

# Site Management Plan

for

Miller Creek Farms  
WDID# 1\_12CC417788  
APN 220-271-008  
1600 Miller Creek Road  
Briceland, CA 95542

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This document was prepared to comply with the technical report requirement of enrollment in the California State Water Resources Control Board (SWRCB) ORDER WQ-2019-0001-DWQ, Cannabis Cultivation Policy, and the NOA issued by the North Coast Regional Water Quality Control Board (NCRWQCB). Miller Creek Farms is operating a commercial cannabis farm on Humboldt County APN 220-271-008-000, enrolled as WDID 1\_12CC417788. This document describes the existing conditions of the site and how the property is or will meet the provisions and requirements of the ORDER and the Cannabis Policy as well as how the Discharger is implementing the best practicable treatment or control (BPTC) measures listed in Attachment A of ORDER WQ-2019-0001-DWQ. The Site Management Plan (SMP) also addresses the schedule to achieve compliance with the ORDER, including winterization and BPTC measures monitoring and maintenance. The SMP will demonstrate that **all applicable** BPTC measures are, or will be, implemented and properly maintained. This property is located in SWRCB Region 1 and the SMP will address legacy waste discharge issues (if present), including those that are not related to cannabis cultivation.

## 1. Introduction

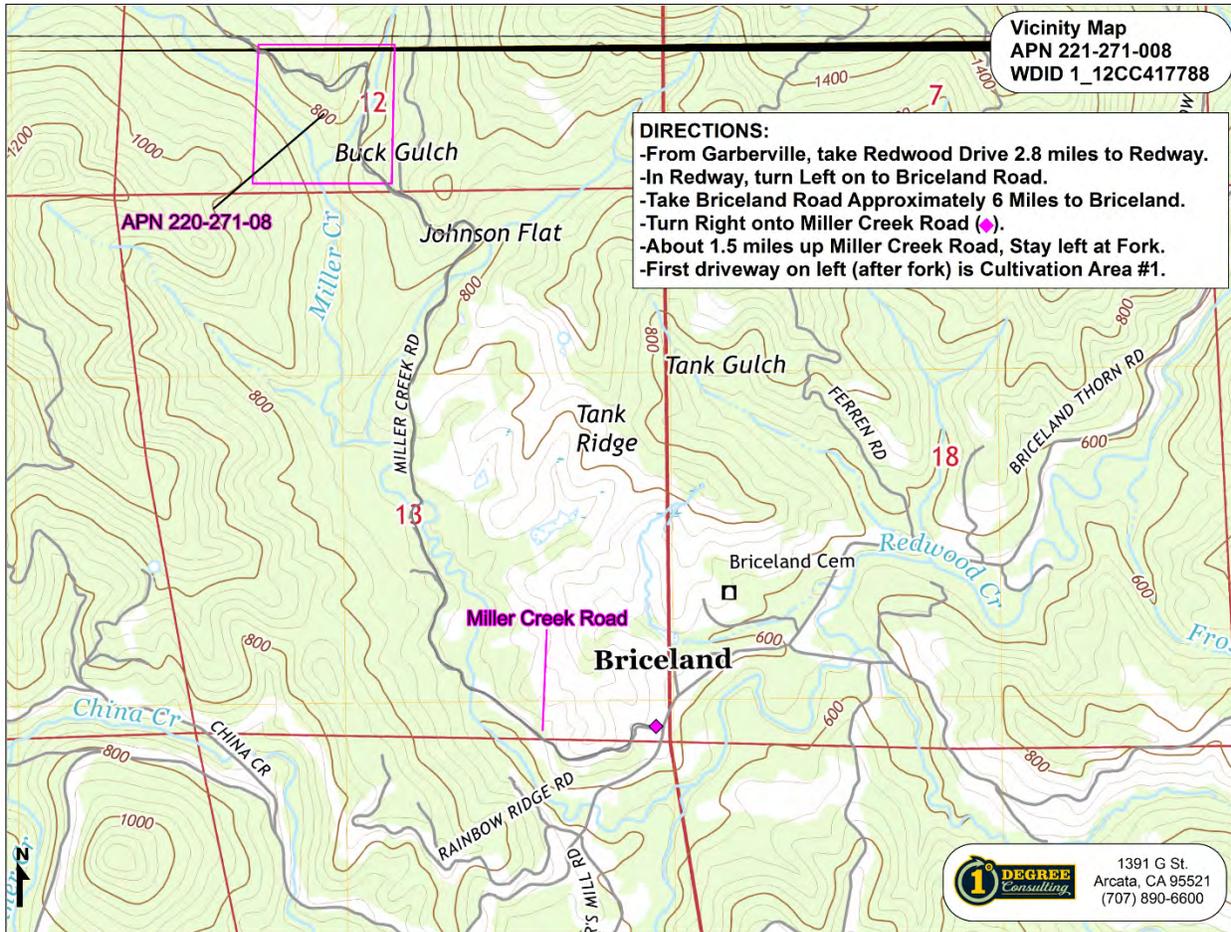
The site is located in southern Humboldt County, about 2 miles north of the town of Briceland, CA, at 1600 Miller Creek Road. The property has two prominent Class I streams, Miller Creek and Buck Gulch, which confluence near the southern parcel boundary (Map 1). Buck Gulch is a tributary to Miller Creek, which is a tributary to Redwood Creek, within the South Fork Eel River watershed. The cannabis activities occupy historic graded terraces on naturally low gradient topography. Legacy features include a minor road to an alluvial terrace at the confluence of Buck Gulch and Miller Creek. The terrace had legacy cultivation removed years ago, but still has cultivation related infrastructure present – water transfer tanks and pump – as well as a domestic storage building.

According to the Cannabis Cultivation Policy Tier definitions, this property is a Tier 1 Low Risk enrollment. The cultivation footprint is 4,350 ft<sup>2</sup> within a disturbed area of approximately 5,400 ft<sup>2</sup>; including an abandoned cultivation area, the total disturbance area is 6,700 ft<sup>2</sup>. The Low Risk designation reflects the cultivation disturbance being legacy flats on natural slopes less than 25% grade and outside of stream setbacks.

In general, this is a very low-impact, low-risk operation. Cultivation is on stable areas outside of buffers and hazardous materials have secondary containment. There is an existing SIUR appropriative water right for 2 diversions on the parcel. The water right provides water for commercial operations (irrigation and incidental) from a stream and a jurisdictional spring diversion. Power is supplied by PG&E. The bathroom that supports the farm operations is on a neighboring parcel that is owned by a partial owner of the farm. The bathroom will meet Policy requirements when the OWTS permits are granted. The largest threat to water quality on the property is a legacy log stringer stream crossing on Miller Creek Road over Buck Gulch, and active erosion of the inboard ditch near this crossing.

Improvements planned for the site are: relocation of a water pump and transfer tanks, the Buck Gulch stream crossing upgrade, road drainage treatments, removal of anthropogenic material from a legacy cultivation area, and an upgrade to the nutrient storage building at cultivation area 2. Corrective Actions and schedule are summarized in Table 1. No additional restoration or mitigation actions are recommended at this time.

Annual monitoring will include inspection of winterization measures for integrity and effectiveness. Additionally, the terrace will be inspected for stormwater run-off after designated threshold storm events. Winterization Monitoring Points are summarized in Table 5.



MAP 1. APN 221-271-08 location and directions.

