

Lower Tuscan Aquifer
Monitoring, Recharge, and Data
Management Report
Third Quarter 2010
Quarterly Report

Prepared for
Butte County Department of Water and
Resource Conservation
January 11, 2011

Lower Tuscan Aquifer Monitoring, Recharge, and Data Management Report

Third Quarter 2010 Quarterly Report

Prepared for
Butte County Department of Water and Resource Conservation
January 11, 2011

138604



10540 White Rock Road, Suite 180
Rancho Cordova, CA 95670

Table of Contents

List of Figures	iii
List of Tables	iii
List of Abbreviations	iv
1. Introduction	1-1
1.1 LTA Project Purpose	1-1
1.2 Report Format	1-3
2. CEQA Initial Study	2-1
2.1 Activities Completed - Third Quarter 2010	2-1
2.2 Planned Activities - First Quarter 2011	2-1
3. Technical Steering Committee	3-1
3.1 Activities Completed - Third Quarter 2010	3-2
3.2 Planned Activities - First Quarter 2011	3-2
4. GIS Geodatabase	4-1
4.1 Activities Completed - Third Quarter 2010	4-1
4.2 Planned Activities - First Quarter 2011	4-1
5. Aquifer Recharge Assessment	5-1
5.1 Activities Completed - Third Quarter 2010	5-1
5.2 Planned Activities - First Quarter 2011	5-5
6. Installation of Groundwater Monitoring Wells	6-1
6.1 Activities Completed - Third Quarter 2010	6-1
6.2 Planned Activities - First Quarter 2011	6-3
7. Aquifer Performance Testing	7-1
7.1 Activities Completed - Third Quarter 2010	7-1
7.2 Planned Activities - First Quarter 2011	7-1
8. Public Outreach	8-1
8.1 Activities Completed - Third Quarter 2010	8-1
8.2 Planned Activities - First Quarter 2011	8-1
Appendix A: November 8, 2010 TSC Meeting Presentation Slides	A
Appendix B: Preliminary Infiltrometer Test Plots	B
Appendix C: Preliminary Summary Well Profiles, Geophysical Logs, and Grain Size Analysis	C

List of Figures

Figure 1. General Lower Tuscan Aquifer Project Area	1-2
Figure 2. LTA Project Schedule	1-4
Figure 3. Location of Completed Infiltrometer Tests (shown in green)	5-2
Figure 4. Location of Stream Gauges and Temperature Profile Wells	5-2
Figure 5. Example of Infiltration Plot for SI-DR-1	5-3
Figure 6. Dual Ring Infiltrometer Testing – SD-IR-12	5-3
Figure 7. Stream Pro Device used for Stream Profiling.....	5-4
Figure 8. Installation of Staff Gauge along Mill Creek.....	5-4
Figure 9. Stream Profile and Data Collected from Stream Pro Gauging Instrument (see Figure 5).....	5-4
Figure 10. Temperature Gradient Well Installation along Mill Creek	5-5
Figure 11. Location of Newly Installed Groundwater Monitoring Wells.....	6-1
Figure 12. Adding Grout Seal during Construction of MW-CSU-1	6-2
Figure 13. Development of MW-CSU-1	6-3

List of Tables

Table 1. TSC Members.....	3-1
Table 2. Summary of Infiltrometer Testing.....	5-2
Table 3. Groundwater Monitoring Well Construction Details.....	6-2
Table 4. Summary of Well Development	6-3

List of Abbreviations

ARCH	air-rotary casing hammer
ASTM	American Society for Testing and Materials
BC	Brown and Caldwell
BCDWRC	Butte County Department of Water and Resource Conservation
BCEHD	Butte County Public Health Department, Environmental Health Division
bgs	below ground surface
CEQA	California Environmental Quality Act
CSU	California State University
DWR	California Department of Water Resources
GIS	Geographic Information System
IRWM	Integrated Regional Water Management
IS/MND	Initial Study/Proposed Mitigated Negative Declaration
LTA Project	Lower Tuscan Aquifer Monitoring, Recharge, and Data Management Project
MND	Mitigated Negative Declaration
TSC	Technical Steering Committee
USGS	United States Geological Survey

Section 1

Introduction

This report is being submitted as the Third Quarter 2010 Quarterly Report concerning activities completed for the Lower Tuscan Aquifer Monitoring, Recharge, and Data Management Project (LTA Project). This Quarterly Report is intended to meet the requirements of Attachment Two Section A2.3 of the County of Butte Contract Number 18050 dated January 31, 2010 between Butte County and Brown and Caldwell (BC). The purpose of the Quarterly Reports are to provide the Butte County Department of Water and Resource Conservation (BCDWRC) and the Public progress reports on activities completed during the quarter, a summary of initial findings, and an estimate of activities that will be completed during the next quarter. The LTA Project consists of seven tasks as follows:

