Ukiah Valley Basin
Sustainable Groundwater Planning Grants

Presented To:

Ukiah Valley Basin
Groundwater Sustainability Agency

Presented By:

LACO Associates
Christopher J. Watt, CEG, CHG
Brian M. Wallace, EIT

Photo Credit: Parducci Wine Cellars, WineMaps.com 2016

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Today's Schedule

- 2015 SGWP Grant
  - LACO's Role in Obtaining Grant Funding
  - Initial Groundwater Sustainable Plan
  - Progress Report

- 2017 SGWP Grant
  - Grant Funding and Deadlines
  - Remaining work for Groundwater Sustainability Plan

2015 SGWP Grant Solicitation

- Proposition 1: Water Quality, Supply, and Infrastructure Improvement Act of 2014
- Counties with Stressed Basins
- $10 Million was made available to Counties in California
- Maximum Award $250,000

LACO's Role

- Provide policy and technical guidance to assist Mendocino County Water Agency with the development of the Ukiah Basin Groundwater Sustainability Agency.
- Develop an initial Groundwater Sustainability Plan for the Ukiah Valley Basin.

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2015 SGWP Grant Project Deliverables

- Outreach and Agency Collaboration ✓
- Compilation of Existing Data ✓
- Surface Water-Groundwater Data Gap Analysis ✓
- Groundwater Monitoring Protocol Manual Development ✓
- Hydrogeologic Conceptual Model
- Water Budget Development
- Development of Sustainable Management Criteria

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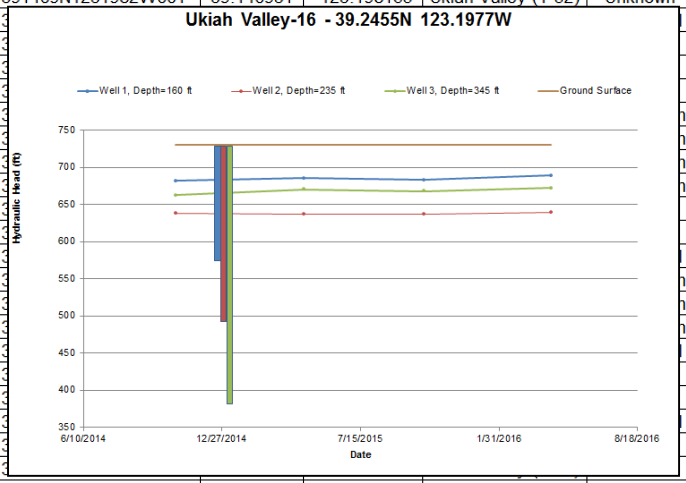
Compilation of Existing Groundwater Data

	A	B	C	D	E	F	G	H	I	J	K
1	CASGEM Well Number	State Well Number:	Local Well Designation:	Number of Data Points	Site Code:	Latitude (NAD83):	Longitude (NAD83):	Groundwater Basin (code):	Well Use:	Well Status:	Well Completion Report Number:
18	391322N1231929W001		Ukiah Valley-10a	5	391322N1231929W001	39.132200	-123.192884	Ukiah Valley (1-52)	Irrigation	Active	N/A
19	391334N1231885W001		Ukiah Valley-24	3	391334N1231885W001	39.133440	-123.188470	Ukiah Valley (1-52)	Irrigation	Unknown	N/A
20	391409N1231982W001	15N12W20R003M	Ukiah Valley-14	4	391409N1231982W001	39.140931	-123.198165	Ukiah Valley (1-52)	Unknown	Active	N/A
21	391482N1231810W001		Ukiah Valley-31	1						Active	e071160
22	391730N1232108W001	15N12W08L001M	15N12W08L001M	98						Active	N/A
23	391860N1232039W001	15N12W05J004M	Ukiah Valley-15	4						Active	34445
24	391917N1232000W001		Ukiah Valley-23	1						Active	e0232792 - N/A
25	391918N1232003W001		Ukiah Valley-1	4						Active	e0207604 A-D - N/A
26	391918N1232003W002		Ukiah Valley-2	4						Active	e0207604 A-D - N/A
27	391918N1232003W003		Ukiah Valley-3	4						Active	e0207604 A-D - N/A
28	391918N1232003W004		Ukiah Valley-4	4						Active	e0207604 A-D - N/A
29	391920N1232273W001		Ukiah Valley-21	1						Inactive	N/A
30	391932N1232124W001		Ukiah Valley-35	1						Inactive	N/A
31	392358N1232020W001	16N12W16N002M		86						Active	15976
32	392455N1231977W001		Ukiah Valley-16	4						Active	N/A
33	392455N1231977W002		Ukiah Valley-17	4						Active	N/A
34	392455N1231977W003		Ukiah Valley-18	4						Active	N/A
35	392516N1231610W001		Ukiah Valley-20	3						Unknown	N/A
36	392556N1232312W001	16N12W07K001M	Ukiah Valley-8	4						Active	N/A
37	392572N1231906W001	16N12W09J001M	Ukiah Valley-9	1						Inactive	N/A
38	392594N1232129W001		Ukiah Valley-19	3						Active	N/A
39	392606N1232098W001	16N12W08A001M	Ukiah Valley-6	4						Active	N/A
40	392645N1231955W001	16N12W09B001M	Ukiah Valley-5	4						Active	N/A
41	392647N1232245W001		Ukiah Valley-30	1	392647N1232245W001	39.264700	-123.224520	Ukiah Valley (1-52)	Residential	Active	N/A
42	392648N1232318W001	16N12W07B001M	Ukiah Valley-7	5	392648N1232318W001	39.264820	-123.231770	Ukiah Valley (1-52)	Unknown	Active	N/A
43	392730N1231770W001	16N12W03G001M	Ukiah Valley-13	4	392730N1231770W001	39.273000	-123.177000	Ukiah Valley (1-52)	Unknown	Active	e066664
44	392962N1232047W001	17N12W28M001M		78	392962N1232047W001	39.296200	-123.204700	Ukiah Valley (1-52)	Residential	Active	N/A



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Compilation of Existing Groundwater Data

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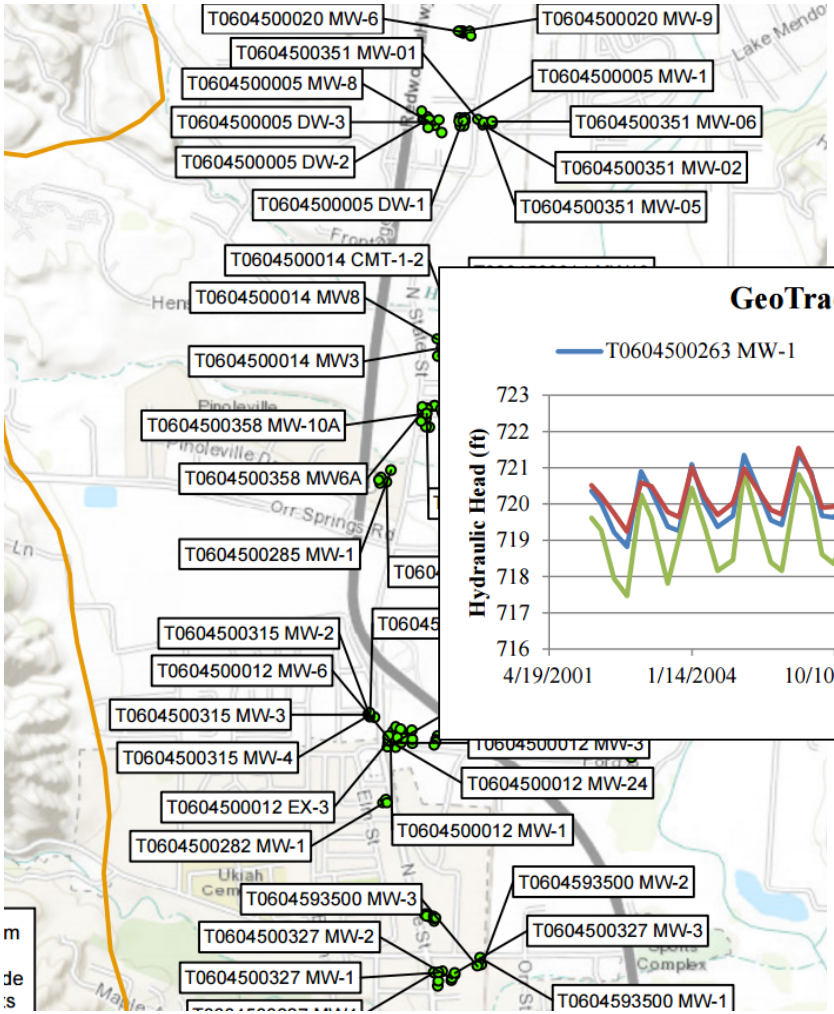

