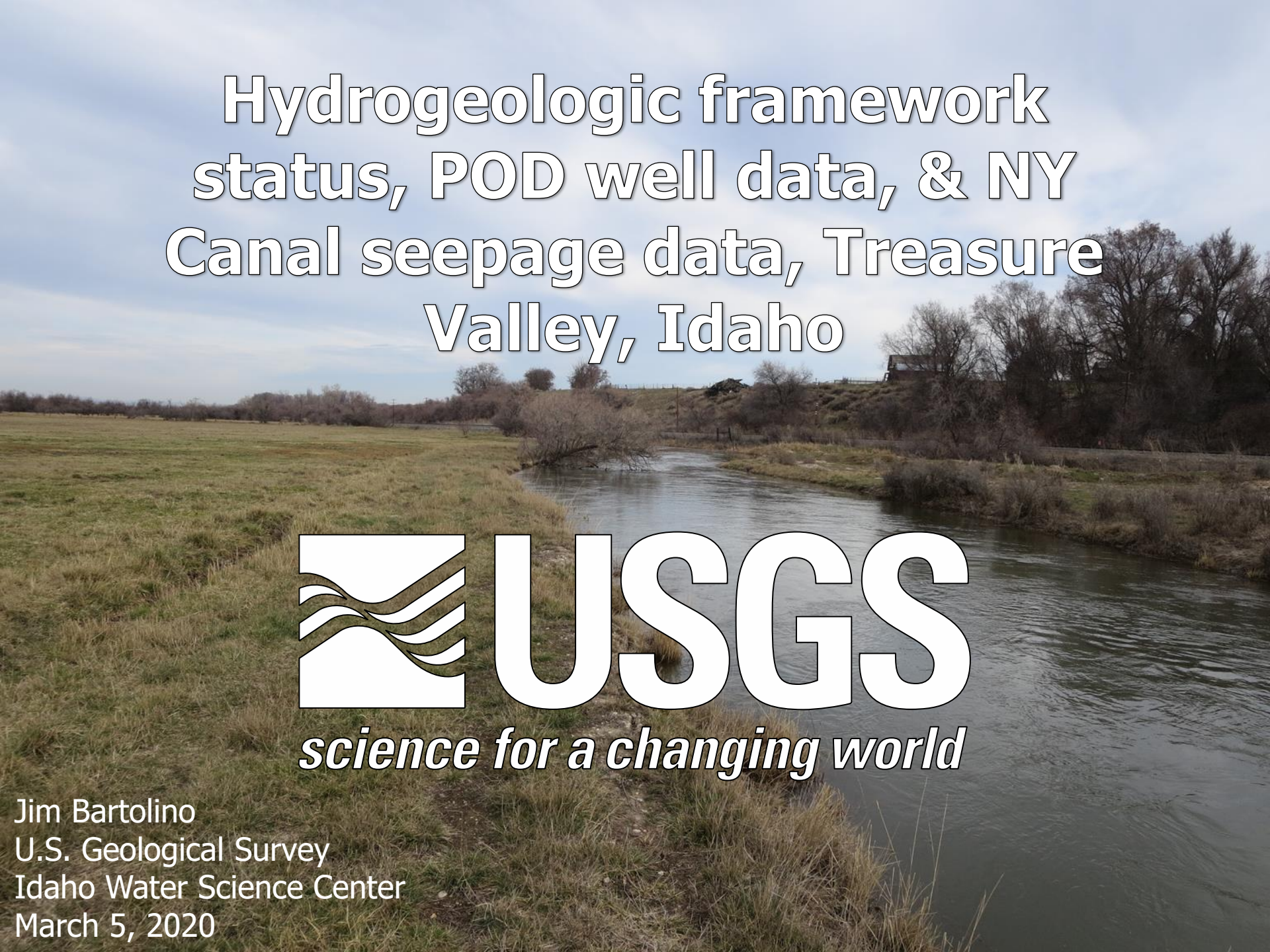
# Hydrogeologic framework status, POD well data, & NY Canal seepage data, Treasure Valley, Idaho



USGS

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Jim Bartolino
U.S. Geological Survey
Idaho Water Science Center
March 5, 2020

# HYDROGEOLOGIC-FRAMEWORK REPORT STATUS

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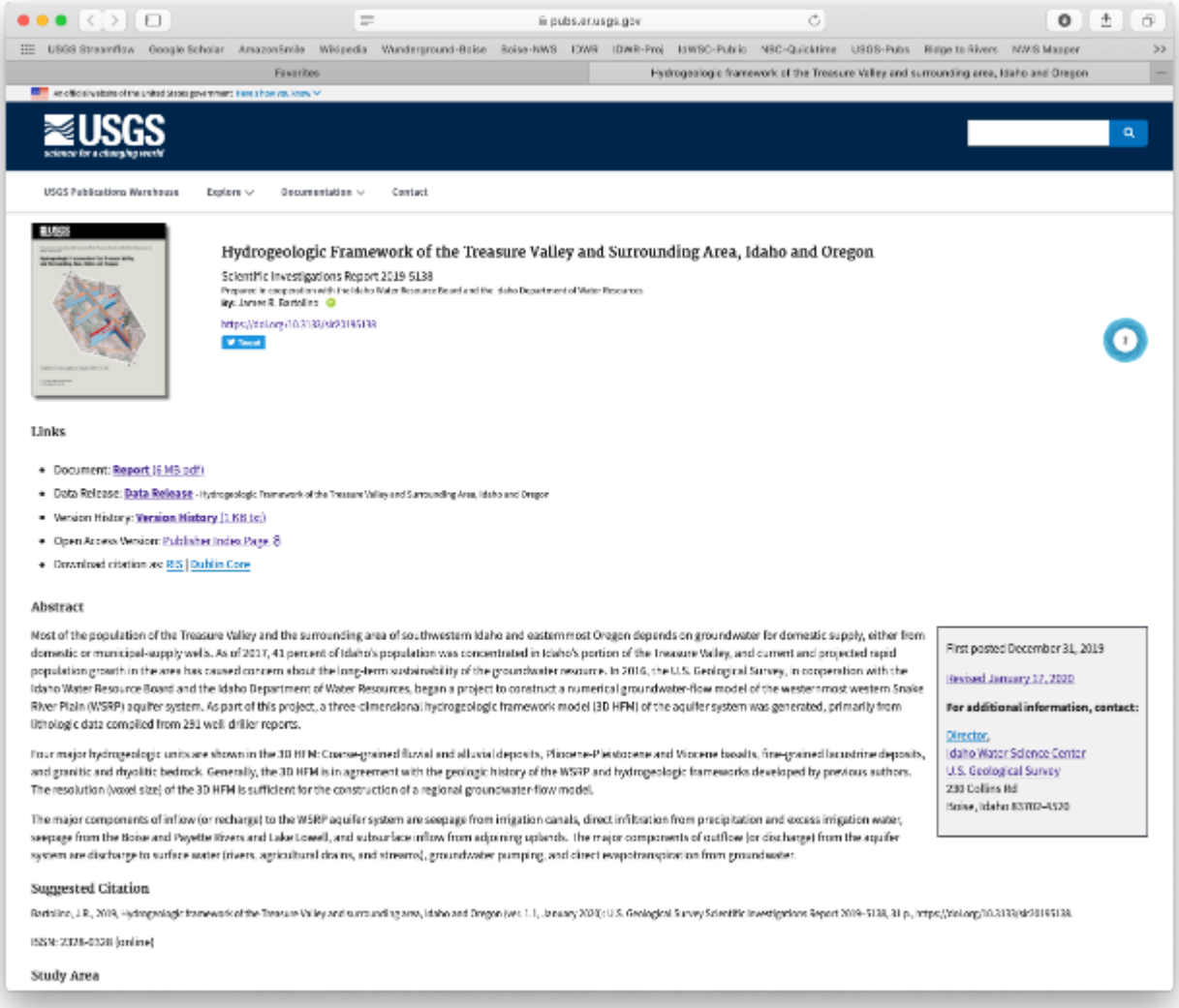
# Hydrogeologic framework report: done



