

KALISPELL WATER RESOURCES REGIONAL OFFICE
DEPARTMENT OF NATURAL RESOURCES AND CONSERVATION



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KALISPELL, MONTANA 59901-2367

February 15, 2005

COPY

Shawna Floyd, Chair
Batavia-Kleans Homeowners Association
568 Batavia Lane
Kalispell, Montana 59901

Re: Correct and Complete Final Review, Smith Valley Controlled Groundwater Area

Dear Mrs. Floyd,

Our department has completed the review of the above petition. The department followed Montana Code Annotated, §§ 85-2-506 and §§ 85-2-507 to determine if the petition was a correct and complete proposal.

While making a review of the petition material I noticed statements such as on page 3, in the second paragraph, "The DNRC needs to determine.." and again on page 10, second paragraph " hydrogeology and water productivity...are not adequately characterized...(and a) CGA closure with commensurate monitoring is the best way to address water availability issues...". These statements lead me to believe that there may still be a misunderstanding of the petition process.

When we first discussed this petition, one of the questions was about MCA §§ 85-2-507(5)(a) and (b) as it pertains to a temporary controlled groundwater area. We discussed that a temporary closure was granted if the department does not find that sufficient facts are available to designate a permanent closure. You had expressed that was what you thought was appropriate and the statements lead me to believe that you still want a temporary closure and then a study. I want to restate that it could take months or years before the department could get the necessary funding, equipment, and manpower to study this ground water area and funding may never be available. That is why it is important that a petition be a good, quality petition supported by factual data that supports a hearing decision to grant a permanent closure.

The petition sets forth allegations that are consistent with the requirements of MCA §§ 85-2-506 and it appears to be directly in line with all of the petitioners concerns. The petition includes much of the types of data that we had discussed you needed to research. However, we do not find that there has been a complete analysis of the data including hydrogeology and water productivity, delineation or assessment of the recharge area; or determination of the recharge and discharge; all typical hydrogeologic characteristics that need to be either gathered and analyzed, measured and calculated, or estimated with scientific references. Also none of the petitioners

have discussed water level monitoring. Among the many groundwater users who signed the petition there is probably one with sufficient technical expertise to do some of common technical tasks. Without this basic information, many of the alleged facts cannot be determined to be accurate.

One piece of monitoring and data analysis that was provided was the static water level measurements on the 16 different wells discussed on page 13. Static water level measurements are one-time data, therefore, a comparison must be made between the original and current water levels and all other data as well. The date the well was drilled and the date it was measured, the antecedent conditions that existed at the time, either drought, normal, or excess moisture, all had to be correlated to each well and a full discussion of that comparison made for each well. The analysis simply made a comparison between the original and current water levels. Because of the inadequate analysis, the department hydrogeologist stated, "...no interpretation of any significance can be placed on the March 2004 water level measurements collected..."

You have presented a petition to the department with the alleged facts as stated in MCA §§ 85-2-506 (2). According to MCA §§ 85-2-506 (3), when a proposal has been made the department must determine if the petition is correct and that it contains a complete record of the facts asserted. If it does, then the department will fix a time and place for a hearing. The following is the department's determination:

Part 1. Requirements of MCA § Section 85-2-506

Petitioners Signatures

The requirements of MCA §§ 85-2-506 (2), that a petition "... can be filed by...at least 25% or 20 of the users of groundwater, whichever is less, in an area for designation.", have been met. The department determined that the 27 legal users of groundwater that have signed the petition are water right owners of record and are legal parties to the petition.

On January 15, 2005 our office received a request for information from Maxwell G. Battle, Jr. of Battle & Erenfield, PLLC. You have recently received our response to that letter. In the letter, Item 3) it asks "What did DNRC do to verify signatures on the Petition and Amendments?" The department determines that each signature to the petition represents one water right. Therefore, if a person signed the petition and had no water right they were not counted as a petitioner, also if two people are listed as owners of a water right, say a husband and wife and both signed the petition, it only counts as one signature. By this means it was determined that there were 27 water rights, in the correct names, signed by one or more of the owners of the water. In response to the question and in order to assure that you are reaching each petitioner, a copy of this letter and all of its attachments should be sent to each of the people that signed the petition.