Task 1 – CEQA Initial Study

Task 2 – Technical Steering Committee

Task 3 – Development of GIS Geodatabase

Task 4 – Aquifer Recharge Assessment

Task 5 – Installation of Groundwater Monitoring Wells

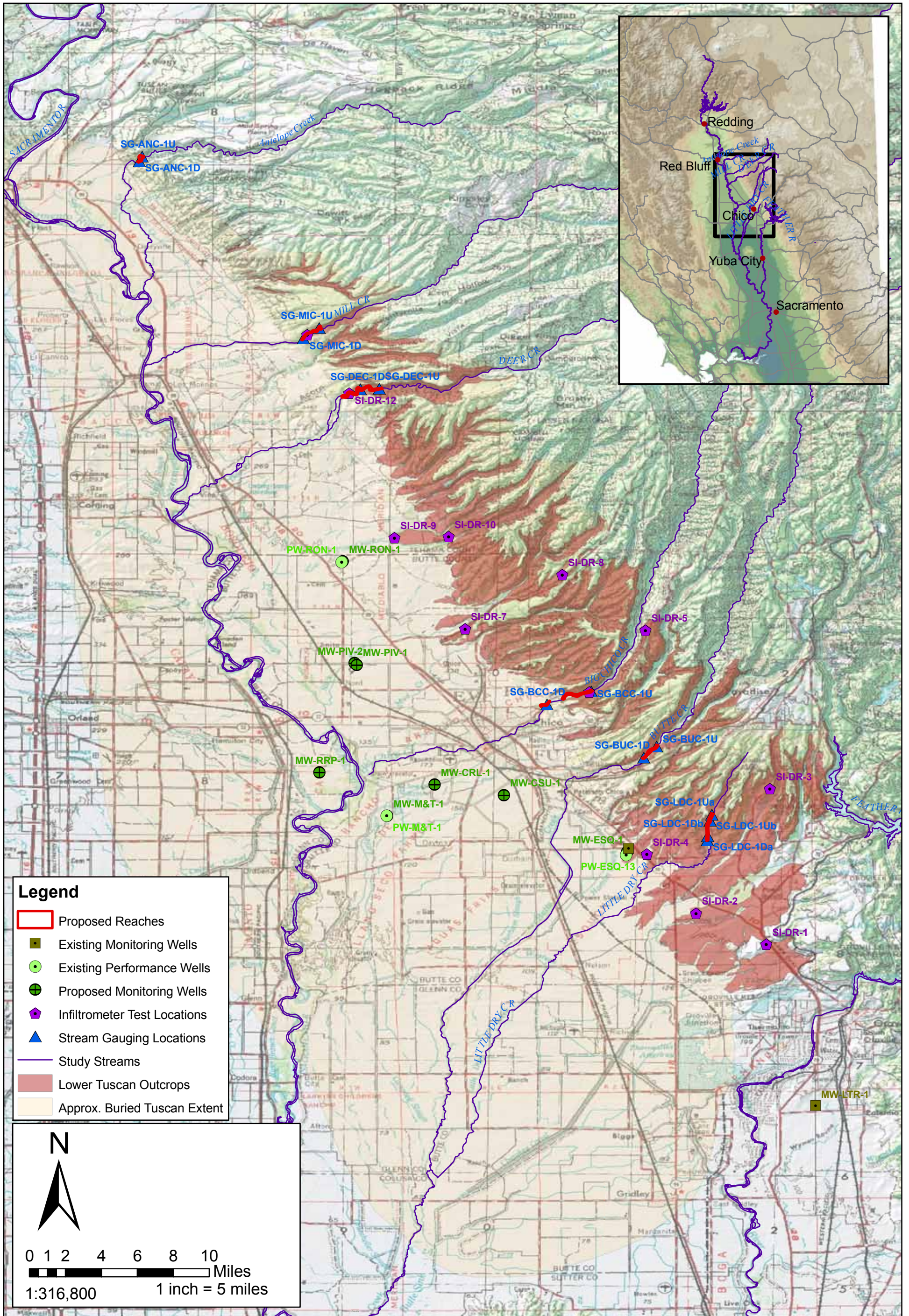
Task 6 – Aquifer Performance Testing

Task 7 – Public Outreach

The Tuscan Aquifer system, a regional aquifer of the Sacramento Valley Groundwater Basin, is among the principal water bearing units in Butte County. For this project, the Tuscan Formation has been divided into four units, labeled A through D, as defined by Helly and Hardwood (1985). Units A and B define the LTA, the subject of this study, and units C and D define the Upper Tuscan Aquifer. The approximate extent of the LTA within the project boundaries is shown on Figure 1.

1.1 LTA Project Purpose

Butte County has been awarded grant funds from the California Department of Water Resources (DWR) through Proposition 50 (Water Security, Clean Drinking Water, Coastal and Beach Protection Act of 2002) for implementation of the LTA Project. Included as part of Proposition 50 is the Integrated Regional Water Management (IRWM) Grant Program. Butte County is administering the LTA Project in partnership with the Four County Group (Butte, Glenn, Colusa, Tehama and Sutter Counties).



Legend

- Proposed Reaches
- Existing Monitoring Wells
- Existing Performance Wells
- Proposed Monitoring Wells
- Infiltrrometer Test Locations
- Stream Gauging Locations
- Study Streams
- Lower Tuscan Outcrops
- Approx. Buried Tuscan Extent

N

0 1 2 4 6 8 10
Miles

1:316,800 1 inch = 5 miles

BROWN AND CALDWELL	PROJECT 138604	SITE Butte and Tehama Counties, California	Figure 1
	DATE 5-24-10	TITLE General Lower Tuscan Aquifer Project Area	

The LTA Project grant application included a scientific investigation that is to develop data and analytic tools to improve the understanding of the aquifer. Specifically, the LTA Project is a scientific field investigation that seeks to improve the scientific understanding of the properties of the LTA system including:

- The physical parameters affecting percolation of surface water to the LTA.
- The interaction between surface water and the LTA.
- Recharge contributions from other aquifers to the LTA.
- Measurements of standard aquifer properties and their variability.
- Identification of natural recharge areas under current hydrologic conditions.
- Identification of recharge areas under increase utilization.
- How additional pumping may impact the aquifer and surface water.

