WaterWatch of Oregon

Protecting Natural Flows In Oregon Rivers

Testimony of WaterWatch of Oregon (Brian Posewitz) on SB 103

Senate Committee on Environment and Natural Resources

March 20, 2019

Founded in 1985, WaterWatch is a non-profit river conservation group dedicated to the protection and restoration of natural flows in Oregon's rivers. We work to ensure that enough water is protected in Oregon's rivers to sustain fish, wildlife, recreation and other public uses of Oregon's rivers, lakes and streams. We also work for balanced water laws and policies. WaterWatch has members across Oregon who care deeply about our rivers, their inhabitants and the effects of water laws and policies on these resources.

WaterWatch Supports Senate Bill 103.

SB 103 would put a moratorium on new industrial dairies until Oregon gets a better handle on their impacts and how to manage those impacts. WaterWatch supports SB 103 because the impacts of industrial dairies include enormous impacts on water resources, and because those impacts need to be better regulated. The biggest problem is that, under current law, industrial dairies can take an unlimited amount of water from our rivers, streams and aquifers to provide drinking water for their cows – a use that can exceed a million gallons of water per day – without first getting a water appropriation permit that ensures the use does not harm existing users and is otherwise in the public interest.

Background: Water Issues at Lost Valley Farm

Lost Valley Farm near Boardman highlights the need for better regulation of industrial dairies. Lost Valley opened in 2017 with about 10,000 cows, and with plans to grow to 30,000 cows. Lost Valley then promptly collapsed after two years of repeated permit violations, drug arrests and bankruptcy. The situation got so bad that the Oregon Department of Agriculture went to court against Lost Valley twice – first seeking an injunction to stop dairy operations and then asking to have the dairy's owner, Gregory te Velde, held in contempt of court (which he was) for violating the stipulated judgment entered in the first case.

Lost Valley also illustrated problems in the state's water permitting system, and in the interface between that system and the ODA/DEQ system for issuing permits under the federal Clean Water Act (permits for confined animal feeding operations, or "CAFO"s).

Lost Valley needed water for three things: (1) for irrigation of crops, which are used to feed the cows and absorb nitrates from the animal waste; (2) for the cows to drink; and (3) for dairy operations such as washing barns, running machinery and cooling milk. All told, the water demands, averaged over the course of a year, could approach 20 million gallons per day – the equivalent of a mid-sized city.[1] Lost Valley had water rights for irrigation but needed year-round groundwater rights for stock watering and dairy operations. Lost Valley could not get a new groundwater permit because the area was designated a critical groundwater area in 1976 and was closed to new appropriations. It was closed because demand for groundwater in the area already exceeded the supply.

Lost Valley arranged to trade surplus irrigation rights to a nearby dairy, Sage Hollow Ranch, in exchange for Sage Hollow's groundwater rights, but that required approval of a "transfer" by the Water Resources Department – because the "place of appropriation" (the wells) would be moved about two miles and because the season and character of use would change from summer irrigation to year-round stock watering and dairy operations. Water Resources proposed approving the transfer, but the proposed approval was subject to challenge and was in fact challenged – by another neighboring dairy as well as coalition of public interest groups. Meanwhile, ODA issued Lost Valley's CAFO permit anyway – the day after the first challenge was filed. Thus, Lost Valley went into business, and was allowed by ODA to go into business, without a year-round supply of water for stock watering and dairy operations.

After one interim water strategy failed (temporary permits), Lost Valley resorted to a combination of using irrigation water in the summer for stock water, trucking water about 10 miles from the Port of Morrow and, worst of all, pumping water from the closed groundwater aquifers and claiming the use was exempt from permit requirements because the statutes include an unlimited exception for "stockwatering."[2] The exception probably assumed stock watering would have insignificant effects on water resources, but Lost Valley's unpermitted new use was in fact very significant. In a letter to Lost Valley's owner before the dairy opened, Water Resources said use of the stock watering exemption for a dairy of Lost Valley's size could increase demand on the aquifer by 22% to 56%. (Attachment 1.)

[1] The calculation is based on Lost Valley's stated demand for stock watering and dairy operations (about one million gallons per day) and an estimate of irrigation demand that multiplies the number of acres under production, according to the Animal Waste Management Plan for the CAFO permit, by the water use allowed per acre per year under Lost Valley's water rights for irrigation water from the Columbia River. For perspective, the City of Salem uses about 44 million gallons per day on average and the City of Bend uses about 12 million gallons per day (according to their online information).