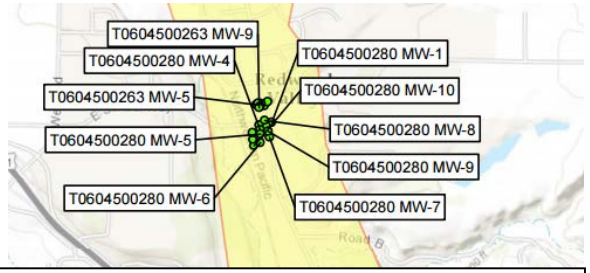

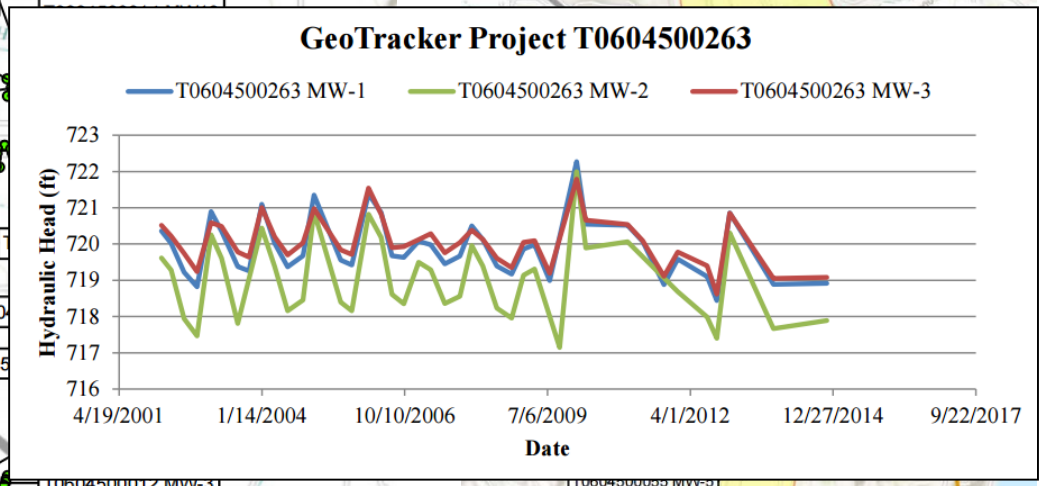

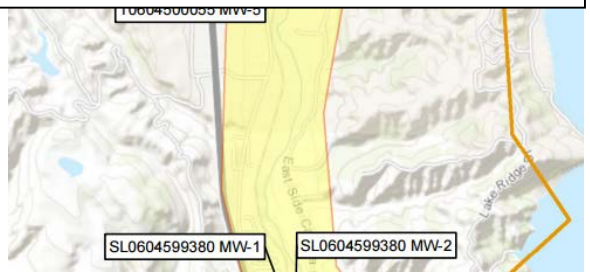

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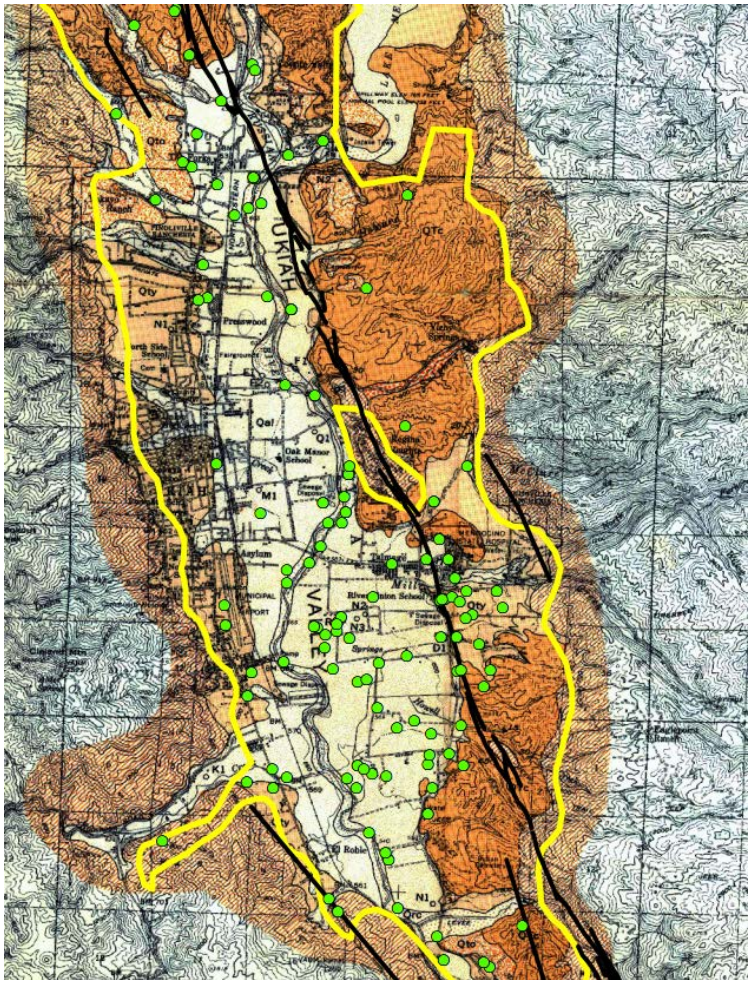
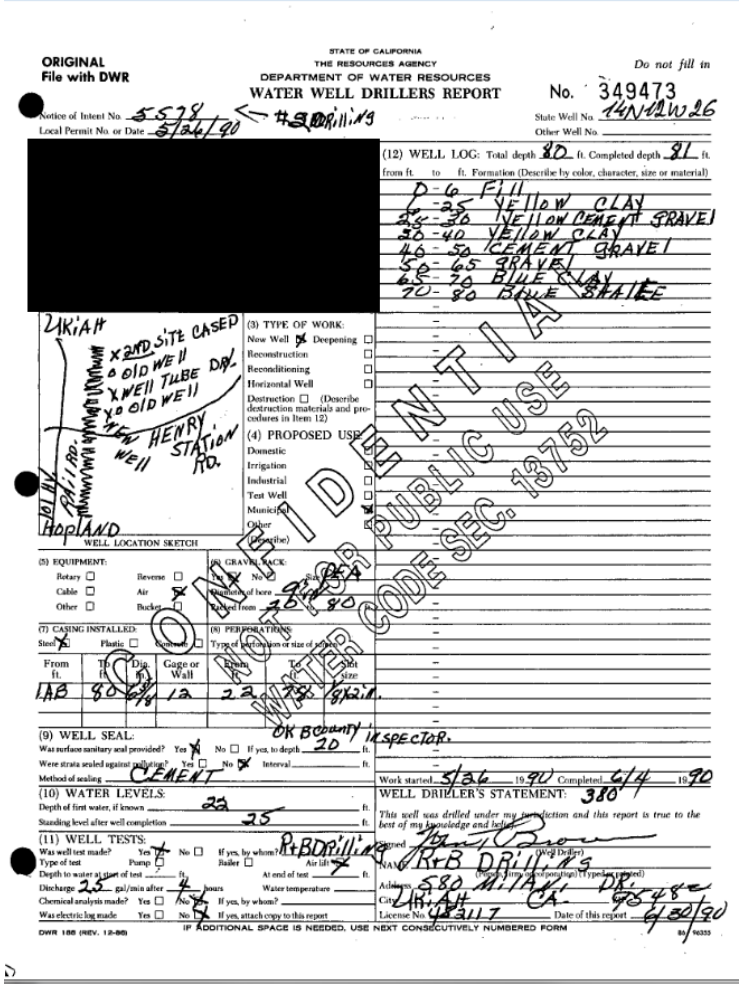
Compilation of Existing Groundwater Data





ORIGINAL
File with DWR

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
WATER WELL DRILLERS REPORT

Do not fill in
No. 349473
State Well No. 14N/12W26
Other Well No.

