AEM 2.0 RESULTS

MONTEREY SUBBASIN GROUNDWATER SUSTAINABILITY PLAN (GSP)
MONTEREY PENINSULA WATER SUPPLY PROJECT (MPSWP)

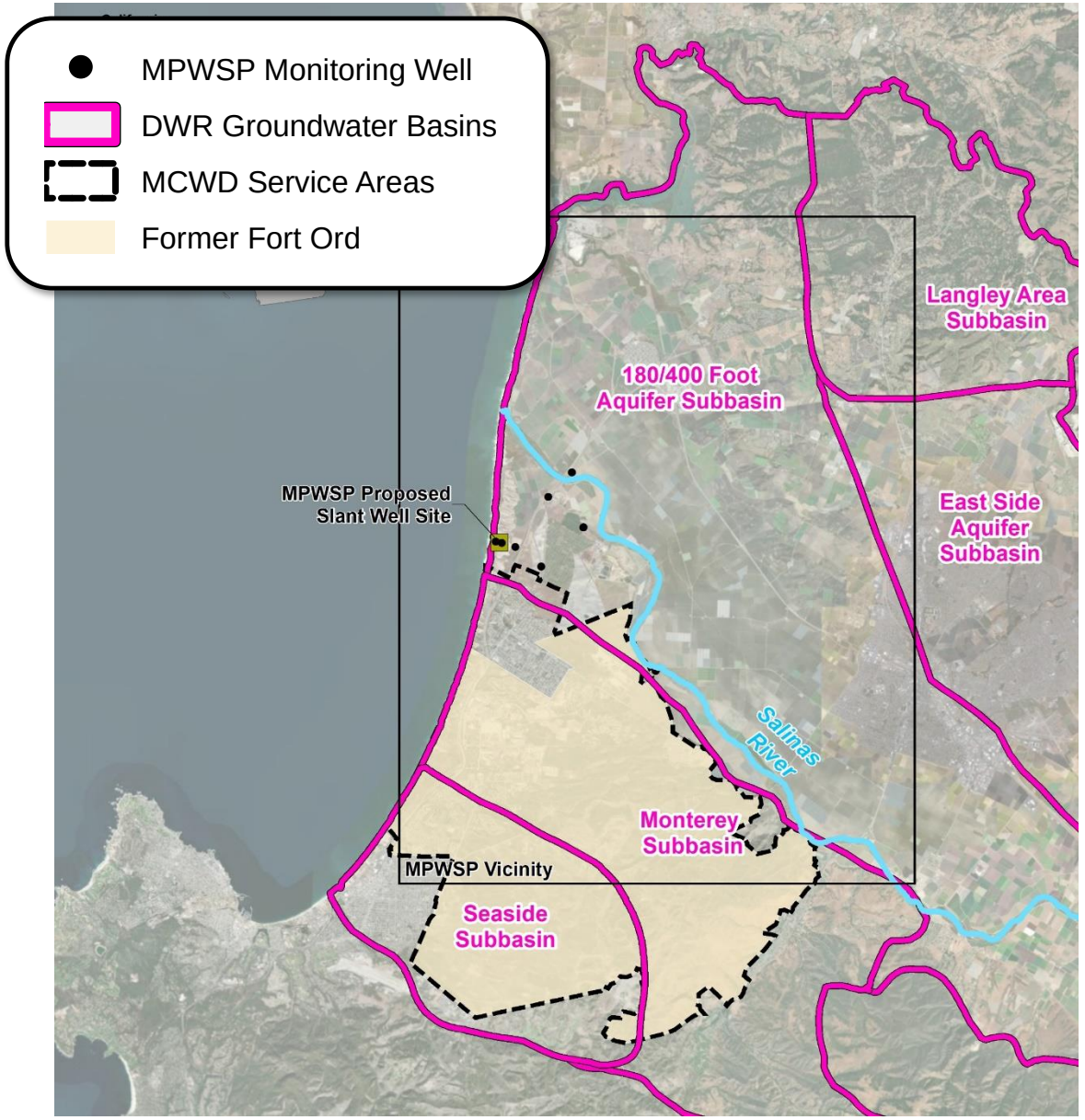
25 FEBRUARY 2020

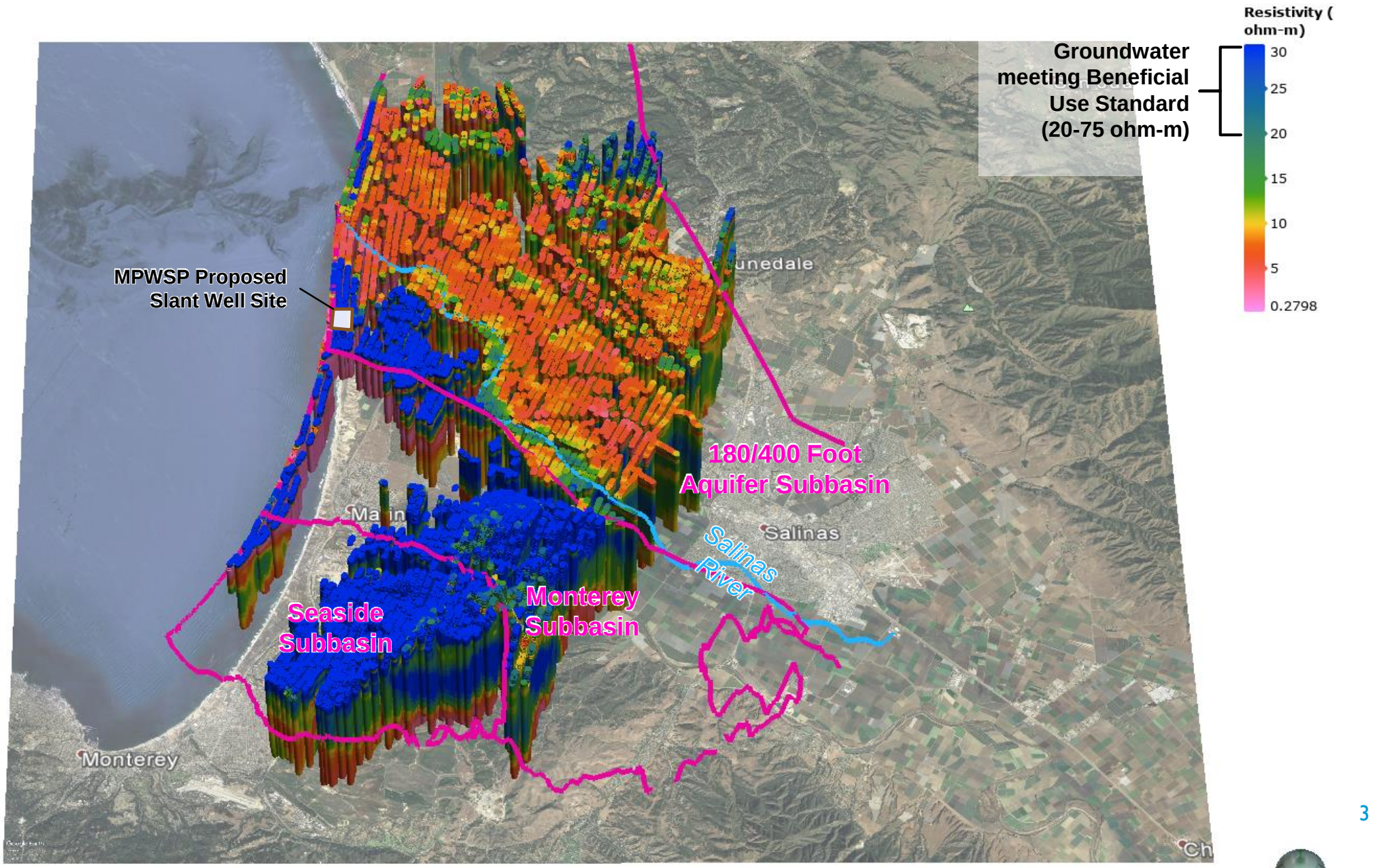
PREPARED ON BEHALF OF MARINA COAST WATER DISTRICT

eki environment & water

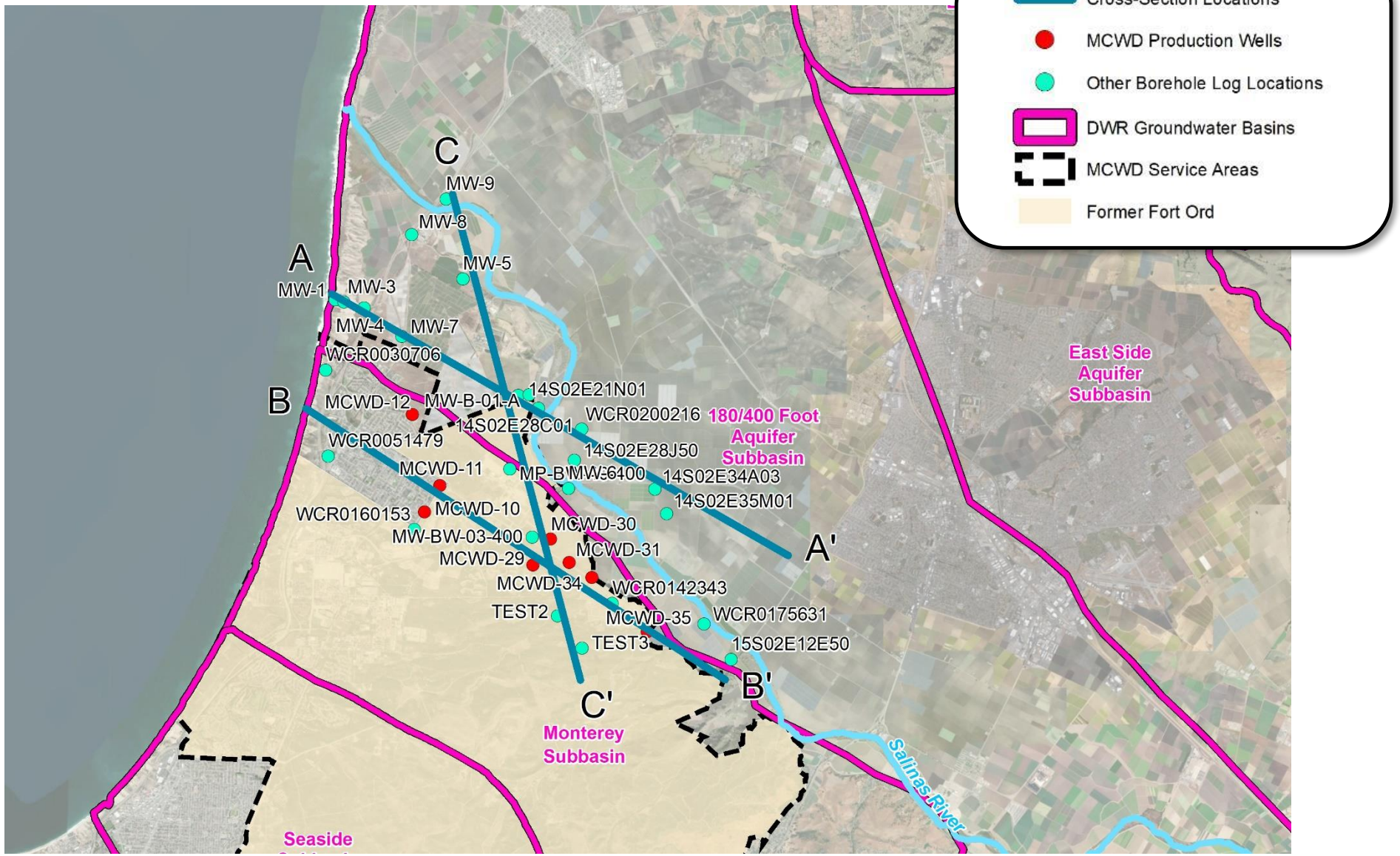
2019 AEM RESULTS

- Provide updated information in Monterey Subbasin regarding location of fresh groundwater and extent of salt water intrusion:
  - Critical to understanding Hydrologic Conceptual Model for preparation of Groundwater Sustainability Plan for Monterey Subbasin (GSP)
  - Siting of future production wells/potential projects
  - Identifying critical data needs
- Provide updated information regarding distribution of freshwater/saltwater in vicinity of MPWSP