[2] Most new water uses require an appropriation permit after a review to ensure the use would not "impair or be detrimental to the public interest" (surface water), ORS 537.153, or would "ensure the preservation of the public welfare, safety and health" (groundwater), ORS 537.621(2).

Lost Valley's defenders will claim its unpermitted groundwater pumping from a closed aquifer was "mitigated" because Sage Hollow (the neighboring dairy involved in the proposed water right transfer) agreed, in exchange for temporary transfers of surface water rights, not to pump groundwater during the irrigation season from its wells about two miles away. However, it's far from clear that Sage Hollow's "forbearance" from pumping in the summer offset Lost Valley's pumping in the winter. Among other reasons, it's not clear that Sage Hollow's wells and Lost Valley's wells were taking water from the same "water bearing zones." In its review of the proposed transfer, Water Resources noted that, because Sage Hollow's wells potentially drew water from numerous depths, "[t]here is not enough available information to determine what portion of the use is from the various water bearing zones." (Attachment 2, p. 3.)

Lost Valley's defenders also will claim that the Water Resources Department "already has the tools it needs" to address unpermitted stock watering on industrial dairies. They will claim the use can be regulated in favor of other rights based on seniority, and that the Department can do a rulemaking to prohibit exempt use in a critical groundwater area. However, regulation requires a "call" (complaint) from a senior user and can be made only after the senior user has exhausted efforts to "chase the aquifer" by drilling a deeper well, etc. A rulemaking (the other suggested tool) would be controversial, cumbersome and time consuming, and would likely take more than a year.

In short, the water issues raised by Lost Valley show a need for change.

SB 103 Would Fix Many of the Problems Illustrated by Lost Valley Farm

With respect to water resources, SB 103 would do two things:

First, it would say that "the provision of water to cows at an industrial dairy" "[i]s an industrial use of water" and "not stock watering." Section 1(4). This would take industrial dairies outside the stock watering exemptions from water permitting requirements, which are in ORS 537.141(1)(f) (exemption from surface water permitting) and ORS 537.545(1)(a) (exemption from groundwater permitting). That means stock watering at industrial dairies would be exempt from permitting only to the same extent as any other "single industrial or commercial purpose" – 5,000 gallons per day. ORS 537.545(1)(f); SB 103, sections 10, 11.[3] Otherwise, stock watering would need a permit. These are reasonable limits and requirements for stock watering at industrial dairies.[4]

[3] Section 1(4) is partially redundant, and arguably contradictory in one instance, of sections 10 and 11. Sections 10 and 11 provided limited stock watering exemptions for industrial dairies but Section 1(4) says providing water to cows on industrial dairies is not stock watering. We suggest deleting Section 1(4) to provide clearly that the stock watering exemption for industrial dairies is limited to 5,000 gallons per day.

[4] Ideally, all stock watering would be limited to 5,000 gallons per day – not just stock watering on industrial dairies.

Second, SB 103 would require ODA and DEQ to adopt rules to ensure industrial dairies have an adequate long-term supply of water before they open. Sections 6-9. This makes sense to prevent future disasters like Lost Valley Farm, which struggled in part because ODA/DEQ allowed it to begin operating before it had the necessary approvals for an adequate and cost-effective long-term water supply.

Thank you for considering our testimony on this important issue.

Contact: Brian Posewitz, WaterWatch of Oregon, 503-295-4039 x 2, brian@waterwatch.org.

Oregon
Kate Brown, Governor

Water Resources Department
North Central Region
116 S.E. Dorion Avenue
Pendleton, OR 97801
Phone (541) 278-5456
Fax (541) 278-0287
www.wrd.state.or.us

February 5, 2016

Greg te Velde
5850 Avenue 160
Tipton, CA 93272

Re: Groundwater development for dairy operation and stockwater

Dear Mr. te Velde:

I'd like to provide some background information about the local groundwater resource in the area around your new proposed dairy located in Section 16 of T3N/R26E, Morrow County, Oregon. The subject site is located within the Ordnance Basalt Critical Groundwater Area (Ordnance Basalt CGWA), and less than one mile from the Ordnance Gravel Critical Groundwater Area. These groundwater management areas were established by Special Order Vol. 27, pp 40-86 in 1976, because significant groundwater level declines indicated annual consumptive use exceeded natural recharge of the groundwater systems. The order specifies control provisions that prohibited new permitted uses in the Ordnance Basalt CGWA and curtailed existing permitted uses in the Ordnance Gravel CGWA to protect senior groundwater users.

