



**NorthStar**  
ENVIRONMENTAL DIVISION  
Formerly Gallaway Consulting

September 7, 2011

Butte County Department of Water and Resource Conservation  
Paul Gosselin, Director  
308 Nelson Avenue  
Oroville, CA 95965

**RE: Mitigation Monitoring for the Lower Tuscan Aquifer Monitoring, Recharge and Data Management Project, per IS/MND MMRP.**

Dear Mr. Gosselin,

This letter report has been prepared in compliance with the mitigation requirements established in the Initial Study/Mitigated Negative Declaration (IS/MND) for the **Lower Tuscan Aquifer Monitoring, Recharge and Data Management Project, SCH#2010052030**. The IS/MND identified Mitigation Measures for Biological and Cultural Resources that would ensure complete avoidance of potential effects to special-status biological resources and undocumented cultural resources during project equipment installation tasks.

Specifically, these Mitigation Measures stated the following:

**Mitigation Measure 4.4.1 (Biological Resources)**

The proposed fieldwork tasks shall avoid potential impacts to special-status biological resources during all installation tasks, in all areas proposed for fieldwork tasks, and in all access routes to fieldwork areas.

In order to ensure complete avoidance of potential effects to special-status biological resources, a qualified biologist or botanist, as appropriate, shall be present during final siting and initial installation activities for fieldwork tasks.

The qualified biologist shall submit a written report to the Department of Water and Resource Conservation and Development Services providing a brief summary of installation activities with verification that no direct or indirect impacts to sensitive natural communities or plant, wildlife, and fish species and their associated habitat, as described in items 4.4.1.A through 4.4.1.I, occurred during fieldwork.



#### **Mitigation Measure 4.5.1 (Cultural Resources)**

- All documented historic and prehistoric resources identified during the Class I Archaeological Survey shall be avoided pursuant to applicable regulations (PRC, CEQA Guidelines, et al.).
- A qualified archaeologist shall be present during the final siting and initial installation activities of fieldwork tasks (undertakings) to survey the project area and ensure the avoidance of undocumented cultural resources. The archaeologist's site review shall be conducted for each specific undertaking. The archaeological area of potential effect will be the land area affected by the proposed undertaking.
- If potentially significant resources are identified during the siting of any fieldwork tasks, the proponent, in consultation with a qualified professional archaeologist, shall avoid potential effects through redesign of the applicable task(s).
- If a previously undiscovered historical resource is inadvertently encountered during project activities, all work in the immediate vicinity of the resource (except that necessary to secure and protect the resource) shall cease until the project proponent can secure assistance from a professional archaeologist who will be commissioned to evaluate and, if necessary, mitigate effects to the discovery. Evaluation and mitigation shall be carried out in compliance with CEQA and professional guidelines as expeditiously as possible.

As per the mitigation requirements, a qualified biologist from NorthStar Engineering/Gallaway Consulting (NS/GC) and a qualified archaeologist from Genesis Society conducted site assessments at each project location where project monitoring and data collection activities were proposed to occur and associated equipment would be installed. The IS/MND provides site preparation details for each of the monitoring and data collection activities, aerial photos of all potential fieldwork activities, and biological and cultural resources reports.

### **FIELD WORK COMPONENTS**

The fieldwork components of the proposed project, and as described in the IS/MND included:

- Soil Infiltration Testing
- Stream Gauge Installation and Monitoring
- Stream/Aquifer Interaction Piezometer Installation and Monitoring
  - This activity includes the installation of piezometer wells
  - Seepage meter tests
- Monitoring Well Installation

Because these tasks involved the installation of equipment that could result in a physical change to the environment, the locations of these sites and the activities that would occur at these locations were the focus of Mitigation Measures 4.4.1 and 4.5.1. Table 1 summarizes the fieldwork activities from the implementation of the proposed project and their potential physical effects as identified in the IS/MND. However, it should be noted that actual tasks and activities may not have occurred as the project and data collection activities were implemented due to a variety of factors including physical constraints and private property access restrictions.

