

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

Permit No: 65-22357

Split: 65-23811

Split: 65-23812

Split: 65-23813

Split: 65-23814

Exam Date: 7/11/2018

A. GENERAL INFORMATION

1. Current Owner:
TBD (THAC representatives?)
2. Accompanied by: Mike Lawrence (Attorney representing Tamarack Homeowners Acquisition Company, LLC
THAC)
Shelley Davis, Attorney
THAC representatives
Tamarack Municipal Association representatives
3. SOURCE:
GROUND WATER

B. HISTORICAL CONTEXT AND GENERAL OVERVIEW

IDWR conducted the field exam for water right permit 65-22357 on July 11, 2018. This water right is diverted from 5 wells (Well 1, Well 4, Well 5, Well 7, and Midmountain Well #2). Nine additional wells were drilled under this permit, but those wells are not incorporated in the infrastructure and add no additional beneficial use.

The Permit, which was issued a RAFN permit, was approved on December 20, 2002, with a 15 year planning horizon, which ended on December 31, 2017.

Proof of beneficial use under this permit was originally due on January 1, 2008. The Department approved two requests for extension of time (12/11/2007 and 12/19/2012) to file proof extending the deadline to January 1, 2018 and received the Statement of Completion on December 29, 2017.

During licensing IDWR split the permit into four (4) separate water rights (65-23811, 65-23812, 65-23813, 65-23814), because the associated points of diversion are not part of an integrated system. Each of the water rights are for municipal use and share the same large POU.

On December 29, 2017 THAC submitted an Application for Permit (65-23750) to IDWR, which intends to fill any gap between the licensed amount and the amount that was on this permit (65-22357).

C. OVERLAP REVIEW

The permit holder indicates in its Statement of Completion that the Service Area described in the Permit did not change. The Service Area, as proposed under the original RAFN application, overlaps with private land with several domestic use water rights (20+/- rights). The revised POU for the licenses accounts for the area that was developed during the duration of the planning horizon.

Also of note are the following (see figure below):

65-23081 – Lapsed Permit in the name of Idaho Dept. of Lands; originally permitted for commercial use for a recreational day lodge and up to 1/2 acre of associated landscaping for Tamarack Resort. During the beneficial use exam Tamarack indicated that Mid Mountain well #2 is the POD for the lodge. The well permit was issued to Tamarack Resort, LLC.

65-23358 (65-2669 parent) – Water Right Owned by the Estate of Joe and Margaret Slifka; irrigation of 98 acres. This water right overlaps directly with the main portion of the developed area of Tamarack Resort in the SWSW Section 32 T16N R03E. None of the parcels in that QQ are currently owned by Slifka.

65-22475 (65-2247 superseded by decree) – Water Right owned by THAC; irrigation of 238 acres. Currently leased into the Water Supply Bank.

Legend

- 63-23081 – IDL – LAPSED
- 65-22475 – Tamarack
- 65-23358 – SLIFKA
- Snowmaking_POU
- 65-22357 Revised POU
- Tamarack 65-22357 Permit Service Area



0 0.5 1 2 Miles

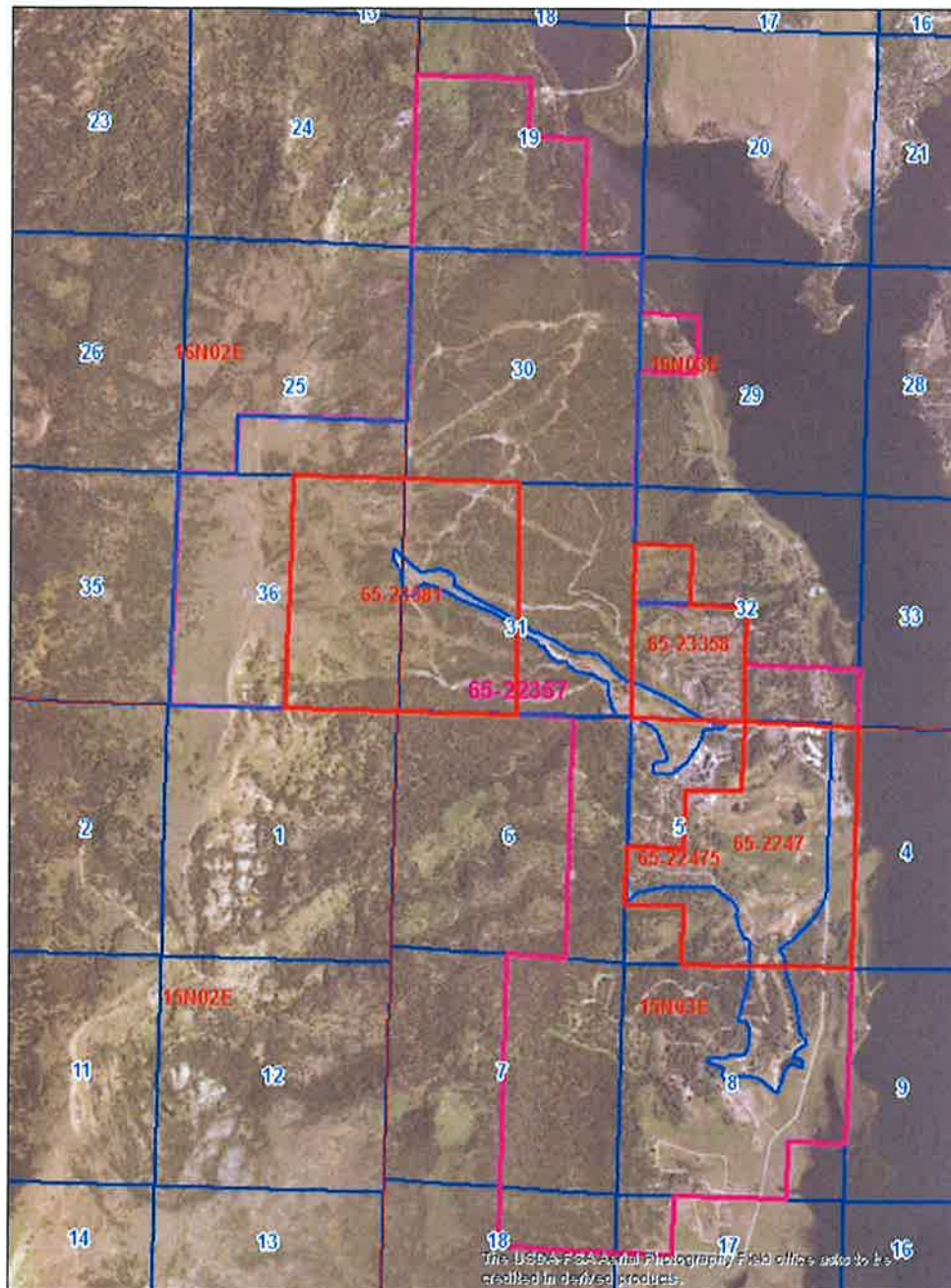


Figure showing two overlapping water rights and a lapsed permit.

D. DIVERSION AND DELIVERY SYSTEM

Please also reference attached photo log and well capacity discussion for a more detailed description of the delivery system.

1. LOCATION OF POINT(S) OF DIVERSION:

Name of POD	Well Tag	Location	Description of Use
Well 1	D0015877	SENE Sec. 8 T15N R03E	This well is attached to a 10,000 gallon storage tank. The well has a 7.5 HP pump (. Tamarack representatives said the well has been to fill water trucks but is not currently being used and has a broken PVC pipe between the well and the storage tank. This well is now the sole POD for water right 65-23811.
Well 4	D0029486	NENW Sec. 5 T15N R03E	Well 4 can be used in combination with Well 7. Water from both wells is pumped to the Mountain Control Building for Water Treatment and Distribution. During the winter months Well 4 is the primary well and during the summer months well 7 is the primary well, and sometimes both wells are used at the same time. This well is now one of two PODs for water right 65-23812.
Well 5	D0029766	NWNE Sec. 5 T15N R03E <u>Revised</u> location from SWNE of Sec.5 Need Amendment	Well 5 is used for snowmaking during the winter months and irrigation purposes during the summer months. Water from this well is pumped to a wet well in the Mountain Control Building. From there the water can be pumped into a 106,290 gallon (0.33 ac-ft) storage tank. This well is now the sole POD for water right 65-23813.
Well 7	D0031852	NWNE Sec. 5 T15N R03E	Well 7 can be used in combination with Well 4. Water from both wells is pumped to the Mountain Control Building for Water Treatment and Distribution. During the winter months Well 4 is the primary well and during the summer months well 7 is the primary well, and sometimes both wells are used at the same time. This well is now one of two PODs for water right 65-23812.
Midmountain Well 2	D0047295	SENE Sec. 36 T15N R03E	Water from Mid Mountain Well 2 can be pumped into three (3) 2,100 gallon tanks located in the basement of the Mid Mountain lodge, but the lodge was never put into use. This well is now the sole POD for water right 65-23814.

2. PLACE OF USE:

The Service Area under the permit (65-22357) was 4511 acres. The POU for the four (4) separate water rights (65-23811, 65-23812, 65-23813, 65-23814) was revised to reflect the area that was actually developed during the planning horizon of the permit, which was issued as a RAFN. The shared POU of the four rights is now 608 acres.

3.

Delivery System Diagram Attached (required). Indicate all major components and distances between components.
 _____ Indicate weir size/pipe as applicable.