Your current water right transfer T-12248, currently in process with the Department, proposes to change places of use, types of use and points of appropriation (well locations) authorized by Certificates 49726, 55317, 49727, 55316. These rights currently authorize irrigation use from two basalt wells, MORR 595/590 and MORR 591, both located in the Ordnance Basalt CGWA . Please note that drilling new wells before the transfer is reviewed and approved carries a big risk. It is likely well construction conditions will be specified by a Department hydrogeologist to ensure the proposed wells will access the same aquifer as the existing wells, MORR 595/590 and MORR 591 . Also, the Department will have to do an analysis of the transfer to determine if the proposed change can be done without injury or enlargement. Additionally, transfer applications are subject to protest by the public. So, there is a lot of uncertainty on whether a transfer can be approved until the transfer goes through the entire review process required by law and rule.

Department groundwater use data indicates that average combined use at these two wells is on the order of 1000 acre-feet per year. The four certificates noted above allow up to 1029.3 acre-feet per year of groundwater use. Total annual groundwater use within the Ordnance Basalt CGWA was approximately 3000 acre-feet in 2014. At this level of use, groundwater levels in the basalt are currently declining at a rate of about 2 feet per year. This indicates that the groundwater resource is beyond its capacity, is sensitive to overdraft, and that a sustainable new use is not available without injury to senior groundwater users. The most viable water supply option for the dairy project is a combination of surface water and basalt groundwater resulting from the proposed transfer of existing water rights.

Any new appropriation from the basalts, such as stock water for 30,000 head of dairy cattle, will represent a significant new use within the CGWA that will likely injure senior users. A rough estimate of dairy cattle drinking water use, assuming 20-50 gallons per head per day, is 672 to 1680 acre-feet per year. This represents approximately 22% to 56% increase in pumpage from the Ordnance Basalt CGWA, a resource that is already declining at the current level of use. This amount of additional use is not sustainable which could cause us to look at re-opening the Ordnance basalt CGWA order and consider regulation of the most junior uses, including exempt uses.

I am happy to participate in a meeting with you and your consulting team to discuss this matter further, and look for possible solutions. But I felt it prudent to share this information with you given the scale of your proposed project. Please call me at 541.278.5456 or email me at michael.f.ladd@wrd.state.or.us if you have any questions or would like to arrange a meeting.

Sincerely,

Mike Ladd

Mike Ladd, Region Manager

Cc: Greg Silbernagel – Watermaster District 5, via e-mail
Scott Fairley – Governor's office, via e-mail
William Mathews, ODA, via e-mail
Eric Nigg, DEQ, via e-mail
Carla McLane, Morrow County, via e-mail
Ivan Gall – Field Services Division, via e-mail
Wayne Downey, IRZ Consulting, via e-mail

Oregon Water Resources Department
725 Summer Street NE, Suite A
Salem, Oregon 97301-1271
(503) 986-0900
www.wrd.state.or.us

Ground Water Review Form:

- ☒ Water Right Transfer
- ☐ Permit Amendment
- ☐ GR Modification
- ☐ Other

Application: T-12248 Applicant Name: Sage Hollow Ranch LLC

Proposed Changes: ☒ POA ☐ APOA ☐ SW→GW ☒ RA
☒ USE ☒ POU ☐ OTHER

Reviewer(s): Jen Woody Date of Review: 10/06/2016, supersedes reviews dated 2/25/2016 and 3/24/2016

The information provided in the application is insufficient to evaluate whether the proposed transfer may be approved because:

☐ The water well reports provided with the application do not correspond to the water rights affected by the transfer.

☐ The application does not include water well reports or a description of the well construction details sufficient to establish the ground water body developed or proposed to be developed.

☐ Other _____

---

1. Basic description of the changes proposed in this transfer: T-12248 proposes to make changes to 4 certificates to use groundwater in the Ordnance Basalt Critical Groundwater Area (CGWA). It proposes to move the 2 relevant points of appropriation (POAs) from T3N/R26E-Section 4 to T3N/R26E- Sections 16 and 22.

