

Groundwater Application Review Summary Form

Application # LL- 1967

GW Reviewer Josh Hackett Date Review Completed: 8/26/2024

Summary of GW Availability and Injury Review:

☐ Groundwater for the proposed use is either over appropriated, will not likely be available in the amounts requested without injury to prior water rights, OR will not likely be available within the capacity of the groundwater resource per Section B of the attached review form.

Summary of Potential for Substantial Interference Review:

☐ There is the potential for substantial interference per Section C of the attached review form.

Summary of Well Construction Assessment:

☐ The well does not appear to meet current well construction standards per Section D of the attached review form. Route through Well Construction and Compliance Section.

This is only a summary. Documentation is attached and should be read thoroughly to understand the basis for determinations and for conditions that may be necessary for a permit (if one is issued).

WATER RESOURCES DEPARTMENT

MEMO

August 26, 2024

TO: Application LL- 1967

FROM: GW: Josh Hackett
(Reviewer's Name)

SUBJECT: Scenic Waterway Interference Evaluation

☐ YES The source of appropriation is hydraulically connected to a State Scenic
☒ NO Waterway or its tributaries

☐ YES
☒ NO Use the Scenic Waterway Condition (Condition 7J)

☐ Per ORS 390.835, the Groundwater Section is **able** to calculate ground water interference with surface water that contributes to a Scenic Waterway. The calculated interference is distributed below

☐ Per ORS 390.835, the Groundwater Section is **unable** to calculate ground water interference with surface water that contributes to a scenic waterway; **therefore, the Department is unable to find that there is a preponderance of evidence that the proposed use will measurably reduce the surface water flows necessary to maintain the free-flowing character of a scenic waterway**

DISTRIBUTION OF INTERFERENCE

Calculate the percentage of consumptive use by month and fill in the table below. If interference cannot be calculated, per criteria in 390.835, do not fill in the table but check the "unable" option above, thus informing Water Rights that the Department is unable to make a Preponderance of Evidence finding.

Exercise of this permit is calculated to reduce monthly flows in [Enter] Scenic Waterway by the following amounts expressed as a proportion of the consumptive use by which surface water flow is reduced.

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec

PUBLIC INTEREST REVIEW FOR GROUNDWATER APPLICATIONS

TO: Water Rights Section Date August 26, 2024
 FROM: Groundwater Section J. Hackett
 Reviewer's Name
 SUBJECT: Application LL- 1967 Supersedes review of _____
 Date of Review(s)

PUBLIC INTEREST PRESUMPTION; GROUNDWATER

OAR 690-310-130 (1) *The Department shall presume that a proposed groundwater use will ensure the preservation of the public welfare, safety and health as described in ORS 537.525. Department staff review groundwater applications under OAR 690-310-140 to determine whether the presumption is established. OAR 690-310-140 allows the proposed use be modified or conditioned to meet the presumption criteria. This review is based upon available information and agency policies in place at the time of evaluation.*

A. GENERAL INFORMATION: Applicant's Name: John and Diane Kilkenny County: MORR

A1. Applicant(s) seek(s) 0.334 (total 0.894 stacked) cfs from 1 well(s) in the Umatilla Basin,
 _____ subbasin

A2. Proposed use Road Construction and Maintenance, General Construction Seasonality: Year Round

A3. Well and aquifer data (attach and number logs for existing wells; mark proposed wells as such under logid):

POA Well	Logid	Applicant's Well #	Proposed Aquifer*	Proposed Rate(cfs)	Location (T/R-S QQ-Q)	Location, metes and bounds, e.g. 2250' N, 1200' E fr NW cor S 36
1	MORR 206	1	Basalt	*0.894 (0.334 + 0.560)	2S/28E-29 NWSW	2980' S, 4640' W fr SE cor S 29
2						
3						
4						

* Alluvium, CRB, Bedrock

POA Well	Well Depth (ft)	Seal Interval (ft)	Casing Intervals (ft)	Liner Intervals (ft)	Perforations Or Screens (ft)	Well Yield (gpm)	Drawdown (ft)	Test Type
1	197	0-22	0-23			400		A
2								
3								
4								

POA Well	Land Surface Elevation at Well (ft amsl)	Depth of First Water (ft bls)	SWL (ft bls)	SWL Date	Reference Level (ft bls)	Reference Level Date
1	2719	69	12	10/11/1973		
2						
3						
4						

Use data from application for proposed wells.