Notice of Intent No. 5578 <- #2 Drilling
Local Permit No. or Date 5/26/90

(12) WELL LOG: Total depth 80 ft. Completed depth 81 ft.
from ft. to ft. Formation (Describe by color, character, size or material)

0-6 Fill
6-25 Yellow CLAY
25-30 Yellow CEMENT GRAVEL
30-40 Yellow CLAY
40-50 CEMENT GRAVEL
50-65 GRAVEL
65-70 BLUE CLAY
70-80 BLUE SHALE

UKIAH
2ND SITE CASED
OLD WELL
WELL TUBE DRY
OLD WELL
WELL
HENRY STATION RD.
HOPLAND
WELL LOCATION SKETCH

(3) TYPE OF WORK:
New Well X Deepening
Reconstruction
Reconditioning
Horizontal Well
Destruction (Describe destruction materials and procedures in Item 12)

(4) PROPOSED USE:
Domestic
Irrigation
Industrial
Test Well
Municipal
Other
(Describe)

(5) EQUIPMENT:
Rotary Reverse
Cable Air X
Other Bucket

(6) GRAVEL PACK:
Yes X No
Size DEA
Depth of bore 80
Packed from 35 to 80

(7) CASING INSTALLED:
Steel X Plastic Concrete

(8) PERFORATIONS:
Type of perforation or size of slot

From ft.	To ft.	Dia. in.	Gage or Wall	From ft.	To ft.	Slot size
IAB	80	6/4	12	22	78	9/32in.

(9) WELL SEAL:
Was surface sanitary seal provided? Yes X No If yes, to depth 20 ft.
Were strata sealed against pollution? Yes No X Interval ft.
Method of sealing CEMENT
OK BCounty INSPECTOR.

(10) WATER LEVELS:
Depth of first water, if known 22 ft.
Standing level after well completion 25 ft.

(11) WELL TESTS:
Was well test made? Yes X No If yes, by whom? R+B DRilling
Type of test Pump Bailer Air lift X
Depth to water at start of test ft. At end of test ft.
Discharge 25 gal/min after 4 hours Water temperature
Chemical analysis made? Yes No X If yes, by whom?
Was electric log made Yes No X If yes, attach copy to this report

Work started 5/26 19 90 Completed 6/4 19 90

WELL DRILLER'S STATEMENT: 380
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief
Name R+B DRilling (Well Driller)
Address 580 Mill St.
City UKIAH Zip 95482
License No. 483117 Date of this report 6/30/90

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

DWR 188 (REV. 12-88)

CONFIDENTIAL
NOT FOR PUBLIC USE
WATER CODE SEC. 13752

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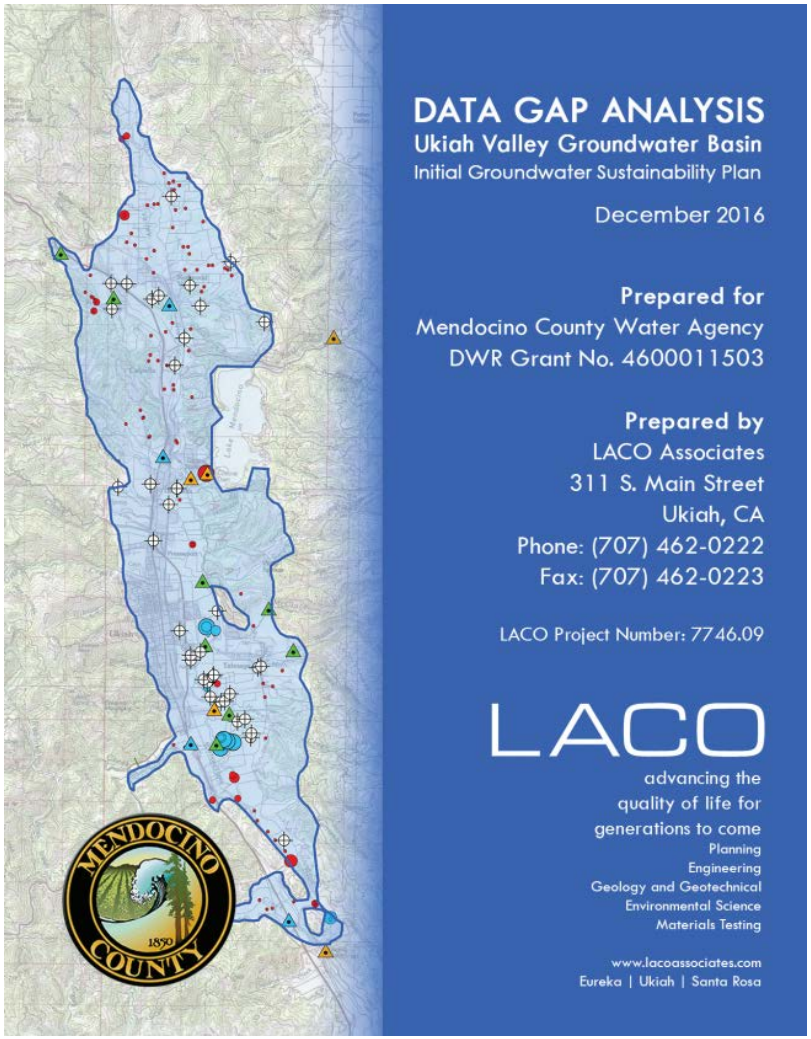
Surface Water-Groundwater Data Gap Analysis



- Surface Water Monitoring Background
- Groundwater Monitoring Background
- Proposed Streamflow Gauge Network
- Proposed Groundwater Monitoring Network
- Temporal Data Gaps