Hydrogeologic Framework of the Treasure Valley and Surrounding Area, Idaho and Oregon

Scientific Investigations Report 2019-5138

Links

- Document: Report (6 MB pdf)
- Data Release: Data Release - Hydrogeologic framework of the Treasure Valley and Surrounding Area, Idaho and Oregon
- Version History: Version History (1 KB txt)
- Publisher Index Page

Abstract

Most of the population of the Treasure Valley and the surrounding area of southwestern Idaho and easternmost Oregon depends on groundwater for domestic supply, either from domestic or municipal-supply wells. As of 2017, 41 percent of Idaho's population was concentrated in Idaho's portion of the Treasure Valley, and current and projected rapid population growth in the area has caused concern about the long-term sustainability of the groundwater resource. In 2016, the U.S. Geological Survey, in cooperation with the Idaho Water Resource Board and the Idaho Department of Water Resources, began a project to construct a numerical groundwater-flow model of the westernmost western Snake River Plain (WSRP) aquifer system. As part of this project, a three-dimensional hydrogeologic framework model (3D HFM) of the aquifer system was generated, primarily from lithologic data compiled from 291 well driller reports.

Four major hydrogeologic units are shown in the 3D HFM: Coarse-grained fluvial and alluvial deposits, Pliocene-Pleistocene and Miocene basalts, fine-grained lacustrine deposits, and granitic and rhyolitic bedrock. Generally, the 3D HFM is in agreement with the geologic history of the WSRP and hydrogeologic frameworks developed by previous authors. The resolution (voxel size) of the 3D HFM is sufficient for the construction of a regional groundwater-flow model.

The major components of inflow (or recharge) to the WSRP aquifer system are seepage from irrigation canals, direct infiltration from precipitation and excess irrigation water, seepage from the Boise and Payette Rivers and Lake Lowell, and subsurface inflow from adjoining uplands. The major components of outflow (or discharge) from the aquifer system are discharge to surface water (rivers, agricultural drains, and streams), groundwater pumping, and direct evapotranspiration from groundwater.

First posted December 31, 2019

Revised January 17, 2020

For additional information, contact:

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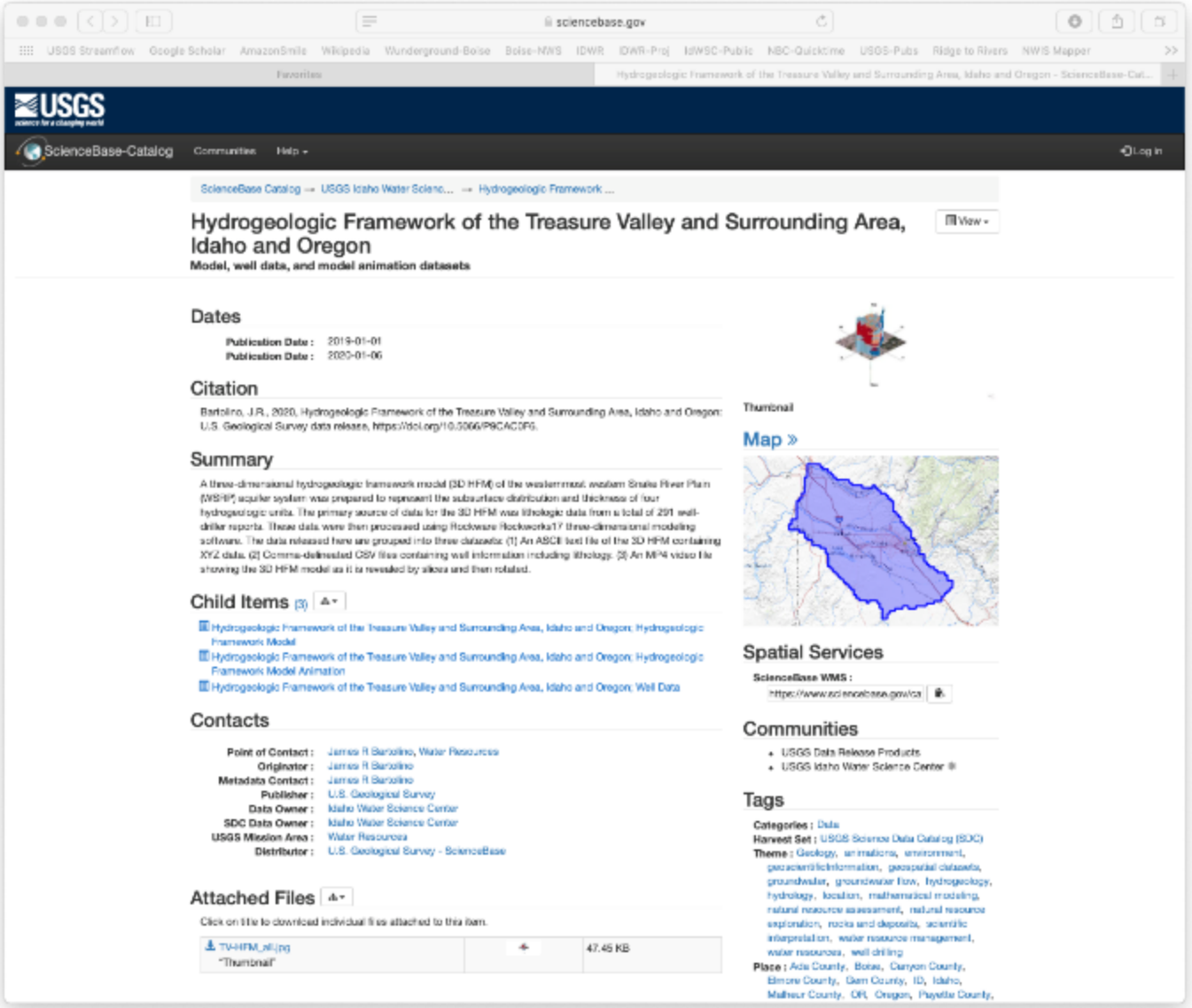
Idaho Water Science Center
U.S. Geological Survey
230 Collins Rd
Boise, Idaho 83702-4520