## 2. Sediment Discharge BPTC Measures

### 2.1 Site Characteristics

#### 2.1.1 Land Disturbance

All major construction on the property - with the exception of the LSAA implementation - has been completed. Future land disturbance is limited to two stream crossing upgrades under LSAA 1600-2016-0577-R1, dated May 24, 2018 (Appendix B) and rolling dip and ditch-relief culvert (DRC) upgrades. There are no unstable slopes associated with land disturbance observed on the property. The potential for pollutant discharge to waters of the state on this parcel with respect to land disturbance is limited to the road network and one gas-powered water pump that is located within the riparian setback of Miller Creek. The legacy features on

the parcel include: the spur road on the north bank of Buck Gulch and the (benign) 1,134 ft<sup>2</sup> abandoned cultivation area south of Cultivation Area #1 (CA1).

All development related to cannabis occurs on slopes less than 30 percent grade, with fill slopes less than 50 percent grade. There is one legacy road which was likely built to provide access to the Creekside cabin, which is now, also used to access the diversion pump and transfer tanks; this legacy road is within the riparian buffer of Buck Gulch. Upgrades and seasonal use restrictions will be prescribed to mitigate potential impacts from this road.

#### *Heavy Equipment*

The only anticipated use of heavy equipment will be for stream crossing and road work. This work will be done by licensed contractors and adhere to all conditions of the CDFW LSA Agreement, SWRCB ORDER WQ-2019-0001-DWQ, and CWA 404 permit (pending 404 application). Prevention of chemical(s) discharge associated with heavy equipment will be of top priority. Equipment storage/refueling and a chemical staging area will be established outside of the riparian setbacks. Frequent equipment inspections shall assure that any potential leaks can be repaired in short-term to minimize potential impacts to natural resources. Any construction or spill clean-up related waste or debris will be recycled or properly disposed of off-site.

#### *Cultivation*

The 4,350 ft<sup>2</sup> of cannabis cultivation is in two (2) locations on the property, within a disturbance footprint of 5,400 ft<sup>2</sup>, and it meets all stream setbacks. Both cultivation flats are less than 1% slope. Cultivation Area #1 (CA1) is on an historic flat constructed in a grassland area on a natural slope of roughly 12% grade. This flat is likely a legacy feature of logging here based on its age and proximity to the main haul road. Cultivation Area #2 (CA 2) is on a flat that was graded prior to 2005 on a topographic ridge with a natural slope of less than 20%.

As a benefit of having a small operation, crop irrigation is performed by hand with an emphasis on applying just enough water to meet each plant's specific need. After harvest, a cover crop of legumes is planted and the flats are mulched with weed-free straw. The potential for run-off or sediment transport from either cultivation site is very low; there is no potential for delivery to a waterway or wetland. The nearest stream is greater than 150 feet from CA2 and 100 feet from CA1. Moreover, there is a dense natural vegetation buffer of conifer, hardwood, and shrub between the cultivation areas and the streams.

There is an abandoned cultivation bed (23 x 57-foot) in the grassland south of CA1 that has a disturbance area of 1,315 ft<sup>2</sup>. This legacy feature will be remediated by removing all lumber and other human contribution here. The natural grass has revegetated the area and there is no disrupted drainage, erosion or fill failure potential associated with this flat (Photo 13).

Recontouring here would provide no additional benefit vs. the short-term impacts and risk associated with heavy equipment use. Hand tools will be used to soften the vertical edges of the beds after the lumber is removed. Straw mulch will be applied to exposed soil and straw wattle will be installed at the downslope edge of the remediation area. Natural revegetation - as opposed to reseeding of the small bare surface area - is the preferred vegetation treatment after the removal work, eliminating the risk of introducing non-native species. The disturbance area will be a monitoring point (MP 24) and adaptive management will be prescribed as necessary.

## *Buildings*

### BLDG 1 Future Office 110 ft<sup>2</sup>

An approximately 110 ft<sup>2</sup> (9 x 12 feet) cabin on a pier-and-post foundation, located on the access road to CA2, near Miller Creek Road.

### BLDG 2 Red Cabin 460 ft<sup>2</sup>

An approximately 460 ft<sup>2</sup> (23 x 20 feet) cabin on a pier-and-post foundation, located near CA 2. The 'Red Cabin' will be utilized as a break/support facility. The building contains a kitchen, solar electricity, propane gas (110-gallon tank), and water. There is no restroom/toilet in this building. The Red Cabin is greater than 200 feet from any waterway, the nearest being Buck Gulch (Class I).

### BLDG 3 Shed4 50 ft<sup>2</sup> (CA2 nutrient storage/composting toilet)

An approximately 50 ft<sup>2</sup> (6 x 8 feet) hard-plastic, pre-fabricated (stand-alone) gardening shed with an impermeable floor (photo 6), located adjacent to Cultivation Area #2 (CA 2). It contains a Sun-Mar Composting Toilet. The shed is also used for nutrient storage. Shed4 resides on the same flat as CA 2 and is greater than 200 feet from any waterway; the nearest stream being Buck Gulch (Class I). New shelves will be installed for nutrient storage organization.

### BLDG 4 Creekside Cabin 450 ft<sup>2</sup> NOT CANNABIS

An approximately 450 ft<sup>2</sup> (30 x 15 feet) cabin on pier and post foundation, used for domestic storage. This historic cabin and the road to it are within the riparian setback of Buck Gulch. The building has no affiliation with the cannabis cultivation. There is no greywater or sewage discharge at this building. The road will be upgraded to meet the standards of the *Handbook for Forest and Ranch Roads*. This road is closed to vehicle access but serves as foot-traffic access to the water pump and transfer tanks. Fuel for the water diversion pump is carried in a 1-gallon can by hand, as needed. The road is used for access to the domestic storage cabin very rarely, and never sees any vehicle traffic.

### BLDG 5 Shed3 96 ft<sup>2</sup> NOT CANNABIS

An 8-foot by 12-foot historic structure located adjacent to Cultivation Area #1 (CA 1). This building is not used for any cannabis related activity. Currently the building has some domestic items inside that are planned to be removed and stored elsewhere. Shed3 is greater than 100 feet from any waterway, the nearest being Buck Gulch (Class I).

### BLDG 6 Shed1 216 ft<sup>2</sup>

A 12-foot by 18-foot building on a pier-and-post foundation. The building is utilized for nutrient storage during the cultivation season, and then drying at harvest time. The structure has a plywood floor and a shop style roll-up door. Shed1 is greater than 150 feet from any waterway, the nearest being Miller Creek (Class I). No petroleum products will be stored in this building.

### BLDG 7 Shed2 30 ft<sup>2</sup> NOT CANNABIS

A 5-foot by 6-foot dilapidated historic structure adjacent to an abandoned cultivation area. This building is not used for any cannabis related activity. Currently the building has some metal

items stored inside that will be removed and recycled. Shed2 is greater than 150 feet from any waterway, the nearest being Miller Creek (Class I).

### 2.1.2 Roads

All roads on the parcel will meet the *Handbook for Forest, Ranch & Rural Roads* standards upon completion of stream crossing and road drainage upgrades. Access to APN 220-271-008 from Briceland Thorn Road is via 1.5 miles of Miller Creek Road, a Category IV equivalent (dirt) shared right of way. Miller Creek Road goes through the parcel from southeast to northwest and provides access to the cultivation areas, via spur roads. South of the parcel boundary there is a fork in Miller Creek Road: Miller Creek Road stays to the left and runs through the project parcel, while the unnamed fork to the right provides access to neighboring properties east of Buck Gulch as well as some water storage tanks on Miller Creek Farms property (Map 1). Both roads have angular gravel surface rock and show no signs of instability, erosion or sediment transport. APN 220-271-008 has vehicle access gates at three (3) locations where spur roads junction from Miller Creek Road: (1) Cultivation Area #1; (2) BLDG1 & Water Pump access (Near Buck Gulch Crossing); and, (3) Cultivation Area #2 (near Cal-Fire turnaround). There is also an ungated spur road near the Cal-Fire turnaround that leads northeast to neighboring APN 220-271-009, where the Discharger resides.