 X Map Attached Showing Location(s) of point(s) of diversion and place(s) of use (required). Scale must be 1:24,000 or greater.

_____ Aerial Photo Attached (required for irrigation of 10+ acres).

_____ Photo of Diversion and System Attached

4.

E. FLOW MEASUREMENTS

See attached Well Capacity Summary.

E. FLOW CALCULATIONS

Measured Method: See attached Well Capacity Summary

Theoretical flow calculation: See attached spreadsheet

G. VOLUME CALCULATIONS

See attached Recommended Diversion Rates and Volumes

H. NARRATIVE/REMARKS/COMMENTS

Have conditions of permit approval been met? Yes X No

Tamarack did not develop the full system capacity authorized under the permit during the planning horizon. The original RAFN permit (65-22357) is now split into four separate rights. Each of the rights reflect the actual beneficial use that was accomplished in terms of diversion rate and volume and POU.

I. RECOMMENDATIONS**1. Recommended Amounts**

WATER RIGHT NUMBER	BENEFICIAL USE	PERIOD OF USE	DIVERSION RATE (cfs)	Volume (AFA)
65-23811 (Well 1)	Municipal	01/01 to 12/31	0.61	0.11
65-23812 (Wells 4 & 7)	Municipal	01/01 to 12/31	2.49	500
65-23813 (Well 5)	Municipal	01/01 to 12/31	2.57	367
65-23814 (Mid Mountain Well #2)	Municipal	01/01 to 12/31	0.04	0.5

2. Recommended Amendments

☒ Change P.D. as reflected above ☐ Add P.D. as reflected above ☐ None

☒ Change P.U. as reflected above ☐ Add P.U. as reflected above ☐ None

J. AUTHENTICATION

Field Examiner's Name Manuel Rauhut Date 12/20/18

Reviewer _____ Date _____

Well Capacity Summary and Recommended Diversion Rates and Volumes:

Please refer to the photo log for photos and further descriptions.

Well 1 (65-23811):

The well/pump capacity could not be measured, because the pipe was broken and there was no place to attach a flow meter. Well 1 was used to fill an adjacent 10,000 gallon storage tank from which water trucks could be filled (see photo below). The approximate dimension of the 10,000 gallon tank are 11 ft diameter and 15 ft tall. The tank was elevated on a dirt mound and stacked railroad ties to an elevation of approximately 10 feet above the surrounding ground level. The well was filled from the top, so water had to be pumped approximately 25 feet above ground level (approximately 11 psi). The well capacity is based on the Theoretical Horsepower Equation Worksheet (attached). During the field exam representatives of/for Tamarack stated that there is a 7.5 horsepower pump installed in the well. Based on the well drilling report for this well, the pumping level at 400 gallons per minute is at 27 feet. I used a discharge pressure of 21 psi (11 psi to account for lifting the water 25 feet and 10 psi friction loss). Based on those assumptions, the well/pump capacity is approximately 0.61 cfs (275 gpm).

Well 9:

This 8 inch well is known as the "Batch Plant" well and was disconnected from a power source and therefore is not operational. Tamarack did not provide pumping records or pump information for this well, so it is not possible to recommend a diversion rate that was developed for this well.

Well 10:

No pump was ever installed in this 24 inch well, so it is not possible to recommend a diversion rate for this well.

Wells 4 and 7 (65-23812):

Well 4 was measured using the Panametric and Tyme Flyte closed conduit ultra/polysonic flow meters and the installed McCrometer (Model #E7000-000). The following average flow rates were recorded:

Tyme Flyte:	370 gpm (0.82 cfs)
Panametric:	330 gpm (0.74 cfs)
Tamarack meter:	309 gpm (0.69 cfs)

Wells 4 Average: 336 gpm (0.75 cfs)

Well 7 was not measured individually, but in combination with Well 4.

Tyme Flyte:	1199 gpm (2.67 cfs)
Panametric:	1119 gpm (2.49 cfs)
Tamarack meter:	1032 gpm (2.30 cfs)

Wells 4+7 Average: 1117 gpm (2.49 cfs)

Well 7 Average: 1116 gpm-336 gpm = 780 gpm (1.74 cfs)

During both measurements (Well 4 measured individually and Wells 4 and 7 measured combined) the Tyme Flyte flow meter had the highest reading and the Tamarack flow meter had the lowest reading. The Panametric measurement was in the middle. The difference between the the Tyme Flyte and the Panametric flow meters may be attributable to the textured polymer protective coating on the galvanized pipe, which we filed down for each sensor prior to performing flow measurements. A conclusive flow rate could not be established from the three separate flow measurements, therefore the combined recommended flow rate for wells 4 and 7 is based on the average of the three flow measurements, which is 1117 gpm (2.49 cfs).

Well 5 (65-23813):

Water from well 5 is pumped into a wet well located in the east side of the Mountain Control Building before being pumped into the adjacent 106,290 gallon tank. The horsepower associated with this pump is unknown. A clipboard with a partially legible well reading log was located in the control panel adjacent to Well 5. The recorded dates do not include the year of the entry. The highest flow rate recorded on the sheet was 1200 gpm (2.67 cfs) at a pressure of 125 psi (see attached photo log).

During the field exam we measured Well 5, by recording the amount of time it took to raise the water level in the 106,290 gallon tank by 1.0 ft. The diameter of the tank is 32.0 ft. Therefore 1.0 feet of water in the tank corresponds to 6014 gallons. A digital display in the Mountain Control Building shows the water level to 0.1 ft. We recorded the amount of time (seconds) it took for each 0.1 ft increment.

$30+30+32+26+39+32+29+26+34+35 = 313 \text{ seconds} = 5.22 \text{ minutes.}$

$6014 \text{ gal}/5.22 \text{ min} = 1152 \text{ gal/min} = 2.57 \text{ cfs}$

This flow rate is reasonable and corresponds well with the amount of flow recorded on the log sheet at the well (1200 gallons maximum; see photo log).

Mid Mountain Well 2 (65-23814):

Mid Mountain Well 1 (disconnected, but not abandoned) and Mid Mountain Well 2 (operational). The mid mountain Tamarack lodge is approximately 70% complete, but was never put into service. The water supply infrastructure was put into place before the project was abandoned during the economic downturn around 2008. Water from Mid Mountain Well 2 was going to be pumped into three (3) 2,100 gallon tanks located in the basement of the lodge. The well is operational and water from this well is used for incidental needs for the adjacent yurt and other low volume activities. We measured the well capacity with a 5 gallon bucket and stopwatch during the field exam (15.8 gallons per minute; 0.035 cfs).

Well Capacities Summary

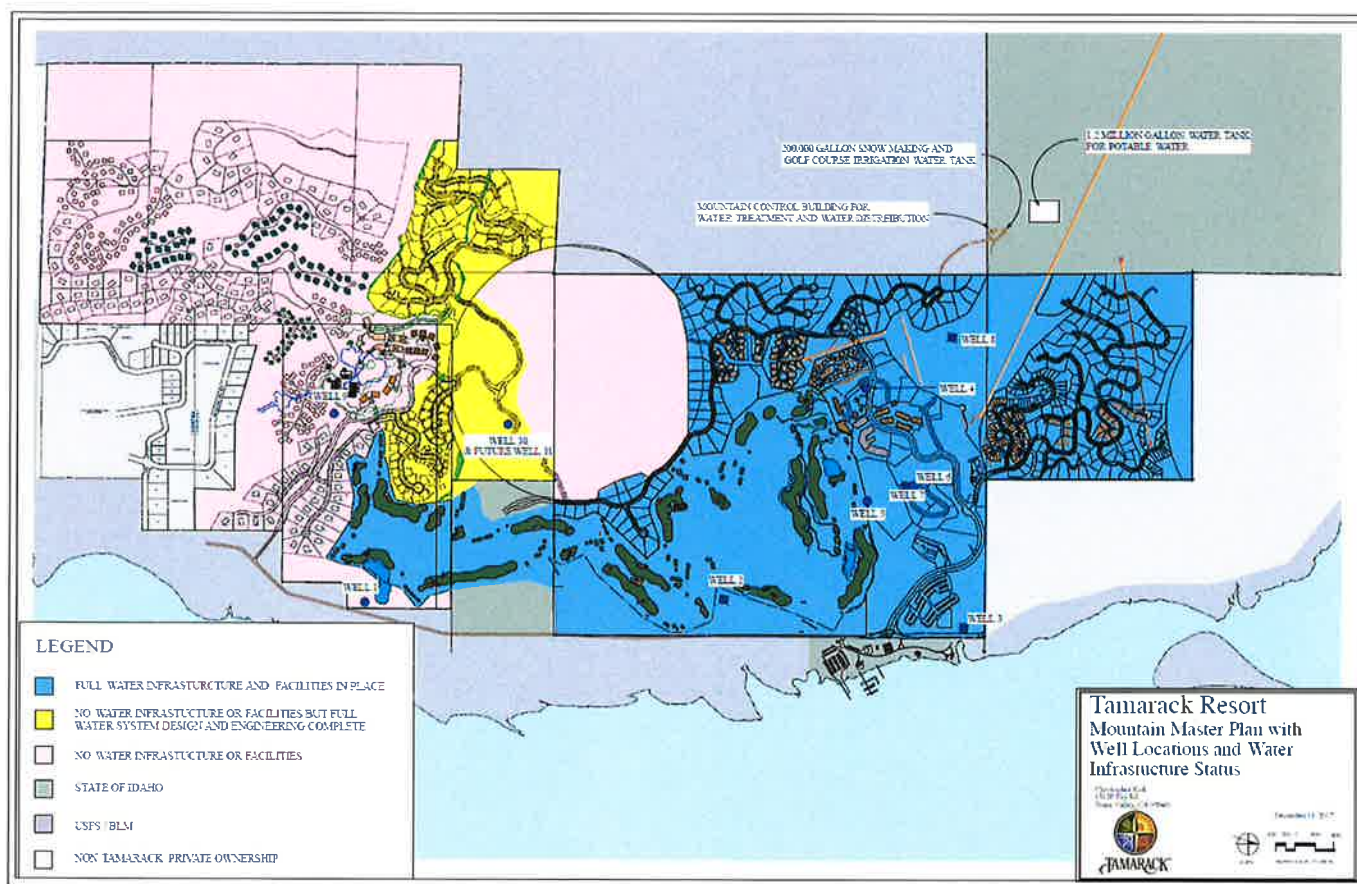
- Capacity:

