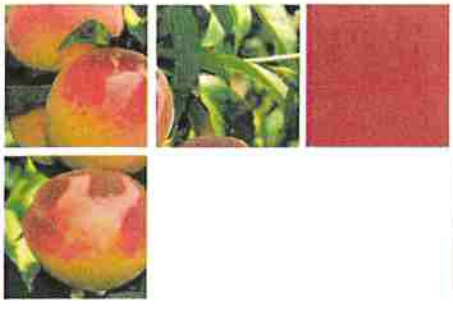
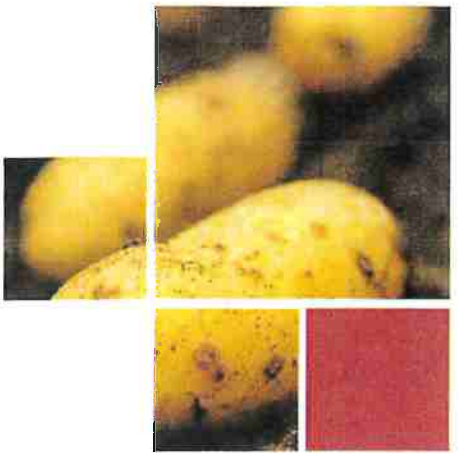
- ✓ 0-day PHI
- ✓ MRL tolerance exemption

VENERATE XC is convenient to use...

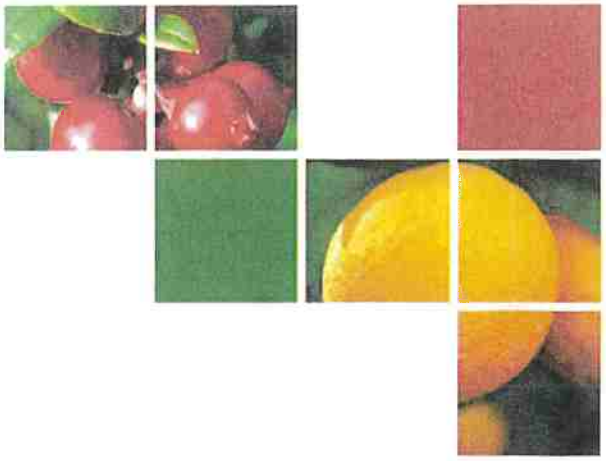
- ✓ 4-hour REI
- ✓ Easy-to-use liquid formulation
- ✓ No spray buffer required

With VENERATE XC, you benefit from maximum operational flexibility...

- ✓ No limit on number of applications per season
- ✓ Approved for field and greenhouse applications
- ✓ Apply by ground or air
- ✓ OMRI approved and NOP compliant

VENERATE™ XC
BIOINSECTICIDE

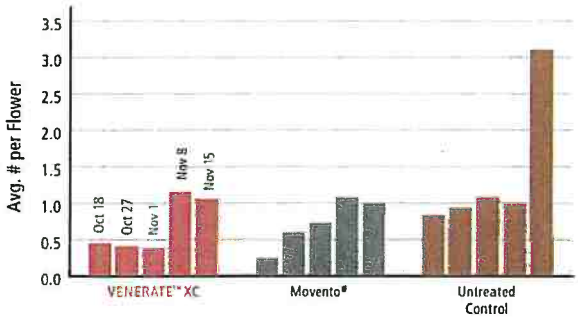


Reduce the risk of insect resistance with VENERATE XC

VENERATE™ XC is derived from a newly discovered bacterial species and is powered by several active compounds that span different chemical classes. These compounds drive multiple modes of action—exoskeleton degradation and molting interference through exposure and ingestion of the product.

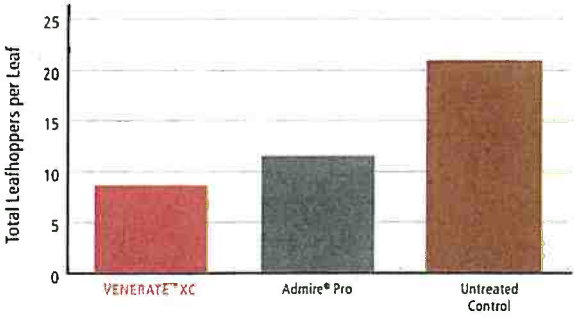
With VENERATE's multiple active compounds and modes of action, the risk of insect resistance is greatly reduced.

Western Flower Thrips on Strawberry
VENERATE
Pacific Ag Research, CA



Treatments applied 1= Oct 12 , 2= Oct 19, 2010. Trial #115.
All applications included surfactant.

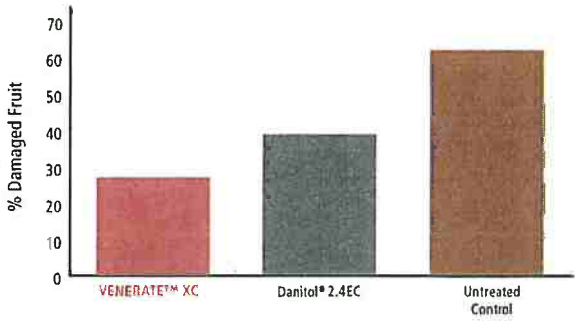
Leafhopper in Grapes
VENERATE
Agriculture Development Group, WA



Trial conducted August/September 2013. Two applications. Trial #V010.
All applications included surfactant.

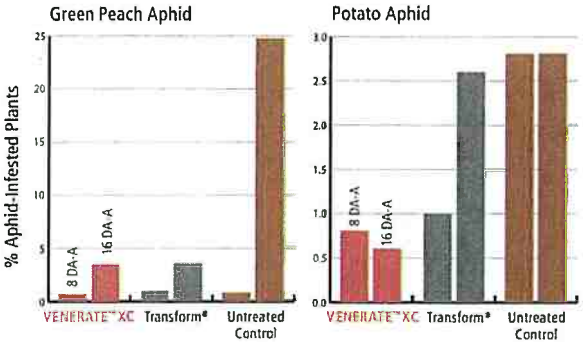
Always read and follow label directions.

Brown Marmorated Stink Bug in Stonefruit
VENERATE
Rutgers Agricultural Research & Extension Center, NJ



Application Jul 29, 2013. Date of harvest: Aug 1 (3 days after application). Entire block was treated with Belay® 6 oz. on Jul 11 and Baythroid® 2 oz. on Jul 18. Trial #V6.

Aphids on Potatoes
VENERATE
University of Maine, ME



Trial conducted August 2013. Two applications. Trial #V018.

