Appendix II.B.9.d) Example Assignment of Error (AOE) For Ground Water

Assignments of Error (AOEs) Format

The County's Findings That the Carrying Capacity of the Land's Groundwater Resources Is Adequate to Support the Allowed Densities and Uses Are Inadequate and Not Supported by Substantial Evidence in the Whole Record

Assignments of Error (AOEs) have four sections.

1. Potential Assignment of Error
2. Standards & Criteria, Relevant Laws & Rules
3. Analysis of Facts
4. Conclusion Statement

2008 Example AOE

D. FOURTH ASSIGNMENT OF ERROR

The County's Findings That the Carrying Capacity of the Land's Groundwater Resources Is Adequate to Support the Allowed Densities and Uses Are Inadequate and Not Supported by Substantial Evidence in the Whole Record

1. Assignment of Error

The county's findings fail to adequately address the issue of whether the density of allowed development will exceed the carrying capacity of the groundwater supply for the subject property and surrounding lands relying on a common aquifer.

2. Summary Of Applicable Standards And Criteria

JCCP Goal 11, Policy 2.C and RLDC 46.040.C require that "Requests involving changes to the plan and/or zone maps * * * demonstrate the land has adequate carrying capacity to support the densities and types of uses allowed by the proposed plan and zone designations." Rec 50, App B2,

JCCP Goal 11, Policy 2.C[1]-[6] and RLCD 46.040.C.1-6 are the same and list factors that must be considered in making the required carrying capacity determination. Recs 50 - 51, App B2 JCCP Goal 11, Policy 2.C[2] and RLDC 46.040.C.2 require that the carrying capacity analysis consider "*the land and surrounding area*" by finding:

> "Other physical characteristics of the land and surrounding area make the land suitable for the proposed density and types of uses[.]" Rec 50

The RLDC 11.030 definition of "carrying capacity" provides, in relevant part:

> "The ability of land to support proposed development as determined by an evaluation of * * * the adequacy of the domestic groundwater supply (quantity and quality)[.]" App B3

3. Summary Of Applicable Findings Of Fact

The Josephine County Board of County Commissioners' (BCC) Finding of Fact III.C states that:

> "the evidence presented by the applicant in the form of **well logs** [and] water quality report * * * as well as testimony from experts in their fields, demonstrates that the **property** has the carrying capacity for the intended use. The evidence was substantial and convincing not withstanding the testimony of those in opposition that have not provided any significant expert testimony contrary to the evidence provided by the applicant." (emphasis added) Rec 60; App A and App C

The BCC's Finding of Fact III.O states that:

> "[t]he **property** is not located in a water quality problem area. Testing has shown that the water supply to be safe as evidenced by a water lab testing report." (emphasis added) Recs 64 - 65; App A and App C

The county's finding that the subject property has an "adequate quantity of ground water to support the allowed uses is" conclusory because it fails to explain how the well logs relied upon establish that adequate ground water is available for all of the allowed lots or parcels throughout the year

The county's findings are further inadequate because they failed to address the issue whether withdrawals from the aquifer would have adverse water availability impacts on the surrounding area (i.e., existing or allowed uses on adjacent or nearby lands) drawing from the same aquifer.

Although they are not included as part of the county's final decision, the Josephine County Rural Planning Commission (RPC) did make a recommendation regarding the carrying capacity of the area's groundwater supplies. The RPC concluded that compliance with several criteria had not been met and specifically that the property did not exhibit adequate carrying capacity, including groundwater supplies, for Rural Residential 5 acre density. Recs 762 , 952 - 954 On March 15, 2008 the RPC recommended denial of the application with an disapprove 8 to 1 vote. Rec 954

4. Analysis of Facts and Arguments

a) No Findings And No Evidence to Support Conclusion Of Adequate Carrying Capacity of *Surrounding Area* to Subject Property

The county's decision on allowed densities and uses would allow for up to 29 lots on the subject property to be developed with dwellings supplied with ground water from domestic wells. Recs 66, 78, 87, 120, 199, 214, 365, 502

RLCD 46.040.C.2 requires findings that the land and *surrounding area* is suitable for the proposed densities and uses. It requires that the carrying capacity analysis consider a specified list of factors and any other "similar natural or man-made conditions or circumstances."

RLCD 46.040.C.3 requires findings that the land in its natural state accommodates the proposed uses and densities, or special alterations or

mitigation plans can make the land achieve the carrying capacity for the allowed densities and types of uses.