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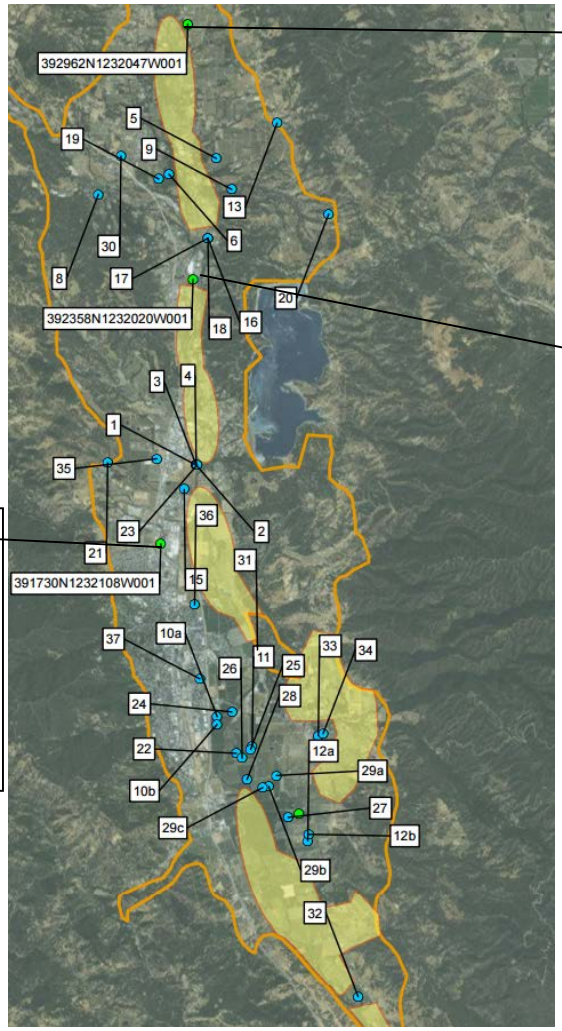
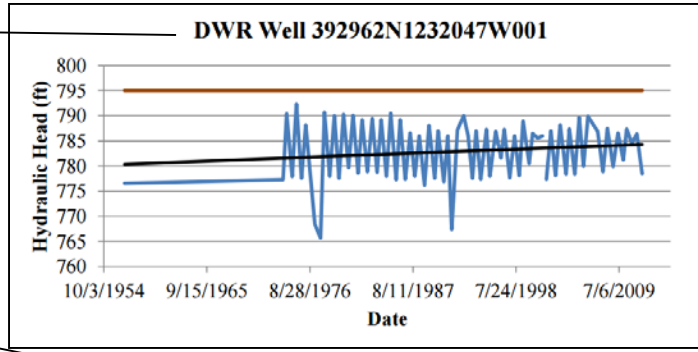
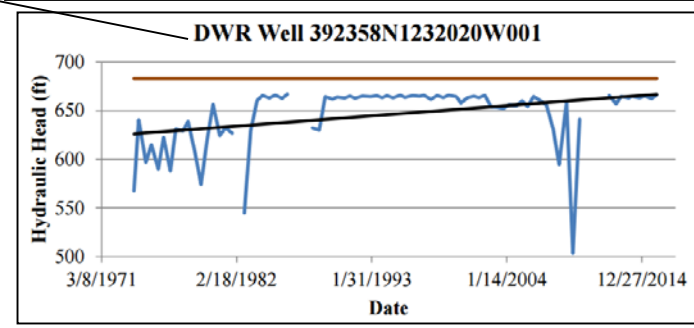
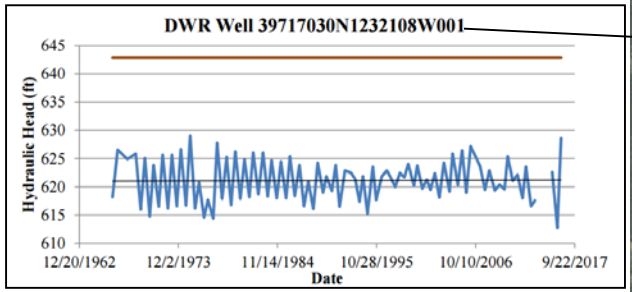
Surface Water-Groundwater Data Gap Analysis









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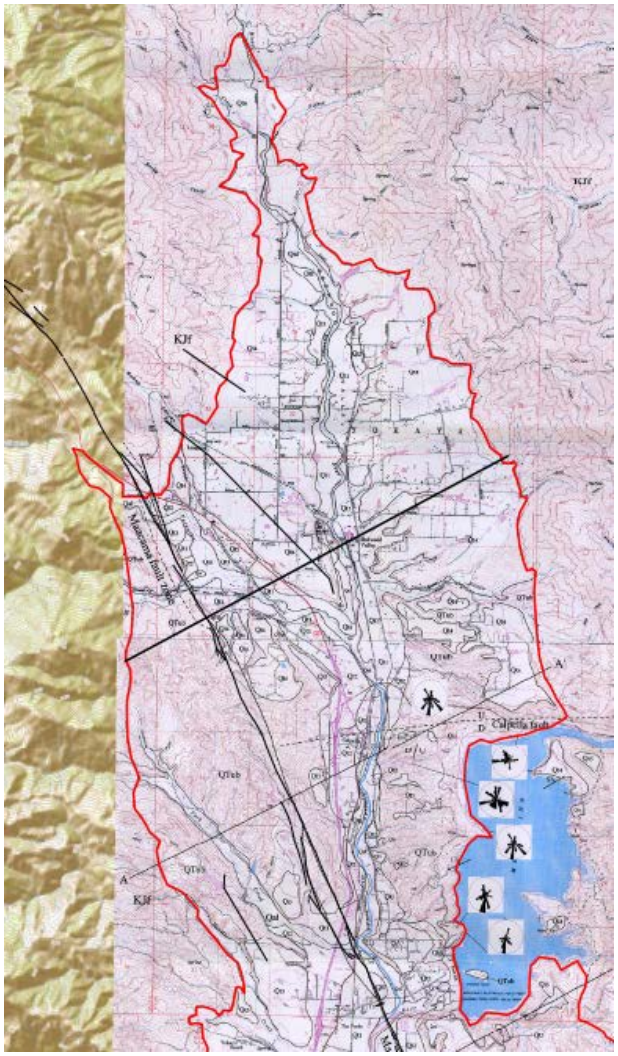
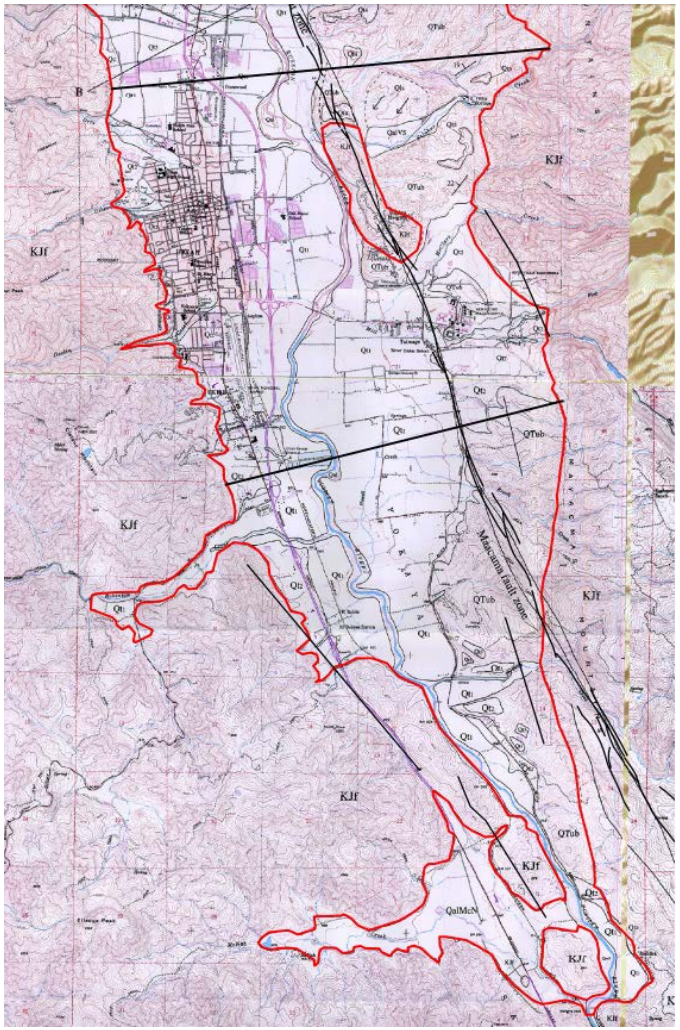
Hydrogeologic Conceptual Model