OMRI LISTED

CAN BE USED IN ORGANIC PRODUCTION

Marrone Bio Innovations

FOR MORE INFORMATION CONTACT YOUR LOCAL RETAILER OR MARRONE BIO INNOVATIONS:

Phone 530-750-2800 • Toll Free 877-664-4476
Email venerate@marronebio.com

EXHIBIT G

Statement of Contingent and Limiting Conditions

STATEMENT OF CONTINGENT AND LIMITING CONDITIONS CONCERNING THE PREPARATION AND USE OF REPORTS ADDRESSING GENERAL WASTE DISCHARGE REQUIREMENTS UNDER ORDER WQ 2019-0001-DWQ

1. This document has been prepared for the property within APN 315-045-004, in Humboldt County, for enrollment in the General Waste Discharge Order WQ 2019-0001-DWQ.
2. AgDynamix does not assume any liability for the use or misuse of the information in this document.
3. The information is based upon conditions apparent to AgDynamix based on client interviews, photographs and published USGS, USDA FSA, USDA Humboldt County GIS, and Esri maps at the time data was collected. Changes due to land use activities or other factors occurring after the submittal of this report, have not been considered in this document.
4. The conditions presented in this document may differ from those made by others or from changes on the property occurring after inspections were conducted. AgDynamix does not guarantee this work against such differences.
5. AgDynamix did not conduct an investigation on a legal survey of the property.
6. Persons using this document are advised to contact AgDynamix prior to such use.
7. AgDynamix will not discuss this document or reproduce it for anyone other than the Client for which this document was prepared without authorization from the Client.

Geoff Churchill

Representative

Kinsey Ridge Farm

KINSEY RIDGE FARM
SITE MANAGEMENT PLAN

Humboldt County

APN: 315-045-004

Owner: Kristi Smith
Contact: Geoffrey Churchill

Project Name: Kinsey Ridge Farm
WDID #: 1_12CC411731
APN: 315-045-004

Route 1
Willow Creek, CA 95573

Table Of Contents

Site Plan

APN: 315-045-004
WDID#: 1_12CC411731

Purpose

This Site Management Plan (SMP) has been prepared on behalf of the cannabis cultivator for the Humboldt County property identified as assessor parcel number 315-045-004, by agreement and in response to the State Water Resources Control Board Cannabis Cultivation Policy (Cannabis Policy), in congruence with Order WQ 2019-0001-DWQ General Waste Discharge Requirements for Discharges of Waste Associated with Cannabis Cultivation Activities (General Order). The General Order implements the Cannabis Policy requirements, specifically those requirements that address waste discharges associated with cannabis cultivation activities.

Discharges registered as Tier 1 or 2 Cannabis Cultivators are required to submit and implement a Site Management Plan describing how they are complying with the requirements listed in Attachment A of the General Order. This SMP describes how the cultivator is implementing the Best Practical Treatment or Control Measures (BPTC) listed in Attachment A are implemented across the entire property where Commercial Cannabis Cultivation is/will be occurring.

Tier Designation

Tiers are defined by the amount of disturbed area. As defined in The General Order, Disturbed Area, or "Land Disturbance" includes areas where natural plant growth has been removed whether by physical, animal, or chemical means, or natural grade has been modified for any purpose. Land disturbance includes all activities whatsoever associated with developing or modifying land for cannabis cultivation related activities or access.

Tier 1 outdoor commercial cultivation activities disturb an area equal to or greater than 2,000 square feet and less than 1 acre (43,560 square feet). Tier 2 outdoor commercial cultivation activities disturb an area equal to or greater than 1 acre. Risk designation is based on the slope of disturbed areas and the proximity to a surface water body.

According to the Notice of Receipt from the State Water Resources Control Board for the Cannabis General Order Application Number: 411731 the property will be processed as a Tier 1 Low Risk site. Tier 1 outdoor commercial cultivation activities disturb an area less than 1 acre (43,560 square feet). As was reported in the Initial Enrollment, no portion of the disturbed area is within the setback requirements, no portion of the disturbed area is located on a slope greater than 30 percent, and the cannabis cultivation area is less than or equal to 1 acre.

Project Description

This property includes approximately 30,000 square feet (.67 acres) of existing cumulative disturbed area on the 84 acre parcel. This current disturbed area is split between four graded areas dispersed throughout the parcel. The project proposes to relocate cultivation out of areas with a slope greater than 30% due to instability features and remediate existing flats for other incidental uses. There is currently no cultivation

occurring on the property.

Plans are proposed for 13,000 S.F. of cumulative outdoor cultivation on the property located in Relocation Area 1 and 2 designated on the Site Plan. This new proposed cultivation area would also disturb under an acre of land in two pre-existing, gently sloping (under 30% grade) meadow areas.

This parcel is approximately 1300 feet from White Oak Creek, 1100 feet from the Unnamed tributary to Redwood Creek, and, as the crow flies, approximately 14 miles from the town of Willow Creek.

Methods

The methods used to develop this SMP include both historical and client-substantiated data analysis. The historical data analysis consisted of studying published USGS, USDA FSA, Humboldt County GIS, and ESRI. In addition, this client provided a Hydraulic and Drainage Report (Exhibit E) and Site Plan (Exhibit A), both drafted by licensed professionals at Trinity Valley Consulting Engineers (TVCE) and both were analyzed for the purpose of this SMP. The client-substantiated component included an interview questionnaire, photographs, and descriptions of site-specific conditions including all access roads, vehicle parking areas, Waters of the State, stream crossings, drainage features, cultivation sites, buildings, disturbed areas, and all other relevant site features within the project area and surrounding areas. Cultivation areas, associated facilities, roads, and other developed and/or disturbed areas were assessed for discharges and related controllable water quality factors from the activities listed in the General Order.

1. Sediment Discharge BPTC Measures

A. Site Characteristics

i. Access Road Conditions

The parcel is divided by USFS Route 1, a federally owned and maintained thoroughfare paved with asphalt. The parcel currently has dirt roads to the cultivation areas that will be improved in accordance with State and County standards.

The residence is located adjacent to the Forest Service Road. There are two residents/operators and no employees. Other than during harvest and planting times, travel around the property is done on foot. A pickup truck is used on site for the two planting and two harvesting days of each year.

The on-site roadways currently convey water to roadside ditches via rolling dips that, in turn, convey water through any culverts to be dispersed in the natural flow pattern of the parcel. If required by Humboldt County, the water drainage facilities will be improved to meet code requirements by incorporating energy reducing facilities such as rip-rap and bioswales to slow the water after being discharged through culverts. This will allow sediment to drop out from the conveyed stormwater.

On a yearly basis the on-site roadway will be winterized during the fall with seed, mulch and fiber rolls, as necessary. At the beginning of activities in the spring the on-site roadway will have: culverts and roadside ditches cleaned; rolling dips re-established; travel way re-graded; and, if necessary, additional gravel and dust control will be placed.

