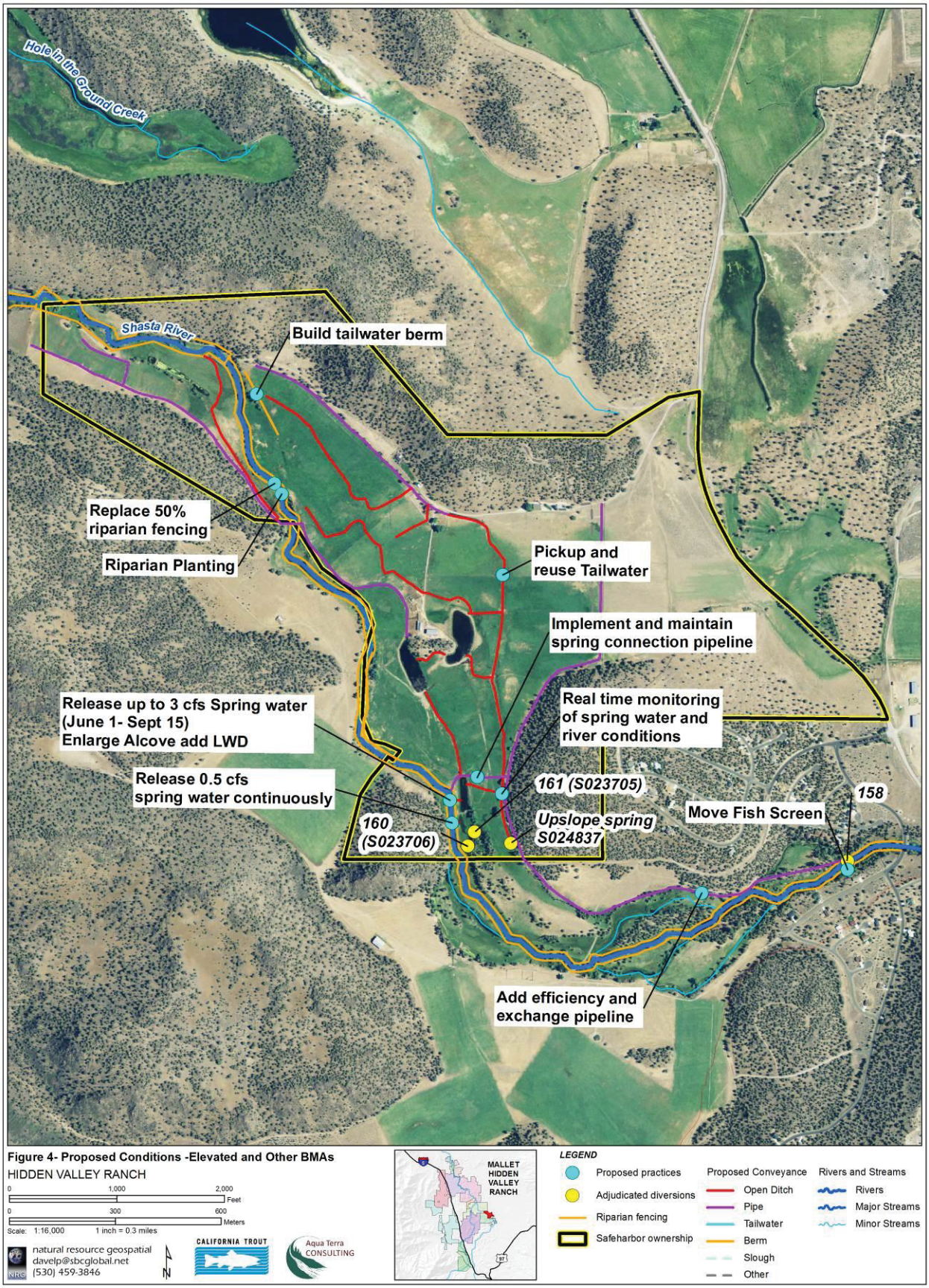

Hole in the Ground Creek
Shasta River
Build tailwater berm
Replace 50% riparian fencing
Riparian Planting
Pickup and reuse Tailwater
Implement and maintain spring connection pipeline
Release up to 3 cfs Spring water (June 1- Sept 15) Enlarge Alcove add LWD
Real time monitoring of spring water and river conditions
Release 0.5 cfs spring water continuously
161 (S023705)
158
Move Fish Screen
160 (S023706)
Upslope spring S024837
Add efficiency and exchange pipeline
Figure 4- Proposed Conditions -Elevated and Other BMAs
HIDDEN VALLEY RANCH
0 1,000 2,000 Feet
0 300 600 Meters
Scale: 1:16,000 1 inch = 0.3 miles
natural resource geospatial
davelp@sbcglobal.net
(530) 459-3846
CALIFORNIA TROUT
Aqua Terra CONSULTING
MALLET HIDDEN VALLEY RANCH
LEGEND
Proposed practices
Adjudicated diversions
Riparian fencing
Safeharbor ownership
Proposed Conveyance
Open Ditch
Pipe
Tailwater
Berm
Slough
Other
Rivers and Streams
Rivers
Major Streams
Minor Streams

E.2.a. Hydrology/Water Quality

Increase delivery and irrigation efficiency:

-The current prior rights conveyance has approximately 2,500-feet of open ditch, resulting in ditch loss and an increased non-consumptive diversion amount. The Permittee commits to pipe the entire prior rights conveyance ditch, from the newly constructed fish screen to the existing prior rights pipeline at the place of use. This project has been designed, environmental review has been completed, permits and implementation funds have been obtained, with the goal to construct in 2018-2019. In exchange for the increased efficiency, the Permittee agrees to release 0.5 cfs of spring water to the Shasta River continuously, as long as the springs are producing at or above this amount, for the duration of the agreement. This is the approximate amount of ditch loss that was measured by AquaTerra Consulting during the 2015 Upper Shasta Flow Experiment, when measuring discharge in the ditch from the fish screen to the south boundary of HVR. The spring sources must produce more than 0.25 cfs in order to fulfill the adjudicated right, which has priority, at #160/161, then the 0.5 cfs will be discharged to the Shasta River.

Tailwater Reduction:

-Tailwater is a large concern in this reach, and the ranch topography includes sloped pastures with gullies. The Permittee commits to the construction and maintenance of approximately 1000-feet of tailwater infiltration berms at known tailwater return points within the Bunkhouse Pasture. The berm was designed to collect water from the pasture over time, allow it to percolate into the ground, and/or be released in the morning hours if cool enough via a waterman valve and culvert. This project was constructed in 2017 with funds from the Shasta Valley RCD. HVR utilized this feature in 2017 with overall success and will maintain and manage the berm for the term of the agreement.

Water Exchanges:

-A water exchange of 1.5 cfs with MWCD has being negotiated under this Agreement to facilitate improvement to water quality by releasing additional spring water to the channel. Once the terms with MWCD are settled and a 1707 has been completed, the exchange would be exercised for the term of the agreement. In order to exercise the exchange, the installation of an additional pipeline (approximately 4000-feet) to deliver up to 1.5 cfs of MWCD water (in addition to current prior rights deliveries) in exchange for bypassing available cold spring water directly to the Shasta River from June 1 through September 15th is needed. This project has been designed, environmental review has been completed, and permits and implementation funds have been obtained, with the goal to construct in 2019-2020. In order for an exchange to occur, the overall spring production on the ranch must be over 0.75 cfs, this allows the ranch to fulfill the 0.25 cfs adjudicated right (#160/161) for irrigation purposes and the 0.5 cfs spring contribution due to efficiency improvements (as described above). If the overall spring production is between 0.75 and 2.25 cfs than the exchange agreement will be fulfilled on a 1:1 basis and if spring production decreases the exchange amount diverted will be decreased in equal proportion. This effort will be documented with the SWRCB through a Water Code section 1707 process by 2019-2020. The water exchange will be managed using real-time flow meters, measuring spring released to the river and exchange water used for irrigation.

Additional Spring Water Contribution:
The Permittee commits to bypass an additional 1 cfs of spring water to the Shasta River from June 1st through September 15th, when total spring water sources are producing over 2.25 cfs.

The 2.25 cfs is the amount that is needed to fulfill the 0.25 cfs adjudicated right on the springs (#160/161) for irrigation purposes, the 1st priority bypass of 0.5 cfs spring bypass due to irrigation efficiency improvements and the 2nd priority bypass of 1.5 cfs spring water in exchange for MWCD water as described above. Then the additional 3rd priority ranch contribution of 1cfs will be bypassed. The 2nd and 3rd priority contribution will require the installation of a pipeline connecting the upper spring to the river, a distance of 560-feet. This project has been designed, environmental review has been completed, and permits and implementation funds have been obtained, construction was completed in 2017. This riparian water right will be protected via a permissive 1707 dedication in conjunction with the adoption of and implementation of the water exchange program with MWCD by 2020. The additional spring water contribution will be monitored via a real-time flow meter.

Table 3- Spring Contribution Commitments

Description of Proposed Water Quality Conservation Benefits	1st priority- From conservation (piping)	2nd priority- Exchange with MWCD	3rd priority- Ranches Contribution to Reach Benefit	Total potential instream contribution
Pipe the prior rt conveyance ditch in exchange for 0.5 cfs spring water discharged to river continuously, committing to releasing (1.50 cfs) from springs to river, an equal amount will be provided to the ranch from MWCD, 1 cfs of Spring water will be provided to river as ranch contributions	0.5 cfs	1.5 cfs	1 cfs	**A maximum of 3 cfs spring flow will be available for instream contribution from June 1- Sept 15.** **The spring flow contribution will be managed as follows:** - 0.5 cfs of spring water will be bypassed throughout the irrigaiton season for efficiency improvements on Prior rights conveyance. (Spring source must produce a minimum of 0.25 cfs to fulfill adjudicated right at #160/161) -Upto 1.5 cfs of spring water will be bypassed in exchange for an equal amount of MWCD water. The overall spring production must be between 0.75 (to fulfill above contributions) and 2.25 cfs to accomodate a full 1.5 cfs exchange. The exchange will be provided in equal proportion to available spring water. -Upto 1 cfs of spring water will be bypassed as the participant's additional contribution. The overall spring production must be over 2.25 cfs (to fulfill above contributions).

E.2.b. Passage/Migration/ Diversion Screening

Fish Screen

-The present fish screen/diversion weir utilized at diversion 158 has been determined to pose a threat to fish by stranding when the current ditch is dewatered at the end of the irrigation season, and is presumed to result in elevated water temperatures in the Shasta River at the point of fish bypass flow discharge. To benefit the Covered Species, HVR has committed to moving, upgrading, and operating the new fish screen as designed. The new self-cleaning cone screen will be relocated to the channel at the current point of diversion, thereby eliminating the potential for stranding and bypass flow heating in the ditch. Funding for this project has been secured by California Trout and the environmental compliance and permits are completed.