A4. **Comments:** *The proposed POA (MORR 206) is authorized under valid water right Certificate 53474. The maximum rate under Certificate 53474 is 0.560 cubic feet per second (cfs). For the purposes of this application review, the combined use in the well will be analyzed, 0.334+ 0.560 cfs = 0.894 cfs.

Water will be used for the proposed Heppner Wind Farm and Wheatridge East Wind Farm. Water will be pumped into storage tanks approximately 600 feet from the well and will be used for dust suppression and compaction of gravel associated with wind farm road construction.

A5. ☒ **Provisions of the** Umatilla Basin rules relative to the development, classification and/or management of groundwater hydraulically connected to surface water ☒ **are**, or ☐ **are not**, activated by this application. (Not all basin rules contain such provisions.)

Comments: The POA is located within the City of Heppner 5 mile municipal well boundary.

From 690-507-0070 3d(C) Groundwater from the basalt reservoir in a five-mile radius around any municipal well of the cities of Heppner, Helix, Ione, Lexington, and Pendleton is classified for municipal, group domestic and statutorily exempt groundwater uses (see definition) only. Other uses may be permitted if it is documented that a barrier to groundwater movement separates a proposed well from municipal wells and there will be no interference with municipal wells.

Applications for other uses of groundwater within a five-mile radius of a municipal well shall automatically be referred to the Commission for review and consideration of public interest unless the affected city affirms that it is in favor of the proposed appropriation. This classification applies only when the affected city(ies) have a full-time conservation program in effect.

A6. ☐ **Well(s) #** _____, _____, _____, _____, _____, tap(s) an aquifer limited by an administrative restriction.

Name of administrative area: N/A

Comments: _____

B. GROUNDWATER AVAILABILITY CONSIDERATIONS, OAR 690-310-130, 400-010, 410-0070

B1. **Based upon available data**, I have determined that groundwater* for the proposed use:

- a. ☐ is over appropriated, ☒ is not over appropriated, or ☐ cannot be determined to be over appropriated during any period of the proposed use. * This finding is limited to the groundwater portion of the over-appropriation determination as prescribed in OAR 690-310-130;
- b. ☐ will not or ☒ will likely be available in the amounts requested without injury to prior water rights. * This finding is limited to the groundwater portion of the injury determination as prescribed in OAR 690-310-130;
- c. ☐ will not or ☒ will likely to be available within the capacity of the groundwater resource; or
- d. ☒ will, if properly conditioned, avoid injury to existing groundwater rights or to the groundwater resource:
 - i. ☐ The permit should contain condition #(s) 7RLN; medium water use reporting;
 - ii. ☐ The permit should be conditioned as indicated in item 2 below.
 - iii. ☐ The permit should contain special condition(s) as indicated in item 3 below;

- B2.
- a. ☐ **Condition** to allow groundwater production from no deeper than _____ ft. below land surface;
 - b. ☐ **Condition** to allow groundwater production from no shallower than _____ ft. below land surface;
 - c. ☐ **Condition** to allow groundwater production only from the _____ groundwater reservoir between approximately _____ ft. and _____ ft. below land surface;
 - d. ☐ **Well reconstruction** is necessary to accomplish one or more of the above conditions. The problems that are likely to occur with this use and without reconstructing are cited below. Without reconstruction, I recommend withholding issuance of the permit until evidence of well reconstruction is filed with the Department and approved by the Groundwater Section.

Describe injury –as related to water availability– that is likely to occur without well reconstruction (interference w/ senior water rights, not within the capacity of the resource, etc): _____

- B3. **Groundwater availability remarks:** The applicant's well (MORR 206) is in an area that contains lava flows of the Grande Ronde Basalt Formation of the Columbia River Basalt Group from land surface to a depth of 2000 to 2500 feet. The well is 197 feet deep and is open to water-bearing zones between 82-160 feet below land surface. Water levels in nearby wells appear relatively stable (see attached hydrograph).