Miller Creek Road has about 0.52 miles on the parcel. The main, through- road averages 12 feet wide and varies in grade from 4 to 14-percent. The surface is coarse angular gravel, contains appropriate drainage structures (needing maintenance), and has moderate active erosion and sediment delivery associated with Inboard Ditch erosion on the left-approach to the Buck Gulch Crossing. This ditch erosion is being created by concentrated surface run-off in a gully through hummocky topography upslope of Miller Creek Road. It is impacting 60-75 feet of ditch that delivers to Buck Gulch; there is over 150 feet of ditch connected to the crossing but only the section downroad of the gullies are transporting sediment. The problem area will be armored in the interim and included in the Buck Gulch stream crossing upgrade design for a long-term solution to the excessive ditch contribution.

The spur road to Cultivation Area #1 is benign with no erosion nor delivery potential. The spur road to Cultivation Area #2 also shows no signs of erosion nor sediment delivery potential.

The spur road to BLDG 4 is along the right bank of Buck Gulch, primarily within the riparian setback. The road is mostly on contour and has a minimal fill prism. No rilling or erosion on the native surface. The road has one DRC and one point identified by Stillwater as a stream crossing, which is included in the LSAA. The DRC is 12" and delivers to Buck Gulch but there is no evidence of sediment transport to the inlet (no ditch) and no erosion at the shotgun outlet. No drainage structure or stream was observed at the coordinates provided for the crossing identified in the LSAA and Stillwater Memo. There is no evidence to attribute erosion downslope of the road to any hydrologic influence of the road; it appears associated with Buck Gulch stream meander.

There is no sign of significant rilling on any of the road on the property and the drainage structures are appropriately placed and hydrologically disconnected from receiving waters to the extent physically possible. However, Rolling Dips will need touch-up to ensure no potential for run-off bypass. Also, there is actively eroding inboard ditch at the left approach to Buck Gulch (Map 3, 14). Finally, Ditch-relief culverts on the property are 12-inch diameter and shall be upgraded to 18-inch per the ORDER.

Miller Creek Farms was issued an LSAA for the Bulk Gulch crossing based on a design for an arch culvert installation; the plan has changed to a bridge installation, which will necessitate an amendment to the existing agreement with CDFW. Currently, a consultant is pursuing grant funding opportunities for this specific project prior to amending the agreement with CDFW. The new design and LSAA amendment shall include treatments to accommodate surface water input at 2 points proximal to the left bank of Buck Gulch (Map 2, "Gully"): ditch armor may be adequate depending on egress of bridge design.

Vehicle traffic on Miller Creek Road is public and year-round. Vehicle use of the spur roads varies by location and season. Parking for the site is located in two places: (1) at CA1 / Shed1, and (2) at the lower gate near the Red Cabin. The farm is family/owner operated with 1-2 people at the site during the off-season (6 months) almost daily for monitoring or general presence. These family members live on a parcel adjacent to the Farm parcel and may or may not use a vehicle to access the project depending on their task (and inspiration). During peak operations (June – October), up to 4 people may be at the farm at any one time. The spur road to the Creekside Cabin is closed to vehicular traffic in the wet seasons; and in general, this road gets low use in the dry season as well. Thus, Miller Creek Farms vehicular traffic is essentially 1-2 cars on the spur roads to CA1 and CA2 daily during peak operations plus occasional use in the winter. Public use on Miller Creek Road is unknown.

The discharger will regularly inspect ditch-relief culverts and clear them of any debris or sediment.

### 2.1.3 Waterways & Wetlands

There are two named streams on the parcel: Class I Buck Gulch and Class I Miller Creek. Additionally, there is a class III stream that crosses the spur road to the Creekside Cabin via a corrugated metal culvert ("C2" in Stillwater memo). 1-Degree Consulting located this point in the field and while there was a hole in the inboard-ditch, sediment transport was not evident upslope nor was an outlet observed downslope.

The spring diversion has bypass flow, but no channel (connection to Miller Creek) was observed downslope on the walk out where it would be expected based on topography. No other streams were observed on the parcel. The cultivation areas are greater than 100-feet from the riparian vegetation of any stream, meeting the setback distance under their WDID 1B161607CHUM enrollment in NCRWQCB ORDER 2015-0023. No wetlands were observed on the property.

Cultivation operations do not disturb naturally occurring, riparian vegetative cover. In-stream work will be limited to two stream crossing upgrades and a spring diversion authorized by a CDFW LSA Agreement. The 404/401 CWA permits will be obtained prior to any in-stream work. The spring diversion is gravity fed to transfer tanks and then pumped uphill to its storage prior to gravity distribution to its places of use.

### 2.1.4 Stream Crossings

There are two road-stream crossings on the property. A final Lake and Streambed Alteration Agreement (LSAA) has been issued (1600-2016-0577-R1) by CDFW for the eventual upgrades at both of these locations. Crossing 1 (C1) is Miller Creek Road over Buck Gulch (84-inch culvert); Crossing 2 (C2), per the Stillwater memo and LSAA, is a 12-inch culvert in a small spur road to the Creekside Cabin, conveying a class III tributary to Buck Gulch. Work for these

encroachments will include excavation, removal of the inadequate culverts, replacement with new properly sized culverts, backfilling and compaction of fill, and rock armoring as necessary to minimize erosion. All Avoidance and Minimization measures in the LSAA will be followed. These measures include specific actions for stream crossings and erosion/pollution control designed for protection of both water quality and habitat. These worksites are included as monitoring points (MP15 & MP16) in this Site Management Plan. Monitoring will include regular inspection and maintenance of stream crossings to ensure crossings are not blocked by debris. At a minimum, the cultivator will perform inspections prior to the onset of fall and winter precipitation and following storm events that produce at least 0.5 in/day or 1.0 inch/7 days of precipitation. The CDFW LSAA is included as Appendix B.

Per the Stillwater Sciences TECH Memo (Appendix C): Crossing 1 is proposed replacement of a fish-passage barrier culvert (6-foot diameter, shotgun outlet). The replacement stream crossing will be an 18-foot width by 11-foot 4-inch rise arch culvert, designed to accommodate the 100-year flood flow. Minor channel modification and large wood and armor placement in the upstream channel is also proposed to maintain grade that will allow fish passage and restore a natural sediment transport regime. An engineering Basis of Design was produced for Crossing 1 by Stillwater Sciences and is included in their Technical Memorandum to CDFW regarding stream crossing upgrades and water diversions on APN 220-271-008. The design described above however, has recently changed. Per Elena (Discharger), there is now (currently) a design for a bridge instead of the arch culvert design in the existing LSAA: Stillwater Sciences is pursuing grant funding for this shared road stream crossing.

Crossing 2 is described as a 12-inch diameter corrugated steel culvert on a Class III stream, and; proposed for upgrade to an 18-inch diameter culvert.

### 2.1.5 Legacy Discharge

There are no legacy discharge issues on the property. The only potential legacy discharge points on the parcel would be from the road network. The only roads identified on the parcel are current-use features. Legacy roads with sediment delivery risk were not identified on the property. Sediment delivery potential associated with in-use roads is addressed in Section 2.1.2 (Roads) of this plan. There is however a legacy cultivation area (MP 23) that will have anthropogenic materials removed, but it poses no threat to water quality and has no erosion or sediment delivery potential.

## 2.2 Erosion Prevention and Sediment Control

### 2.2.1 Erosion Prevention BPTC Measures

The cultivation footprint is 4,350 ft<sup>2</sup> within a disturbed area totaling approximately 6,100 ft<sup>2</sup>. The cannabis is grown in-ground with amended native soil in individual holes. Based on NRCS soils map for the area, the natural soil at the cultivation areas is Sproulish-Canoecreek-Redwohly complex. The primary component of this complex is classified as well-drained, paragravelly clay loam belonging to Hydrologic Soil Group C – a slow infiltration rate.