E.2.c. Instream Habitat Complexity

The Permitee will not implement any measures specifically to protect/improve instream habitat complexity under elevated baseline, see section E.1.c and E.3.c.

E.2.d. Riparian Function

The Permitee will not implement any measures specifically to protect/improve riparian function under elevated baseline, see section E.1.d and E.3.d.

E.2.e Substrate Quality

The Permitee will not implement any measures specifically to protect/improve substrate quality under elevated baseline, see section E.3.e.

E.2.f. Pasture Management

The Permitee will not implement any measures specifically to protect/improve Pasture Management under elevated baseline, see section E.1.f.

E.2.g Assessments/Studies

The Permitee will not implement any measures specifically to Assessments/Studies under elevated baseline, see section E.1.g and E.3.g.

E.3. Other Beneficial Land and Water Management Activities

This section summarizes any other land and water management activities that will be implemented on the enrolled property to benefit the Covered Species. These actions are also shown on Figure 4.

E.3.a. Hydrology/Water Quality

Tailwater Reduction

- The Permitee will collect tailwater in open ditches and reused whenever possible.

Participate in Reach-wide Flow Management Strategy:
-The Permitee agrees to coordinate diversions and releases of spring water with the other Permitees along the reach to optimize reach-scale flow objectives,

Soil Moisture Monitoring
-The Permittee will install, utilize and maintain soil moisture sensors throughout the ranch under advisement with UC-Extension in order to inform irrigation water application and to assist the Permittee with making informed decisions around the crop water needs of the pastures. The purpose will be monitoring water application versus need for water in the soil profile. After consultation between the permittee and UC Extension, soil moisture sensors will be installed in different pastures, with sensors at different soil depths to monitor when irrigation is needed for particular pastures. The practice of monitoring soil moisture will assist landowner in knowing appropriate irrigation schedule and rotation to ensure adequate irrigation occurs while minimizing the possibility of overwatering or watering when ET rates are low. By fine tuning irrigation practices on the ranch, the potential for additional instream contributions from spring sources can be maximized. These additional instream contributions will be quantified after reviewing the soil moisture and irrigation data and included in the annual report.

Spring Water Contribution
-The Permittee will voluntarily bypass excess spring water over the 3 cfs of spring water committed to under Elevated Baseline. These riparian rights will be protected via a permissive 1707 dedication or some other arrangement such as a forbearance agreement acceptable to the parties The agreement will be applied for within 3 years after the execution of the SHA.

E.3.b. Passage/Migration/ Diversion Screening

Beaver Management for Instream Benefit
-Permittee encourages the development of beaver dams on the reach to further expand the presence of pools and cover. Such dams are found on other reaches and expected to occur along this reach in the future. The Permittee will adhere to the Beaver BMPs.

E.3.c. Instream Habitat Complexity

Large Woody Debris-
-Where appropriate, woody debris will be left in the stream bed to support cover for various life stages of the Covered Species.
-The Permittee will participate in the implementation of habitat improvement projects (LWD, grade control structures, etc) as stipulated on the attached Figure 5- Habitat Improvement map *included in Appendix E*. Up to 24 sites (some shared with adjacent property owner) have been identified on the ranch for LWD placement, which would entail placement of rootwads/pieces to improve existing habitat while minimizing impacts to adjacent land. Participate is defined as allowing access, tracking design and funding progress done by others, reviewing plans and providing junipers from upland areas on the ranch.

-The Permittee agrees to allow an existing alcove to be enhanced where the spring water will re-enter the channel to provide a refugia. The enhancement will entail enlarging the existing alcove and provide cover and backwatering using up to 5 LWD structures. This project is estimated to be designed and implemented 3 years after SHA signature. HVR will work with the Agencies and engineers to design improvements to the alcove that remain within the riparian zone (existing fence configuration) and address concerns of the landowner relating to erosion and any other factors created by the activity prior to any construction. The landowner will not be responsible for repairs, loss of use, or other conditions if the site is lost due to flood or other natural disaster.

E.3.d. Riparian Function

Riparian Function:

-The Permittee agrees to maintain up to 50-percent of the riparian fencing in the event of flood damage to the fencing.

-The Permittee agrees to participate in additional riparian plantings within between 3-5 other riparian areas on the ranch to fill in the gaps between existing old growth riparian. The total planting area could be as much as 0.5 acres. The riparian assessment is estimated to be designed and implemented 5 years after SHA signature.

Revised Riparian Grazing Management plan:

-Permittee agrees to adhere to the Riparian Grazing Management Plan in Appendix D.

E.3.e Substrate Quality

-The Permittee will allow the introduction of spawning gravel at up to 5 sites throughout the reach on the ranch. This effort is also in conjunction with a proposed potential "supplementation effort".

E.3.f. Pasture Management

-The Permittee will cross fence 3 large pastures to better manage stubble height and pasture health. This effort will be accomplished within 3 years of implementation of this agreement.

E.3.g Assessments/Studies

Access for Studies:

-In addition to the on-going access as described in Section E.1.g(CADFW Pit Tag studies), Permittee is also supportive of surveys to determine food types and quantities sufficient to support life stages of Coho Salmon and the relationships such food supply may have toward variations in water temperatures.

-All relevant studies associated with the covered species, as specified in the Template and Adaptive Management Program for the agreement that are relevant to the covered property will be allowed under this agreement of 5 years, after which the Agencies may request an additional period of access for a like specified period of time. All access related to on-going studies will be done in a manner which provides at minimum 7 days' notice of intent to access by the Agency personnel. Access will be limited to the specific area of study and may require escort by the landowner or his/her representative. The landowner reserves the right to obtain the results of the study upon completion to assure privacy rights are maintained before publication.

-The following monitoring stations will be installed on HVR as part of the effectiveness monitoring program as described in Appendix 4 in the Template Agreement.

Reach and Station Locations	Designation	Monitoring Element	Maintenance Responsibility
HVR Upstream Property Line	HVR-US	RT Stage/Temp/Air	SWCG
HVR Downstream Property Line	HVR-DS	RT Stage/Temp/Air	SWCG

E.3.h Supplementation

The Permittee will allow access for salmonid supplementation and all associated monitoring activities.

F. Effective Date and Duration of the Site Plan and Agreement

The Template Safe Harbor Agreement, Site Plan Agreement and Permit take effect when signed by the Participants/Permittees, NMFS, and CDFW. The Template Safe Harbor Agreement, Site Plan Agreement and Permit have a term of 20 years, which may be extended by mutual written consent of the Participants/Permittees, NMFS, and CDFW. One (1) year prior to end of term of the Template Safe Harbor Agreement, Site Plan Agreement and Permit, the Participant/Permittees, NMFS, and CDFW will meet to decide whether to extend the term of the Template Safe Harbor Agreement, Site Plan Agreement and Permit.

G. Monitoring and Reporting (who, what, when, where)

Implementation monitoring includes those monitoring tasks associated with construction and implementation of BMAs (e,g, construction of habitat restoration projects) and AMMs. Implementation monitoring of BMAs serves to verify that habitat restoration projects are constructed as designed or intended. AMMs are intended to minimize or reduce potential adverse impacts that may occur during implementation of BMAs or during routine ranching and farming activities. Monitoring protocols for AMMs are described in Appendix 3 of the Agreement. These actions will be conducted by the Permittee, the SWCG or a contractor.

G.1. Avoidance and Minimization Monitoring Commitments

Table 4- Avoidance and Minimization Monitoring

Covered Activity	HVR Ranch -AMM (See Section C2 for full description)	AMM Monitoring Technique
Irrigation Management	A1 A2	All maintenance of instream diversion structures shall be monitored as follows: -Log of what in-water work had occurred and what minimization measures were implemented will be included in the Annual SHA report -Data from measuring devices -When construction or repair work is being done, Photo Point Monitoring will be completed in accordance with template document.

Irrigation Maintenance	B1 B2 B3 B4 B5 B6 B7 B8	-All maintenance of instream irrigation facilities shall be monitored. Following are some examples of protocols: -Log of maintenance activities carried out within the calendar year be included in the yearly SHA report.
Riparian Grazing Management	C1 C2 C3	Riparian grazing management shall be monitored as follows: -Three to five permanent photo point stations will be established and marked at locations within each riparian pasture designed to show both vegetation changes before and after seasonal grazing activities, and long-term trends. Photo Point Monitoring will be completed in accordance with template document. Digital photographs will be taken at each photo point station once per year for trend monitoring, and before and after riparian pasture grazing takes place for annual implementation reporting. -Maintain a log of grazing activities carried out within the calendar year and include in the yearly Site Plan monitoring report. At a minimum, the log will include the following information: beginning and end dates of riparian pasture grazing; number of

		animals, monitoring practices during the riparian grazing period, and management actions taken as a result of monitoring results including management cues used to determine the time to move livestock out of the riparian pasture. -NMFS and CDFW may initiate periodic inspection of grazed riparian pastures to ensure riparian grazing management plan is effective.
Fence Maintenance	D1 D2	-A short description of fence maintenance activities will be included in the annual report template.
Road Maintenance	E2 E3	-A short description of annual road maintenance activities will be included in the annual report.
Crossing Maintenance	F1 F2	- When work is being done, Photo Point Monitoring will be completed in accordance with template document.
Herbicide/Fertilizer/Pesticide Use	G1 G2 G3 G4 G5	- Permitee commits to log use of herbicide, fertilizer and pesticide activities carried out within the calendar year be included in the annual report.
Flood Repair	H1 H2	- Permitee shall take photographs of the emergency site repairs and a detailed description of the repairs to be included in the annual report.