Hydrogeologic Review

MCA §§ 85-2-506(2) requires that a petition provide information to support alleged facts concerning groundwater in the proposed area. The petition has provided alleged facts in support of MCA §§ 85-2-506(2)(a-d) that groundwater withdrawals are in excess of recharge to the aquifer or aquifers within the ground water area; that excessive groundwater withdrawals are very likely to occur in the near future because of consistent and significant increases in withdrawals from within

the groundwater area; that significant disputes regarding priority of rights, amounts of groundwater in use by appropriators, or priority of type of use are in progress within the ground water area; and that groundwater levels or pressures in the area in question are declining or have declined excessively. The information provided, as stated above, is correct information to meet the statutory requirement. We sent the hydrogeologic information in the petition to be reviewed by the department's hydrogeologist. A copy of his report is attached as Exhibit 1 to this letter and has been placed in the petition file. The department has used the report and all available information and has the following opinions:

§§ 85-2-506(2)(a) that groundwater withdrawals are in excess of recharge to the aquifer or aquifers within the ground water area:

The department believes that stating that "...the recharge area, has yet to be delineated..." and that "...recharge from precipitation...has not been accurately determined.." is not adequate on which to base a decision. On page 3, second paragraph, the petition states, "An accurate mass balance of recharge versus discharge should be completed before any additional wells are drilled or water rights allocated in the proposed CGA." The statement leads the department to conclude that this action has not been taken. The petition needs to include convincing data and calculations of drainage basin size, precipitation versus runoff/infiltration data, correlation with stream flows and precipitation gauges, that support that statement. For example, the petition contains precipitation data that shows that the Flathead Valley is in a drought, but that data has not been discussed as it specifically relates to the SVCGA area. Basically, no analysis of the technical data has been provided to support the statements.

It is the department's opinion that, considering the size of the area in question, that quantification of aquifer recharge must be done. We believe that it requires a characterization of the watershed and determination of the water that contributes to the recharge area. It is the department's opinion that this data must be gathered if this allegation is to be resolved. The hydrogeologist's memorandum has provided some suggestions on what data must be provided.

§§ 85-2-506(2)(b) that excessive groundwater withdrawals are very likely to occur in the near future because of consistent and significant increases in withdrawals from within the groundwater area

The allegations in this part of the petition appear to be supported by some documentation although much of the data is directly related to the Nez Perce, Cheyenne, Chippewa, and Cherokee subdivisions which are in one area of the CGA and represented by 72 lots on 80 acres of the total 7,000 acres in the CGA. On November 3, 2004 our office received a letter from Terri McCall of Henning and Keedy, P.L.L.C. A copy is attached as Exhibit 2 to this letter. In that letter Mr. McCall points out that several of the proposed subdivisions that you have included as evidence that "...excessive groundwater withdrawals are very likely to occur.." are not within the CGA. We agree and therefore that data will not be considered. When these subdivisions are removed from your list, only three others remain that account for 15 additional lots on 76 additional acres for a total of 156 acres out of the more than 7,000 acres in the CGA.

§§ 85-2-506(2)(c) that significant disputes regarding priority of rights, amounts of groundwater in use by appropriators, or priority of type of use are in progress within the ground water area

This part of the petition appears to be supported by sufficient documentation although much of the complaint data, again, is directly related to, or in the area of, the Nez Perce, Cheyenne, Chippewa, and Cherokee subdivisions. Our office may have information or other documentation about other groundwater well concerns in this area and we certainly have fielded many telephone calls about low producing wells, wells that have interfered with other neighboring wells and general water right telephone complaints. It is advised that you continue to research other significant disputes that may have occurred and that you follow up in the department's files as they relate to these areas.

Alleged disputes should be located within the CGA boundaries and not be outside the area unless a hydrologic correlation between the different areas can be made.

§§ 85-2-506(2)(d), that groundwater levels or pressures in the area in question are declining or have declined excessively

Please refer to the hydrogeologist review of this information. It is the department's opinion that the data shows that ground water levels in the area's aquifers are dynamic and constantly changing in response to seasonal recharge from precipitation and surface water flow, and it responds to discharge from pumping withdrawals. There is no evidence provided of existing data or analysis, and to our knowledge petitioners have not set up or maintained any kind of monitoring. It is our hydrogeologist opinion that if you want to make this determination, the only way that this data can be verified to be true is through several years of groundwater-level monitoring and subsequent data analysis. It is believed that there is no other means available to provide adequate information leading to a credible interpretation of whether there may be a trend in long-term water-level decline or rise.