In addition, the project includes development of a comprehensive Geographic Information System (GIS) Geodatabase to store data collected during the duration of the project. As part of the GIS Geodatabase, the project also includes development of a field data collection tool that will improve quality of data collected in the field to be incorporated into the Geodatabase. Finally, the project includes a public outreach program that will heighten public awareness and understanding of the aquifer.

1.2 Report Format

As stated above, the purpose of the Quarterly Reports is to provide the BCDWRC and the public progress reports on activities completed during the quarter, a summary of initial findings, and an estimate of activities that will be completed during the next quarter. As such, the format of this report has been developed based on activities completed during the Quarter. For the Third Quarter 2010, activities have been conducted for all seven tasks stated in the introduction. The activities discussed in this report cover the period from September 1, 2010 to December 31, 2010. An updated schedule showing the progress of the project is provided on Figure 2.

Lower Tuscan Aquifer Monitoring, Recharge, and Data Management Project

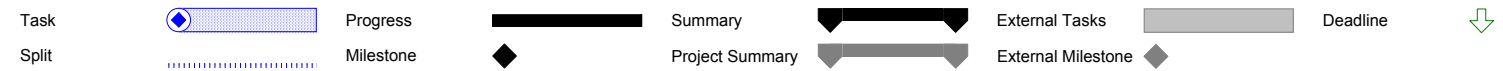
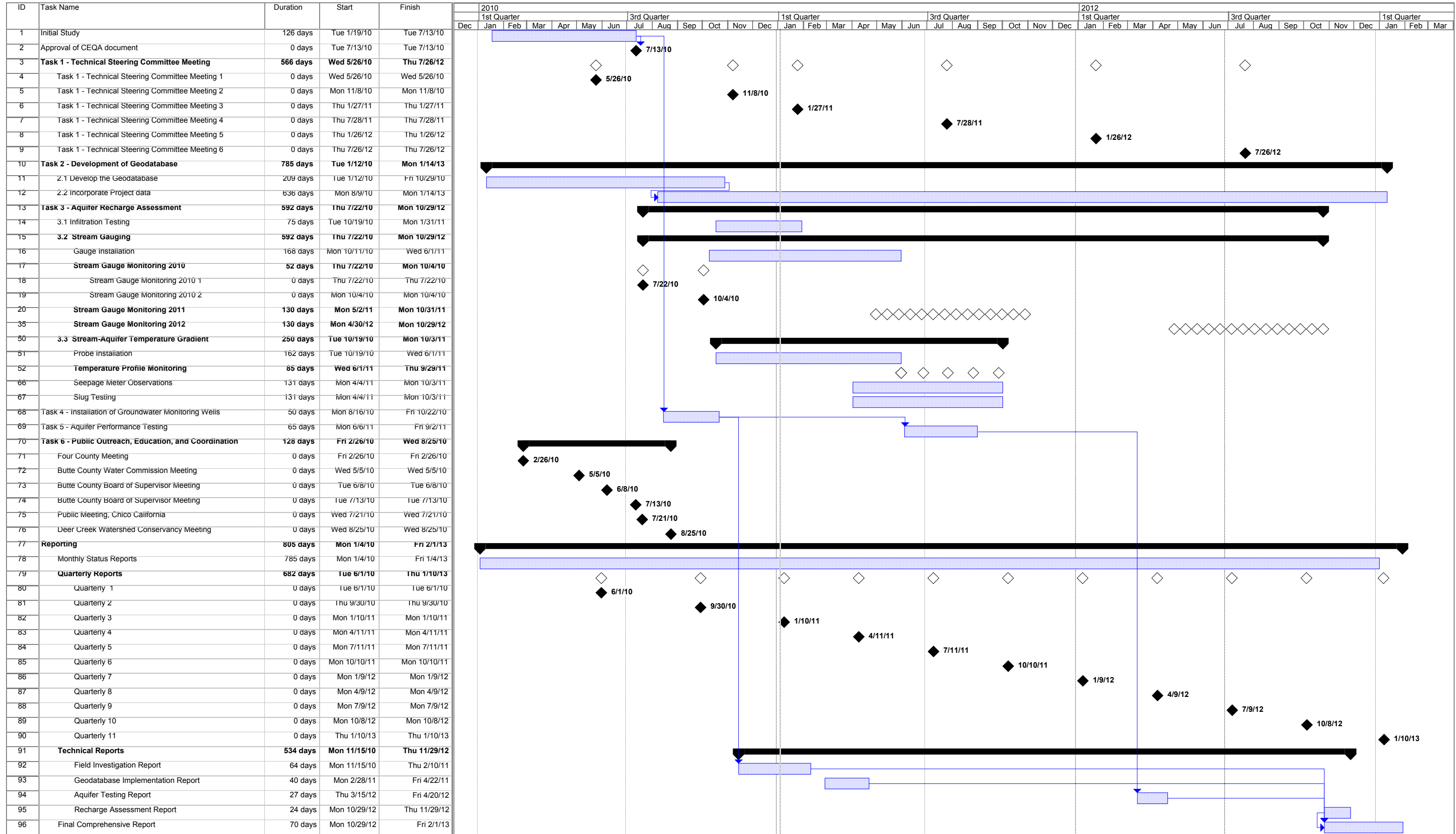


Figure 2

Section 2

CEQA Initial Study

BCDWRC, acting as the California Environmental Quality Act (CEQA) Lead Agency, has determined that the proposed LTA Project would not have a significant effect on the environment pursuant to CEQA. Because the Lead Agency finds no substantial evidence that the project or any of its aspects may cause a significant impact on the environment with mitigation, a Proposed Mitigated Negative Declaration (MND) was prepared. BC with teaming partner Galloway Consulting were responsible for preparation of the CEQA Initial Study/Proposed Mitigated Negative Declaration (IS/MND). The IS/MND was approved by the Butte County Board of Supervisors on July 13, 2010. A copy of the IS/MND and response to comments can be found at the project website listed below.