G.2 Implementation and Effectiveness Monitoring Commitments

Table 5- Net Conservation Benefit Monitoring

Habitat Parameter	HVR -Net Conservation Benefit Actions	Implementation Monitoring Technique	Effectiveness Monitoring Commitment/Technique
Hydrology/Water Quality	-Maintain existing pipeline infrastructure as described in E.1.a. - Continue irrigation practices to reduce tailwater temperature impacts as described in E.1.a. - Continue to release spring water into the river at the end of the irrigation season (November 1- March 1) as described in Section E.1.a. -Implement efficiency projects from point of diversion to place of use and committing to releasing 0.5 cfs of spring water to the river continuously as described in Section E.2.a. -Construct and maintain tailwater infiltration berms, as described in Section E.2.a - Provide a maximum of 3 cfs spring water for instream contribution from June 1 – September 15, as described in Table 3 in Section E.2.a. Permissive dedication	- Three to five photo points using Photo Point Monitoring guidelines. Documenting pipeline construction and tailwater berm condition. -Exchanges and spring contribution: Flow measuring devices will be installed in the prior rights pipeline, the exchange pipeline, the riparian spring contribution pipeline and the spring irrigation use pipeline. These devices will log hourly usage and will have the capacity to be real-time for the use of the Permitee, but will be downloaded and included in the annual implementation report to NOAA, as well as a report to MWCD to validate the exchange agreement.	- Long term water temperatures will be monitored using the real-time stations already established at HVR's upstream and downstream boundaries. Provide yearly data. -Instream temperature monitoring showing longitudinal changes due to project implementation. Provide the first three years after project implementation.

	through a 1707 of this riparian right will be explored. - Collect tailwater in open ditches and reuse on HVR as described in Section E.3.a. -Participate in a reach-wide diversion management strategy as described in Section E.3.a. -Implement soil moisture monitoring to ensure adequate irrigation as described in E.3.a. -Voluntarily release additional spring water over the 3cfs committed to under Elevated Baseline when the ranch is adequately irrigated.	-Provide Soil moisture data	
Passage/Migration/Screening	-Maintain unimpeded fish passage conditions at the HVR diversion and agrees to yearly inspection as described in Section E.1.b. -Construct an on channel new fish screen as described in Section E.2.b. -Implement beaver BMPs as described in E.3.b.	- Three to five photo points using Photo Point Monitoring Guidelines. Documenting new point of diversion construction and fish screen maintenance. -Water measuring protocol that is in concurrence with SB88 at new point of diversion. -Pre- and post-construction and design flow surveys of structure and any other critical or controlling hydraulic features.	
Instream Habitat Complexity	-Leave woody debris from existing trees place as described in Section E.1.c.	- Three to five photo points using Photo Point Monitoring Guidelines of Habitat improvements	

	-Provide access for implementation of large wood enhancement on the HVR as shown on Habitat Improvement map in Appendix and as described in Section E.3.c.		
Riparian Condition	-Perform yearly maintenance on existing riparian fencing as described in E.1.d. - Maintain crossings and stockwater as described in Section E.1.d. -Replace up to 50% of riparian fencing if needed due to flood damage as stipulated in Section E.3.d. -Participate in additional riparian planting projects as described in Section E.3.d. - Implement the riparian grazing plan as described in Section E.3.d and outlined in Appendix X.	- Three to five photo points using Photo Point Monitoring Guidelines to document riparian grazing area, and crossing and stockwater systems in proper function.	-Survival rates of riparian planting will be reported by Shasta Valley RCD or other implementing organization for a minimum period of 3 years after planting occurs or term will be stipulated by the grants utilized for implementation.
Substrate Quality	-Provide access to implement spawning gravel enhancement on the HVR at locations stipulated on the Habitat Improvement map and described in Section E.3.e	- Three to five photo points using Photo Point Monitoring Guidelines	-Mapping to monitor the distribution of spawning gravel over time.
Pasture Management	-Manage pasture grazing as described in Section E.1.f.	- Three to five photo points using Photo Point Monitoring Guidelines to document pasture condition.	

Assessment/Studies	-Allow for the usage of existing studies performed on the ranch to further understand baseline conditions. These studies are summarized in Section E.1.g. - Allow access for studies as described in Section E.3.g.	-Reports of studies will be written/summarized/ obtained and provided in the annual report	-Access to maintain existing pit tag array and trap and tag fish as deemed feasible by agency staff
Supplementation	-The Permitee will allow access for salmonid supplementation as described in Section E.3.h.		

H. Annual Report and Adaptive Management

The Permittee will complete the Annual Report Form, attached in Appendix F, yearly and reported as stipulated in the agreement template.

I. Regulatory Assurances

Upon execution of this Agreement by the Parties, and the satisfaction of all other applicable legal requirements, NMFS will issue a permit under Section 10(a)(1)(A) of the ESA to assure the Permittee may incidentally take Covered Species, in accordance with the Site Plan and Agreement, as a result of Routine Land Use and Beneficial Management Activities as described in each Agreement, and except where such Routine Land Use would result in the diminishment or non-achievement of the Baseline and/or Elevated Baseline Conditions established for the enrolled property. This assurance depends on the Permittee maintaining the Baseline and/or achieving the Elevated Baseline Conditions set forth in the Site Plan, complying fully with the Agreement and their Site Plan, and so long as the continuation of Routine Land Use and Beneficial Management Activities would not be likely to result in jeopardy to Covered Species or the adverse modification or destruction of their designated critical habitat. NMFS provides no assurances with regard to any action that may affect Non-Covered species, including the take of Non-Covered Species and the adverse modification or destruction of their designated critical habitat.

J. Signatures of NMFS, CDFW and the Permitee

_____ _____

NMFS **Date**

_____ _____

Permittee **Date**

SEPARATE SIGNATURE BLOCK FOR CDFW:

By signing the Template Safe Harbor Agreement and this Site Plan Agreement CDFW expresses its expectation that the Agreement along with a Permittee's Site Plan Agreement signed by NMFS, and the NMFS ESP, could meet the requirements of section 2089.22 of the California Fish and Game Code with respect to the particular property described in the Site Plan Agreement. However, CDFW will not make such determination until reviewing that Site Plan Agreement signed by NMFS and the NMFS ESP.

_____ _____

CDFW **Date**

Appendix A- Legal Deeds

RECORDING REQUESTED BY AND WHEN RECORDED MAIL TO:

Howard M. Larsen, Inc.
4 Upper Newport Plaza, #103
Newport Beach, CA 92660

MAIL TAX STATEMENTS TO:

Mallett Hidden Valley Ranch Partnership
729 Westwood Place
Anaheim, CA 92805

Entry Number: 1997101300023
Instrument: 1997101312219
Total Fees: $8.00
Date: 13-OCT-1997 01:45:34 P
Contact: BEVERLY J FOSTER

GRANT DEED

The undersigned Grantor declares under penalty of perjury that the following is true and correct:

The Documentary Transfer Tax is EXEMPT.

Signature of Declarant or Agent, **Howard M. Larsen, Inc.**

The Grantor and Grantee in this conveyance are comprised of the same parties who continue to hold the same proportionate interest in the property, R & T 11923(d)

FOR A VALUABLE CONSIDERATION, receipt of which is hereby acknowledge, the undersigned Grantor, **Bernard E. Mallett, Trustee of the Bernard E. Mallett Family Trust dated August 30, 1984**, hereby grants to: **Mallett Hidden Valley Ranch Partnership**, a California General Partnership, the following described real property in the City of Montague, County of Siskiyou, State of California:

SEE EXHIBIT "A" ATTACHED HERETO AND MADE A PART HEREOF BY THIS REFERENCE

More commonly known as: 13521 Big Springs Road, Montague, CA ("Hidden Valley Ranch")
Assessor's Parcel No.: 20-040-080-0 & 20-050-020-0

Dated: October 2, 1997

Bernard E. Mallett, Trustee

STATE OF CALIFORNIA)
) ss.
COUNTY OF ORANGE)

On October 2, 1997, before me, Monique Juteau, a Notary Public in and for said County and State, personally appeared **Bernard E. Mallett**, proved to me on the basis of satisfactory evidence to be the person whose name is subscribed to the within instrument and acknowledged that he executed the same in his authorized capacity, and that by his signature on the instrument the person or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal.

MONIQUE JUTEAU
Comm. # 1011638
NOTARY PUBLIC - CALIFORNIA
Orange County
My Comm. Expires Dec. 25, 1997

(SEAL)

RECORDING REQUESTED BY AND
WHEN RECORDED MAIL TO:

Howard M. Larsen, Esq.
4 Upper Newport Plaza, #103
Newport Beach, CA 92660

MAIL TAX STATEMENTS TO:

Susan J. Mallett-Rodgers
Judy S. Roggenbuck

GRANT DEED

The undersigned Grantor declares under penalty of perjury that the following is true and correct:

The Documentary Transfer Tax is EXEMPT.

Signature of Declarant or Agent, **Howard M. Larsen, Esq.**

The Grantor and Grantee in this conveyance are comprised of the same parties who continue to hold the same proportionate interest in the property, R & T 11923(d)

FOR A VALUABLE CONSIDERATION, receipt of which is hereby acknowledge, the undersigned Grantor, **Mallett Hidden Valley Ranch Partnership**, a California General Partnership, hereby grants to: **Susan J. Mallett-Rodgers, Trustee of the Susan J. Mallett-Rodgers Trust dated October 4, 1995** an undivided one-half interest **and Judy S. Roggenbuck, Trustee of the Judy S. Roggenbuck Trust dated September 20, 1996**, an undivided one-half interest in and to the following described real property in the City of Montague, County of Siskiyou, State of California:

SEE EXHIBIT "A" ATTACHED HERETO AND MADE A PART HEREOF BY THIS REFERENCE

More commonly known as: 13521 Big Springs Road, Montague, CA ("Hidden Valley Ranch")
Assessor's Parcel No.: 20-040-080-0 & 20-050-020-0

Dated: June 28, 2002

MALLETT HIDDEN VALLEY RANCH PARTNERSHIP

By: Susan J. Mallett-Rodgers
Susan J. Mallett-Rodgers

Judy S. Roggenbuck

Its: General Partners

STATE OF CALIFORNIA)
) ss.
COUNTY OF ORANGE)

On June 28, 2002, before me, Monique Juteau, a Notary Public in and for said County and State, personally appeared **Susan J. Mallett-Rodgers and Judy S. Roggenbuck**, proved to me on the basis of satisfactory evidence to be the persons whose names are subscribed to the within instrument and acknowledged that they executed the same in their authorized capacities, and that by their signatures on the instrument the persons or the entity upon behalf of which the persons acted, executed the instrument.

WITNESS my hand and official seal.

Monique Juteau (SEAL)

MONIQUE JUTEAU
Commission # 1337679
Notary Public - California
Orange County
My Comm. Expires Jan 5, 2006

EXHIBIT "A"

PARCEL 1:

All that portion of the North Half of the Southeast Quarter and the South Half of the Northeast Quarter of Section 22, Township 43 North, Range 5 West, Mount Diablo Base and Meridian, which lies North of a line beginning at a fence post situated at fence corner at or near the Southeast corner of the North Half of the Southeast Quarter of Section 22, said post being described by ALBERT F. PARROTT as one-sixteenth section; thence North 31°24' West, 488.10 feet to fence post described as Northeast corner from which an iron pin in crack of rocks bears Westerly 69.4 feet and point of rock in center of Shasta River bears North 24°30" East, 49.8 feet; thence North 84°08'00" West, 393.79 feet; thence North 65°37'44" West, 55.07 feet; thence North 40°01'21" West, 55.72 feet; thence North 78°24'32" West, 242.08 feet; thence North 79°47'13" West, 124.08 feet; thence North 65°02'03" West, 108.19 feet; thence North 32°11'00" West, 403.20 feet; thence North 59°00'00" West 69.00 feet; thence North 35°00'00" West, 225.00 feet; thence North 64°00'00" West, 119.00 feet; thence North 26°00'00" West, 114.00 feet; thence North 50°00'00" West, 258.00 feet; thence North 82°00'00" West 206.00 feet; thence North 63°00'00" West, 114.94 feet; thence North 78°00'00" West, 349.25 feet to the termination of said line of the North-South centerline of said Section 22.