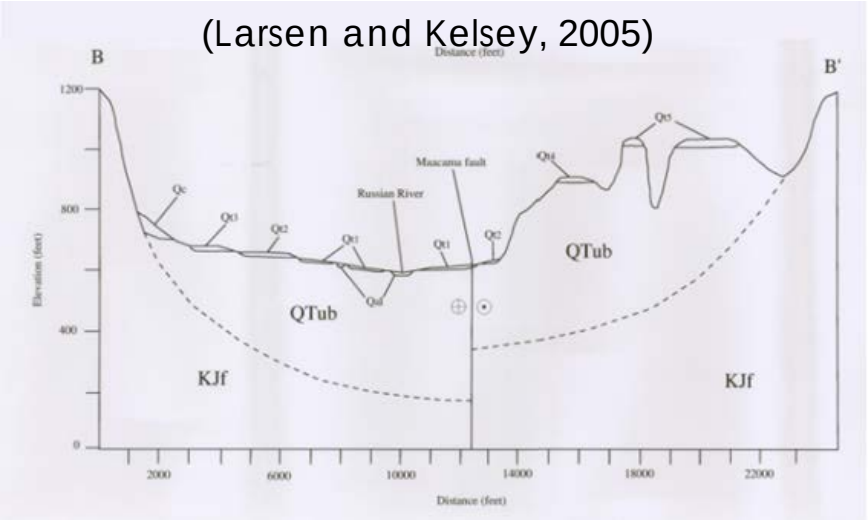


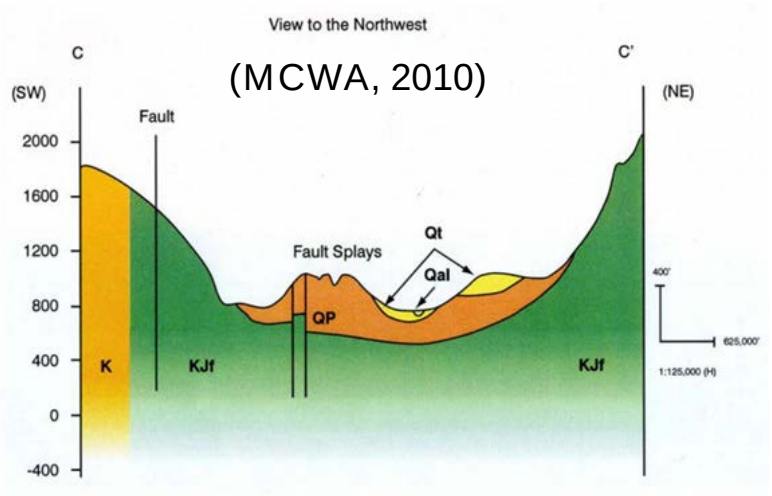
- Review of Previous Studies and Data Collection ✓
- SW/GW Background ✓
- Basin Setting ✓
- Groundwater Basin Boundary ✓
- Bottom of Groundwater Basin ✓
- Principal Aquifers and Aquitards
- Hydrogeologic Conceptual Model Data Gaps

Hydrogeologic Conceptual Model



(Larsen and Kelsey, 2005)





(MCWA, 2010)