Suggested Citation

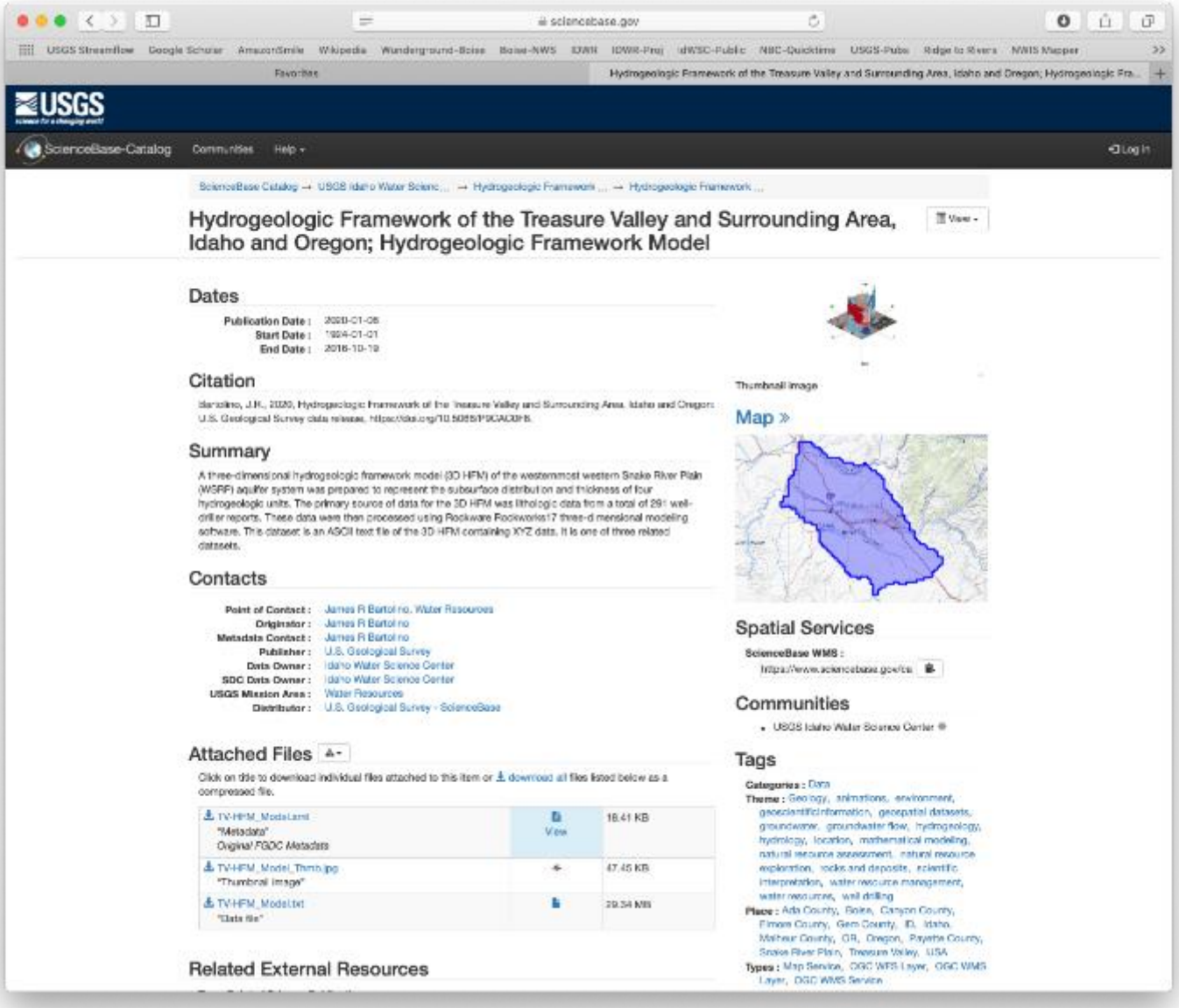
Study Area

- Released on 31Dec2019…
- Taken down a few days later because of problems with table 3 formatting.
- Rereleased as ver.1.1 on 17Jan2020

