

San Pasqual Valley Groundwater Basin Sustainable Groundwater Management Act Technical Peer Review Meeting #1

GSP Development, Physical Settings



November 7, 2019

Draft Work Product



- Draft Mission Statement and Principles of Participation
- Technical Input
 - GSP Outline
 - Meeting Schedule/Topics
 - Draft Section Outlines: Plan Area, Hydrogeologic Conceptual Model, Groundwater Conditions
 - Proposed Monitoring Well Sites
 - Call for Data
- Public Comment



- TPR Composition
 - 2 independent reviewers hired by the Consultant team
 - 1 representative for each Advisory Committee member can be added
 - TPR members require screening
- Meets quarterly
 - Same day as AC meetings after 1st TPR meeting
- AC Member participation
 - On indicated agenda items, each AC member may provide a 3-minute question or comment
- Open to the public
 - Public opportunity to comment at the end of the meeting

- **Draft Mission Statement:**

The San Pasqual Valley GSP TPR will provide expert review and suggestions to aid in the preparation of a scientifically sound GSP for the San Pasqual Valley Groundwater Basin (Basin). The TPR will provide comments that substantively improve the understanding and analysis of the Basin and its management.

- Roles & Responsibilities of TPR Members:
 - Review and provide constructive comments to the Core Team and consultant team where technical concerns may arise during the development of the GSP
 - Commit to attend and participate in TPR public meetings during the development of the GSP
 - Review all agenda and background materials distributed prior to each TPR meeting by the TPR point of contact
 - Provide information in a timely manner in response to data requests
 - Work cooperatively with the Core Team, consultants, and other TPR members
 - Provide non-biased technical contribution to the GSP, not advocate for a particular interest or outcome
 - Explore/verify the conclusions and recommendations from other TPR members, in addition to reviewing the consultant team's work



AC Comments



Technical Input

- GSP Outline
- Meeting Schedule/Topics
- Draft Section Outlines: Plan Area, Hydrogeologic Conceptual Model, Groundwater Conditions
- Proposed Monitoring Well Sites
- Call for Data

Executive Summary

Section 1: Introduction and public engagement

Section 2: Plan Area

Section 3: Hydrogeologic Conceptual Model

Section 4: Groundwater Conditions

Section 5: Water budget and groundwater flow model

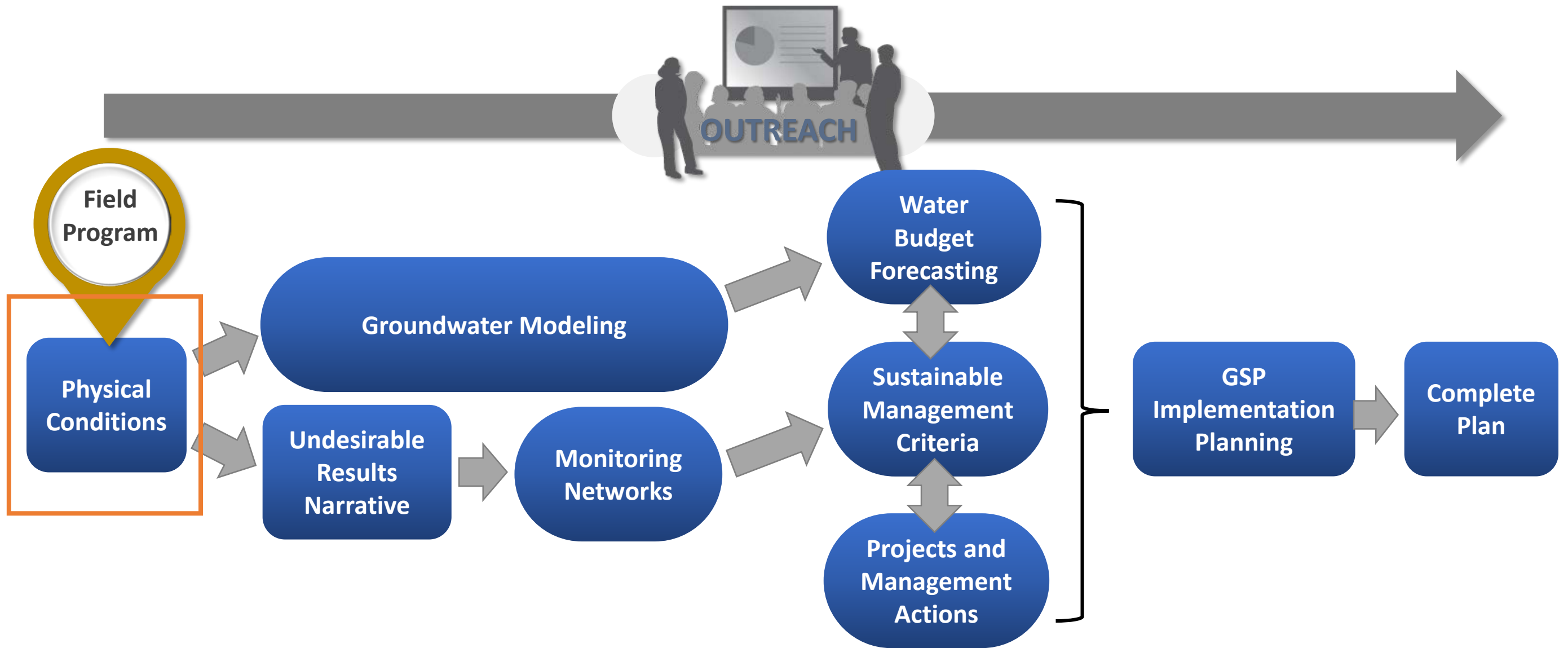
Section 6: Undesirable Results

Section 7: Monitoring program and data management system

Section 8: Sustainable management criteria

Section 9: Projects and management actions

Section 10: Plan implementation





TPR Meeting Schedule

- Meeting 2: January 9, 2020
- Meeting 3: April 9, 2020
- Meeting 4: July 9, 2020
- Meeting 5: October 8, 2020
- Meeting 6: January 14, 2021
- Meeting 7: April 8, 2021
- See Handout for Topics

Approach/Outlines

Analysis Results

Refined Analysis



GSP Development Process:

Components of a Successful GSP

- Satisfies requirements in legislation and approved by GSA and DWR
- Identifies basin sustainability with stakeholder support
- Continues local control of groundwater management
- Minimizes regulatory burden on groundwater users
- Provides a clear path towards sustainability by 2042 that is economically and socially practical and responsible for stakeholders

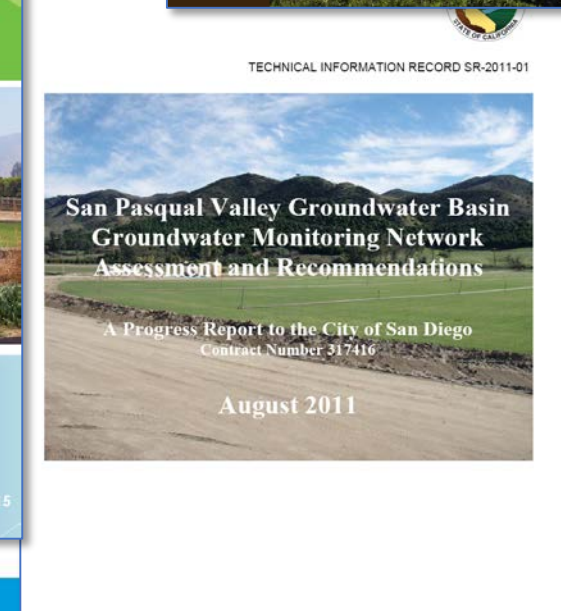
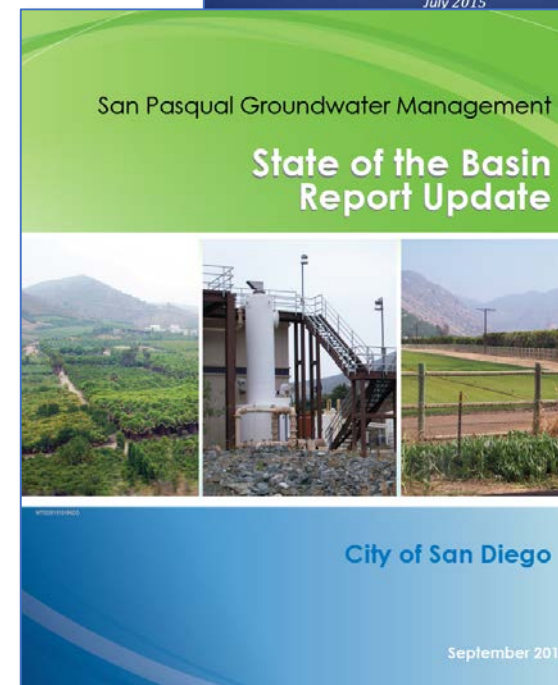
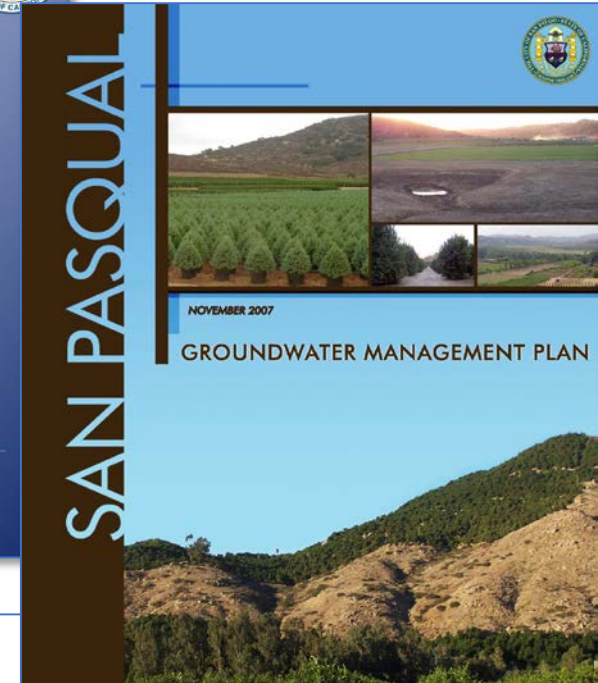
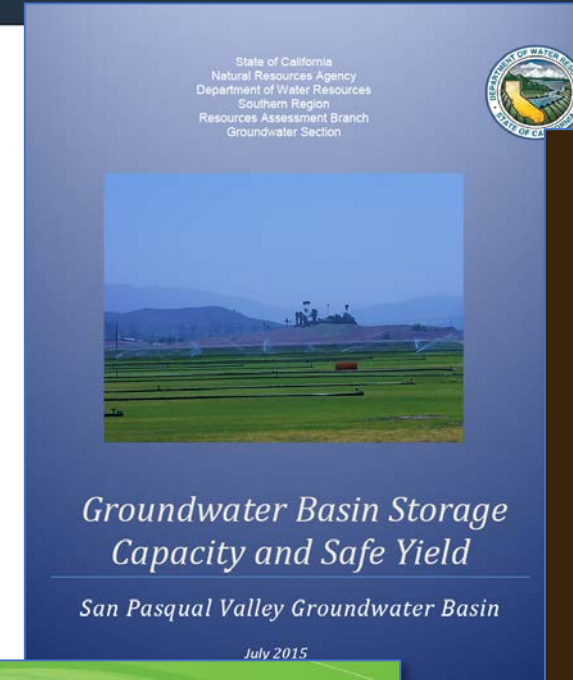