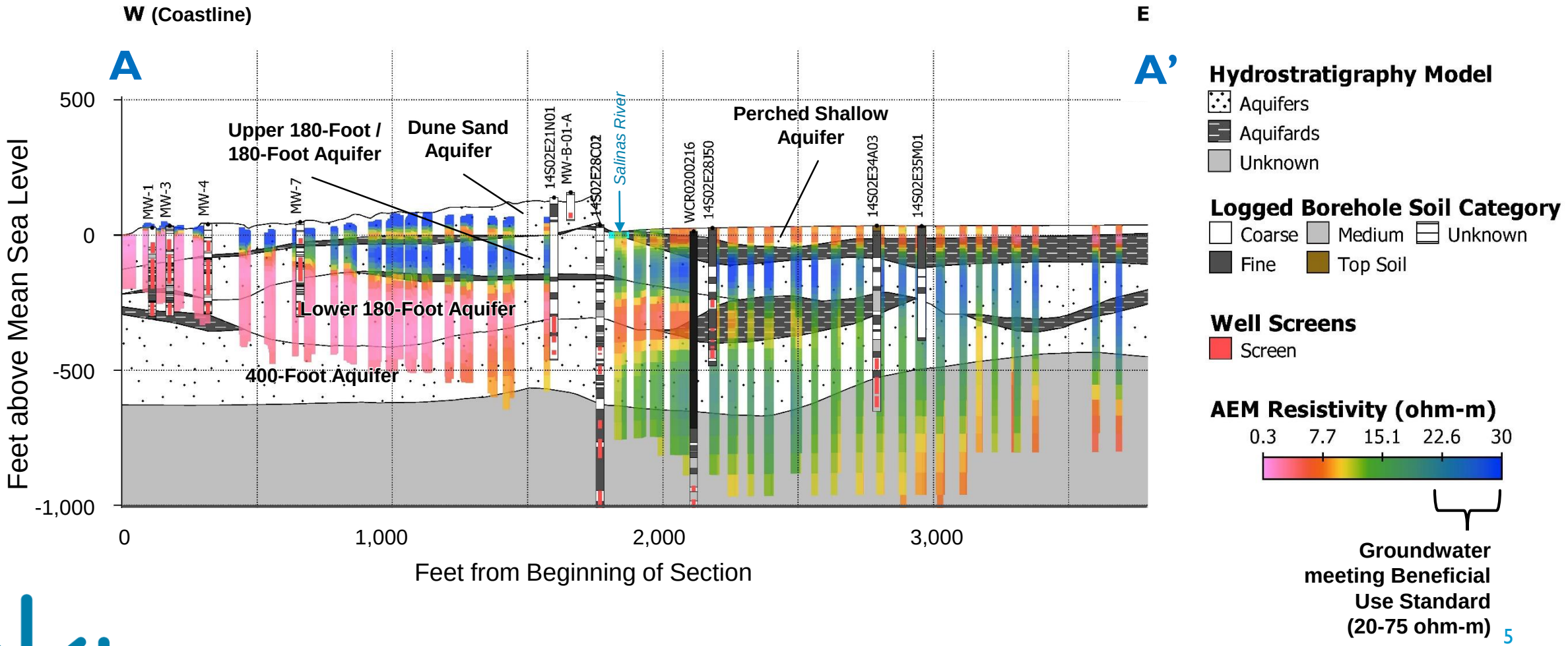



Resistivity (ohm-m)
30
25
20
15
10
5
0.2798
Groundwater meeting Beneficial Use Standard (20-75 ohm-m)
MPWSP Proposed Slant Well Site
180/400 Foot Aquifer Subbasin
Salinas
Salinas River
Monterey Subbasin
Seaside Subbasin
Monterey
Plunge +06
Looking North