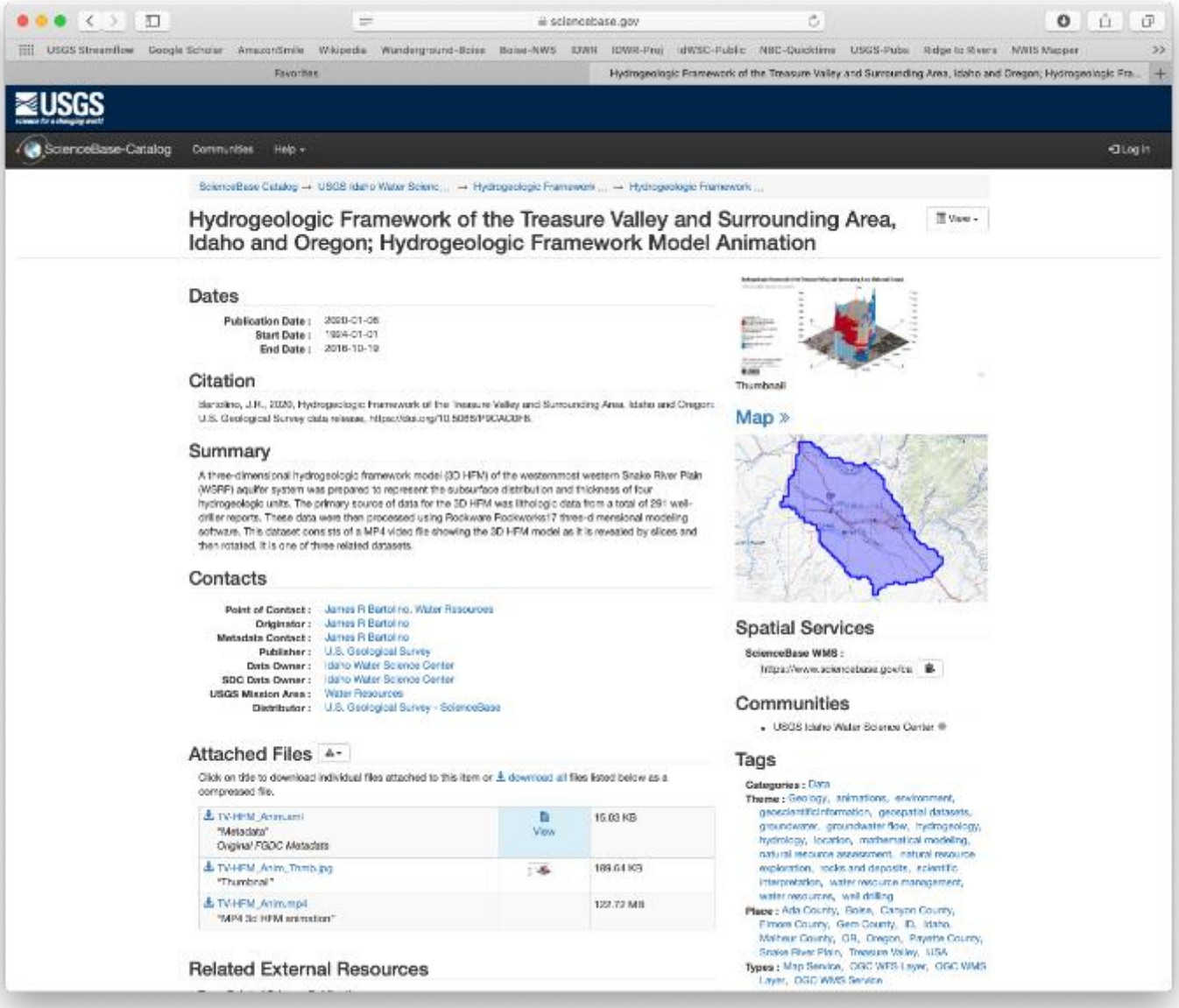
# ScienceBase data release: Main page



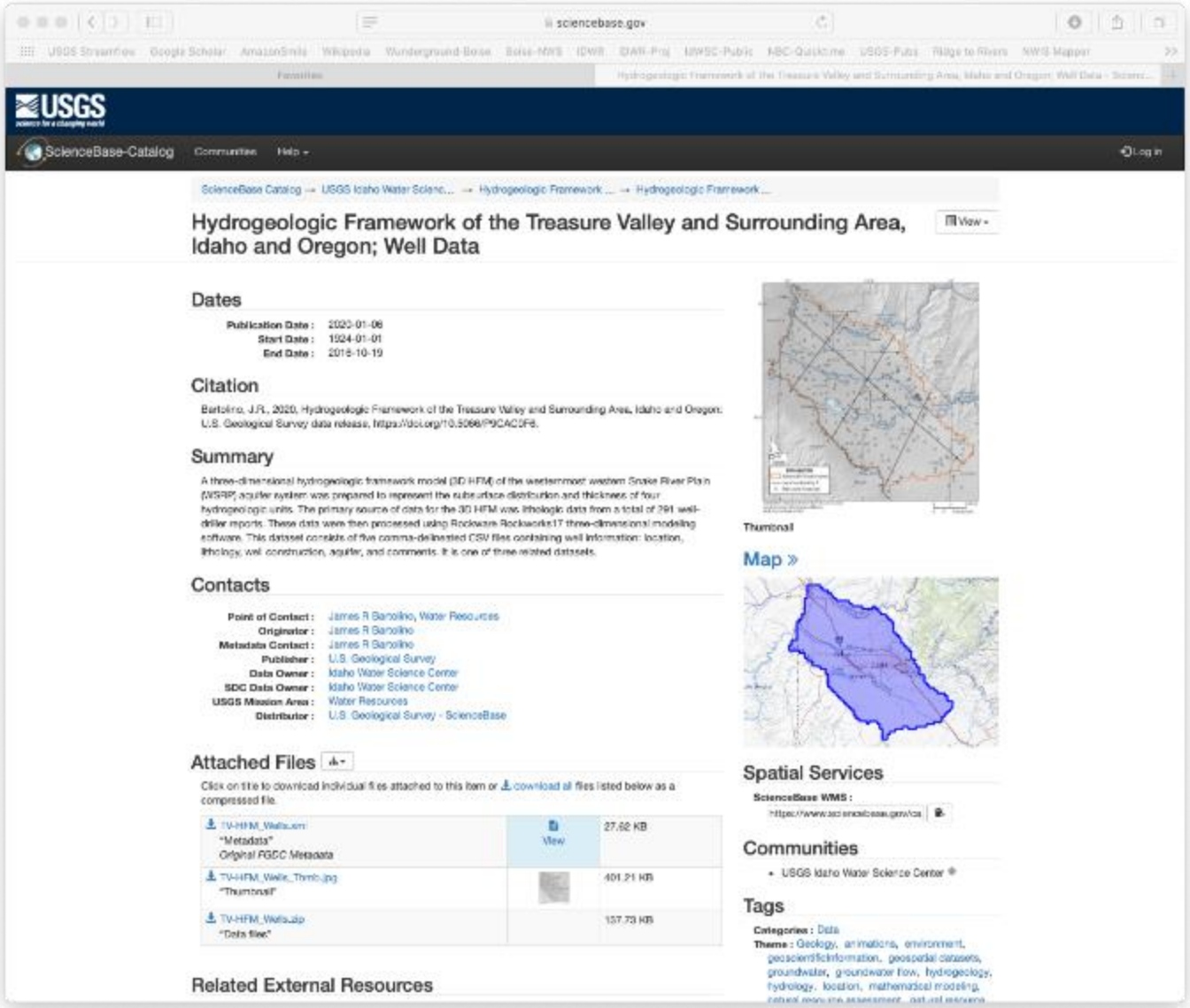
# ScienceBase data release: 3D HFM



# ScienceBase data release: Animation



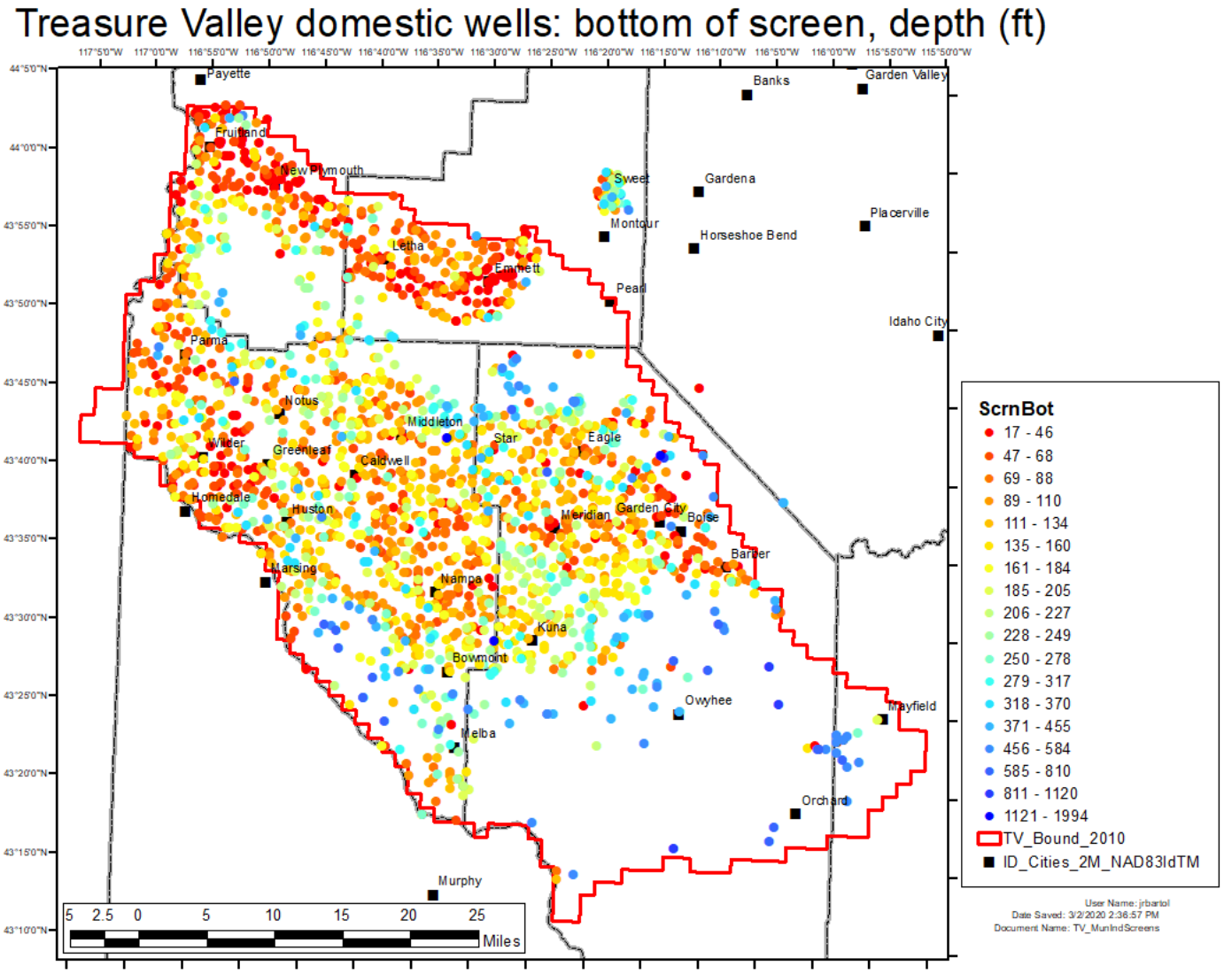
# ScienceBase data release: Well data



# GROUNDWATER PODS

# POD Wells: Domestic (1)

- Difficult to match water rights to wells; entered screen intervals for two wells per section for uniform coverage
- 2,120 wells
- Screen bottoms 17-1994 ft; average 157 ft

