

Water Right Conditions Tracking Slip

Groundwater/Hydrology Section

FILE # # G-17799

ROUTED TO: Water Rights - Kim

TOWNSHIP/
RANGE-SECTION: 235/33 E - 17, 19+20
246/32.5 E - 2

CONDITIONS ATTACHED?: [☒] yes [☐] no

REMARKS OR FURTHER INSTRUCTIONS:

Reviewer: Mike Zwart

[illegible]

PUBLIC INTEREST REVIEW FOR GROUND WATER APPLICATIONS

TO: Water Rights Section Date April 8, 2014

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

SUBJECT: Application G- 17799 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: Bo Thorenfeldt County: Harney

A1. Applicant(s) seek(s) 14.667 cfs from 6 well(s) in the Malheur Lake Basin,
Harney Valley subbasin Quad Map: Carson Point

A2. Proposed use: Irrigation, 880 acres Seasonality: March 1 to 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	Proposed	1	Volcanic Seds.	2.23	23S/33E-17 SW-SW	1320' N, 1320' E fr SW cor S 17
2	Proposed	2	Volcanic Seds.	2.23	23S/33E-20 NW-NW	1320' S, 1320' E fr NW cor S 20
3	Proposed	3	Volcanic Seds.	2.23	23S/33E-19 SE-SE	1320' N, 1320' W fr SE cor S 19
4	Proposed	4	Volcanic Seds.	2.23	23S/33E-20 SW-SW	1320' N, 1320' E fr SW cor S 20
5	Proposed	5	Volcanic Seds.	2.23	23S/33E-20 SE-SE	1320' N, 1320' W fr SE cor S 20
6	Proposed	6	Volcanic Seds.	2.23	24S/32.5E-2 NE-NE	1320' S, 1320' W fr NE cor S 2

* 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
All	*	?	35±		250	0-30	0-250	None	200-250			

Use data from application for proposed wells.

A4. Comments: *Estimated elevations for wells 1-6, respectively, are: 4125, 4125, 4123, 4124, 4124 and 4121 feet above mean sea level. Note that the well-specific rates do not quite add up to the total rate requested.

A5. ☒ Provisions of the Malheur Lake 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:
- ☒ The permit should contain condition #(s) 7N (provided that the above findings are overcome);
 - ☐ The permit should be conditioned as indicated in item 2 below.
 - ☒ 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 no current or non-current State Observation Wells nearby with long-term water-level records. There are also no other water-level data on file for the local area except for nearby well HARN 51275, which has been measured only a few times as part of a permit condition. However, water-level data being collected in the Weaver Springs area to the southwest and in the Crane area to the south have disclosed groundwater level declines in areas that have experienced significant development of groundwater for irrigation. The Crane area is noteworthy because it is a local example of over-appropriation of the groundwater resource and it has a similar climate, underlying geology and recharge as the area here. Review of local well logs and the November 2012 draft Harney Basin Groundwater Study indicate that the regional groundwater flow direction in this area is generally to the south toward Malheur and Harney lakes. Therefore, this area is likely upgradient of the Crane area. This is significant, given the documented water-level declines in that area and the fact that several existing groundwater rights in that area are yet to be developed. In addition, several other recent applications are pending in the area immediately surrounding these proposed wells. Thus, the water-level declines are likely to increase in time as these existing and pending rights are more fully developed. Issuance of a permit for the amounts proposed here will likely result in water-level declines at the proposed wells that would exceed the limits set forth in permit condition 7N, which is typically recommended. The use of the proposed wells would also likely result in water-level declines and possibly also substantial interference at nearby existing and proposed wells with senior rights.

Special Permit Condition: The permittee shall construct one minimum six-inch diameter observation well to penetrate the same aquifer as the production wells. The well shall meet the Department's minimum well construction standards and shall be cased and sealed to the same depth as the production wells. The well shall be constructed at a location approved by the Department for the purpose of instrumentation with continuous water-level monitoring equipment. The landowner or permittee shall provide access to Department staff to install and maintain the monitoring equipment. The well shall not be used for any other purpose while the Department is monitoring water levels. The well shall be completed prior to water use under the terms of any permit issued.

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
All	Tuffaceous sedimentary rocks and sediments (Tvs of GW Report 16)	☒	☐
		☐	☐
		☐	☐
		☐	☐
		☐	☐

Basis for aquifer confinement evaluation: Locally, the aquifer may be confined to semiconfined, but regionally it is unconfined and discharges to Malheur Lake.