Within the CRBG, most water occurs in confined aquifers that occupy thin rubble zones (interflow zones) at the contacts between lava flows. The interiors of the basalt flows generally have low porosity and permeability and act as confining beds. This geometry generally produces a stack of thin aquifers (interflow zones) separated by thick confining beds (flow interiors). The low permeability of the basalt flow interiors probably limits the natural vertical connection between overlying aquifers.

Groundwater level data in the area is sparse, however, water levels in city of Heppner wells (wells with long-term data records) appear relatively stable.

The stacked rate in MORR 206 would be approximately 430 gallons per minute (gpm). Well statistics for the area indicate a maximum well yield of 500 gpm with a median of 100 gpm. During the drilling process, a bailer test resulted in a yield of 400 gpm at MORR 206. Therefore, it is likely that the requested stacked rate will be in the capacity of the resource (See Well Statistics).

Well density in the area is low, so water is likely to be available without injury to other water rights in the immediate vicinity.

The applicant's well is located within 5 miles of all city of Heppner wells (Well #1 (MORR 317), Well #2 (MORR 312), Well #3 (MORR 189), Well #4 (MORR 304), and Well #5 (MORR 245)) and is therefore subject to OAR 690-507-0090(3)(b)(C) which precludes new appropriation from the basalt aquifer utilized by the city of Heppner's wells unless a hydrogeologic barrier separates the proposed well from the City's wells. As shown on the well location map (see attached map), City of Heppner Well #5 (MORR 245) is located across a northwest trending geologic fault that acts as a barrier to groundwater flow between it and MORR 206. Evidence of the barrier is manifest in water levels in the wells (see attached hydrograph). The water level elevation in MORR 206 is more than 500 feet higher than the water level elevation in MORR 245. This difference in water level elevations indicates the wells produce from different aquifers. Water level elevations also indicate that MORR 206 produces from a different aquifer than city of Heppner wells #1 (MORR 317), #3 (MORR 189), and #4 (MORR 304). The water level elevation in MORR 206 is approximately 150 feet lower than the water level elevation in MORR 317, 150 feet higher than MORR 304, and more than 500 feet higher than MORR 189 (see attached hydrograph). Although not separated by geologic structures, the significant water level differences between MORR 206 and these city of Heppner wells suggests they do not produce from the same aquifer.

Similar water level elevations in MORR 206 and city of Heppner Well #2 (MORR 312) suggest they produce from the same aquifer. As a result, MORR 206 is subject to OAR 690-507-0090(3)(b)(C).

C. GROUNDWATER/SURFACE WATER CONSIDERATIONS, OAR 690-09-040**C1. 690-09-040 (1):** Evaluation of aquifer confinement:

Well	Aquifer or Proposed Aquifer	Confined	Unconfined
1	CRBG	☒	☐
		☐	☐
		☐	☐
		☐	☐

Basis for aquifer confinement evaluation: The water level in the well rose above the elevation which it was encountered.

C2. 690-09-040 (2) (3): Evaluation of distance to, and hydraulic connection with, surface water sources. All wells located a horizontal distance less than ¼ mile from a surface water source that produce water from an unconfined aquifer shall be assumed to be hydraulically connected to the surface water source. Include in this table any streams located beyond one mile that are evaluated for PSI.

Well	SW #	Surface Water Name	GW Elev ft msl	SW Elev ft msl	Distance (ft)	Hydraulically Connected?			Potential for Subst. Interfer. Assumed?	
						YES	NO	ASSUMED	YES	NO
1	1	Kilkenny Fork	2400-2750	2500 - 2800	900	☐	☒	☐	☐	☐
1	2	Hinton Creek	2400-2700	2500-2600	8000	☒	☐	☐	☐	☒
		Willow Creek	2400-2700	2200-2700	16000	☒	☐	☐	☐	☒
						☐	☐	☐	☐	☐

Basis for aquifer hydraulic connection evaluation: The applicant's well is not located within 1 mile of nearby perennial surface water sources. The nearest surface water source, Kilkenny Fork, is a non-perennial creek that collects runoff from surrounding uplands. The well is likely in limited hydraulic connection with perennial streams Hinton Creek and Willow Creek. However, stream depletion impacts to these creeks was not evaluated because there is no model readily available that can appropriately estimate impacts from wells that produce from stratiform basalt aquifers.