Sustainable Groundwater Management Act

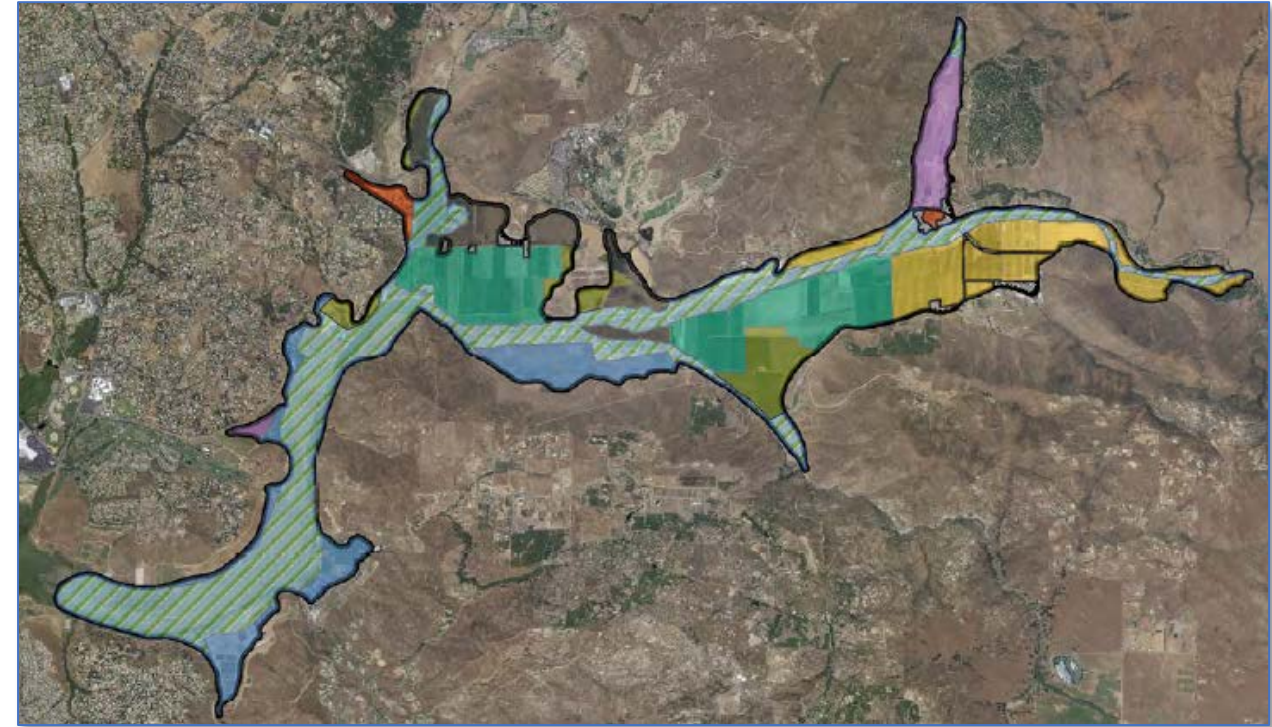
“Local agencies will now have the power to assess the conditions of their local groundwater basins and take the necessary steps to bring those basins in a state of chronic long-term overdraft into balance.”

-Governor Edmund G. Brown Jr.
From the letter accompanying the signing
of AB 1739, SB 1168 and SB 1319

- Use existing studies and reports
- Use existing monitoring data
- Numerical model needed for water budget and some components of Groundwater Conditions

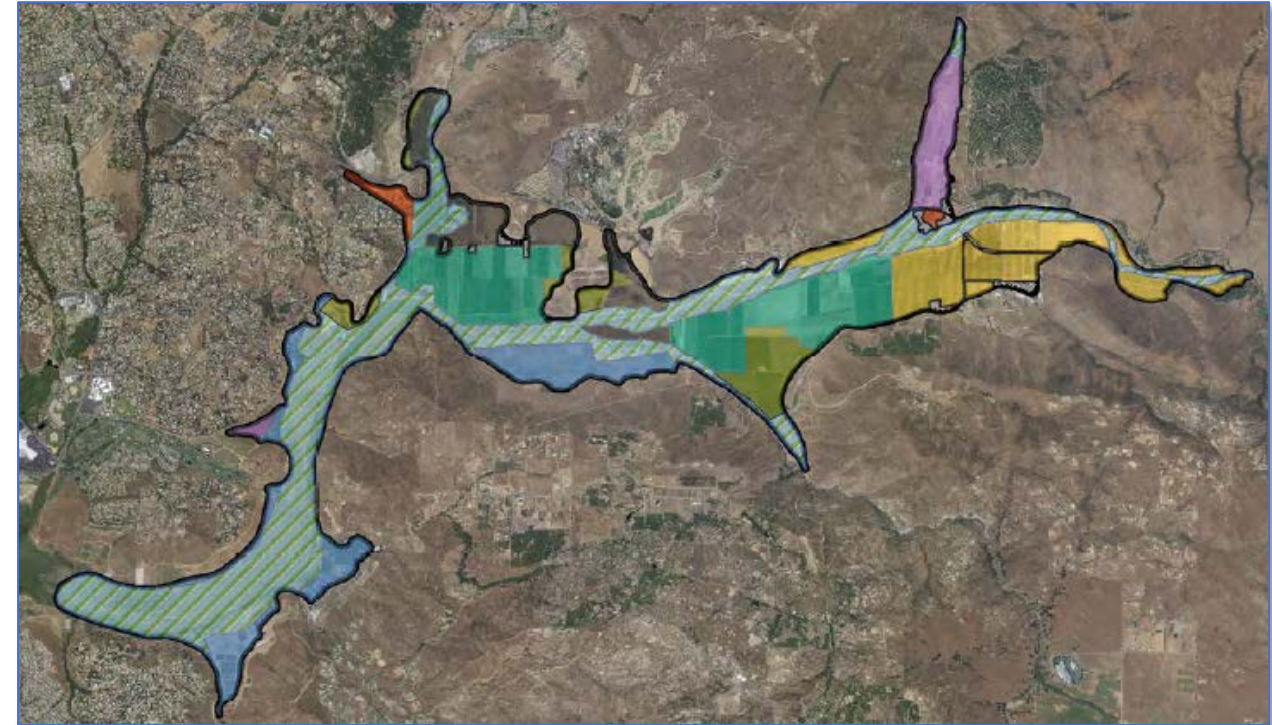


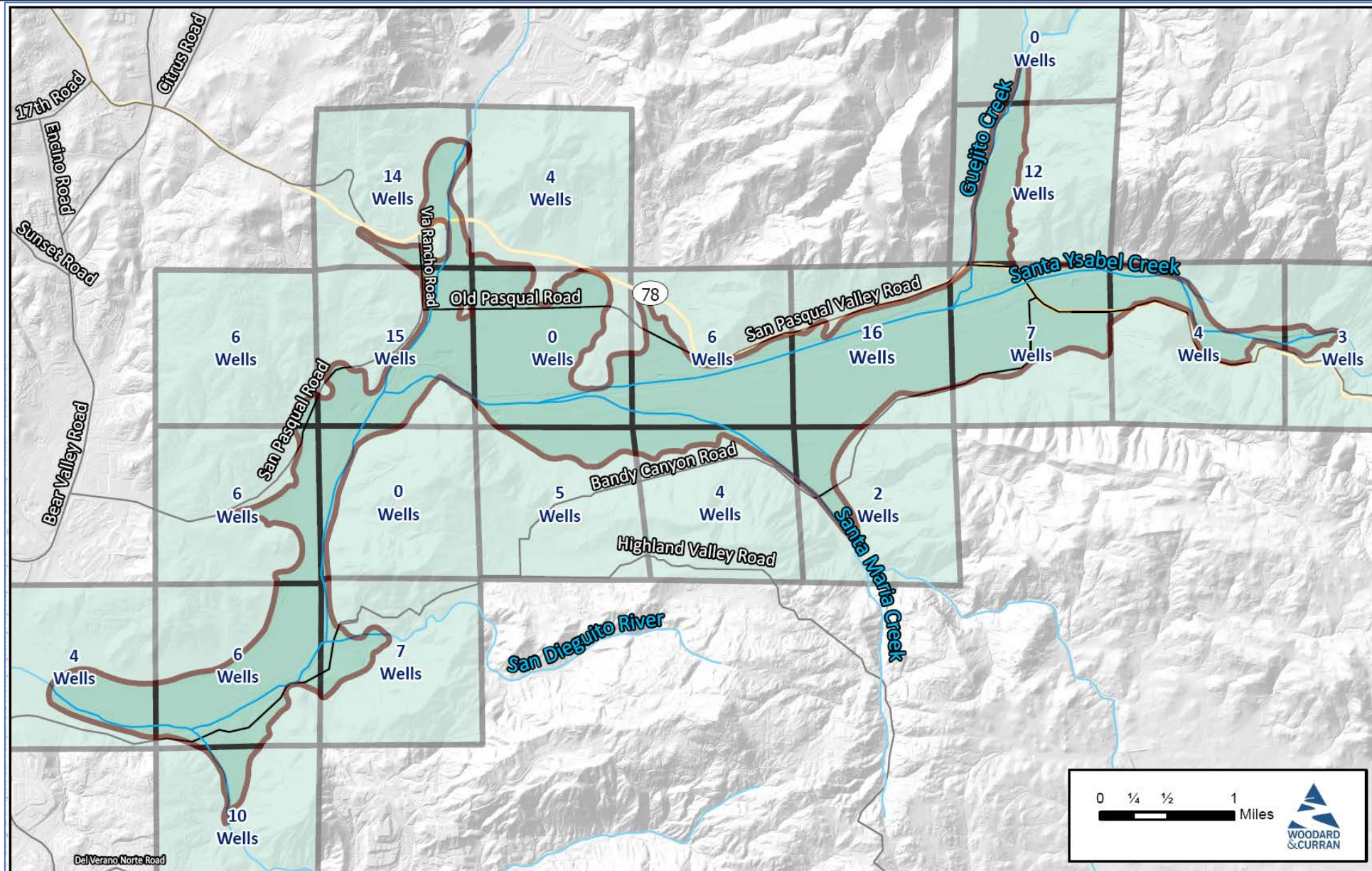
- How area is defined
- Setting
 - Maps of jurisdictional boundaries
 - Maps of well density
 - Maps of land use and soils
- Relationship of GSP to
 - Existing management programs
 - Existing monitoring programs
 - General Plans



Example sources of information:

- California Spatial Information Library (CaSIL)
- SANDAG land use
- DWR data and tools
- Salt and Nutrient Management Plan (2014)
- Groundwater Management Plan (2011)
- San Pasqual Vision Plan (2004)
- City of San Diego's monitoring program
- DWR/USGS monitoring
- County Monitoring





