Oregon
Tina Kotek, Governor

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Groundwater Allocation Rules Advisory Committee
Hybrid Meeting #1 (8:30 am – noon, April 19, 2023)
Meeting Summary

This is a summary of the Groundwater Allocation Advisory Committee (RAC) Meeting held in person (Salem office, Oregon Water Resources Department) and virtually (Zoom platform), on April 19, 2023, from approximately 8:30 to Noon. For more information, see the Meeting Agenda, Meeting Presentation, Draft Rules, and other Meeting Materials, available online at https://www.oregon.gov/owrd/programs/GWWL/GW/Pages/Groundwater-Rulemaking.aspx

Rules Advisory Committee (RAC) members in attendance:

Adam Sussman, Central Oregon Cities Organization, GSI Water Solutions
April Snell, Oregon Water Resources Congress
Bill Jaeger, Applied Economics, OSU
Brad Parrish, Klamath Tribes
Casey McClellen, Seven Hills Winery
Cheyenne Holliday, Verde
Dave Wildman, Anderson Perry & Associates
Gen Hubert, Deschutes River Conservancy
Greg Kupillas, Pacific Hydrology
Jeff Stone, Oregon Association of Nurseries
Karen Lewotsky, Oregon Environmental Council
Kelly Warren, Confederated Tribes of the Umatilla Indian Reservation
Laura Masterson, 47th Ave Farms
Lauren Poor, Oregon Farm Bureau
Lisa Brown, WaterWatch of Oregon
Margaret Durner, Powder Basin Watershed Council
Misty Buckley, Homeowner, Klamath County
Nick Siler, Atmospheric Science, OSU
Obie Strickler, Grown Rogue
Phil Brown, Northwest Groundwater Services
Robyn Cook, GSI Water Solutions
Sarah Liljefelt, Oregon Cattlemen's Association
Susan Lea Smith, Willamette University Law School
Tammy Wood, Oregon Lakes Association
Tyler Hufford, Rancher
Zach Freed, The Nature Conservancy

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RAC members not in attendance:

Derrick DeGroot, Klamath County Commission/AOC
Kelly Simmelink, Jefferson County Commission
Michael Martin, League of Oregon Cities
Scott White, Klamath Drainage District

Oregon Water Resources Department (OWRD) staff in attendance: Justin Iverson, Groundwater Section Manager, Laura Hartt, Policy Analyst and Rules Coordinator, Annette Liebe Technical Services Division Administrator. Additional staff listening virtually: Mary Bjork, Darrick Boschmann, Travis Brown, Camille Collett, Jerry Grondin, Jon LaMarche, Amanda Mather, Kelly Meinz, Ben Scandella, and Tim Seymour.

Members of the public: Rex Barber (Big Falls Ranch), Mike Buettner (Central Oregon Cities Organization and City of Bend), Harmony Burright, Edward Butts (4B Engineering and Consulting), Danette Faucera (Oregon Department of Fish and Wildlife), Jason Melady (Summit Water Resources), Deb Merchant, and Ken Yates (proxy for April Snell, Oregon Water Resources Congress).

Welcome & Introductions

RAC members and key OWRD staff introduced themselves.

Agenda Review; Meeting Guidelines

OWRD staff reviewed the meeting agenda and meeting guidelines.

Rulemaking Process & Timeline; RAC Operating Guidelines

OWRD staff reviewed the rulemaking process and timeline; the draft timeline shows four meetings between April and June 2023, a 60-day public comment period (and public hearings) tentatively scheduled for August and September 2023, and Water Resources Commission consideration in mid-November 2023. One RAC member asked why the Department was scheduling the RAC process during the legislative session. OWRD responded that the timing responds to the priority of this effort for the Water Resources Commission.

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Rulemaking Objective

OWRD staff summarized the objective of the rulemaking. Some RAC members questioned how exempt use wells are reflected in the Groundwater Concerns Assessment and asked whether exempt use wells will be impacted by the rulemaking. OWRD staff responded that exempt use wells are not impacted by the rulemaking and offered to include more information concerning exempt well use in the next RAC meeting.

A RAC member how the statutory language "the Legislative Assembly recognizes, declares and finds that the right to reasonable control of all water within this state from all sources of water supply belongs to the public..." (ORS 537.525) relates to tribal interests and rights. OWRD staff indicated that they understand the government-to-government relationship with Oregon tribes but will need to seek DOJ advice on the extent to which the statutory policy language recognizes tribal interests.