   Certificate 49726: authorizes MORR 595/590 for 1.12 cfs (207.3 acres primary irrigation), the transfer proposes to change the POA to 3 new wells.

   Certificate 55317 authorizes MORR 595/590 for 0.07 cfs (12 acres primary irrigation), the transfer proposes to change the POA to 3 new wells.

   Certificate 49727 authorizes one well (MORR 596 was authorized, MORR 591 is used as a replacement well) for 0.84 cfs (38.4 acres primary irrigation), the transfer proposes to change the POA to 3 new wells.

   Certificate 55316 authorizes MORR 595/590 and MORR 591 for 0.35 cfs total (85.2 acres primary irrigation), the transfer proposes to change the POA to 3 new wells.

   The certificates involved in this transfer are affected by the Ordnance Critical Groundwater Area Order (Special Order Volume 27, pp 40-86). Based on excessively declining groundwater levels, that order prohibited new allocation of groundwater from the CRBG aquifers within the Critical Area boundaries starting in 1976. Water use at MORR 595 and MORR 591 is summarized in Figure 1; average total annual use from the two wells is about 1,000 acre-feet.

2. Will the proposed POA develop the same aquifer (source) as the existing authorized POA?
☒ Yes ☐ No Comments:

The existing and proposed wells will produce from one or more water-bearing zones in the Columbia River Basalt Group (CRBG), a series of lava flows with a composite thickness greater than 10,000 feet in the Columbia Plateau (Kahle et al., 2011). Each flow is characterized by a series of internal features, which generally include a thin rubble zone at the contact between flows and a thick, dense, low porosity and low permeability interior zone. In some cases, sedimentary layers were deposited during the time between basalt flow emplacements. A flow top, sedimentary interbed (if present) and flow bottom are collectively referred to as an interflow zone. Unconfined groundwater occurs near the weathered top of the basalts, but most water occurs in interflow zones under confining conditions at the contacts between lava flows. CRBG flow features result in a series of stacked, thin aquifers that are confined by dense flow interiors. The low permeability of the basalt flow interiors usually results in little connection between stacked aquifers, which results in tabular aquifers with unique water level heads (Reidel et al., 2002).

Constructing a well that is open to multiple water-bearing zones with distinct water level heads commingles multiple aquifers. When the pump is off, water migrates through the well bore from an aquifer of higher pressure to an aquifer of lower pressure. Over time, this can depressurize the aquifer and exacerbate water level decline.

Hydrogeologic investigations by Sceva (1966) and McCall (1975) found that the same CRBG aquifers extend through the currently authorized POA location and the proposed POA locations, based on groundwater elevations and trends. Assuming the new POAs are constructed to no greater depth that the existing wells, they should encounter the same aquifer (same source).

3. a) Is there more than one source developed under the right (e.g., basalt and alluvium)?
☒ Yes ☐ No There is more than one aquifer developed within the CRBG. MORR 595 and MORR 591 are constructed with 700-800 foot open intervals in the CRBG. There are at least two CRBG aquifers within 800 feet of land surface in this area. Each aquifer has a distinct head, as evidenced by UMAT 1543 and MORR 1720 which were reconstructed with casing and seal depths that allow access to a single CRBG aquifer per well (see Figure 3) . The shallow CRBG aquifer accessed by UMAT 1543, is located above approximately 400 feet below land surface and has a current February groundwater elevation of 490-500 feet above mean sea level (amsl). Between approximately 400 and 800 feet below land surface, the aquifer accessed by MORR 1720 has a current February groundwater elevation of 260-280 feet amsl (see Figure 3). Cascading water has been documented by Department staff when measuring the water level at MORR 595. MORR 591 has 18' of seal reported on the log, leaving the well open to alluvium and multiple aquifers within the CRBG. To access the same aquifers with new wells that meet current well construction standards, it may be necessary to install multiple wells to replace MORR 595, for example.

The existing wells do not meet current well construction standards requiring single aquifer completion, based on the large open intervals and the lack of information regarding surface seals. They will need to be repaired, converted to dedicated observation wells or abandoned. The proposed APOAs are described in the application with total depth of 750-1000 feet and 150 feet of casing and seal. This will not meet current well construction standards requiring wells access a single aquifer.

b) If yes, estimate the portion of the right supplied by each of the sources and describe any limitations that will need to be placed on the proposed change (rate, duty, etc.): There is not enough available information to determine what portion of the use is from the various water bearing zones intercepted by MORR 595 and MORR 591.