Water Availability Basin the well(s) are located within: HINTON CR > WILLOW CR - AT MOUTH

C3a. 690-09-040 (4): Evaluation of stream impacts for each well that has been determined or assumed to be **hydraulically connected and less than 1 mile** from a surface water (SW) source. Limit evaluation to instream rights and minimum stream flows that are pertinent to that SW source, not lower SW sources to which the stream under evaluation is tributary. Compare the requested rate against the 1% of 80% *natural* flow for the pertinent Water Availability Basin (WAB). If Q is not distributed by well, use full rate for each well. Any checked ☒ box indicates the well is assumed to have the potential to cause PSI.

Well	SW #	Well < ¼ mile?	Q _w > 5 cfs?	Instream Water Right ID	Instream Water Right Q (cfs)	Q _w > 1% ISWR?	80% Natural Flow (cfs)	Q _w > 1% of 80% Natural Flow?	Interference @ 30 days (%)	Potential for Subst. Interfer. Assumed?
		☐	☐			☐		☐		☐
		☐	☐			☐		☐		☐
		☐	☐			☐		☐		☐
		☐	☐			☐		☐		☐

C3b. **690-09-040 (4):** Evaluation of stream impacts by total appropriation for all wells determined or assumed to be **hydraulically connected and less than 1 mile** from a surface water source. **Complete only if Q is distributed among wells.** Otherwise same evaluation and limitations apply as in C3a above.

	SW #		Q _w > 5 cfs?	Instream Water Right ID	Instream Water Right Q (cfs)	Q _w > 1% ISWR?	80% Natural Flow (cfs)	Q _w > 1% of 80% Natural Flow?	Interference @ 30 days (%)	Potential for Subst. Interfer. Assumed?
			☐			☐		☐		☐
			☐			☐		☐		☐

Comments: The well is likely in limited hydraulic connection with perennial streams Hinton Creek and Willow Creek. However, stream depletion impacts to these creeks was not evaluated because there is no model readily available that can appropriately estimate impacts from wells that produce from stratiform basalt aquifers.

C4a. **690-09-040 (5):** Estimated impacts on **hydraulically connected surface water sources greater than one mile** as a percentage of the proposed pumping rate. Limit evaluation to the effects that will occur up to one year after pumping begins. This table encompasses the considerations required by 09-040 (5)(a), (b), (c) and (d), which are not included on this form. Use additional sheets if calculated flows from more than one WAB are required.

Non-Distributed Wells													
Well	SW#	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
		%	%	%	%	%	%	%	%	%	%	%	%
Well Q as CFS													
Interference CFS													
Distributed Wells													
Well	SW#	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
		%	%	%	%	%	%	%	%	%	%	%	%
Well Q as CFS													
Interference CFS													
		%	%	%	%	%	%	%	%	%	%	%	%
Well Q as CFS													
Interference CFS													
(A) = Total Interf.													
(B) = 80 % Nat. Q													
(C) = 1 % Nat. Q													
(D) = (A) > (C)		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
(E) = (A / B) x 100		%	%	%	%	%	%	%	%	%	%	%	%

(A) = total interference as CFS; (B) = WAB calculated natural flow at 80% exceed. as CFS; (C) = 1% of calculated natural flow at 80% exceed. as CFS; (D) = highlight the checkmark for each month where (A) is greater than (C); (E) = total interference divided by 80% flow as percentage.