The RLDC 11.030 definition of "carrying capacity" specifies that the analysis consider "the adequacy of the domestic groundwater supply."

Taken together, the carrying capacity criteria of RLDC 11.030, RLDC 46.040.C, and JCCP Goal 11, Policy 2.C require findings that the groundwater resources of the land in its natural state and the *surrounding area* can, or can be made to accommodate the proposed use and densities.

The county failed to make findings regarding off-site impacts to the aquifer of the additional groundwater withdrawal that would result from the allowed development, and to explain how the additional allowed groundwater withdrawals will not adversely impact the area's groundwater supplies. This omission is related to the failure of the county's findings to adequately identify the relevant "*surrounding area*." *Knight v. City of Eugene*, 41, Or LUBA 279 (2002)).

The issue was raised before the county that the "carrying capacity" criteria of JCCP Goal 11, Policy 2.C and RLDC 11.030 definition of "carrying capacity", in conjunction with RLDC 46.040.C, require findings that the land's groundwater resources can support the allowed densities and uses, considering both the subject property and the surrounding area. Recs 727, 730, 762, 1,237, 1,388, 1,899 - 1,907, 2,471, 2,492

Uncontroverted evidence in the record establishes that the aquifer(s) underlying the subject property extends beyond the bounds of that property and that evaluations of groundwater availability must consider the aquifer as a whole.

Evidence in the record supports the Oregon Water Resources Department's (OWRD) position that when ground water is being mined, long-term ground water levels decline for a given aquifer when the ground water withdrawal rate exceeds the ground water recharge rate. As additional domestic (exempt) ground water users increase in the region, it is likely that well interference complaints will increase, and the already over-appropriated surface water (stream flows) will continue to further decrease during the dry season months. Recs 1,901 - 1,903 The county made no findings addressing the OWRD's stated concerns.

The Bureau of Land Management (BLM) raised the specific concern that the proposed development could adversely affect the water supplies of its adjacent Sprague Seed Orchard and stated there was a need for impact buffering to minimize land use conflicts. Recs 701, 803, 1,223 - 1,224, 1,405, 1,469, 2,474, App D (pages D-1 through D-5) The county made no findings addressing BLM's stated concerns.

The Josephine Soil and Water Conservation District (JSWCD) raised the specific concern that the subject property is located in a notably poor water area and the proposal will create a greater stress to the aquifer further reducing the quality and quantity of the water available to not only new residents *but those who already reside in the area*. Recs 123 - 124 The county made no findings addressing JSWCD's stated concerns.

The county's ground water findings, including the evidence presented by the applicant in the form of well logs, is based on the applicant's carrying capacity study, which includes a study entitled "2.1 POTABLE WATER SUPPLIES". Recs 85, 199 - 200 The supporting evidence in the carrying

capacity study/ground water study specifically and inappropriately limited its analysis and conclusions to the subject parcel. Nowhere in the record does it state that adequate groundwater "will" be available for the subject property and the relevant *surrounding area* from the underlying aquifer(s). Recs 199 - 200

The geologist preparing the supporting area water resources study to the POTABLE WATER SUPPLIES section was not an expert witness concerning the availability of ground water. Recs 213 - 226 That responsibility would more typically come from an hydrologist and/or an hydrogeologist. Testimony from a regional hydrogeologist employed by the OWRD was provided, but not addressed in the findings. Recs 1,901 - 1,903

Nowhere in the record is there a study or analysis for the subject property's aquifer in the *surrounding area*. The supporting study concludes with a "LIMITATIONS" section which specifically confines the applicability of the study to the subject property. Rec 222

The county findings relied on 29 well logs out of 51 in Section 8 to support its conclusion that the subject property's groundwater resources had the carrying capacity to support the allowed densities and uses. Recs 60, 215 Section 8 is the same section as the subject property is located. The county's finding failed to address whether the well logs are within any relevant ground water study area, or to explain how or if the existing wells draw upon or relate to the underlying aquifer in the surrounding area. Section 8 could be implied to be the study area, but no where in the record is it identified as such. It is a legal boundary of one square mile for the section. It is highly improbable that its square boundaries have any relationship to the unknown boundaries of the

supporting aquifer. Further, 21 of the 29 well logs relied on were taken long ago from 1971 through 1999 and do not provide current information. The average year drilled for the 29 well logs is 1991 which means the collective data is over 15 years old. Recs 215 - 218 Ground water yields from 10, 20, and 30 year old well logs are not evidence of *current or future* availability of ground water from those wells.