<http://buttecounty.net/Water%20and%20Resource%20Conservation/Tuscan%20Aquifer%20Project.aspx>

A summary of activities conducted for this task during the Third Quarter 2010 and planned activities for First Quarter 2011 are presented in the following Sections.

2.1 Activities Completed - Third Quarter 2010

As part of the mitigation measures listed in the IS/MND, the BC team conducted site visits for clearance of biological and cultural resources at Mill Creek and the 10 infiltrometer test sites.

2.2 Planned Activities - First Quarter 2011

During the First Quarter 2011, weather permitting, the archeologist will observe the installation of temperature gradient wells along Big Chico Creek. After completion of these wells, the written reports from the qualified biologist and archeologist will be prepared and submitted to Butte County. These reports will provide a brief summary of field activities for all LTA tasks and a verification that no direct or indirect impacts to sensitive natural communities or plant, wildlife, and fish species and their associated habitat occurred during field work.

Section 3

Technical Steering Committee

A Technical Steering Committee (TSC) has been formed to provide input and recommendations to help guide the progress of the project and the quality of the data. The TSC is comprised of qualified scientists selected from within the Four County area and includes representatives from State and local agencies, the academic community and various special districts throughout the Northern Sacramento Valley. The TSC meets on an as needed basis throughout the duration of the project and will act solely in an advisory capacity to Butte County and the BC Project Team. A list of the TSC members and the organization they represent are in the Table 1.

Table 1. TSC Members	
TSC Member	Organization
Four County Group Members	
Vickie Newlin	BCDWRC
Allan Fulton	Tehama County
Lester Messina	Glenn County, Department of Agriculture
Steve Hackney	Colusa County, Planning and Building Department
Dan Peterson	Water Resources, Sutter County Department of Public Works
External TSC Members	
Joe Connell	University of California Cooperative Extension
Brendon Flynn	Pacific Farms & Orchards
Dr. Steffan Mehl	California State University (CSU) Chico
Dr. Todd Greene	CSU Chico
Benn Pennock	Glenn Colusa Irrigation District
Ted Trimble	Western Canal Water District
Kelly Stanton	DWR, Northern District
Tracy McReynolds	Department of Fish and Game
John Lane	Chico Environmental Science and Planning
Mark Kimmelshue	Armco
Dr. Lev Kavas	Hydraulic Research Laboratory, California Hydrologic Research Laboratory
Carol Perkins	Butte Environmental Council

3.1 Activities Completed - Third Quarter 2010

During the Third Quarter 2010, a TSC meeting was conducted on November 8, 2010. The primary object of the meeting was to provide the TSC members with a project update and to summarize initial preliminary results of field activities conducted prior to the meeting. A copy of the presentation slides for the November 8, 2010 meeting is provided in Appendix A.

3.2 Planned Activities - First Quarter 2011

No significant field activities are planned during the First Quarter 2011 and, as such, no TSC meetings are anticipated during this period. The next TSC meeting will be conducted during the Second Quarter 2011 prior to startup of the planned aquifer pumping tests.

Section 4

GIS Geodatabase

As stated in Section 1, the project includes development of a comprehensive GIS Geodatabase to store data collected during the duration of the project. This system is an important tool for the BCDWRC to monitor conditions in the groundwater basin and promote education regarding the local water resources and will allow qualification and quantification of surface water and groundwater properties from the LTA Project area including:

- Aquifer transmissivity and hydraulic conductivity;
- Aquifer storage values (storativity or specific yield);
- Surface water and groundwater temperature;
- Streambed and soil infiltration capacities;
- Monitoring well location and construction;
- Extraction well location, construction, yield, drawdown and specific capacity.

As part of this task, the BC Project Team also developed a field data collection tool that will improve the quality of the data collected in the field to be incorporated into the geodatabase.

4.1 Activities Completed - Third Quarter 2010

During the Third Quarter 2010, data was collected using the field tool for drilling of pilot borings, development and installation of groundwater monitoring wells, installation of staff gauges and temperature probes, and performance of stream gauging and infiltrometer tests.

4.2 Planned Activities - First Quarter 2011

During the First Quarter 2011, data collected using the field tool will be check for accuracy and reliability from interfaces with other field tool. Based on these checks, the data base will be refined and updated, as necessary, for future use on the project. Data will be collected during this period using the field tool as discussed in the other sections.

Section 5

Aquifer Recharge Assessment

The aquifer recharge assessment is intended to gain a better understanding of the flow pathways by which surface water enters the subsurface and recharges the LTA. Three subtasks have been identified to assess the potential for recharge from surface water sources: Subtask 1 – Soil Infiltration Testing; Subtask 2 – Stream Gauging; and Subtask 3 – Stream-Aquifer Temperature Gradient Evaluation.

The soil infiltration testing (Subtask 1) will be performed at 10 locations (Figure 1). Each test location will include the performance of basic geologic outcrop mapping in the immediate vicinity of the test location. One double-ring infiltrometer test will be performed at each of the ten proposed sites following American Society for Testing and Materials (ASTM) Standard D-3385-03. The stream gauging task (Subtask 2) was intended to provide estimates of discharge, and potential recharge to the LTA, from 6 primary streams within the drainage basin overlying and intersecting the LTA. These streams included: Antelope Creek, Mill Creek, Deer Creek, Big Chico Creek, Butte Creek, and Little Dry Creek (Figure 1). However, due to access issues, the stream gauging task will only be conducted from 4 streams: Mill Creek, Big Chico Creek, Butte Creek, and Little Dry Creek. If access is granted at a later date to Antelope Creek and Deer Creek, then stream gauging activities will be conducted at these streams as appropriate.