Basis for impact evaluation: N/A

C4b. **690-09-040 (5) (b) The potential to impair or detrimentally affect the public interest is to be determined by the Water Rights Section.**

- C5. ☐ **If properly conditioned**, the surface water source(s) can be adequately protected from interference, and/or groundwater use under this permit can be regulated if it is found to substantially interfere with surface water:
- i. ☐ The permit should contain condition #(s)_____;
 - ii. ☐ The permit should contain special condition(s) as indicated in “Remarks” below;

C6. **SW / GW Remarks and Conditions:** _____

References Used: Madin, I.P., and Geitgy, R.P., 2007, Preliminary geologic map of the Umatilla basin, morrow and Umatilla counties, Oregon, Oregon Department of Geology and Mineral Industries, Open-File Report O-07-15, 23p.

D. WELL CONSTRUCTION, OAR 690-200

D1. **Well #:** _____ **Logid:** _____

D2. **THE WELL does not appear to meet current well construction standards based upon:**

- a. ☐ review of the well log;
- b. ☐ field inspection by _____;
- c. ☐ report of CWRE _____;
- d. ☐ other: (specify) _____

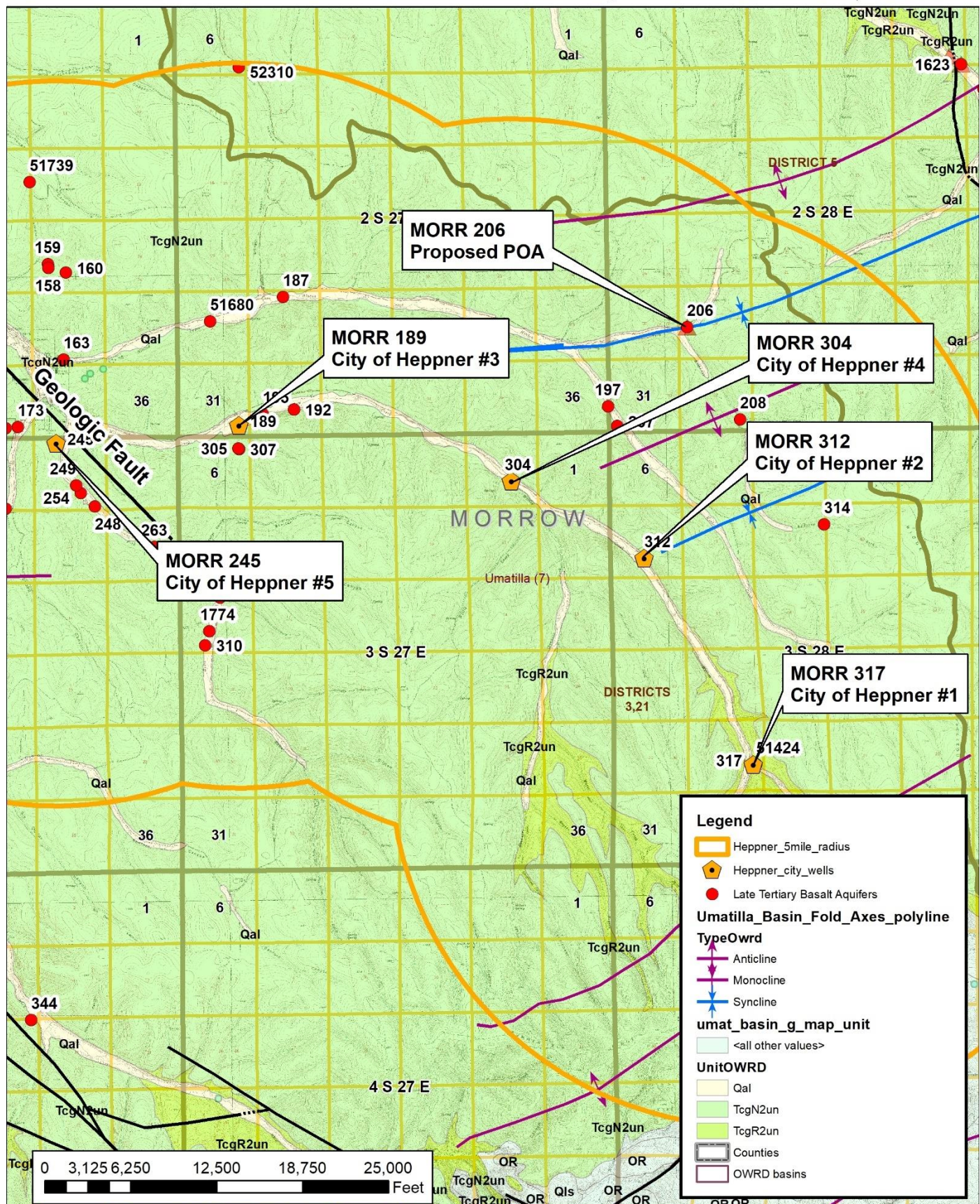
D3. **THE WELL construction deficiency or other comment is described as follows:** _____