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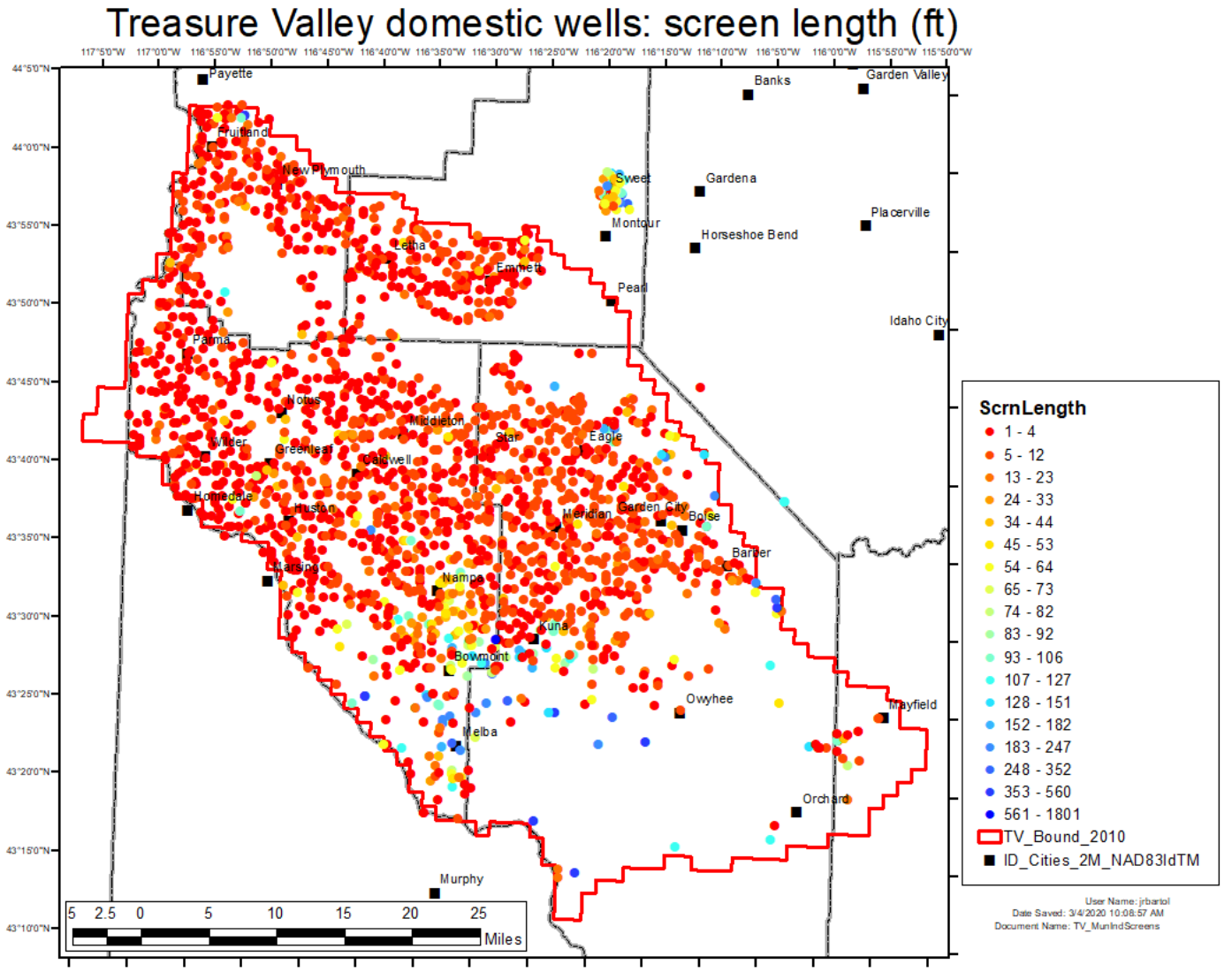
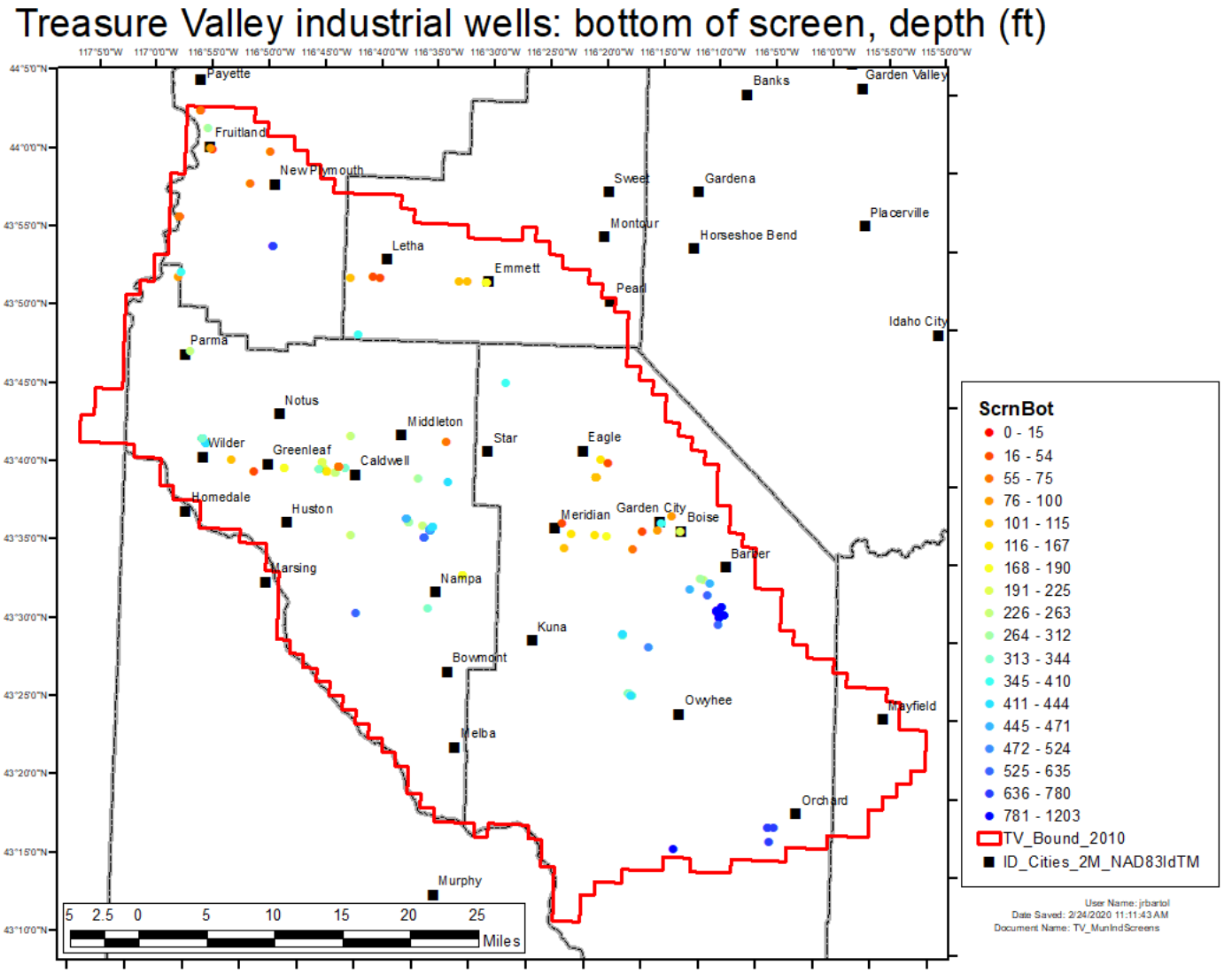
# POD Wells: Domestic (2)

- Difficult to match water rights to wells; entered screen intervals for two wells per section for uniform coverage
- 2,120 wells
- Screen lengths 1-1801 ft; average 19 ft



# POD Wells: Industrial (1)

- Matched 194 water rights to wells; entered screen intervals
- Many of these wells are essentially domestic/ commercial wells (office, store, etc)
- Screen bottoms 15-1203 ft; average 362 ft