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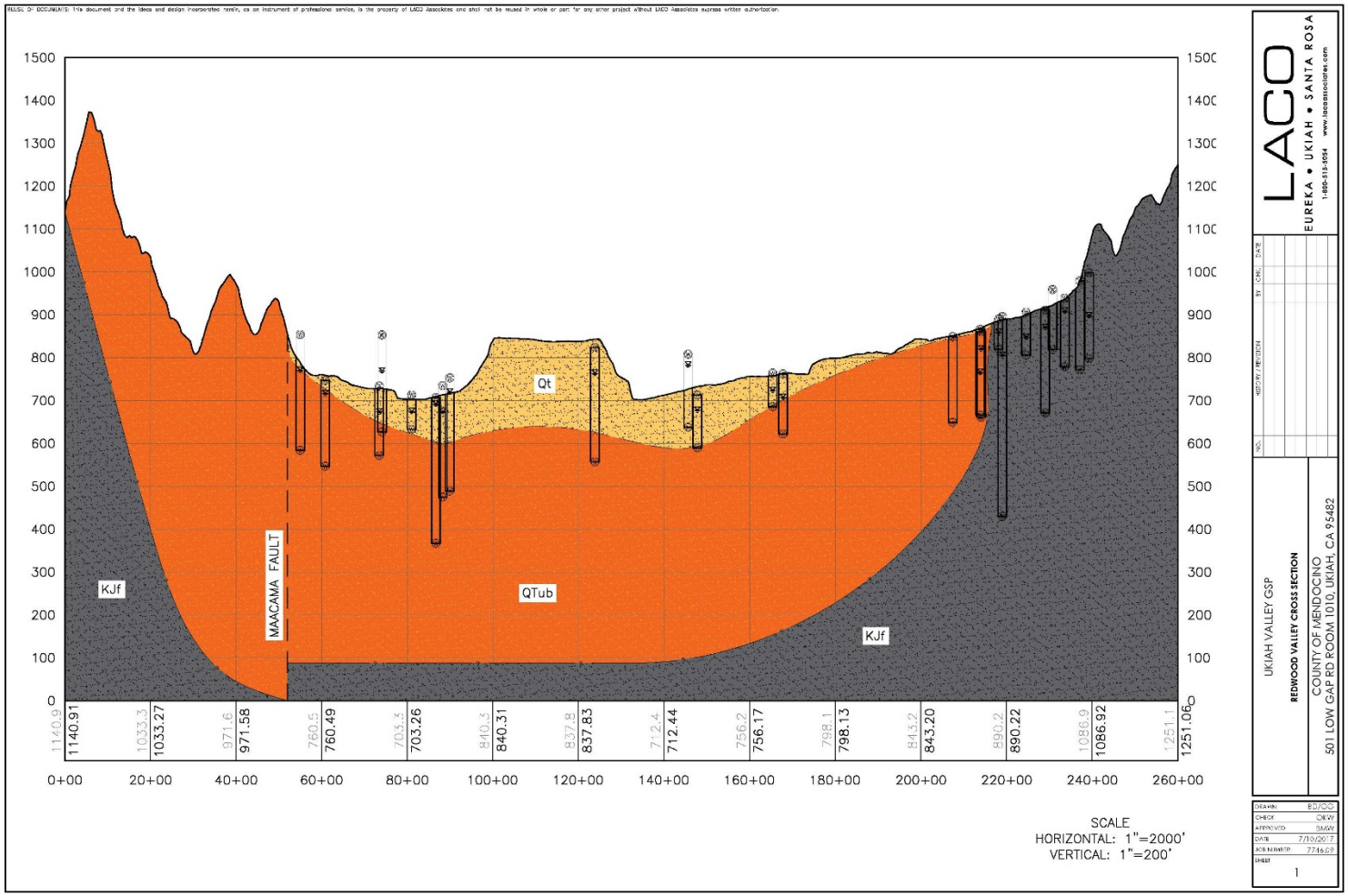
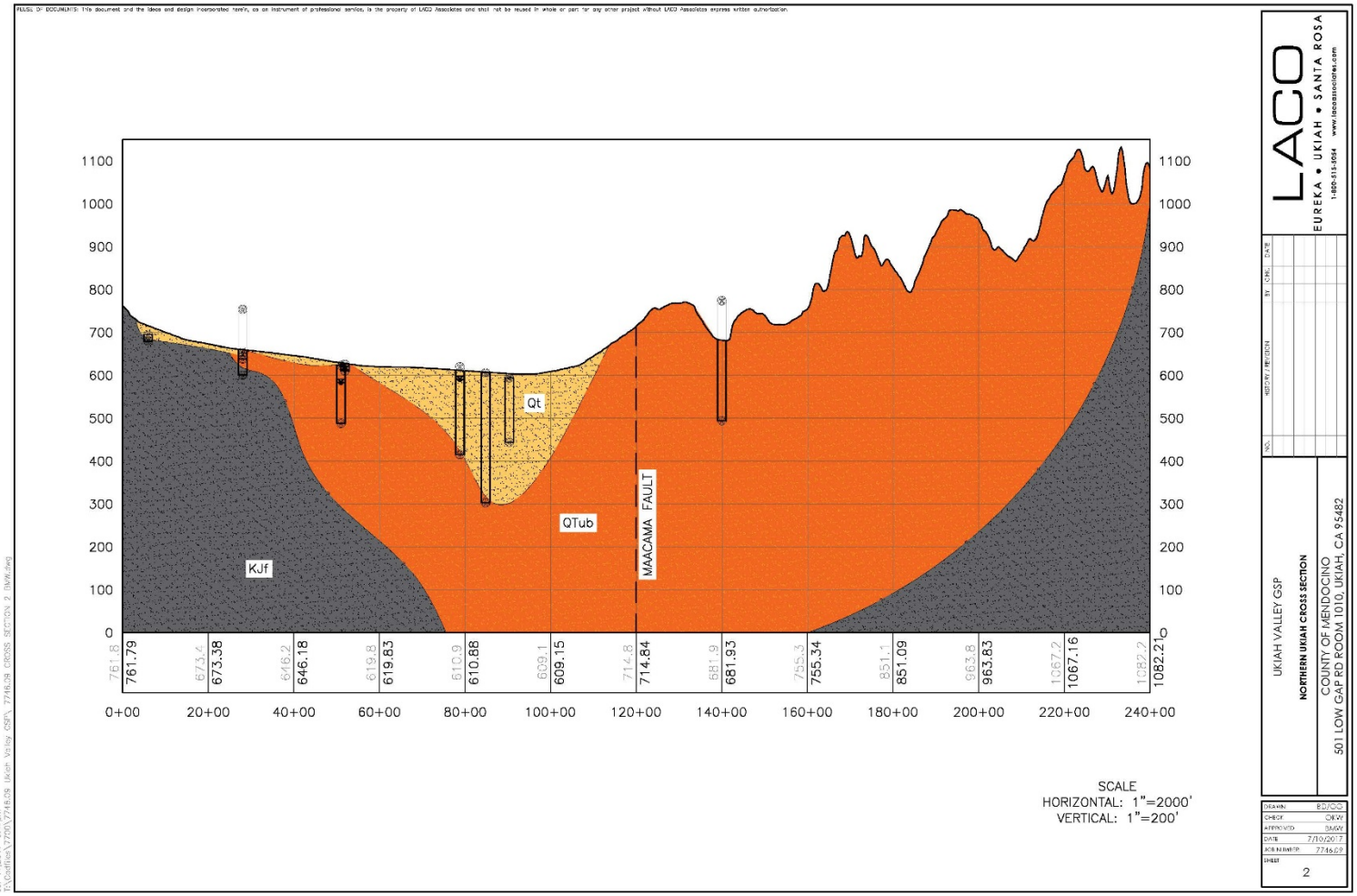
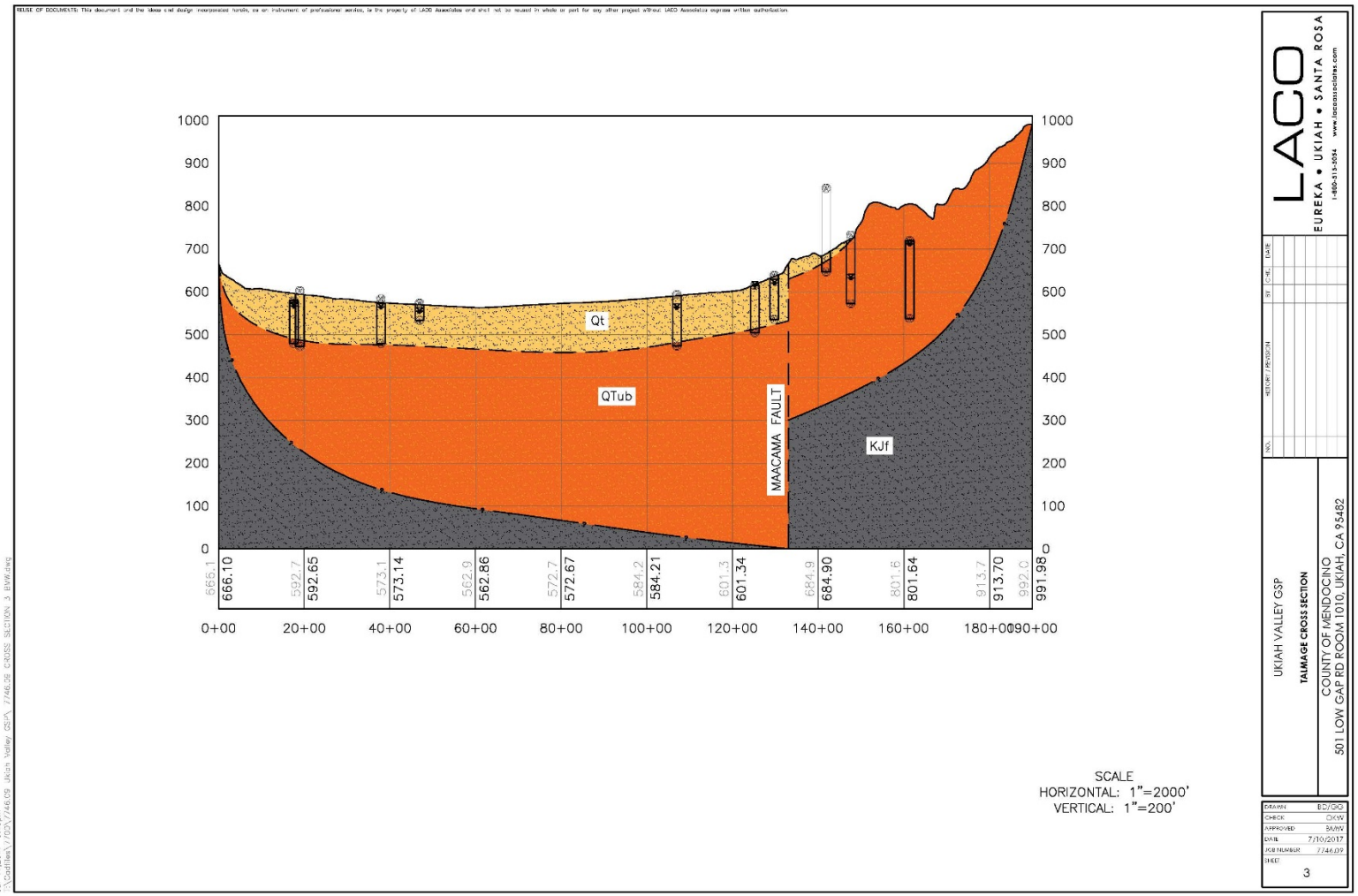
Redwood Valley Geologic Cross Section