D4. ☐ **Route to the Well Construction and Compliance Section for a review of existing well construction.**

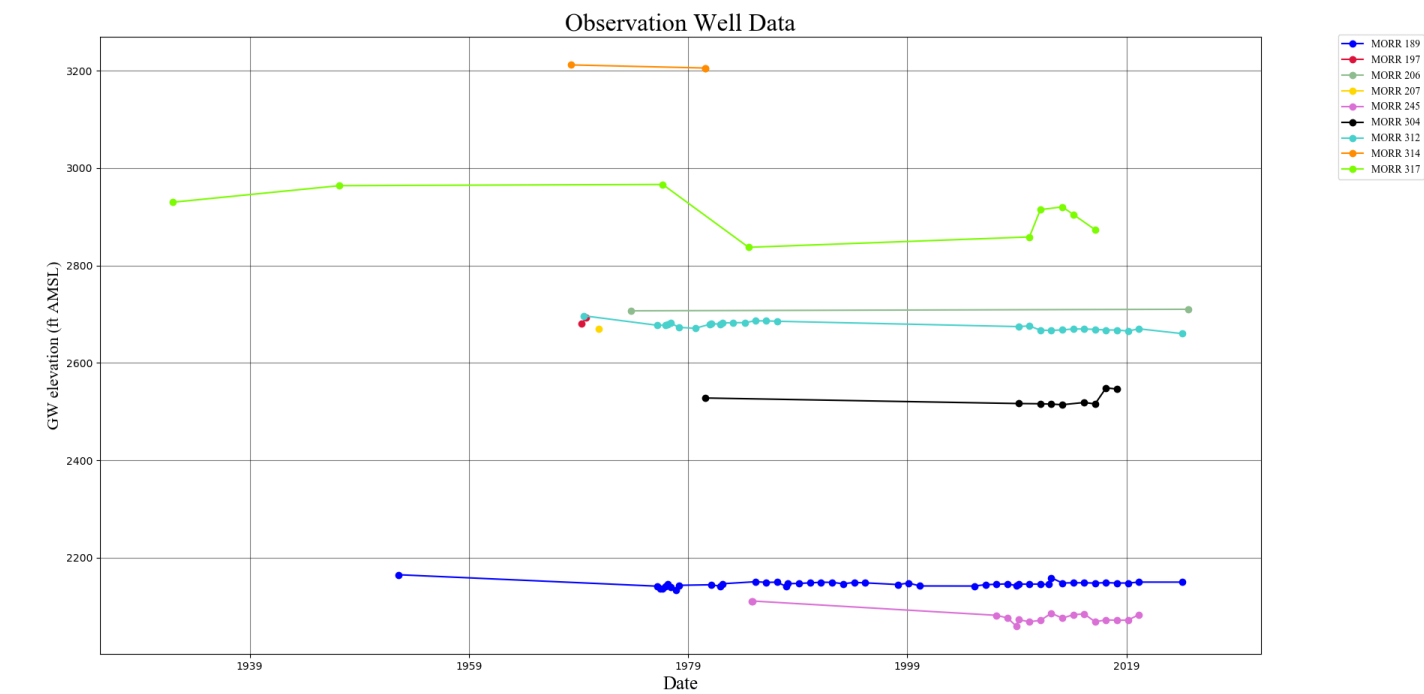
Well Location Map