Every other fall, the road will be serviced with the heavy equipment necessary. The amount of traffic and activities on the site are such that it is not foreseen that much maintenance activities will be required during the summer months, but maintenance will be attended to during the summer as required.

ii. Streams

The area of use is located at the top of a hill, with no USGS mapped waterways on the parcel. The three closest blue line streams located, over 1000 feet away, on adjacent parcels are: an Unnamed Stream to the west, Cow Creek to the north east, and White Oak Creek to the south east.

Multiple Unnamed Class II and Class III waterways exist on the property. There is potentially more than one location where a previously existing cultivation area was located within the setback requirements (see site map). There is currently no cultivation occurring in those areas. A licensed professional will be contracted to assess if a Disturbed Area Stabilization Plan will be required.

There is one culvert identified on the access roads for this parcel. This an 18 inch Culvert made of corrugated plastic. A Hydraulic and Drainage Report (Exhibit D) has been

completed by a licensed professional which suggests upsizing the culvert to 30 inches. Work on the culvert will only commence once the necessary permits have been acquired with CDFW and the Water Board. Photos of the existing culvert are included in Exhibit C of this report.

B. Sediment Erosion Prevention and Sediment Capture

i. Erosion Prevention

Storm water from the roof of the residence and other structures is captured in gutters and transported to a water conveyance system that transfers the water to rainwater catchment tanks. The structures without gutters convey the stormwater towards natural drainage paths dispersed through vegetated areas.

Cultivation Area 2 also features a 96' x 8' x 8' Gabian Rock Wall armoring designed by Hilfiker Retaining Walls to prevent erosion and instability within the Cultivation Area (see Exhibit D).

If necessary, straw mulch, seed, and fiber rolls will be placed on site for temporary erosion control and also at the end of harvest prior to winter each year. Any bare soil areas will be converted to vegetation that will retard runoff and take up nutrients, pesticides, and other pollutants wherever possible. These BPTC's will be placed in accordance with the State of California General Permit.

ii. Sediment Control BPTC Measures

In the case of any erosion, there will be fiber rolls in place to capture sediment. The initial approach will be to prevent and minimize erosion, thereby eliminating most sediment needing capture. If required, the fiber rolls will be placed at the edges of all exposed slopes. Also if necessary, hydroseeding will be used for sediment control and dispersed during the winterization of the site.

Spoil or soil piles (piles of excavated soil or excess potting soil) that remain onsite one day or longer will be surrounded by properly installed temporary sediment barriers (fiber rolls or filter fence) and completely covered by an impermeable material or straw and seed. The impermeable fabric will also be placed on any non-vegetated spoil piles whenever a storm is impending. This practice will allow rain to flow off of the fabric instead of allowing it to quickly erode the spoil pile.

iii. Maintenance Activities – Erosion Prevention and Sediment Control

Erosion control consisting of fiber rolls, mulch and seed will immediately be put in place after any activities that expose slopes: either, once those slopes will no longer be worked on during the construction activities; or before any rain event.

Maintenance and inspection of BPTC's will be performed in accordance with the State of California General Construction Permit. The BPTCs will be inspected weekly, prior to and after a rain event. When any BPTC's are damaged they will be immediately repaired or

replaced. Sediment will be removed from the BPTC's as needed and will be disposed of in accordance to the General Permit.

2. Fertilizer, Pesticide, Herbicide, and Rodenticide BPTC Measures

A. Product List

i. Fertilizers:

1. Earth Juice Rainbow Mix Pro Grow - an all-purpose organic fertilizer specially formulated to promote vigorous growth during all phases of plant and tree development. A complete formula with macro and micronutrients, including mycorrhizal fungi, beneficial microbes and humic acids.
2. Earth Juice Rainbow Mix Pro Bloom - a powerful blend of all natural ingredients and 29 different strains of mycorrhizae and beneficial microbes.
3. Stutzman Sup'R Green Composted Chicken Manure Fertilizer - a ground, 100% natural organic composted mixture of sawdust and chicken manure for superior mulching, feeding and water retention.

ii. Pesticides

1. SuffOil-X - This pre-emulsified oil spray uses suffocation to kill many soft-bodied insects and to control certain fungal diseases. Mineral Oil is the only active ingredient.
2. Venerate - A sustainable and highly effective liquid bioinsecticide that features multiple modes of action and is highly effective against a wide variety of chewing and sucking insects and mites yet are easy on beneficials. The active ingredients are: are heat-killed *Burkaholderia* spp. strain A396 cells and spent fermentation media.

iii. Herbicides

1. see above.

iv. Rodenticides

1. none.

B. Product Storage Location

All of the above-listed products and any other fertilizers, pesticides, herbicides, or rodenticides used in the future will be stored in the shed designated on site map (see Exhibit A) as "Agricultural Chemicals/Pesticide/Fuel Storage" with all containers stored in secondary containment.

C. Bulk Fertilizers and Chemical Concentrates

Bulk fertilizers and chemicals will be stored and mixed within the above-referenced shed. This shed is outside of any setbacks and will have secondary containment. Application will not occur within 48 hours of a predicted rain event having a 50% or greater chance of happening and producing more than .5" of rainfall during the event.

Disposal of empty containers will be in accordance with manufacturers recommendations. All bulk fertilizers and chemicals will be kept in their original containers and properly stored at all times. Containers will be routinely inspected for leaks.

D. Spill Prevention and Cleanup Plan

All Fertilizers, Pesticides, Herbicides, and Rodenticides will be kept in their original containers and properly stored at all times. These containers will be routinely inspected for leaks. In addition, containers with these materials are stored within a covered structure, within secured containers, and with their lids secured after their use.

There are adequate quantities of absorbent materials stored at this location. Should a spill of these materials occur, absorbent materials will be applied immediately and allowed enough time to absorb as much material as possible. Following treatment, absorbent materials applied will be removed and disposed of appropriately as per the manufacturer's guidelines. Reporting in accordance with the State of California Water Board will occur.

3. Petroleum Product BPTC Measures

A. Product List

1. Gasoline – Powers the gasoline-powered sprayers and other gasoline engines on site.
2. Oil – Used for oil changes on all gas engines when required.
3. Bar Oil – Used for oil changes with the chain saws.
4. Two Cycle Fuel – Powers the weed eater, roto-tiller, and chainsaws.

B. Product Storage Location

All of the above listed products and any other petroleum products used in the will be stored in the same shed designated on the site map for fertilizer and pesticide storage.

All petroleum products and other liquid chemicals are stored so as to prevent their spillage, discharge, or seepage into receiving waters. Storage containers shall be of

suitable material and construction to be compatible with the substance(s) stored and conditions of storage such as pressure and temperature. Above ground storage tanks and containers would be provided with a secondary means of containment for the entire capacity of the largest single container. Sufficient cover shall be provided to prevent any/all precipitation from entering said secondary containment vessel.