The Stream-aquifer interaction task (Subtask 3) includes three components which relate to the ability for the stream channels to act as primary recharge conduit to the LTA. The three tasks to be implemented here include a temperature gradient evaluation, slug testing of shallow piezometers, and seepage meter evaluation. Details of each of these tasks are presented in the Draft IS/MND. To assess the viability of these tests for future use, these tests will initially only be conducted at Mill Creek, Big Chico Creek, and Butte Creek. If the tests are successful, then these tests will be conducted on Little Dry Creek and if access is granted at a later date, on Antelope Creek and Deer Creek.

5.1 Activities Completed - Third Quarter 2010

During September 2010, the BC team assisted with access issues related to Mill Creek, Deer Creek, Big Chico Creek, Butte Creek, and infiltrometer testing locations. The double ring infiltrometer was procured and stored at the Butte County offices. In addition, the BC team provided Butte County with recommendations for purchase of pressure transducers needed for this task and Task 5. The pressure transducers have been purchased and are stored at the BC Sacramento Office. During October 2010 the BC team performed 7 of the 10 infiltrometer tests, installed staff gauges and stilling wells at Mill Creek and Little Dry Creek, installed two temperature gradient wells at Mill Creek. Table 2 summarizes the results of the infiltrometer tests and copies of the field plots for these tests are presented in Appendix B. Figure 3 shows the approximate location of each of the tests. Figure 4 shows the location of stream gauging and temperature gradient wells.

Table 2. Summary of Infiltrometer Testing			
Site I.D.	Date Performed	Infiltration Rate (feet per hour)	Comments
LTA-SI-DR-1	10/27/2010	0.144	
LTA-SI-DR-2	10/27/2010	0.15	
LTA-SI-DR-4	10/26/2010	0.336	
LTA-SI-DR-5	10/26/2010	1.8	Estimated, poor test on duff and litter
LTA-SI-DR-7	10/25/2010	0.066	
LTA-SI-DR-9	10/21/2010	0.3	
LTA-SI-DR-12	10/19/2010	0.072	

During November 2010, the BC team assisted with access issues related to Big Chico Creek and Butte Creek. As part of this assistance, the BC Team attended the November 29, 2010 City of Chico Parks Commission meeting for access to Big Chico Creek. Access to both Big Chico Creek and Butte Creek were granted. To date, access has not been granted to Antelope Creek and Deer Creek.

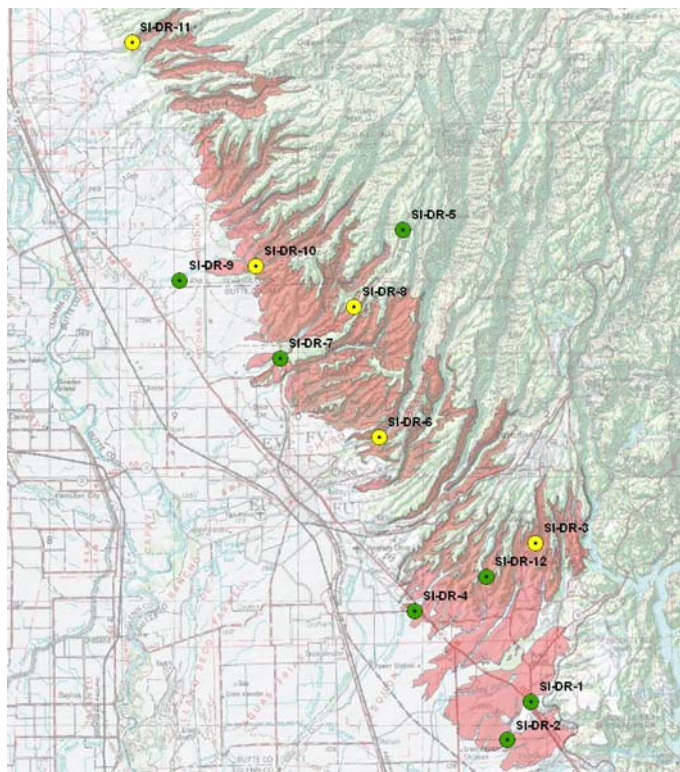


Figure 3. Location of Completed Infiltrometer Tests (shown in green)

