

Santa Ynez River Valley Groundwater Basin Western Management Area Groundwater Sustainability Agency

May 2020 Status Update



DUDEK Geosyntec

consultants

Agenda

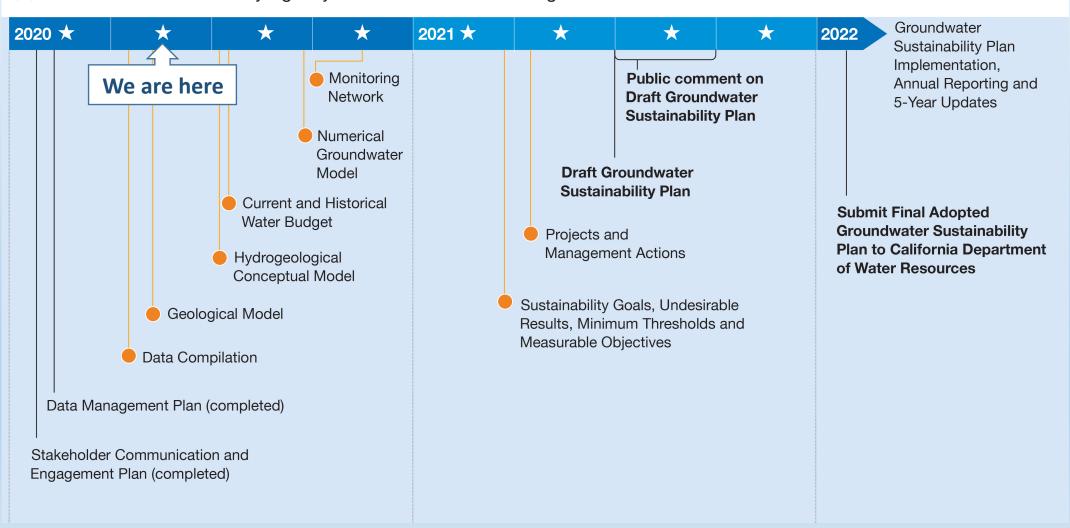
- 1. SGMA & GSA Overview
- 2. Timeline & Milestones
- 3. Community Outreach
- 4. WMA Water
- 5. Technical Memorandums
- 6. Field Work
- 7. SkyTEM
- 8. Questions

Santa Ynez River Valley Groundwater Basin Vandenberg San Antonio Creek Valley Santa Barbara County Water Mission Hills SGMA GSAs/Management Areas * Management Areas outside of Santa Ynez River Water Conservation District under jurisdiction of Santa Barbara County Water Agency DWR Bulletin 118 (2018 Update)

Timeline

Groundwater Sustainability Plan Development Milestones

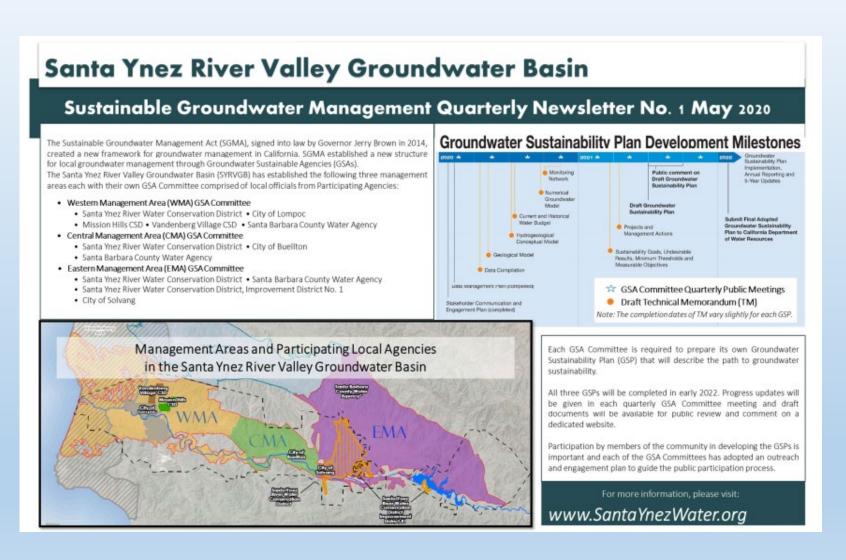
☆ Groundwater Sustainability Agency Committee Public Meeting
■ Technical Memorandum



