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Via Mail and Electronic Mail

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Subject: Comments on the Indian Wells Valley Groundwater Authority Groundwater Sustainability Plan

Dear Mr. Zdeba:

The California Department of Fish and Wildlife (Department) Central Region is providing comments on the Indian Wells Valley Groundwater Authority Draft Groundwater Sustainability Plan (GSP) prepared by Indian Wells Valley Groundwater Authority for the area of the Indian Wells Valley Groundwater Basin (basin), pursuant to the Sustainable Groundwater Management Act (SGMA). As trustee agency for the State's fish and wildlife resources, the Department has jurisdiction over the conservation, protection, and management of fish, wildlife, native plants, and the habitat necessary for biologically sustainable populations of such species (Fish & G. Code §§ 711.7 and 1802).

Development and implementation of Groundwater Sustainability Plans under SGMA represent a new era of California groundwater management. The Department has an interest in the sustainable management of groundwater, as many sensitive ecosystems and species depend on groundwater and interconnected surface waters. SGMA and its implementing regulations afford ecosystems and species specific statutory and regulatory consideration, including the following as pertinent to Groundwater Sustainability Plans:

- Groundwater Sustainability Plans must identify and consider impacts to groundwater dependent ecosystems (GDEs) pursuant to 23 CCR § 354.16(g) and Water Code § 10727.4(l); and

- Groundwater Sustainability Agencies must consider all beneficial uses and users of groundwater, including environmental users of groundwater pursuant to Water Code §10723.2 (e); and Groundwater Sustainability Plans should identify and consider potential effects on all beneficial uses and users of groundwater pursuant to 23 California Code of Regulations (CCR) §§ 354.10(a), 354.26(b)(3), 354.28(b)(4), 354.34(b)(2), and 354.34(f)(3); and

- Groundwater Sustainability Plans must establish sustainable management criteria that avoid undesirable results within 20 years of the applicable statutory deadline, including depletions of interconnected surface water that have significant and unreasonable adverse impacts on beneficial uses of the surface water pursuant to 23 CCR § 354.22 *et seq.* and Water Code §§ 10721(x)(6) and 10727.2(b) and describe monitoring networks that can identify adverse impacts to beneficial uses of interconnected surface waters pursuant to 23 CCR § 354.34(c)(6)(D); and

- Groundwater Sustainability Plans must account for groundwater extraction for all Water Use Sectors including managed wetlands, managed recharge, and native vegetation pursuant to 23 CCR §§ 351(al) and 354.18(b)(3).

Furthermore, the Public Trust Doctrine imposes a related but distinct obligation to consider how groundwater management affects public trust resources, including navigable surface waters and fisheries. Groundwater hydrologically connected to navigable surface waters and surface waters tributary to navigable surface waters are also subject to the Public Trust Doctrine to the extent that groundwater extractions or diversions affect or may affect public trust uses (*Environmental Law Foundation v. State Water Resources Control Board* (2018), 26 Cal. App. 5th 844). Accordingly, groundwater plans should consider potential impacts to and appropriate protections for navigable interconnected surface waters and their tributaries, and interconnected surface waters that support fisheries, including the level of groundwater contribution to those waters.

Accordingly, the Department values SGMA groundwater planning that carefully considers and protects groundwater dependent ecosystems and fish and wildlife beneficial uses and users of groundwater and interconnected surface waters.

COMMENT OVERVIEW

The Department supports ecosystem preservation in compliance with SGMA and its implementing regulations based on Department expertise and best available information and science.

The Department recommends that the GSP provide additional information and analysis that considers all environmental beneficial uses and users of groundwater in its sustainability management criteria and better characterize or consider shallow groundwater. The Department is providing additional comments and recommendations below.

GSP COMMENTS AND RECOMMENDATIONS

1. **Comment #1 Environmental Beneficial Users of Groundwater.** Section 1 Introduction, Subsection 1.4 Notice and Communication (Section 1, page 13).

   Per 23 CCR § 354.10(a), GSPs are to include in the Notice and Communication Section a "description of the beneficial uses and users of groundwater in the basin."

   a. *Issue:* The GSP does not list nor describe beneficial uses and users of groundwater, including environmental uses and users, in Subsection 1.4 Notice and Communication. Additionally, environmental beneficial users are not explicitly represented in the Technical Advisory Committee or the Policy Advisory Committee (Section 1, pages 10-11). In other locations, the GSP mentions SGMA's required consideration of all beneficial uses and users of groundwater, including GDEs (Section 2, page 37), and notes that the GSP does consider the interests of all beneficial uses and users of groundwater (Section 2, page 32); however the identification and description of beneficial uses and users is not included in any location in the GSP.