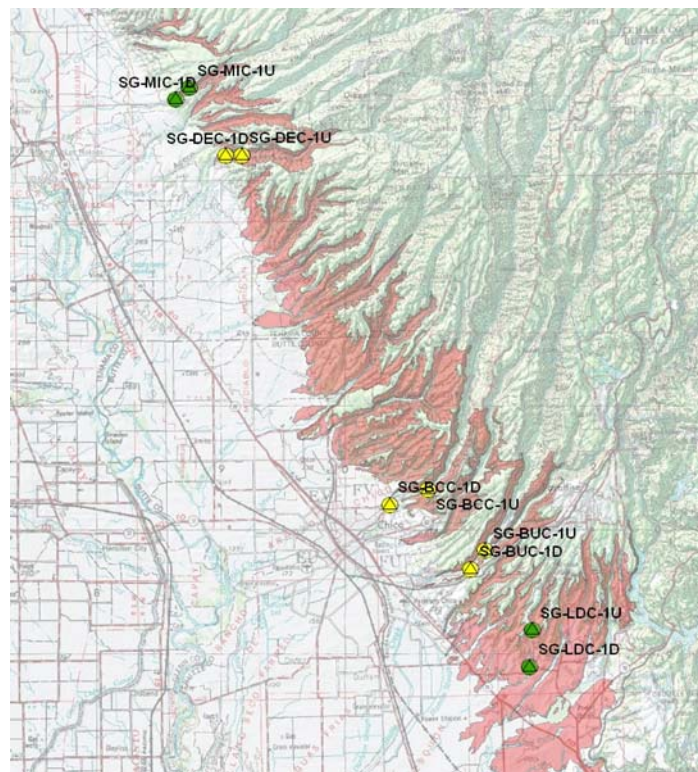


Figure 4. Location of Stream Gauges and Temperature Profile Wells

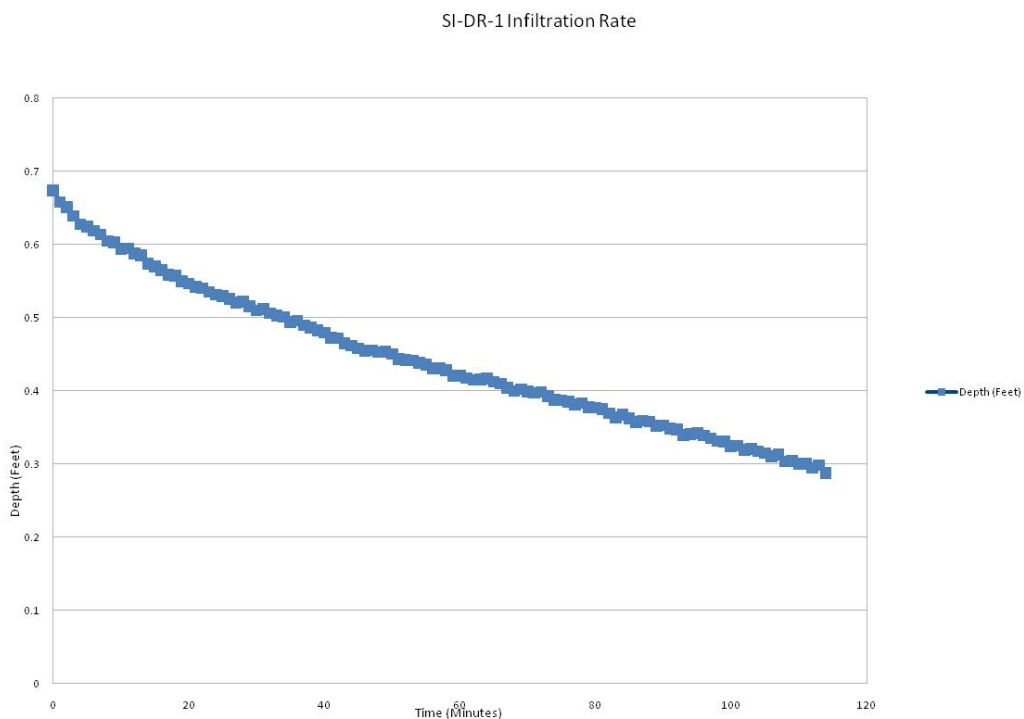


Figure 5. Example of Infiltration Plot for SI-DR-1



Figure 6. Dual Ring Infiltrimeter Testing – SD-IR-12

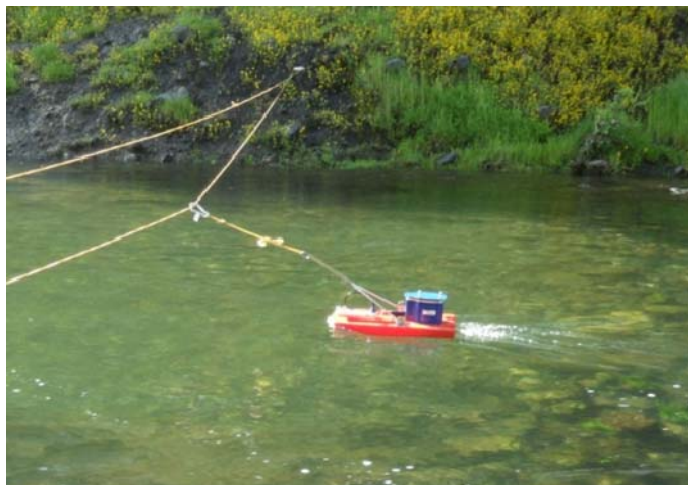


Figure 7. Stream Pro Device used for Stream Profiling

Figure 8. Installation of Staff Gauge along Mill Creek



Figure 9. Stream Profile and Data Collected from Stream Pro Gauging Instrument (see Figure 5)

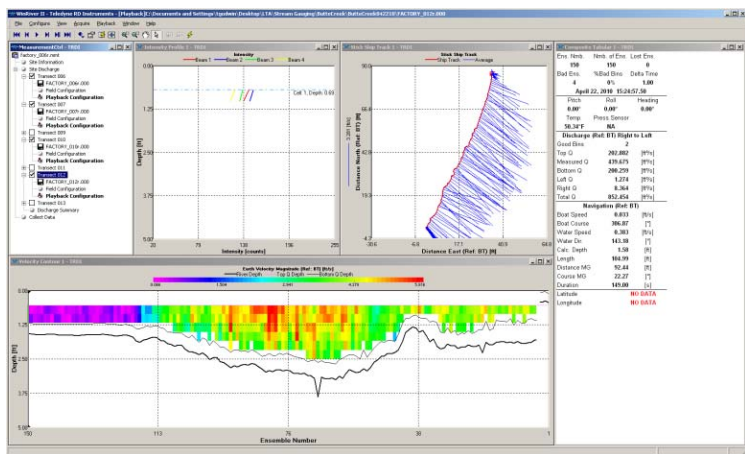




Figure 10. Temperature Gradient Well Installation along Mill Creek

5.2 Planned Activities – First Quarter 2011

During the First Quarter 2010, if weather conditions permit, the BC Project Team will complete infiltrrometer testing and installation of staff gauges, stilling wells, and temperature gradient wells at Butte Creek and Big Chico Creek. In addition, depending on flows, stream gauging activities will be conducted at each of the creeks with approved access. The BC team will also submit samples from completed infiltrrometer tests for grain size analysis, prepare formal logs for 5-foot borings completed for each test, and complete office analysis of results.