Project #: 0011197

Legend

San Pasqual Valley Basin

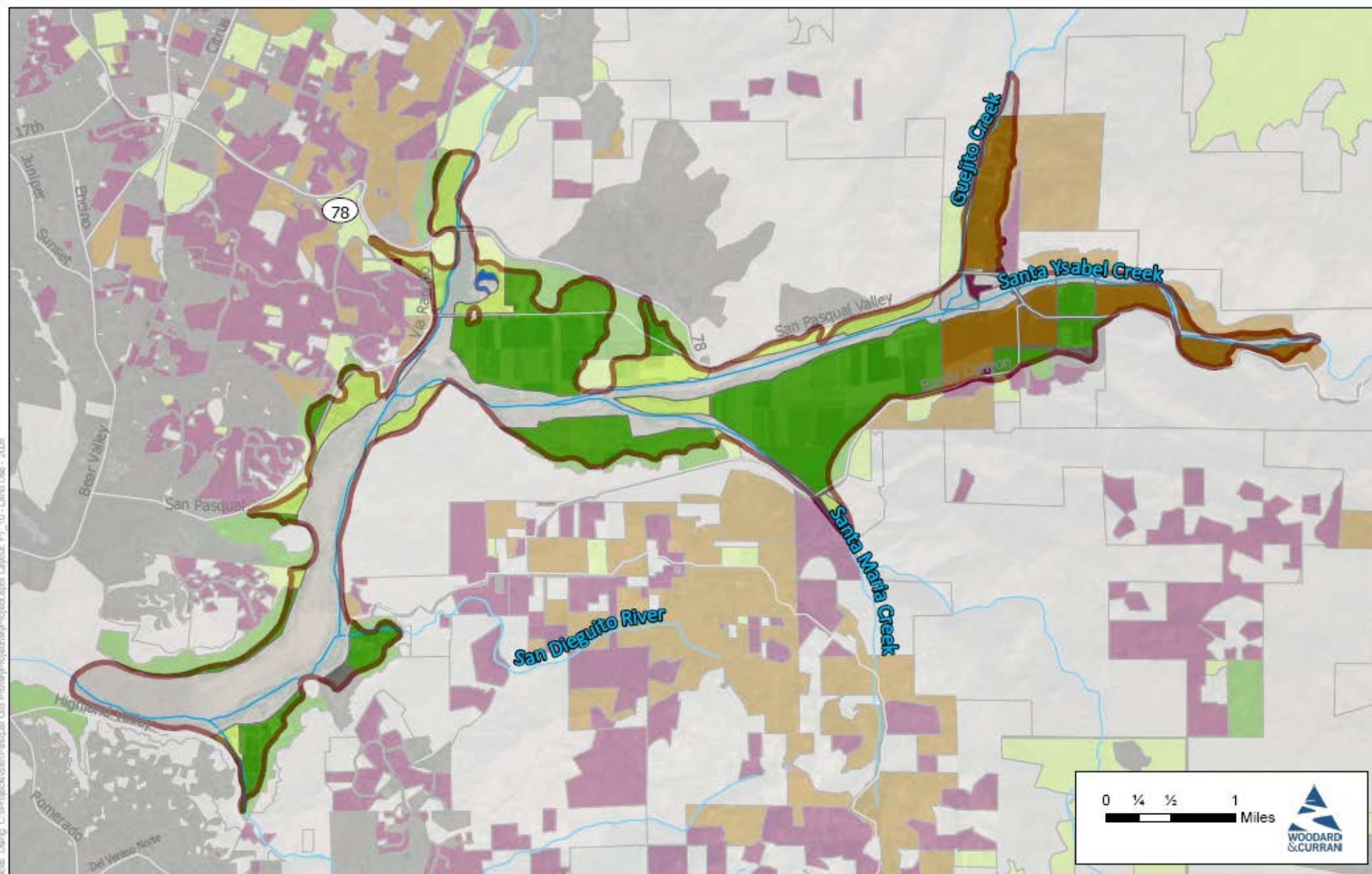
Production Wells by Section

Figure 1-X

San Pasqual Valley GSA

San Pasqual Valley Production Wells by Section

Draft Work Product



Project #: 0011197

Legend

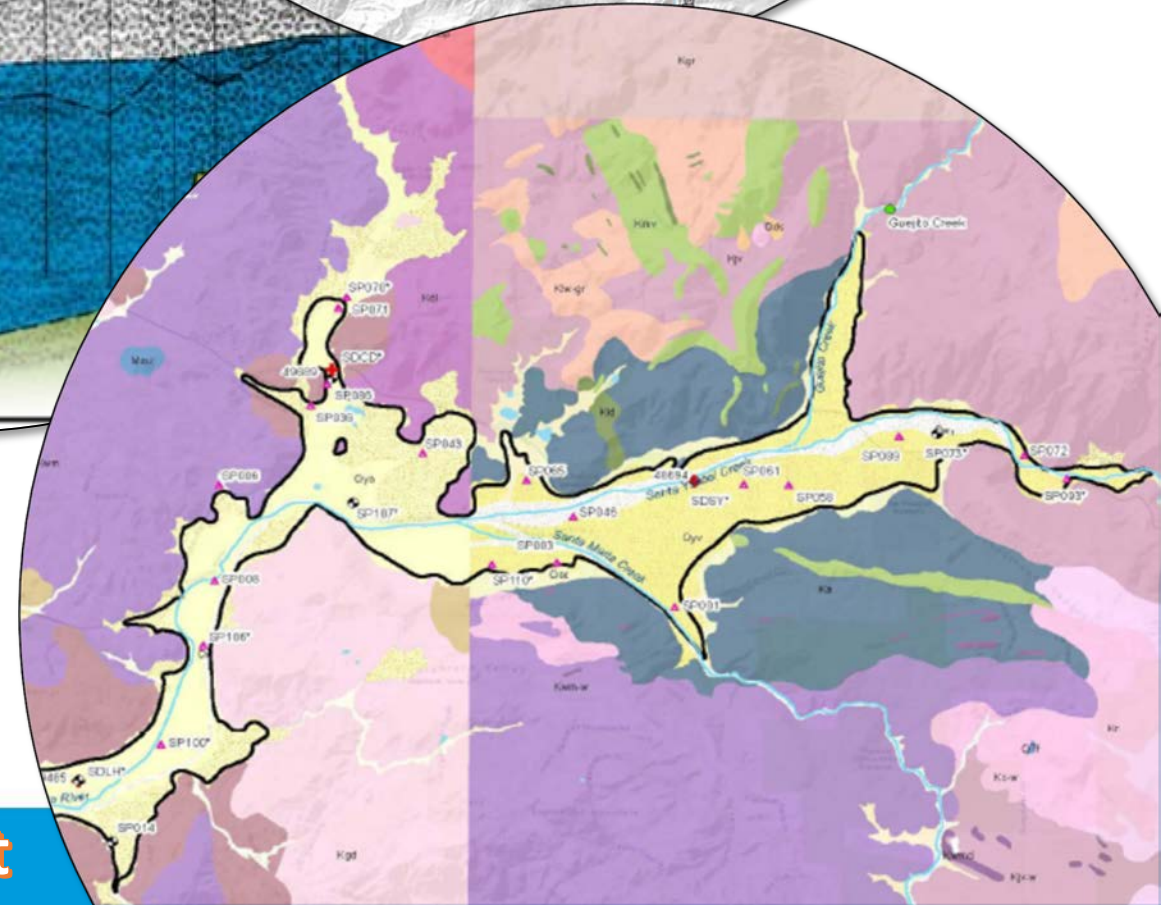
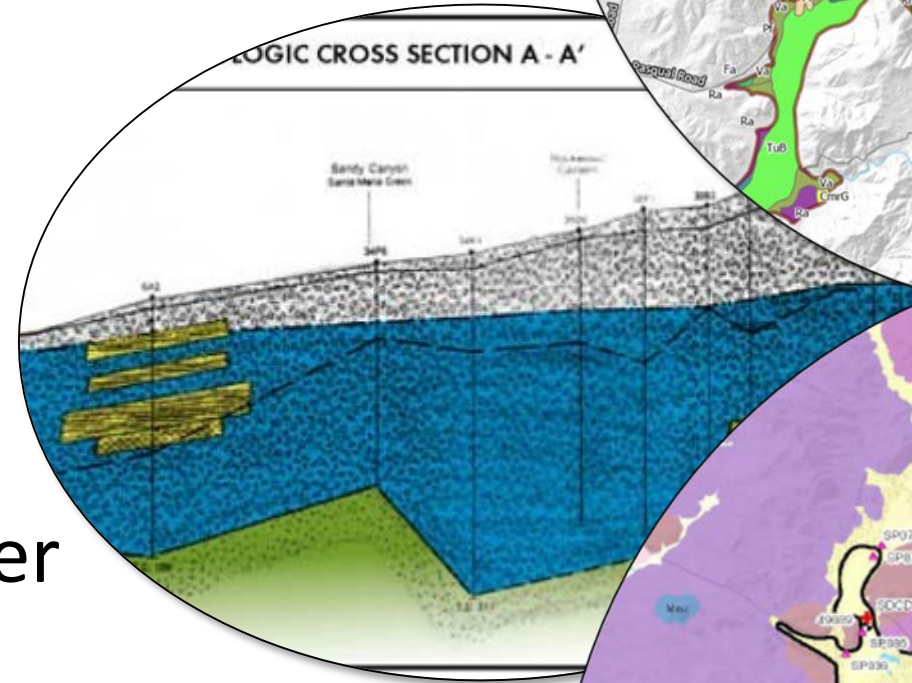
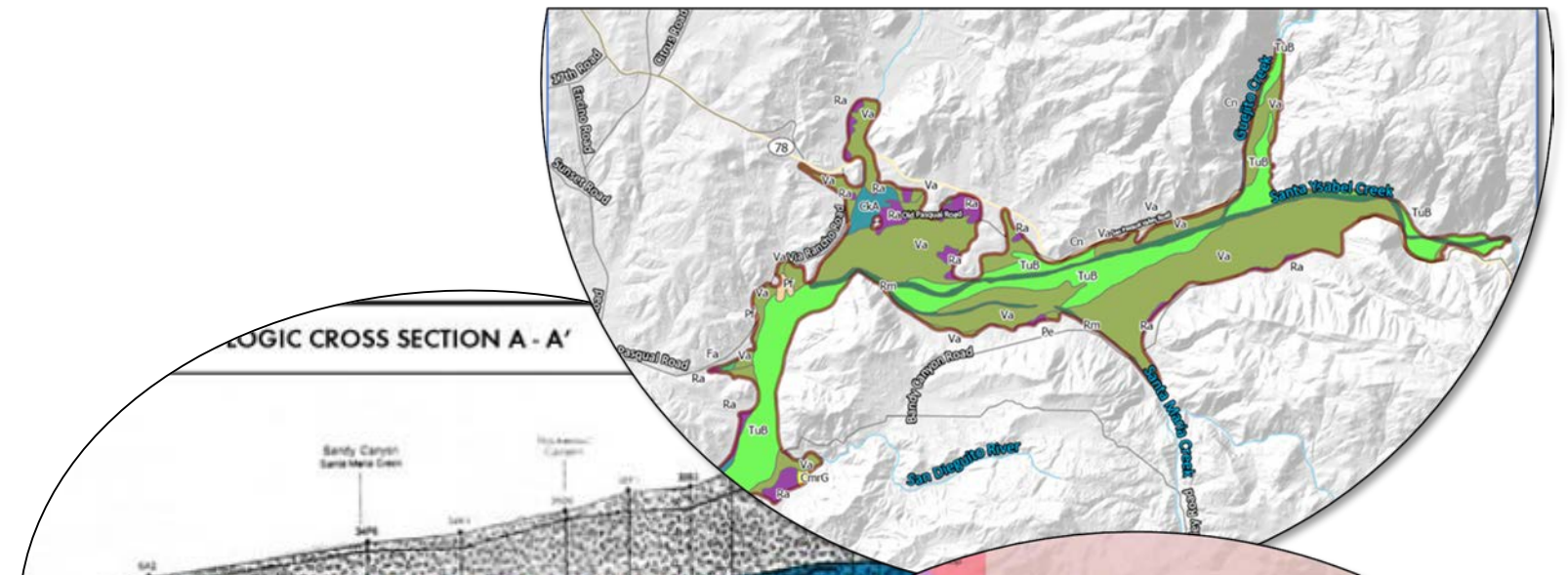
- San Pasqual Valley Basin
- Field Crops
- Idle
- Intensive Agriculture
- Water
- Orchard or Vineyard
- Rural
- Urban



