Water Right Conditions Tracking Slip

Groundwater/Hydrology Section

FILE ** G-17102

ROUTED TO: Water Rights

TOWNSHIP/
RANGE-SECTION: 14S/39E-28 ba

CONDITIONS ATTACHED? [✓] yes [ ] no

REMARKS OR FURTHER INSTRUCTIONS:

Reviewer: Mike Zwart

PUBLIC INTEREST REVIEW FOR GROUND WATER APPLICATIONS

TO: Water Rights Section Date **December 9, 2008**

FROM: Ground Water/Hydrology Section **Mike Zwart**
Reviewer's Name

SUBJECT: Application G- **17102** 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 ground water 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:** **Ronald E. Ray** **County:** **Malheur**

A1. Applicant(s) seek(s) **1.159** cfs from **1** well(s) in the **Malheur** Basin, **Willow Creek** subbasin Quad Map: **Ironside**

A2. Proposed use: **Irrigation, 42.4 acres** Seasonality: **March 1-October 31**

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

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	MALH 33	5	Alluv./Sed. rocks	1.159	14S/39E-28 NE-NW	760' S, 2560'E fr NW cor S 28
2						
3						
4						
5						

* Alluvium, CRB, Bedrock

Well	Well Elev ft msl	First Water ft bls	SWL ft bls	SWL Date	Well Depth (ft)	Seal Interval (ft)	Casing Intervals (ft)	Liner Intervals (ft)	Perforations Or Screens (ft)	Well Yield (gpm)	Draw Down (ft)	Test Type
1	**3765**	**72**	**25**	**7/15/82**	**250**	**0-25**	**-1.5-161.5**		**82-102, 122-162**	**300**	**n/a**	**A**

Use data from application for proposed wells.

A4. **Comments:** **The requested rate is much higher than the customary rate. The shallowest water-bearing zone is cased and sealed off. Application states that the well is currently irrigating acres authorized under Certificate 34483, but this well was drilled well after that certificate was issued and there is no record of a transfer to add an APOA. There is also no well log on file that matches the construction and age of Molton well #5 described in the application for the existing right. I suspect this well is an informal (unauthorized) replacement well for the original well.**

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

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

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

B1. **Based upon available data**, I have determined that ground water* 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 ground water 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 ground water 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 ground water resource; or

d. ☒ **will, if properly conditioned,** avoid injury to existing ground water rights or to the ground water resource:
   i. ☒ The permit should contain condition #(s) 7N;
   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 ground water production from no deeper than _____ ft. below land surface;

b. ☐ **Condition** to allow ground water production from no shallower than _____ ft. below land surface;

c. ☐ **Condition** to allow ground water production only from the _____ ground water 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 Ground Water 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. **Ground water availability remarks:** **There are 5 nearby obs wells (MALH 27, MALH 28, MALH 39, MALH 40, MALH 41), most of which are not located. I looked at the data to see if it was worth trying to locate the wells in order to create a stacked hydrograph, and I decided it wasn't worth it. The water levels, which are long-term, seem very stable.**

C. GROUND WATER/SURFACE WATER CONSIDERATIONS, OAR 690-09-040

C1. **690-09-040 (1):** Evaluation of aquifer confinement:

Well	Aquifer or Proposed Aquifer	Confined	Unconfined
1	**Interbedded sand, gravel, clay and sandstone,**	☒	☐
	Likely tuffaceous sedimentary rocks of GMS-7	☐	☐
		☐	☐
		☐	☐
		☐	☐

Basis for aquifer confinement evaluation: **Significant clay beds are described below the well seal and the shallowest water-bearing zone. Review of local well logs confirms that clay beds are likely extensive and that major water-bearing zones are usually deeper than 150 feet. The static water levels are above the water-bearing zones.**

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	**Willow Creek**	**3740**	**3720**	**3700**	☐	☒	☐	☐	☒
1	2	**Middle Willow Creek**	**3740**	**3755**	**1490**	☐	☒	☐	☐	☒
1	3	**South Willow Creek**	**3740**	**3762**	**250**	☐	☒	☐	☐	☒
						☐	☐	☐	☐	☐
						☐	☐	☐	☐	☐
						☐	☐	☐	☐	☐