Based on the above discussion, the capacity (maximum documented diversion rate) of the five PODs, (THAT ARE NOW SPLIT INTO FOUR SEPARATE WATER RIGHTS) at the time of the beneficial use exam is:

Well 1 (65-23811):	0.61 cfs (275 gpm)
Wells 4 and 7 (65-23812):	2.49 cfs (1116 gpm)
Well 5: (65-22813)	2.57 cfs (1152 gpm)
Midmountain Well 2 (65-23814):	0.035 cfs (15.8 gpm)

Recommended Diversion Rates and Volumes

The original Application for Permit was filed as a RAFN permit, anticipating far greater development within the 15 year planning horizon than actually occurred (see December 11, 2017 Figure below). Tamarack filed two extensions to submit proof of beneficial use, which resulted in proof being due at the same time as the end of the planning horizon (Planning Horizon ended on December 31, 2017 and Proof was due on January 1, 2018). Since no further development can be achieved beyond the planning horizon, the extent of beneficial use established will be evaluated as a non-RAFN permit. Furthermore, this single permit (65-22357) will be split into four (4) separate water rights that share the same large POU, because the system is not interconnected. Beneficial use will be based on development within the service area during the planning horizon of the permit. IDWR Administrative memo 18 states the following: "When licensing a permit for municipal use for a municipal provider that does not serve an incorporated city, the extent of beneficial use established under a non-RAFN permit should be described with both a rate of flow and a volume limitation. Beneficial use shall be based on development within the service area during the authorized development period of the permit and shall include stubbed-in lots for domestic purposes (i.e. a service line is available for each lot to hook up to the municipal delivery system). The rate should be determined based on the installed capacity if reasonable to serve the needs within the established service area. The annual volume limitation should be determined based on the water requirements for the established service area (including stub-ins). The place of use listed on the license can be described generally for the service area as defined under Section 42-202B, Idaho Code. (Section 42-202B (9): For a municipal provider that is not a municipality, the service area shall correspond to the area that it is authorized or obligated to serve, including changes therein after the permit or license is issued).



Well 1 (65-23811): This well was used to fill the adjacent 10,000 gallon storage tank, but is not currently operational. The recommended rate for this POD is the theoretically calculated pump capacity of 0.61 cfs. Water from well 1 was primarily used for dust control and other construction related water needs. Assuming that during the peak of construction Tamarack filled the 10,000 gallon tank once per day on average, the total annual volume corresponds to 11 acre-feet. (11 AFA).

Recommended Rate: 0.61 cfs

Recommended Volume: 11 AFA

Wells 4 & 7 (65-23812): Per telephone conversation with Chris Schneider, who is the operator for North Lake Recreational Sewer and Water District, which covers the property on the west side of Cascade Lake up to Tamarack on November 27, 2018, Tamarack primarily pumps water from Well 4 during the winter months and primarily uses Well 7 during the summer months, and sometimes pump from both wells. In the addendum to the original application for permit, the peak diversion rate of 8.6 cfs, which is currently on the permit, was broken out as follows: 5.8 cfs for irrigation of the golf course (associated with Well 5), 1.4 cfs for domestic and commercial (wells 4 & 7), and 1.4 cfs for irrigation and other water use associated with common areas (wells 4 & 7, Tamarack is required to use treated water to irrigate common areas). That combined peak diversion rate of 2.8 cfs is in excess of the 2.49 cfs well capacity of wells 4 & 7, but the water is pumped into a 1.2 million gallon storage tank, which could supply the peak amount. A footnote on page 7 of IDWR Administrative Memorandum 18 states the following: *"The installed capacity may not represent beneficial use if significantly greater than the diversion required to meet the needs of the developed service area (including stub-ins), even if it does not exceed the amount permitted. For example, if fewer lots are stubbed-in than permitted, the required diversion rate would likely be smaller than the permitted rate"*. However, given that Tamarack utilizes both wells at times, and the water is pumped at full capacity, into a 1.2 million gallon storage tank, from which water is distributed for irrigation and other aesthetic uses of common areas, and for domestic and commercial use, the recommended diversion rate should be the measured capacity for that system (2.49 cfs).

Based on data provided by IDEQ, the following peak amounts of water were pumped by either Well 4 or Well 7 or both through the treatment plant:

Highest flow per day for available monthly records*:

June 2017:	180,200 gallons/day
July 2017:	249,900 gallons/day
Nov 2017:	47,500 gallons/day
Dec 2017:	112,500 gallons/day
Feb 2018:	74,900 gallons/day
Mar 2018:	77,400 gallons/day
April 2018:	77,900 gallons/day
May 2018:	87,700 gallons/day
June 2018:	188,300 gallons/day
July 2018:	214,733 gallons/day

*includes records post development period, which ended December 31, 2017.

During the period of available record, Tamarack pumped 33,063,000 gallons (101 acre-feet) in one year (July 3, 2017-July 2, 2018) from wells 4 and/or 7. This annual diversion volume is probably significantly lower than during some years during the development period (the years leading up to the economic downturn of 2008), when landscaping was a higher priority, the resort was operational with more visitors, and more residences were occupied than they have been since 2008. Per processing Memo 22, a reasonable annual volume per household is 0.6 acre-feet (0.6 AFA) with irrigation not included. Valley County provided a Parcel Detail listing. The information included the number of parcels (including individual condos etc.) that are currently within the Tamarack footprint, and how many of those are considered improved lots. 316 of the 656 parcels are considered improved, which means some sort of a building is on that parcel. The record drawings provided by Tamarack show that the 656 parcels have full water infrastructure and facilities in place (see blue area in the Figure on the previous page). Therefore, for domestic purposes, the annual volume limit is 393 acre feet (656 parcels x 0.6 AFA/parcel = 393 AFA). Tamarack also uses treated water from wells 4 and 7 for their landscape irrigation (same water source as domestic use). In their Application for Permit, Tamarack estimated that they anticipate 213 acre-feet per year to irrigate common areas. This included areas on the southern half of the property that have not yet been developed (no stub ins). Excluding the golf course, approximately 50% of the total area has been developed, which corresponds to 107 acre-feet per year for common area landscape irrigation ($213/2=106.5=107$ AFA). Therefore the annual volume associated with wells 4 and 7 is 500 acre-feet ($393 \text{ AFA} + 107 \text{ AFA} = 500 \text{ AFA}$).