The potential for erosion or transport of sediment or farm products from the cultivation areas to the waterways on the property is essentially zero. The riparian buffers are met and the natural vegetation between the cultivation areas and the waterways is lush and undisturbed. No

additional erosion prevention or sediment capture measures are necessary to protect water quality from the cultivation areas.

Erosion Prevention BPTC measures on the property are associated with roads and water storage. There are two stream crossings, four ditch-relief culverts, two rolling dips, and one off-road drain. The stream crossings are undersized and will be upgraded. The ditch-relief culverts are also undersized for this forested setting and will be upgraded to an 18-inch diameter, with rock armor applied at the outlets where appropriate. Rolling Dip 1 (RD1, MP19) was installed in a poor place, which outflows onto an old fill failure above the right bank of Buck Gulch. Fortunately, the hydro contribution to RD1 is a short road reach; and, RD1 was likely installed here to eliminate erosion of the proximal thru-cut reach, downgrade. The RD1 road reach shall be rocked for 60 feet, thicker in places in order to gently crown or inslope the road tread and reduce the concentrated flow at the OBR, thus reducing erosion potential and sediment transport. Rolling Dip 2 (RD2, MP20) is functioning well. The off-road drain (MP18) is non-functioning and will be regraded.

There is also one point of actively eroding inboard ditch at the left approach to Buck Gulch (MP14). This will be addressed in an LSAA amendment for the Buck gulch crossing upgrade. In the interim, this ditch shall be rocked with 6-inch-minus rip rap at the knickpoint to inhibit migration; and rocked with coarse angular road rock for 25 feet of ditch downstream of the knickpoint in order to dissipate hydraulic energy and promote deposition prior to stream delivery.

The water storage tanks require shut-off valves for water conservation and to eliminate erosion potential. Only one location in the water distribution system (MP9) has the potential to deliver eroded sediment to a waterway but there is no evidence of erosion to date. These tanks will have float valves installed and are scheduled to be relocated outside the stream buffers.

### 2.2.2 Sediment Control BPTC Measures

No restoration is necessary; clean-up will not involve land disturbance nor revegetation. Sediment control BPTCs are only necessary at one location (MP14) for this site, and only as an interim measure. Otherwise, there is no indication of sediment transport with potential for delivery to any waterways. Aside from MP14, road tread surface and inboard ditches are potentially connected to streams at only two locations (MP17 & MP19) that currently show no sign of erosion or sediment transport: erosion prevention measures that include road rock and culvert outlet armor will be applied to ensure this status is maintained.

The sole legacy land use issue on the property — the disturbance area / abandoned garden south of CA 1 — also shows no indication of concentrated run-off, sediment transport or mass movement potential. Incidental erosion prevention and sediment control benefits provided by Miller Creek Farms farming practices include cultivation-season mulching, winter cover crops on cultivation areas, and restricted seasonal use of the access road.

### 2.2.3 Maintenance Activities - Erosion Prevention and Sediment Control

Erosion prevention treatments on the property are theoretically maintenance-free. The one feature that *may* potentially require adaptive management/maintenance is the inboard ditch (interim) treatment scheduled for MP14. This site will have rock armor applied at a knickpoint in the ditch as well as the downgrade ditch. The long-term strategy will be part of the crossing upgrade design for MP15. There will be no need for sediment removal during the interim period,

but the erosion prevention at the knickpoint shall be monitored for effectiveness and maintained as necessary.

The majority of road is the main, shared right-of-way, Miller Creek Road. Secondary (spur) road consists of access to the cultivation areas and the Creekside Cabin; vehicle use of these roads is restricted to dry season travel. Road and drainage features will be regularly inspected to ensure effectiveness of treatments. At a minimum, cannabis cultivators shall perform inspections prior to the onset of fall and winter precipitation and following storm events that produce at least 0.5 in/day or 1.0 inch/7 days of precipitation. The cultivator will perform all of the following maintenance, if or as necessary:

- Remove any wood debris that may restrict flow in a culvert.
- Remove sediment that impacts access road or drainage feature performance. Place any removed sediment in a location outside the riparian setbacks and stabilize the sediment.
- Assess ditch armor effectiveness and adjust treatment if necessary

#### 2.2.4 Erosion Control BPTC measures

Erosion control treatments will be incorporated into the stream crossing upgrades that are authorized in the existing LSA agreement issued by CDFW. All conditions of the LSAA will be adhered to for the planning, implementation, and monitoring of the land disturbance associated with these treatments. Likewise, the erosion control BMPs outlined in the Stillwater Sciences Erosion Remediation Plan Technical Memo, Section 6.1 will be incorporated as follows:

- Erosion and sediment control best management practices (BMPs) shall be installed prior to the wet season (1 October through 30 April).
- Sensitive areas and areas where existing vegetation is being preserved shall be protected with construction fencing; fencing shall be maintained throughout construction activities.
- All areas disturbed during grading activities shall be seeded with native grass seed and mulched with rice straw.
- Prior to seeding and straw, disturbed areas should be roughened by track walking with a dozer.
- Straw shall be applied at a uniform rate of approximately 4,000 lbs per acre by hand.
- At the completion of the project, straw wattles shall be placed as directed by the engineer or geologist.
- All sediment control BMPs shall be maintained throughout the wet season until new vegetation has become established on all graded areas

Interim erosion prevention and sediment capture measures shall be implemented within seven days of completion of land disturbance activities. Inspection and maintenance of all erosion protection and sediment capture measures will occur year-round. Verification of the effectiveness of all erosion prevention and sediment capture measures will part of winterization activities.

There is only one Erosion and Sediment Control BPTC that may require maintenance (MP14) prior to stream crossing work. Upon implementation of the stream crossing treatments, Erosion and Sediment Control BPTCs will be applied, monitored, and maintained. Monitoring of BPTCs

will be accomplished by the year-round presence of operators at the site; the operator resides on a neighboring parcel.

Stream crossings and roads will be monitored for surface run-off after/during storm events that produce 0.5 inches of rainfall in a day or 1 inch of rainfall in 7 days. Additionally, cultivation areas will be inspected for concentrated surface flow during these events. In the unlikely occurrence that flow concentrates and flows from the cultivation area, straw wattles or soil roughening will be applied to provide energy dissipation and allow infiltration proximal to the site.

Table 1. Water Quality Protection BPTC Measures Condition and Implementation Schedule

<b>Monitor Point</b>	<b>Description</b>	<b>Category</b>	<b>Current Condition</b>	<b>Treatment Recommendation</b>	<b>Priority</b>	<b>Anticipated Completion</b>
MP1	POD 1 Spring Diversion	Water Diversion/Use	Inadequate Intake	Upgrade diversion works/intake to LSAA specifications	High	Completed Dec 2019
MP2	POD 1 Spring Diversion	Water Diversion/Use	Inadequate meter	Upgrade meter to meet ORDER conditions	High	Jan 2020
MP3	Tank Farm	Water Conservation	No overflow prevention	Install shut-off float valves	High	Jan 2020
MP4	CAL FIRE Turnaround	Fire Protection	Inadequate dimensions	Clear brush to open Hammerhead T turnaround to CalFIRE specifications	Moderate	May 2020
MP5	Tank Farm at CA 2	Water Diversion/Use	No overflow prevention	Install shut-off float valves	High	Jan 2020
MP6	Nutrient Storage at CA 2	Secondary Containment	Permeable floor	Install impermeable floor & shelves	Moderate	May 2020
MP7	Gas powered pump	Riparian Buffer	Within setback	Move pump to proposed location outside of setback	High	April 2020
MP8	Gas powered pump	Secondary Containment	Inadequate cover and reservoir	Construct appropriate secondary containment for pump	High	April 2020
MP9	Transfer Tanks	Riparian Buffer	Within setback	Move tanks to proposed location outside of setback	High	April 2020
MP10	Transfer Tanks	Water Conservation	No overflow prevention	Install shut-off float valves	High	Jan 2020
MP11	POD 2 Stream Diversion	Water Diversion/Use	Inadequate Intake	Upgrade diversion works/intake to LSAA specifications	High	Completed Dec 2019
MP12	Tank Farm at CA 1	Water Diversion/Use	No overflow prevention	Install shut-off float valves	High	Jan 2020
MP13	DRC #24	Drainage Control	Undersized	Upgrade to 18" diameter. Armor Outlet	Moderate	July 2020