Part 2. Type of Designation

The petition originally requests a designation "To protect existing water rights and prevent further harm to existing water users and water right holders in the Smith Valley CGA, Petitioners are requesting closure of the identified area to further appropriation of groundwater, except for replacement wells." This type of designation is a corrective control as addressed in MCA §§ 85-2-507(4)(a) and is a correct type of designation to request. After the first deficiency letter was sent on October of 2004, you replied that this was not the intent of the petition and that the wording needed to be amended to read that "...no new appropriations of groundwater unless a permit is issued by the DNRC." A copy of your letter dated October 28, 2004 is enclosed as Exhibit 4. The amended request is also a proper corrective control and a hearings officer may grant that type of designation.

On December 15, 2004 I received an Email correspondence from you asking if it was possible to change "replacement wells exempt from the permitting process." That information has been made part of the file and therefore available to the hearings examiner in making a decision on the petition.

Part 3. Map

The maps, as corrected and resubmitted are correct and complete. It would be much easier to understand the area and provide the layers of necessary data if the maps are available in a digital format and are printed out on a large, clear, map plotter. Presenting data on copies of maps that have been hand drawn leaves much of the accuracy of the data subject to interpretation. We would encourage the petitioners to develop a digital format for the maps.

In addition to defining the surface boundary map of the CGA, part 3. C. of the petition application and MCA §§ 85-2-507(3) requires that the final order must also indicate which of the groundwater aquifers located within the area in question are included within the CGA. Per your October 29, 2004 amendment, it is now noted that you have corrected the petition to read all of the aquifers beneath the surface of the CGA.

Part 4. Landownership.

You have attached a new list of the property owners within the proposed boundaries of the CGA. The list includes what appears to be all of the names and mailing addresses of property owners within the CGA. The department has not completed a full review of this list. As landownership is rapidly changing in this area, the list will be reviewed again now that the deficiencies have been corrected. As of the date of this review, the list provides a record of known property owners and should meet the requirements of Part 4. of the petition. Please provide any updated ownership records that you are aware of within the next ten (10) working days. Once the updated list is received we will begin to prepare a final list of property owners that will need to be notified.

Department Finding & Recommendation

Having met the requirements of MCA §§ 85-2-506, and, having provided all of information it is hereby determined that the Smith Valley Petition for a Controlled Groundwater Area is a correct and complete application. Upon your written request we will forward the petition to the departments hearings unit to schedule a hearing.

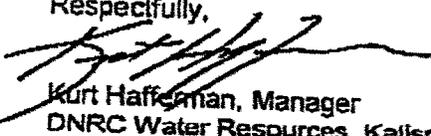
Before the Smith Valley Controlled Ground Water Area Petitioners begin the process to prepare for a hearing to show why the petition should be granted, the department suggests you reconsider this proposed petition. The department does not believe that sufficient data has been provided in support of many of your alleged facts. Both short term and long term monitoring is necessary before they types of allegations made in this petition can be substantiated. Monitoring static water levels is necessary and long term, accurate records need to be kept and submitted to the department. We also know many professional publications suggest, as a minimum, precipitation and stream flow monitoring must be taken, all in an attempt to begin to define and characterize any aquifers in question and all data that could have been collected.

The department suggests that you consult with our department staff and seek legal advice before pursuing this application. We also recommend meetings with the petitioners to discuss this proposal.

Once you have made a final decision, please send a letter to me with the directions to either send the petition to the central office to have a hearing scheduled or postpone action on the petition. Our office must complete an Environmental Assessment of the proposed action and we will need to make duplicate copies of the petition for our records. We will not proceed with those tasks until we receive your response.

Per your November 1, 2004 request I have also enclosed copies of the correspondence that I have received that pertains to the SVVGA petition. I have not completed my search for all of the pending notice of completion wells in the CGA but I will get that done soon.