Recommended Rate: 2.49 cfs

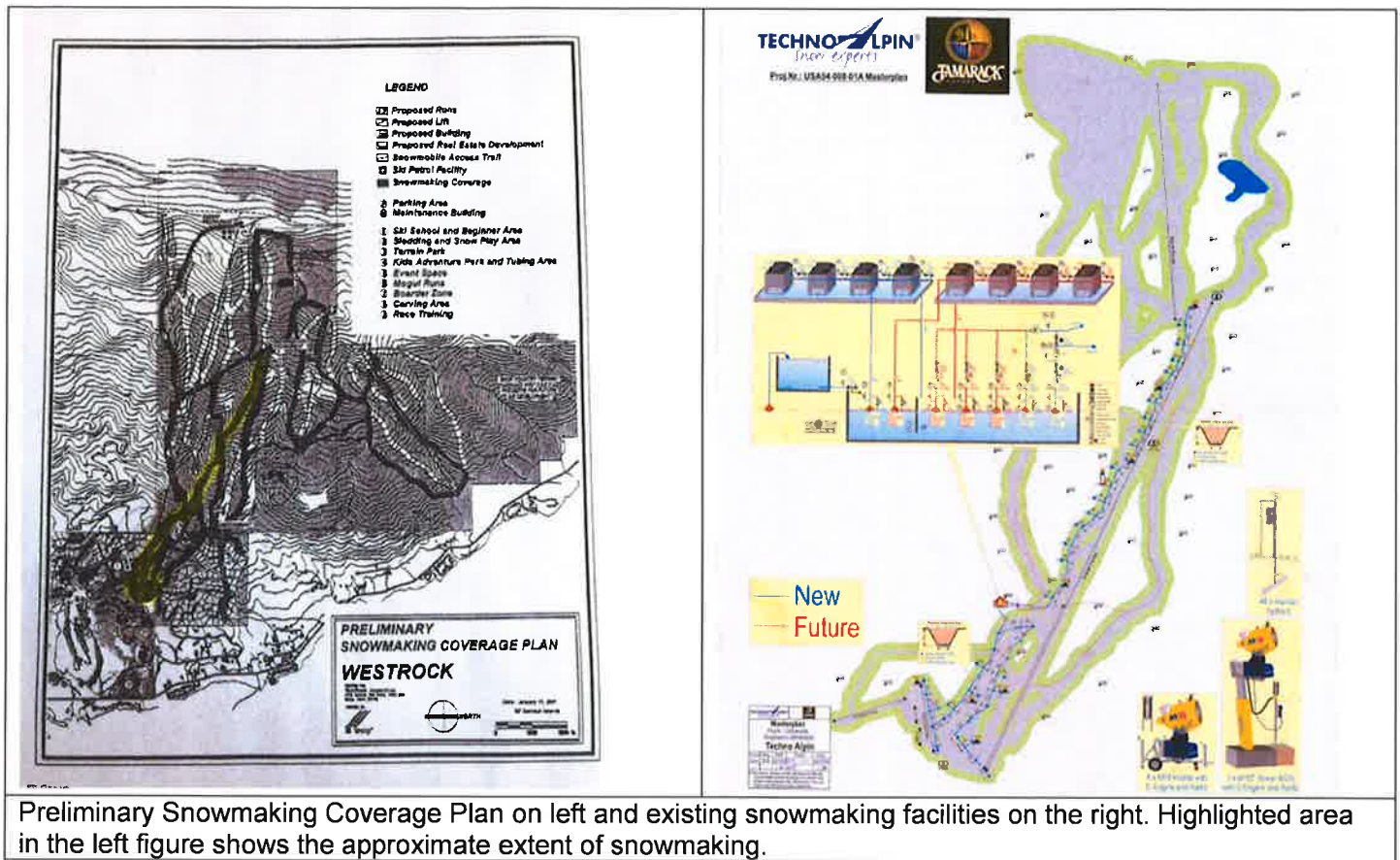
Recommended Volume: 500 AFA

Well 5 (65-23813): This well is associated with snowmaking during the winter and irrigation of the golf course during the summer. The peak demand for snowmaking is estimated to be 1,500 gpm, while the peak demand for irrigation of the golf course is 2,606 gpm. Chris Schneider (North Lake Recreational Sewer and Water District) indicated that the golf course is sometimes irrigated directly from Well 5, but can also be irrigated from the storage tank associated with Well 5. The well capacity 2.57 cfs (1152 gpm), which is well below the peak demand of 2,606 gpm and only slightly above the average daily demand of 1,023 gpm, as presented in the supplemental information (Exhibit 5) included with the original Application for Permit. Given that the golf course is fully constructed, and records found in the well control box (see photo log) show historic diversion at the wells capacity, the recommended rate for this well is the capacity we measured during the beneficial field exam, which was 2.57 cfs (1152 gpm). The golf course consists of 120 acres of irrigated turf, so 2.57 cfs corresponds to 0.021 cfs per acre, which is acceptable because of the daily irrigation window, which is as short as 6 hours, also supports recommending the full capacity of the well. The supplemental information (Exhibit 5) included with the original Application for Permit specifies that the yearly volume of water to irrigate the golf course is 300 acre-feet, which corresponds to 2.5 acre-feet per acre. This amount seems reasonable, considering that ET Idaho estimates a net irrigation water requirement of 1.7 ft/acre for irrigated lawns during the growing season for the Cascade Lake area. Assuming that the irrigation systems are 70% efficient, 1.7 acre-ft/acre corresponds to 2.4 acre-feet per acre. The standard field head gate volume is 3.0 acre-feet per acre. This standard allows irrigators to shift from crop to crop, including the most water consumptive crops in the area. The beneficial use for this water is municipal, not irrigation, and the crop type (golf course), is not expected to change. Granting the 3.0 acre-feet per acre may create a volume amount that could be shifted to other municipal uses when it is not needed for the golf course. That would be tantamount to reserving water for RAFN, which is not our intent because the planning horizon has passed. Therefore the volume limit 300 acre-feet (120 acres x 2.5 acre-feet/acre per acre = 300 AFA) proposed in the application is reasonable and should be recommended for the license. Exhibit 5 specifies that snowmaking will account for 293 acre-feet per year on 309 acres. That estimate was based on snowmaking as outlined in the Preliminary Snowmaking Coverage Plan (see below), which was included as Exhibit 7 in the original Application for Permit. Tamarack provided a figure of the existing extent of snowmaking, which shows that snowmaking is currently limited to the base area and the main run along the Tamarack Express chairlift, which accounts for approximately 70 acres, or 23% of the originally planned area of 309 acres. This corresponds to 67 acre-feet water demand per year. (23% of 293 acre-feet demand), which is the recommended annual volume limit for snowmaking.

The total volume limit, associated with well 5, for irrigation of the golf course and snowmaking is 367 acre-feet per year (367 AFA).

Recommended Rate: 2.57 cfs

Recommended Volume: 367 AFA



Preliminary Snowmaking Coverage Plan on left and existing snowmaking facilities on the right. Highlighted area in the left figure shows the approximate extent of snowmaking.

Midmountain Well 2 (65-23814):

This well has not been beneficially used as intended to date, because the construction at the lodge was halted suddenly in 2008. Tamarack currently only uses the well for incidental needs in adjacent yurts. During the field exam the well capacity was measured as 0.04 cfs. Assuming that Tamarack uses an average of 500 gallons per day for incidental purposes, the annual volume corresponds to 0.5 acre-feet per year (0.5 AFA).

Recommended Rate: 0.04 cfs

Recommended Volume: 0.5 AFA

THEORETICAL HORSEPOWER EQUATION WORKSHEET (cjh 1/92)

Water Right No.: 65-22357
 Reviewer: Manuel Rauhut
 Date of Review: 11/15/2018

P/D No.:

PUMP HORSEPOWER
 BOOSTER HORSEPOWER

PUMPING LEVEL

DISCHARGE PRESSURE

RATE OF FLOW (cfs)
 RATE OF FLOW (GPM)

Well 1	Well 4	Well 7
7.5	150	175
0		0
27	260	150
21	175	200
0.61	1.39	1.76
275	624	791

The above calculates the formula =

Q =

$$8.8 * (\text{Efficiency}) * \text{hp}$$

$$\text{depth to water} + 2.31 * (\text{psi}) + \text{friction}$$

Assumptions: %70 efficiency.
 No Friction

Examiners Notes:

Well 1: Pumping Level is based on well report. Discharge pressure assumed to be 50 psi.

Well 9: Not operational. Well was used at some point, but was disconnected at the time of the field exam. no pumping records exist for this well.

Well 10: Never had a pump and was never used.

Wells 4 and 7: Wells 4 and Well 7 were not measured individually. Water from both wells is pumped to the Mountain Control Building. We used two types of ultrasonic flow meters to measure the flow and compared those measurements to the installed flowmeter flow rate. The above calculations support the measured flow capacity, but pumping levels are based on well logs rather than actual measurements.

Well 5: The horsepower associated with this pump is unknown. we measured the flow rate capacity of this well by filling the associated 106,290 gallon storage tank.

Midmountain 2: Horsepower of pump unknown. Used a 5 gallon bucket and stopwatch to determine flow rate capacity of the well.

Jun-17				
Day in June	gallons recorded	gallons per day	gpm	comment
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15	4,958,600			
16	5,104,000	145,400	101	
17				
18				
19	5,388,000	94,667	66	
20	5,485,100	97,100	67	
21	5,589,500	104,400	73	
22	5,691,100	101,600	71	
23	5,800,500	109,400	76	
24				
25				
26	6,213,500	137,667	96	
27	6,321,300	107,800	75	
28	6,448,300	127,000	88	
29	6,555,100	106,800	74	
30	6,735,300	180,200	125	highest flow
* (note the pump automatically shuts off when the water level in tank reaches 20 feet during the summer months and 19 feet during the winter months, so the rate shown is not representative of the diversion rate, but provides an average daily rate).				

Jul-17				
Day in July	gallons recorded	gallons per day	gpm	comment
1	6,952,000			
2				
3	7,263,800	155,900	108	
4				
5	7,595,900	166,050	115	
6	7,738,300	142,400	99	
7	7,874,900	136,600	95	
8				
9				
10	8,327,900	151,000	105	
11	8,577,800	249,900	174	highest flow
12	8,742,400	164,600	114	
13	8,952,300	209,900	146	
14	9,084,200	131,900	92	
15				
16				
17	9,522,200	146,000	101	
18	9,653,800	131,600	91	
19	9,808,700	154,900	108	
20	9,967,400	158,700	110	
21				
22				
23				
24				
25				
26				
27				
28				
29				
30				
31				
* (note the pump automatically shuts off when the water level in tank reaches 20 feet during the summer months and 19 feet during the winter months, so the rate shown is not representative of the diversion rate, but provides an average daily rate).				

Nov-17				
Day in November	gallons recorded	gallons per day	gpm	comment
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15	26,449,400			
16	26,496,900	47,500	33	highest flow
17	26,535,000	38,100	26	
18				
19				
20	26,624,200	29,733	21	
21	26,645,700	21,500	15	
22	26,690,500	44,800	31	
23				
24	26,732,000	20,750	14	
25				
26				
27	26,849,900	39,300	27	
28	26,849,900			
29	26,892,000	42,100	29	
30	26,892,000			
* (note the pump automatically shuts off when the water level in tank reaches 20 feet during the summer months and 19 feet during the winter months, so the rate shown is not representative of the diversion rate, but provides an average daily rate).				