<b>Monitor Point</b>	<b>Description</b>	<b>Category</b>	<b>Current Condition</b>	<b>Treatment Recommendation</b>	<b>Priority</b>	<b>Anticipated Completion</b>
MP14	Eroding IBD	Erosion Control	Active – Excess Upslope Contribution	Armor Ditch as Interim Measure. Incorporate this Surface Connection in Bridge Design MP15	Moderate	April 2020
MP15	C1	Watercourse Crossing	Undersized & fish passage barrier	Upgrade crossing to specifications in LSAA	Moderate	July 2022*
MP16	C2	Watercourse Crossing	Undersized	Upgrade crossing to specifications in LSAA	Moderate	July 2020*
MP17	DRC	Drainage Control	Undersized	Upgrade to 18” diameter. Armor Outlet	Moderate	July 2020
MP18	Off-Road Drain	Drainage Control	Flow Bypass	Regrade and armor with angular road rock	Moderate	July 2020
MP19	Rolling Dip 1	Drainage Control	Poor placement	Regrade and armor with angular road rock	Moderate	July 2020
MP20	Rolling Dip 2	Drainage Control	Good function	Monitor for deposition or erosion at out flow. Maintain as needed.	Low	Annually
MP21	DRC #26	Drainage Control	Undersized	Upgrade to 18” diameter. Armor Outlet	Moderate	July 2020
MP22	DRC #27	Drainage Control	Undersized	Upgrade to 18” diameter. Armor Outlet	Moderate	July 2020
MP23	MP7 & MP9 new location	Riparian Buffer	Outside setback	Move tanks & pump to this location	High	April 2020
MP24	Abandoned Cultivation Area	Legacy Disturbance	Fallow / Benign	Remove all unnatural materials	Low	July 2020
MP25	Cultivation Area 1	Winterization	N/A	Plant cover Crop	Annually	November 15
MP26	Cultivation Area 2	Winterization	N/A	Plant cover Crop	Annually	November 15

\*Pending CWA 404 permit and LSAA amendment.

### 3. Water Storage and Use BPTC Measures

There are two (2) registered points of water diversion on the parcel. The State Water Board has issued Certificate H100036 for Registration H500861 allowing diversion from a spring POD and also from a POD in Miller Creek for the explicit use of irrigation of 10,000 ft<sup>2</sup> (0.2295 acres) of crops. An LSAA has been finalized for the diversions as well. No water is diverted for domestic use. All water is diverted to storage in HDPE hard-sided tanks. All water use on the property is for commercial operations and support. Irrigation volumes are tracked by recording the use date and number of tank fills (volume) required for the designated period of use. Irrigation records will be retained for a minimum of five years and made available for review by the Water Boards, CDFW and any other authorized representatives of the Water Boards or CDFW. At the time of this plan, operations have changed cultivators and been running for one year in their current configuration.

Current water storage on the property is 26,500 gallons in HDPE hard side tanks: two (2) 5,000-gal, three (3) 3,000-gal, and two (2) 2,500-gal tanks dedicated to irrigation as well as an additional 2,500-gal tank reserved for fire suppression. There is also one (1) 300-gal and one (1) 1,000-gal transfer tank near the pump location. All tanks will be equipped with float valve shut-offs to prevent overfilling. Water quantity necessary for irrigation of crops was previously estimated by a consultant to be approximately 44,000 gallons / year for 10,000 square feet of crops. Permits were issued for 4,350 ft<sup>2</sup> and last season the cultivator used 14,000 gallons to irrigate these crops. The cultivator believes this is a good estimate of annual irrigation needs based on practices and conditions. If a seasonal shortage occurs in the future, then water will be purchased at that time and additional storage will be installed for future years.

Water conservation is achieved by hand watering and storage system integrity. Irrigation run-off and deep percolation is prevented by watering at agronomic rates. System integrity is monitored at each watering due to the manual connection of the water source at each garden area. The diversion intake in Miller Creek is removed from the stream during the forbearance period.

A gasoline powered water pump and associated transfer tanks are in a stable location but within the riparian buffer of Miller Creek. A new stable location has been identified outside of the buffer (MP23). Additionally, the secondary containment for the pump will need to be upgraded with a new reservoir and roof. The water intake at the Spring diversion is screened and maintained to meet the conditions of the LSAA. The Miller Creek diversion is not currently being used as the Spring will fill the storage volume necessary for irrigation; original irrigation estimates were based on a larger permitted crop canopy.

### 4. Soil Amendments and Pest Management BPTC Measures

#### 4.1 Products, Use, Storage

Miller Farms uses only commercially available nutrients and pest management products (Table 2 & Table 3). Likewise, no restricted products are ever used or stored on this property. Daily inspections of each plant are integral to warding off problems. Hand removal of pests or hosing plants with water if necessary, before infestations occur, will mitigate the need for pesticides. Removal of yellowed or withered leaves removes insect habitat; pruning and trellising of plant limbs will increase air flow and sunlight to increase yields and decrease growth of fungus and mold. Fertilizers are applied at agronomic rates by hand to eliminate overwatering and run-off.

Fertilizers are delivered to the site in necessary quantities that are used during the season. When not in use during the cultivation season, these materials are stored in secondary containment proximal to each garden, in the original packaging. As materials are exhausted, empty containers are recycled (if possible) or added to garbage and transported to the local transfer station. At harvest, all remaining residual materials are consolidated and stored at Cultivation Area 2 (MP6).

Table 2. Potential Fertilizers and Soil Amendments			
Product	Ingredients	N-P-K	Use
Fox Farm – Marine Cuisine	Cottonseed meal, blood meal, earthworm castings, <b>fish</b> meal, shrimp meal, <b>crab</b> meal, bat guano, seabird guano, kelp meal, urea, ammonium sulphate, <b>calcium</b> nitrate, ammonium phosphate, Treble phosphate, <b>potassium</b> sulphate, <b>potassium</b> chloride, ferrous sulphate, <b>iron</b> sucate, manganese sucate	10 – 7 - 7	Spring Amendment
Native Nutrients – Fish On	fish hydrolysate	2 – 4 - 0.2	Immature plants
Native Nutrients – Kelp Help	Bull Kelp (trace minerals), Humic Acid	N/A	Soil Drench
Fox Farm – Big Bloom*	earthworm castings & bat guano	0 - 0.5 - 0.7	Flowering
Sparetime Supply - Molasses	Sugar Cane	1 - 0.1 - 3	Flowering
*Organic Material Review Institute Listed and California Department of Food & Agriculture registered input material.			

Miller Creek Farms has developed operational and cultivation methods that minimize the need for pest management. This includes cultural, mechanical, biological, and chemical controls. They are currently using the products listed in Table 3. Copies of MSDS for all materials are also stored in each of the two sheds that contain the products (Pesticide, Herbicide, Chemicals).