C. Product Use

Small quantities of fuel and motor oil are stored within fuel canisters, or the original container, in the above-mentioned structure (see site map). Containers holding any petroleum products are stored within a covered structure, within secured containers, and with their lids secured after their use. Disposal of empty containers will be in accordance with manufacturer's recommendations. In addition, these containers will be routinely inspected for leaks.

D. Spill Prevention and Cleanup

Any/all fuel canisters and motor oil containers shall be stored within a covered structure in secondary containment (e.g. plastic totes or sealed metal boxes) while being stored long term or not in immediate use, wherever these materials are used anywhere on the property.

There are adequate quantities of absorbent materials stored at this location. Should a spill of these materials occur, absorbent materials will be applied immediately and allowed enough time to absorb as much material as possible. Following treatment, absorbent materials applied will be removed and disposed of appropriately as per the manufacturer's guidelines. Reporting in accordance with the State of California Water Board will occur.

4. Trash/Refuse, and Domestic Wastewater BPTC Measures

A. Type of Trash/Refuse

The types of trash that will be generated at this site will be typical household waste such as paper, plastic, glass and other recyclables. In addition to typical household waste, additional waste associated with the cultivation of Cannabis will be created also. The Cannabis-related trash will be: plastic bags, grow pots, and jugs and containers containing fertilizers, herbicides, and pesticides.

B. Trash/Refuse Containment and Disposal

Trash/refuse will typically be hauled off-site to a dump or recycle facility and organic household waste will be composted. Cannabis related trash, residual nutrients, and chemicals will be disposed of in a manner that will not impact waters of the State and

will not encroach on any setbacks to riparian areas. Cannabis plant material may be disposed of onsite in compliance with any CDFA license conditions.

C. Trash/Refuse Storage Location

Typical household trash that can't be composted will be removed from the site and will be hauled to a landfill for disposal. Prior to removal from the site, trash will be stored in a shed designated on the site map.

Spent growth medium shall be stored in water-tight containers or covered with plastic sheeting prior to proper disposal or reuse. Spent growth medium will be disposed of at an authorized landfill or other disposal site in compliance with state and local laws, ordinances, and regulations. Proper reuse of spent growth medium may include incorporation into garden beds or spreading on a stable surface and re-vegetating the surface with native plants.

D. Personal Waste

i. Total Number of Employees, Visitors, and Residents at the Site

There will be 2 residents year round at this site. The only visitors to the site will be qualified professionals and regulators from the appropriate agencies performing routine inspections of the site.

ii. Types of Domestic Wastewater

The household wastewater generated at the site will be typical greywater effluents and solids.

iii. Disposal of Domestic Wastewater

The domestic waste will be disposed of in an On-site Wastewater Treatment System (OWTS). The OWTS will be designed and constructed in accordance with County and State requirements for permitting. Trinity Valley Consulting Engineers (TVCE) has conducted the septic suitability study and designed the OWTS in accordance with State and Local guidelines. If the project requires field laborers, portable toilets will be equipped on site that are serviced and maintained regularly.

5. Winterization BPTC Measures

A. Winterization and Waste Discharge Prevention

During the winterization process, fiber rolls, seed, and mulch will be applied in accordance with State requirements. Temporary roads will be closed to through traffic

and no heavy equipment will operate during the winter period.

The site remains inaccessible from February to April due to inclimate weather conditions and no project operations would occur during this time frame.

B. Drainage and Sediment Capture Maintenance Activities

The owners shall maintain all culverts, drop inlets, trash racks and similar devices to ensure they are not blocked by debris or sediment. The outflow of culverts shall be inspected to ensure erosion is not undermining the culvert. Culverts shall be inspected prior to the onset of fall and winter precipitation and following precipitation events that produce at least 0.5 in/day or 1.0 inch/7 days of precipitation to determine if maintenance or cleaning is required.

C. Revegetation Activities

If necessary, seed and mulch will be applied to all exposed slopes prior to the beginning of the precipitation season.

D. Timeline for The Above Winterization, Maintenance and Revegetation Measures

Winterization will be completed prior to October 15 of each year and will not be removed until after April 15 of each year.

6. Cannabis Cultivation Activities

A. Cannabis Cultivation Areas

The Cannabis grown at this facility will all be grown within two cultivation areas in the southeastern portion of the parcel. The cultivation area further to the east will be 5,760 square feet. The cultivation area further to the west (RA2) will be 7,236 square feet. In both proposed cultivation areas, Cannabis will be planted in the ground in augered holes with possible above ground planters/pots. Tailwater will not be captured.

B. Irrigation Water Filtration

Irrigation water is not filtered prior to use. No fertigation occurs for this project. All fertilization occurs in pre soil medium preparations and through means of top dressing.

