Groundwater Application Review Summary Form

Application # LL- _1981_

GW Reviewer _Darrick E. Boschmann_ Date Review Completed: _10/16/2024_

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 **_10/16/2024_**

TO: **Application** LL-**_1981_**

FROM: **GW:** **_Darrick E. Boschmann_**
(Reviewer's Name)

SUBJECT: Scenic Waterway Interference Evaluation

☐ **YES**
☒ **NO** The source of appropriation is hydraulically connected to a State Scenic 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 10/16/2024
FROM: Groundwater Section Darrick E. Boschmann
Reviewer's Name
SUBJECT: Application LL- **1981** 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: **Newsun Cascade Development** County: **Lake**

A1. Applicant(s) seek(s) 1.51 cfs from 1 well(s) in the Goose & Summer Lakes Basin, Summer Lake (Fort Rock Valley) subbasin

A2. Proposed use Road Construction/Maintenance, General Construction, Dust Control, Soil Management, Fire Suppression, Re-Seeding, and Re-vegetation

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	LAKE 341/LAKE 345	#3	Main GW Reservoir	1.51	26.00S-14.00E-13-NE SE	1330 FEET NORTH AND 1310 FEET WEST FROM SE CORNER, SECTION 13
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	305	18	+2-108	-	-	1500	7	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	4309	18	13	5/23/1976	-	-
2						
3						
4						

Use data from application for proposed wells.

A4. **Comments:**

The proposed well is located in Fort Rock Valley (Fort Rock classified area) about 4 miles southeast of the unincorporated community of Fort Rock. The area immediately underlying the proposed well was mapped by McLeod and Sherrod (1992) as Qs (Sedimentary deposits – unconsolidated to moderately indurated fluvial and lacustrine gravel, sand, silt, and locally diatomite). These sedimentary deposits are underlain at variable depth by a variety of basaltic and rhyolitic volcanic rocks.

Groundwater in the Fort Rock Valley-Christmas Valley area (Fort Rock Classified Area) is identified as a single groundwater system. Groundwater is found in both a shallower predominantly basin-fill sediment unit and a deeper predominantly volcanic rocks and sediments unit below. The predominantly basin fill sediment unit and the predominantly volcanic rocks and sediment unit both readily yield groundwater, and the two units are hydraulically connected.

The well log describes a variety of rock and volcanic deposits. The most likely aquifer given the well construction is the "main groundwater reservoir" of the Fort Rock Basin (Miller, 1986), which is classified under OAR 690-513-0060(2)(n).

Miller (1986) describes the groundwater source as the main groundwater reservoir. That reservoir includes groundwater in different geologic units. The reservoir has three characteristics. First, the "natural" groundwater level changes less than 1.5 feet annually, indicating the system is highly modulated. Second, the 1980s potentiometric surface was approximately 4292 feet elevation amsl basin-wide with Silver Lake an exception. Third, the reservoir consists of numerous water producing zones in several formations, all having an essentially common potentiometric level, and all being very transmissive in general.

The application identifies that the use is to be offset by non-use at a portion of certificate 80626 which authorizes groundwater pumping for irrigation. This review does not evaluate the viability of the offset proposal, the change in use from seasonal irrigation to year-round construction/maintenance use, or the associated rate/duty conversion.

A5. ☒ **Provisions of the** Goose and Summer Lakes 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 proposed well would produce groundwater from the "main ground water reservoir" of the Fort Rock Basin.

690-513-0060(2)(n) Ground water from the main ground water reservoir of the Fort Rock Basin is classified for stockwater, watering any lawn or noncommercial garden not exceeding one-half acre in area, watering any lawn or noncommercial garden not exceeding three acres in area for public uses, quasi-municipal, single or group domestic, down-hole heat exchange, industrial, and commercial uses only.

A6. ☒ **Well(s) # 1** , _____ , _____ , _____ , _____ , tap(s) an aquifer limited by an administrative restriction.
Name of administrative area:
Comments:

The proposed wells would produce groundwater from the "main ground water reservoir" of the Fort Rock Basin. The proposed uses are not explicitly listed as a classified use for the "main ground water reservoir" of the Fort Rock Basin.

*The intended uses of water listed on the application include Road Construction/Maintenance, General Construction, Dust Control, Soil Management, Fire Suppression, Re-Seeding, and Re-vegetation.