Well log levels do not provide facts about future groundwater availability, only its historical availability for the individual wells. Well logs are simply drilling reports. A log provides information on geologic formations encountered in a well and identifies other details such as yields for the well, but only during the day, month and year it was drilled.

There is no evidence in the record of current or future availability of ground water from the supporting aquifer to the subject property or the supporting aquifer in the surrounding area. The findings refer to the evidence presented by the applicant in the form of well logs. The "well log review" and "groundwater recharge" sections of the supporting study refer to an aquifer or water producing zone for all the 29 well logs as the fractured bedrock of the granitic (Kjg) unit. Rec 215 The conclusion that all 29 wells are in granitic (Kjg) geologic units may be correct. The conclusion that the granitic (Kjg) geologic units are one aquifer is at best a correlation, and not an analysis or identification of the supporting aquifer; it is simply a suspicion. The county's findings states that the evidence presented by the applicant in the form of well logs as well as expert testimony demonstrates that the property has the carrying capacity for the

intended use, but nowhere in the record is there any evidence of any identified aquifer defined by OAR 690-200, or by any other definition.

Well logs are not aquifer studies. Nowhere in the record is there a reference to a pump test/aquifer test or well interference study, or any other type of study, alleged to provide information regarding the hydraulic characteristics or boundaries of the supporting aquifer for the subject property and *surrounding lands*.

The county failed to make findings regarding total demand on the aquifer or within the relevant study area from existing wells, recorded or unrecorded. Also, the list of wells for the area are not comprehensive as there are many wells without logs on file with the OWRD, especially those drilled before 1960. Recs 215 - 218 Further, for those wells on file with the OWRD, the supporting study relied on by the findings acknowledged that only 29 well logs out of 51 in Section 8 were used in the study. That means that 43 percent of the recorded wells in Section 8 were not used. Therefore, the record is incomplete.

The eight hydrographs for individual wells identified in the supporting study provide information about the characteristics of the individual wells, but only for those wells. Further, three of the eight referenced wells having hydrograph information identified that they are discontinuous hydrographs or have limited records, and they all show an annual draw down to their static water levels. Recs 219 - 220 The four hydrograph wells that have continuous hydrograph records from 2000 to 2006 are the BLM wells on the parcel to the east and adjacent to the subject parcel. These four wells have a distinctive pattern of recharge and draw down with relatively constant annual recharges and draw

downs for the period of record. Recs 220 - 221 However, the BLM raised the specific concern that the proposed development could adversely affect the water supplies to these same four wells and stated there was a need for impact buffering to minimize land use conflicts. Recs 701, 803, 1,223 - 1,224, 1,405, 1,469, 2,474, App D (pages D-1 through D-5) There is no evidence in the record concerning the capacity or recharge rate of the aquifer; the total existing demand on the aquifer, either peak or throughout the season; or of cumulative demand from existing uses, uses already allowed, plus densities and uses that would be allowed by the county's decision.

b) Inadequacy of Evidence to Support Findings Regarding Carrying Capacity of *Subject Property*

The county's findings are inadequate because they fail to explain how evidence from one remote well (Recs 85, 217, 776) on the subject property supports a conclusion that groundwater supplies are adequate to support the allowed densities and uses of 29 lots or parcels and dwellings throughout the subject property. The county's conclusion that adequate groundwater supplies are available is not supported by substantial evidence in the record.

Taken together, the carrying capacity criteria of RLDC 11.030, RLDC 46.040.C, and JCCP Goal 11, Policy 2.C require findings that the groundwater resources of the land in its natural state and the surrounding area can, or can be made to accommodate the allowed uses and densities.

The county's conclusion that the groundwater resources on the subject property have adequate carrying capacity to support the allowed densities and uses are based primarily on evidence from off-site well logs. Without a

demonstration that conditions on surrounding lands can be relied upon to determine the water quality and quantity on the subject parcel, the county cannot rely on the water quality and quantity of other parcels to satisfy these criteria. *Doob v. Josephine County*, 31 Or LUBA 275 (1996).