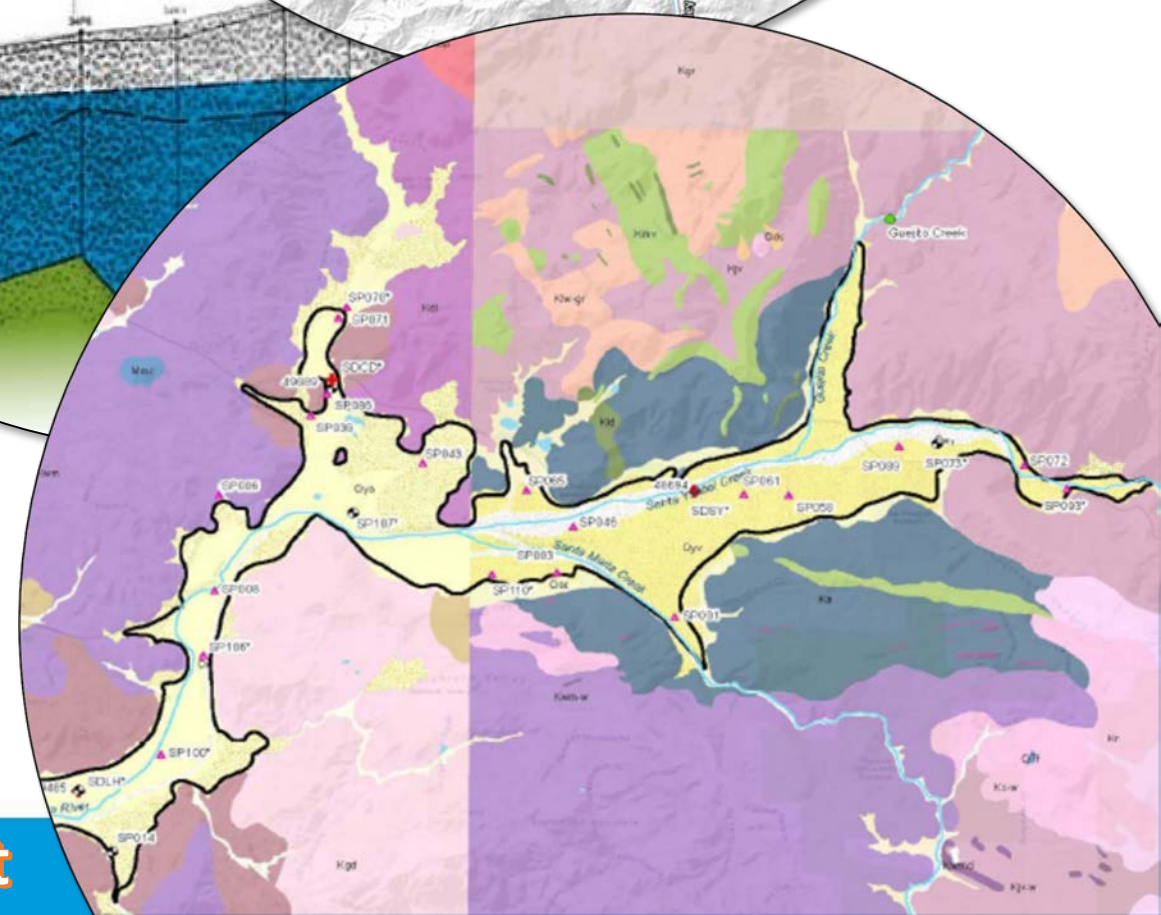
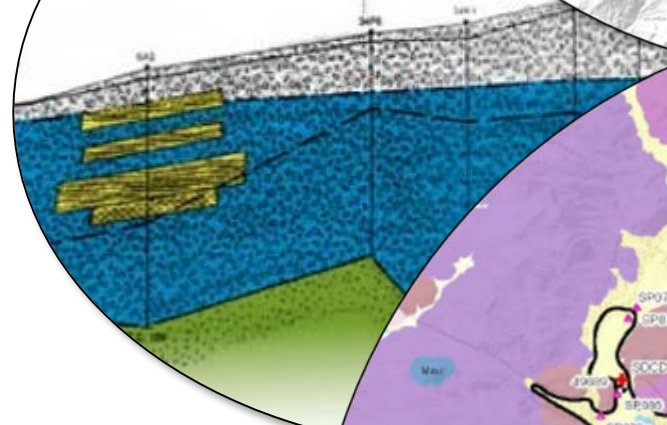
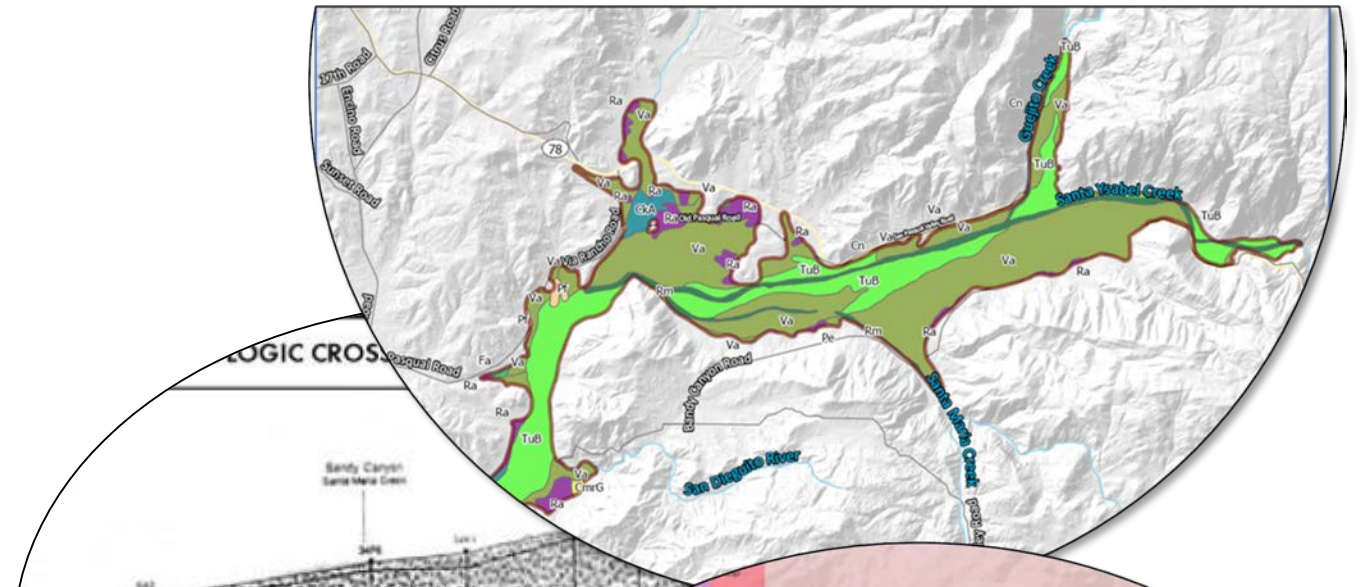
Figure 1-10
San Pasqual Valley GSA
San Pasqual Valley
2008 Land Use

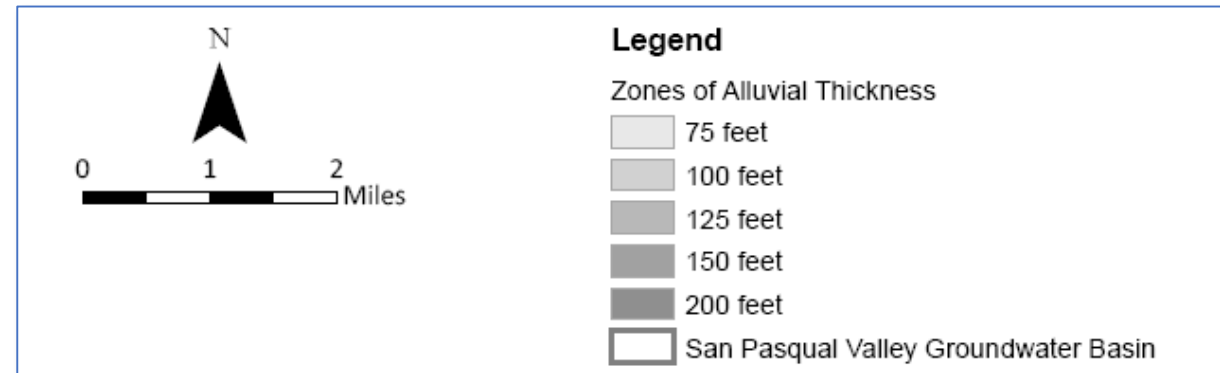
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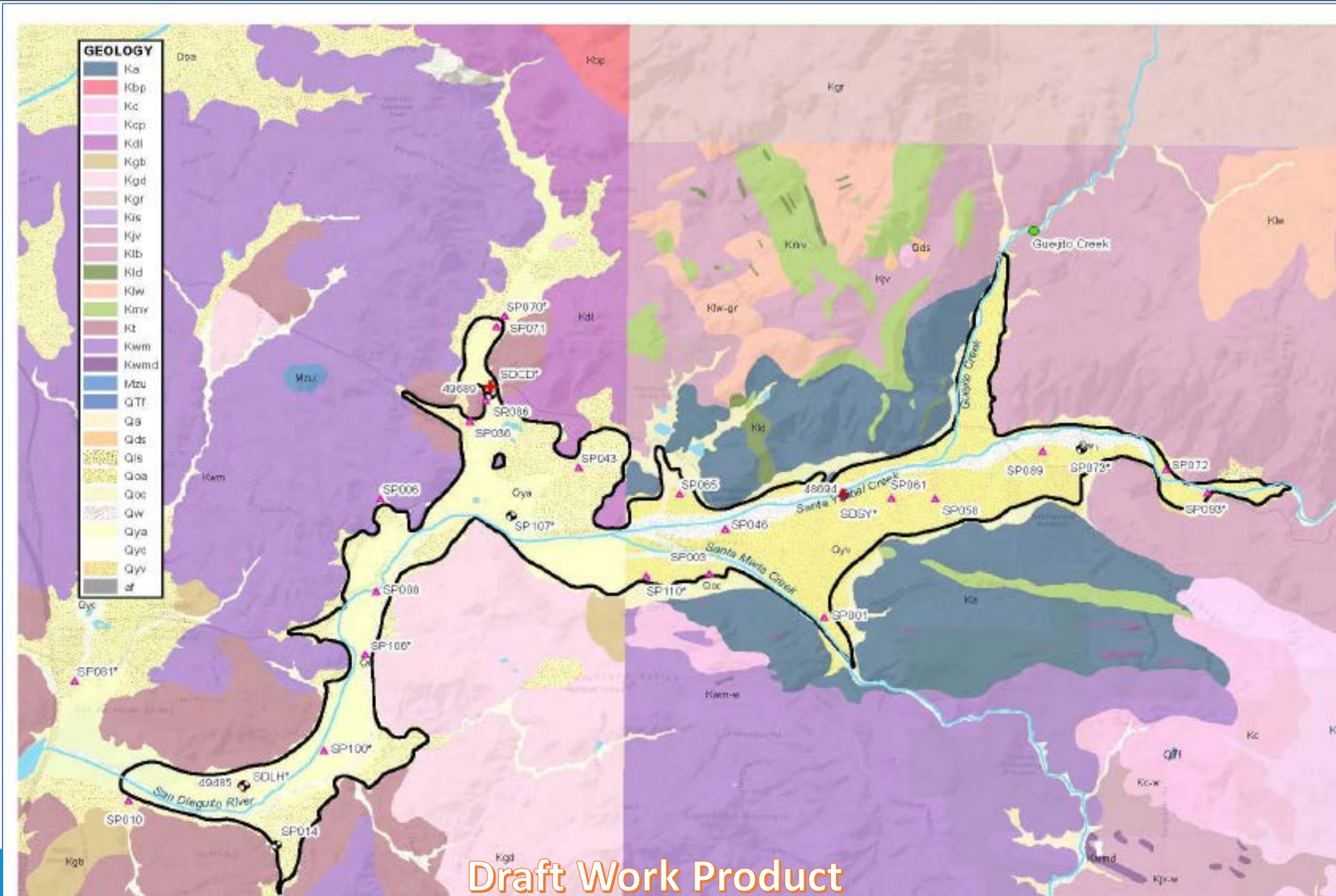
- Regional geology
- Structural setting
- Geologic formations
- Cross sections
- Basin boundaries
- Principal aquifers
- Topography and surface water
- Groundwater recharge