**Table 1: Summary of Fieldwork Activities**

Task	Location of Activity	Activity	Potential Environmental Resources and Factors
Soil Infiltration Testing	10 locations located throughout project area (plus 2 alternative sites)	Clear 8x8 foot surface area	<ul style="list-style-type: none"> <li>Limited vegetation clearing</li> <li>Temporary noise if auger used</li> </ul>
		Dig a 3-foot hole to install infiltrometer	<ul style="list-style-type: none"> <li>Could occur within jurisdictional riparian habitat, depending on distance from stream</li> </ul>
Stream Gauging	2 sites on each of the 6 identified stream reaches	Some existing gauges may be retrofitted with equipment	<ul style="list-style-type: none"> <li>None: Upgrades to existing facilities a part of normal operating and maintenance activities</li> </ul>
		New staff gauges may be installed	<ul style="list-style-type: none"> <li>Activities in the streambed; potential resources include fish migration and spawning habitat</li> </ul>
Stream-Aquifer Interaction	24 piezometer wells (4 wells located within each of the 6 stream reaches)	Install piezometer wells; clear ±225 square foot area for each well	<ul style="list-style-type: none"> <li>Could occur within jurisdictional riparian habitat, depending on distance from stream</li> <li>Temporary noise if auger used</li> <li>Disturb ±225 square foot area per site</li> </ul>
	12 slug tests (2 for each piezometer well)	slug tests as part of piezometer well monitoring activities	<ul style="list-style-type: none"> <li>None: part of piezometer well monitoring activities</li> </ul>
	18 seepage meters (3 per stream reach, within each of the 6 stream reaches)	Seepage meter tests; press a 1-ft bucket or 2-ft drum, 4-inches into streambed	<ul style="list-style-type: none"> <li>Activities would occur in the streambed; potential sensitive resources include fish migration and spawning habitat</li> </ul>
Monitoring Well Installation	3 existing wells	Install transducers on existing wells	<ul style="list-style-type: none"> <li>None</li> </ul>
	7 new monitoring well locations identified east of the Sacramento River	Install monitoring wells; installation of wells is dependent on funding	<ul style="list-style-type: none"> <li>Disturb approximately 100x100 foot area per site</li> <li>Temporary noise associated with installation</li> </ul>

## METHODOLOGY

Once the site locations were identified and prior to visiting each of the project locations NS/GC staff consulted the California Natural Diversity Database (CNDDDB), the United States Fish and Wildlife Service (USFWS) and the California Native Plant Society (CNPS) websites to identify potential special status species that may occur in the project area. Each site was then individually surveyed to evaluate habitat that may support species identified in the database consultations. If habitat for these species occurred within the proposed site then the potential to impact these species based on the fieldwork activities was evaluated. If it was determined that no impact would occur to species, then the installation of project monitoring and data collection equipment was subsequently initiated. If, it was determined that potential impacts to biological resources would occur, then a new site would be identified (within ¼ mile for the original site) and evaluated. As indicated below, no potential impacts to biological resources were identified at any of the initial site selections.

Additionally, Genesis Society (GS) conducted a Class I analysis of each of the listed locations in order to determine whether or not significant historical resources were present within the proposed project land areas. In order to accomplish this goal, GS examined the records maintained at the Northeast Information Center of the California Historical Resources Information System at CSU-Chico, followed by pedestrian survey of the various project components. If significant or potentially significant resources were discovered within the proposed project area then the potential impact to these resources was evaluated. If it was determined that no impact would occur to cultural resources, then the installation of project monitoring and data collection equipment was subsequently initiated. If, it was determined that potential impacts to cultural resources would occur, then a new site was identified by the consultant team and evaluated. As indicated below, all selected sites were cleared of potential impacts to cultural resources.

Provided below is a summary of the findings at each project site. The date of the survey is also provided. Biologist, Brooks Taylor from NS/GC and Archaeologist, Sean Jensen from Genesis Society performed all fieldwork and pedestrian surveys.

## PROJECT SITES

### Monitoring Wells

#### *CSUC Farms Monitoring Well Location (MW-CSU-1)*

*Site Visit: July 20, 2010*

A monitoring well will be installed within agricultural land located on the California State University Farm. The well is located adjacent to orchards and will have no impact on any natural features. The well will be located within existing land use/farming facilities. The well will not draw water from the aquifer and will only be used for monitoring the level of the water table and recharge rates following normal agricultural activities.