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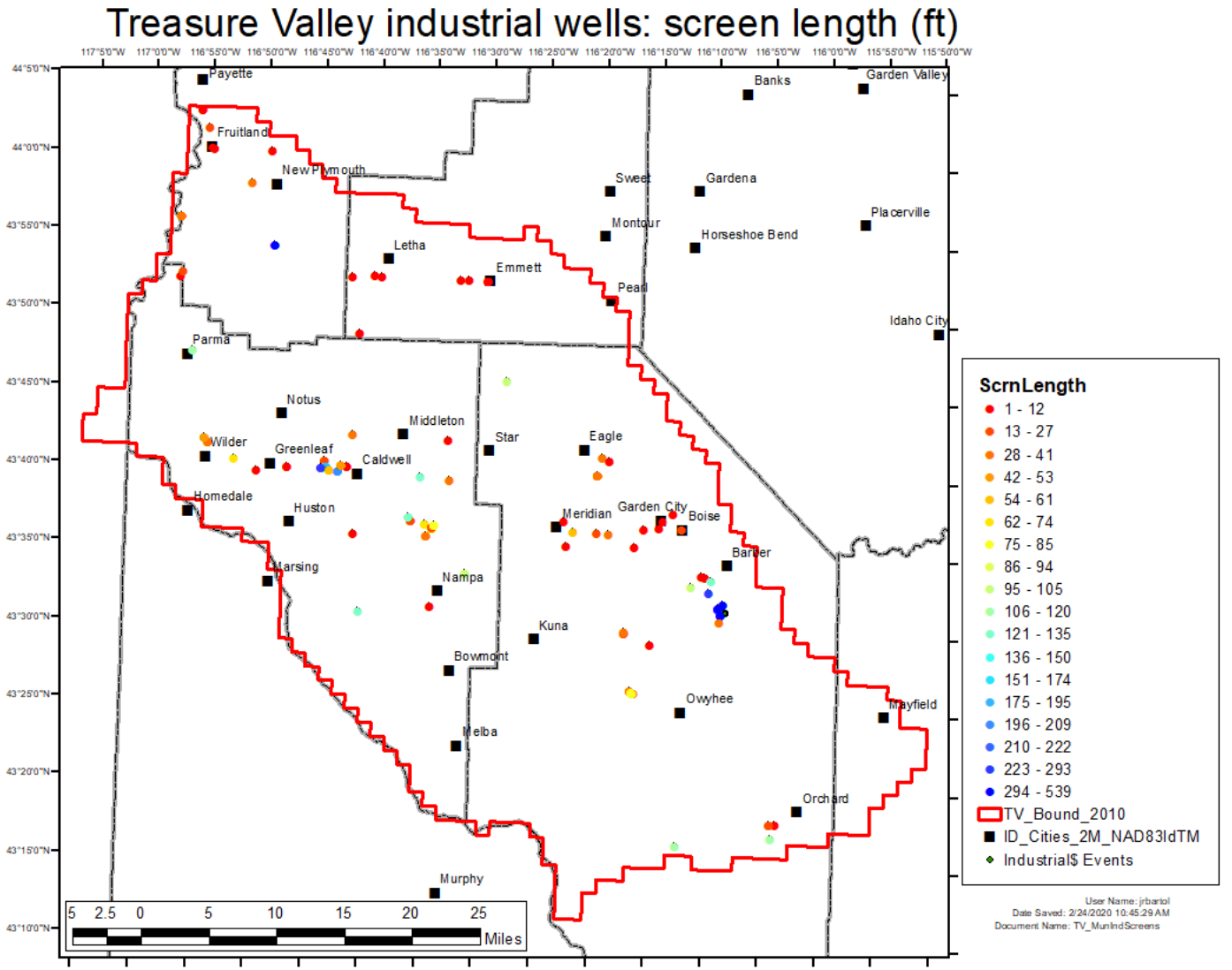
# POD Wells: Industrial (2)

- Matched 194 water rights to wells; entered screen intervals
- Many of these wells are essentially domestic/ commercial wells (office, store, etc)
- Screen lengths 1-573 ft; average 88 ft

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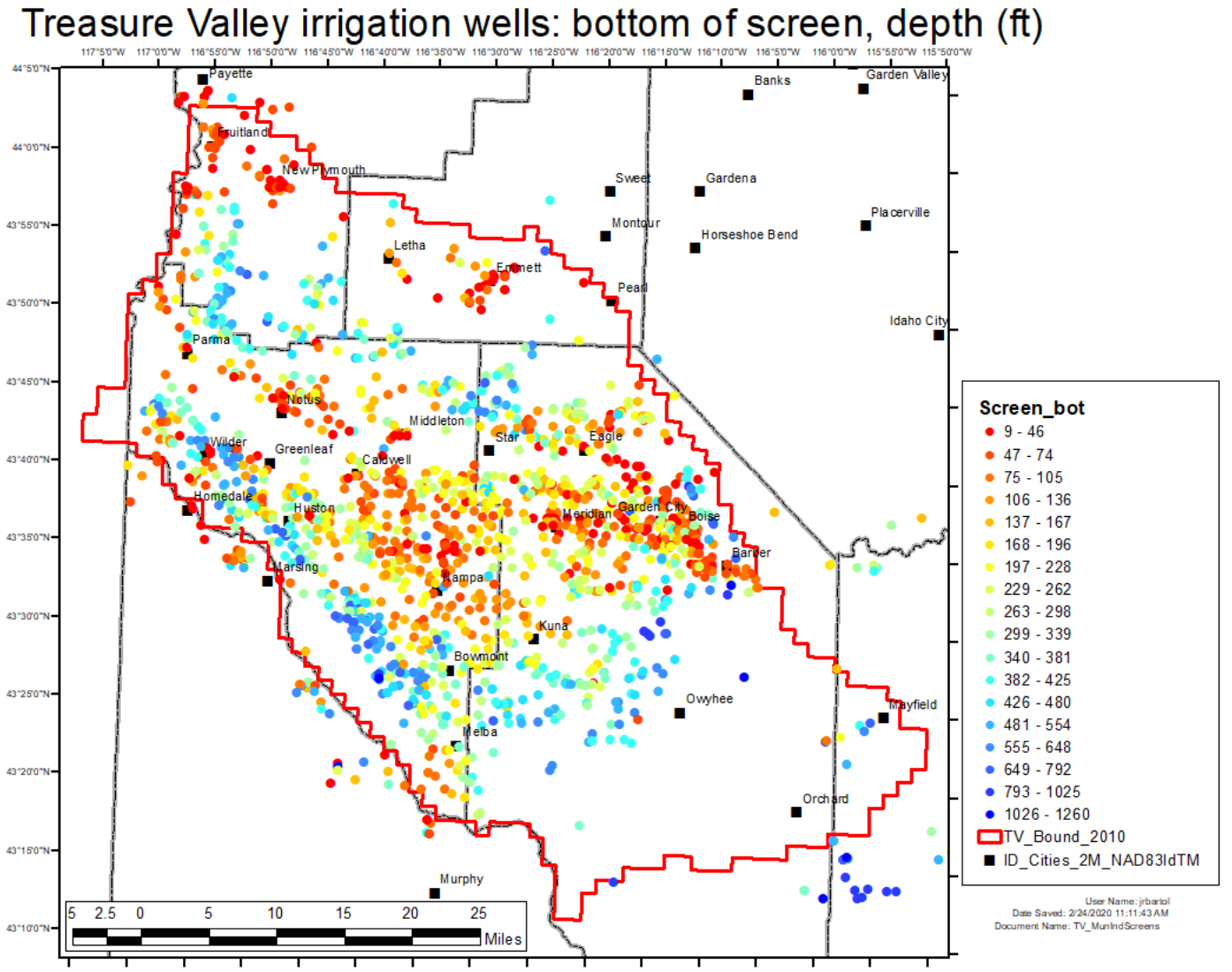
# POD Wells: Irrigation (1)

- Difficult to match water rights to wells; entered screen intervals for two wells per section
- 1,698 wells
- Screen bottoms 9-1260 ft; average 250 ft