LL-1967, Kilkenny

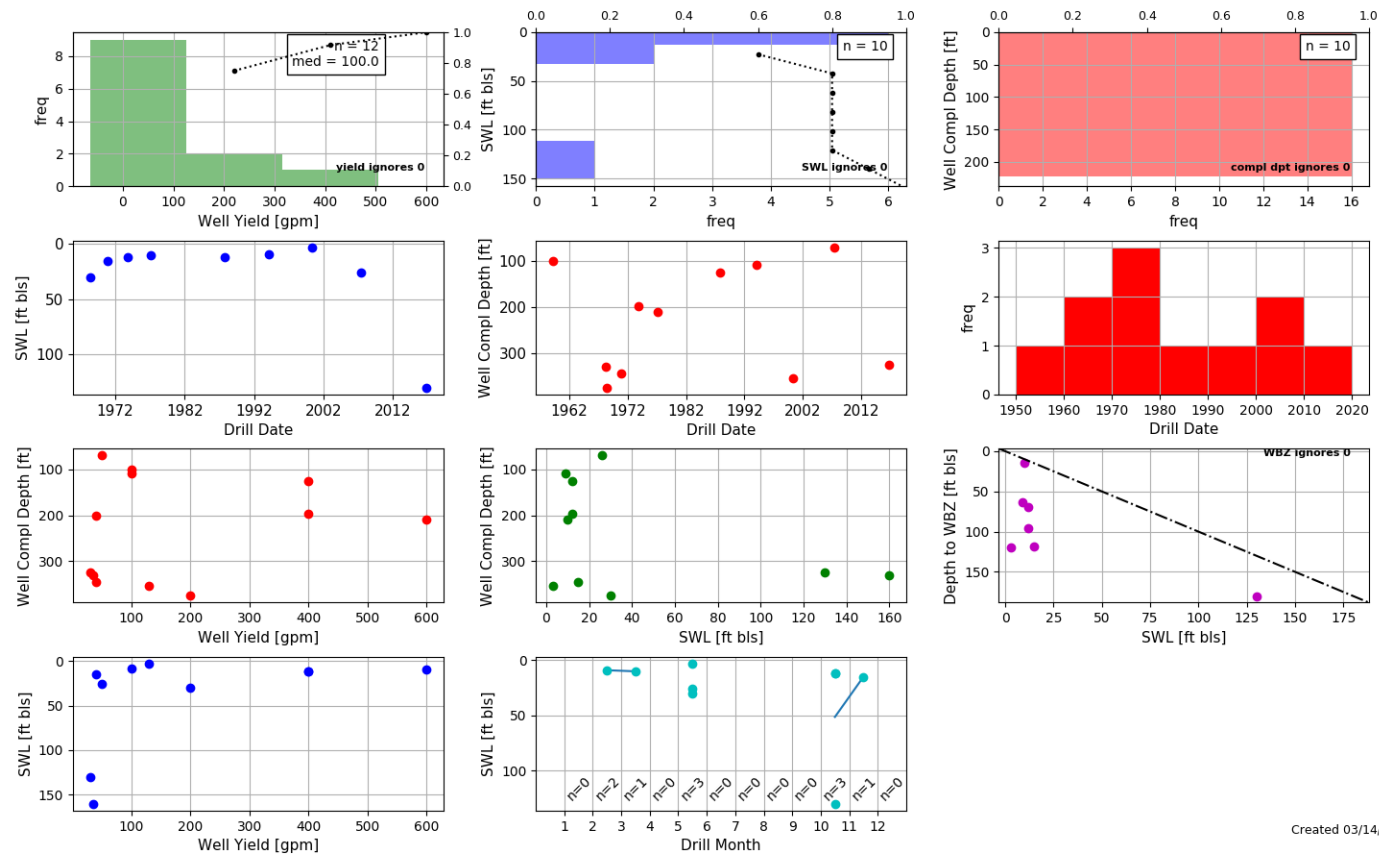
1:100,000 scale



Water-Level Measurements in Nearby Wells



Well Statistics



Created 03/14/2024