*Biological Resources:*

No wetlands or other aquatic feature or habitat that may be used by special status species is present within the well location.

*Cultural Resources:*

In terms of cultural resources, two sites (CA-BUT-2887 and -2888), both historic structures, have been documented within the CSUC Farm property. However, pedestrian survey of the monitoring well location failed to reveal any cultural resources within, adjacent to, or nearby the proposed project area. It was further discovered that the two historic structures are located more than 100 yards from the proposed well site. Consequently, no significant historical resources will be affected by placement of the well.

### ***M&T Ranch Monitoring Well Location (MW-MT-1)***

*Site Visit: July 20, 2010*

A monitoring well will be installed in one location on the M&T Ranch property located southwest of the City of Chico, east of River Road between Little Chico Creek and Angel Slough. The well will be located within existing agricultural land used for managing farming activities. The well will not draw water from the aquifer and will only be used for monitoring the level of the water table and recharge rates following normal agricultural activities.

#### *Biological Resources:*

No wetlands or other aquatic feature or habitat that may be used by special status species is present within the well location.

#### *Cultural Resources:*

Both the pedestrian survey, and the records search conducted at CSU-Chico, failed to identify significant historical resources within the proposed well location. Consequently, no significant historical resources will be affected by placement of the well at this location.

### ***North Chico Monitoring Well Location (Hackett Property, MW-HP-1)***

*Site Visit: July 20, 2010*

A monitoring well will be installed in one location on private property approximately eight miles north of Chico and one-half mile east of State Route 99. The well will be located within existing land use/farming facilities, adjacent to a machinery storage area. The well will not draw water from the aquifer and will only be used for monitoring the level of the water table and recharge rates following normal agricultural activities.

#### *Biological Resources:*

No wetlands or other aquatic feature or habitat that may be used by special status species is present within the well location.

#### *Cultural Resources:*

Both the pedestrian survey, and the records search conducted at CSU-Chico, failed to identify significant historical resources within the proposed well location. Consequently, no significant historical resources will be affected by placement of the well at this location.

## **Stream Gauging Sites**

### ***Butte Creek Stream Reach Activities***

*Site Visit: July 20, 2010*

There are two gauging sites that will be located on Butte Creek. The first site is located where Honeyrun Road intersects Butte Creek. A stream gauge will be installed directly to the bridge abutment and equipment will be installed within the stream to monitor water temperatures. The second gauge site is located within the Butte Creek Ecological Preserve downstream from the Honeyrun Road crossing.

*Biological Resources:*

No adverse effects will occur as a result of the placement of stream gauges and seepage meter testing equipment. Spring run salmon and central valley steelhead occur within Butte Creek; however the scope of work within the stream is extremely small, and will not require the use of heavy equipment within the stream, will not result in increased turbidity, and will not affect spawning areas. Therefore, anadromous fish within Butte Creek will not be impacted.

*Cultural Resources:*

In terms of cultural resources, five sites (CA-BUT-2868 through -2872), have been documented along the segment of Butte Creek, in the project vicinity. However, pedestrian survey of the two gauging station locations failed to reveal any cultural resources within, adjacent to, or nearby the proposed project area. It was further discovered that the five historic sites are located either on the northwest side of Honeyrun Road, or more than 100 yards from the proposed gauging station locations. In any event, no significant historical resources will be affected by placement of the gauging stations.

***Big Chico Creek Stream Reach Activities***

*Site Visits: July 20, 2010 and July 13, 2011*

Stream gauges will be installed in two locations on Big Chico Creek. The first location is located downstream from the “Bear Hole” swimming area located in Upper Bidwell Park. The second site is located at the “5-mile” recreation area in Lower Bidwell Park. Piezometer wells will be located outside of the stream channel, adjacent to the stream, and would be constructed per the specifics identified in the IS/MND.

*Biological Resources:*

No adverse effects will occur as a result of the placement of stream gauges and seepage meter testing equipment. Spring run salmon and central valley steelhead occur within Big Chico Creek however the scope of work within the stream is extremely small, will not require the use of heavy equipment within the stream, will not result in increased turbidity, and will not affect spawning areas. Therefore, anadromous fish within Big Chico Creek will not be impacted.