Community Outreach

- 1st Quarterly
 Newsletter developed
- Distribute with water bills (paper and/or email)
- Digital Outreach

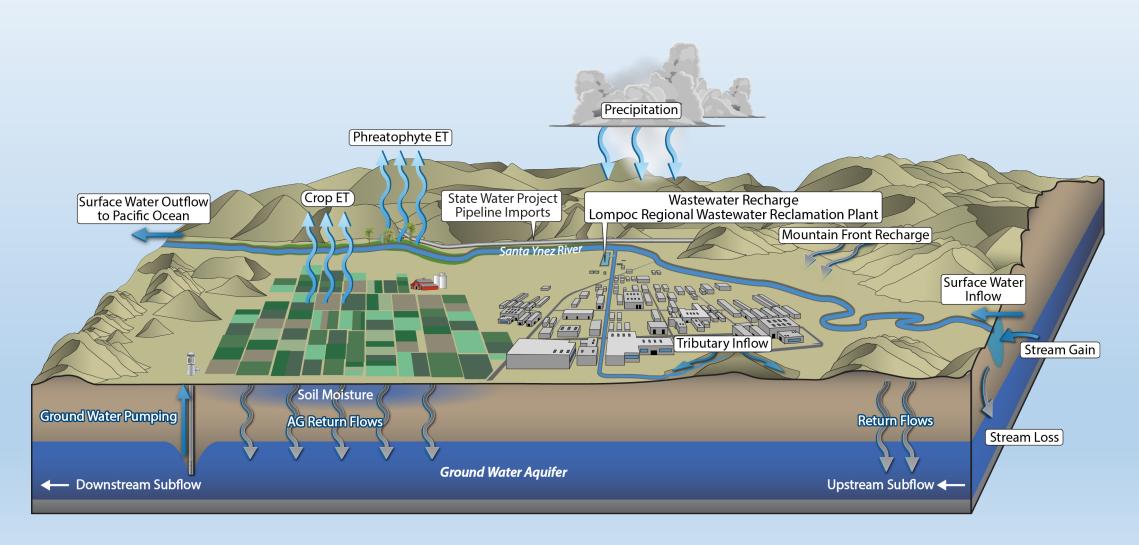


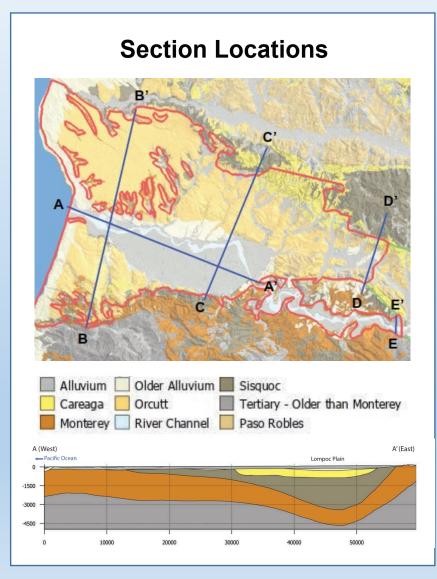


WMA Water

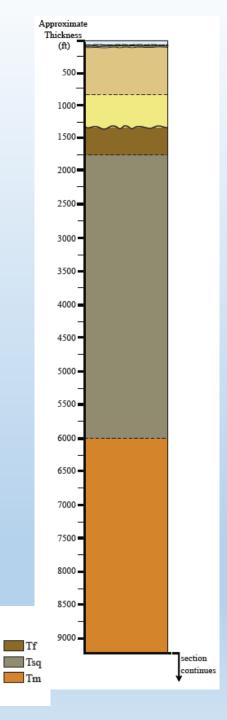
DRAFT

WESTERN MANAGEMENT AREA OF THE SANTA YNEZ RIVER VALLEY GROUNDWATER BASIN



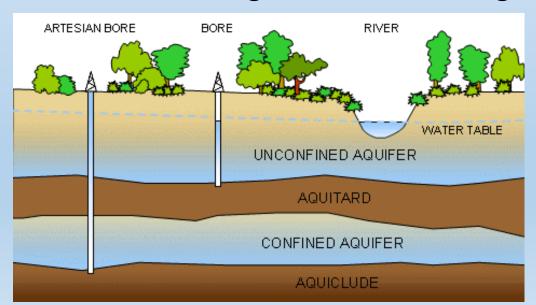


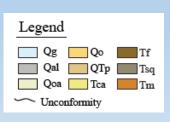
- DRAFT Tech Memo in review by Staff
- Describes the software, data sources and assumptions used to build the model
- Outlines data gaps identified by the model
- SkyTEM data may be used later to refine the model

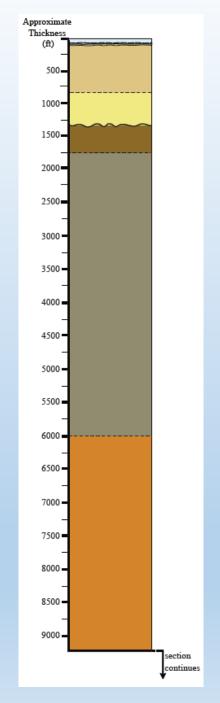


Legend

- Why model the basin Geology?
- Geologic units inform where groundwater is present.
- Each geologic unit has specific properties that affect how groundwater moves through the basin.