      The GSP does, however, demonstrate some consideration of environmental beneficial uses and users of groundwater. For example, the GSP identifies key guiding tenants of local land use plans, including the Inyo County General Plan's goals to protect and preserve water resources for the maintenance, enhancement, and restoration of environmental resources; and to protect and restore environmental resources from the effects of export and withdrawal of water resources (Section 2, page 21). The GSP also identifies the resident State and federal endangered and State fully protected fish species, the Mojave Tui Chub (*Siphateles bicolor mohavensis*), and identifies its dependence on local groundwater seeps as well as a guiding U.S. Fish and Wildlife Service Biological Opinion and Navy-prepared Habitat Management Plan (Section 2, page 36). Finally, the GSP identifies potential GDEs (Section 3, pages 34-35, Figure 3-16) (see Comment #3) and acknowledges that GDEs on the valley floor are vulnerable and susceptible to impacts related to the chronic lowering of groundwater levels (Section 3, page 35; Section 4; page 18). These environmental uses and users of groundwater, however, are not mentioned or considered in the Sustainable Management Criteria (SMC) potential effects analysis that looks only at impacts to shallow wells (Section 4, page 14-15).

   b. *Recommendations:* The Department recommends identifying environmental beneficial uses and users of groundwater in the Notice and

Communication Section and including a detailed description on how these users, such as GDEs and the species therein, may rely on groundwater and may be impacted by SMC pursuant to 23 CCR §§ 354.10(a), 354.26(b)(3), 354.28(b)(4), 354.34(b)(2), and 354.34(f)(3). The Critical Species Lookbook (The Nature Conservancy 2019) is a resource to help identify threatened and endangered species in any basin subject to SGMA and to help understand species relationships to groundwater. The LookBook also offers narrative on species and habitat groundwater dependence that can be a model for describing environmental beneficial uses and users of groundwater in the GSP.

2. **Comment #2. Plan Area**. Section 2 Plan Area. Section 2.5 Land Use. Subsection 2.5.2 Summary of General Plan and Other Land Use Plans. Subsection 2.5.2.1 Kern County (pages 17 to 20).

   The Department owns 80 acres in two parcels as part of Indian Wells Valley mitigation lands, approximately 9 miles west of Ridgecrest and 4.5 miles south of Inyokern. The Department is in the process of designating these mitigation lands to the Ecological Reserve system and there is one abandoned well present on this property. California Department of Transportation (CalTrans) owns approximately 1,800 acres of mitigation lands around the Department's property and there are plans to add these CalTrans lands to the future Indian Wells Valley Ecological Reserve. All of these lands are primarily managed for terrestrial State and Federal listed species.

3. **Comment #3. Groundwater-Dependent Ecosystems**. Chapter 3 Basin Setting. Section 3.4 Current and Historical Groundwater Conditions and Hydrology, Subsection 3.4.7 Groundwater Dependent Systems (pages 34 to 35) and Figure 3-16.

   The GDE identification section, pursuant to 23 CCR § 354.16 (g), identifies ecosystems that may depend on groundwater. The GSP acknowledges that critical information on the relationship between groundwater levels and the health of GDEs is currently unknown (Section 3, page 35; Section 4, page 18). The Department supports the expansion of GDE monitoring proposed as part of the GSP monitoring program to better understand the relationship between groundwater level and GDE health (Section 3, page 35; Section 4, page 18) and recommends that the GSP specify the methods and implementation timeline to expanding GDE monitoring.

   a. *Recommendations:* The Department concurs that additional information is needed, as described in Subsection 3.1.1.4 Other Data Gaps (page 52), to positively identify GDEs and other valuable native habitats within the GSP area. The Department recommends including additional references for

GDE evaluations. The Department recognizes that the Navy's Integrated Natural Resources Monitoring Plan (INRMP) and the Natural Communities Commonly Associated Groundwater (Klausmeyer et al. 2018) provided by the California Department of Water Resources (CDWR) are good starting references for GDEs. There are additional resources available for evaluating GDE locations and habitat types, as well as information for State and Federal listed species. These recommended references include but not limited to the following tools and other resources: the California Department of Fish and Wildlife California Natural Diversity Database (CNDDB) (2019); the California Native Plant Society (CNPS) Manual of California Vegetation (CNPS 2019A); the CNPS California Protected Areas Database (CNPS 2019B); the U.S. Fish and Wildlife Service online mapping tool for listed species critical habitat (2019); the U.S. Forest Service CALVEG ecological grouping classification and assessment system (2019); and other publications by Klausmeyer et al. (2019), Rohde et al. (2018), The Nature Conservancy (2014, 2019), and Witham et al. (2014).

The Department also recommends aligning Figure 3-16 and Navy-produced GDE maps to provide the most accurate representation of likely GDEs in the basin (Section 3, page 35) based on field verification. Finally, the Department recommends integrating the Navy's INRMP phreatophyte inventories into the description of environmental beneficial uses and users (see Comment #1) and the analysis of SMC impacts on GDEs (See Comment #5).