PARCEL 2:

All of the North Half of the Southwest Quarter of Section 23, and that portion of the South Half of the Southwest Quarter of Section 23, and the North Half of the Northwest Quarter of Section 26, all in Township 43 North, Range 5 West, Mount Diablo Base and Meridian, which lies Easterly of a line described as follows:

BEGINNING at a fence post situated in a rock mound in the fence corner at or near the Northwest corner of the Southwest Quarter of the Southwest Quarter of said Section 23, which said fence post is described by ALBERT F. PARROTT one-sixteenth section; thence South 55°45' East, 386.36 feet to the fence corner, a post marked corner No. 3; from which a 10 inch Cottonwood tree bears North 3°47' East, 12.6 feet marked corner No. 3 BT; thence South 38°59' East, 160.56 feet to corner No. 4 fence post described corner No. 4; thence South 13°19'30" East, 144.2 feet to fence post described corner No. 5; thence South 11°25' West, 233.61 feet to a 12 inch Juniper tree, marked corner No. 6; thence South 4°44' West, 572.61 feet to corner No. 7, from which an 18 inch Willow tree bears South 33°07' East, 7 feet and the Quarter section corner common to Sections 23 and 26, Township 43 North, Range 5 West, Mount Diablo Base and Meridian bears South 88°41' East, 1110 feet, North 89°42' East, 954.2 feet and East 216 feet; thence South 8°22' West, 205.25 feet to an 8 inch Willow marked corner No. 8; thence South 41°01' East, 216.46 feet to corner No. 9; thence South 58° East, 154.6 feet to corner No. 10 on low ditch bank; thence South 62°56' East, 109.8 feet to corner No. 11 on ditch bank; thence South 68°57' East, 78.3 feet to corner No. 12 on ditch bank; thence South 33°57' West, 79.5 feet to corner No. 13 fence corner described corner No. 13; thence North 84°21' West, 96.9 feet to corner No. 14 below ditch; thence South 44°52' West, 126 feet to corner No. 15; 8 feet above ditch which a stake driven in crack in rock bears Easterly 61.9 feet; thence South 32°46' West, 346 feet; thence South 18° West, 462 feet, more or less to the South line of the Northwest Quarter of the Northwest Quarter of Section 26, Township 43 North, Range 5 West, Mount Diablo Base and Meridian.

Commonly known as: 13521 Big Springs Road, Montague, CA
Assessors Parcel Nos.: 20-040-080-0 & 20-050-020-0

BILL OF SALE, GENERAL CONVEYANCE AND ASSIGNMENT

This Bill of Sale, General Conveyance and Assignment, dated 4-16-2001, 2001, is made by Bernard E. Mallett, Trustee of the Bernard E. Mallett Survivor's Trust ("Transferor"), for the benefit of Susan J. Mallett-Rodgers, Trustee of the Susan J. Mallett-Rodgers Trust and Judy S. Roggenbuck, Trustee of the Judy S. Roggenbuck Trust ("Transferees").

W I T N E S S E T H:

That for the consideration previously received of which the undersigned hereby acknowledges receipt, Transferor hereby sells, conveys, assigns, transfers, sets over and delivers to and vests in Transferees, its 95% interest in that certain general partnership known as "Mallett Hidden Valley Ranch Partnership, a General Partnership."

This Bill of Sale, General Conveyance and Assignment is executed by and shall be binding upon Transferor, and its successors and assigns, and for the purposes and use as set forth and referred to above, effective as of the date and year first above written.

BERNARD E. MALLETT SURVIVOR'S TRUST

Bernard E. Mallett

Bernard E. Mallett, Trustee

RECORDED AT REQUEST OF
MT. SHASTA TITLE & ESCROW CO.

Page 1 of 2 pages

RECORDING REQUESTED BY AND
WHEN RECORDED RETURN TO:

John W. Reese, Jr.
Shadwell & Reese
P. O. Drawer 4647
Redding, CA 96099

85006915

OFFICIAL RECORDS
SISKIYOU COUNTY, CALIF.
JUN 24 3 49 PM '85
#85006915
RECORDER FEE $ 7.00

ACKNOWLEDGMENT OF PRESCRIPTIVE EASEMENT

The undersigned, MAXINE M. TAYLOR, a widow, hereby acknowledges the existence of a prescriptive easement over the existing road, which runs in a Westerly and Southwesterly direction from Big Springs County Road and crossing a portion of the East half of Section 23, Township 43 North, Range 5 West, M.D.M., thence intersects the East boundary of the Southwest quarter of said Section 23, as delineated on the map attached hereto.

The prescriptive easement is being acknowledged as appurtenant to and for the benefit of the Hidden Valley Ranch, located in portions of Sections 22, 23, and 26, Township 43 North, Range 5 West, M.D.M., Siskiyou County.

The prescriptive easement being acknowledged is a right of ingress and egress over the existing road, and which road at no point shall exceed the width of twenty feet (20'), provided, however, that the Hidden Valley Ranch shall be guaranteed ingress and egress for farm equipment, and upon the express condition that the owners of the Hidden Valley Ranch and their heirs, successors and assigns at all times be responsible for the upkeep and maintenance of the cattle guard crossing over the above-described prescriptive easement, and that they shall maintain and keep the prescriptive easement in a safe and usable condition, and that MAXINE M. TAYLOR and her heirs, successors and assigns have no obligation whatsoever with respect to upkeep or maintenance of the prescriptive easement, nor any

liability due to the use by MAXINE M. TAYLOR or her heirs, successors or assigns of the property upon which the prescriptive easement is located.

DATED: June 12, 1985

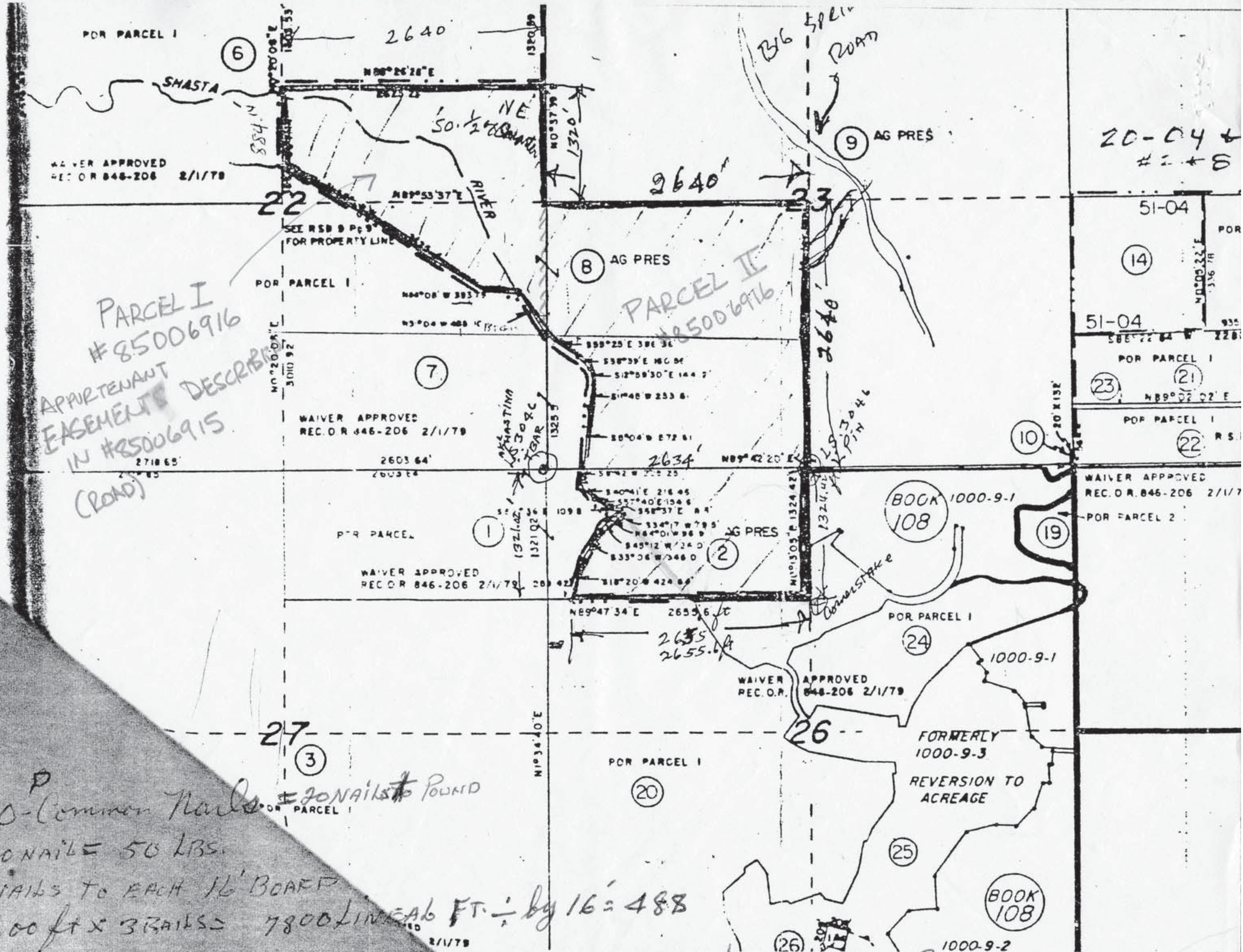
Maxine M. Taylor
MAXINE M. TAYLOR

STATE OF CALIFORNIA)
COUNTY OF SHASTA) ss.

On this 13th day of June, 1985, before me, the undersigned, a Notary Public in and for said County and State, personally appeared MAXINE M. TAYLOR, personally known to me or proved to me on the basis of satisfactory evidence to be the person whose name is subscribed to the within instrument and acknowledged that she executed the same.