Basis for aquifer hydraulic connection evaluation: **The creeks are within Quaternary alluvium and are not likely incised to the level of the shallowest water-bearing zone of the sedimentary rocks within one mile of the well. There is likely direct hydraulic connection between the sedimentary deposits and the alluvium. The head relationship suggests that indirect and diffuse interference is likely with a downstream reach of Willow Creek beyond a distance of 6000 feet.**

Water Availability Basin the well(s) are located within: **31011926** WILLOW CR> MALHEUR R- AB LONG CR; **31011929** WILLOW CR> MALHEUR R- AB S WILLOW CR; **71462** S WILLOW CR> WILLOW CR- AT MOUTH; **31011923** LOST VALLEY CR> WILLOW CR- AT MOUTH (see map).

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 source. Limit evaluation to instream rights and minimum stream flows that are pertinent to that surface water source, and 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 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 #		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: **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													
		%	%	%	%	%	%	%	%	%	%	%	%
Well Q as CFS													
Interference CFS													
		%	%	%	%	%	%	%	%	%	%	%	%
Well Q as CFS													
Interference CFS													
		%	%	%	%	%	%	%	%	%	%	%	%
Well Q as CFS													
Interference CFS													
		%	%	%	%	%	%	%	%	%	%	%	%
Well Q as CFS													
Interference CFS													

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

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 ground water 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: Local well logs; water-level data at nearby wells; Geology of the Oregon Part of the Baker 1° by 2° Quadrangle, by Brooks, et al, 1976; Amy Kim, personal communication.

D. WELL CONSTRUCTION, OAR 690-200

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

D2. **THE WELL does not 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**:
- a. ☐ constitutes a health threat under Division 200 rules;
- b. ☐ commingles water from more than one ground water reservoir;
- c. ☐ permits the loss of artesian head;
- d. ☐ permits the de-watering of one or more ground water reservoirs;
- e. ☐ other: (specify) _____

D4. **THE WELL construction deficiency is described as follows:** _____

D5. **THE WELL**
- a. ☐ **was**, *or* ☐ **was not** constructed according to the standards in effect at the time of original construction or most recent modification.
- b. ☐ I don't know if it met standards at the time of construction.

D6. ☐ **Route to the Enforcement Section.** I recommend withholding issuance of the permit until evidence of well reconstruction is filed with the Department and approved by the Enforcement Section and the Ground Water Section.

THIS SECTION TO BE COMPLETED BY ENFORCEMENT PERSONNEL

D7. ☐ Well construction deficiency has been corrected by the following actions: _____

_____ _____, 200____.
(Enforcement Section Signature)

D8. ☐ **Route to Water Rights Section (attach well reconstruction logs to this page).**

SW Sources 1-3

WILLOW CR> MALHEUR R- AB LONG CR
MALHEUR BASIN

Water Availability as of 12/7/2008

Watershed ID #: 31011926 Exceedance Level: 80%

Date: 12/7/2008 Time: 12:55 PM

Water Availability Calculation | Consumptive Uses and Storages | Instream Requirements | Reservations | Water Rights | Watershed Characteristics

Water Availability Calculation

Monthly Streamflows in Cubic Feet per Second
Storage at 50% Exceedance in Acre-Feet

Month	Natural Stream Flow	Consumptive Use and Storage	Expected Stream Flow	Reserved Stream Flow	Instream Requirement	Net Water Available
Jan	6.35	0.07	6.28	0.00	0.00	6.28
Feb	12.50	0.22	12.30	0.00	0.00	12.30
Mar	17.60	3.89	13.70	0.00	0.00	13.70
Apr	32.20	17.90	14.30	0.00	0.00	14.30
May	29.20	45.00	-15.80	0.00	0.00	-15.80
Jun	21.50	36.50	-15.00	0.00	0.00	-15.00
Jul	7.90	12.20	-4.28	0.00	0.00	-4.28
Aug	3.25	4.88	-1.63	0.00	0.00	-1.63
Sep	2.10	2.53	-0.43	0.00	0.00	-0.43
Oct	2.75	1.25	1.50	0.00	0.00	1.50
Nov	5.42	0.07	5.35	0.00	0.00	5.35
Dec	5.75	0.07	5.68	0.00	0.00	5.68
Storage Acre-Feet at 50%	14,200.00	7,550.00	7,940.00	0.00	0.00	7,940.00