7. Exhibits

A. Site Map (Full Size)

B. Location Map

C. Culvert Photos

D. Hilfiker Retaining Wall Photo

E. Hydraulic and Drainage Report

F. Pesticide and Fertilizer Data Sheets

G. Statement of Contingent and Limiting Conditions

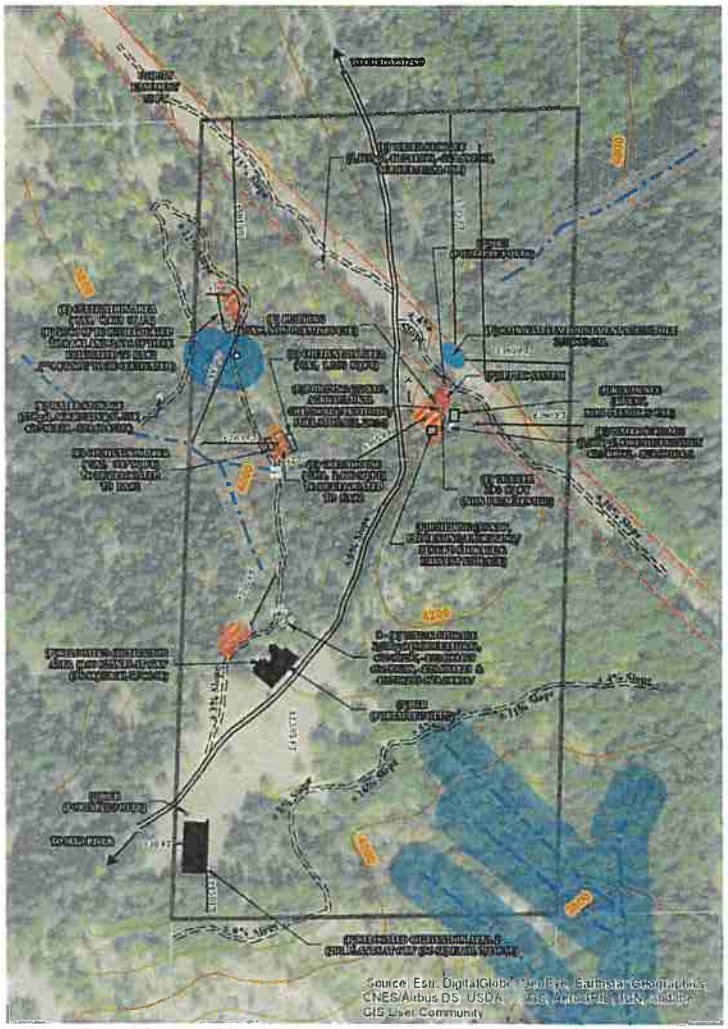
EXHIBIT A

Site Map

SITE PLAN

PORTION OF SECTION 11 TOWNSHIP 4 NORTH, RANGE 4 EAST, H.M
APN: 315-045-004
FOR

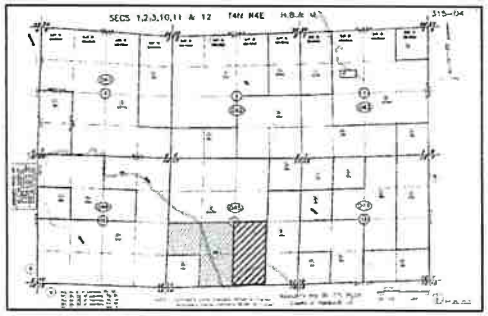
KINSEY RIDGE FARM
ROUTE 1
WILLOW CREEK, CA 95573



LEGEND

USFS ROUTE 1	STRUCTURE
<all other values>	CULTIVATION AREA
CULVERT	GREENHOUSE
GATE	RAINWATER IMPOUNDMENT STRUCTURE
SPRING	UTILITY EASEMENT
WATER STORAGE	GRADED_AREA
ACCESS ROAD	PROPERTY BOUNDARY- NOT SURVEYED
FENCE	SURROUNDING PARCELS
STREAM	(P) RELOCATED CULTIVATION AREA
50 FT BUFFER	
100 FT BUFFER	

(E)Total Cultivation Area:	**13,000 sq ft**
(E) Cultivation Area:	**10,600 sq ft**
(E)Greenhouse Cultivation Area:	**2,400 sq ft**
(P) Relocated Area	**13,003 sf ft**
**** 4 sq ft from Cultivation Area 3 Not to berelocated/cultivated**	
Total Water Storage:	**11,650 gal**
Water Tanks:	**11,650 gal**
Proposed Water Storage:	**250,000 gal**
Rainwater Impoundment Structure:	**250,000 gal**



LOCATION MAP NTS

AREA MAP NTS

GENERAL NOTES

Water: Delivered
Power: Generator
Phone: Verizon Wireless
Septic: Onsite-unpermitted
Grading: None

NOTES

ZONING: TPZ
GENERAL PLAN USE: T (FRWK)
COASTAL ZONE: NO
FIRE RATING: HIGH
FEMA FLOOD ZONE: NO
SEISMIC SAFETY: HIGH INSTABILITY
EARTHQUAKE FAULTS OR HAZARDS: NO
SETBACKS: 30 ft.
SLOPE: CALCULATED USING ELEVATION PROFILE TAB.
ACCURACY ±5%
(PER HUM CO WEB PORTAL)

1 " = 400 FEET

0 400

TVCE

KINSEY RIDGE FARM
315-045-004
SITE PLAN

11/15/16
1" = 400'
1027
P1

EXHIBIT B

Location Map

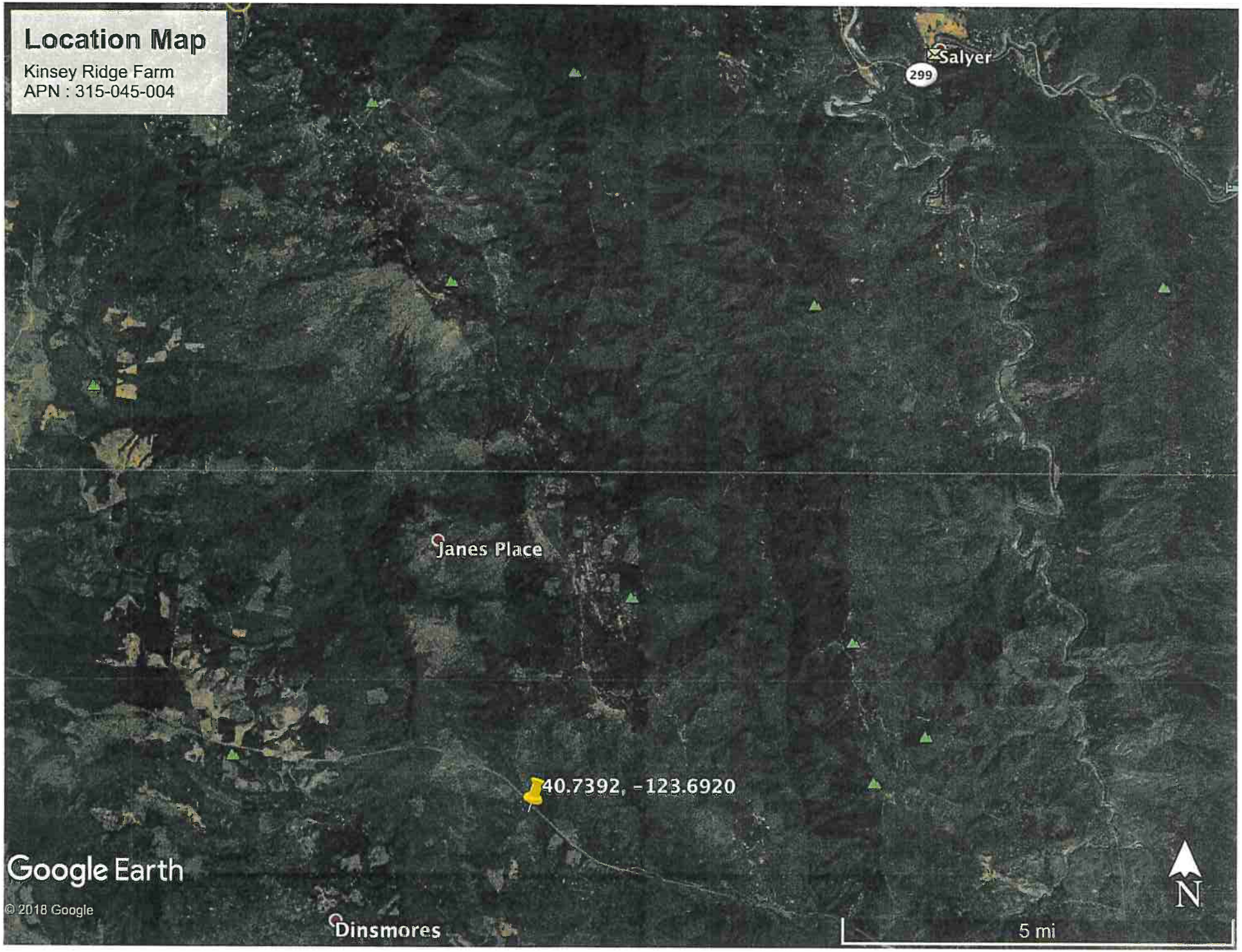

Location Map
Kinsey Ridge Farm
APN : 315-045-004
Salyer
299
Janes Place
40.7392, -123.6920
Google Earth
© 2018 Google
Dinsmores
N
5 mi