- Understanding where groundwater is present and how it flows through the basin informs groundwater management.







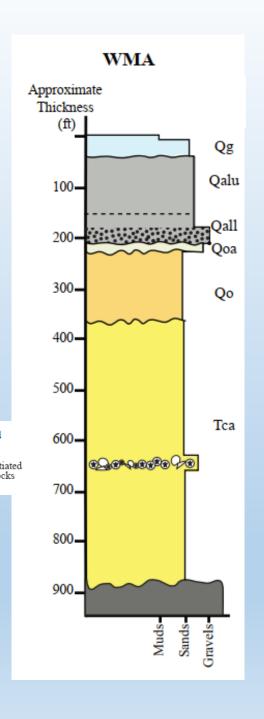
Geologic units can be categorized into two broad categories:

1. Consolidated Rock

- underlies the ground-water basin and crops out in the surrounding hills
- Monterey Shale, Foxen, and Sisquoc Formations
- In terms of SGMA terminology forms the "definable bottom of the basin" and "lateral basin boundaries"

2. Unconsolidated Deposits

- Santa Ynez River Floodplain Alluvium Upper Aquifer (River gravels, Younger alluvium)
- Upland Deposits Formations Lower Aquifer (Terrace Deposits/Older Alluvium, Orcutt, Paso Robles, Careaga Sand)

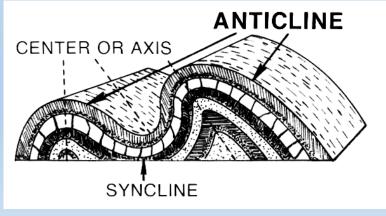


Thickness 1000-1500-2000 2500-3000 3500 -4000 4500 -5000 5500 = 6000 6500 -7000 7500 = 8000 8500 Legend 9000.