Pesticides and fertilizers are stored in both Shed1 (BLDG 6) and Shed4 (BLDG 3) during the cultivation season and then all materials moved to Shed4 (MP6) during harvest time, when Shed 1 is utilized for processing. The Red Cabin has been used for winter storage of all material in the past. This may change to winter storage in Shed4 when proper interior is completed. Shed1 is 216 ft<sup>2</sup> building on a pier-and-post foundation with interior secondary containment provided by totes; The Red Cabin is a fully contained storage building. Shed1 is greater than 150 feet from the nearest waterway. There is no potential for discharge of any substance to waters of the state from either of these sites.

Table 3. Products Potentially Used For Pest Management		
Product	Ingredients	Pest or Disease
Actinovate*	<i>Streptomyces lydicus</i> WYEC 108	Soil Pathogens, Gray Mold, Powdery Mildew, Botrytis, Phytoematotricum, Sclerotinia
Lost Coast Plant Therapy	Soy Oil, Peppermint Essential Oil, Citric Acid	Aphids, Whiteflies, Cutworms, Budworms
*Organic Material Review Institute Listed and California Department of Food & Agriculture registered input material.		

All products are stored and used consistent with product labeling, separate from petroleum or other liquid chemicals. They are stored and mixed outside of riparian buffers and shall not be applied within 48 hours of a predicted rainfall event of 0.25 inches or greater with a probability greater than 50-percent.

#### 4.2 Spill Prevention and Clean-Up

Spill prevention for pesticides, herbicides, and fertilizers is accomplished by contained storage and application sites. Soil amendments are added at the receiving cultivation site; other products are transferred to application equipment at the respective storage building. This utilizes maximum containment and minimum opportunity for spill while maintaining a maximum distance from any waterway. The cultivator will immediately notify the California Office of Emergency Services at 1-800-852-7550 and immediately initiate cleanup activities for all spills that could degrade groundwater.

Absorbent materials designated for spill containment and spill cleanup equipment are kept on-site at Shed1 and Shed4 for use in an accidental spill of fertilizers or other substances which may degrade waters of the state. Petroleum products are stored at the Red Cabin and will utilize the spill equipment at Shed4 if petroleum is spilled. In the unlikely event of a spill that could enter a waterbody or degrade groundwater, the cultivator will immediately notify the California Office of Emergency Services at 1-800-852-7550 and immediately initiate cleanup activities for all spills.

### 5. Petroleum Products BPTC Measures

#### 5.1 Products, Use, Storage

All fuels, lubricants, and hazardous materials are stored in a contained storage off-site at the owner's adjacent parcel. Gasoline is used for the water pump. Gasoline is only used in small quantities and thus delivered and stored in 1-gallon (legal) containers. Incidental oils and lubricants are stored off-site. All fueling happens at the water pump, outside of the riparian buffers. The water pump is regularly inspected for leaks. In the event of a leak, drip or spill,

clean-up will be done immediately and the pump will be removed and repaired if necessary, to correct the leak/drip.

Table 4. Petroleum Products			
Product	Use	Storage	Winterization
Gasoline	Water Pump	1-gallon cans in tote, off-site	Within fully contained building
Oil	Water Pump	Original packaging, off-site	Within fully contained building

## 5.2 Spill Prevention and Clean-Up

Spill prevention is achieved by secondary containment of all nutrients and petroleum-based products. A Spill clean-up kit (kitty Litter, Absorbent pads, etc.) will be stored at each containment location. If a clean-up is required, contaminated materials will be disposed of through Humboldt Waste Management Authority or similar authorized receiver. The cultivator will immediately notify the California Office of Emergency Services at 1-800-852-7550 and immediately initiate cleanup activities for all spills that could degrade groundwater.

## 6. Commercial Cultivation Trash/Refuse and Wastewater BPTC Measures

### 6.1 Cultivation Waste

Organic waste is chipped and/or composted onsite. This includes stalks and roots. Synthetic grow media associated with clones is separated out and treated as rubbish: disposed of with other trash.

### 6.2 Trash/Refuse

The refuse from operations consists of miscellaneous packaging/garbage and is contained in covered cans inside a storage chamber of the Red Cabin. The trash is delivered to a local transfer station (Recology – Redway Transfer Station, Redway, CA 95560) bi-weekly to monthly depending on seasonal need.

### 6.3 Wastewater

The parcel does not have a residence nor any OWTS. The farm is run exclusively by three (3) family members that reside on an adjoining parcel (APN 220-271-009); currently, all restroom needs are accommodated on that (home) property. There is a self-contained composting toilet on the project parcel that was utilized during the past when the cabins were seasonally occupied and will be used for the limited farmer needs in all future cultivation seasons. This toilet is located near Cultivation Area 2 in BLDG 3 (nutrient storage).

There are one-to-three people working on the property on any given day. General wastewater consists of two greywater handwashing locations; one is a sink in the Red Cabin, and one is the

hose Bibb near Cultivation Area 1. There is no evidence of run-off at either of these locations. Moreover, both greywater sites are greater than 200 feet from any stream. There is no potential for any greywater to enter waters of the state.

## 7. Winterization

There are no construction spoils, bare soil, or unstable slopes. There are road drainage structures (rolling dips and culverts) and stream crossings that are scheduled for upgrades. These will be inspected for function in the interim, and inspected and monitored for integrity effectiveness after upgrade.

Winterization will include the following measures. The cultivation areas will be planted with cover crop (legume) and straw mulched. Use of the spur road to the transfer tanks and water pump is restricted to foot-travel during the wet seasons. All nutrients are transferred to BLDG 2 (Red Cabin) for winter storage – fuel is also stored in this building, separate from other materials.

### 7.1 Discharge Potential

Containment of cultivation is already present to some degree by virtue of the plants being grown in-ground. Containment of beds is enhanced by the planting of a cover crop. Both cultivation areas are outside of the setback requirements and a lush riparian buffer of trees, shrubs, and grasses further minimizes discharge/delivery potential. Potential sediment contribution to stormwater elsewhere on the site is limited to the road network. The access road to the Creekside Cabin (BLDG 4) is closed to vehicles during the wet seasons. The compost pile is covered over the winter season.

### 7.2 Maintenance

The Erosion and Sediment Control BPTCs that may potentially require maintenance is primarily the eroding inboard ditch at MP 14 and secondarily, the culverts and other road drainage features. Monitoring of sediment discharge BPTCs will be accomplished by the year-round presence of family/operators at the site. Maintenance, if necessary, will be manipulation of the armor at the knickpoint or downgrade ditch. Cultivation areas will be monitored for surface run-off after storm events that produce 0.5 inches of rainfall in a day or 1 inch of rainfall in 7 days. In the unlikely occurrence that flow concentrates and flows from the cultivation areas, the lush natural vegetation will provide energy dissipation to allow infiltration proximal to the terrace surface.

Individual plant holes are straw mulched and a cover crop is planted on the cultivation flats every Fall. All storage locations will be inspected for containment integrity prior to the onset of winter rain. All drainage structures will be inspected for function and uncompromised in-flow and erosion-free out-flow. Structures will 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.

### 7.3 Revegetation

There are no revegetation treatments planned at this time. Revegetation will occur when the LSAA treatments are implemented. The revegetation plan is included in the Stillwater Sciences Basis of Design report for Buck Gulch Fish Passage Project (Worley Property).