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; Large 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:**

17 active State Observations wells are monitored in the Fort Rock Classified Area, indicating that groundwater levels in the area have been declining about 0.25 to 0.5 feet per year since 1985 (see hydrograph below). However, the available water level record does not meet the Division 8 definition of excessively declining or declined excessively (for the *storage* portion of the source of water to wells).

The nearest authorized groundwater POD to the proposed wells is over 0.5 miles away. Any seasonal interference would be unlikely to meet the standard for substantial or undue interference.

The proposed POA locations are within the Fort Rock Classified Groundwater area (OAR 690-513-0060 (2)(n) where ongoing declines have been occurring since the early 1980s due to the groundwater resource capacity being exceeded. The proposed use would exacerbate the groundwater capacity exceedance problem. Additional groundwater development in this area will contribute to the ongoing declines. Therefore, the new use is found to be not within the capacity of the resource as defined in OAR 690-400-0010**.

**Note: This review does not evaluate the viability of the offset proposal, the change of use from seasonal irrigation to year-round construction/maintenance use, or the associated rate/duty conversion.

If a permit is issued the following conditions are recommended:

7RLN Static Water Level Condition

Large Water Use Reporting

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	**Main GW Reservoir**	☒	☐
		☐	☐
		☐	☐
		☐	☐

Basis for aquifer confinement evaluation:

Miller (1986) describes groundwater in the "main groundwater reservoir" as occurring under both confined and unconfined conditions. It is likely that confined to semi-confined conditions exist.

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? YES	NO	ASSUMED	Potential for Subst. Interfer. Assumed? YES	NO
1	**1**	**Paulina Marsh**	**4279**	**4310**	**>6mi**	☒	☐	☐	☐	☒
						☐	☐	☐	☐	☐
						☐	☐	☐	☐	☐
						☐	☐	☐	☐	☐

Basis for aquifer hydraulic connection evaluation:

Groundwater in the alluvium and basin-fill overlying the deposits comprising the "main ground water reservoir of the Fort Rock Basin" is in hydraulic connection with surface water given shallower static groundwater elevations are similar to surface water elevations. Additionally, groundwater in the alluvium and basin-fill is in hydraulic connection (downward gradient) with groundwater within the deposits comprising the "main ground water reservoir of the Fort Rock Basin" meaning all groundwater in the area is in hydraulic connection with surface water.

The GW elevation cited above is from the 4/24/2024 static water level measured in LAKE 357 (SOW 346). Although the hydraulic gradient between the proposed wells and Paulina Marsh is away from the marsh, this does not preclude a finding of hydraulic connection in this situation. Note that Millers 1986 plate also appears to indicate groundwater flow from the marsh toward the location of the proposed wells.

Water Availability Basin the well(s) are located within: No WAB data available.

C3a. **690-09-040 (4):** Evaluation of stream impacts for <u>each well</u> 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?	Qw > 5 cfs?	Instream Water Right ID	Instream Water Right Q (cfs)	Qw > 1% ISWR?	80% Natural Flow (cfs)	Qw > 1% of 80% Natural Flow?	Interference @ 30 days (%)	Potential for Subst. Interfer. Assumed?
		☐	☐			☐		☐		☐
		☐	☐			☐		☐		☐
		☐	☐			☐		☐		☐
		☐	☐			☐		☐		☐

C3b. **690-09-040 (4):** Evaluation of stream impacts <u>by total appropriation</u> 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 #		Qw > 5 cfs?	Instream Water Right ID	Instream Water Right Q (cfs)	Qw > 1% ISWR?	80% Natural Flow (cfs)	Qw > 1% of 80% Natural Flow?	Interference @ 30 days (%)	Potential for Subst. Interfer. Assumed?
			☐			☐		☐		☐
			☐			☐		☐		☐

Comments: C3a./C3b. This section does not apply.

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:

No evaluation here. Given the great distance between the proposed well and the surface water source interference will be well under the threshold for PSI under this section. Additionally, no WAB data is available.

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:**

C1. 690-09-040 (1)
It is determined that all wells will produce water from a confined to semi-confined aquifer.

C2. 690-09-040 (2) (3)
It is determined that all wells are hydraulically connected with Paulina Marsh.

C3a./C3b. 690-09-040 (4)
This section does not apply. The proposed wells are located greater than 1 mile from Paulina Marsh

C4a. 690-09-040 (5)
No analysis here given the great distance between the proposed wells and Paulina Marsh.