4. a) Will this proposed change, at its maximum allowed rate of use, likely result in an increase in interference with **another ground water right**?
☒ Yes ☐ No Comments: The proposed POAs are about ½ mile closer to nearby basalt wells, which will increase well-to-well interference. A dedicated observation well condition is specified to protect the resource and other existing users. The CGWA order requires that all wells be equipped with water level measuring facilities, which allow monitoring of long term water level trends and the degree of well-to-well interference. Since the proposed POAs will be in use year-round, a dedicated observation well is recommended to meet that requirement.

b) If yes, would this proposed change, at its maximum allowed rate of use, likely result in another groundwater right not receiving the water to which it is legally entitled?
☐ Yes ☒ No If yes, explain: Groundwater elevations in the deep basalt aquifer are very consistent across the CGWA. That suggests that the basalt aquifers in this area are not extensively compartmentalized, which would exacerbate well-to-well interference. Interference is expected to be slightly increased by the change in location but similar in magnitude to current conditions.

5. a) Will this proposed change, at its maximum allowed rate of use, likely result in an increase in interference with **another surface water source**?
☐ Yes ☒ No Comments: There is no significant change in surface water interference likely to result from the transfer.

b) If yes, at its maximum allowed rate of use, what is the expected change in degree of interference with any **surface water sources** resulting from the proposed change?
Stream: _____ ☐ Minimal ☐ Significant
Stream: _____ ☐ Minimal ☐ Significant
Provide context for minimal/significant impact: _____

6. What conditions or other changes in the application are necessary to address any potential issues identified above:

References

McCall, William B., 1975, Ground-Water Conditions and Declining Water Levels in the Ordnance Area, Morrow and Umatilla Counties Oregon, State of Oregon Water Resources Department Groundwater Report No. 23, 134 p.

Oregon Water Resources Department, 1976, Special Order Volume 27, On the Determination of the Critical Ground Water Area in the Ordnance Area, Morrow and Umatilla Counties, Oregon, pp. 40-86.

Sceva, Jack E., 1966, A Brief Description of the Ground-water Conditions in the Ordnance Area Morrow and Umatilla Counties, Oregon, State of Oregon Ground Water Report No. 11, 43 p.

OWRD water level database, accessed 2/24/2016.