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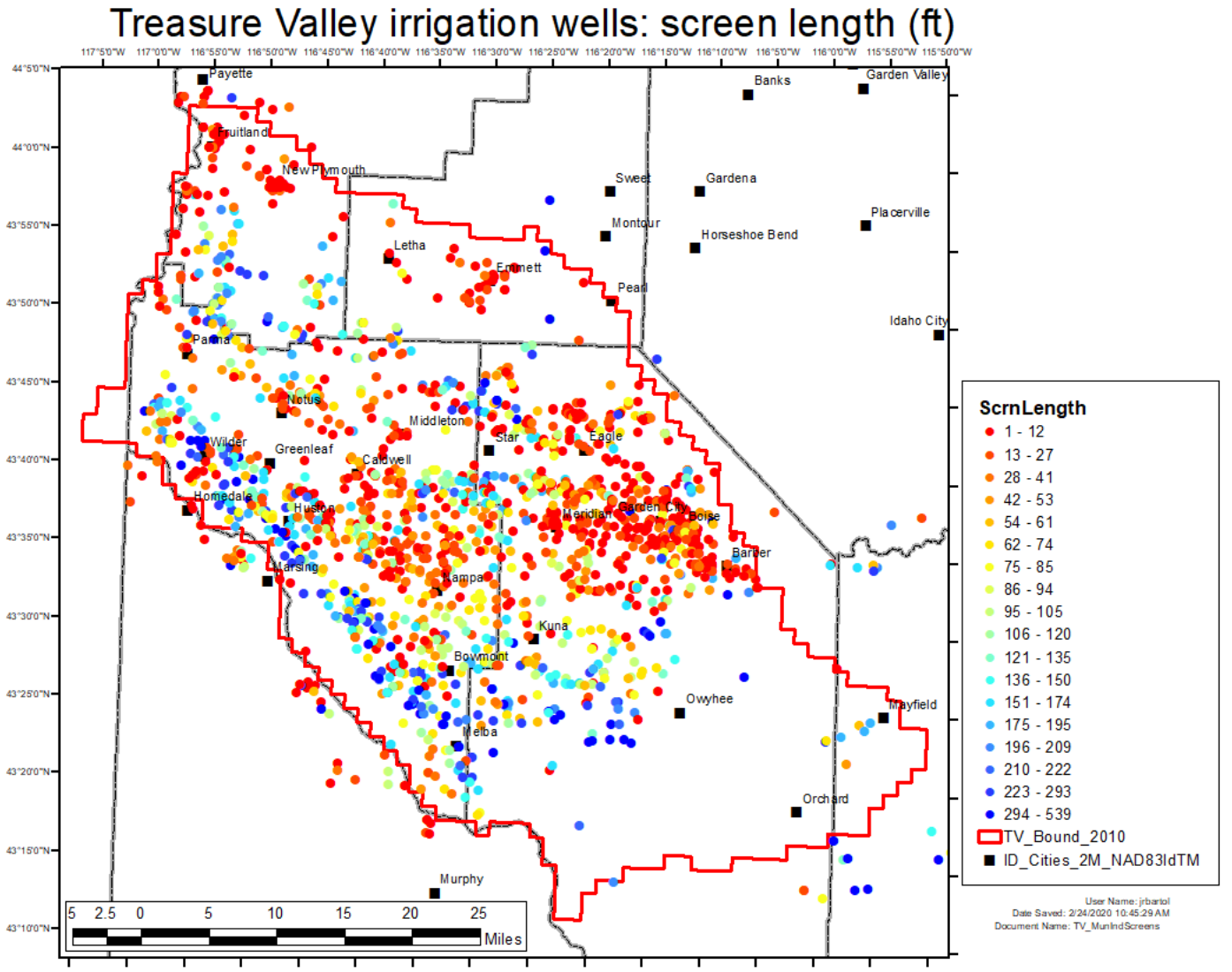
# POD Wells: Irrigation (2)

- Difficult to match water rights to wells; entered screen intervals for two wells per section
- 1,698 wells
- Screen lengths 1-870 ft; average 88 ft

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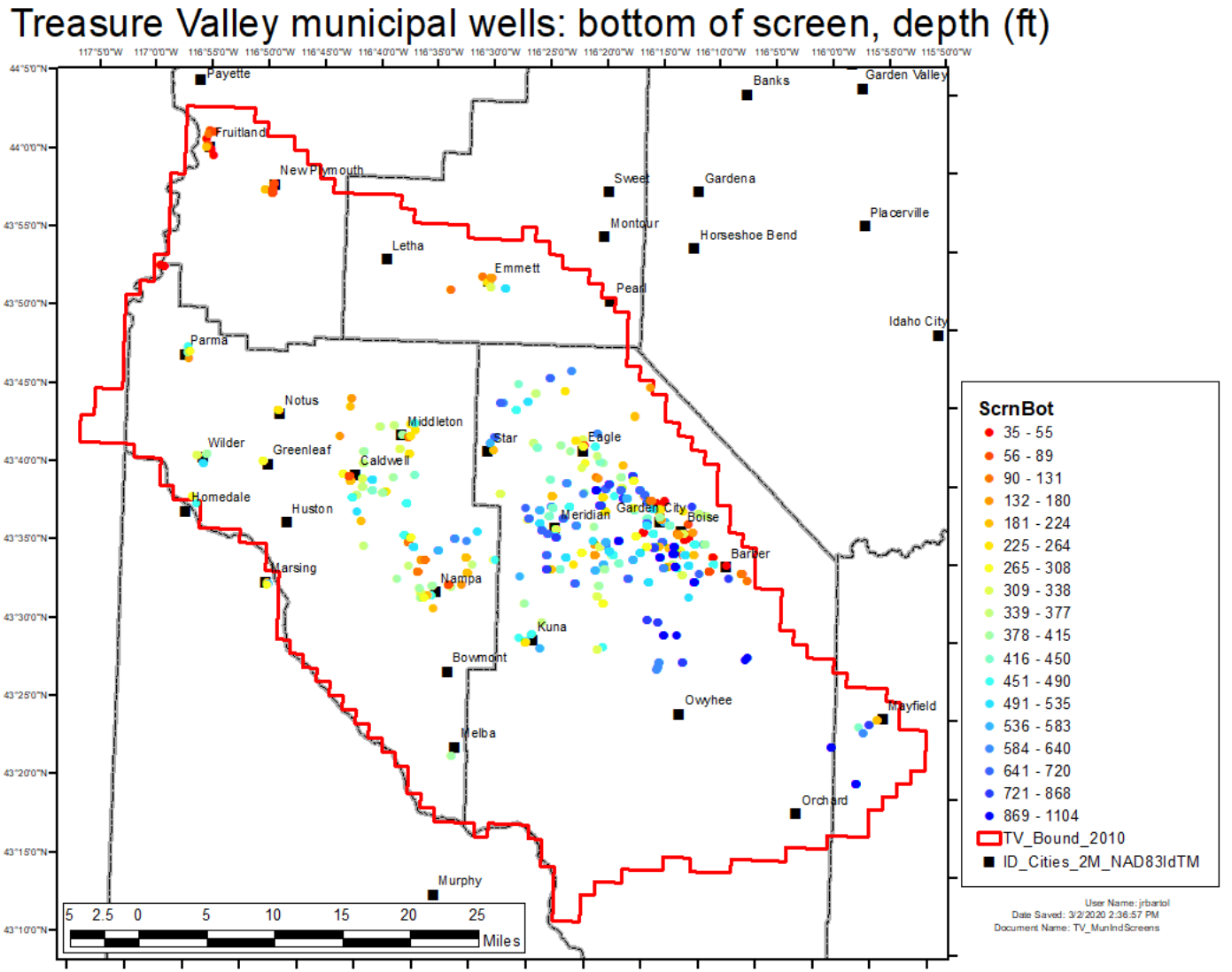
# POD Wells: Municipal (1)