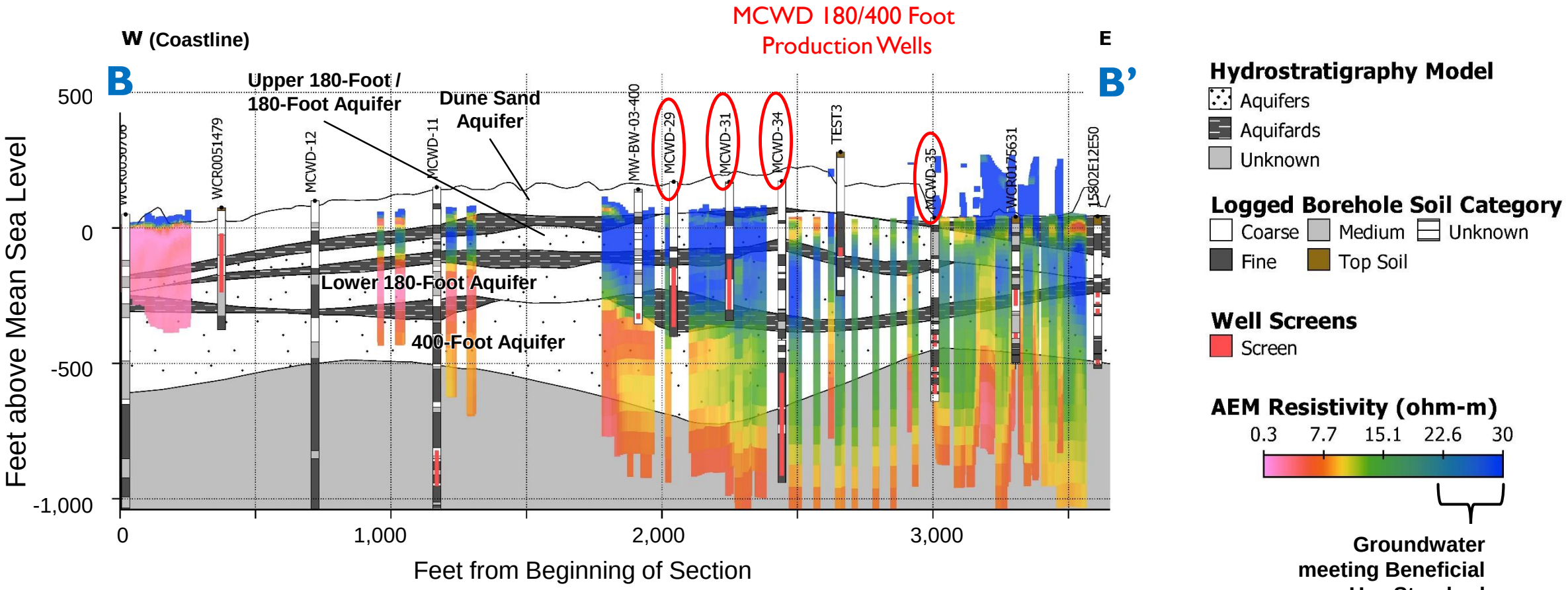
CROSS-SECTION LOCATIONS



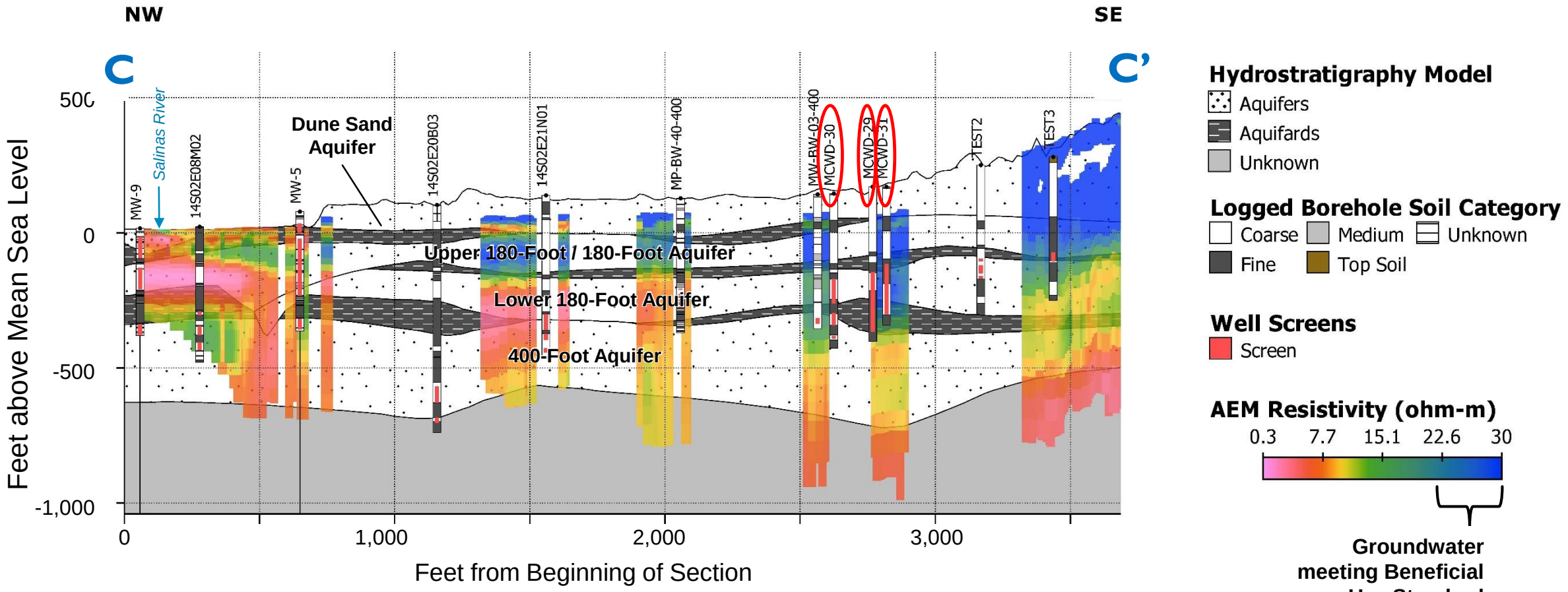
CROSS-SECTION A



CROSS-SECTION B



CROSS-SECTION C



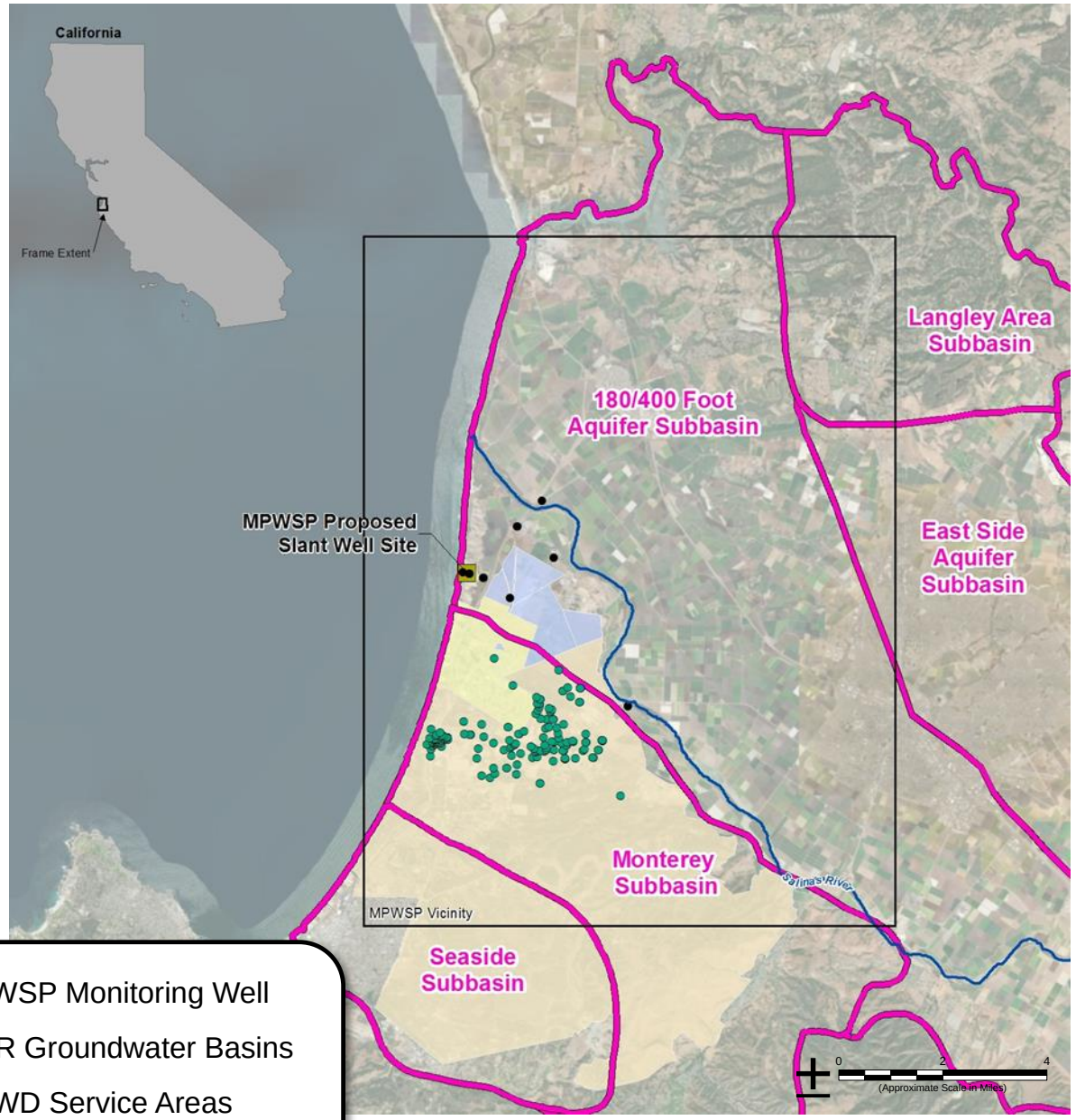
VOLUME OF GROUNDWATER MEETING BENEFICIAL USE STANDARDS

Aquifer	2019 AEM Survey Volume of Groundwater Meeting Beneficial Use Standards[a]
Perched A / Shallow Aquifer[b]	1,000 acre-ft
Dune Sand Aquifer	220,000 acre-ft
Salinas Valley Aquitard	*23,000 acre-ft*
Upper 180-Foot Aquifer[c]	131,000 acre-ft
Intermediate 180 Aquitard	*13,000 acre-ft*
Lower 180-Foot Aquifer	39,000 acre-ft
180-400 Ft Aquitard	*4,000 acre-ft*
400-Foot Aquifer	7,000 acre-ft
400-Foot Aquitard	*1,000 acre-ft*
TOTAL	**438,000 acre-ft**

a. Beneficial use standard (<3,000 mg/L TDS). Assumes 20% porosity and estimated for the 2017 AEM Survey area.
b. The Perched A / Shallow Aquifer only exists north of the Salinas River.
c. The Upper 180-Foot Aquifer includes (1) the Upper 180-Foot Aquifer where the Intermediate 180 Aquitard exists, and (2) the entire 180-Foot Aquifer elsewhere.