- Groundwater Assessment (2019)
- Salt and Nutrient Management Plan (2014)
- Groundwater Management Plan (2011)
- Groundwater Basin Storage Capacity and Safe Yield (2015)
- USGS Monitoring Well (2013)
- Well Completion Reports

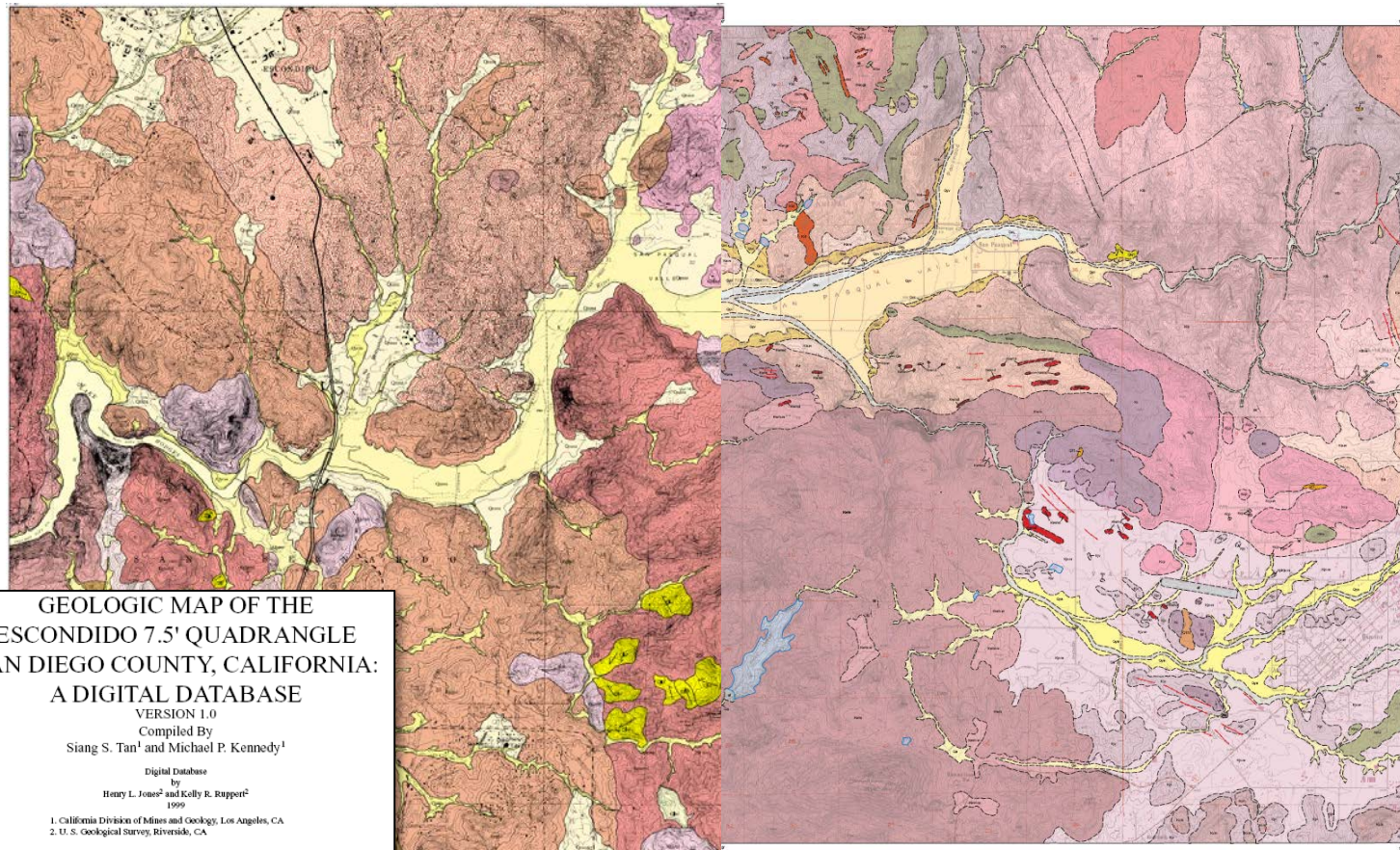






Draft Work Product

- Alluvium
- Residuum
- Basement



GEOLOGIC MAP OF THE SAN PASQUAL 7.5' QUADRANGLE SAN DIEGO COUNTY, CALIFORNIA: A DIGITAL DATABASE

VERSION 1.0

By
Janis L. Hernandez¹, Victoria R. Todd², Lawrence L. Busch¹, and Siang S. Tan¹

Digital Database
by
Carlos I. Oubere² and Karen Toman-Sager¹

© 2002
1. California Geological Survey
2 U. S. Geological Survey (retired), 1143 Clifton Drive, Williamsport, PA 17701

DESCRIPTION OF MAP UNITS

- Artificial fill (late Holocene)** - Includes earth dam structures of Lake Hemet, and engineered fill, asphalt and concrete paving of Ramona Airport apron.
- Wash deposits (late Holocene)** - Unconsolidated sand and gravel deposited in active washes. Consists of light brown-gray (Q1) to gray-brown (Q1R) (Q2), fine to medium-grained sand, silt, and coarse sand to fine gravel. Sand is angular to sub-angular micaceous, and is primarily derived from local bedrock. Subject to seasonal flooding and fine sediment deposition during winter storms.
- Wash deposits (late Holocene)** - Unconsolidated sand and gravel deposited in intermediately active washes. Composed of light brown-gray (Q1) to medium-grained sand, silt, and coarse sand to fine gravel. Sand is angular to sub-angular micaceous, and is primarily derived from local bedrock. Subject to periodic flooding of lowland Q1 wash deposits.
- Asial channel deposits (late Holocene)** - Unconsolidated sand, gravel, silt, and clay deposited in active and recently active canyon and valley channels. Consists of gray-brown (Q1R) (Q2) sand, gravel, silt and clay.
- Landslide deposits (Holocene to Pleistocene)** - Slope failure deposits consisting of poorly to moderately consolidated, poorly sorted rock fragments and soil matrix. May be susceptible to renewed slope movements. Quaternary mark indicates landslide is questionable.
- Deltaic slide deposits (Holocene to Pleistocene)** - Slope failure deposits consisting of soil material and poorly sorted rock fragments. May be susceptible to renewed slope movements.
- Young local channel deposits (Holocene to Pleistocene)** - Unconsolidated to slightly consolidated sand and gravel deposited in marginal parts of active washes. Consists of light brown-gray (Q1) to gray-brown (Q1R) (Q2). Local deposits often to coarse gravel with minor silt, and minor fine to coarse gravel and bedrock. Gravel and bedrock are not visible to the surface, and are slightly elevated above the active channel wash deposits.
- Young alluvial valley deposits (Holocene to late Pleistocene)** - Unconsolidated to moderately consolidated gently sloping fluvial deposits with broad valleys. Consists of gray-brown (Q1) to dark gray-brown (Q1R) (Q2) fine to medium-grained sand, silt, and fine gravel.
- Old alluvial deposits (late to middle Pleistocene)** - Unconsolidated to well-consolidated deposits of sediment, non fragmental sand and gravel deposited by rivers and close wash. Consists of brown to gray (Q1R) (Q2) to (Q1R) (Q2) fine to coarse-grained sand, silt, and minor fine gravel. Mapped where thick enough to obscure underlying bedrock. Forms terraces along the base of slopes.
- Fracture zone (Quaternary or Tertiary?)** - Moderately to well-indurated, massive bedded, poorly sorted to moderately sorted, brown to reddish-brown, coarse to medium-grained, sandstone. Matrix-supported angular (Q) to (Q) 3 to 5 cm (Q) of locally bedded pebbly rock dip-slope. Near its base, the deposit contains abundant casts of angular pebbles related as much as 20 cm in maximum diameter, rare broken (P) type metacasts and quartzite cobble casts up to 25 cm, and rounded, "toppy" granitic boulders. Boulders average 30 cm in diameter and are rounded one meter in maximum diameter. Facies shows fossiliferous sand and other unbedded sands and shales. Occurs as delta flow and fan deposits of base of slopes and in small channels. Fluvial exposed, usually only observed in roadcuts and gullies. Occasional small channels. Gravelly to clayey argillaceous base of moderate to coarse-grained, unbedded siltstone. May include sandstone related to the Salton River system, a gully lag.

CORRELATION OF MAP UNITS

1. Quaternary
2. Tertiary
3. Cretaceous

MAP SYMBOLS

- Contact between map units
- Unconformity
- Slope and dip of bedrock
- Slope and dip of alluvium
- Slope and dip of bedrock
- Slope and dip of alluvium
- Landslide shows (bedrock mapped from geologic maps) subsequently affected by fill where questionable

CLASSIFICATION OF PLUTONIC ROCK TYPES FROM STOCKWELL, 1973, 1975.
A, alkali feldspar; P, perthite; W, quartz; Q, quartz.

GEOLOGIC MAP OF THE ESCONDIDO 7.5' QUADRANGLE SAN DIEGO COUNTY, CALIFORNIA: A DIGITAL DATABASE

VERSION 1.0

Compiled by
Siang S. Tan¹ and Michael P. Kennedy¹

Digital Database
by
Henry L. Jones² and Kelly R. Rappert²

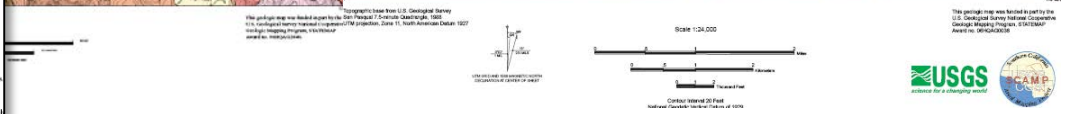
© 1999
1. California Division of Mines and Geology, Los Angeles, CA
2. U. S. Geological Survey, Riverside, CA

CORRELATION OF MAP UNITS

1. Quaternary
2. Tertiary
3. Cretaceous

MAP SYMBOLS

- Contact between map units
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- Slope and dip of bedrock
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- Slope and dip of alluvium
- Landslide shows (bedrock mapped from geologic maps) subsequently affected by fill where questionable



- Groundwater trends
 - Contour maps
 - Hydrographs
- Change in storage
- Groundwater quality
- Land subsidence
- Interconnected surface water
- Groundwater dependent ecosystems



- Groundwater Assessment (2019)
- Salt and Nutrient Management Plan (2014)
- Groundwater Management Plan (2011)
- Groundwater Basin Storage Capacity and Safe Yield (2015)
- Conjunctive Use Study (2010)
- State of the Basin Reports
- Agricultural Water and Salinity Budget (2010)