Respectfully,



Kurt Hafferman, Manager
DNRC Water Resources, Kailspell regional Office

Cc:

Kim Overcast, DNRC NA Program Manager
Terry McCall
Max Battle, Jr.
DNRC KRO
File

Exhibits (5)

DEPARTMENT OF NATURAL RESOURCES
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To: Kurt Hafferman, Manager
Kalispell Water Resources Regional Office

From: Bill Uthman, Hydrogeologist
Water Management Bureau

Date: February 10, 2005

Re: Smith Valley Controlled Ground-Water Area Petition

Introduction

A petition proposing to establish the Smith Valley Controlled Ground-Water Area (SVCGWA) west of Kalispell has been submitted to the department and its Water Management Bureau has reviewed the petition in relation to the criteria specified at Montana Codes Annotated, 85-2-506. Only the alleged facts and criteria that have not been adequately addressed are discussed below.

Discussion

(a) *Criteria that ground water withdrawals are in excess of recharge to the aquifer.*

The petition correctly states that "... recharge from precipitation in the proposed CGWA has not been accurately determined" and "the recharge area to the Smith Valley has yet to be delineated and assessed". However, other alleged facts expressed in the petition were not supported with technical data and thus will remain as allegations until factually demonstrated. As an example, the petition alleges that "... with ... evaporation rates exceeding recharge, especially during extended periods of drought, it is logical to assume that there may be significant overallocation of groundwater in the proposed CGWA". The petitioners have asserted that evaporation exceeds recharge, but have not based their opinion on data. Another excerpt from the petition alleges that "... groundwater is limited and may already be over allocated in the proposed Smith Valley Controlled Groundwater Area." Ground water may actually be limited in availability due to poor hydraulic properties of the aquifers in the proposed SVCGWA. The petitioners may be surprised to find that study results may demonstrate that the volume of ground-water recharge exceeds the volume of appropriated ground water. Facts alleged by the petitioners must be supported with field data and interpretation before they can serve as credible technical arguments.

The recharge area for the proposed SVCGWA must be fully delineated and characterized in order to support allegations that ground-water appropriation exceeds aquifer recharge. The recharge area includes a large forested watershed west of the proposed SVCGWA. The petitioners have provided information that supports this interpretation but have not provided discussion or argument leading to the interpretation. Their information includes a potentiometric surface (i.e. ground-water surface) map, presented as Figure 3 of the petition, that indicates that the ground-water flow direction within the proposed SVCGWA is southeast and that ground-water flow most likely originates in the highlands of the forested watershed. Further map interpretation indicates that ground-water flow east of the proposed SVCGWA originates in the upland area southeast of the proposed SVCGWA and moves northwest into the Smith Valley. Ground water flowing from the uplands converges in the Smith Valley, and ground-water flow continues along the axis of the Smith Valley toward the northeast. Thus, wells in the proposed SVCGWA and those wells east of the proposed SVCGWA have different sources of ground water.

Quantification of aquifer recharge requires a complete characterization of the watershed recharge area. Precipitation gages and snowpack monitoring stations (i.e. SNOTEL sites) are needed to estimate annual precipitation. Streamflow measuring devices and evaporation stations are also needed to measure seasonal streamflow and evaporation. Differences between precipitation falling within the watershed and evaporative/runoff losses may provide an approximation of recharge to the subsurface. Professional publications are available that describe watershed hydrology field techniques, procedures to estimate aquifer recharge, and the results of watershed hydrology projects.

The department does not control where persons choose to live or whether they appropriate ground water from aquifers from which production is poor. Low-producing wells, and even "dry" wells, are common occurrences in bedrock mountainous and foothills regions, and are problematic to the homeowners who choose to live in those areas of tenuous, limited water resources. Wells drilled in the bedrock above valley floors or in glaciated terrain are often less reliable sources of sustainable ground-water supply than wells drilled in the valley alluvium. Declining water levels and poor production rates are commonly experienced in wells completed fractured bedrock and glaciated terrain because ground water is often withdrawn at rates greater than the capability of these aquifers to recharge. Drought further exacerbates ground-water availability problems in bedrock and glacial aquifers because less aquifer storage is available to dampen or modulate the effects of deficit precipitation and recharge. If aquifer storage is large, drought may have only a small effect on long-term water storage and when normal precipitation patterns resume, the water table returns to a more typical level in a relatively short time. Remedies for declining water levels include the lowering of the pump, and also deepening the well in an attempt to intersect deeper water-bearing bedrock fractures and joints.