Table 5. Winterization Points

<b>Monitor Point</b>	<b>Category</b>	<b>Description</b>	<b>Treatment</b>	<b>Scheduled Completion</b>
MP6	Nutrient Storage	Storage at CA 2	Transfer nutrients to BLDG 2 for winter	November 1
MP7	Containment	Gas powered pump	Inspect containment. Assure protection from elements	November 1
MP13	Culvert	DRC	Inspect Inlet & Outlet. Clear debris if present	November 1
MP14	Erosion Control	Inboard Ditch	Inspect for effectiveness. Clear debris and apply armor if necessary	Ongoing
MP16	Culvert	Watercourse Crossing	Inspect Inlet & Outlet. Clear debris if present	November 1
MP17	Culvert	DRC	Inspect Inlet & Outlet. Clear debris if present	November 1
MP18	Off-Road Drain	Drainage Control	Inspect for effective run-off capture & erosion-free outflow. Maintain as needed	November 1
MP19	Rolling Dip 1	Drainage Control	Inspect for effective run-off capture & erosion-free outflow. Maintain as needed	November 1
MP20	Rolling Dip 2	Drainage Control	Inspect for deposition or erosion at out flow. Maintain as needed	November 1.
MP21	Culvert	DRC	Inspect Inlet & Outlet. Clear debris if present	November 1
MP22	Culvert	DRC	Inspect Inlet & Outlet. Clear debris if present	November 1
MP25	Irrigation Run-off	Cultivation Area 1	Plant cover Crop	November 15
MP26	Irrigation Run-off	Cultivation Area 2	Plant cover Crop	November 15

\*Pending CWA 404 permit and LSAA amendment.

## 8. Monitoring & Reporting

Monitoring and reporting program requirements will be implemented. Annual reports will be submitted to the North Coast Regional Waterboard by March 1 following the year being monitored.

### 8.1 Monitoring Points

Monitoring points for this site include erosion prevention BPTC measures as well as annual winterization measures: containment integrity; nutrient and chemical storage; cover crop planting. There is virtually no risk of sediment discharge. There is no construction, riparian buffer concerns, stream crossings, drainage structures, or legacy discharge potential. All monitoring points are included in Table 1, while winterization points are also broken out in Table 5.

Winterization is planting cover crops and transfer nutrients to winter storage. It is expected that monitoring will evolve as LSAA implementation creates new disturbance and interim erosion control treatments. At this time, maintenance of erosion prevention or sediment control BPTCs is limited to culverts and other road drainage structures (low frequency), with the connected and eroding Inboard Ditch at MP14 being the most critical.

### 8.2 Reporting

This site is designated Tier 2 Low Risk and the annual report will only require the following:

1. Facility Status Report.
2. The name and contact information for the person responsible for operation, maintenance, and monitoring.

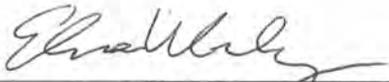
The Facility Status Report shall address the following monitoring requirements:

Monitoring Requirement	Description
Winterization Measures	Report winterization procedures implemented, any outstanding measures, and the schedule for completion.
Tier Status Confirmation	Report any changes in tier status.
Third Party Identification	Report any change in third party status.
Nitrogen Application	Report monthly and annual total nitrogen use. Provide data as lbs./canopy acre/time (month or year), like Nitrogen Management Plan.

## 9. Certification

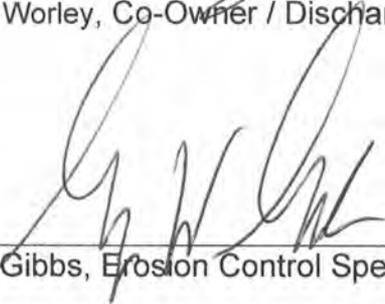
Data for this plan was collected by Greg Gibbs and Megan Acevedo during a site visit conducted on June 12, 2019. Greg and Megan work for 1 Degree Consulting; Megan was assisting Miller Creek Farms with County and State permitting; Greg is responsible for production of this Site Management Plan. Elena Worley (Miller Creek Farms Co-Owner) accompanied us on the site visit. Elena has reviewed this plan and agreed that it accurately depicts the site conditions and commercial operations.

"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."



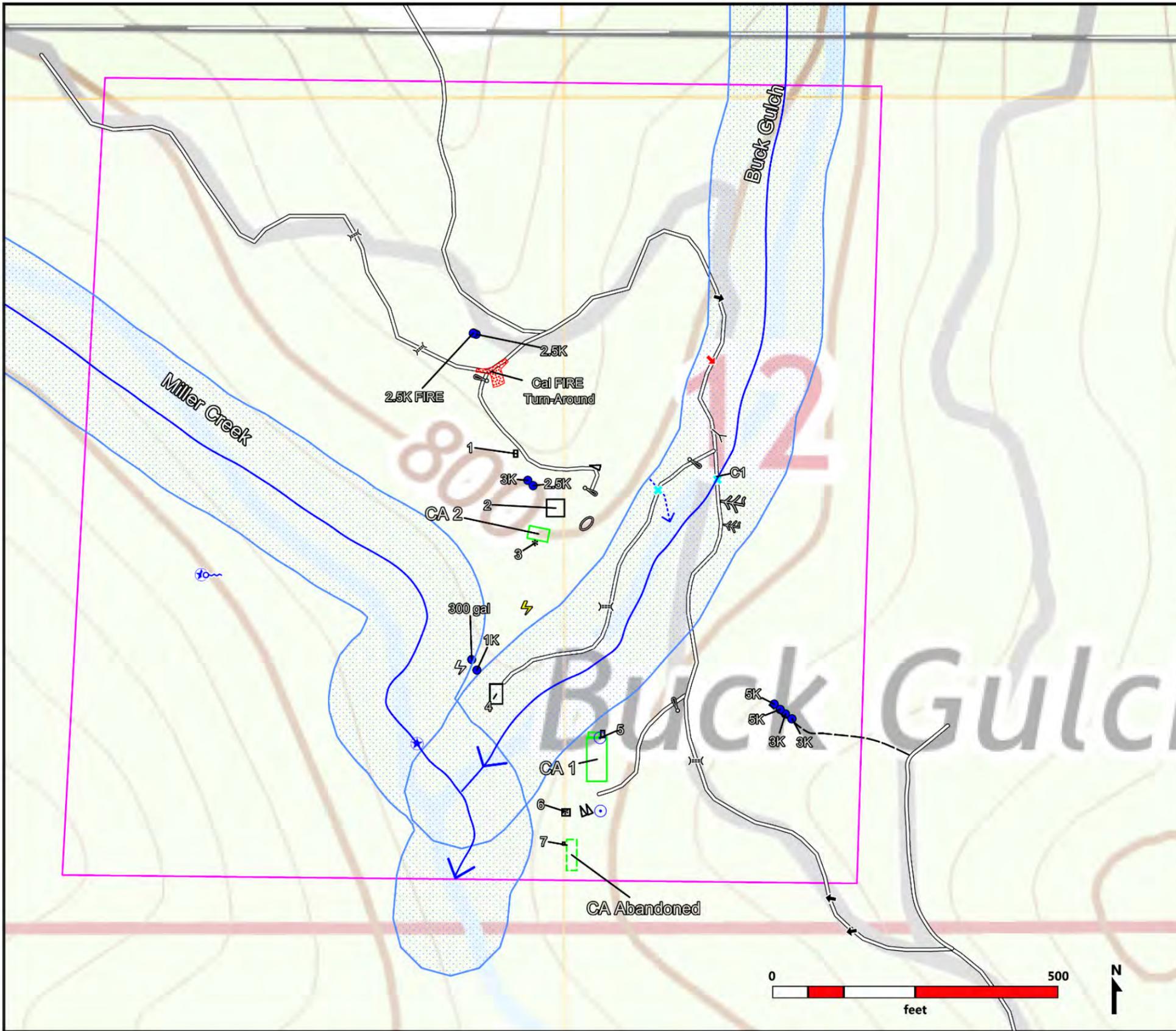
Elena Worley, Co-Owner / Discharger

2/18/2020



Greg Gibbs, Erosion Control Specialist, 1-Degree Consulting

2/18/20



**APN 221-271-008**  
**OWNER: ANDREW MILLER / ELIZABETH WORLEY**  
**APPLICANT: MILLER CREEK FARMS**  
**WDID 1\_12CC417788**