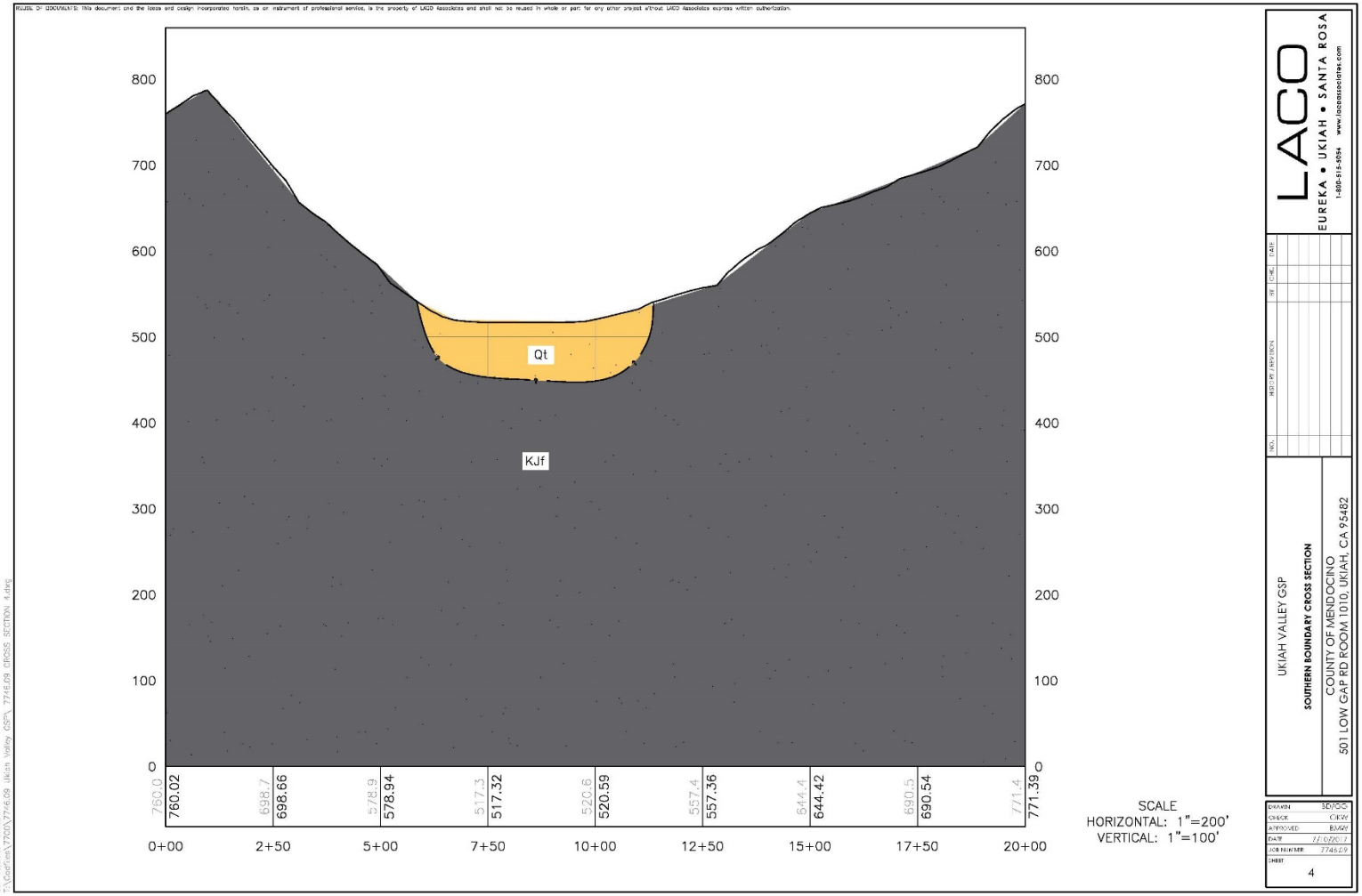
Northern Ukiah Geologic Cross Section



Talmage Geologic Cross Section



Southern Boundary Geologic Cross Section



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Water Budget Methodology

Inflows

- Infiltration ✓
- Lake/Pond Leakance
- Evapotranspiration ✓
- River/Stream Leakance
- Return Flows
- Boundary Recharge
- Artificial Recharge

Outflows

- Groundwater Extraction ✓
- Discharge to Surface Water
- Boundary Outflow ✓

Inflows – Outflows = Change in Storage

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Groundwater Model Development

- Utilize data from UC Davis Thesis Project
- Utilize results from Hydrogeologic Conceptual Model to characterize groundwater basin geometry and hydrogeologic properties.
- Calibrate water budget using 8,000 monitoring well observations
- Provide higher resolution data to USGS for implementation into Russian River Watershed-Wide GSFLOW Model, and enhance USGS' ability to effectively characterize Ukiah Basin component of model.

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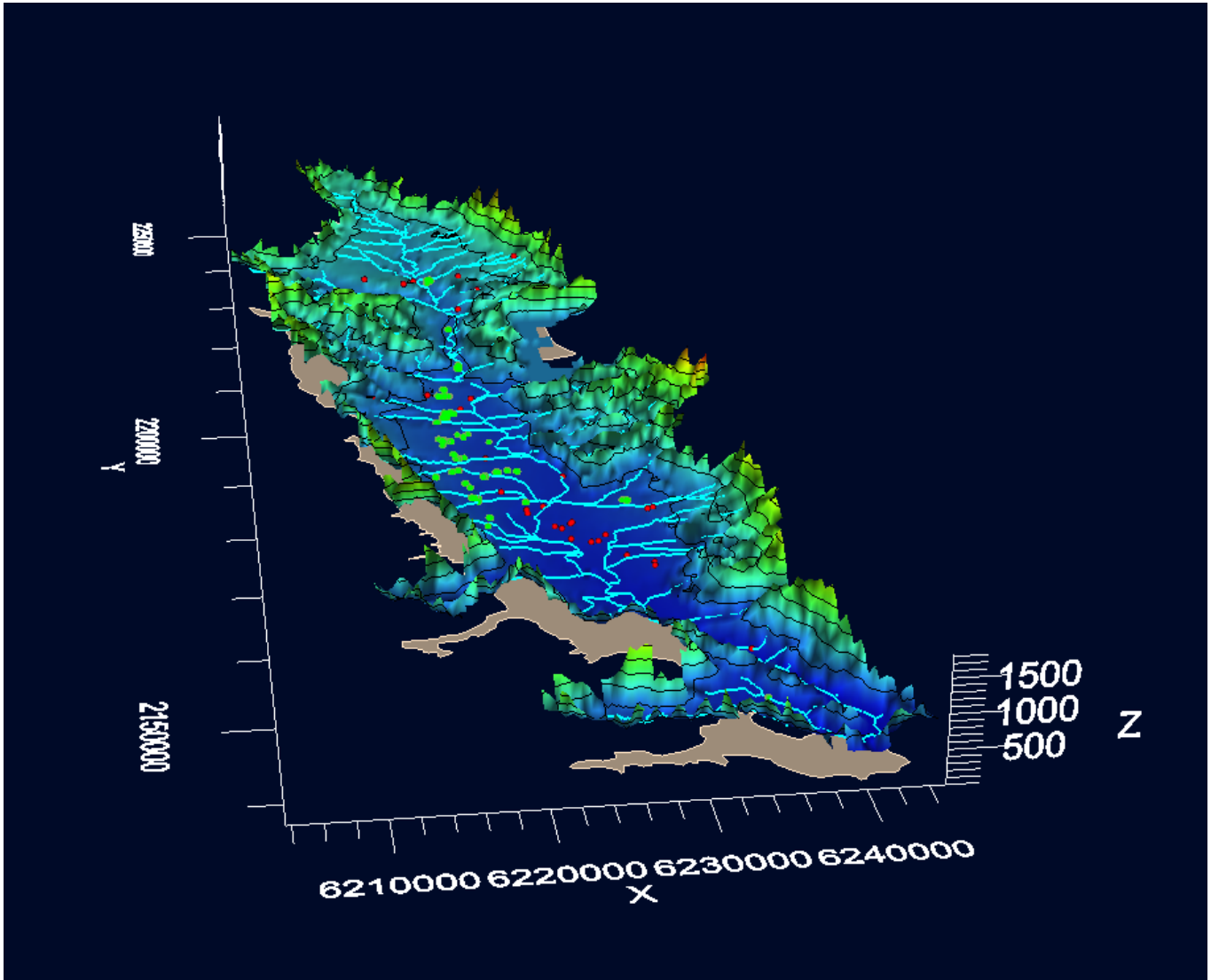
Groundwater Model Data Import