4. **Comment #4 Groundwater Conditions and Monitoring.** Section 3 Basin Setting (multiple Subsections), Section 4 Sustainable Management Criteria (multiple Subsections).

   The GSP does not thoroughly characterize shallow groundwater and the hydrologic relationships between: 1) the shallow and the deeper principle aquifers, and 2) springs and seeps and the principle aquifers.

   a. *Issue:* The GSP intermittently mentions the relationship between surface expressions of groundwater (e.g., GDEs and springs and seeps) but does not thoroughly discuss the hydrologic dynamics and conditions that govern hydrologic communication between the principle aquifers and groundwater on or near the ground's surface. In the Basin Setting Section, the GSP identifies two principle aquifers – a shallow aquifer and a deeper aquifer – with strong connections between the two in some areas, more clear confinement in other areas, and artesian conditions within the deeper aquifer beneath lacustrine sediments (Section 3, page 21). Besides identifying the many seeps and springs in the basin (Section 3, page 17;

Figure 3-11), some of which contribute to the significant basin 'outflow' such as evapotranspiration from the China Lake playa (Section 3, pages 35, 52), the GSP does not elaborate on other inter-aquifer dynamics. The visual representation of the aquifer in Figure 3-3 does not clarify these dynamics; although the GSP acknowledges that declining groundwater levels have, and continue to, impact shallow production wells (Section 3, page 30), it does not provide a clear characterization of shallow versus deep wells.

There are also confusing statements wherein the GSP characterizes GDEs in the El Paso area as not vulnerable to groundwater impacts because the groundwater levels are steady in the region (Section 3, page 35), and later, the GSP notes that there are few monitoring wells in the El Paso area and the groundwater has not been well characterized and would benefit from additional monitoring wells (Section 3, page 50).

Furthermore, it is not clear how the 10 representative monitoring wells selected to monitor SMC (Section 4; pages 25-26, 37) will adequately capture shallow groundwater dynamics or inter-aquifer dynamics, both of which matter to environmental beneficial uses and users of groundwater, when most of the representative monitoring wells appear to track groundwater levels from the deeper aquifer several hundred feet below the ground surface elevation (Figure 4-5a through 4-5j).

Therefore, the GSP appears to offer few data points on shallow groundwater level trends and potential pumping impacts to seeps and springs as they relate to environmental users of groundwater. These data are critical to understanding groundwater management outcomes for fish and wildlife beneficial uses and users of groundwater, including GDEs and possible interconnected surface water habitats, which are impacted disproportionately by shallow groundwater and vertical gradient trends. These trends can impact the accessibility of groundwater to GDEs by lowering or raising the potentiometric groundwater surface, which influences seepage rate of springs and seeps by pressurizing or depressurizing aquifers under artesian conditions.

b. *Recommendations:* To better characterize groundwater conditions in a manner that best understands potential impacts to fish and wildlife beneficial uses of groundwater, the Department recommends that the GSP include figures presenting hydrographs from the 10 multi-level monitoring wells in the basin (Section 3, page 49), and provide an analysis of the hydrographs that discusses inter-aquifer dynamics and vertical gradient trends. Additionally, the Department recommends the general expansion of shallow groundwater monitoring, potentially through the

installation of additional nested monitoring wells near likely GDEs, to develop robust depth to groundwater contours and to better understand the potential for groundwater dependent ecosystems to be supported by shallow groundwater and/or vertical hydraulic gradients producing seeps and springs [23 CCR 354.34 (b)(2)]. This recommendation aligns with the GSP's intent to expand groundwater level monitoring in the vicinity of GDEs (Section 4, page 37). Specifically, the Department recommends installation of monitoring wells near likely GDEs in the El Paso area and near sites that have experienced documented vegetation loss due to lowered groundwater levels (Section 3, page 35). The Department encourages an active information-exchange and monitoring partnership with the Naval Air Weapons Station China Lake to understand groundwater dynamics in the China Lake area that may be susceptible to dramatic groundwater elevation decreases if project and management actions are not implemented in a timely fashion (Section 4, page 18). The Department supports the installation of data loggers, as proposed by the GSP, in existing wells near GDEs (Section 3, page 52).

5. **Comment #5 Sustainable Management Criteria.** Section 4 Sustainable Management Criteria (multiple Subsections).