A RAC member requested a high-level summary of criteria used in the Groundwater Concerns Assessment and whether the report had been peer reviewed in areas of concern. OWRD staff indicated that the report had been peer reviewed internally but not by outside experts. The report, Scandella & Iverson (2021), Oregon Groundwater Resource Concerns Assessment (OWRD White Paper) is available online at https://www.oregon.gov/owrd/WRDReports/2021_Groundwater_Resource_Concerns_Report.pdf.

A RAC member suggested putting the percent of approved applications in perspective, noting that every application that comes across his desk gets vetted. He further explained that only applications with a high probability of success are sent to OWRD. He noted that Pacific Hydrogeology has close to 100% success in terms of application approval. Therefore, the RAC member did not find the numbers in the Groundwater Assessment Report to be surprising. He also summarized his understanding of the groundwater review process, which includes boxes to check for over-appropriation (yes/no/cannot be determined). He then noted the Commission's concern that permits were being issued when the "cannot be determined" box was checked.

Another RAC member requested direct link to the materials from the public outreach meetings in Fall 2022. These materials are available online here: https://www.oregon.gov/owrd/programs/GWWL/GW/Pages/Groundwater-Rulemaking.aspx (see "Public Engagement, Hearings and Comments" tab).

Key Groundwater Concepts (slides 13-22)

A RAC member noted that the slide showing groundwater and surface water connections (slide 17) did not capture layered aquifers. The RAC member further noted that the simplified vision

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depicted in the slide does not help people understand the vertical challenges in identifying an aquifer and resource availability. OWRD staff agreed, responding that the slide is an oversimplification to highlight key concepts. OWRD staff also noted that other issues such as heterogeneity and timing are important, while recognizing that hydraulically connected groundwater flow paths still exist within and between layered aquifers. OWRD staff explained that while subsurface complexity affects the timing of pumping impacts to surface water sources, the impact will nonetheless occur. These concepts are further described in Barlow & Leake (2012), "Streamflow depletion by wells-Understanding and managing the effects of groundwater pumping on streamflow," (USGS Circular 1376), which is available online at: https://pubs.usgs.gov/circ/1376/

One RAC member asked whether there is water in the ground that is not considered groundwater. OWRD staff responded that, yes, often between the ground surface and the water table there is an unsaturated or partially zone in which the pore space is filled with both water and air, termed the vadose zone. The physics of groundwater flow through the vadose zone are different than those for fully saturated groundwater flow occurring below the water table.

A RAC member asked whether the figure showing pumping (slide 19) includes time-varying pumping or assumes continuous pumping. OWRD staff responded that the block diagram does not specify the pumping pattern. OWRD staff then discussed several scenarios describing how time-varying pumping still captures groundwater that would otherwise have discharged to surface water.

A RAC member asked whether there can be collapse of a confined layer that can restrict future flow. OWRD staff replied that yes, that can happen. For example, in the California Central Valley, removal of groundwater led to collapsing pore space and caused the overlying land to subside. We have not seen that in Oregon yet.

A RAC member mentioned that he has clients in Yamhill County with wells in fractured marine sediments that experienced a reduction in maximum pumping rates from 15 gallons per minute (gpm) to 2 gpm over time. This reduction in pumping capacity is believed to be caused by the collapse of water-bearing fractures due to over-pumping. As a result, it was necessary for them to drill a new well. In other words, such collapses may occur in Oregon, but it is not common in alluvial aquifers.

Another RAC member followed up by asking if an aquifer collapses, is it fair to say you can never put water back in that space. OWRD staff responded that they are not aware of any way to "re-inflate" pore space.

A RAC member asked how aquifer recharge affects hydrological connection, specifically, whether there is a way to use recharge to reduce cones of depression. The RAC member further

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noted that with the potential for increased rain (not snow) events in the future, there is a desire to understand how aquifer recharge fits with these issues. OWRD staff responded that aquifer storage is of interest, and for this rulemaking the scope is future allocation of "natural supplies." Right now, water rights associated with Aquifer Storage and Recovery (ASR) and Aquifer Recharge (AR) are regulated like a bank, so recovery of artificially recharged water won't be affected by this rulemaking. A RAC member noted that the draft rules could create a moratorium on all new groundwater permits.

A RAC member noted that the fact that Deschutes Groundwater Study Area is indicated in red on the Groundwater Concerns Map because of state scenic waterway requirements may be misleading, because the Deschutes Mitigation program was established by rule mitigates for these impacts.