Section 6

Installation of Groundwater Monitoring Wells

Over the past few years, dedicated groundwater monitoring infrastructure (monitoring wells) have been installed in the Northern Sacramento Valley, which has contributed to a better understanding and quantification of the region. The LTA Project includes the installation of additional monitoring wells to further contribute to groundwater monitoring databases. The purpose of this task is to:

- Establish a reliable baseline of hydrogeologic data,
- Fill data gaps,
- Measure drawdown during aquifer performance tests,
- Monitor groundwater recharge, and
- Evaluate well performance and pumping impacts.

Dedicated groundwater monitoring wells provide data regarding the depths of different aquifers. Small diameter PVC pipes with perforations at varying depths were placed near existing production well and measurements of groundwater depth and quantity will be made at different times to assess local groundwater recharge and recovery. The newly installed monitoring wells cannot be used for or retrofitted for groundwater extraction or production of water. Once the monitoring project is complete, the monitoring wells will be integrated into the cooperative DWR-BCDWRC groundwater monitoring network.

6.1 Activities Completed - Third Quarter 2010

During the Third Quarter 2010, all three monitoring wells MW-MT-1, MW-CSU-1, and MW-HKT-1 were completed and developed. Prior to construction, downhole geophysical logs consisting of resistivity, spontaneous potential, spectral gamma, and caliper logs were conducted within each of the pilot borings. The locations of these new wells are shown on Figure 11.

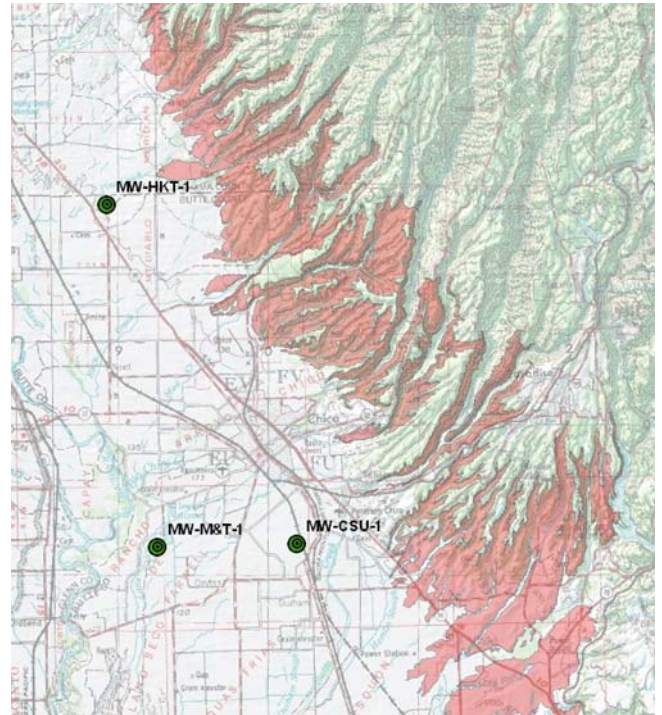


Figure 11. Location of Newly Installed Groundwater Monitoring Wells

Well construction details for each of the new wells are presented on Table 3.

Preliminary summary profiles of each new well, copies of the geophysical logs, and results of laboratory grain size analysis for samples collected from the screen intervals are presented in Appendix C. Finalized summary profiles will be presented in the Field Investigation Technical Memorandum that will provide a detailed description of the procedures and methods used to install and develop each of the wells.



Figure 12. Adding Grout Seal during Construction of MW-CSU-1

Table 3. Groundwater Monitoring Well Construction Details			
Well I.D.	MW-HKT-1	MW-MT-1	MW-CSU-1
Date Completed	October 14, 2010	November 5, 2010	October 11, 2010
Total Depth	600 feet bgs	900 feet bgs	820 feet bgs
Screen Interval	510 to 540 feet bgs 320 to 340 feet bgs 70 to 100 feet bgs	780 to 820 feet bgs 570 to 590 feet bgs 355 to 385 feet bgs	735 to 760 feet bgs 540 to 560 feet bgs 240 to 340 feet bgs
Well Sumps	540 to 545 feet bgs 340 to 345 feet bgs 100 to 105 feet bgs	820 to 825 feet bgs 590 to 595 feet bgs 385 to 390 feet bgs	760 to 765 feet bgs 560 to 565 feet bgs 340 to 345 feet bgs
Casing Diameter	2.5-inches	"	"
Screen Material	Machine slotted Schedule 80 PVC	"	"
Screen Slot Size	0.020 inches	"	"
Blank Casing	Schedule 80 PVC	"	"
Filter Pack Material	Number 3 Sand	Number 3 Sand (Deep and Shallow) 2/12 Sand (Intermediate)	Number 3 Sand
Filter Pack Interval	499 to 555 feet bgs 309 to 351 feet bgs 60 to 115 feet bgs	758 to 830 feet bgs 560 to 605 feet bgs 280 ¹ to 400 feet bgs	720 to 772 feet bgs 524 to 574 feet bgs 229 to 350 feet bgs
Bentonite Pellet/Fine Sand Seal	555 to 600 feet bgs 351 to 499 feet bgs	830 to 845 feet bgs 605 to 758 feet bgs 60 to 280 feet bgs	772 to 820 feet bgs 350 to 524 feet bgs 70 to 229 feet bgs
Grout	Surface to 60 feet bgs	Surface to 60 feet bgs	Surface to 70 feet bgs
Centralizers	Every 30 feet from bottom of screen to top of well	"	"

1. Interval from 280 feet bgs to approximately 320 feet bgs consists of native material due to collapse of well boring during construction.