   Sustainable Management Criteria do not reflect consideration of impacts to environmental beneficial uses and users of groundwater, pursuant to 23 CCR 354.26(b)(3) and 23 CCR 354.28(b)(4).

   a. *Issue:* Hydrographs throughout the GSP area demonstrate significant and unreasonable prolonged groundwater drawdown that has caused undesirable results (Section 4, page 12) .The GSP states, "Historical impacts to GDEs have already occurred and will continue to occur if groundwater levels continue to decline" (Section 3, page 35). However, as mentioned in Comment #1, environmental uses and users of groundwater are not considered in the SMC 'potential effects' analysis that looks only at impacts to shallow wells (Section 4, page 14-15). Undesirable results are defined by the number of shallow wells expected to be impacted, and if project and management actions are implemented, 22 shallow well impacts are expected to suffer impacts – a number the GSP considers feasible for mitigation (Section 4, page 14). Groundwater elevation Minimum Thresholds and Measurable Objectives are established for wells with groundwater elevations far below the ground's surface (see Comment #4). These SMC are based on adjusted simulated future groundwater levels under Project and Management Action implementation scenarios, but the GSP does not tie these SMC to potential impacts on environmental beneficial uses and users of groundwater.

b. *Recommendations:* The Department recommends that the GSA perform an analysis on SMC expected impacts to environmental beneficial uses and users of groundwater. If serious continued adverse impacts are expected, the Department recommends adjusting SMC to better preserve the groundwater interests of fish and wildlife. Should information not be available to perform this analysis, the Department recommends identifying a clearly sequenced path and expedited timeline for acquiring the necessary information for reevaluation of SMC in future GSP updates.

OTHER COMMENTS: Implementation of Future Project Actions Related to SGMA

SGMA exempts the preparation and adoption of GSPs from the California Environmental Quality Act (CEQA) (WC § 10728.6); however, SGMA specifically states that implementation of project actions taken pursuant to SGMA are not exempt from CEQA (WC § 10728.6). The Department is California's Trustee Agency for fish and wildlife resources and holds those resources in trust by statute for all the people of the State (Fish & G. Code, §§ 711.7, subd. (a) & 1802; Pub. Resources Code, § 21070; CEQA Guidelines § 15386, subd. (a)). The Department, in its trustee capacity, has jurisdiction over the conservation, protection, and management of fish, wildlife, native plants, and habitat necessary for biologically sustainable populations of those species (*Id.*, § 1802). Similarly, for purposes of CEQA, the Department is charged by law to provide, as available, biological expertise during public agency environmental review efforts, focusing specifically on projects and related activities that have the potential to adversely affect fish and wildlife resources.

The Department is also a Responsible Agency under CEQA (Pub. Resources Code, § 21069; CEQA Guidelines, § 15381), and the Department expects that it may need to exercise regulatory authority as provided by the Fish and Game Code for implementation of projects related to the GSP that are also subject to CEQA. These projects may be subject to the Department's lake and streambed alteration regulatory authority (i.e., Fish & G. Code, § 1600 et seq.). Notification pursuant to Fish and Game Code § 1602 is warranted if a project will (a) substantially divert or obstruct the natural flow of any river, stream, or lake; (b) substantially change or use any material from the bed, bank, or channel of any river, stream, or lake (including the removal of riparian vegetation); and/or (c) deposit debris, waste or other materials that could pass into any river, stream, or lake. Likewise, to the extent that implementation of any project may result in "take" as defined by State law of any species protected under the California Endangered Species Act (CESA) (Fish & G. Code, § 2050 et seq.), related authorization as provided by the Fish and Game Code will be required. The Department is required to comply with CEQA in its issuance of a Lake or Streambed Alteration Agreement or an Incidental Take Permit.

Water Rights: The implementation of SGMA does not alter or determine surface or groundwater rights (WC § 10720.5). It is the intent of SGMA to respect overlying and other proprietary rights to groundwater, consistent with section 1200 of the Water Code (Section 1(b)(4) of AB 1739). The capture of unallocated stream flows to artificially recharge groundwater aquifers are subject to appropriation and approval by the State Water Resources Control Board (SWRCB) pursuant to Water Code § 1200 et seq. The Department, as Trustee Agency, is consulted by SWRCB during the water rights process to provide terms and conditions designed to protect fish and wildlife prior to appropriation of the State's water resources. Certain fish and wildlife are reliant upon aquatic and riparian ecosystems, which in turn are reliant upon adequate flows of water. The Department therefore has a material interest in assuring that adequate water flows within streams for the protection, maintenance and proper stewardship of those resources. The Department provides, as available, biological expertise to review and comment on environmental documents and impacts arising from project activities.

CONCLUSION

In conclusion, the GSP needs to address all SGMA statutes and regulations, and the Department recommends that the GSP seriously consider fish and wildlife beneficial uses and shallow groundwater dynamics. The Department recommends that the Indian Wells Valley Groundwater Authority consider the above comments before the GSP is submitted to CDWR. The Department appreciates the opportunity to provide comments on the GSP. If you have any further questions, please contact Dr. Andrew Gordus, Staff Toxicologist, at Andy.Gordus@wildlife.ca.gov or (559) 243-4014 extension 239.

Sincerely,

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Regional Manager, Central Region

Enclosures (Literature Cited)

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