(d) Criteria that ground water levels or pressures in the area in question are declining or have declined excessively.

Montana's Doctrine of Prior Appropriation states that water use occurs on a priority basis in which the common law concept of "first in time, first in right" is adhered to and water users are either "senior" or "junior" to each other. The doctrine does not include the right

of senior users to prevent changes by later appropriators in the condition of water occurrence, such as the lowering of a water table, artesian pressure, or water level unless it can be proven that adverse impact is caused to senior users by junior appropriators. In order to evaluate whether further aquifer development will cause adverse impacts to existing water users, a knowledge of aquifer hydraulic properties is required. Aquifer tests and slug tests are conducted and analyzed to determine the hydraulic properties of the aquifer.

The petitioners have provided hydrographs from two wells monitored by the Montana Bureau of Mines and Geology that are located within and adjacent to the proposed SVCGWA. The hydrographs indicate trends of declining ground-water levels beginning in 1998 that are alleged to have resulted from drought and increased ground-water withdrawals. The petitioners do not indicate whether these wells have been in operation while data were collected. If these wells were in use, declines can result from poor recovery of pumping water levels. Dedicated monitoring wells are required to delineate long-term water-level trends.

The Kalispell Water Resources Regional Office requested the petitioners to immediately initiate a ground-water level monitoring program when they first inquired about the potential for establishing a controlled ground-water area in the Smith Valley. The petitioners, however, indicate that no ground-water level monitoring program has been established. Alternatively, one set of ground-water level measurements was collected in March, 2004 and these measurements were compared with static ground-water levels listed on the well logs of the measured wells. The petitioners have commented that all but one of the ground-water levels measured were lower than the levels listed on the well logs and succinctly imply that these measurements definitively demonstrate that ground-water levels are progressively declining. While it is true that these measurements indicate that water levels are now lower than water levels observed when the wells were drilled, they are definitely not an indication that ground-water "mining" has occurred or will occur. Consideration must be given to the facts that 1) the measurements were collected at a time when ground-water levels are typically at or near their lowest levels of the year, regardless of whether the annual precipitation is above or below average, and 2) the measured wells were drilled in various seasons of the year and in different years when more typical precipitation conditions may have existed.

Further, this reviewer has rarely, if ever, observed a static water level that was higher than the level reported on the well log. It is unreasonable to expect that ground-water levels should remain at the same levels as those reported when the wells were drilled. Ground-water levels are expected to decline as a result of aquifer development, and are generally not observed at the same levels as those reported when the wells were drilled. Thus, water-availability problems cannot be interpreted from a single record of ground-water level measurements, and in fact, no interpretation of any significance can be placed on the March, 2004 water-level measurements collected in the proposed SVCGWA.

Ground-water levels in the area's aquifers are dynamic and constantly changing in response to seasonal recharge from precipitation and streamflow, and discharge from pumping withdrawals. A ground-water level monitoring program must be established and

several years of ground-water level data are needed to provide adequate information leading to a credible interpretation of whether there may be a trend in long-term water-level decline. A ground-water level monitoring network would include wells completed at various levels in the bedrock aquifer of the proposed SVCGWA. Monitoring wells must also be established away from the effects of pumping and irrigation that respond exclusively to climatic variability. Field locations of all monitoring wells must be accurately located, and wellhead elevations must be surveyed. Recommended measuring intervals include two measurements per month from May through September and one per month from October to the following April. More frequent measurements are typically conducted during the warmer months of the year because aquifer recharge occurs from spring snowmelt and seasonal rainfall, and aquifer discharge increases when lawns and gardens are irrigated. Several monitoring wells should also have continuous recording devices, such as pressure transducer/data logger instrumentation.

Conclusion

The petition to establish a controlled ground-water area in the Smith Valley has not provided a convincing demonstration that hydrogeologic criteria have been adequately addressed. A credible estimate of aquifer recharge and flux through the aquifer must be determined from a watershed hydrology study and long-term ground-water level measurements, and aquifer characterization must be completed to support claims of adverse impact caused by development.