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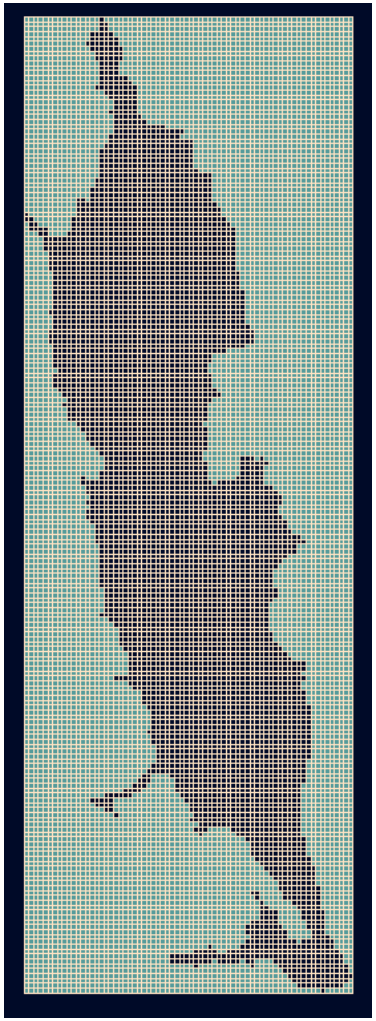
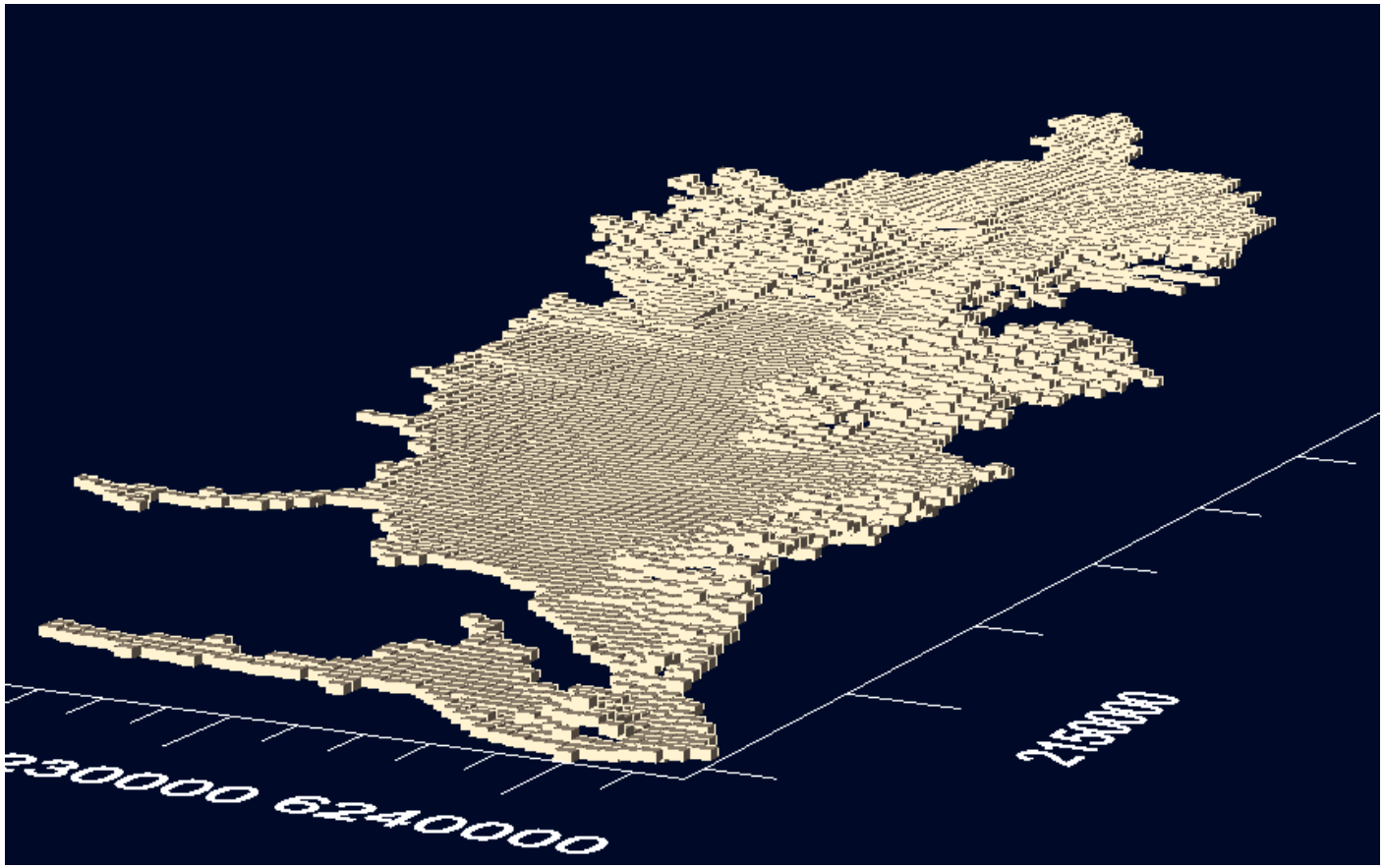
Groundwater Model Discretization





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2015 SGWP Grant Progress Report

- Outreach and Agency Collaboration (On-going)
- Compilation of Existing Data (Complete)
- SW-GW Data Gap Analysis (Complete)
- Groundwater Monitoring Protocol Manual (Complete)
- Hydrogeologic Conceptual Model (80% Complete)
- Water Budget Development (50% Complete)
- Development of Sustainable Criteria (10% Complete)

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Initial GSP

- Article 3. Technical and Reporting Standards
  - § 352.2. Monitoring Protocols ✓
- Article 5. Plan Contents
  - Subarticle 2. Basin Setting
    - § 354.12. Introduction to Basin Setting ✓
    - § 354.14. Hydrogeologic Conceptual Model
    - § 354.16. Groundwater Conditions ✓
    - § 354.18. Water Budget
  - Subarticle 3. Sustainable Management Criteria
    - § 354.24. Sustainability Goal
    - § 354.26. Undesirable Results
    - § 354.28. Minimum Thresholds
    - § 354.30. Measurable Objectives

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Remaining Work for GSP

Article 5. Plan Contents

- Subarticle 1. Administrative Information
  - § 354.4. General Information
  - § 354.6. Agency Information
  - § 354.8. Description of Plan Area
  - § 354.10. Notice and Communication
- Subarticle 2. Basin Setting
  - § 354.12. Introduction to Basin Setting
  - § 354.14. Hydrogeologic Conceptual Model
  - § 354.16. Groundwater Conditions
  - § 354.18. Water Budget
  - § 354.20. Management Areas
- Subarticle 3. Sustainable Management Criteria
  - § 354.24 Sustainability Goal
  - § 354.26. Undesirable Results
  - § 354.28. Minimum Thresholds
  - § 354.30. Measurable Objectives
- Subarticle 4. Monitoring Networks
  - § 354.34. Monitoring Network
  - § 354.36. Representative Monitoring
  - § 354.38. Assessment and Improvement of Monitoring Network
  - § 354.40. Reporting Monitoring Data to the Department
- Subarticle 5. Projects and Management Areas
  - § 354.44. Projects and Management Actions

Complete

In Progress

Not Part of 2015 SGWP Grant

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2017 SGWP Grant Solicitation

- $10 Million is available for SDACs (Phase 1)
- $86 Million is available for GSAs (Phase 2)
- Maximum Award $1 Million for SDACs (Phase 1)
- Maximum Award $1 Million for GSAs (Phase 2)
- Final Proposal Solicitation Package Deadline: August 2017
- Grant Application Submission Deadline: October 2017
- Release of Phase 1 Funding Awards: December 2017
- Release of Phase 2 Funding Awards: December 2017 to January 2017

2017 SGWP Grant Solicitation

- **Category 1 – SDAC Projects ($1 Million Available)**
  - Vulnerability assessments
  - Feasibility studies for evaluating projects
  - Project design and environmental planning
  - Install and instrument a groundwater production well
  - Installation of meters of groundwater production wells
  - Instrumentation of monitoring wells with pressure transducers
  - Connect communities on degraded groundwater to municipal supplies
  - Evaluate groundwater management needs of SDACs

2017 SGWP Grant Solicitation

- **Category 2 – GSP ($1 Million Available)**
  - Project types include activities associated with the planning, development, or preparation of a Groundwater Sustainability Plan that will meet the requirements of SGMA.

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Thank you!