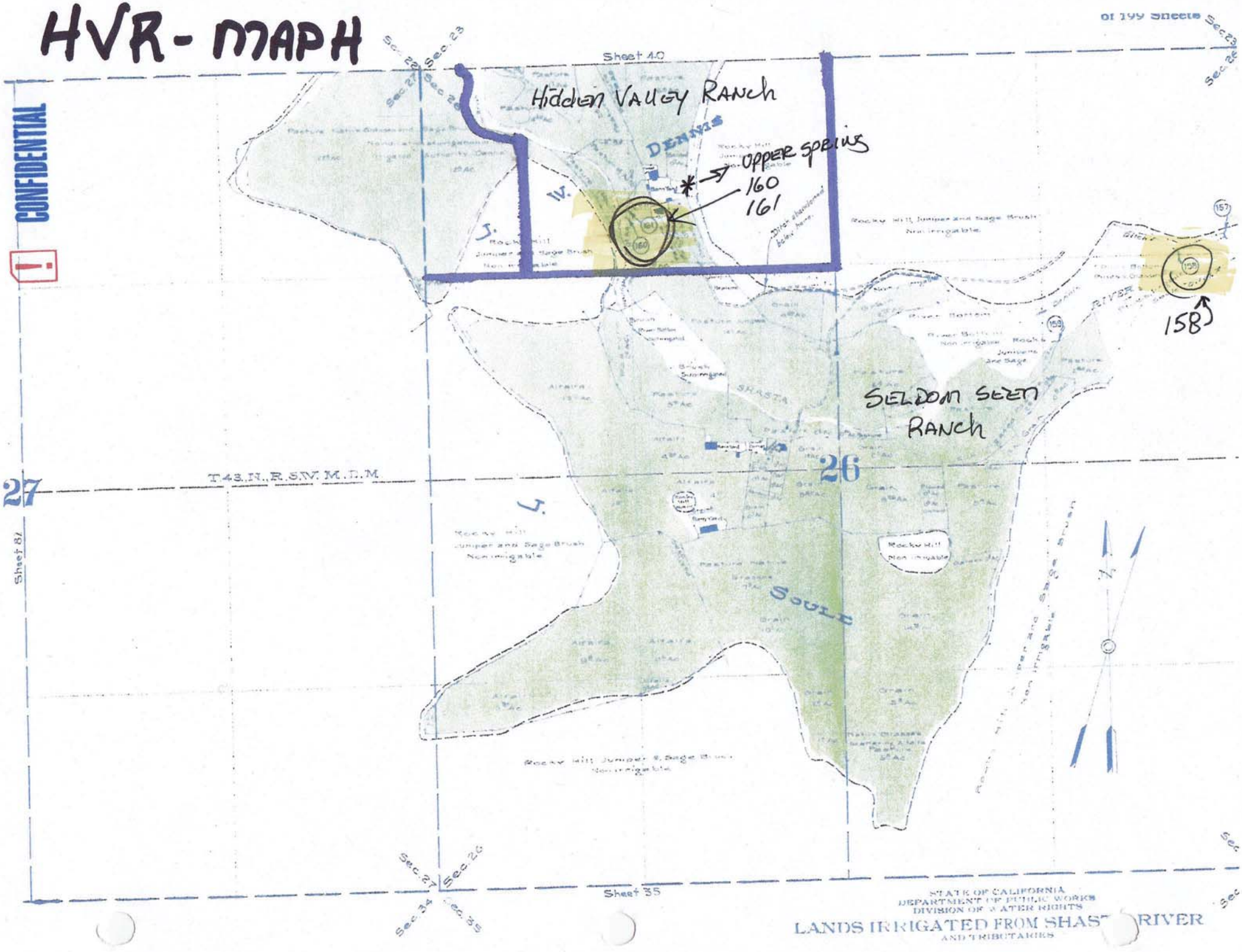
OFFICIAL SEAL
LINDA J. POPE
Notary Public-California
PRINCIPAL OFFICE IN
SHASTA COUNTY
My Commission Expires Sept. 28, 1988

Linda J. Pope
NOTARY PUBLIC



30 Common Nails = 20 Nails to Pound
1000 NAILS = 50 LBS.
9 NAILS TO EACH 16' BOARD
2600 ft x 3 RAILS = 7800 LINEAL FT. ÷ by 16 = 488
9 NAILS EACH X 488 PCS = 4392 NAILS ÷ 20 NAILS to LB = 220 TOTAL POUNDS = 4.40 BOXES (50 lbs)

HVR - MAP H


CONFIDENTIAL
Hidden Valley Ranch
DENNIS
UPPER SPRING
160
161
158
SELDOM SEEN RANCH
SHASTA
SOUTH
26
27
T.43.N., R.5W. M.D.M.
Sheet 40
Sheet 81
Sheet 35
Sec. 22
Sec. 23
Sec. 27
Sec. 26
Sec. 34
Sec. 35
Rocky Hill Juniper and Sage Brush Non-irrigable
STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF WATER RIGHTS
LANDS IRRIGATED FROM SHAST RIVER
AND TRIBUTARIES

Appendix B- Statements of Water Use

[SUMMARY OF FINAL SUBMITTED VERSION]

SUPPLEMENTAL STATEMENT OF WATER DIVERSION AND USE FOR 2017

Primary Owner: MALLETT HIDDEN VALLEY RANCH
Statement Number: S023705
Date Submitted: 08/13/2018

1. Water is used under	Riparian Claim Pre-1914 Claim
2. Year diversion commenced	1886

3. Purpose of Use	
Irrigation	
Stockwatering	120 cow/calf

Irrigated Crops			
	Multiple Crops	**Area Irrigated (Acres)**	**Primary Irrigation Method**
Pasture	Yes	50	Surface (example: flood)

4. Changes in Method of Diversion
None

Special Use Categories	
C1. Are you using any water diverted under this right for the cultivation of cannabis?	No

5-6. Maximum Rate of Diversion for each Month and Amount of Water Diverted and Used				
Month	**Rate of diversion (CFS)**	**Amount directly diverted (Acre-Feet)**	**Amount diverted or collected to storage (Acre-Feet)**	**Amount beneficially used (Acre-Feet)**
January	0	0	0	0
February	0	0	0	0
March	0	0	0	0
April	0	0	0	0
May	0	0	0	0
June	0	0	0	0
July	1	11.4	0	11.4
August	1	10.5	0	10.5
September	0	0	0	0
October	0	0	0	0
November	0	0	0	0
December	0	0	0	0
Total		21.9	0	21.9

Type of Diversion	Direct Diversion Only
Comments	

Water Transfers	
6d. Water transfered	No
6e. Quantity transfered (Acre-Feet)	
6f. Dates which transfer occurred	/ to /
6g. Transfer approved by	

Water Supply Contracts	
6h. Water supply contract	No
6i. Contract with	
6j. Other provider	
6k. Contract number	
6l. Source from which contract water was diverted	
6m. Point of diversion same as identified water right	
6n. Amount (Acre-Feet) authorized to divert under this contract	
6o. Amount (Acre-Feet) authorized to be diverted in 2017	
6p. Amount (Acre-Feet) projected for 2018	
6q. Exchange or settlement of prior rights	
6r. All monthly reported diversion claimed under the prior rights	
6s. Amount (Acre-Feet) of reported diversion solely under contract	

7. Water Diversion Measurement	
a. Required to measure as of the date this report is submitted	Yes
b. Is diversion measured?	Yes
c. An alternative compliance plan was submitted to the division of water rights on	
d. A request for additional time was submitted to the division of water rights on	

8. Conservation of Water		
a.	Are you now employing water conservation efforts?	Yes
	Describe any water conservation efforts you have initiated	pipeline/risers to deliver precise flows to pastures, soil moisture monitoring project with UC Davis Extension
b.	Amount of water conserved	
	I have data to support the above surface water use reductions due to conservation efforts.	No

9. Water Quality and Wastewater Reclamation		
a.	Are you now or have you been using reclaimed water from a wastewater treatment facility, desalination facility, or water polluted by waste to a degree which unreasonably affects such water for other beneficial causes?	No
	Amount of reduced diversion	
	Type of substitute water supply	

b.	Amount of substitute water supply used	
	I have data to support the above surface water use reductions due to the use of a substitute water supply	

10. Conjuctive Use of Surface Water and Groundwater		
a.	Are you now using groundwater in lieu of surface water?	No
b.	Amount of groundwater used	
	I have data to support the above surface water use reductions due to the use of groundwater.	

Additional Remarks
Report is filed late due to misunderstanding of reporting through watermaster. Diversion is part of decree but use was riparian. Clarification of reporting came after receipt of delinquency notice. Water master service district reported adjudicated use.

Attachments		
File Name	**Description**	**Size**
No Attachments		

Contact Information of the Person Submitting the Form	
First Name	Jack
Last Name	Roggenbuck
Relation to Water Right	Diverter of Record
The information in the report is true to the best of his/her knowledge and belief	Yes

[SUMMARY OF FINAL SUBMITTED VERSION]

SUPPLEMENTAL STATEMENT OF WATER DIVERSION AND USE FOR 2017

Primary Owner: MALLETT HIDDEN VALLEY RANCH
Statement Number: S024837
Date Submitted: 05/31/2018

1. Water is used under	Riparian Claim Pre-1914 Claim
2. Year diversion commenced	1886

3. Purpose of Use	
Irrigation	
Stockwatering	120 pair beef cattle

Irrigated Crops			
	Multiple Crops	**Area Irrigated (Acres)**	**Primary Irrigation Method**
Pasture	Yes	150	Surface (example: flood)

4. Changes in Method of Diversion
Monitoring of water use done by Shasta Valley RCD as part of arrangement toward completion of Safe Harbor Agreement in conjunction with associated irrigation efficiency projects. Reporting accomplished only during irrigation season after which equipment was pulled by SVRCD staff per funding agreements with project grant funding sources.