Dec-17				
Day in December	gallons recorded	gallons per day	gpm	comment
1	26,936,300			
2				
3				
4	27,029,200	30,967	22	
5	27,029,200			
6	27,074,900	45,700	32	
7	27,122,400	47,500	33	
8	27,130,800	8,400	6	
9	27,148,900	18,100	13	
10	27,179,600	30,700	21	
11	27,219,500	39,900	28	
12	27,252,900	33,400	23	
13	27,296,900	44,000	31	
14	27,308,200	11,300	8	
15	27,337,800	29,600	21	
16				
17				
18	27,461,400	41,200	29	
19	27,499,800	38,400	27	
20	27,540,000	40,200	28	
21	27,574,700	34,700	24	
22	27,615,300	40,600	28	
23				
24				
25				
26	27,855,500	60,050	42	
27	27,968,000	112,500	78	highest flow
28	28,019,000	51,000	35	
29	28,105,000	86,000	60	
30				
31				
* (note the pump automatically shuts off when the water level in tank reaches 20 feet during the summer months and 19 feet during the winter months, so the rate shown is not representative of the diversion rate, but provides an average daily rate).				

Feb-18				
Day in Feb	gallons recorded	gallons per day	gpm	comment
1	30,055,900			
2	30,103,100	47,200	33	
3				
4				
5	30,272,800	56,567	39	
6	30,309,400	36,600	25	
7	30,381,000	71,600	50	
8	30,440,000	59,000	41	
9	30,468,400	28,400	20	
10				
11				
12	30,623,600	51,733	36	
13	30,656,700	33,100	23	
14	30,699,500	42,800	30	
15	30,738,000	38,500	27	
16	30,812,900	74,900	52	highest flow
17				
18				
19				
20	31,059,700	61,700	43	
21	31,106,300	46,600	32	
22	31,136,200	29,900	21	
23	31,174,200	38,000	26	
24				
25				
26	31,375,000	66,933	46	
27	31,422,700	47,700	33	
28	31,469,700	47,000	33	
* (note the pump automatically shuts off when the water level in tank reaches 20 feet during the summer months and 19 feet during the winter months, so the rate shown is not representative of the diversion rate, but provides an average daily rate).				

Mar-18				
Day in March	gallons recorded	gallons per day	gpm	comment
1	31,485,400			
2	31,548,600	63,200	44	
3				
4				
5	31,718,800	56,733	39	
6	31,735,600	16,800	12	
7	31,775,700	40,100	28	
8	31,823,100	47,400	33	
9	31,870,500	47,400	33	
10				
11				
12	32,004,500	44,667	31	
13	32,031,800	27,300	19	
14	32,063,600	31,800	22	
15	32,106,800	43,200	30	
16	32,127,600	20,800	14	
17				
18				
19	32,311,800	61,400	43	
20	32,317,700	5,900	4	
21	32,359,500	41,800	29	
22	32,396,400	36,900	26	
23	32,443,800	47,400	33	
24				
25				
26	32,667,300	74,500	52	
27	32,711,700	44,400	31	
28	32,783,200	71,500	50	
29	32,823,800	40,600	28	
30	32,901,200	77,400	54	highest flow
31				
* (note the pump automatically shuts off when the water level in tank reaches 20 feet during the summer months and 19 feet during the winter months, so the rate shown is not representative of the diversion rate, but provides an average daily rate).				

Apr-18				
Day in April	gallons recorded	gallons per day	gpm	comment
1				
2	33,112,500			
3	33,172,900	60,400	42	
4	33,219,700	46,800	33	
5	33,297,600	77,900	54	highest flow
6	33,337,000	39,400	27	
7				
8				
9	33,522,800	61,933	43	
10	33,585,300	62,500	43	
11	33,624,000	38,700	27	
12	33,699,000	75,000	52	
13	33,724,600	25,600	18	
14				
15				
16	33,902,300	59,233	41	
17	33,934,400	32,100	22	
18	33,984,100	49,700	35	
19	34,023,800	39,700	28	
20	34,063,700	39,900	28	
21				
22				
23	34,227,400	54,567	38	
24	34,269,300	41,900	29	
25	34,304,200	34,900	24	
26	34,344,800	40,600	28	
27	34,384,400	39,600	28	
28				
29				
30	34,508,700	41,433	29	
* (note the pump automatically shuts off when the water level in tank reaches 20 feet during the summer months and 19 feet during the winter months, so the rate shown is not representative of the diversion rate, but provides an average daily rate).				

May-18				
Day in May	gallons recorded	gallons per day	gpm	comment
1	34,550,300			
2	34,564,700	14,400		
3	34,607,000	42,300	29	
4	34,648,700	41,700	29	
5				
6				
7	34,799,900	50,400	35	
8	34,810,300	10,400	7	
9	34,881,800	71,500	50	
10	34,897,000	15,200	11	
11	34,939,700	42,700	30	
12				
13				
14	35,063,800	41,367	29	
15	35,098,200	34,400	24	
16	35,145,100	46,900	33	
17	35,211,400	66,300	46	
18	35,235,600	24,200	17	
19				
20				
21	35,415,100	59,833	42	
22	35,477,700	62,600	43	
23	35,511,800	34,100	24	
24	35,580,600	68,800	48	
25	35,627,400	46,800	33	
26	35,715,100	87,700	61	highest flow
27				
28				
29	35,931,600	72,167	50	
30	35,980,500	48,900	34	
31	36,060,500	80,000	56	
* (note the pump automatically shuts off when the water level in tank reaches 20 feet during the summer months and 19 feet during the winter months, so the rate shown is not representative of the diversion rate, but provides an average daily rate).				

Jun-18				
Day in June	gallons recorded	gallons per day	gpm	comment
1	36115200			
2				
3				
4	36,359,200	81,333	56	
5	36,457,900	98,700	69	
6	36,557,700	99,800	69	
7	36,675,300	117,600	82	
8	36,784,700	109,400	76	
9				
10				
11	37,181,500	132,267	92	
12	37,282,200	100,700	70	
13	37,443,200	161,000	112	
14	37,569,100	125,900	87	
15	37,700,300	131,200	91	
16				
17				
18	38,204,100	167,933	117	
19	38,340,800	136,700	95	
20	38,499,600	158,800	110	
21	38,584,800	85,200	59	
22	38,773,100	188,300	131	highest flow
23				
24				
25	39,238,300	155,067	108	
26	39,413,200	174,900	121	
27	39,571,200	158,000	110	
28	39,696,400	125,200	87	
29	39,852,000	155,600	108	
30				
* (note the pump automatically shuts off when the water level in tank reaches 20 feet during the summer months and 19 feet during the winter months, so the rate shown is not representative of the diversion rate, but provides an average daily rate).				

Jul-18				
Day in July	gallons recorded	gallons per day	gpm	comment
1				
2	40,326,800			
3	40,488,500	161,700	112	
4	40,662,300	173,800	121	
5	40,848,700	186,400	129	
6	41,023,800	175,100	122	
7				
8				
9	41,569,500	181,900	126	
10	41,733,400	163,900	114	
11	41,954,500	188,974	131	adjusted for over 24 hour period
12	42,128,900	174,400	121	
13	42,321,200	192,300	134	
14				
15				
16	42,933,200	204,000	142	
17	43,086,700	153,500	107	
18	43,255,500	168,800	117	
19	43,441,900	186,400	129	
20	43,661,400	211,058	147	adjusted for over 24 hour period
21				
22				
23	44,246,600	195,067	135	
24	44,429,600	183,000	127	
25	44,610,600	181,000	126	
26	44,821,700	202,981	141	adjusted for over 24 hour period
27	45,016,500	194,800	135	
28				
29				
30	45,660,700	214,733	149	highest flow
31	45,842,400	181,700	126	
* (note the pump automatically shuts off when the water level in tank reaches 20 feet during the summer months and 19 feet during the winter months, so the rate shown is not representative of the diversion rate, but provides an average daily rate).				

Beneficial Use Exam Photo Log

All photos in this Photo Log were all taken on 7/12/2018. The photos are organized in the same order that the various sites were visited during the beneficial use exam.



Overview Map Showing the well locations associated with Water Right 65-22357.