A RAC member mentioned that he is skeptical about the maps, especially in the Willamette Valley. OWRD staff explained that, for visualization's sake, the map assigns concern classifications to entire township areas even if the observations triggering the concern rating were limited to a small area of the township. Staff further noted that stacked aquifers were grouped together. (Please refer to the last paragraph of the Summary section on page 6 of Scandella & Iverson (2021), Oregon Groundwater Resource Concerns Assessment (OWRD White Paper), available online at https://www.oregon.gov/owrd/WRDReports/2021_Groundwater_Resource_Concerns_Report.pdf).

A RAC member agreed that the map needs to be taken with a grain of salt. Their consulting company does water level measurements every March throughout the Willamette Valley. According to the RAC member, very few wells are declining, and this year, levels in some wells have gone up. OWRD staff agreed that water levels vary seasonally in response to precipitation/recharge and pumping/discharge. OWRD staff further noted that for areas where water levels have been steady year-over-year, that generally means a well has captured water that would otherwise have discharged to surface water (as opposed to dominantly pumping from aquifer storage and resulting in water level declines over time).

A RAC member asked why reduced base flow is not shown in the Water Availability and Reporting System (WARS). The RAC member further noted that if you look at a water availability basin in the model, you do not see base flow numbers changing, even over the course of many years. OWRD staff responded that the model is a static one based on a period of record of 1958-1987, and therefore the natural streamflow values do not change. OWRD is seeking resources to update the model.

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Current Allocation Process & Need for Updated Rules (slides 23-32)

A RAC member asked whether appropriation includes exempt uses? Department staff responded that for the sake of this discussion appropriation equals water rights. It doesn't take cumulative exempt uses into account.

A RAC member mentioned that exempt wells do need to come up and be part of the solution for example, in the Harney Basin. There are areas where domestic wells are expanding through development enough to become a larger component.

A RAC member asked how piping might affect recharge since leaky canals have been a source of recharge. They also indicated they would be happy to follow up offline.

A RAC member asked about the types of data used to evaluate recharge in confined and unconfined aquifers. Department staff responded that current estimates of recharge are made by assuming recharge is approximately equal to stream baseflow (discharge), which is possible to measure. We currently have state-wide estimates using this method from a 1968 USGS study. Given recharge estimates are only available at basin-wide scales, WRD currently uses water level data as a proxy for this part of the definition of over-appropriation. If the dominant source of water to wells in an area is storage, water level trends will decline when pumping exceeds recharge.

A RAC member asked when the definition of "excessively declined" was established, noting that his colleagues are not all in agreement that water levels are a good proxy, because they do not account for proximity to recharge and/or well construction. In other words, the RAC member wanted to know if the numbers in the definition apply across the state. OWRD staff indicated that the department would research the history of the Commission's adoption of the definition.

Draft Rules – Overview: slides 34-46

A RAC member asked why OWRD is focusing this rulemaking effort on whether water is available on not on injury. OWRD staff responded that they are trying to limit how many rule changes are needed to accomplish the rulemaking objectives.

A RAC member asked whether there is more recent science than the 1940 study from Theis. Department staff responded that Theis's (1940) paper is a widely cited reference that formed the foundation of quantitative well hydraulics. Barlow & Leake (2012) summarizes the major advances in the science of the source of water to wells since then.

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A RAC member mentioned that it is important to recognize significant factors with other agencies that make permitting more difficult. The RAC member also requested that OWRD prioritize a review of Division 33, which is not part of this rulemaking.

One RAC member stated that his understanding is that surface water is already over-allocated, and therefore, by considering the hydraulic connection between most groundwater and surface water systems, groundwater may be similarly over-allocated. OWRD staff agreed with that assessment.

Draft Rules - Review (Division 300): slides 47-50

RAC members reviewed the proposed rule changes as follows.

690-300-0010(57) "Water is Available" Definition
A RAC member asked if there will be opportunity to submit additional comments and follow up further on these rules; OWRD staff indicated this is not the only opportunity for feedback.

RAC members had no other comments on the proposed rule changes for Division 300.

Draft Rules - Review (Division 400): slides 51-55

RAC members reviewed the proposed rule changes as follows.

690-400-0010(4) "Capacity of the Resource" Definition
A RAC member asked what timeframe applies to the term "impend" in the draft rules, specifically whether the draft language applies to all wells over time or only wells that are active.

OWRD staff responded that the intent is to consider all valid water rights, acknowledging that not all water rights are used to their full extent every year but the authorization and potential to do so remains. OWRD staff also noted that although the draft rules do not include a time limit on "impend," determination of the proper time scale would depend upon the professional judgement of the hydrogeologist doing the review of the application.