Special Use Categories	
C1. Are you using any water diverted under this right for the cultivation of cannabis?	No

5-6. Maximum Rate of Diversion for each Month and Amount of Water Diverted and Used

Month	Rate of diversion (CFS)	Amount directly diverted (Acre-Feet)	Amount diverted or collected to storage (Acre-Feet)	Amount beneficially used (Acre-Feet)
January	0	0	0	0
February	0	0	0	0
March	0	0	0	0
April	2.37	47.2	0	47.2
May	3.83	235.6	0	235.6
June	3.42	203.6	0	203.6
July	3.55	218.3	0	218.3
August	3.16	194.4	0	194.4
September	3.28	170.4	0	170.4
October	0	0	0	0
November	0	0	0	0

December	0	0	0	0
Total		1069.5	0	1069.5
Type of Diversion	Direct Diversion Only			
Comments				

Water Transfers	
6d. Water transfered	No
6e. Quantity transfered (Acre-Feet)	
6f. Dates which transfer occurred	/ to /
6g. Transfer approved by	

Water Supply Contracts	
6h. Water supply contract	No
6i. Contract with	
6j. Other provider	
6k. Contract number	
6l. Source from which contract water was diverted	
6m. Point of diversion same as identified water right	
6n. Amount (Acre-Feet) authorized to divert under this contract	
6o. Amount (Acre-Feet) authorized to be diverted in 2017	
6p. Amount (Acre-Feet) projected for 2018	
6q. Exchange or settlement of prior rights	
6r. All monthly reported diversion claimed under the prior rights	
6s. Amount (Acre-Feet) of reported diversion solely under contract	

7. Water Diversion Measurement	
a. Required to measure as of the date this report is submitted	Yes
b. Is diversion measured?	Yes
c. An alternative compliance plan was submitted to the division of water rights on	
d. A request for additional time was submitted to the division of water rights on	

Measurement ID number	M009137
This Device/Method was used to measure water during the current reporting period	Yes
M1. Briefly describe the measurement device or method	Hach Flow Meter
M2. Nickname	105SRUPPERS
M3. Type of device / method	Pressure transducer
M4. Device make	Hach
M5. Serial number	080300071097
M6. Model number	AV9000
M7. Approximate date of installation	04/20/2017
M8. Additional info	
M9. Approximate date the measuring device was last calibrated or the measurement method was updated	09/20/2017

M10. Estimated accuracy of measurement	10%
M11. Description of calibration method	In field checks monthly following manufacturer requirements
M12. Describe the maintenance schedule for the device/method	monthly when in use
Information for the person who last calibrated the device or designed the measurement method	
M13. Name	Michael Riney
M14. Phone number	
M15. Email	
M16. Qualifications of the individual	
M17. License number and type for the qualified individual above and/or any other relevant explanation	
M18. Type of data recorder device / method	
M19. Data recorder device make	
M20. Data recorder serial number	
M21. Data recorder model number	
M22. Data recorder units of measurement	
M23. Frequency of data recording	
M24. Additional data recorder info	
M25. I am required to report my diversion or storage data by telemetry as of the date this report is submitted	
M26. I report my diversion or storage date by telemetry to the following website	
M27. I have attached additional information on the method I used to calculate the volume of water	
M28. Describe any documents related to this measurement device or method that are attached to this water use report	

8. Conservation of Water		
a.	Are you now employing water conservation efforts?	Yes
	Describe any water conservation efforts you have initiated	Since 2011, approximately 65% of open ditches converted to pipeline, head gates changed from flash boards to slide gates or waterman screw valves. Completed in June 2017 was a by pass pipeline to convey cold spring water directly to the Shasta River. Amount released directly from spring through this conveyance averaged 7.5 CFS through the irrigation season.
b.	Amount of water conserved	
	I have data to support the above surface water use reductions due to conservation efforts.	Yes

9. Water Quality and Wastewater Reclamation		

a.	Are you now or have you been using reclaimed water from a wastewater treatment facility, desalination facility, or water polluted by waste to a degree which unreasonably affects such water for other beneficial causes?	No
b.	Amount of reduced diversion	
	Type of substitute water supply	
	Amount of substitute water supply used	
	I have data to support the above surface water use reductions due to the use of a substitute water supply	

10. Conjuctive Use of Surface Water and Groundwater		
a.	Are you now using groundwater in lieu of surface water?	No
b.	Amount of groundwater used	
	I have data to support the above surface water use reductions due to the use of groundwater.	

Additional Remarks

Attachments		
File Name	Description	Size
No Attachments		

Contact Information of the Person Submitting the Form	
First Name	Jack
Last Name	Roggenbuck
Relation to Water Right	Diverter of Record
The information in the report is true to the best of his/her knowledge and belief	Yes

[SUMMARY OF FINAL SUBMITTED VERSION]

SUPPLEMENTAL STATEMENT OF WATER DIVERSION AND USE FOR 2017

Primary Owner: MALLETT HIDDEN VALLEY RANCH
Statement Number: S023706 #161
Date Submitted: 08/13/2018

1. Water is used under	Riparian Claim Pre-1914 Claim
2. Year diversion commenced	1886

3. Purpose of Use	
Irrigation	
Stockwatering	120 cow/calf

Irrigated Crops			
	Multiple Crops	Area Irrigated (Acres)	Primary Irrigation Method
Pasture	Yes	50	Surface (example: flood)

4. Changes in Method of Diversion
None

Special Use Categories	
C1. Are you using any water diverted under this right for the cultivation of cannabis?	No

5-6. Maximum Rate of Diversion for each Month and Amount of Water Diverted and Used

Month	Rate of diversion (CFS)	Amount directly diverted (Acre-Feet)	Amount diverted or collected to storage (Acre-Feet)	Amount beneficially used (Acre-Feet)
January	0	0	0	0
February	0	0	0	0
March	0	0	0	0
April	0	0	0	0
May	0	0	0	0
June	0	0	0	0
July	1	11.4	0	11.4
August	1	10.5	0	10.5
September	0	0	0	0
October	0	0	0	0
November	0	0	0	0
December	0	0	0	0
Total		21.9	0	21.9

Type of Diversion	Direct Diversion Only
Comments	

Water Transfers	
6d. Water transfered	No
6e. Quantity transfered (Acre-Feet)	
6f. Dates which transfer occurred	/ to /
6g. Transfer approved by	

Water Supply Contracts	
6h. Water supply contract	No
6i. Contract with	
6j. Other provider	
6k. Contract number	
6l. Source from which contract water was diverted	
6m. Point of diversion same as identified water right	
6n. Amount (Acre-Feet) authorized to divert under this contract	
6o. Amount (Acre-Feet) authorized to be diverted in 2017	
6p. Amount (Acre-Feet) projected for 2018	
6q. Exchange or settlement of prior rights	
6r. All monthly reported diversion claimed under the prior rights	
6s. Amount (Acre-Feet) of reported diversion solely under contract	

7. Water Diversion Measurement	
a. Required to measure as of the date this report is submitted	Yes
b. Is diversion measured?	Yes
c. An alternative compliance plan was submitted to the division of water rights on	
d. A request for additional time was submitted to the division of water rights on	

8. Conservation of Water		
a.	Are you now employing water conservation efforts?	Yes
	Describe any water conservation efforts you have initiated	Use of pipelines/risers, soil moisture monitoring test plots
b.	Amount of water conserved	
	I have data to support the above surface water use reductions due to conservation efforts.	No

9. Water Quality and Wastewater Reclamation		
a.	Are you now or have you been using reclaimed water from a wastewater treatment facility, desalination facility, or water polluted by waste to a degree which unreasonably affects such water for other beneficial causes?	No
b.	Amount of reduced diversion	
	Type of substitute water supply	
	Amount of substitute water supply used	

	I have data to support the above surface water use reductions due to the use of a substitute water supply	

10. Conjuctive Use of Surface Water and Groundwater		
a.	Are you now using groundwater in lieu of surface water?	No
b.	Amount of groundwater used	
	I have data to support the above surface water use reductions due to the use of groundwater.	

Additional Remarks
This report was filed late due to misunderstanding of reporting role by watermaster as diversion is part of decree. Waster master reported adjudicated use. Received letter from Agency notifying of late filing and after research found it necessary to file individually for riparian use.

Attachments		
File Name	Description	Size
No Attachments		

Contact Information of the Person Submitting the Form	
First Name	Jack
Last Name	Roggenbuck
Relation to Water Right	Diverter of Record
The information in the report is true to the best of his/her knowledge and belief	Yes

Appendix C- Map of Existing Infrastructure (Baseline)


Shasta River Safe-Harbor - Existing Practises
Sheet 2 of 8
MALLET HIDDEN VALLEY RANCH
CALIFORNIA TROUT
Aqua Terra CONSULTING
natural resource geospatial
info@nrg-gis.com
(530) 459-3846
Scale: 1:7,200
1 inch = 0.1 miles
Monday, June 08, 2015

Appendix D- Riparian Grazing Management Plan

Hidden Valley Ranch- Draft Prescribed Riparian Grazing Management Recommendation (January 10, 2017)

Prepared by

Kenneth W. Tate, Professor and UCCE Rangeland Watershed Specialist, UC Davis

California Certified Rangeland Manager #79; CA Department of Forestry and Fire Protection

Certified Rangeland Professional #00-104; Society for Range Management

Carissa Koopmann Rivers, Livestock and Natural Resources Advisor, Siskiyou County, UCCE

Riparian Areas on the Ranch

Approximately 1.5 miles of the Shasta River flow through this property, primarily along the western boundary of the ranch (see Figure 1). The entire river reach through this ranch is riparian corridor fenced on both sides with permanent wire fence that is in excellent condition and effective at controlling livestock access to the river and riparian area. Following installation of riparian corridor fencing there was no livestock grazing along the entire length of the Shasta River passing through this ranch between the periods 2011 and late April 2016.

There is substantial coverage of yellow starthistle (YST) along the entire reach of the Shasta River through this ranch, along with patches of teasel, poison hemlock, and blackberry. There has been limited weed management effort within the riparian corridor, and there appears to be limited recruitment of native riparian vegetation under the current riparian management strategy (no grazing, no weed management). It is highly likely that invasive weeds are inhibiting recruitment of native riparian vegetation, and are substantially competing with sparsely established native riparian vegetation along the entire reach – which has potential to support riparian woodies (e.g., willows), *Juncus* and *Carex* spp.

Riparian Grazing and Weed Management Recommendations

Grazing Management Objective. The ranch owner and manager have expressed interest in developing an adaptive grazing strategy to reduce weeds within the riparian corridor – while limiting negative livestock impacts to riparian native vegetation, streambank stability, and instream habitat quality. There is good reason to expect that prescribed riparian grazing with livestock can reduce the cover and competitive advantage of invasive weeds throughout the riparian corridor – improving odds for native riparian species recruitment. A primary target for riparian grazing in this case should be YST. Livestock impacts to teasel, poison hemlock, and blackberry will primarily result from physical damage (i.e., lodging, breakage, trampling) during grazing bouts timed to target YST control. Strong research evidence, available from Dr. Ken Tate at UC Davis, demonstrates that timing (season) of grazing is key to effective YST management via livestock grazing. YST is a palatable and sought-after forage species for livestock (cattle, sheep & goats) at all growth stages prior to bolting and emergence of spiny seed heads (reproductive stage). Sheep and goats will continue to graze YST following seedhead emergence, while cattle will likely shift grazing preference away from YST towards other forage and palatable non-target vegetation species.