Beneficial Use Exam Photo Log

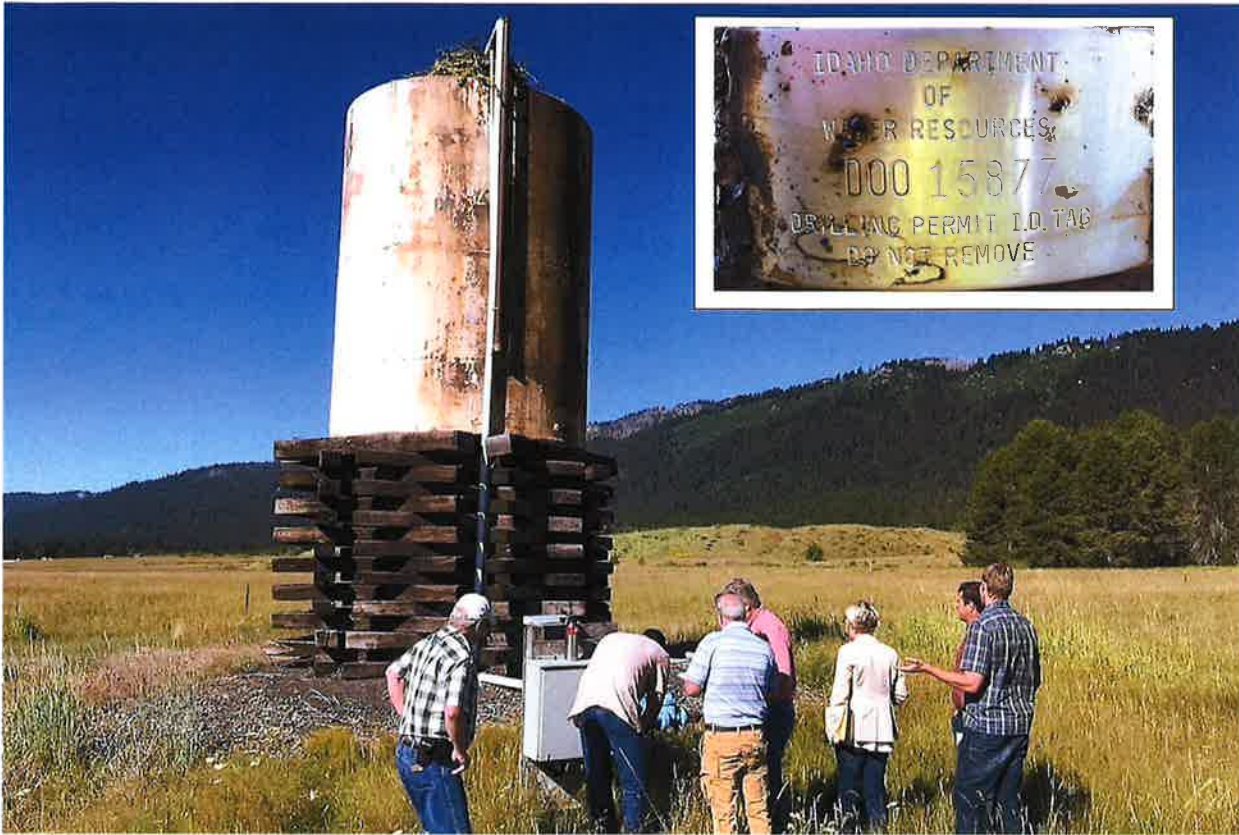


Photo 1. Well 1 looking southwest. This well is attached to a 10,000 gallon storage tank. The well has a 7.5 HP pump. The IDWR well ID is: D00015877. Tamarack representatives said the well has been used but is not currently used.



Photo 2. Well 1 valves, flow meter, and piping to storage tank. Note the broken pipe in front of flow meter. Not operable.

Beneficial Use Exam Photo Log



Photo 3. Mechanical McCrometer flowmeter with volume totalizer (1,564,520 gallons = 4.8 acre feet) and instantaneous flow rate. Due to age and climate conditions this flow meter is likely not accurate or functional.



Photo 4. Well 9, also known as the Batch Plant Well, was used during construction activities. The well did not have a tag number. We added well Tag A0020301 to the well during the field exam. The well log indicates that the well tag issued for this well was D0038096.

Beneficial Use Exam Photo Log



Photo 5. Well 9 was not operational. The power supply was completely disconnected as shown in the photo.



Photo 6. Well 10. This well never had a pump except during the pump test.

Beneficial Use Exam Photo Log



Photo 7. Well 4. This well is for potable water only. The well did not have a tag number, but the well log indicates that well tag D0029486 was issued for this well. We added well tag A0019153 to the well.

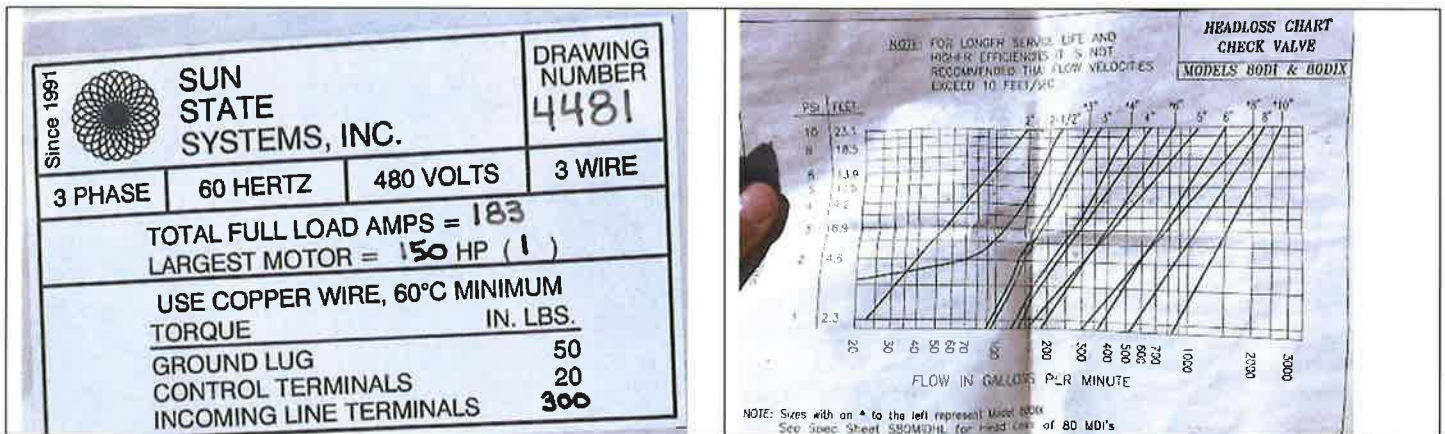
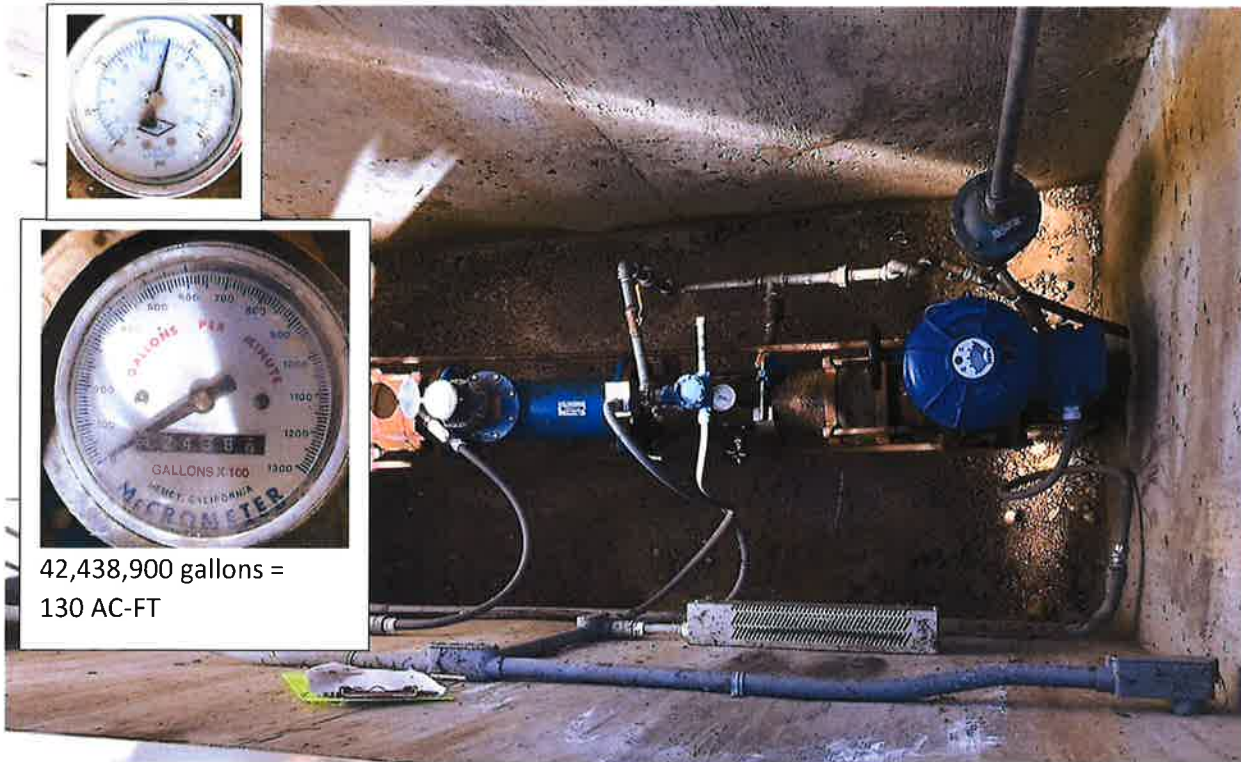


Photo 8. Well 4 Pump information found inside the control panel.

Beneficial Use Exam Photo Log



42,438,900 gallons =
130 AC-FT

Photo 9. View inside the well 4 vault with various piping, valves, and gages. Pressure gage reading during operation at capacity was 175 PSI.