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
						☐	☐	☐	☐	☐
						☐	☐	☐	☐	☐
						☐	☐	☐	☐	☐
						☐	☐	☐	☐	☐
						☐	☐	☐	☐	☐
						☐	☐	☐	☐	☐
						☐	☐	☐	☐	☐
						☐	☐	☐	☐	☐

Basis for aquifer hydraulic connection evaluation: Groundwater likely is discharging to lower reaches of Ninemile Slough, Poison Creek Slough and/or Malheur Lake. Ninemile Slough and Poison Creek Slough are dry in most years and therefore not considered for Division 9 reviews, per memo by Ivan Gall, January 15, 2008.

Water Availability Basin the well(s) are located within: Malheur Sl. > Malheur Lake ab Ninemile Sl. (31200107).

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?
		☐	☐			☐		☐		☐
		☐	☐			☐		☐		☐
		☐	☐			☐		☐		☐
		☐	☐			☐		☐		☐
		☐	☐			☐		☐		☐
		☐	☐			☐		☐		☐
		☐	☐			☐		☐		☐
		☐	☐			☐		☐		☐
		☐	☐			☐		☐		☐

	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?
			☐			☐		☐		☐
			☐			☐		☐		☐
			☐			☐		☐		☐
			☐			☐		☐		☐

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.

[illegible]

Version: 08/15/2003

[illegible]

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;

[illegible]

D. WELL CONSTRUCTION, OAR 690-200

D1. Well #: _____ Logid: _____

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

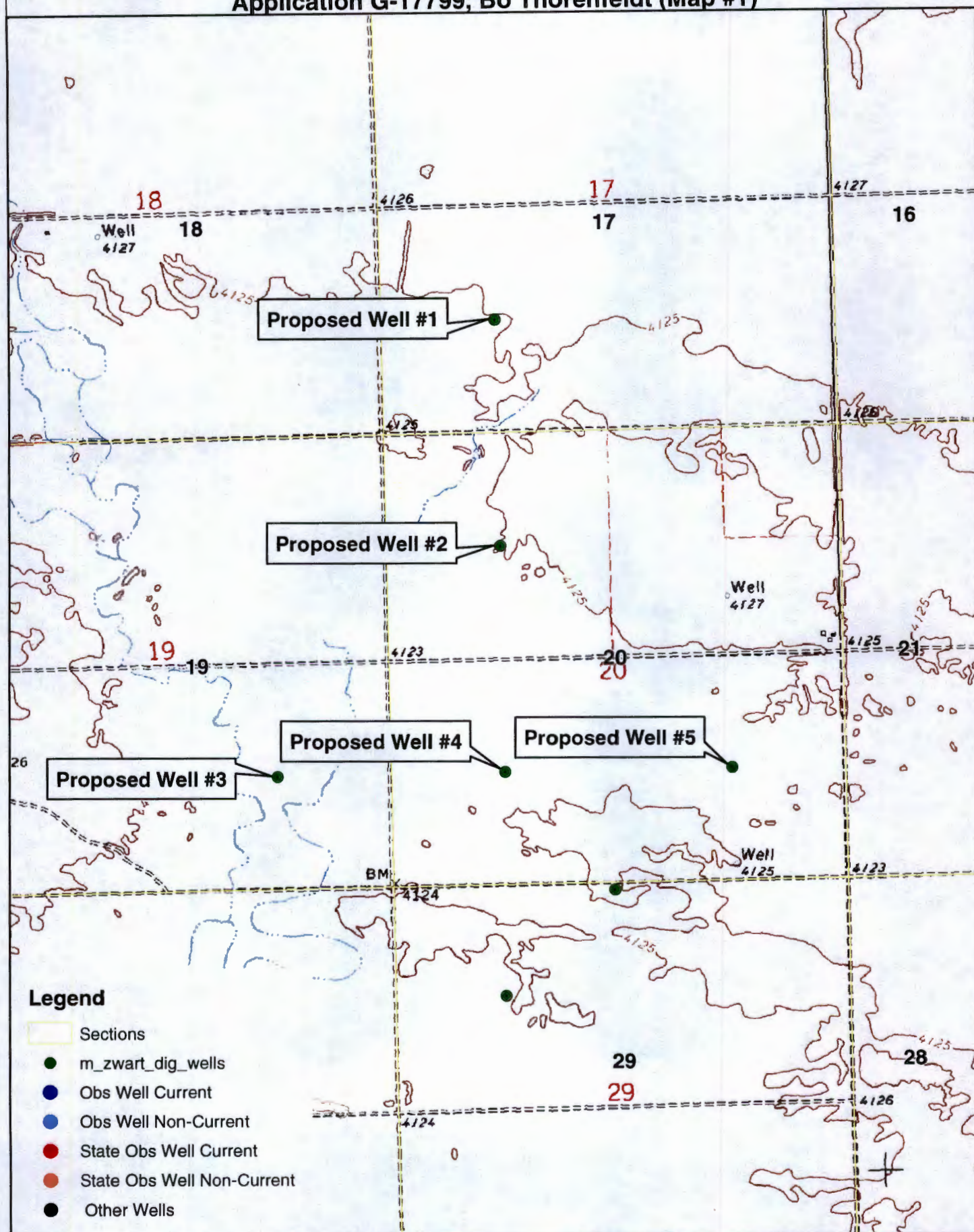
- a. ☐ review of the well log;
- b. ☐ field inspection by _____;
- c. ☐ report of CWRE _____;
- d. ☐ other: (specify) _____

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.