Note: Poison (and water) hemlock is a livestock poisonous plant, but fortunately is generally not preferred by most livestock. Care must be taken not to create situations where cattle and sheep consume more than 0.2 and 0.6% of their body weight, respectively. Early signs of hemlock poisoning include nervousness, trembling, weakness, muscle spasms, and teeth grinding. When livestock are confined in an area with hemlock they should be observed daily for such symptoms, and the unit should be observed for signs of browse on hemlock plants – including on seedheads. If there is any doubt, immediately move livestock to fresh pasture free of hemlock and with good drinking water supplies.

For more information on livestock and poisonous plants in California please see – http://anrcatalog.ucanr.edu/pdf/8398.pdf

Riparian Grazing Infrastructure. Again, the entire river reach through this ranch is riparian corridor fenced on both sides with permanent wire fence that is in excellent condition and effective at controlling livestock access to the river and riparian area. There are regular gates which provide opportunities to move livestock in and out of the fenced riparian area as it passes through the ranch. Moveable electric cross fencing can be used to segment the riparian corridor into grazing units. At the point of this recommendation, the riparian area through the ranch is broken into zone 3 (north), zone 2, and zone 1 (south) unit (see Figure 1). Livestock drinking water can be provided solely from the river, or from adjacent pastures by leaving gates open to allow livestock to pass from riparian units to adjacent pastures. At this time the establishment of fixed, hardened livestock river crossings or drinking access points is not recommended. Livestock crossing/drinking behavior should be monitored during the first year of riparian grazing and this recommendation revisited and adapted as needed based upon livestock behavior and extent/intensity of stream channel disturbance.

Recommended Seasons of Grazing. The emergence of YST seedheads will vary annually on this site due to weather conditions, thus creating need for annual flexibility (i.e., adaptive management) in timing of grazing to target YST. Seedhead emergence is likely between mid-May and late-June, creating an early growing season target grazing period between early April and late-June, depending upon annual weather conditions and YST development. Spring grazing bouts are an excellent period to avoid unwanted livestock browse or physical damage on riparian woody species and herbaceous riparian species. During this time YST and non-native forage grasses will be at their most palatable and nutritious; thus, livestock will preferentially browse these species over the riparian species we desire to enhance. Certainly, browse on non-target riparian species must be monitored, and grazing adjusted in response (see recommended livestock management decision triggers section below).

Senescent YST plants can form barriers (i.e., "skeletons") in fall and deter livestock and native ungulates from foraging on growing YST during the following spring – reducing subsequent spring target grazing effectiveness. Thus, short term, intensive fall grazing by livestock can be used as a tool to physically breakdown YST "skeletons" and facilitate spring targeted grazing as needed. Fall grazing bouts must be monitored carefully to ensure limited livestock browse or physical damage on riparian woody species. During this time YST skeletons and forage grasses will have relatively low palatability and nutrition; thus, livestock could preferentially browse woody species over the weedy species we desire to reduce. Fall grazing bouts may be most effective following a germinating rain, softening of dry YST skeletons, and emergence of winter annual grasses and forbs – but soils should not be too wet and subject to excessive hoof damage and compaction.

Riparian Reach	Optimal Grazing season	Objective
Zone 1	Spring-Summer	Reduce invasive species cover, maintain woody species recruitment.
Zone 2	Spring-Summer	Reduce invasive species cover, maintain woody species recruitment.
Zone 3	Spring-Summer	Reduce invasive species cover, maintain woody species recruitment.

Note: Based upon our recommendations above, the ranch owner and manager conducted a pilot spring grazing bout with cattle on all three riparian grazing units on the ranch during late April through May

2016. Results were positive with livestock targeting weedy species as hoped and limited streambank disturbance and no browse on riparian woody species. The availability of fresh forage at this time of year was also beneficial to the agricultural goals of the ranch, incentivizing interest in conservation oriented riparian grazing management. The ranch owner and manager have access to cattle and sheep; and thus have the potential to integrate multi-species livestock into their adaptive riparian grazing strategy – which would increase the browse pressure on YST, teasel, and blackberry.

Recommended Livestock Management Decision Triggers. Managers must have real-time indicators they can observe directly on the ground to make decisions about the readiness of riparian grazing units for grazing (e.g., sufficient forage, YST actively growing and ripe for grazing), and when livestock need to be moved from a riparian unit to achieve conservation goals (e.g., excessive browse on recruiting riparian woody plans <5ft in height, any streambank disturbance). For this site we recommend that browse on recruiting riparian woody plants (< 5ft in height – below cattle maximum browse height) during a grazing bout (spring or fall) be limited to no more that 20% of current year's leader growth within the riparian unit. We also recommend that physical hoof damage to streambanks be limited to no more than 20% of streambank per each side of stream. Once either one of these triggers are hit, livestock should immediately be rotated out of the riparian unit.

Table 2. Management triggers

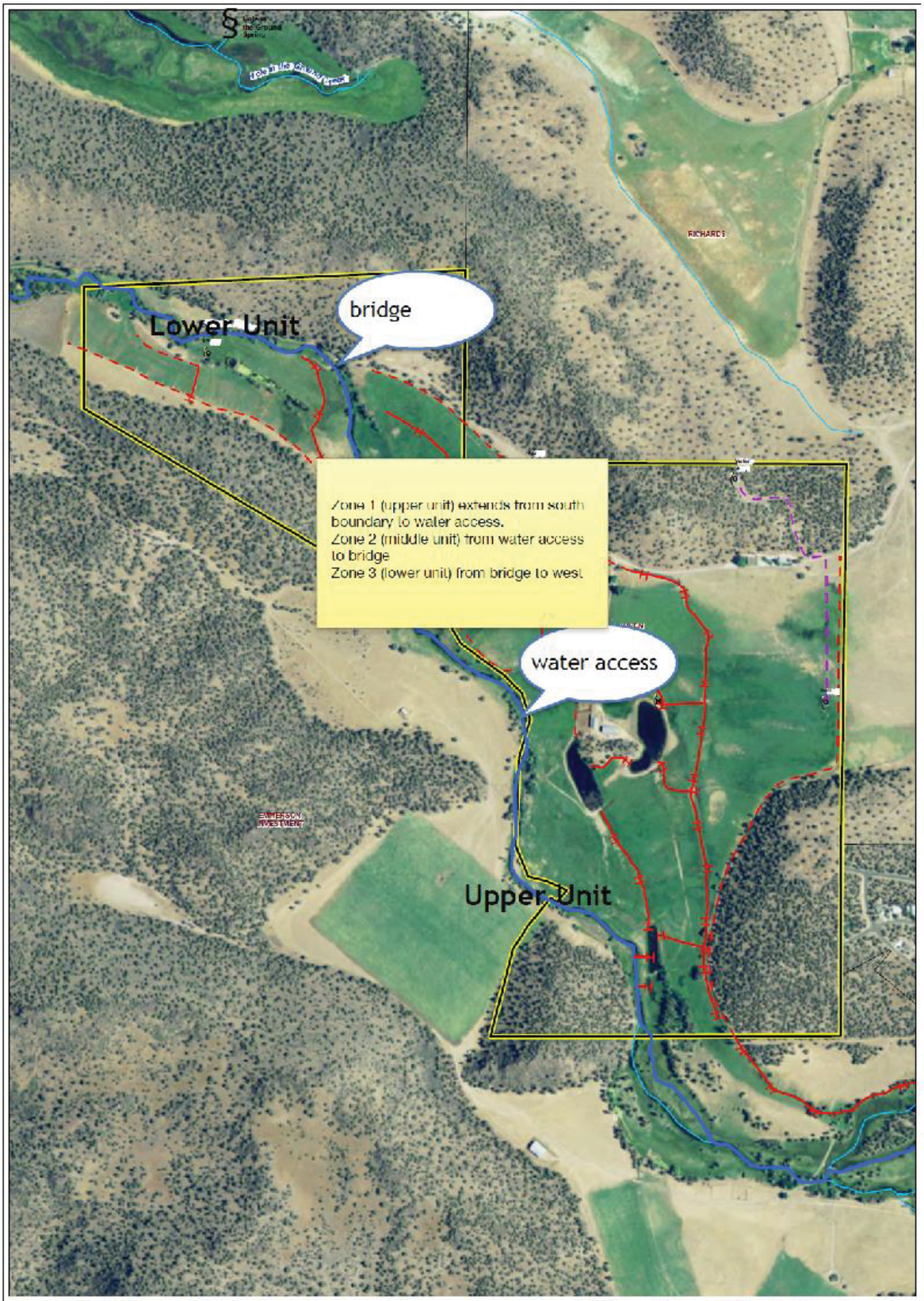
Indicator	Trigger
Browse use on recruiting riparian woody species < 5 ft. in height	20% of current years leader growth
Streambank Hoof action	20% of each side of a streambank

Recommended Grazing Monitoring and Documentation. Siskiyou County UCCE and UC Davis will collaborate annually to provide hands-on, in-the-field training on assessing real-time status of the livestock management decision triggers recommended in the section above. We will base this training on standard, national methods developed in the "Multiple Indicator Monitoring (MIM) of Stream Channels and Streamside Vegetation" (http://www.blm.gov/nstc/library/pdf/MIM.pdf). We recommend progress towards these management triggers be assessed every 1 to 2 days during all riparian grazing bouts. We recommend, and will provide training on, the establishment of permanent photo monitoring points in each riparian grazing unit. Photos should be taken at the beginning and end of each grazing bout (certainly within the first few years of grazing). Photo points should be established so that riparian woody species, weedy species, and streambank conditions can be clearly observed and thus conditions and outcomes documented. Finally, we recommend that dates on and off, and numbers of livestock species and class of livestock used during each grazing bout be recorded for each riparian grazing unit.