OWRD staff also noted that the proposed rules replace "cause" with "contributed to" to address cumulative impacts from all wells. OWRD staff then reviewed the proposed criteria outlined in (a) - (c), which are a subset of those found in ORS 537.525(9).

One RAC member noted that accounting for all paper water rights may over-estimate adverse impacts because not all water rights are fully-exercised all the time. OWRD staff responded that while this accounting may overestimate impacts, theoretically all existing water rights may be pumped at any given time.

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One RAC member suggested trying to reconcile the term "impend" with "sustain."

A RAC member stated that the goal of rulemaking is to clarify statute, i.e., if terms are not defined, then the rules do not add value.

OWRD staff replied that they would review the proposed draft rule language, including use of the term "impends" and revisit the language with the RAC during the next meeting.

One RAC member noted that in the Deschutes Basin, cycles of precipitation cause groundwater levels to rise and fall. The member also noted that groundwater levels may be influenced by canal leakage.

Some RAC members expressed concern about leaving too much to the discretion of the groundwater allocation reviewer. OWRD staff responded that they understand the concerns but also want to ensure that there is the ability to rely on professional judgement because once a number is codified, there is no longer discretion to act based on best available science.

690-400-0010(11) "Over-Appropriated" Definition

A RAC member stated that using hydraulic connection is an overly broad approach to considering impacts to surface water. OWRD staff noted that the timing of impacts from pumping will depend on location. As a previous RAC member mentioned, locations of all wells will have impacts.

A RAC member noted that the proposed rules seem to lead to more findings of over-appropriation and therefore denial of most applications.

Department staff indicated that they agree that the rules as drafted will result in more findings of over-appropriation and therefore more findings that water is not available for additional appropriation. The rule changes are intended to allocate groundwater in a manner that is more sustainable and protective of existing users than the current practice.

A RAC member requested OWRD consider clarifying where criteria apply only to confined aquifers (i.e., 690-400-0010(11)(b)). The RAC member commented that OWRD seemingly finds everything, even confined aquifers, to be hydraulically connected; therefore, the proposed rules would result in denial of 100% of applications. OWRD staff responded that if comments made during the meeting conflated "confined" with "hydraulically connected," it was unintentional, and they would review the language in the draft rule.

A RAC member asked how hydraulic connection would be determined and by whom? The member also asked if there was a database containing existing findings of hydraulic connections?

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OWRD staff responded that the department's hydrogeologist reviewing the application makes this determination by looking at the available data. One important piece of data is water levels in wells compared with surface water elevations as an indication of hydraulic connection.

A RAC member stated that he agreed with the additions to rules, including hydraulic connection, and asked why OWRD removed "exceeds the average annual recharge to a groundwater source over the period of record" from the rule. Instead, he recommended retaining the language as an extra layer of precaution. He noted that information was lacking in many basins but that the state did have some data available for the Willamette, Deschutes, Harney, Klamath, and Walla-Walla.

A RAC member commented that the proposed revisions to 690-400-0010(11)(b) may not address potential impacts to deep confined basalt aquifers not directly connected to a surface water source. OWRD staff responded that 690-400-0010(11)(b) and (c) get at different sources of water to wells. For poorly connected basalt, 690-400-0010(11)(c) would be the controlling consideration

A RAC member asked which rules will apply to applications already received. OWRD staff clarified that these rules would apply to applications received after the effective date of the rules.

A RAC member pointed out that the definition of "over-appropriated" (for groundwater) is awkwardly constructed because it uses the word "over-appropriated" (while referring to surface water). OWRD staff responded that they would take another look at the definition.

Public Comment: slide 57

One member of the public commented that there was need for an exception made for the Deschutes Basin, where OWRD already has an established mitigation program that accounts for the hydraulic connection.

Another member of the public asked if there was a webpage that provides information about the water resources available relative to water rights allocation permits. OWRD staff responded that for surface water, the Water Availability Reporting System could be found online, available here:
https://www.oregon.gov/owrd/programs/streamslakessanddams/surfacewater/pages/surface-water-availability.aspx

She also commented (in the Zoom chat) that water planning in Benton City was needed. She invited suggestions from individuals who have experience in assessing water issues and facilitating a comprehensive planning process.

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Wrap- Up and Next Steps: slide 59

OWRD staff requested feedback on rules discussed during the RAC meeting (i.e., Division 300 and 400) by April 26, 2023.

OWRD noted that the next hybrid RAC meeting was scheduled for May 10, from 8:30 am to noon. The meeting was then adjourned.