

Nancy Cooley

From: Nancy Cooley
Sent: Wednesday, November 30, 2016 2:03 PM
To: Nancy Cooley
Subject: Animal Shelter- Co Engineer to Water Adequacy Study
Attachments: 161129-WATER ADEQUACY STUDY.pdf

From: Jeff Loomis
Sent: Wednesday, November 30, 2016 1:38 PM
To: Nancy Cooley <ncooley@co.blaine.id.us>
Cc: Tom Bergin <tbergin@co.blaine.id.us>
Subject: FW: Animal Shelter- Water Adequacy Study



Nancy,
Apparently in response to this previous CUP application review summary and comment with regards to water rights, water demands, and water supply....

***Irrigation Water/Domestic Water:** The application states the Animal Shelter presently holds Water Right Permit #37-22436, which is a groundwater permit, with a maximum allowed diversion rate of 0.64 cfs, for municipal purposes on the Croy Canyon property. The Animal Shelter also holds Water Right Permit #37-8650, which allows irrigation from groundwater of 1.5 acres, with a maximum diversion rate of 0.05 cfs. This Water Right Permit #37-8650 current place of use is in the Broadford Highland Subdivision.*

The Animal Shelter intends to install a new groundwater well on-site to develop the municipal permit. In addition, I understand the Animal Shelter will transfer the place of use of the irrigation permit to the Croy Canyon property, and the new well will also provide water for irrigation purposes. The application indicates water quantity and quality are satisfactory for these uses, based on review of existing well logs and data from the "Feasibility Study, Potable Water System: Spring Canyon Ranch," from Brockway Engineering, dated August 14, 2007. The well logs and data from this cited feasibility study were included for review with this application. In addition, email correspondence from Jim Laski, representing the Animal Shelter, to Tom Bergin (LUBS) indicates Brockway Engineering is working on a well [capacity] analysis for the Animal Shelter, but data from that analysis is not yet available.

- 1. Based on a general review of the anticipated capacity of septic sewer design, the existing municipal Water Right Permit appears adequate for the domestic/commercial uses proposed. Based on a general review of the landscaping plans provided, the Water Right Permit for irrigation of 1.5 acres also appears this permit may be adequate for the uses proposed.*

The application is unclear with regards to stating that adequate water is available on-site to develop these water right permits. That is, the application indicates the Spring Creek Ranch Feasibility Study indicates adequate water is available, but I am not sure that Study included, or was specific to, development of a well on this site. In addition, Jim Laski's email correspondence to Tom Bergin indicates Brockway Engineering is currently working on an on-site well analysis. Either way, to ensure to the County that an adequate water supply is available, the applicant should provide the County with completed documentation for the indicated water permit place-of-use transfer, and documentation sufficiently supporting the proposed development of necessary diversions, storage, and distribution, for irrigation and domestic/commercial uses, prior to the completion of construction and final platting. In addition, the proposed water system (i.e. well construction, storage structures, and distribution system details) should be included on final construction drawings, stamped by a professional engineer, and

submitted to the County. New well construction is subject to IDWR Well Construction Requirements, including proof of no adverse impact to other wells.

....the applicant has submitted a "Water Supply Adequacy Report" for the Animal Shelter of the Wood River Valley expansion project, dated November 29, 2016 (see attached). This report updates the summary of water rights to the following:

"Currently, the Shelter owns groundwater right 37-11960 which allows for domestic and stockwater use at the facility. This water right has a priority date of 12/31/1981 and authorizes a diversion rate of 0.04 cubic feet per second (cfs) or 18 gallons per minute (gpm), which includes 0.02 cfs/9 gpm for domestic use and 0.02 cfs/9 gpm for stockwater use. Diversion is authorized year round from an existing 8" well at the existing Shelter. Total daily use is limited to 2,500 gallons under this water right.