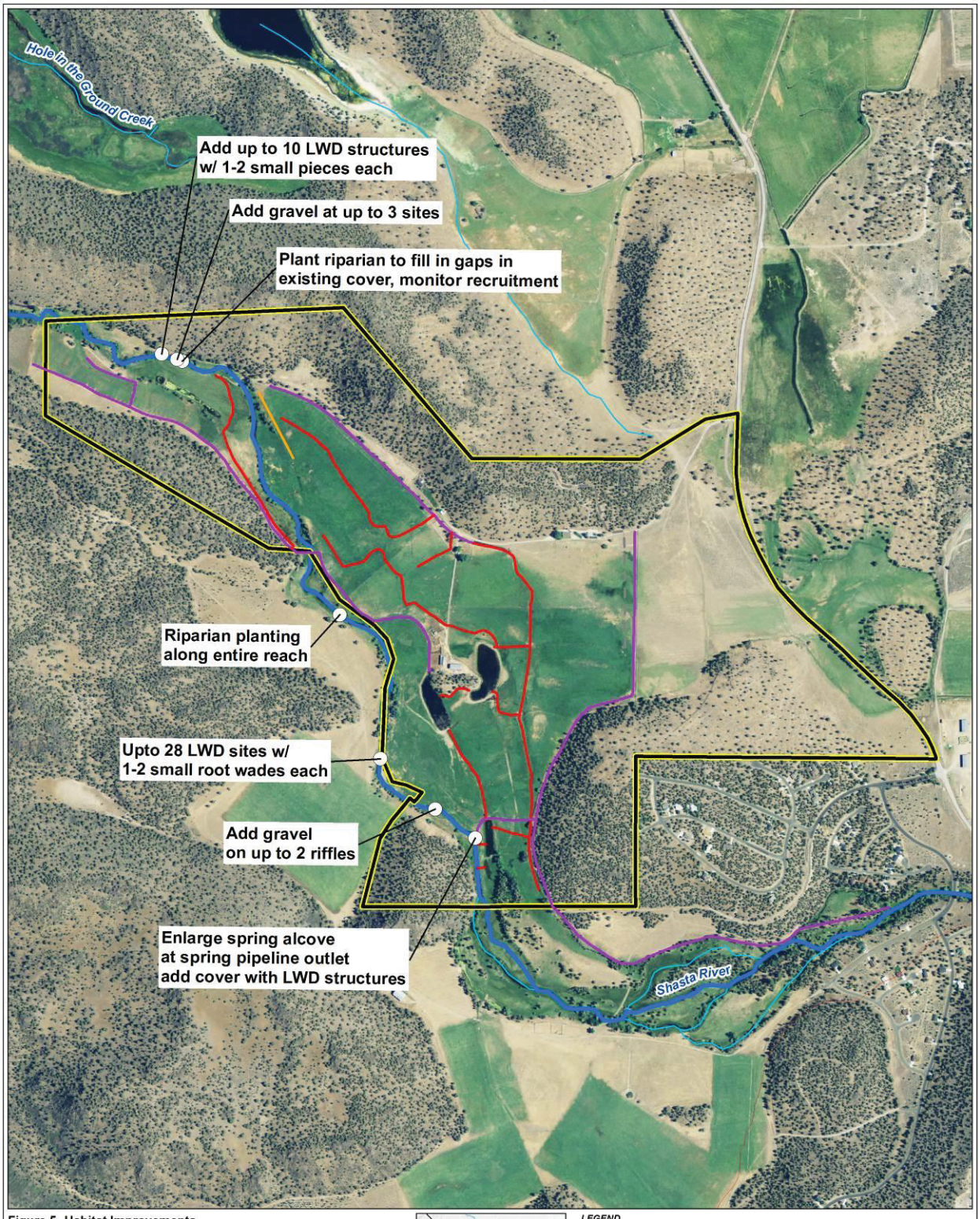
Recommended Supplementary Riparian Weed Management Practices. Grazing alone will likely not achieve the desired level of control on the weedy species on this site. Practices such as targeted herbicide application and burning are valuable components of an integrated weed management strategy. For example, prescribed low intensity burning to remove YST skeletons during fall or winter is an excellent practice to prepare a site for efficient spring targeted grazing, and/or targeted spring herbicide application. Targeted herbicide use should be considered a conservation practice on this site – with herbicide type, timing, and rates selected based upon real-time site specific conditions. Targeted mowing is another key practice that should be available to managers on this site. As with grazing, all of these practices should be implemented in a manner that does not negatively impact native riparian species recruitment and survival, or streambank stability and instream habitat conditions. Technical

support for site specific integrated weed management is available from Siskiyou County UCCE and other local technical service providers.

Note: Siskiyou County UCCE and UC Davis will collaborate in the coming year to provide workshops on integrated riparian weed management for conservation and agricultural outcomes.


Lower Unit
bridge
Zone 1 (upper unit) extends from south boundary to water access.
Zone 2 (middle unit) from water access to bridge
Zone 3 (lower unit) from bridge to west.
water access
Upper Unit
RICHARDS
EMERSON INVESTMENT
Shasta River Safe-Harbor - Existing Practises
Sheet 2 of 8
MALLET HIDDEN VALLEY RANCH
Scale: 1:7,200 1 inch = 0.1 miles
natural resource geospatial info @nrg-gis.com
(530) 459-0846
CALIFORNIA TROUT
Aqua Terra CONSULTING
Monday, June 08, 2015
DwinnellParkSafeHarbor_DDF_11x17

Appendix E- Proposed Habitat Improvements


Hole in the Ground Creek
Add up to 10 LWD structures w/ 1-2 small pieces each
Add gravel at up to 3 sites
Plant riparian to fill in gaps in existing cover, monitor recruitment
Riparian planting along entire reach
Upto 28 LWD sites w/ 1-2 small root wades each
Add gravel on up to 2 riffles
Enlarge spring alcove at spring pipeline outlet add cover with LWD structures
Shasta River
Figure 5- Habitat Improvements
HIDDEN VALLEY RANCH
0 1,000 2,000 Feet
0 300 600 Meters
Scale: 1:16,000 1 inch = 0.3 miles
natural resource geospatial
davelp@sbcglobal.net
(530) 459-3846
CALIFORNIA TROUT
Aqua Terra CONSULTING
MALLET HIDDEN VALLEY RANCH
LEGEND
Proposed Habitat Improvements
Safeharbor ownership
Proposed Conveyance
Open Ditch
Pipe
Tailwater
Berm
Slough
Other
Rivers and Streams
Rivers
Major Streams
Minor Streams

Appendix F- Annual Report Form

Annual Report for Implementation of Hidden Valley Ranch SHA

Prepared by:_____

Date Submitted:_____

Reporting Year:_____

Avoidance and Minimization Measures		*Check box if completed this year and attach stipulated materials to this report*	
G.1.a. Irrigation Management	Was any maintenance of diversion structures completed this year?	☐	-Log of what in-water work had occurred and what minimization measures were implemented will be included in the Annual SHA report
			-Attach raw data from diversion measuring devices
			-Attach photos of diversion structure.
G.1.b. Irrigation Maintenance	Was any maintenance of instream irrigation facilities completed this year?	☐	-Log of maintenance activities carried out within the calendar year be included in the yearly SHA report.
G.1.c. Grazing Management	Was riparian grazing performed?	☐	-Attach photos of riparian grazing area.
			-Maintain a log of grazing activities carried out within the calendar year and include in the yearly Site Plan monitoring report. At a minimum, the log will include the following information: beginning and end dates of riparian pasture grazing; number of animals, monitoring practices during the riparian grazing period, and management actions taken as a result of monitoring results including management cues used to determine the time to move livestock out of the riparian pasture.
			-NMFS and CDFW may initiate periodic inspection of grazed riparian pastures to ensure riparian grazing management Plan is effective.
G.1.d. Fence Maintenance	Was riparian fence maintenance completed this year?	☐	-A short description of fence maintenance activities will be included in the annual report template.
G.1.e. Road Maintenance	Was road maintenance performed this year?	☐	-A short description of annual road maintenance activities will be included in the annual report.
G.1.f. Crossing Maintenance	Was new gravel placed in wet crossings this year?	☐	-Attach photos monitoring of any work done within wet crossings
G.1.g. Herbicide/Fertilizer/Pesticide Use	Was herbicide, fertilizer and pesticide used this year?	☐	-Log of use herbicide, fertilizer and pesticide activities
G.1.h. Flood Repair	Was any flood repair done this year?	☐	-Attach photos of flood repairs

Maintenance of Baseline		*-If work was completed- Answer yes and attached stipulated materials to report -If answered no to any of the questions, please explain why the activity was not completed or identify what progress has been made toward completion in the column below.*	
E.1.a- Maintain existing pipeline	Were the pipelines in functioning condition during this calendar year? Yes ☐ No☐	Attach photos of pipeline from photo point A and B.	
E.1.a- Manage Tailwater to reduce temperature impacts	Was tailwater managed to reduce temperature impacts? Yes ☐ No☐	Attach temperature data for bunkhouse tailwater	
E.1.a- Release spring water into river from November 1 to March 1	Was spring water released to the river from November 1 to March 1? Yes ☐ No☐	Attach flow data from springs	
E.1.b- Maintain unimpeded fish passage	Was the diversion structure inspected this year? Yes ☐ No☐	Attach a copy of the biologists field note	
E.1.c- Leave woody debris instream		Attach photos of riparian area from photo point C and D.	
E.1.d - Riparian fence maintenance	Was any maintenance done on riparian fence this year? Yes ☐ No☐	Attach photo of riparian fence after maintenance	
E.1.d- Crossing maintenance	Was any maintenance needed on the crossings? Yes ☐ No☐	Attach photos of crossings	
Implementation of Elevated Baseline			
E.2.a- Implement Conveyance Efficiency	Was the prior rights pipeline constructed? Yes ☐ No☐	Attach photos of pipeline alignment	
E.2.a- Tailwater Berm	Was the berm constructed? Yes ☐ No☐	Attach photos of berm	
		Attach any tailwater data collected by SVRCD	
E.2.a- Spring Contribution	Was spring water released to the river from March 1 to November 1? Yes ☐ No☐	Attach flow data from springs, exchange pipeline, irrigation water usage.	
		Attach any instream temperature data pre and post project	
E.2.b- New Fish Screen	Was the fish screen constructed? Yes ☐ No☐	Attach photos of fish screen	

Implementation Other Beneficial Management Activities		*-If work was completed- Answer yes and attached stipulated materials to report -If answered no to any of the questions, please explain why the activity was not completed or identify what progress has been made toward completion in the column below.*	
E.3.a- Flow management participation	Was the flow management plan implemented this year? Yes ☐ No☐	Attach effectiveness monitoring data and/or diversion data	
E.3.a- Soil Moisture Sensors	Were soil moisture meters installed/ used this year? Yes ☐ No☐	Attach the soil moisture data	
E.3.a- Additional Spring Water Contribution	Was spring water released to the river from March 1 to November 1? Yes ☐ No☐	Attach flow data from springs	
E.3.c- Instream habitat improvements	Was the LWD projects implemented? Yes ☐ No☐	Attach photos of the project	
E.3.d- Riparian Planting	Were plantings implemented this year? Yes ☐ No☐	Attach photos of the project	
E.3.d- Riparian Grazing Management	Was the riparian grazing plan followed this year? Yes ☐ No☐	Attach photos from photo point E and F	
E.3.e- Gravel Augmentation	Was any gravel placed this year? Yes ☐ No☐	Attach photos from implementation	
E.3.g- Assessments and studies	Were any studies/assessments completed this year? Yes ☐ No☐	Attach any reports or data collected from study	