EXHIBIT C

Culvert Photos

Photo 1: Culvert Inlet

Photo 2: Culvert Outlet

EXHIBIT D

Hilfiker Retaining Wall

Photo 1: Retaining Wall

EXHIBIT D

Hydraulic and Drainage Report

TVCE
TRINITY VALLEY
CONSULTING ENGINEERS, INC

Hydraulic and Drainage Report

KINSEY RIDGE FARM, ROUTE 1
APN: 315-045-004
PORTION OF SECTION 11 TOWNSHIP 4 NORTH, RANGE 4 EAST, H.M
WILLOW CREEK, CA 95573

Report Provided For:

Kristi Smith / Geoff Churchill
3030 Alliance Road
Arcata CA 95521

Report Provided By:

Trinity Valley Consulting Engineers, Inc.
67 Walnut Way, PO Box 1567
Willow Creek, California 95573
(530) 629-3000 Fax: (530) 629-3011

REGISTERED PROFESSIONAL ENGINEER
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CIVIL
STATE OF CALIFORNIA

July, 2019
Josh Mcknight, P.E.
Project No: 1027

Table of Contents:

List of Attachments:

Date:	July 16, 2019	**Project Number:** 1027	
Owner:	Kristi Smith	**Project Name:** Hydraulics Report	
Location:	Willow Creek, Route 1	**APN:** 315-045-004	

Drainage Conditions:

The proposed project site is located approximately 14 miles south of the community of Willowcreek, California (see 40.739621 N, -123.693235 W attached location map). Latitude and Longitude of the project site are per Google Earth. The subject project is on the western side of the ridge at an approximate site elevation of 4,040 feet above mean sea level (see Attachment 2, Drainage Area Map). The stream flows east to west and is located on western part of the property. The highest point of the drainage is approximately 4,280 feet located at the middle of the property. From the highest point the drainage slopes downward toward the west to an elevation of approximately 4,040 feet. The drainage area is approximately 0.0075 square miles and has a length of approximately 700 feet. The average annual rainfall for the project area is 97.84 (2019, NACSE). Using the Linear Regression Equation for the North Coast Region gives the 100 year storm stream flow as 17.2 cubic feet per second (see Attachment 3, Discharge Calculations). Using the Culvert Sizing Monogram in conjunction with the 17.2 cubic feet per second gives a minimum culvert size of 28.8 inches for the 100 year storm (see Attachment 4, Culvert Sizing Monogram). A 30 inch culvert is suggested for the project due to size availability.

Conclusion:

The 100 year storm produces a 17.2 cubic feet per second flow that requires a minimum culvert size of 28.5 inches. A 30 inch culvert is suggested.

References:

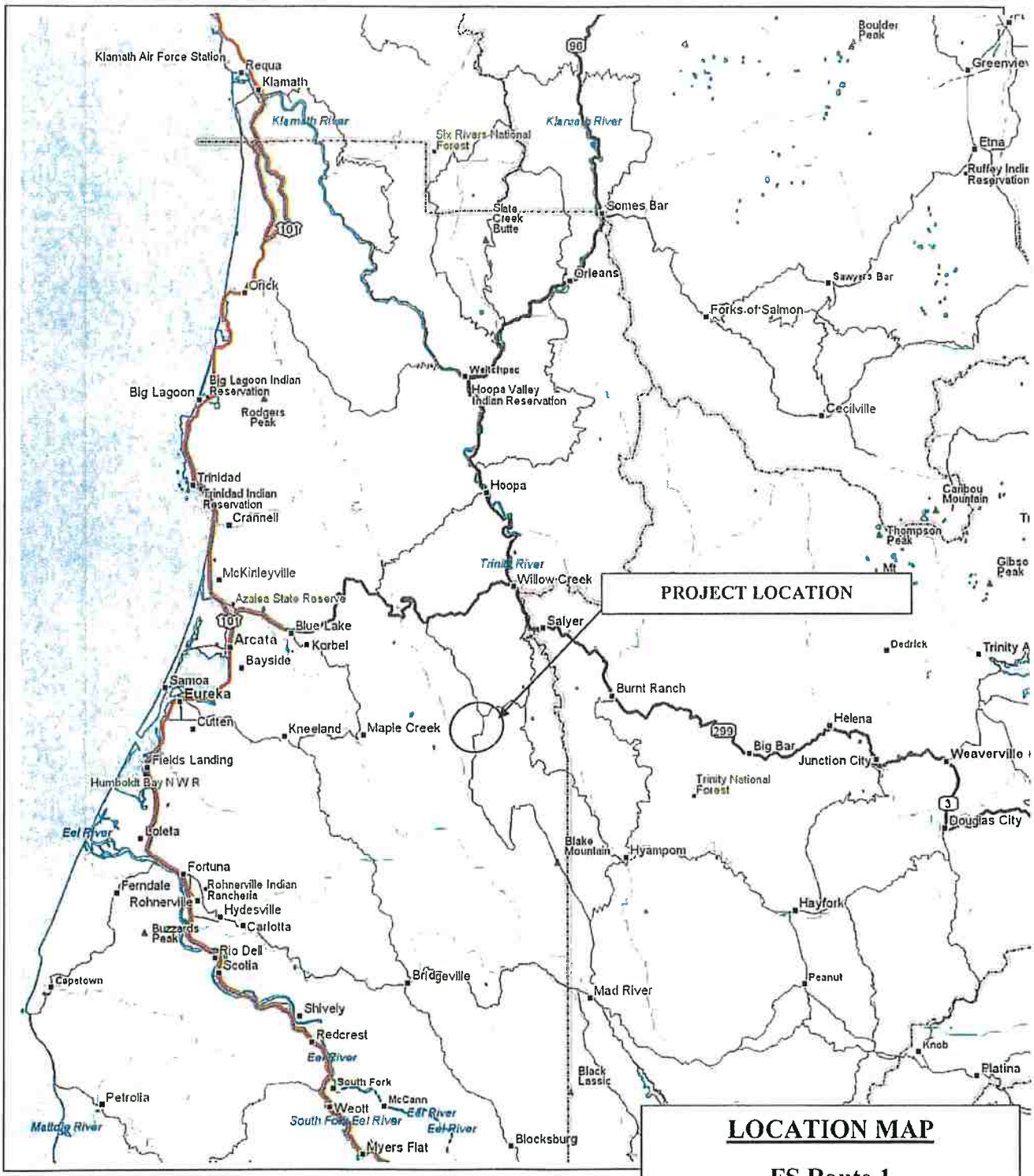
National Oceanic and Atmospheric Administration: NOAA ATLAS 14 POINT PRECIPITATION FREQUENCY ESTIMATES CA, April 23, 2019 (accessed 4/23/2019):
https://hdsc.nws.noaa.gov/hdsc/pfds/pfds_map_cont.html?bkmrk=ca