SW Source 4

WILLOW CR> MALHEUR R- AB S WILLOW CR
MALHEUR BASIN

Water Availability as of 12/7/2008

Watershed ID #: 31011929 Exceedance Level: 80%

Date: 12/7/2008 Time: 1:15 PM

Water Availability Calculation | Consumptive Uses and Storages | Instream Requirements | Reservations | Water Rights | Watershed Characteristics

Water Availability Calculation

Monthly Streamflows in Cubic Feet per Second
Storage at 50% Exceedance in Acre-Feet

Month	Natural Stream Flow	Consumptive Use and Storage	Expected Stream Flow	Reserved Stream Flow	Instream Requirement	Net Water Available
Jan	1.85	0.00	1.85	0.00	0.00	1.85
Feb	3.70	0.00	3.70	0.00	0.00	3.70
Mar	5.16	1.30	3.86	0.00	0.00	3.86
Apr	8.93	6.28	2.65	0.00	0.00	2.65
May	8.72	16.00	-7.28	0.00	0.00	-7.28
Jun	7.04	13.00	-5.96	0.00	0.00	-5.96
Jul	2.50	4.34	-1.84	0.00	0.00	-1.84
Aug	0.97	1.74	-0.77	0.00	0.00	-0.77
Sep	0.55	0.90	-0.35	0.00	0.00	-0.35
Oct	0.73	0.43	0.30	0.00	0.00	0.30
Nov	1.49	0.00	1.49	0.00	0.00	1.49
Dec	1.64	0.00	1.64	0.00	0.00	1.64
Storage Acre-Feet at 50%	4,190.00	2,660.00	2,210.00	0.00	0.00	2,210.00

SW Source 5

S WILLOW CR> WILLOW CR- AT MOUTH
MALHEUR BASIN

Water Availability as of 12/7/2008

Watershed ID #: 71462 Exceedance Level: 80%

Date: 12/7/2008 Time: 1:16 PM

Water Availability Calculation | Consumptive Uses and Storages | Instream Requirements | Reservations | Water Rights | Watershed Characteristics

Water Availability Calculation

Monthly Streamflows in Cubic Feet per Second
Storage at 50% Exceedance in Acre-Feet

Month	Natural Stream Flow	Consumptive Use and Storage	Expected Stream Flow	Reserved Stream Flow	Instream Requirement	Net Water Available
Jan	3.82	0.06	3.76	0.00	3.00	0.76
Feb	7.34	0.19	7.15	0.00	6.00	1.15
Mar	9.93	0.95	8.98	0.00	6.00	2.98
Apr	20.00	3.91	16.10	0.00	6.00	10.10
May	17.80	9.26	8.54	0.00	6.00	2.54
Jun	12.10	7.48	4.62	0.00	5.00	-0.38
Jul	4.68	2.51	2.17	0.00	4.00	-1.83
Aug	2.04	1.01	1.03	0.00	2.40	-1.37
Sep	1.48	0.53	0.95	0.00	1.50	-0.55
Oct	1.91	0.27	1.64	0.00	1.50	0.14
Nov	3.60	0.06	3.54	0.00	2.30	1.24
Dec	3.64	0.06	3.58	0.00	3.00	0.58
Storage Acre-Feet at 50%	8,360.00	1,590.00	6,760.00	0.00	2,810.00	4,000.00

