

Water Resources Management Plan
for
APN 208-251-002

I. Site Maintenance, Erosion Control, Drainage Features

Roads

We periodically inspect our roads for surface rills or ruts that may require intermittent maintenance. When roads are upgraded or moved, we utilize engineering professionals to provide proper design and planning support to ensure that our on-site roads drain properly.

Moderate road shaping and swales are used to optimize drainage to stable areas. Crowing and drainage dips are maintained to ensure proper seasonal flow. Where needed, we utilize and improve road surfaces with gravel cover.

When maintenance occurs we are careful not to remove more leaves and vegetation than necessary to prevent runoff. In addition, where possible we enable road surface drainage to be filtered through vegetation, and work to avoid sidecasting.

Ditches are graded and grass and weeds removed only when and where necessary. The site uses primarily natural vegetation for added sediment control.

Site Surface

As with roads, when exposed surfaces or bare slopes appear, topsoil is covered with straw for temporary erosion control to minimize sediment, and stabilize the surface in the event of heavy rainfall. Gravel may also be used as appropriate. If non-incident surface treatments are required we consult with a qualified professional for guidance.

Flow is monitored to avoid discharge onto fill, unstable areas, or areas that can enter the nearby tributary to Mad River.

II. Spoils Management

Soil is tilled in soil beds along with amendments for reuse. As a result there is little cultivation soil spoilage. Any unusable soil is placed in trash containment for waste removal.

III. Water Storage, Use, and Irrigation Runoff

Tanks are used for irrigation and domestic storage, installed to manufactures specifications, fitted with float valves, placed on soil free of rocks/sharp objects, and set in an area that is capable of bearing the weight when filled.

A solar pump directs water from the spring to storage tanks. Irrigation from tanks then utilizes gravity for flow out to the gardens.

Operations are conducted in a manner that uses primarily stored rain catchment pond water along with drip irrigation, to minimize runoff and enhance water conservation.

Water flow is metered and periodically recorded. Water lines, and connections are checked regularly for wear, damage, and leaks. Repairs are done immediately or mitigated until replacement parts are obtained.

Cultivation soils are enclosed in soil beds surrounded by vegetation and covered with mulch to improve water retention and avoid runoff.

IV. Handling of Fertilizers, Soil Amendments, Pesticides, Petroleum Products, and Other Chemicals

Plants are constantly cared for through a balance of irrigation water, amended soils, and natural fertilizers. Plants are carefully monitored to optimize plant growth and avoid over-fertilization.

Pest management strategies rely on natural methods that apply organic pesticides only to the area of need, in a manner that avoids runoff.

Fuels are stored enclosed or with secondary containment. Materials are kept in their original containers with product labels in place and legible. Bagged and boxed materials are stored in enclosed storage areas or kept above ground on pallets or tarps, and not allowed to accumulate on the ground when in use.

Storage instructions are posted at all times in an open and conspicuous location. SPCC cleanup kits provide a complete supply of spill cleaning materials, and are kept near fuel and amendment storage areas.

V. Refuse, Cultivation and Human Waste

Garbage, including cultivation-related waste is collected, contained, and transported in a manner that ensures residues and pollutants within those materials do not migrate or leech into surface water or groundwaters. All waste is contained in covered trash cans and maintained to ensure it is kept secure from wildlife.

Items are disposed of at an appropriate facility, along with recycled items. During the off-season reusable cultivation materials are collected and stored where they will not enter a waterway or create a nuisance.

Human waste disposal systems are installed and established to prevent threats to local water sources.

Current Compliance Improvement Plan

The following project items have been identified and planned with prioritization based on water protection and budget.

Map Point	Description	Current Status	Scheduled Completion Date
<i>Site maintenance, erosion control, and drainage</i>			
Roads crossings	Install six culverts	Undergoing planning	12/31/2018
<i>Stream crossing maintenance</i>			
Road crossings	Upgrade two culverts	Undergoing planning	12/31/2018
<i>Water storage and use</i>			
POD	Install meter	Awaiting purchase and installation	9/30/2017
<i>Petroleum products and other chemicals</i>			
Fuel storage	Add SPCC Kit	Awaiting purchase	9/30/2017

Amendments and Chemicals Inventory

Date: ____ / ____ / ____

Item	Qty Used	Qty Remaining	Application
Down to Earth Bone Meal			
Down to Earth Blood Meal			
Down to Earth Oystershell			
Down to Earth Kelp			
Down to Earth Fish Emulsion			
Down to Earth Feather Meal			
Down to Earth Crab Meal			
Stuzman's Chicken Manure			
Organic Nitrogen			
Azomite			
Age Old Organics			
Neem Oil			
Worm Castings			
Earth Juice Bat Guano Grow			
AzaMax General Hydroponics			
MyKos Mycorrhizae			

Periodic Inspection Checklist

Date: ____ / ____ / ____

Review Item	Condition			Notes
	Pass	Needs Review	Needs Repair	
Road (Surface erosion and drainage)				
Irrigation Lines				
Irrigation Tanks (Containers and valves)				
Ponds (Containment and overflow)				
Meter Check				
Amendments Storage and Inventory				
Generators				
Secure Fuel storage and Containment				
SPCC Kit				
Exposed Surface Check				
Secure Trash Containment				
Septic				
Exposed Surface Check				
Local Surface Area Erosion				



Water Usage Log

Source: Pond	Date	Qty Used	Notes
Jan	/	gal	
Feb	/	gal	
Mar	/	gal	
Apr	/	gal	
May	/	gal	
Jun	/	gal	
Jul	/	gal	
Aug	/	gal	
Sep	/	gal	
Oct	/	gal	
Nov	/	gal	
Dec	/	gal	

Water Use Plan

Crops are watered with drip irrigation twice a week, progressing to every day during peak summer periods. Watering ranges from a few seconds to five minutes per application and up to 1,260 gallons of water per day. The process is sensitive to water conservation, and as a result, does not allow for runoff. Use is highly controlled by direct oversight.

Water Schedule (in gallons)

Water source and storage: Spring to Tanks (12,500 gal)

Jan	Feb	Mar	Apr	May	June
0	0	0	0	12,500	0
July	Aug	Sept	Oct	Nov	Dec
0	0	0	0	0	0

Water use: Tanks

Jan	Feb	Mar	Apr	May	June
0	0	0	0	320	12,180
July	Aug	Sept	Oct	Nov	Dec
0	0	0	0	0	0

Water use: Spring

Jan	Feb	Mar	Apr	May	June
0	0	0	120	320	2,820
July	Aug	Sept	Oct	Nov	Dec
39,000	39,000	37,800	19,500	0	0