**LEGEND**

Parcel Boundary	Building (number)
Cultivation Area	Nutrient Storage
<P> Water Pump & Transfer Tank Relocation	Propane Tank (100-gal)
Gully	<E> Water Pump
Stream Crossing	Gate
Ditch-Relief Culvert	Water Bibb
Rolling Dip	Spring
Rolling Dip (Redesign)	Water Transfer Tank
Off-Road Drain	Class I Stream
Dirt Road	Class III Stream
<P> Cal-Fire Hammerhead T	Class I Stream Setback (100 ft)
	Point Of Diversion
	Water Tank

**CULTIVATION**  
 -CA 1- is 3,560 sq. ft. contiguous on legacy logging deck (3,896 sq. ft.)  
 -CA 2- is 790 sq. ft. contiguous on legacy logging deck (1,485 sq. ft.)  
 -CA Abandoned- is 1,100 sq. ft. bed on natural slope (NOT USED)

**BUILDINGS**  
 -BLDG 1- Office. (pre-2005) 8x12-foot  
 -BLDG 2- Red Cabin. (pre-2005) 30x40-foot with break room and kitchen. Building also has attached solid waste (garbage) containment  
 -BLDG 3- Nutrient Shed. (post-2014) 6x8-foot Free-standing, pre-fabricated garden shed  
 -BLDG 4- Creekside Cabin. (pre-2005) NOT CANNABIS. 12x16-foot Cabin is domestic storage  
 -BLDG 5- (pre-2005) NOT CANNABIS. 8x12-foot legacy shed is not used  
 -BLDG 6- Dry Shed / Nutrient Storage. (2009)12x18-foot garage on pier and post foundation.  
 -BLDG 7- (pre-2005) NOT CANNABIS. 8x12-foot legacy shed is not used

**\*\*ALL WATER STORAGE IS HDPE HARD-SIDED TANKS INSTALLED APPROXIMATELY 2009**


 1391 G St.  
 Arcata, CA 95521  
 (707) 890-6600

MAP 2 Site Characteristics, USGS 1qo (Contour Interval = 40 feet).

APN 221-271-008  
 OWNER: ANDREW MILLER / ELIZABETH WORLEY  
 APPLICANT: MILLER CREEK FARMS  
 WDID 1\_12CC417788

**LEGEND**

-  Parcel Boundary
-  Monitoring Point
-  Cultivation Area
-  Legacy Cultivation Area
-  Building
-  Class I Stream
-  Class III Stream
-  Dirt Road
-  Skid Road
-  Cal-FIRE Turnaround

**BUILDINGS**

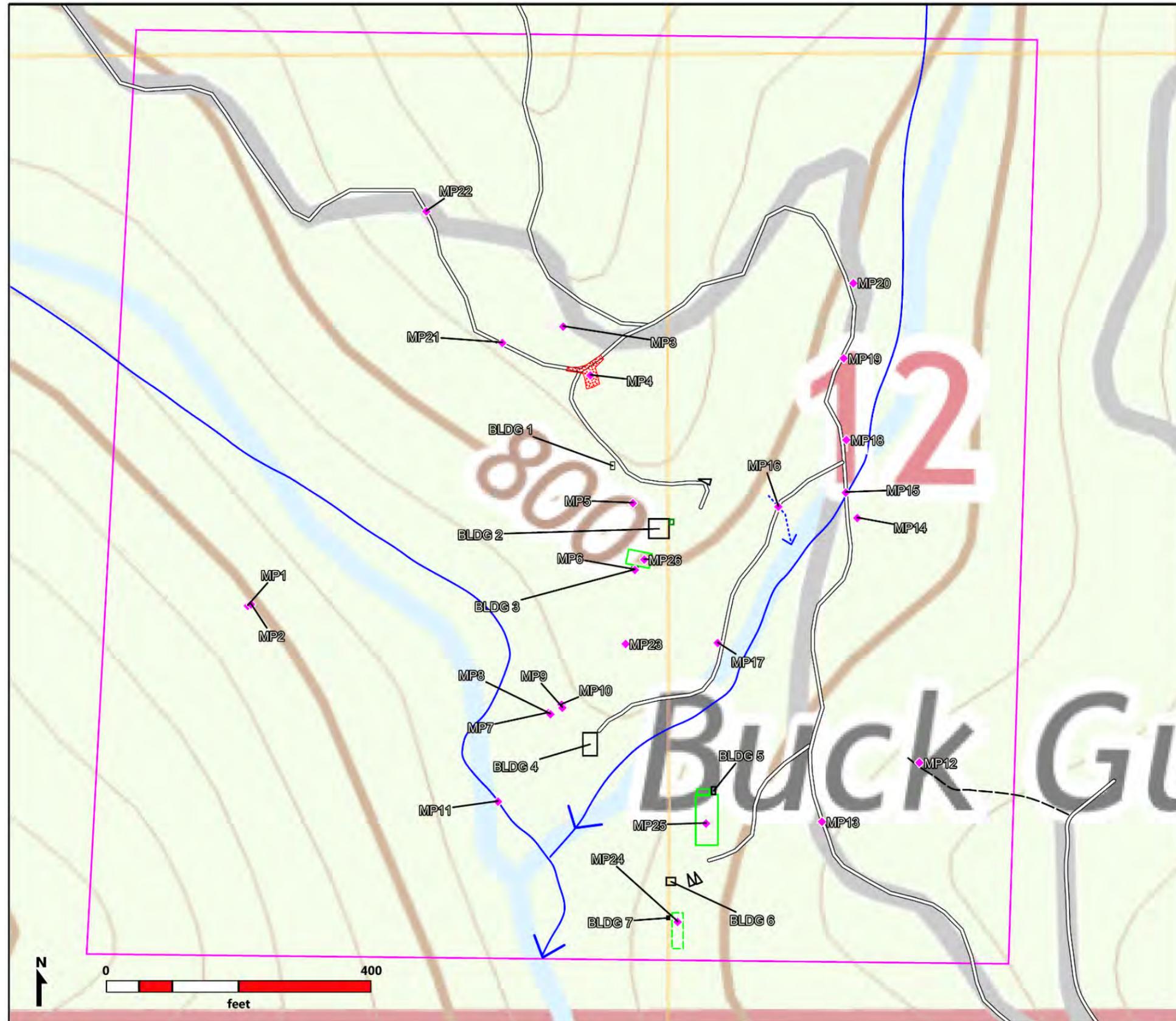
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1391 G St.  
 Arcata, CA 95521  
 (707) 890-6600



MAP 3. Monitoring Points - Winterization and Erosion Prevention BMP & Sediment Control BMP Measures.

APPENDIX A

PHOTOS



Photo 1. Cultivation area 1, Looking South.



Photo 2. Cultivation area 1, Looking North.



Photo 3. Cultivation area 2, Looking West.



Photo 4. Office, Looking west.



Photo 5. Red Cabin, Looking Northwest.



Photo 6. Nutrient Shed at Cultivation Area 2, Looking South.



Photo 7. Creekside Cabin, Looking Southeast.



Photo 8. Shed3. Unused legacy structure adjacent to Cultivation Area 1, Looking North.



Photo 9. Shed1 is located near (south) Cultivation Area 1, Looking West.



Photo 10. Shed2 is south of Shed1, adjacent top abandoned (legacy) cultivation, Looking South.



Photo 11. Buck Gulch, Looking Upstream from Miller Creek Road.



Photo 12. Miller Creek Road crossing over Buck Gulch, Looking Downstream.



Photo 13. Legacy cultivation area, Looking South.



Photo 14. Water storage South (2 x 5K + 2 x 3K), Looking Northwest.



Photo 15. Water storage North (2 x 2.5K), Looking West.



Photo 16. Water storage Middle (2.5K + 3K), Looking West