Groundwater Conditions: TDS

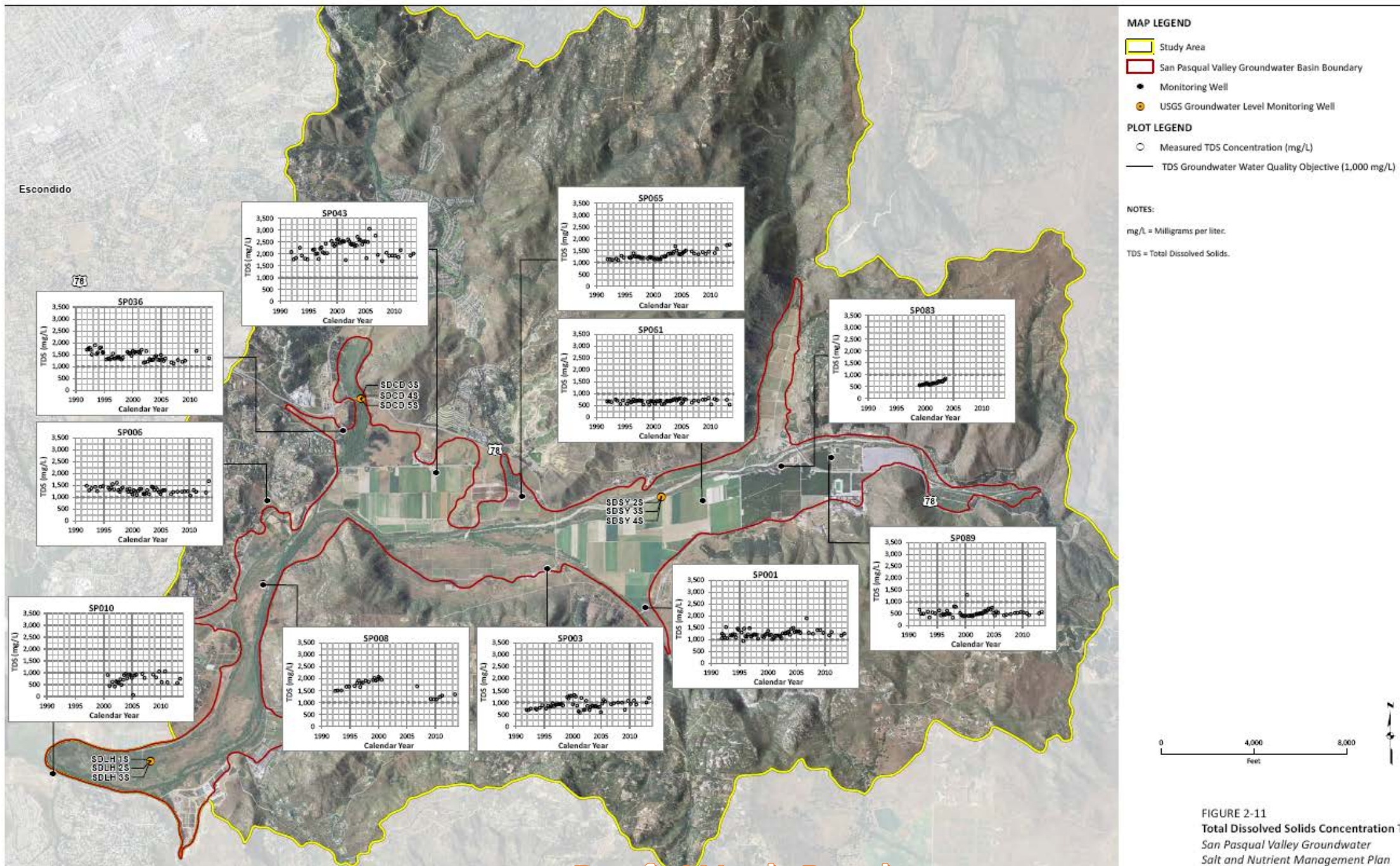
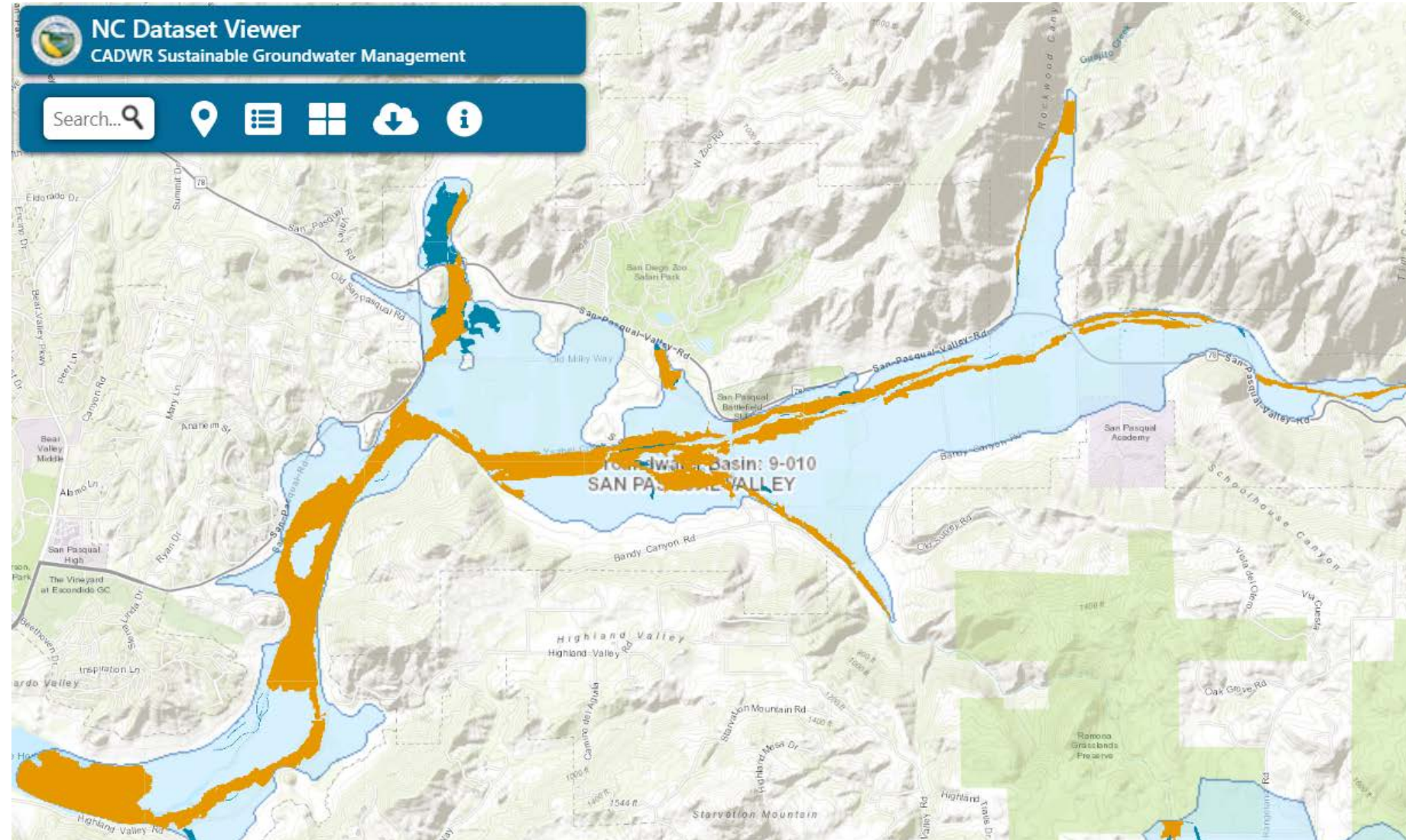


FIGURE 2-11
Total Dissolved Solids Concentration Trends
San Pasqual Valley Groundwater
Salt and Nutrient Management Plan

- Potential Groundwater Dependent Ecosystems (GDE)s
- Natural Communities Commonly Associated with Groundwater (NCCAG)
- Wetlands biologist
- Remote sensing
- Site visits to verify



City of San Diego has secured a grant as part of GSP development that includes the installation of two nested groundwater wells

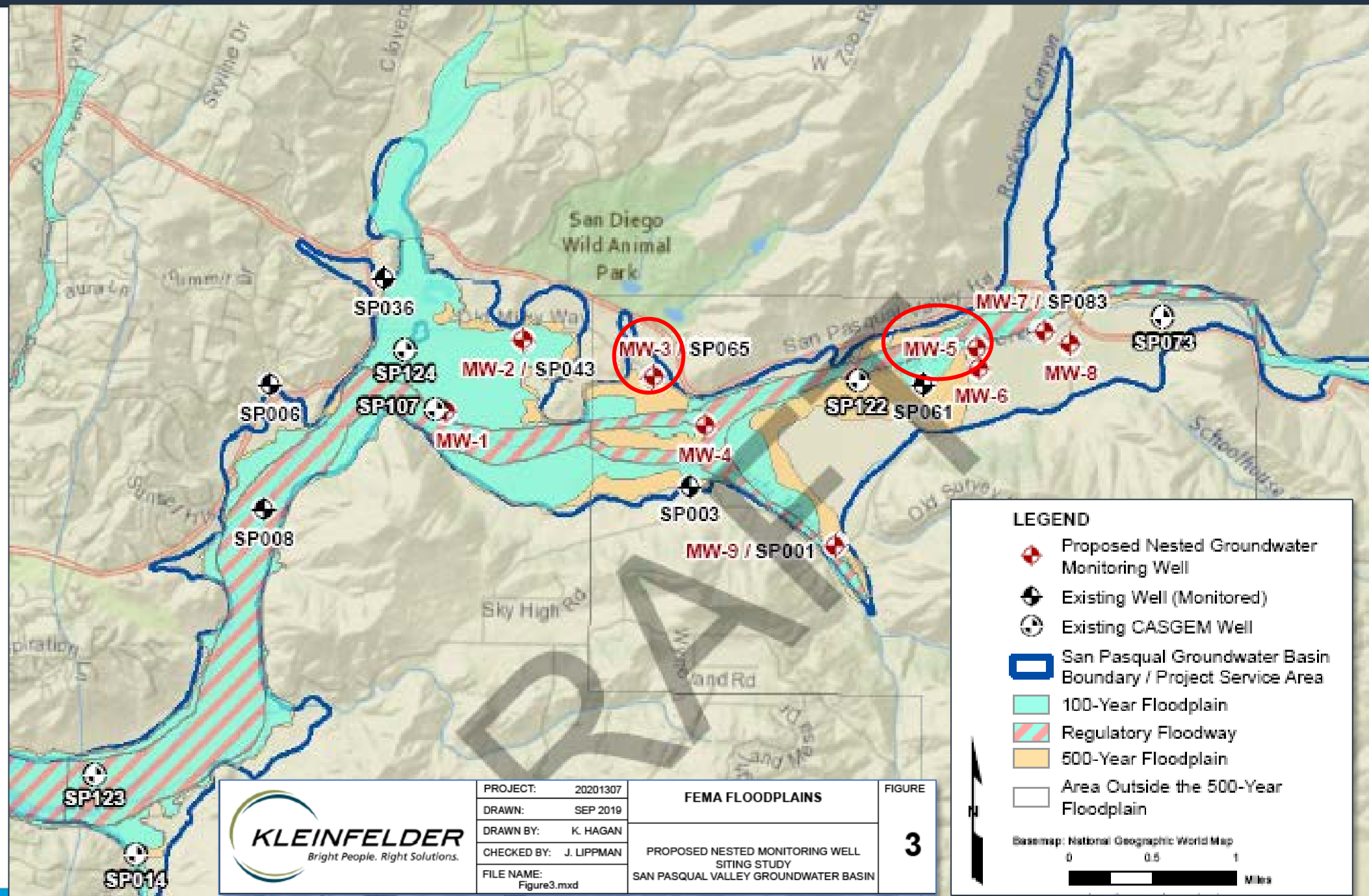
- Developed by City’s On-Call Hydrogeologic Consultant - Kleinfelder
- Nine locations initially considered based on four components:
 - Geologic water bearing units
 - Near active pumping wells
 - On city-owned land
 - Fills spatial data gaps