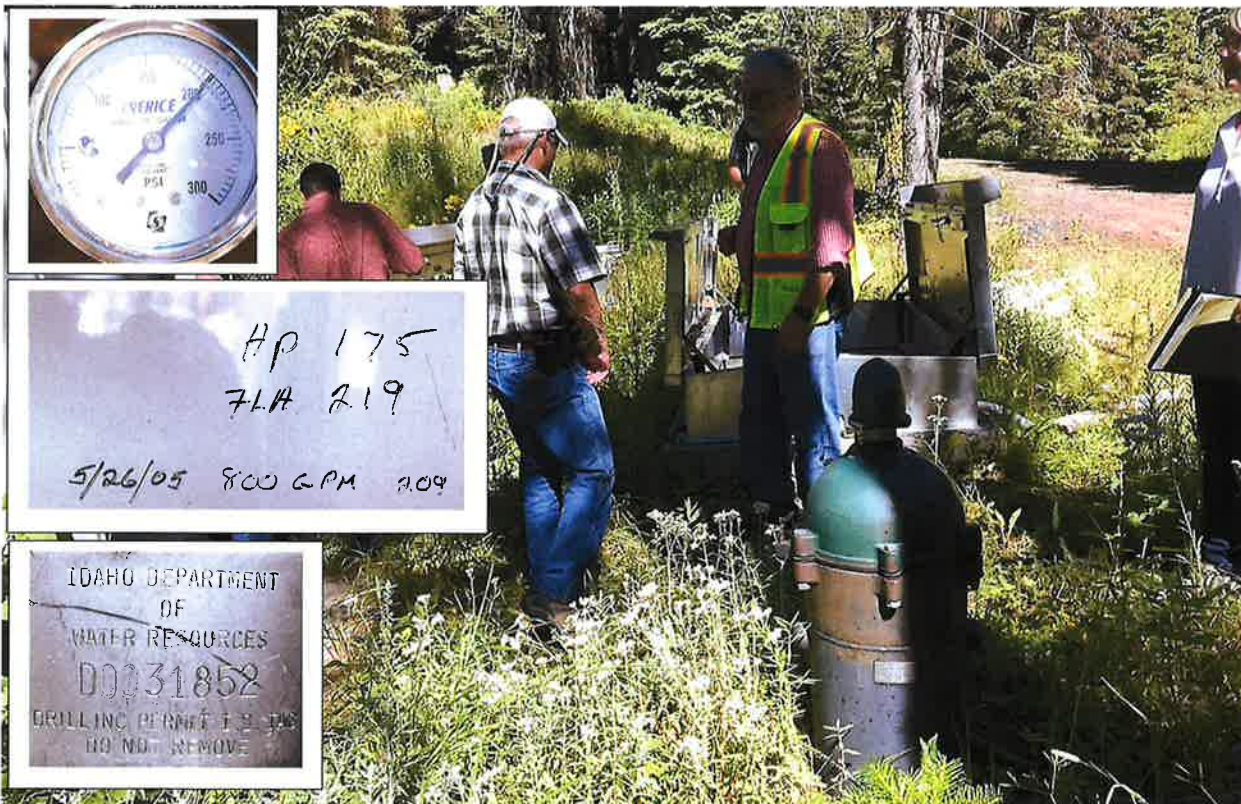
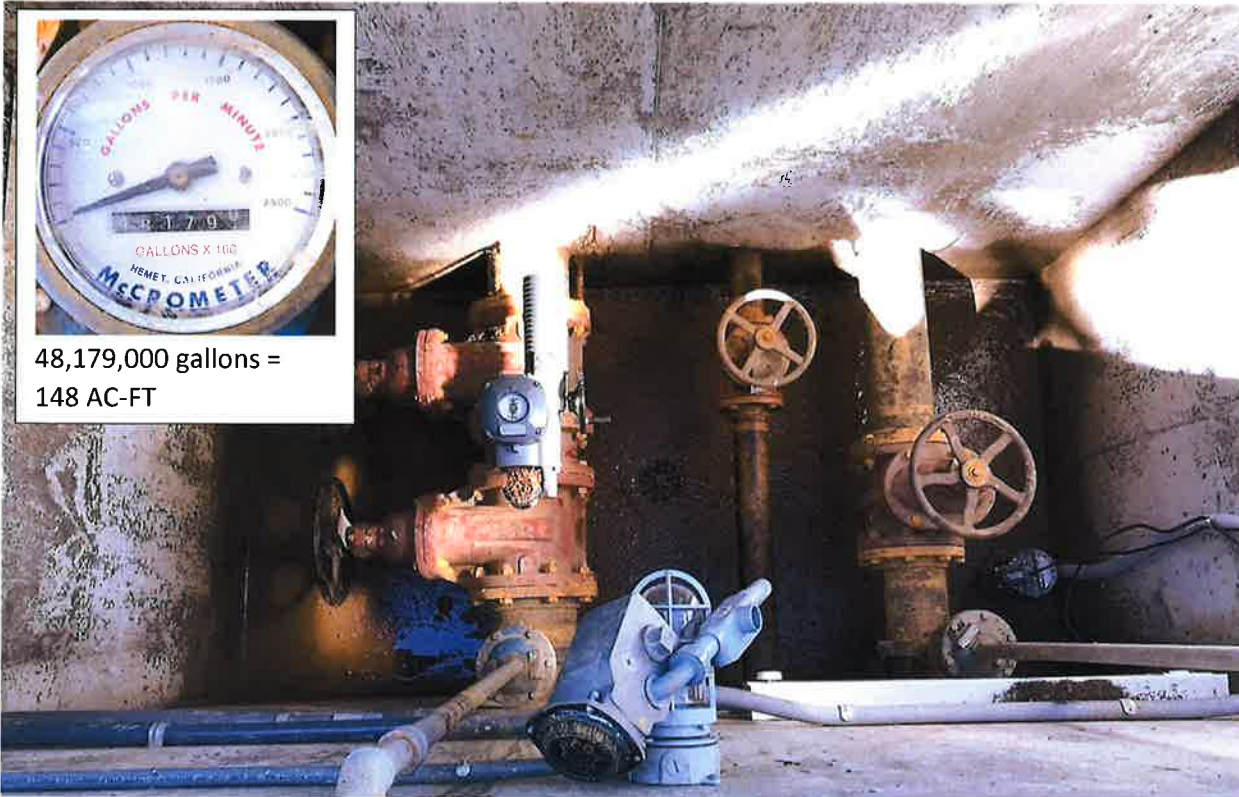


Photo 10. Well 7. Tag number D0031852 attached to the well. Based on information written inside the control panel (middle insert), there is a 175 horse power pump installed in the well. No other horse power information could be located. Pressure gage reading during operation at capacity was 200 PSI.

Beneficial Use Exam Photo Log



48,179,000 gallons =
148 AC-FT

Photo 11. View inside the well 7 vault with various piping, valves, and gages.

Beneficial Use Exam Photo Log



Photo 12. Well 5. The well did not have a tag attached, but the well report indicates that the well tag number that was issued was D0029766. In the field we attached well tag A0019155.



Photo 13. View inside the well 5 vault with various piping, valves, and gages. Pressure gage reading during operation at capacity was 150 PSI. The horsepower associated with this pump is unknown.

Beneficial Use Exam Photo Log

DATE	TIME	ODOMETER	GALLONS PER MINUTE	PSI	TANK AMOUNT	NOTES
8-12	1 st reading: 12:20	1 st reading: 38222	1 st reading: 200	1 st reading: 125		Turned Pump To Run
8-19	2 nd reading: 3:15	2 nd reading: 40355	2 nd reading: 1200	2 nd reading: 125		Turned Pump off
	3 rd reading:	3 rd reading:	3 rd reading:	3 rd reading:		
9/16	1 st reading:	1 st reading:	1 st reading:	1 st reading:		
10/1	2 nd reading:	2 nd reading: 221284	2 nd reading: 1100	2 nd reading: 125		
10/2	3 rd reading:	3 rd reading: 347742	3 rd reading: 1100	3 rd reading: 125		
	1 st reading: 39467	1 st reading: 46886	1 st reading: 1200	1 st reading: 125	1150 GPM	
	2 nd reading:	2 nd reading:	2 nd reading:	2 nd reading:		
	3 rd reading:	3 rd reading:	3 rd reading:	3 rd reading:		
	1 st reading:	1 st reading: 494878	1 st reading: 1150	1 st reading: 150		Feed to Mtn Control for Snow Making
	2 nd reading:	2 nd reading:	2 nd reading:	2 nd reading:		Switch on
	3 rd reading:	3 rd reading:	3 rd reading:	3 rd reading:		
	1 st reading:	1 st reading:	1 st reading: 1170	1 st reading: 150		0-195000 Water Meter shows pressure to 155 sent to wet well through the well leaves for snow making
	2 nd reading:	2 nd reading:	2 nd reading: 1180	2 nd reading: 155	→ to 2nd	
	3 rd reading:	3 rd reading:	3 rd reading:	3 rd reading:		

← Photo 14. Well 5. A clipboard with a partially legible well reading log was located in the control panel. The dates do not include the year of the entry. The highest flow rate recorded (red bubble) on the sheet was 1200 gpm (2.67 cfs) at a pressure of 125 psi. The log also shows that 12,645,800 gallons (38.8 AC-FT) (347,742 – 221,284 => 126,458X100) were pumped between 9/16 and 10/1. The current reading of 118,971 (below) is smaller than 347,742 (or 494,878 recorded on unknown date), which means that the flow meter has turned over at least once. Each time the meter turns over 307 AC-FT of water have been pumped from this well.