2019 AEM RESULTS/MPWSP

- Provide updated information regarding distribution of freshwater/saltwater in vicinity of MPWSP:
  - Confirm relatively fresh groundwater exists in Dune Sand Aquifer and Upper180-foot Aquifer immediately upgradient of the MPWSP
  - Consistent with 2017 AEM Results and 2018 Fort Ord TDS Groundwater sampling results
  - Aid understanding hydrogeologic conditions and potential impacts of MPWSP
  - Establishes pre-project baseline

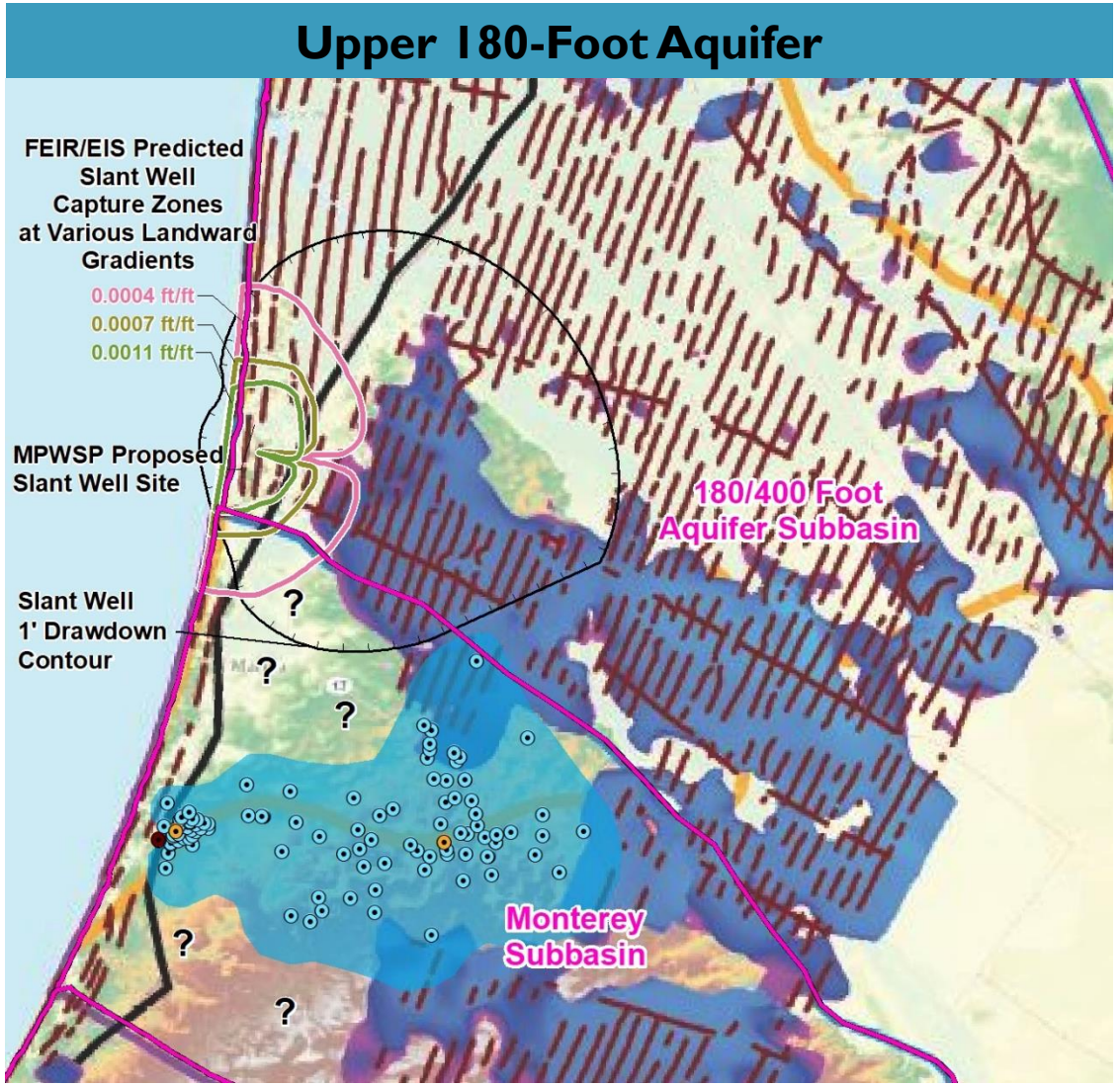


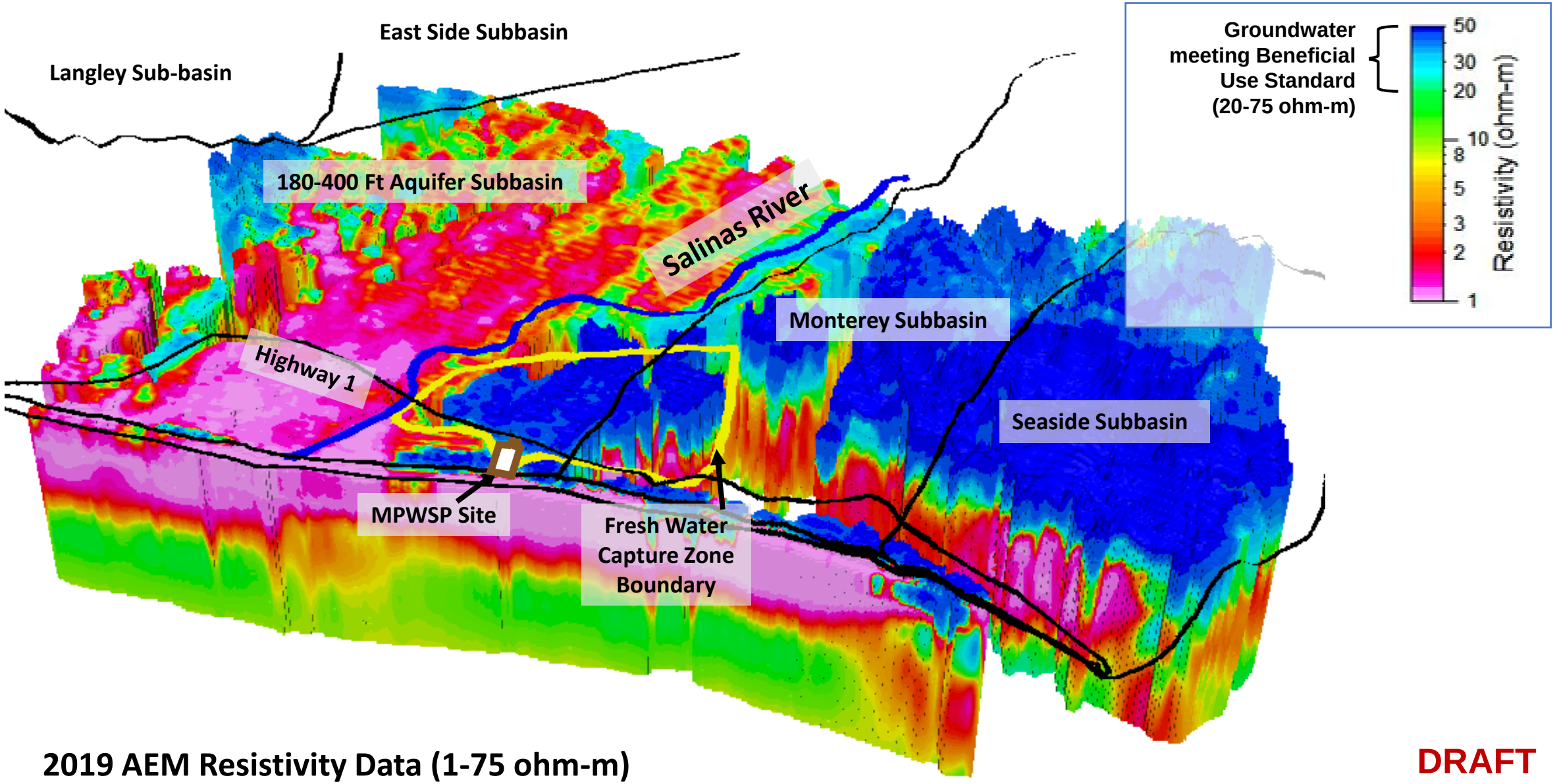
2019 COASTAL COMMISSION INDEPENDENT HYDROGEOLOGIC IDENTIFIES POTENTIAL CAPTURE AREA FOR MPWSP

- Concludes that if the conceptual site model suggested by recent data is accurate:
  - Slant well fresh water capture area could cover 7 sq miles in the Dune Sand Aquifer where AEM and Fort Ord Data show Fresh Water is present
- Recommends additional modeling and data collection

MODELING WILL ASSESS

- Quantity of fresh groundwater MPWSP will take from Dune Sand Aquifer
- If slant well capture zone will extend into the area where groundwater from Dune Sand recharges Upper 180 foot aquifer zone





2019 AEM Resistivity Data (1-75 ohm-m)

2019 Survey Area

Full 3D Voxel

Depth: Surface to 1,230 ft bgs

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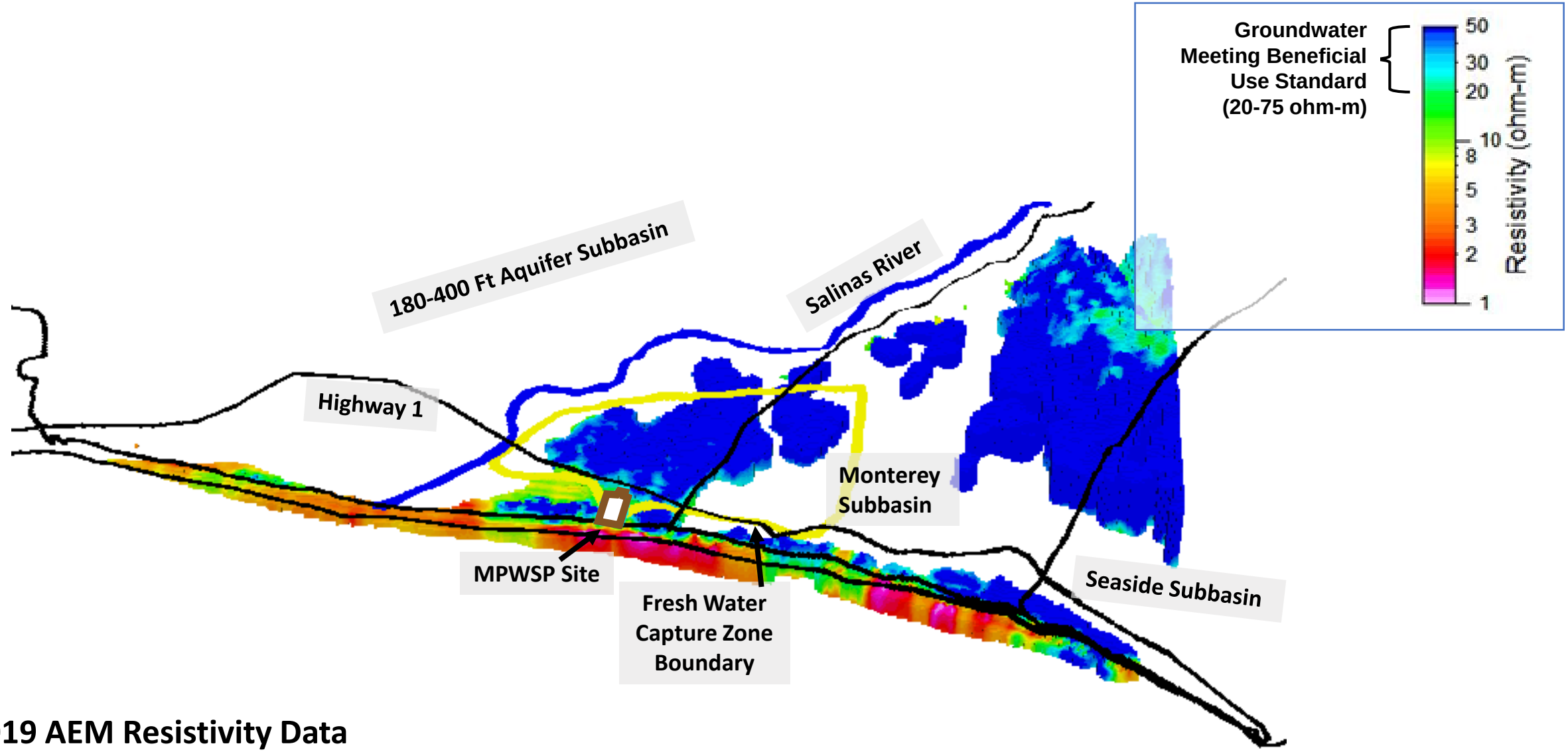
Aqua Geo Frameworks