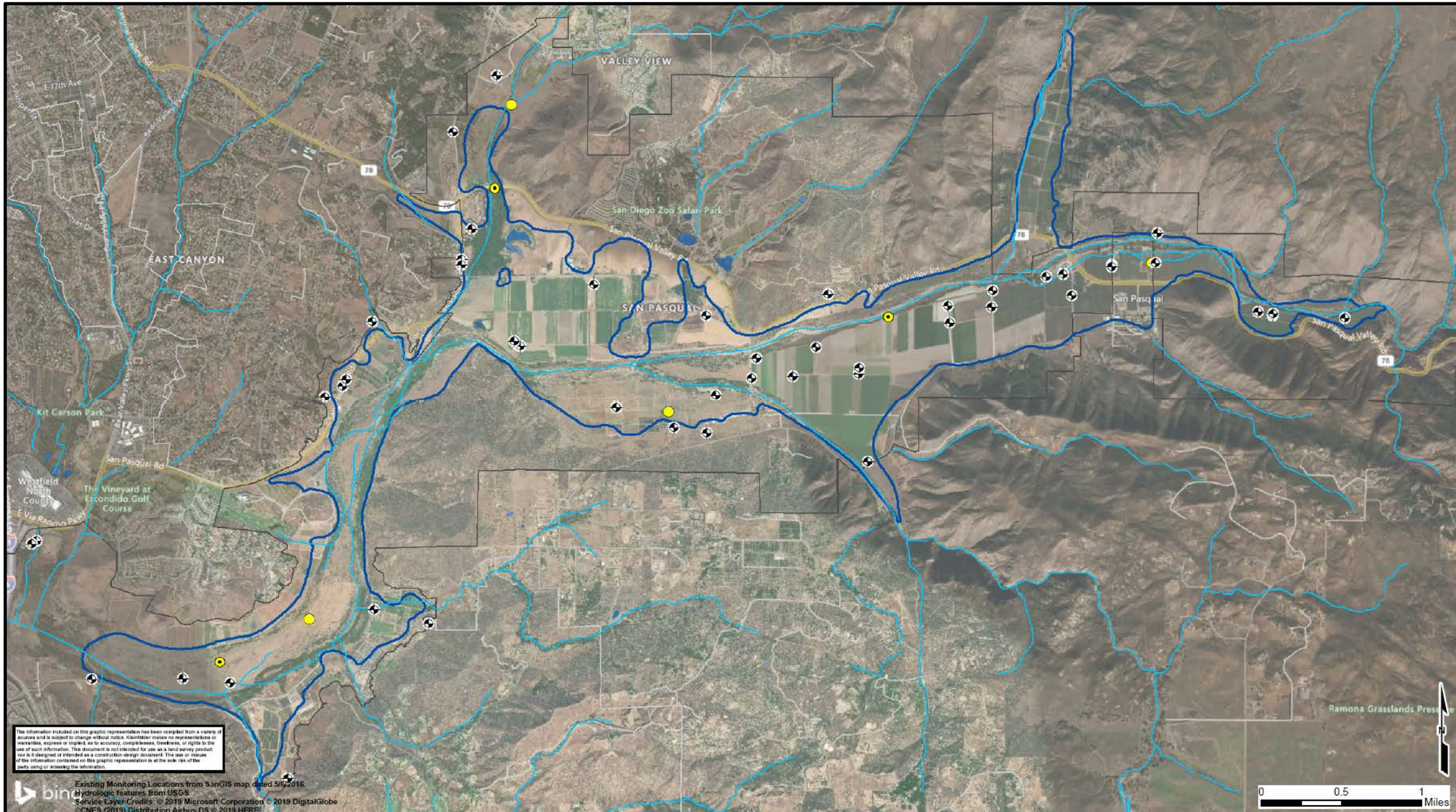
- Locations ranked using:
 - Current site use
 - Location in basin
 - Proximity to existing pumping wells
 - Drilling equipment access
 - Handling of groundwater discharge
 - Flood plain considerations
 - Biological resources
 - Permitting



- Nine initial sites in red
- Selected sites circled



Draft Work Product



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 Hydrologic features from USGS
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LEGEND	
	Active Production Well
	DWR Well
	USGS Monitoring Well
	Stream
	Water Body
	San Pasqual Groundwater Basin Boundary/Project Service Area
	City of San Diego Municipal Limits
	Other Municipalities

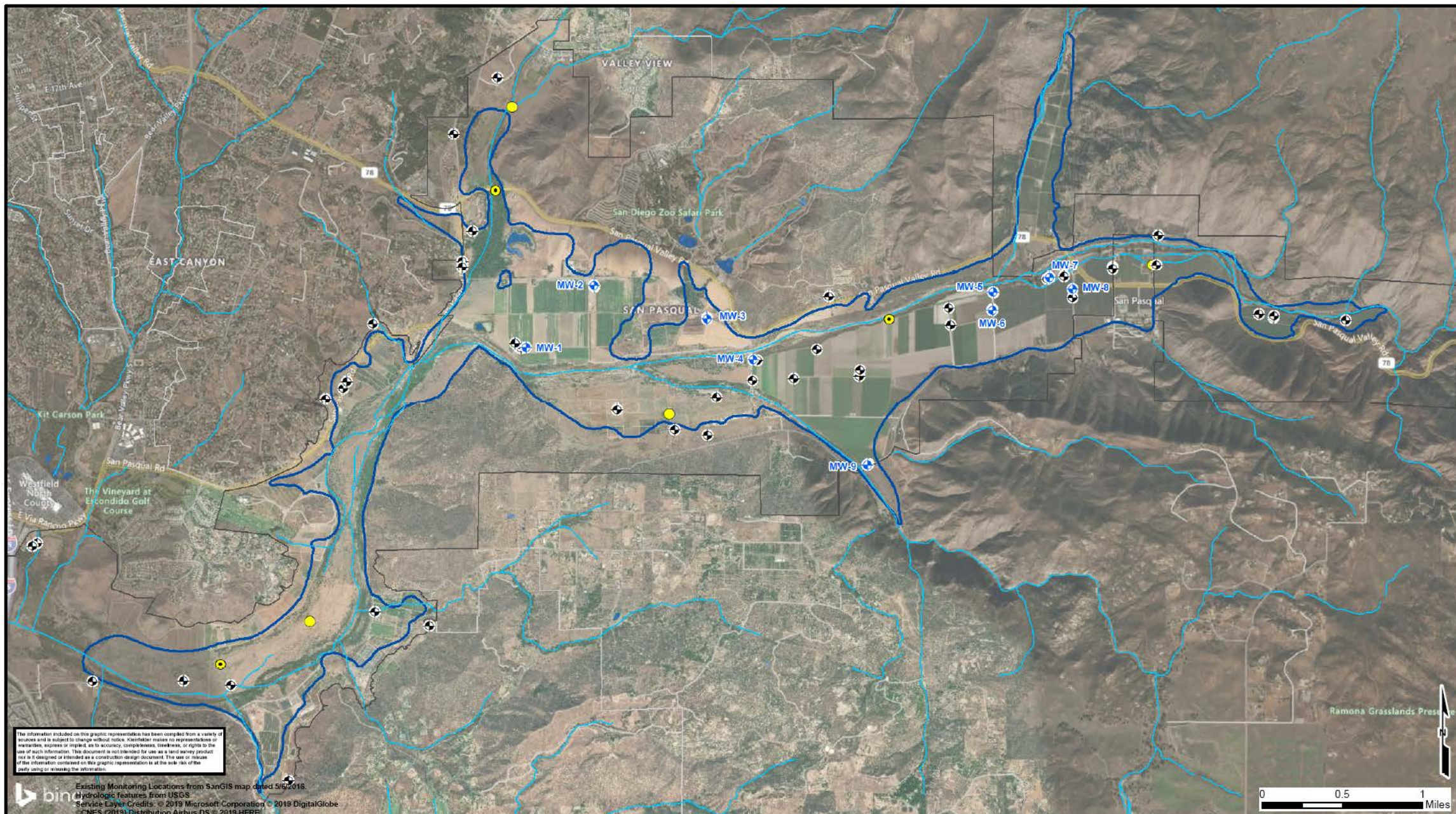
The City of **SAN DIEGO**
Bright People. Right Solutions.

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DRAWN:	NOV 2019
DRAWN BY:	KFH
CHECKED BY:	JUL
FILE NAME:	Siting_F1.mxd

EXISTING CITY WELLS	
WELL SITING STUDY NESTED GROUNDWATER MONITORING WELLS SAN PASQUAL VALLEY GROUNDWATER BASIN	

FIGURE
1



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 Hydrologic features from USGS.
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LEGEND		
	Proposed Nested Groundwater Monitoring Well	
	Active Production Well	
	DWR Well	
	USGS Monitoring Well	
	Stream	
	San Pasqual Groundwater Basin Boundary/Project Service Area	
	City of San Diego Municipal Limits	
	Other Municipalities	

KLEINFELDER The City of **SAN DIEGO**
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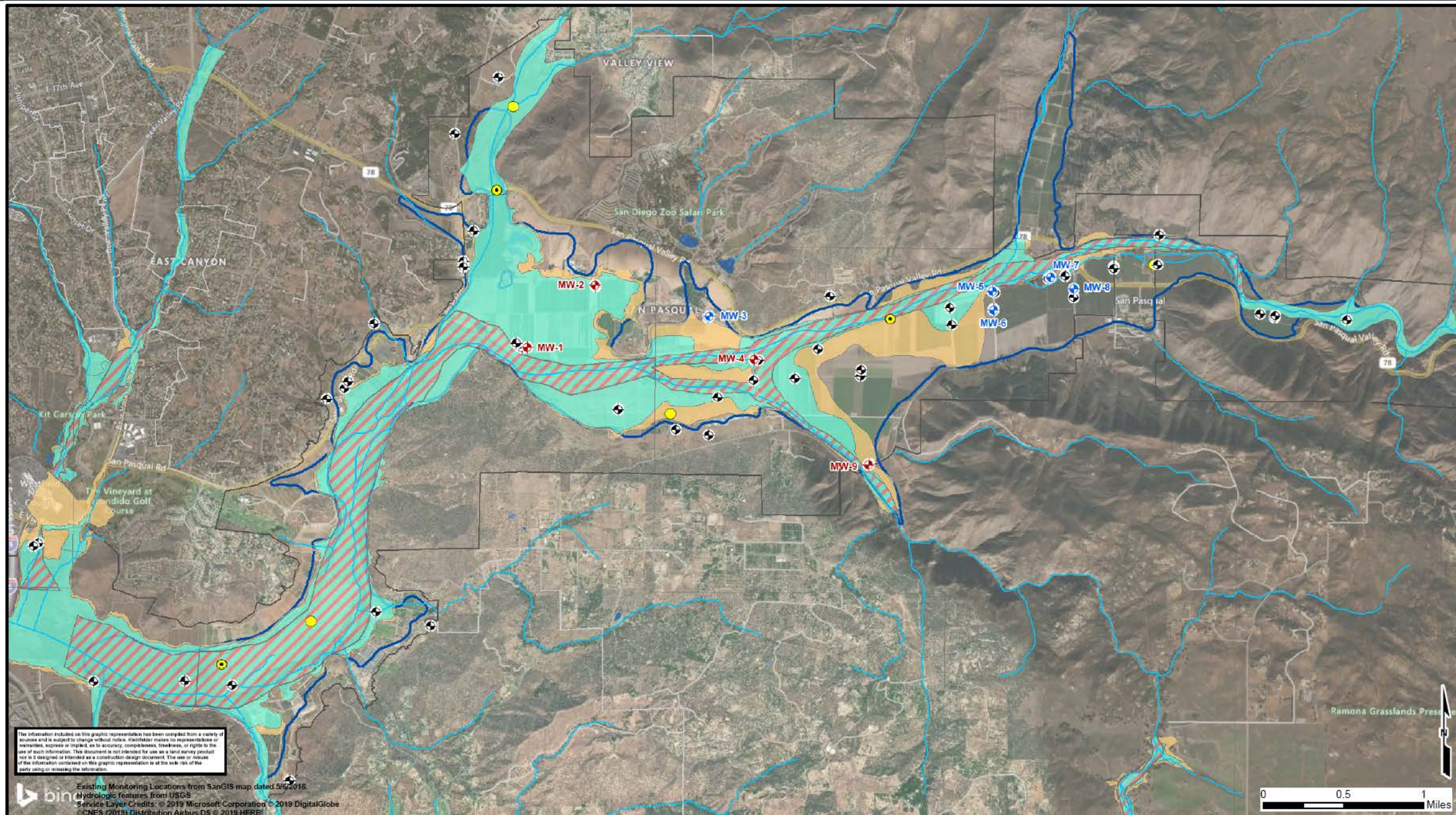
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DRAWN:	NOV 2019
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NESTED WELL ALTERNATIVE LOCATIONS