SW Source 6

LOST VALLEY CR> WILLOW CR- AT MOUTH
MALHEUR BASIN

Water Availability as of 12/7/2008

Watershed ID #: 31011923 Exceedance Level: 80%

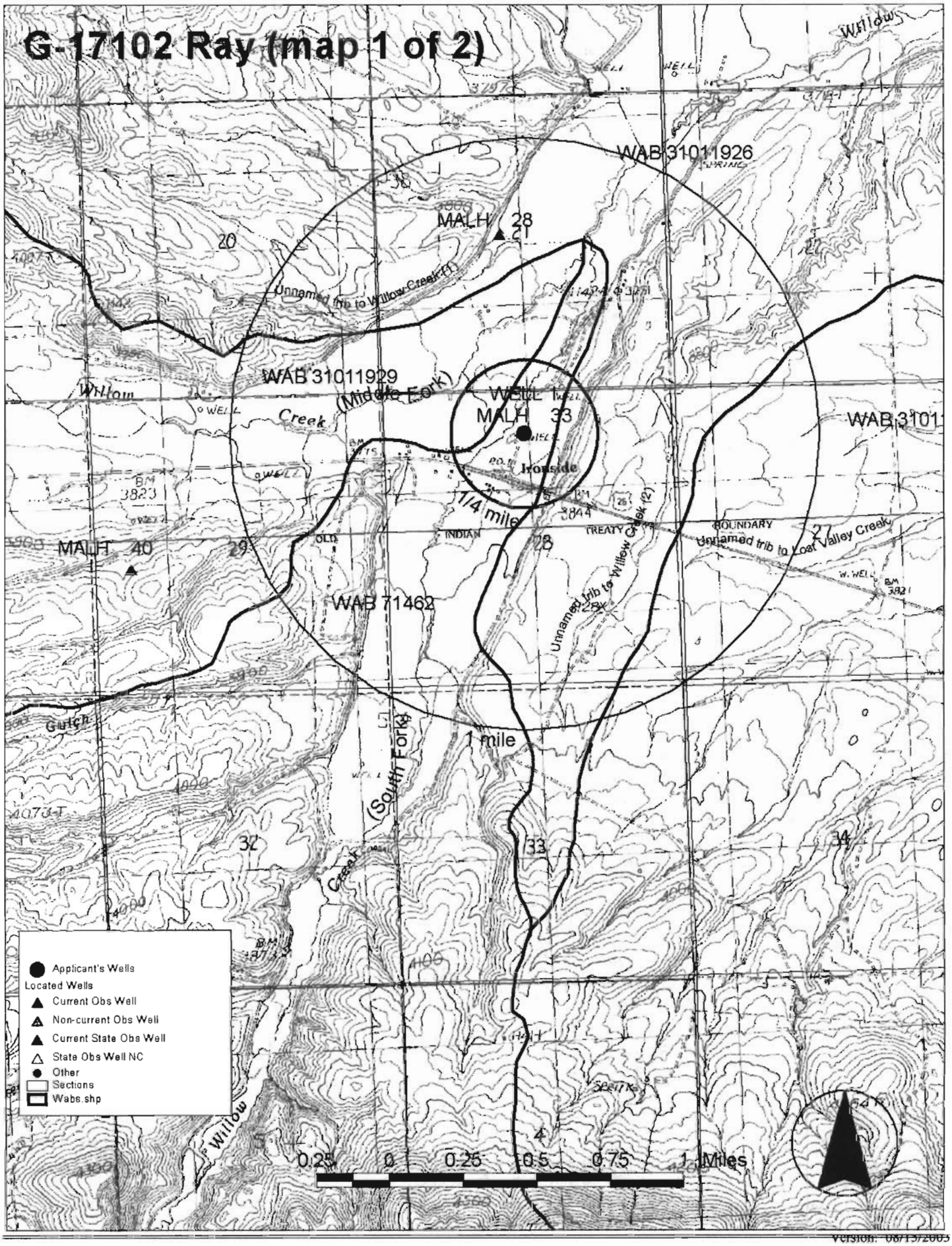
Date: 12/7/2008 Time: 1:17 PM

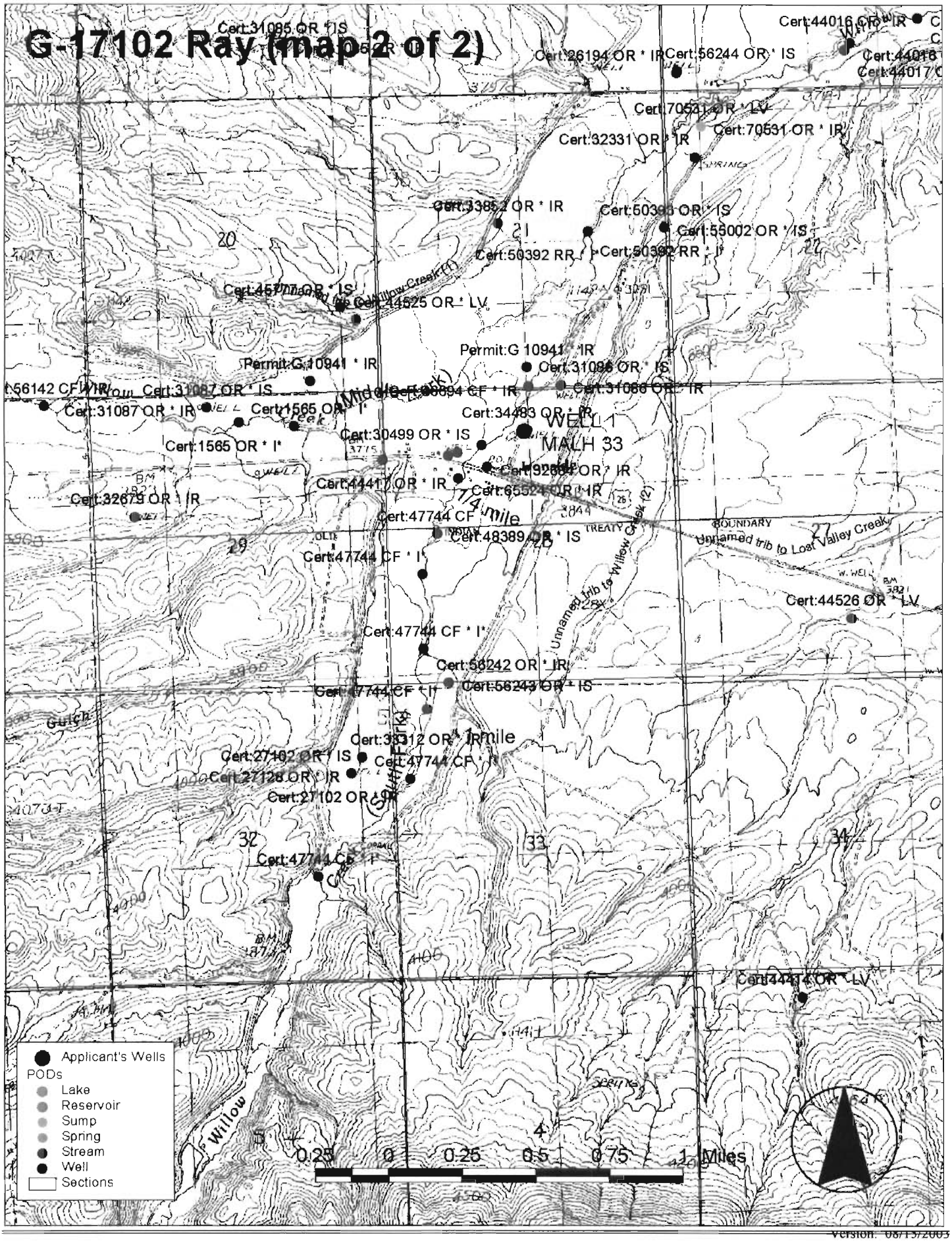
Water Availability Calculation | Consumptive Uses and Storages | Instream Requirements | Reservations | Water Rights | Watershed Characteristics

Water Availability Calculation

Monthly Streamflows in Cubic Feet per Second
Storage at 50% Exceedance in Acre-Feet