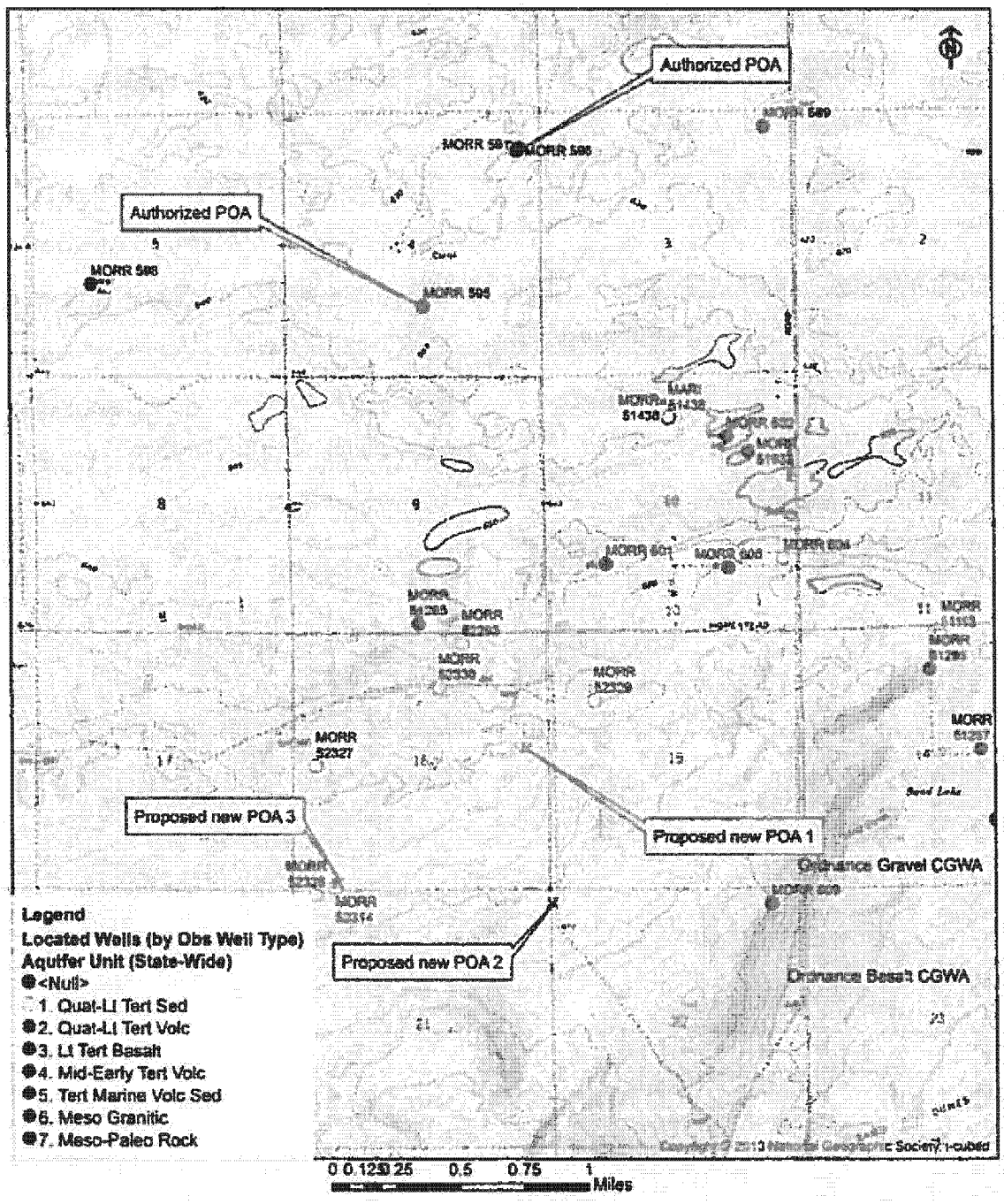
LogId	WaterUseYear	PumpageFinalAF	PumpageFinalSource
MORR 591	1978	109.97	FM
MORR 591	1979	409.08	FM
MORR 591	1980	43.79	FM
MORR 591	1981	402.40	FM
MORR 591	1982	270.44	FM
MORR 595	1983		
MORR 591	1983	809.72	FM
MORR 595	1984	256.07	FM
MORR 591	1984	174.23	FM
MORR 591	1985	869.93	FM
MORR 591	1986	299.20	PM
MORR 591	1987	979.64	PM
MORR 595	1988	680.20	FM
MORR 591	1988	722.94	FM
MORR 595	1989	697.63	FM
MORR 591	1989	696.67	FM
MORR 595	1990	697.87	FM
MORR 591	1990	868.61	FM
MORR 595	1991	819.06	FM
MORR 591	1991	839.19	FM
MORR 595	1992	772.40	FM
MORR 591	1992	701.20	FM
MORR 595	1993	790.99	FM
MORR 591	1993	471.38	FM
MORR 595	1994	677.58	FM
MORR 591	1994	928.05	FM
MORR 595	1995	751.85	FM
MORR 591	1995	811.78	FM
MORR 595	1996	570.49	FM
MORR 591	1996	780.91	FM
MORR 595	1997	596.27	FM
MORR 591	1997	716.69	FM
MORR 595	1998	616.15	FM
MORR 591	1998	235.09	FM
MORR 595	1999	746.05	FM
MORR 591	1999	345.39	FM
MORR 595	2000	587.55	FM / 2yrs
MORR 591	2000	377.46	FM
MORR 595	2001	587.55	FM / 2yrs
MORR 591	2001	666.50	FM
MORR 595	2002	852.73	FM
MORR 591	2002	768.73	FM
MORR 595	2003	771.19	FM
MORR 591	2003	910.53	FM
MORR 595	2004	703.95	FM
MORR 591	2004	640.39	FM
MORR 595	2005	699.21	FM
MORR 591	2005	773.16	FM
MORR 595	2006	631.84	FM
MORR 591	2006	555.13	FM
MORR 595	2007	517.75	FM
MORR 591	2007	572.02	FM
MORR 595	2008	517.97	FM
MORR 591	2008	426.11	FM
MORR 595	2009	549.32	FM
MORR 591	2009	458.93	FM
MORR 595	2010	532.92	FM
MORR 591	2010	338.52	FM
MORR 595	2011	491.96	FM
MORR 591	2011	449.25	FM
MORR 595	2012	711.34	FM
MORR 591	2012	472.58	FM
MORR 595	2013	538.28	FM / 2yrs
MORR 591	2013	578.13	FM
MORR 595	2014	538.28	FM / 2yrs
MORR 591	2014	552.01	FM

FM = flowmeter

Figure 1. Water use records from flowmeters at MORR 595 and MORR 591.