WELL SITING STUDY
 NESTED GROUNDWATER MONITORING WELLS
 SAN PASQUAL VALLEY GROUNDWATER BASIN

FIGURE
2



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LEGEND

- Proposed Nested Groundwater Monitoring Well - Within Floodplains
- Proposed Nested Groundwater Monitoring Well
- Active Production Well
- DWR Well
- USGS Monitoring Well
- San Pasqual Groundwater Basin Boundary/Project Service Area
- 100-Year Floodplain
- Regulatory Floodway
- 500-Year Floodplain
- Area Outside the 500-Year Floodplain
- Water Body
- City of San Diego Municipal Limits
- Other Municipal Limits

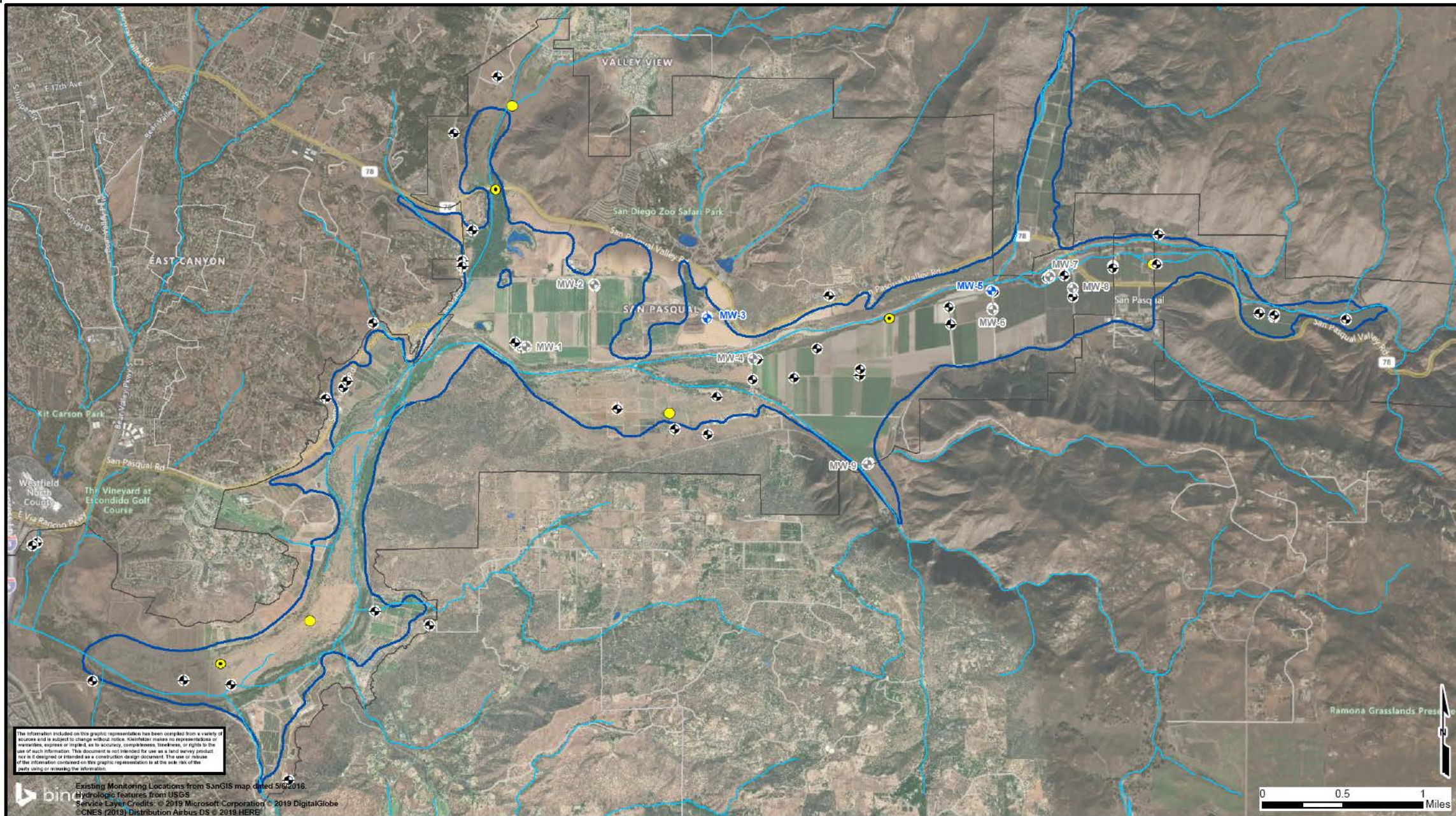


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DRAWN:	NOV 2019
DRAWN BY:	KFH
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FILE NAME:	Siting_F3.mxd

NESTED WELL ALTERNATIVE LOCATIONS - FLOODPLAINS
WELL SITING STUDY NESTED GROUNDWATER MONITORING WELLS SAN PASQUAL VALLEY GROUNDWATER BASIN

FIGURE
3



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LEGEND	
	Proposed Nested Groundwater Monitoring Well - Recommended
	Proposed Nested Groundwater Monitoring Well
	Active Production Well
	DWR Well
	USGS Monitoring Well
	Stream
	Water Body
	San Pasqual Groundwater Basin Boundary/Project Service Area
	City of San Diego Municipal Limits
	Other Municipal Limits

The City of
SAN DIEGO

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Draft Work Product

PROJECT NO.: 20182085.012	RECOMMENDED NESTED WELL ALTERNATIVE LOCATIONS
DRAWN: NOV 2019	
DRAWN BY: KFH	WELL SITING STUDY NESTED GROUNDWATER MONITORING WELLS SAN PASQUAL VALLEY GROUNDWATER BASIN
CHECKED BY: JL	
FILE NAME: Siting_F4.mxd	

FIGURE
4

- Confirm CEQA exemption status for sites
- Review sites with DWR
- Hire a drilling contractor to install wells and obtain permits

More data will help provide a more accurate model for the Groundwater Sustainability Plan and for future decision making.





Call for Data

- Well Data:
 - Well locations, construction, logs, elevation
 - Monitoring data – levels, quality
 - Pumping data – volume, rate
- Crop types
- Land Use and Cropping Data
- Surface Water Data – flows and quality
- Documents and Reports

ORIGINAL
 file with DWR
 Notice of Intent No. _____
 Local Permit No. or Date _____

STATE OF CALIFORNIA
 THE RESOURCES AGENCY
 DEPARTMENT OF WATER RESOURCES
 WATER WELL DRILLERS REPORT
 No. 06266
 State Well No. _____
 Other Well No. _____

D13S002W11P001S
 Do not fill in

13S, 1W-7

(1) OWNER: Name **Charles Jancic**
 Address **12450 Highland Valley Road**
 City **Escondido, California** Zip **92025**

(2) LOCATION OF WELL (See instructions):
 County **San Diego** Owner's Well Number _____
 Well address if different from above **Same**
 Township _____ Range _____ Section _____
 Distance from cities, roads, railroads, fences, etc. **12450 Highland Vly Rd. N. of Road 75 ft. and E. of Pine Tree Nursery 400 ft.**

(12) WELL LOG: Total depth **230** ft. Depth of completed well **230** ft.
 from ft. to ft. Formation (Describe by color, character, size or material)
0 - 12 Clay fill - reddish brown color
12 - 42 Decomposed Granite - green/grey color
42 - 230 Hard rock, granite with some fracturing grey color
Most water obtained in fracture zone at 190 - 210 ft.

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

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

WELL LOCATION SKETCH

(5) EQUIPMENT:
 Rotary Reverse
 Cable Air Diameter of bore _____
 Other Bucket Packed from _____ ft.

(6) GRAVEL PACK:
 Yes No Size _____
 Diameter of bore _____

(7) CASING INSTALLED:
 Steel Plastic Concrete
 Type of perforation or size of screen _____

(8) PERFORATIONS: **None**
 Type of perforation or size of screen _____

(9) WELL SEAL:
 Was surface sanitary seal provided? Yes No If yes, to depth **40** ft.
 Were strata sealed against pollution? Yes No Interval _____ ft.
 Method of sealing **Cementing**

(10) WATER LEVELS:
 Depth of first water, if known **15** ft.
 Standing level after well completion **15** ft.

(11) WELL TESTS:
 Was well test made? Yes No If yes, by whom? **Same**
 Type of test Pump Bailer Air lift
 Depth to water at start of test **15** ft. At end of test **15** ft.
 Discharge **150** gal/min after **3** hours Water temperature **Ukn**
 Chemical analysis made? Yes No If yes, by whom? _____
 Was electric log made? Yes No If yes, attach copy to this report

Work started **11/21** 19 **77** Completed **11/4** 19 **77**

WELL DRILLER'S STATEMENT:
 This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.
 SIGNED **J. R. Fain** (Well Driller)
 NAME **FAIN DRILLING & PUMP CO. INC**
 (Person, firm, or corporation) (Typed or printed)
 Address **P.O. BOX 603**
 City **Valley Center, Calif.** Zip **92082**
 License No. **328287** Date of this report **12/22/77**

188 (REV. 7-76) IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM 4816-932 7-76 508 QUAD © 1977

- Data supplied will be evaluated and used as appropriate
- Local data is valuable to the GSP
- Digital data preferred, can copy paper data
- Provide data by November 14, 2019, if additional time is needed, please contact to discuss
- Send to Sandra Carlson at
 - (619) 533-4235
 - carlsons@sanidiego.gov

- Provide comments on outline by November 21, 2019
- Send to Sandra Carlson at
 - (619) 533-4235
 - carlsons@sanidiego.gov



AC Comments

Public Comment

- 3 minute limit each commentator



- Next meeting:
 - Thursday January 9, 2020, 9-11am
- Public Notices are at:
 - Online:
<https://www.sandiegocounty.gov/content/sdc/pds/SGMA/san-pasqual-valley.html>