2019 AEM Resistivity Data

2017 Survey Area

Dune Sand Aquifer

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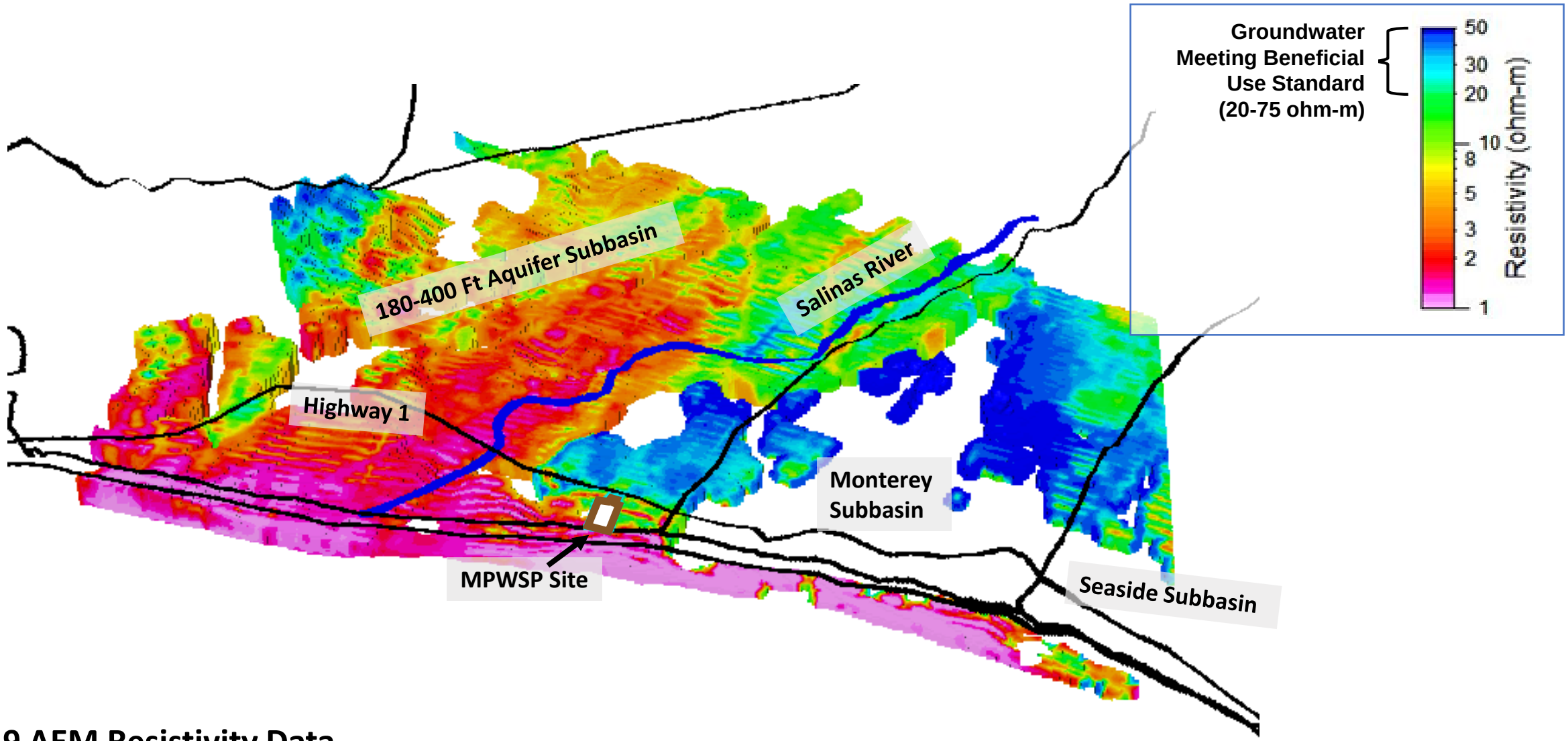
Aqua Geo Frameworks



2019 AEM Resistivity Data

2017 Survey Area

Upper 180-Foot Aquifer

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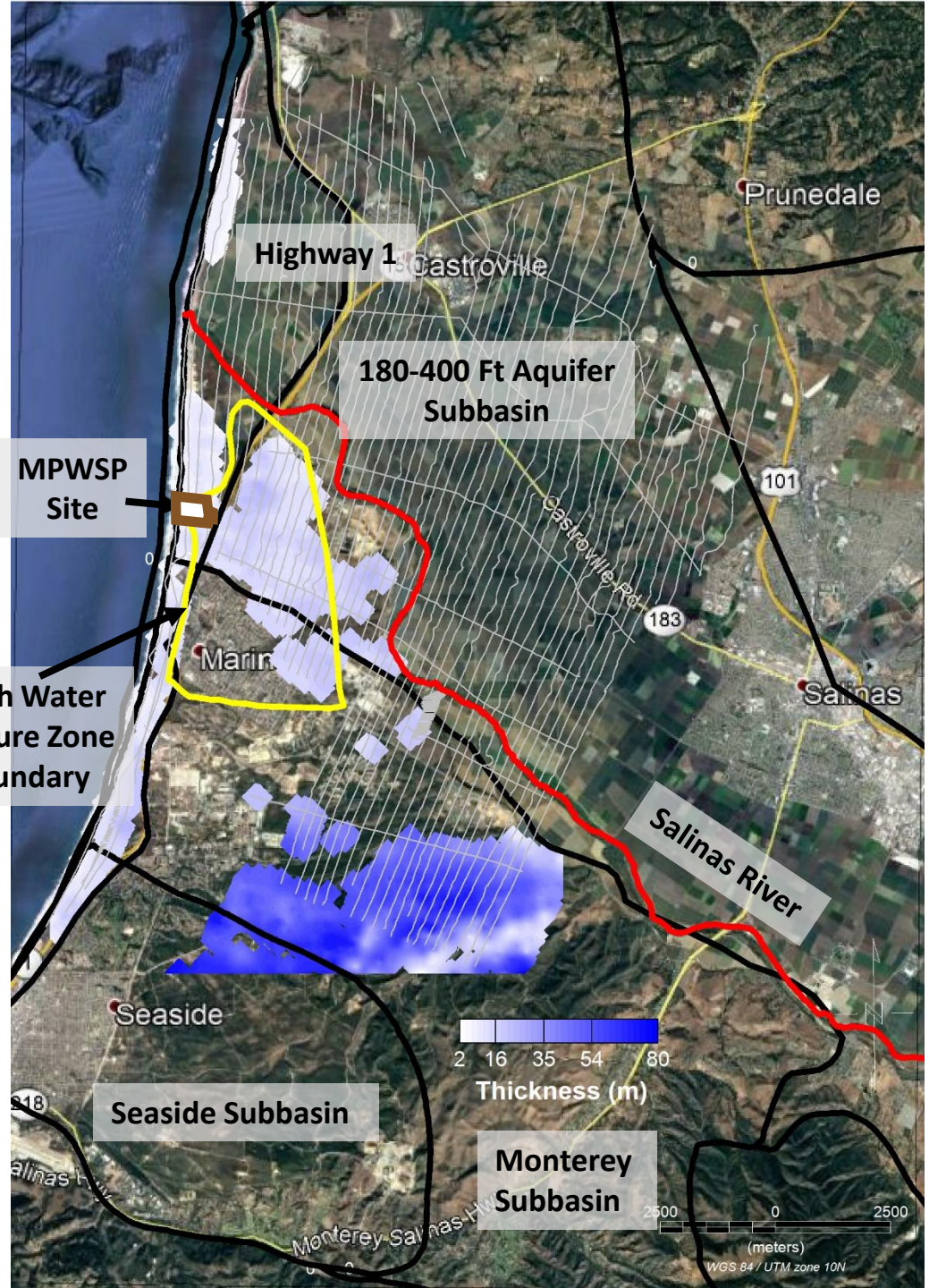
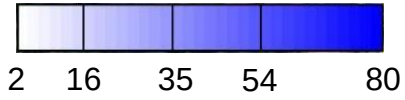
Aqua Geo Frameworks