Additionally, water right permit 37-22346 was assigned to the Shelter from the Croy Canyon Ranch Foundation in June of 2014. Water right permit 37-22436 currently allows for the diversion of 0.64 cfs from two wells for year-round municipal use on the Shelter property. An extension of time was filed with the Idaho Department of Water Resources (IDWR) in June of 2014 and was granted which allows development under the permit to occur up until 8/1/2019. Water right permit 37-22436 may be amended to cover the proposed uses [emphasis added] and would be sufficient to meet the total estimated peak demand as described below...."

So, no mention of the transfer of the place of use for water right permit 37-8650 is included in this update. Permit 37-8650 included irrigation of up to 1.5 acres from groundwater.

This report continues with summaries of the existing domestic well supply (average discharge of 16.8 gpm with a drawdown of 20.8 feet over a 3-hour test), estimated demand for the new campus (calculated peak demand based on standard fixture-unit assumptions of 65 gpm plus 18 gpm for irrigation), proposed well site suitability, and source sufficiency based on review of well logs of existing wells in the area of the proposed well (anticipated static water level around 20 feet below ground surface, bedrock expected around 120 feet below ground surface, anticipated drawdown around 19 feet at peak production, and less than 1-foot of drawdown at 100-feet from the well for production of 75% of peak demand over 24 hours), proposed well design, and anticipated water quality.

The report concludes the proposed water supply for the Shelter expansion is "adequate in terms of yield, quality, and impact on the aquifer system."

County Engineer's Comments

This "Water Supply Adequacy Report" provides an appropriate assessment of the anticipated water supply associated with the Animal Shelter expansion. Below are items I noted as part of my review:

1. The water right summary stated that water right permit 37-22436 "...may be amended to cover the proposed uses..." I assume this water right permit MUST be amended to cover the proposed uses.
2. Previous application documents indicated water rights for up to 1.5 acres of irrigation per Permit 37-8650, but this report identifies a maximum of 0.5 acres of irrigation of turf. This consumptive use (i.e. irrigation of turf) is estimated at just under 1 acre-feet of water per year. In addition, the report indicates 5% to 10% of the domestic use is considered consumptive. This report indicates the Croy Creek basin groundwater supply is estimated to be at least 30 acre-feet per year. This report appropriately states the consumptive use portion of the Shelter's water demand may be subject to curtailment in a conjunctive management scenario.
3. No storage is indicated for the anticipated water demand, however cisterns are proposed for fire flow requirements. No statement is made with regards to filling the cisterns, but I assume this will be completed from the proposed well. This filling of the cisterns should be completed in compliance with the maximum diversion rates associated with the proposed well.
4. The report indicates existing wells in the area will not experience adverse effects from anticipated pumping drawdown. This statement is independent of any hearsay concerns mentioned by County LUBS staff regarding the existing water supply in the Croy Creek basin. As noted previously, the report indicates an estimated

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groundwater supply of 30 acre-feet per year from the Croy Creek basin, an anticipated consumptive use by the Shelter of around 1 acre-feet per year, and that the consumptive portion of the Shelter's water demand will be subject to curtailment in a conjunctive management scenario.

5. The well design summary does not include the installation of a flow/diversion metering device, which I assume will be required by IDWR.
6. This report also mentions the possibility of utilizing a closed-loop geothermal (cold water) system for heating and cooling. The report does not indicate if another separate supply well would be utilized for this system, or if the same well proposed for the Shelter's operation uses would supply this system. Either way, IDWR will regulate this diversion and non-consumptive use of groundwater for such a system. This report indicates this closed-loop system will have no adverse impacts on the aquifer water levels and quality, outside of drawdown and injection effects in the immediate vicinity of the extraction and injection wells.
7. This report included sufficient documentation to support the claims in this report.

Please let me know if you have questions regarding my review of this "water supply adequacy report" associated with the expansion of the Animal Shelter of the Wood River Valley.

Thank you,

JEFF LOOMIS, PE
Blaine County Engineer