Month	Natural Stream Flow	Consumptive Use and Storage	Expected Stream Flow	Reserved Stream Flow	Instream Requirement	Net Water Available
Jan	0.40	0.00	0.40	0.00	0.00	0.40
Feb	0.86	0.01	0.85	0.00	0.00	0.85
Mar	1.88	0.20	1.68	0.00	0.00	1.68
Apr	2.23	0.86	1.37	0.00	0.00	1.37
May	1.20	2.16	-0.96	0.00	0.00	-0.96
Jun	0.75	1.74	-0.99	0.00	0.00	-0.99
Jul	0.27	0.58	-0.31	0.00	0.00	-0.31
Aug	0.10	0.23	-0.13	0.00	0.00	-0.13
Sep	0.05	0.12	-0.07	0.00	0.00	-0.07
Oct	0.07	0.06	0.01	0.00	0.00	0.01
Nov	0.11	0.00	0.11	0.00	0.00	0.11
Dec	0.23	0.00	0.23	0.00	0.00	0.23
Storage Acre-Feet at 50%	981.00	361.00	741.00	0.00	0.00	741.00


G-17102 Ray (map 1 of 2)
WAB 31011926
MALH 28
Unnamed trib to Willow Creek (1)
WAB 31011929
Willow Creek (Middle Fork)
WELL
MALH 33
Ironside
WAB 3101
1/4 mile
MALH 40
INDIAN
TREATY
BOUNDARY
Unnamed trib to Coal Valley Creek
WAB 71462
Unnamed trib to Willow Creek (2)
Gulch
1 mile
(South Fork)
Creek
Willow
Applicant's Wells
Located Wells
Current Obs Well
Non-current Obs Well
Current State Obs Well
State Obs Well NC
Other
Sections
Wabs.shp
0.25 0 0.25 0.5 0.75 1 Miles


G-17102 Ray (map 2 of 2)
Cert:31095 OR * IS
Cert:26194 OR * IR
Cert:56244 OR * IS
Cert:44016 OR * IR
Cert:44017 C
Cert:70531 OR * LV
Cert:70531 OR * IR
Cert:32331 OR * IR
Cert:33852 OR * IR
Cert:50392 OR * IS
Cert:55002 OR * IS
Cert:50392 RR
Cert:50392 RR * I*
Cert:45771 OR * IS
Willow Creek (1)
Cert:44525 OR * LV
Permit:G 10941 * IR
Cert:31086 OR * IS
Cert:56142 CF * IR
Cert:31087 OR * IS
Cert:56894 CF * IR
Cert:31086 OR * IR
Cert:31087 OR * IR
Cert:1565 OR * I*
Cert:34483 OR * IR
WELL 1
MALH 33
Cert:30499 OR * IS
Cert:1565 OR * I*
Cert:32684 OR * IR
Cert:44417 OR * IR
Cert:65524 OR * IR
Cert:32679 OR * IR
Cert:47744 CF
Cert:48389 OR * IS
Cert:47744 CF * I*
BOUNDARY
Unnamed trib to Loar Valley Creek
Unnamed trib to Willow Creek (2)
Cert:44526 OR * LV
Cert:47744 CF * I*
Cert:56242 OR * IR
Cert:56243 OR * IS
Cert:47744 CF * I*
Gulch
Cert:33312 OR * IR
Cert:27102 OR * IS
Cert:47744 CF * I*
Cert:27128 OR * IR
Cert:27102 OR * IR
Cert:47744 CF * I*
Cert:44414 OR * LV
Applicant's Wells
PODs
Lake
Reservoir
Sump
Spring
Stream
Well
Sections
Willow
0.25 0 0.25 0.5 0.75 1 Miles

WATER RESOURCES DEPARTMENT

MEMO December 9, 2008

TO: **Application G-** 17102

FROM: **GW:** Mike Zwart
(Reviewer's Name)

SUBJECT: **Scenic Waterway Interference Evaluation**

_____YES
The source of appropriation is within or above a Scenic Waterway
✓ NO

_____YES
Use the Scenic Waterway condition (Condition 7J)
✓ NO

_____Per ORS 390.835, the Ground Water 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 Ground Water 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 _____ 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