*Cultural Resources:*

Five prehistoric sites (CA-BUT-154, -188, -282, -1467 and -2657), have been documented along the segment of Big Chico Creek, in the project vicinity. However, pedestrian survey of the two gauging station locations failed to reveal any cultural resources within, adjacent to, or nearby the proposed project area. Consequently, no significant historical resources will be affected by placement of the gauging stations.

***Little Dry Creek Stream Reach Activities***

*Site Visit: August 5, 2010*

Two sites within private property on Little Dry Creek were identified for the placement of stream gauges and adjacent piezometer wells. Little Dry Creek was dry at the time of the site survey as was expected during mid-summer. Little Dry Creek typically flows throughout winter months

and is usually dry by late May or June. Piezometer wells, if installed, will be located outside of the stream channel, and would be constructed per the specifics identified in the IS/MND.

*Biological Resources:*

Little Dry Creek does not support anadromous fish species or any other special status fish species. As such no impacts to special status species will occur as a result of project activities. All stream gauge work can be accomplished when the creek is dry therefore, no threat of additional turbidity or siltation will occur. No other habitat that may be used by special status species is present within piezometer well locations.

*Cultural Resources:*

Both the pedestrian survey, and the records search conducted at CSU-Chico, failed to identify significant historical resources within the proposed stream gauge and piezometer well locations. Consequently, no significant historical resources will be affected by placement of the stream gauges and wells.

**Mill Creek Stream Reach Activities**

*Site Visit: October 22, 2010*

Two gauging stations will be installed approximately ¼ mile apart in a stretch of Mill Creek located approximately 8 miles east of Los Molinos. Both locations are on private property abutting the creek. Additionally, piezometer wells will be installed near the more westerly gauging site. Piezometer wells will be located outside of the stream channel, and would be constructed per the specifics identified in the IS/MND.

*Biological Resources*

No adverse effects will occur as a result of the placement of piezometer wells or of stream gauges. Spring run salmon and central valley steelhead occur within Mill Creek; however, the scope of work within the stream is extremely small, will not require the use of heavy equipment within the stream, will not result in increased turbidity, and will not affect spawning areas. Therefore, anadromous fish, or any other special status species which may utilize Mill Creek or its riparian corridor will not be impacted. Within piezometer well locations, no habitat that may be used by special status species is present.

*Cultural Resources*

Both the pedestrian survey, and the records search conducted at CSU-Chico, failed to identify significant historical resources within the proposed stream gauge and well locations. Consequently, no significant historical resources will be affected by placement of the stream gauges and wells.

**Infiltrometer Site Locations**

Soil Infiltration Testing or infiltrometer sites were inspected. Site preparation activities would include the clearing of an 8x8 square foot surface area and digging an approximately 3-foot hole to install the infiltrometer. As of the writing of the IS/MND, it was verified that no heavy equipment would be used, no earth moving would be required, and no vegetation would be

removed. Ultimately, sites were selected that were not located within any wetlands or habitat that may support special status wildlife species. All sites were located immediately adjacent to roadways and none of the sites required the removal of vegetation or other habitat for wildlife.

*Biological Resources*

Upon evaluation of all infiltrometer locations it was determined that no impacts to special status species would occur from installation activities.

*Cultural Resources*

Both the pedestrian survey and the records search conducted at CSU-Chico, failed to identify significant historical resources within any of the proposed infiltrometer locations. Consequently, no significant historical resources will be affected by placement of infiltrometers.

**Summary**

As per the requirements of Mitigation Measures MM 4.4.1 (4.4.1.A-4.4.1.I) and MM 4.5.1, no impacts to special status species and cultural resources would occur from the installation of scientific data collection equipment and associated fieldwork activities. The completion of this letter meets the written monitoring requirements of both mitigation measures.

If you have any questions or comments please contact me at 530-343-8327.

Sincerely,



Kamie Loeser, M.A.

Senior Environmental Planner/Project Manager

cc: Joe Turner, Brown & Caldwell