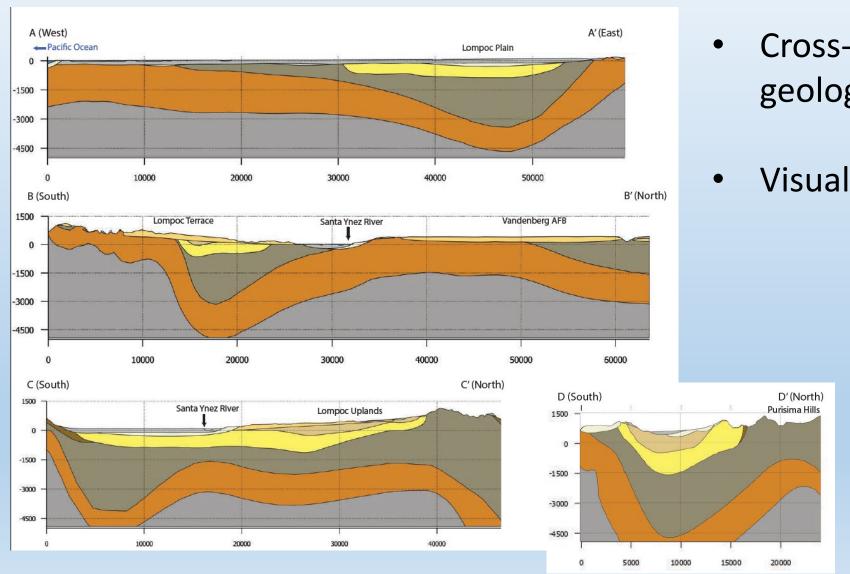
Geologic Model Technical Memorandum

- Modeling the geologic units (stratigraphy) as shown in this figure, helps us better understand and interpret geologic structures within the basin.
 - Geologic structures in the basin include folds, faults, mountains and other features.
 - Anticline and syncline folds



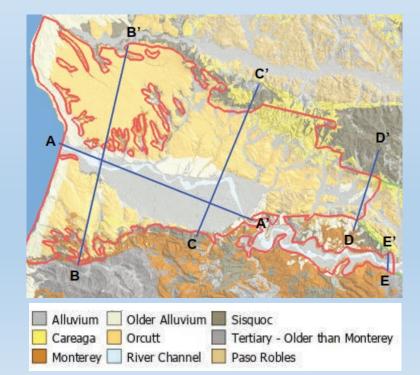


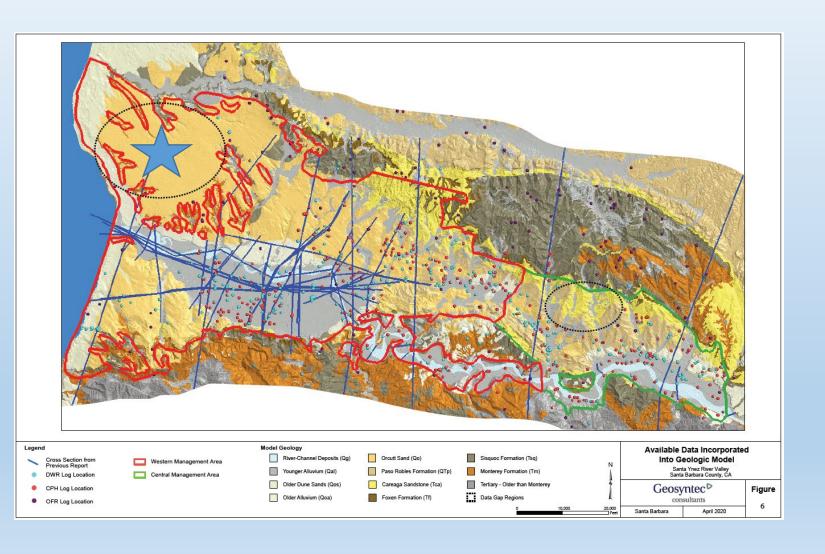
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Cross-section views of the WMA geologic model

Visuals of folds in the WMA





- Aerial (overhead) view of the geologic model and incorporated data.
- Well boring information from publicly available resources.
- Cross-sections from previously published reports.

Data Management System Technical Memorandum

- DRAFT Tech Memo in review by Staff.
- Describes the volume of data uploaded into the DMS (data index).
- Complement to the Data Management Plan.

Туре	Data Uploaded
Pumping Data	Buellton (2007-17), Lompoc (2003-13), Vandenberg Village Community Services District (2005-19), Public Water System Statistics Surveys (2006-18) Santa Ynez River Water Conservation District (2011 - 18)
Water Level Measurements	United States Geological Survey/County of Santa Barbara (1940-2019), United States Bureau of Reclamation (1972-2019), Buellton (2003-2017), Lompoc (1964-2013), Vandenberg Village Community Services District (2005-19)
Water Quality	California State Waterboard <u>GeoTracker</u> GAMA
Map Layers	Committee Agency Extents, General Reference: Digital Elevation Model/Topography, parcels, roads, watersheds, PLSS, etc. Linked Layers: Air Imagery/Geologic Maps
Reports / Publications	187 Total, Examples: Santa Ynez River Water Conservation District Annual Reports, United States Geological Survey (USGS) Reports, California Department of Water Resources (DWR) Reports, Plans – Ex: Urban Water Management Plan/ Integrated Regional Water Management/ General Plans