Well development for each of the newly installed wells was conducted between October 21, 2010 and November 10, 2010.

A summary of the well development activities are presented on Table 4. Calculations of casing volumes for each of the wells used the well construction details presented in Table 3. A detailed description of the procedures and methods used for development will be presented in the Field Investigation Technical Memorandum. On November 19, 2010, pressure transducers were placed within each of the wells. These transducers will monitor water level fluctuations over the 2010/2011 Winter/Spring period prior to conducting the aquifer tests schedule to occur during Summer 2011.



Figure 13. Development of MW-CSU-1

Table 4. Summary of Well Development

Well I.D.	Date Developed	Total Well Depth (Feet)	Depth to Water (Feet bgs)	Pumping Rate (GPM)	One CV (Gallons)	Gallons Removed	pH	Specific Conductivity (µS/cm)	Temperature (C°)	Turbidity (NTU)
MW-HKT-1S	10/26/2010	105	42.92	5	16	395	8.13	478	19.5	28.5
MW-HKT-1I	10/26/2010	345	45.75	20	77	1550	8.00	275	19.0	1.04
MW-HKT-1D	10/26/2010	545	45.65	30	128	1600	8.20	252	21.4	5.58
MW-MT-1S	11/10/2010	390	17.1	30	93	5100	8.20	339	21.7	18.0
MW-MT-1I	11/10/2010	595	19.5	30	143	4650	8.10	238	22.0	12.5
MW-MT-1D	11/10/2010	825	17.7	30	202	3445	8.08	325	22.2	6.25
MW-CSU-1S	10/22/2010	345	73.18	25	68	1500	9.09	268	16.79	18.2
MW-CSU-1I	10/22/2010	565	77.91	30	121	5160	9.12	226	18.21	2.09
MW-CSU-1D	10/22/2010	765	78.92	30	170	5130	8.72	240	19.97	3.15

6.2 Planned Activities - First Quarter 2011

During the First Quarter 2011, the three new monitoring wells discussed will be surveyed by a California licensed surveyor. In addition, preparation of the Field Investigation Technical Memorandum documenting the procedures and methods used for installation and development of wells and summary of data collected during these activities will be prepared.

Section 7

Aquifer Performance Testing

This task consists of two subtasks, a review of existing aquifer performance testing and the performance of up to three aquifer performance tests. Up to six detailed reviews of existing aquifer performance tests will be conducted. The review will include the evaluation of test design, test implementation, the data collected during the test, and the analysis of the test data. If the analysis of the data is found to be inconsistent with industry standards the data will be re-analyzed to verify results.

Aquifer performance testing will be conducted on three existing production wells. The locations of these wells are shown on Figure 1. Newly installed groundwater monitoring wells MW-MT-1 and MW-HKT-1 will be used as observation wells during two of these tests. An existing groundwater monitoring well installed by the DWR (see Figure 1) will be used as an observation well during the third aquifer test. The production wells to be utilized are existing groundwater pumping wells and are connected to irrigation distribution systems. The water extracted will be used as part of existing irrigation practices and distributed according to normal operating conditions at each location. These tests will be compliant with the Regional Water Quality Control Board General Discharge Permit, where applicable and no additional permitting would be required.

7.1 Activities Completed - Third Quarter 2010

As stated in Section 6, the transducers needed for the aquifer pumping tests planned for 2011 were purchased and installed within the new groundwater monitoring wells. No other activities were conducted for this task during Third Quarter 2010.

7.2 Planned Activities - First Quarter 2011

During the First Quarter 2010, the BC Project Team will begin assessment of existing aquifer tests and begin coordination with property owners for the Summer 2011 aquifer pumping tests. In addition, the BC Project Team will also coordinate access for installation of pressure transducers at the existing monitoring well nest located south of the City of Oroville (MW-PNZ-1; Figure 1).

Section 8

Public Outreach

The purpose of the public outreach task is to educate regional and county decision makers and the public about the aquifer investigation's objectives, progress, and results. Public outreach as part of the LTA Project will primarily consist of stakeholder and public meetings, with support in the form of quarterly reports, a website, and newsletters. This website would provide a means of sharing the project schedule, status, and outreach materials with the public and stakeholders. The website will be updated monthly and can contain content such as: project schedule, CEQA documentation, quarterly reports, meeting minutes, outreach meeting schedules, project data, newsletters, and links to other related websites.

8.1 Activities Completed - Third Quarter 2010

The BC Project Team prepared for and attended the November 29, 2010 City of Chico Parks Commission meeting to discuss access issues related to stream gauging activities on Big Chico Creek. During this meeting, the Parks Commission granted access for the planned activities.

8.2 Planned Activities - First Quarter 2011

A copy of this quarterly report will be included on the project website shown below.

<http://www.buttecounty.net/Water%20and%20Resource%20Conservation/Tuscan%20Aquifer%20Project.aspx>