

IWV Draft GSP Section 3 Comments
Submitted by Tim Parker, Consultant to IWVWD

General Comments:

- 1) My understanding is that the TAC and WRM agreed to generally follow the DWR GSP Annotated Outline (attached for your reference. This TOC does not -
 - a. HCM section is separate from Water Budget
 - b. Current and Historical GW Conditions section precedes and forms part of the foundation for Water Budget section
 - c. Water Budget section contains Sustainable Yield estimate
- 2) Geology - there is a lot of data and information in reports that has been generated on the basin geology and not much of the more current work is explained in the section. Per GSP Emergency Regulations please see the following:
§ 351. Definitions (h) "Best available science" refers to the use of sufficient and credible information and data, specific to the decision being made and the time frame available for making that decision, that is consistent with scientific and engineering professional standards of practice.
- 3) The HCM seems oversimplified and as a result does not adequately portray the complexity of the structure and stratigraphy of the basin.
- 4) Current and Historical GW Conditions section - needs to include hydrographs, well locations and gw contour maps in the main portion of the report - this is the basis for all subsequent sections
- 5) References, cross sections and even figures should include the more recent and comprehensive hydrogeologic investigative work of:
 - a. 2002 – Tetra Tech. - Preliminary basewide hydrogeologic characterization report, NAWS china lake, California. Final. June
 - b. 2003 - Tetra Tech Em - Groundwater management in the Indian Wells Valley basin (ab 303 grant)
 - c. 2003 - Tetra Tech Em - Final basewide hydrogeologic characterization summary report, NAWS china lake, California
 - d. 2008 - Stoner, M. D. and Bassett, R. L., - installation & implementation of a comprehensive Groundwater monitoring program for Indian Wells Valley, California." NAWS cl tp 8686. Ab303 grant
 - e. 2012 - Trieco tt - technical justification for beneficial use changes for Groundwater in salt wells valley and shallow Groundwater in eastern Indian Wells Valley
 - f. 2016 - RMC - IWV Groundwater basin salt & nutrient management plan loading analysis
 - g. 2017 - Rosenthal et al - Paleohydrology of China Lake basin and the context of early human occupation in the northwestern Mojave Desert, USA
- 6) Soils - consider the following from ESA 2015.
 - a. ESA, 2015. Indian Wells Valley Land Use Management Plan. - Prepared for Kern County.

Soils - Page 8

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“The National Resource Conservation Service (NRCS) U.S. General Soil Map (STATSGO2) database was reviewed to identify soil units and characteristics underlying the IWV area (NRCS, 2006). The IWV area has not been classified by the United States Department of Agriculture’s NRCS. However, in the area immediately adjacent to the IWV, to the west of State Route-395, the soil has been classified by the NRCS. Two different types of soil occur in this area, which may also be found in the IWV due to its close proximity. A detailed description of each soil unit follows.

Jawbone association, 8 to 50% slopes

The Jawbone soils, 8 to 50 percent slopes are a somewhat excessively drained soil. The parent material consists of Residuum weathered from granite. This soil is on inset fans. Depth to a root restrictive layer is 4 to 12 inches to paralithic bedrock. The depth to the water table is more than 80 inches. The capacity of the most limiting layer to transmit water is very low. Jawbone association soils are classified as Not-Prime Farmland. This soil is in land capability class 8 nonirrigated and non-classified for irrigated farmland.

Dovecanyon-Koehn association, 2 to 8% slopes

The Dovecanyon-Koehn soils, 2 to 8 percent slopes are a well-drained soil. The parent material consists of alluvium derived from granite. This soil is on fan remnants. Depth to root restrictive is more than 80 inches. The capacity of the most limiting layer to transmit water is moderately high to high. The depth to the most restrictive feature is more than 80 inches. This soil is in capability class 7e for non-irrigated land, and non-specified for irrigated land. This soil is classified as NotPrime Farmland.”

- b. Also consider the following reference (there are likely more):
USACE 2001. Delineating Playas in the Arid Southwest - A Literature Review - Technical Report ERDC TR-01-4

7) Figures

- a. Figure labeling needs to be placed consistently next to the figure title.
- b. Figure 3-1 -
 - Need to add B118 boundary - also the southern GSA boundary is not shown (it is currently shown as a black line that culminates with the extent of the watershed and model - assume the3 GSA boundary is the same as the B118 boundary?
 - This is labeled a “Location Map, so suggest removing wells and TRS - make wells separate figure with TRS if needed -
 - For ‘Location Map’ suggest adding (1) Inyokern and Ridgecrest City limits (2) IWVWD jurisdiction (3) NAWS (also include in Map Explanation) (4) Brown (since referenced in narrative) (5) Pearsonville, (6) Searles Valley (since mentioned in narrative) -also an inset of California showing location

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- c. Figure 3-2 - nice diagram -
 - Suggest adding a few more faults trending NE-SW, especially in light of recent events -
 - How do you represent the El Paso area of the basin, which collects and stores and then slowly releases that water into the China Lake area of the IWV basin?
- d. Figure 3-4a - the IWV gw basin boundary should be noted on the figure
- e. Figure 3-4 & 3-5
Two cross section lines, the absolute minimum requirement for cross sections, do not show the complexity of structure and stratigraphy of the basin, nor do they show the relationship between the El Paso and China Lake areas.
- f. Figure 3-7 Shows precipitation for 1981 - 2010 - need to show historical up through 2014, with the date of January 1, 2015 referenced in SGMA. Also would be useful to show watershed and subwatershed boundaries on figure to correlate with inflow into the basin.
- g. Figure 3-8 - assumptions for cumulative departure curves
- h. Figure 3-10 reference/source for springs shown?
- i. Figure 3-11 Looks as though most of the TDS trend wells do not have recent (in the last 5-10 or event 20 years) TDS data - is this true?
- j. Figure 3-12 Please provide range of dates on figure included in "Most Recent TDS (mg/L)" Data
- k. Figure 3-13 Arsenic Trends - do not believe this figure shows anything worth reporting in the GSP, due to the well locations, age and sparsity of data reported. IWVWD and Navy collects As data regularly, as well as the MWCs, and these data should be evaluated for possible inclusion in the GSP.
- l. Figure 3-14
Redundant explanation items - B118 GW basin = IWV GW Basin
Need to add in explanation shading around the gw basin - or remove from figure
- m. Figure 3-15 thru 3-18
 - I believe these figures are inappropriate from the GSP main volume and should instead be placed in the appendix
 - Put figures in that a lay person can see and understand about the model:
 - Model extent showing cells
 - Two to three Model cross sections showing layers