If a permit is issued, the following conditions are recommended:

7RLN Static Water Level Condition

Large Water Use Reporting

References Used:

McLeod and Sherrod, 1992. Reconnaissance geologic map of the west half of the Cresent 1 degree by 2 degree quadrangle, central Oregon. U.S. Geological Survey Miscellaneous Investigations Series Map I-2215. Scale 1:250,000.

Miller, D.W., 1986. Ground water conditions in the Fort Rock Basin, Northern Lake County, Oregon. Oregon Water Resources Department Ground Water Report No. 31.

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:** _____

_____

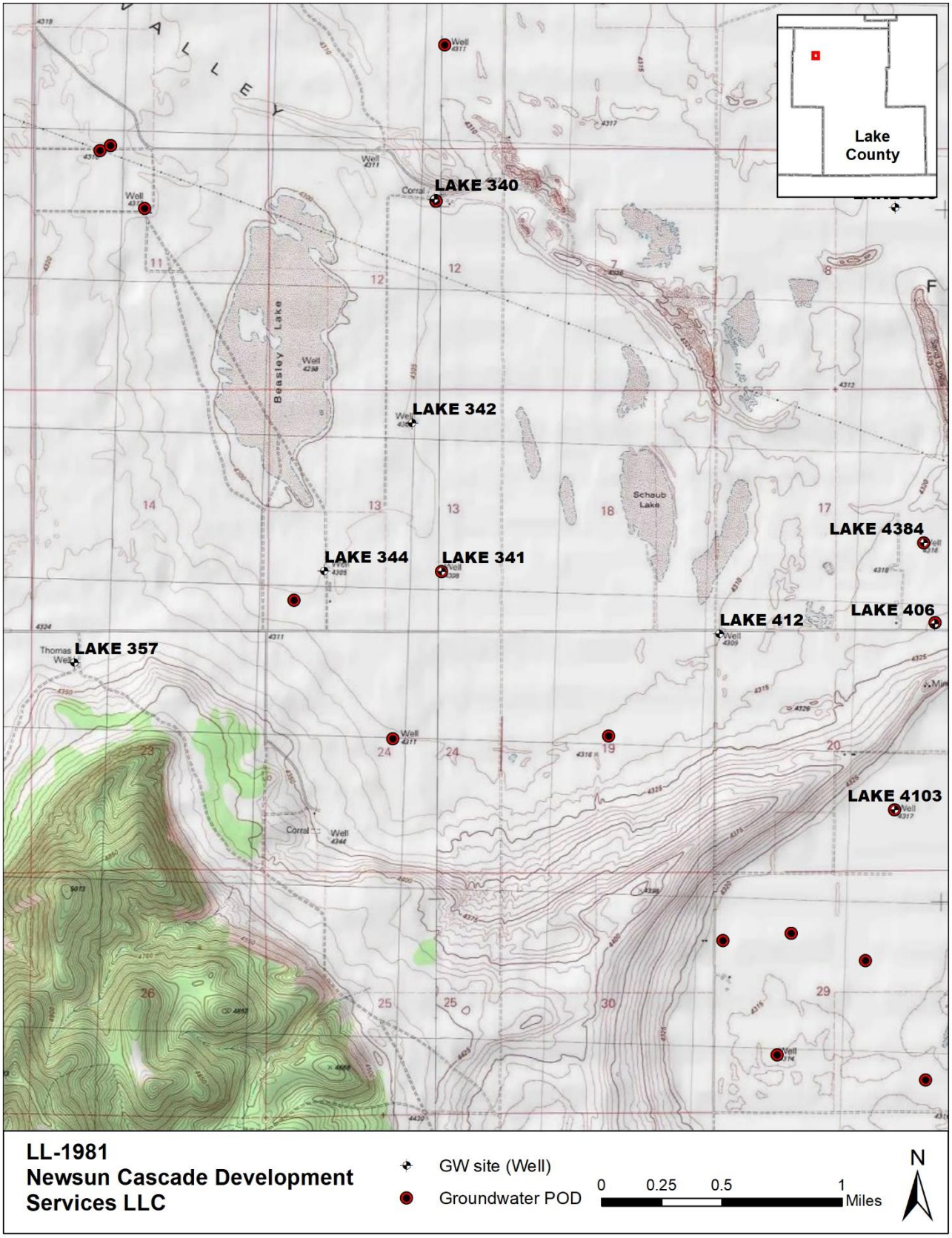
_____

_____

_____

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

Well Location Map



Water-Level Measurements in Nearby Wells