Figure 2. Well locations.

T-12248 Sage Hollow/te Velde
T3N/R26E- Sections 4, 16, 22



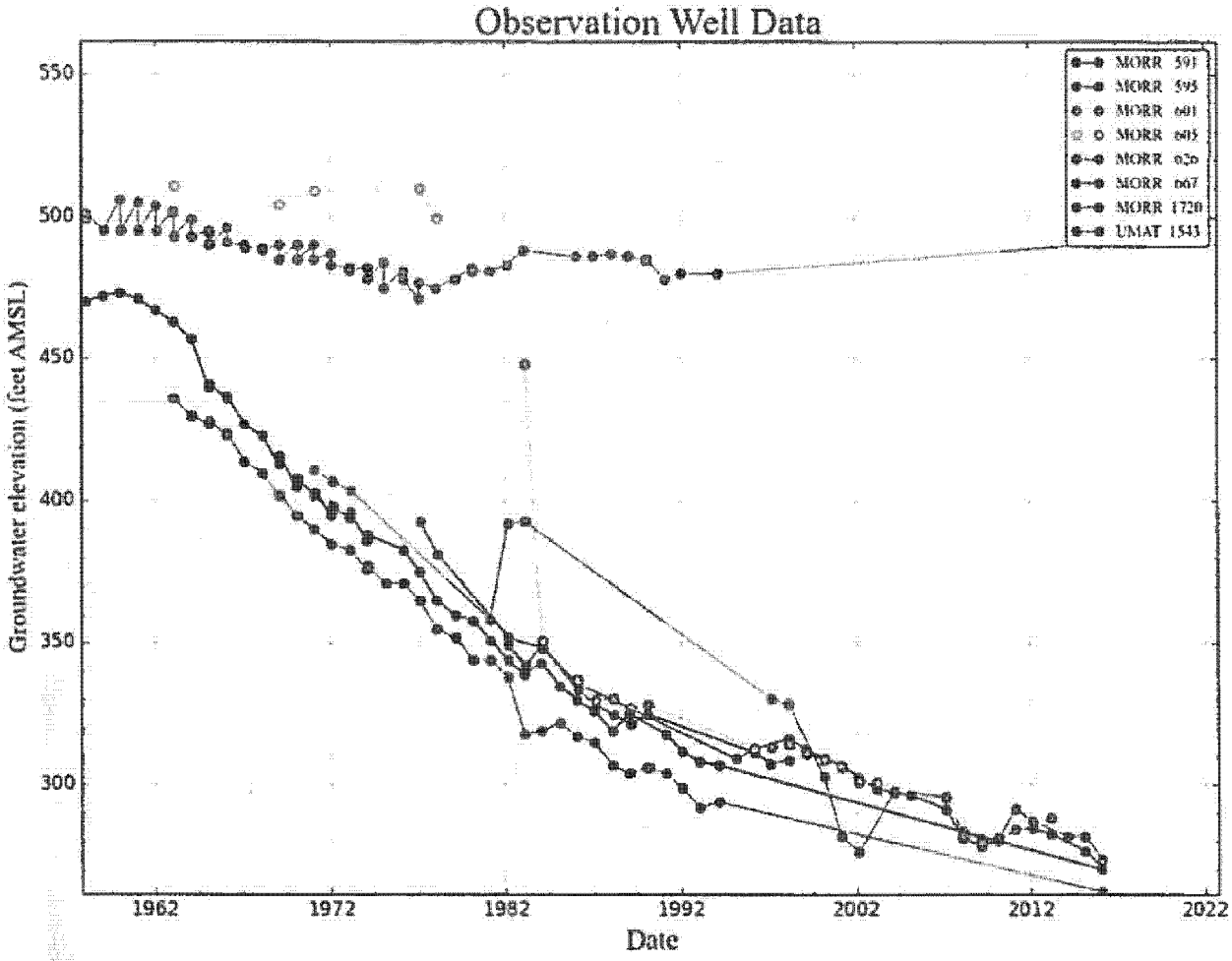


Figure 3. Water levels in wells in the Ordnance Basalt Critical Groundwater Area show two water bearing zones with distinct heads, and falling head with depth. See Figure 4 for well locations.