Google Earth

Northwest Alliance for Computational Science & Engineering (NACSE), Time Series Values for Individual Location, 2019 accessed 07/16/2019
http://www.prism.oregonstate.edu/explorer/

Attachment 1:

Location Map



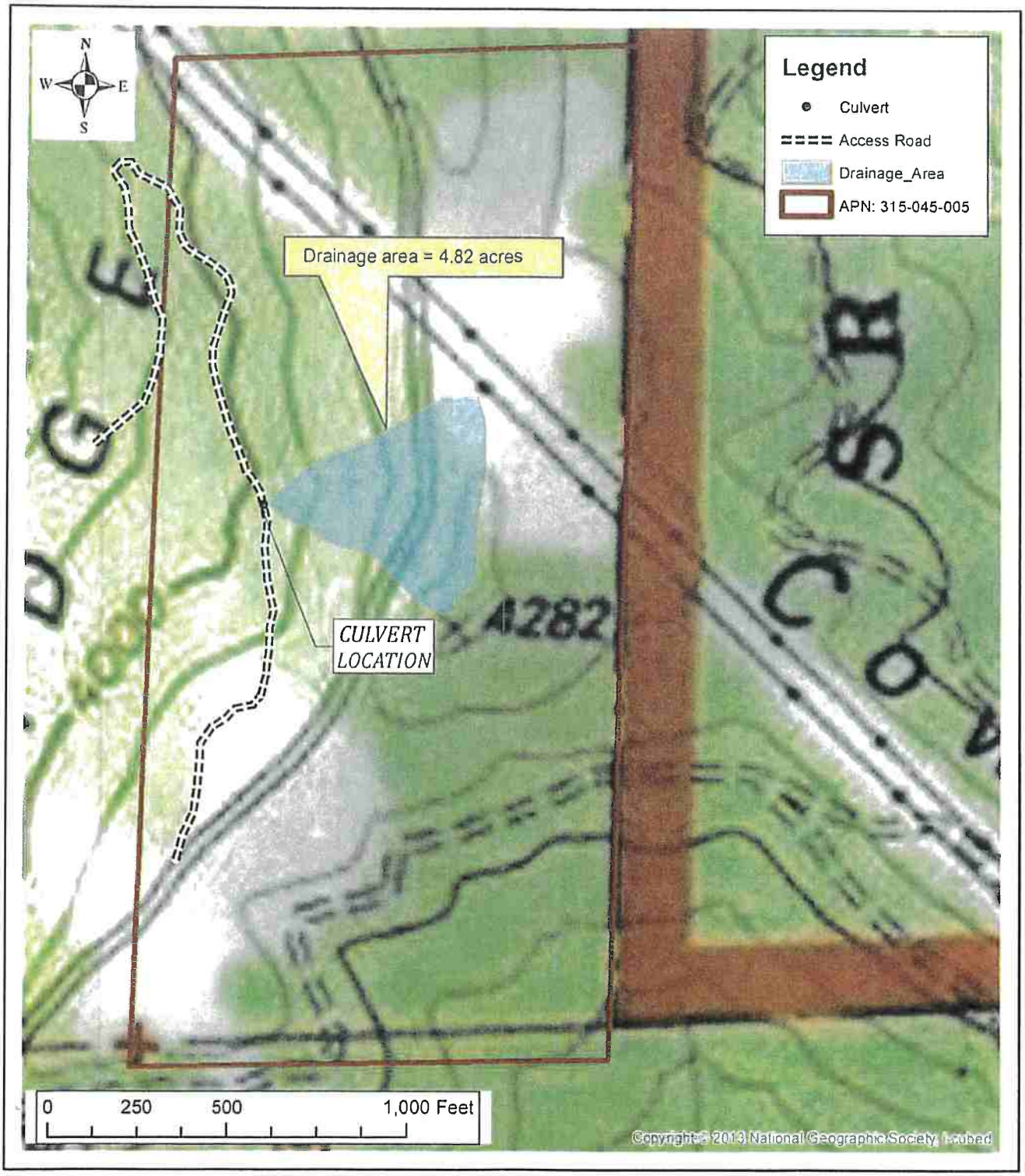
LOCATION MAP

FS Route 1
Willow Creek, California
APN 317-076-001

Kristi Smith / Geoff Churchill
3030 Alliance Road
Arcata CA 95521

Attachment 2:

Drainage Area Map



TVCE

DRAINAGE MAP
APN: 315-045-005

ESRI USGS SEAMLESS TOPOGRAPHICAL MAP FOR HUMBOLDT COUNTY

Project: 1027
Kristi Smith
Route 1, Humboldt

Attachment 3:

Drainage Area Calculations

Determination of 100-Year Flood Flow

Project: 1027 Kristi Smith **Location: 40.739621 N, -123.693235 W**

(Enter data in fields with red-colored headings. Other data fields will be calculated automatically.)