- Matched 4,976 water rights to wells; entered screen intervals
- Water rights may be transferred to younger wells
- A well may have multiple water rights and vice versa
- Screen bottoms 35-1104 ft; average 438 ft

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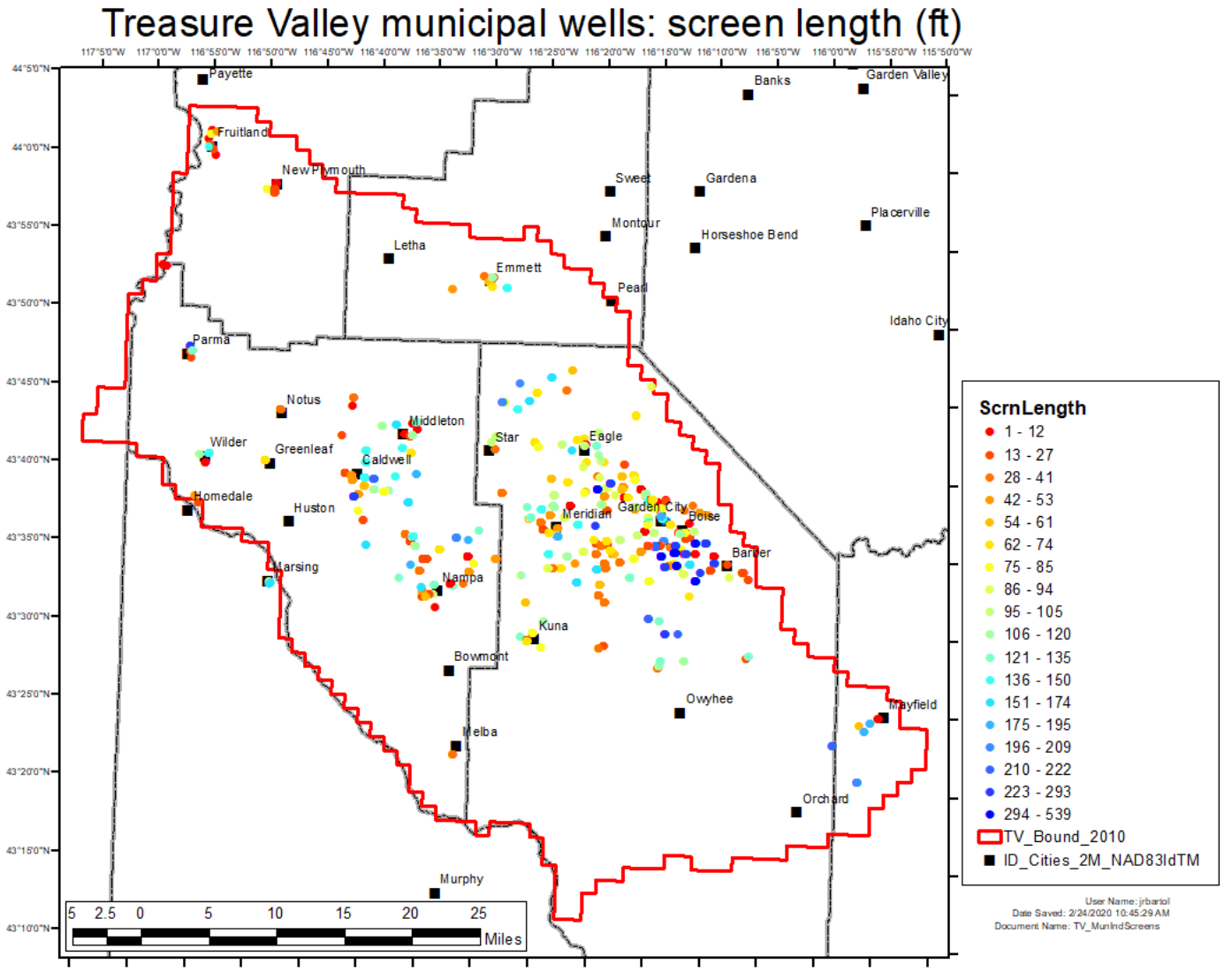
# POD Wells: Municipal (2)

- Matched 4,976 water rights to wells; entered screen intervals
- Water rights may be transferred to younger wells
- Screen lengths 1-539 ft; average 102 ft

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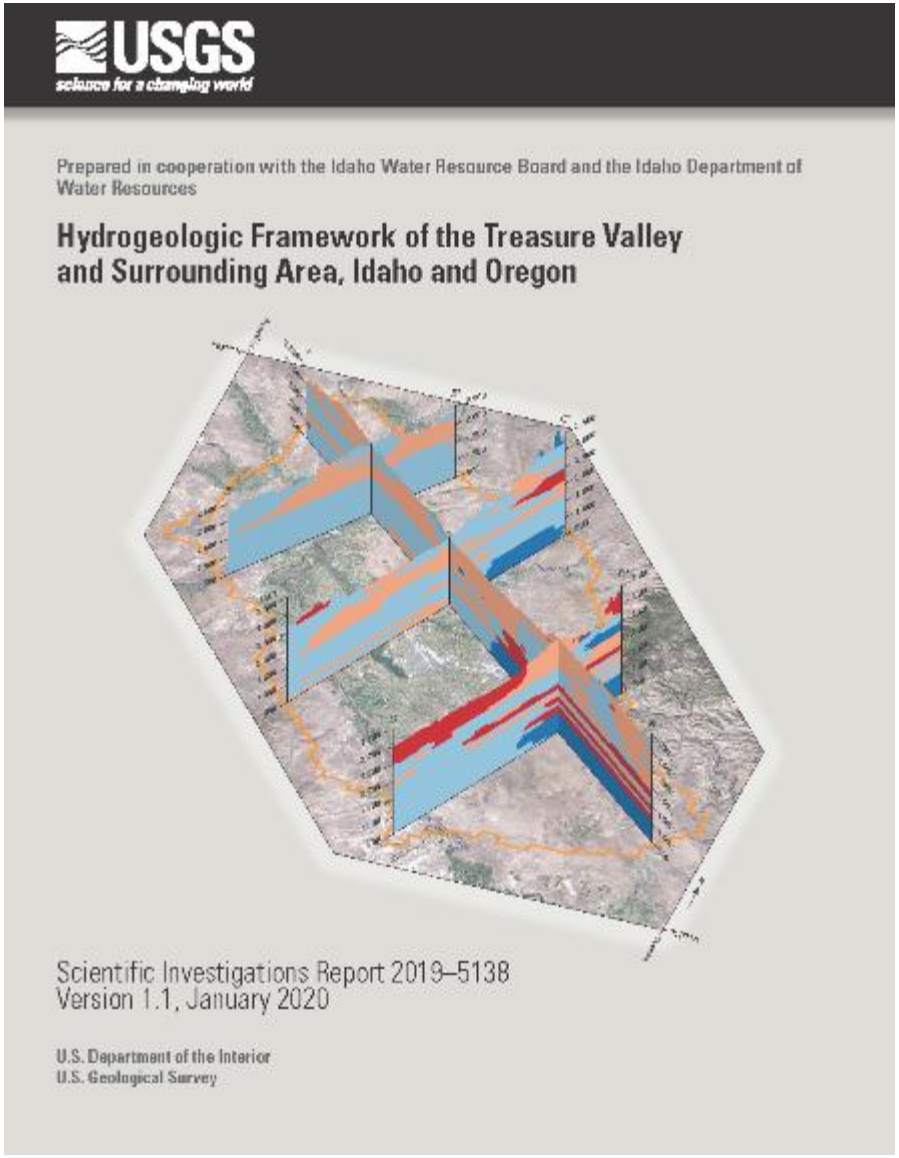
- Report:

https://doi.org/10.3133/sir20195138

- Data:

https://doi.org/10.5066/P9CAC0F6

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