Water Availability Tables

Application G-17799, Bo Thorenfeldt (Map #1)



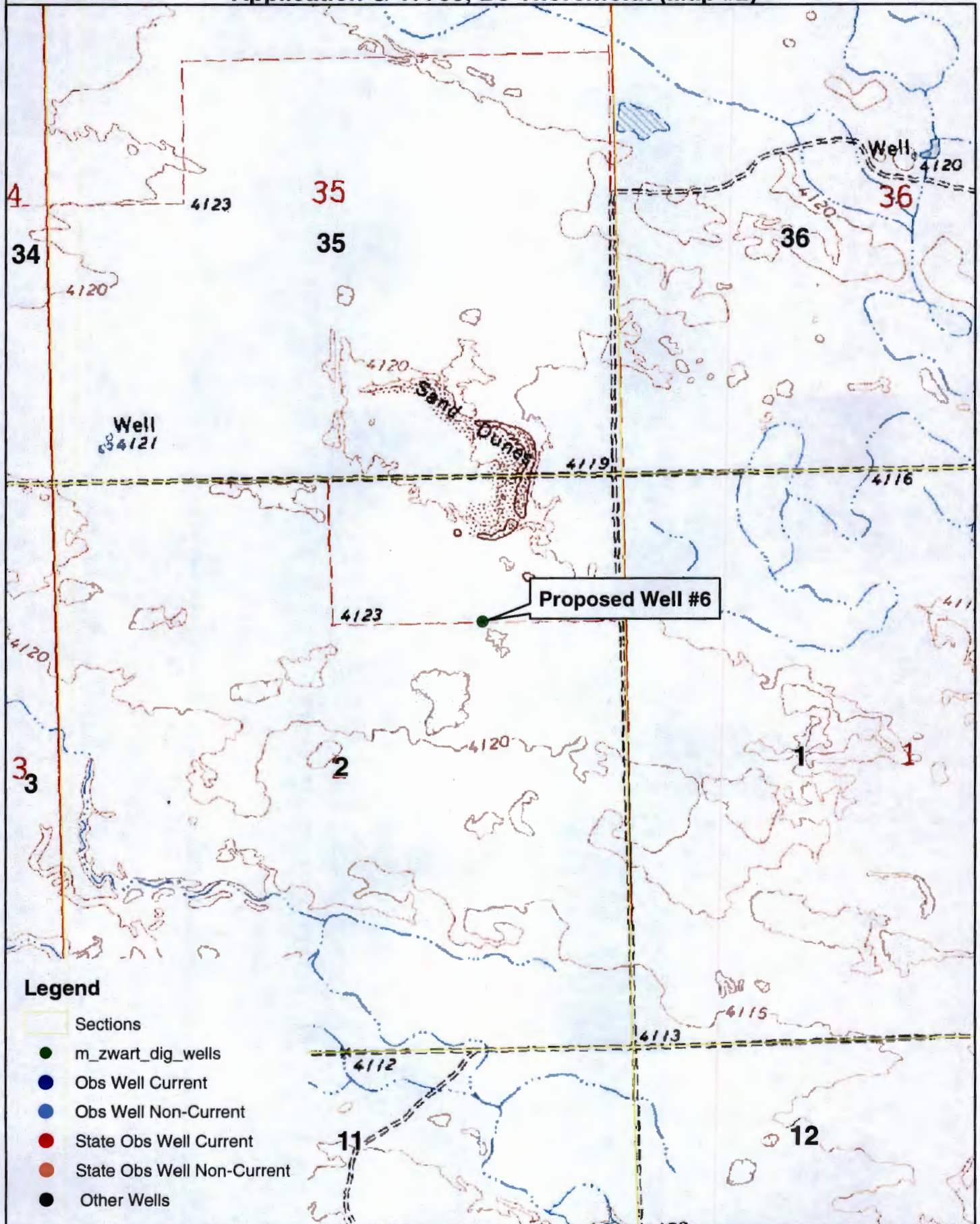
Legend

- Sections
- m_zwart_dig_wells
- Obs Well Current
- Obs Well Non-Current
- State Obs Well Current
- State Obs Well Non-Current
- Other Wells



0 0.5 1 Miles

Application G-17799, Bo Thorenfeldt (Map #2)



0 0.5 1 Miles