Magnitude and Frequency Method for 100-year flood flow (A > 100 acres)

No.	Crossing	Area (acres) A	Basin maximum elevation (ft)*	Crossing elevation (ft)*	Area (mi^2) A	Avg. Annual Precipitation (in/yr) P	Elevation Index (mean basin	100-yr flood flow Q_{100} (cfs) North Coast[1] (NC)	Sierra[2] (S)	North-east[3] (NE)	Central Coast[4] (CC)	Revised using latest regression eq.
1	*Culvert 1*	4.82	4280	4040	0.008	97.84	4160	*9.0*	*10.5*	*25.5*	*17.2*	
2					0.000		0	*0.0*	*#DIV/0!*	*0.0*	*0.0*	
3					0.000		0	*0.0*	*#DIV/0!*	*0.0*	*0.0*	
4					0.000		0	*0.0*	*#DIV/0!*	*0.0*	*0.0*	
5					0.000		0	*0.0*	*#DIV/0!*	*0.0*	*0.0*	
6					0.000		0	*0.0*	*#DIV/0!*	*0.0*	*0.0*	
7					0.000		0	*0.0*	*#DIV/0!*	*0.0*	*0.0*	
8					0.000		0	*0.0*	*#DIV/0!*	*0.0*	*0.0*	
9					0.000		0	*0.0*	*#DIV/0!*	*0.0*	*0.0*	
10					0.000		0	*0.0*	*#DIV/0!*	*0.0*	*0.0*	

**To estimate discharges for bridges, use elevations along watercourse at 85 percent and 10 percent of water-course length from crossing to drainage divide, respectively, instead of using maximum and crossing elevations.*

NC (1) $Q_{100} = 48.5(A)^{0.866}(P)^{0.556}$

S (2) $Q_{100} = 20.6\ (A)^{0.874}(P)^{1.24}(H)^{-0.250}$

NE (3) $Q_{100} = 0.713\ (A)^{0.729}(P)^{1.56}$

CC (4) $Q_{100} = 11.0\ (A)^{0.84}(P)^{0.994}$

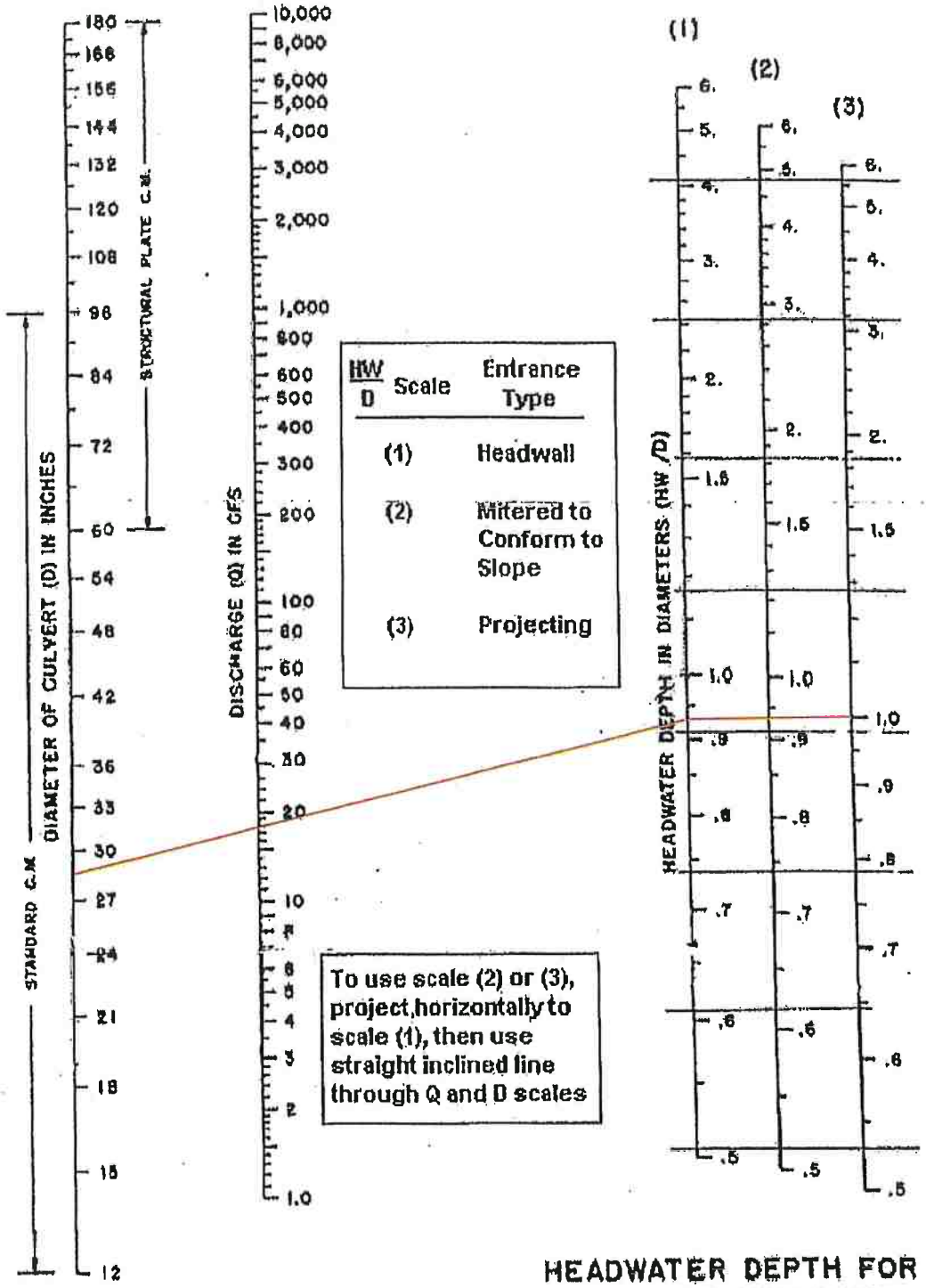
Rational Method for 100-year flood flow (A < 200 acres)

		$T_c = 60((11.9 \times L^3)/H)^{0.385}$			$Q_{100} = CIA$			
No.	Crossing	Channel length (to top of basin) (mi) L	Elevation difference (ft) H	Concentration time (min) Tc	Runoff coefficient C	100-year Return-Period Precipitation (in/hr) I*	Area (acres) A	100-yr flood flow (cfs) Q100
1	*Culvert 1*	0.1325758	240	*10*	0.5	4.506	4.82	*10.9*
2	*0*		0	*#DIV/0!*			0	*0.0*
3	*0*		0	*#DIV/0!*			0	*0.0*
4	*0*		0	*#DIV/0!*			0	*0.0*
5	*0*		0	*#DIV/0!*			0	*0.0*
6	*0*		0	*#DIV/0!*			0	*0.0*
7	*0*		0	*#DIV/0!*			0	*0.0*
8	*0*		0	*#DIV/0!*			0	*0.0*
9	*0*		0	*#DIV/0!*			0	*0.0*
10	*0*		0	*#DIV/0!*			0	*0.0*

**Use 100-yr precipitation of duration similar to Tc or for 10 min, whichever is larger; convert to in/hr for input as "I"*

Attachment 4:

Culver Sizing Monogram



HEADWATER DEPTH FOR C. M. PIPE CULVERTS WITH INLET CONTROL

BUREAU OF PUBLIC ROADS JAN. 1963

EXHIBIT E

Hydraulic and Drainage Report