In 1996 the Oregon Land Use Board of Appeals (LUBA) ruled that the county's land use regulations required a showing of on-site potable water to determine water adequacy for a 40-acre property allowing densities and uses of up to eight (8) lots. *Doob v. Josephine County*, 31 Or LUBA 275 (1996). A year later LUBA ruled that evidence from two wells drilled on a 13.98-acre parcel along with a description of wells drilled off-site was substantial evidence to support findings of compliance with the county's regulations requiring a demonstration of adequate water on the property allowing up to 12 lots. *Doob v. Josephine County*, LUBA No. 96-115, February 5, 1997).

LUBA's previous decisions establish some sideboards: in the absence of on-site evidence, findings cannot be supported by substantial evidence; evidence from two wells, corroborated by evidence from off-site wells, can be substantial evidence. However, one issue remain unclear. How many wells are necessary for a given size property to support allowed densities and uses? LUBA's previous holdings suggest that the answers to these questions require a case-by-case determination.

The subject property at 158 acres is magnitudes larger in size and associated dimensions then the 14-acre property for which two on-site wells was held to be sufficient. The allowed densities and uses of 29 lots and homes are also significantly greater than the12 lots and associated home sites.

There is also substantial evidence from three resource agencies that was not present in the previous cases in the form of testimony from the ODWR, BLM, and the JSWCD that question the carrying capacity of the ground water resources.

Most importantly the applicant's experts in all three cases, as well at the petitioners in the two earlier cases presumed some hydraulic connectivity between wells in the region as demonstrated by simple well logs. However, as previously stated well logs are not aquifer studies. And, finally, petitioners here are arguing there are legal standards at JCCP Goal 11, Policy 2.C and RLDC 11.030, RLDC 46.040.C that require findings that the allowed development will not exceed the carrying capacity of the groundwater supply for the subject property and surrounding lands relying on a common aquifer.

In the present case, there is only one on-site well. That remote well was drilled at the far western end of the 158-acre property. Recs 85, 217, 776 There is no explanation in the findings or evidence in the record to explain how that one well on the subject property suffices to show adequate on-site water exists at the other end of the property, approximately half a mile away. There are no aquifer or any other studies showing that the aquifer lying under the one on-site well is connected to the rest of the property, and there is no evidence that the aquifer or aquifers underlying any of the off-site wells also underlie any of the property.

There is, however, concern from the BLM for the adjacent Sprague Seed Orchard abutting the east end of the subject property that the development might harm its resource use by depleting its water supply and that there was a need for impact buffering. There are no findings or evidence in the record that the tree farm's and the development's aquifer either are, or are not connected.

The county relied on evidence from the one on-site well and off-site wells to find that adequate water is available to the subject property. The county's conclusion rests on the assumption that the same aquifer or aquifers underlying off-site wells also underlie the subject property. However, the county did not find, and evidence in the record does not establish that the aquifer underlying the one on-site well or the off-site wells also underlies the rest of the property. It is entirely possible that no connecting aquifer to the one on-site well underlies the rest of the property.

The county's findings are inadequate and there is not sufficient evidence in the record to support the county's conclusion that adequate water is available for the allowed densities and uses.

Moreover, the evidence relied on by the county fails to establish that water is or will be available over the full course of the year. A well log provides information on ground water yields for that well during the one day of one year when the well was drilled. Recs 228 - 254 An individual wells log without an analysis of its yields during the hot dry season months does not provide evidence that the carry capacity is satisfied during low yield periods.

The county's findings that one well log on the property, well logs on the surrounding lands, and other expert testimony demonstrate that the carrying capacity of the groundwater supply is adequate are conclusory because they fail to explain how the facts lead to the conclusion that the request satisfies the approval standards. There is no explanation of why the evidence provided by well logs support the conclusion that an adequate water supply is or will be available. *Doob v. City of Grants Pass*, 34 Or LUBA 480 (1998); *Le Roux v. Malheur County*, 30

Or LUBA 268 (1995); *Sunnyside Neighborhood v. Clackamas Co., Comm*., 280 Or 3, 20-21, 569 P2d (1977).

5. Conclusion Statement

The county's findings that the carrying capacity of the land's groundwater supply has adequate carrying capacity to support the allowed densities and uses are inadequate and not supported by substantial evidence in the whole record. The county made no findings concerning the carrying capacity of the land to support densities and uses allowed by the amendment in addition to existing and allowed uses in the surrounding area. The county's findings fail to explain how the evidence in the record supports its conclusion that available groundwater supplies are available to support the allowed densities and uses on the subject property. Therefore, the county's decision should be remanded. ORS 197.835(9)(a)(D); ORS 197.835(9)(a)(C); ORS 197.835(11).