Thickness of Groundwater Within Dune Sand Aquifer With TDS <1,000 mg/L

Source: 2019 AEM Resistivity Data





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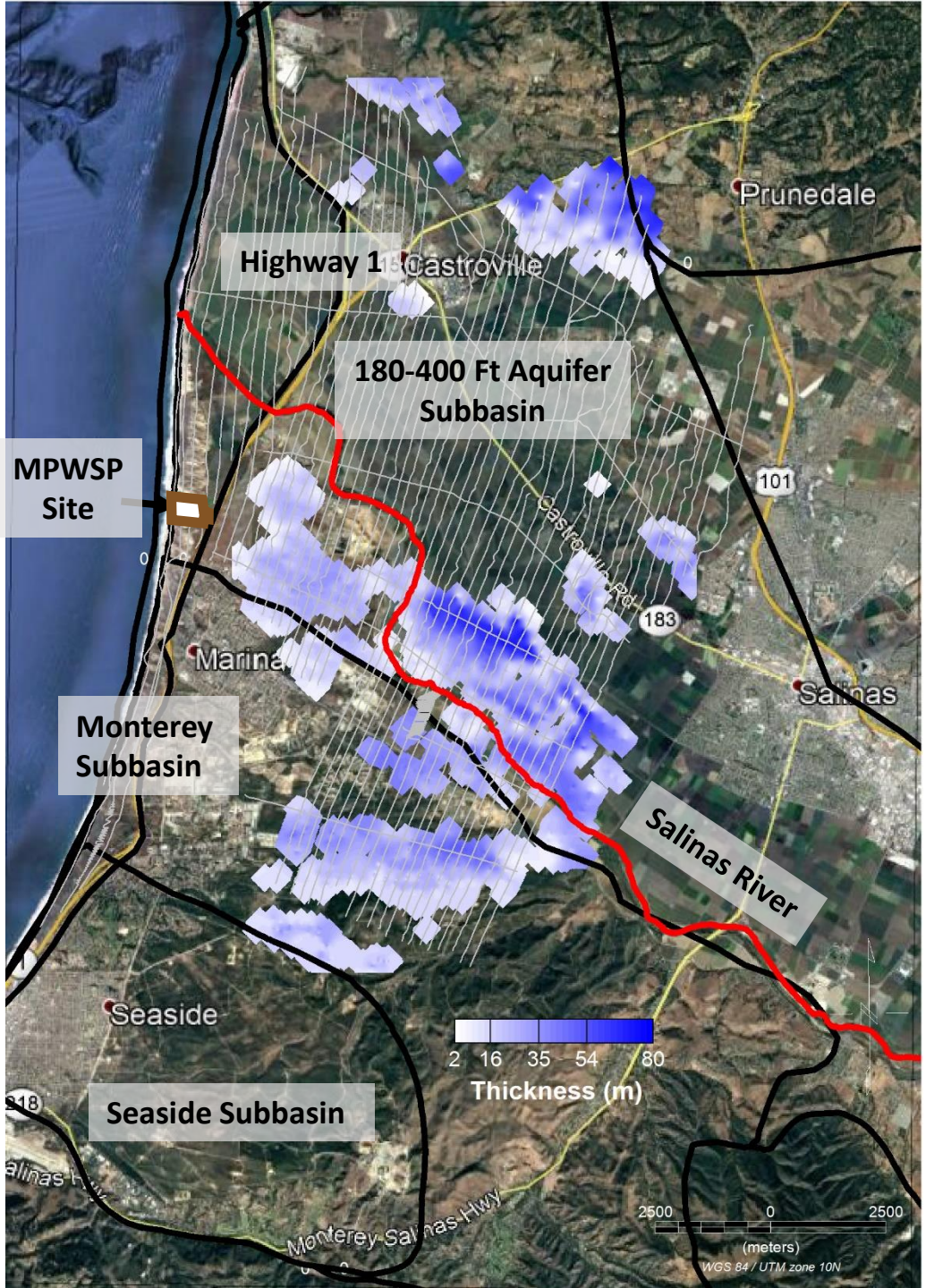
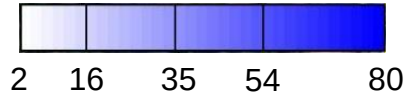
Aqua Geo Frameworks

Thickness of Groundwater Within Upper 180-Foot Aquifer With TDS <u><1,000 mg/L</u>

Source: 2019 AEM Resistivity Data





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Aqua Geo Frameworks

NEXT STEPS

- MCWD has provided AEM data, new Fort Ord TDS data, as well as other information for utilization in Coastal Commission assessment
- Coastal Commission-Hydrolgeologist to provide scope of work for completion which will include updated modeling of Project Impacts
- AEM Data will be further evaluated and incorporated into GSP