T-12248 te Velde
Location of wells in hydrograph (Figure 3)

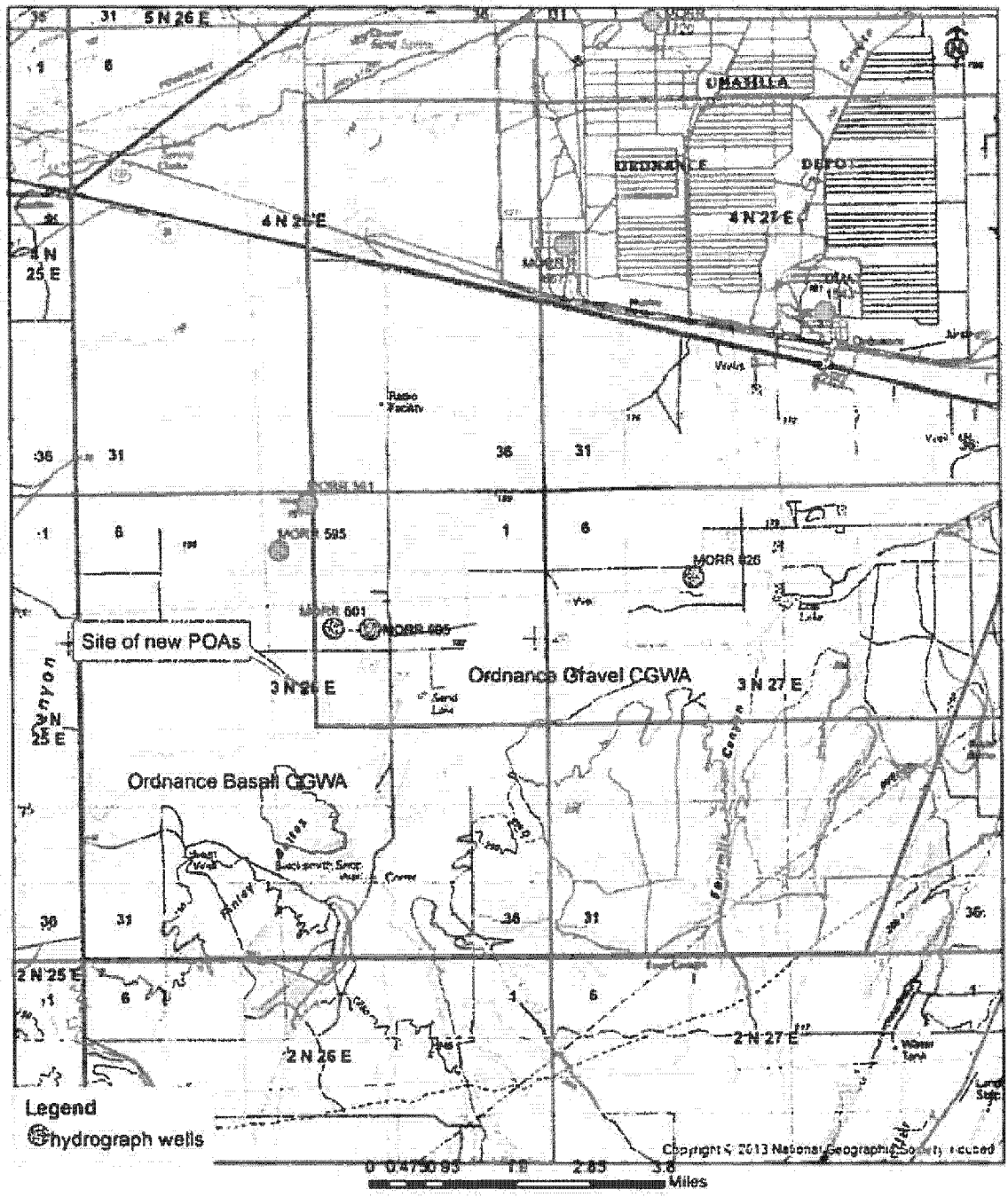


Figure 4. Location of wells with water level data depicted in Figure 3.