Field Work



Survey and field-verification of various items:

- Ground surface elevation
- Groundwater well locations
- Groundwater elevation measuring points

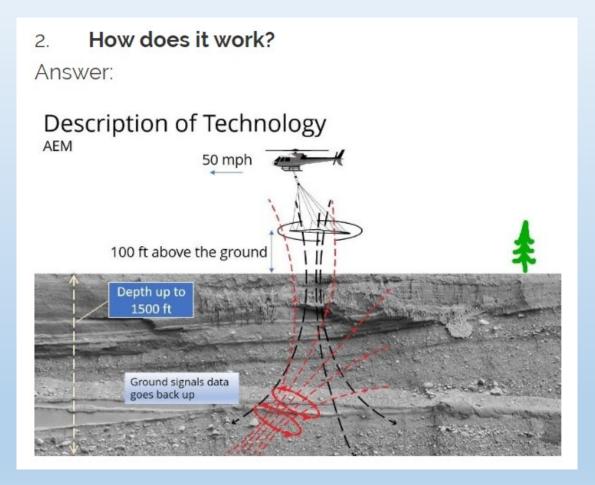


SkyTEM



- Grant from DWR for SkyTEM work.
- Basin-wide mapping of geology and groundwater aquifers using Aerial Electromagnetic Method (AEM).
- The collected AEM data may be used to update the geologic model and subsequent technical studies.

SkyTEM

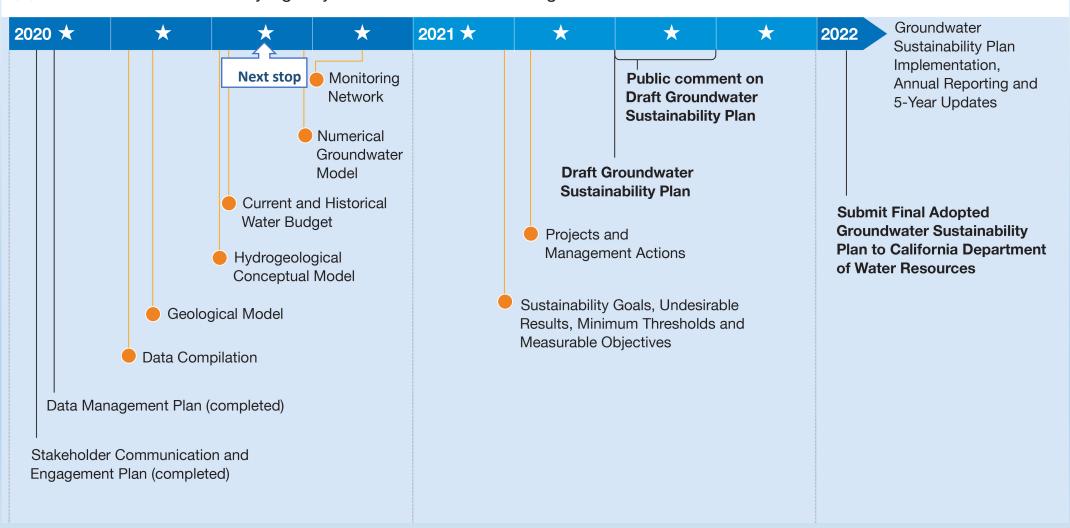


- Instruments are attached to a low flying helicopter flying at ~100 feet above the ground surface, towing a large hoop that will transmit a weak electromagnetic field.
- The electromagnetic field interacts with the ground, and the ground response is measured using a set of receiver coils attached to the hoop.
- Additional SkyTEM info available on the website: https://www.santaynezwater.org/ae
 m-survey-ema

The Way Ahead

Groundwater Sustainability Plan Development Milestones

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Questions?









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