Photo 15. Well 5 flowmeter



Photo 16. Overview Photo. Water from wells 4, 5, and 7 is pumped up the mountain to the Mountain Control Building. There, water from wells 4 and 7 is treated and then pumped to the 1.2 million gallon water tank, which is a concrete vault located underneath one of the ski runs. The treated water from wells 4 and 7 is for domestic use and is also used for landscape irrigation. Water from well 5 is pumped into a 106,290 gallon steel tank located north of the Mountain Control Building. From there water can be used to fill the wet well for snow making during the winter or for irrigating the golf course during the summer. Well 5 can also be operated to irrigate the golf course directly without pumping it to the steel tank.

Note, well 6 shown on some of the Master Plan drawings is not used under this water right.

Beneficial Use Exam Photo Log

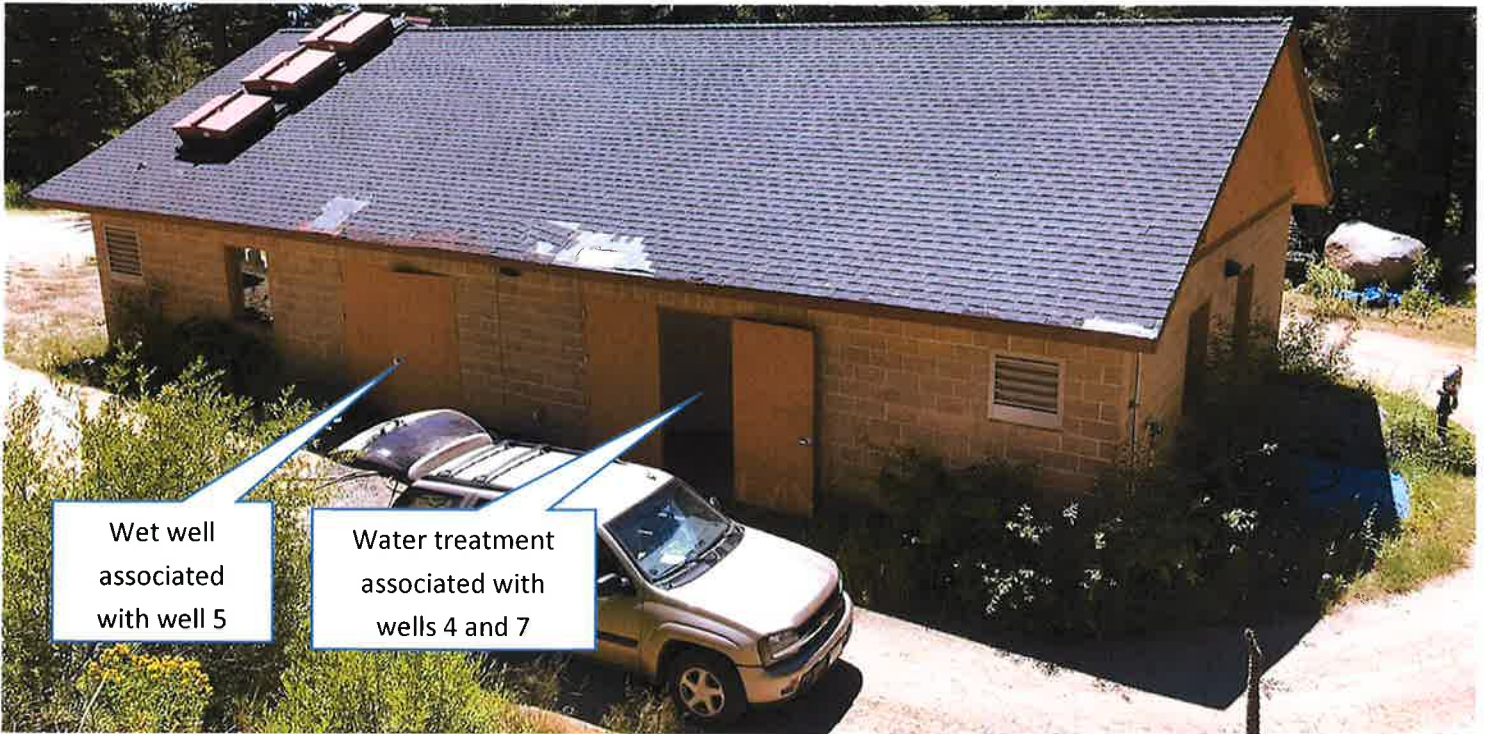


Photo 17. Mountain control Building looking south. The wet well associated with well 5 is accessed through the doors on the left in photo and the water treatment facility associated with wells 4 and 7 is accessed through the doors on the right in photo.



Photo 18. Wet well associated with water from well 5. Water from the adjacent 106,290 gallon steel tank fills the wet where it is prepared for snowmaking during the winter months. The wet well is not used to irrigate the golf course.

Beneficial Use Exam Photo Log



Photo 19. 32 foot diameter, 18.2 foot tall, 106,290 gallon (0.33 AF-FT) capacity tank that is associated with well 5. To measure the pumping capacity of well 5, we conducted a fill test of this tank (added a total of 1.0 feet of water). We recorded the water level over time, which allowed us to calculate the volume over time.

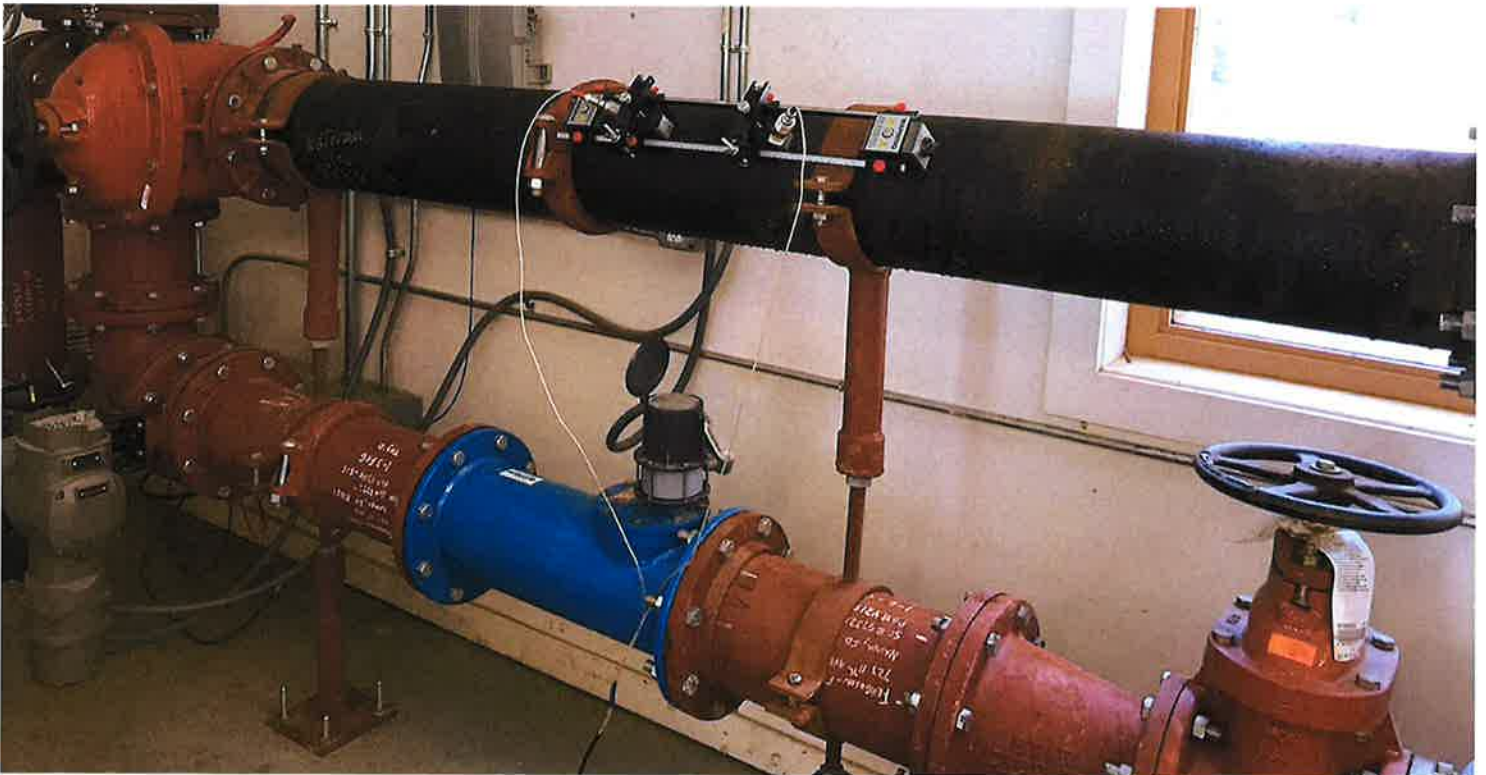


Photo 20. Piping and valves associated with wells 4 and 7. During the field exam we had the Panametric and Tyme Flyte flow meters installed at the same time. Note, the only accessible pipes to install the flow meters was ductile iron. We removed the texture for better surface contact of the transducers. We were also able to compare our measured flows with the flows recorded by the installed McCrometer flowmeter.

Beneficial Use Exam Photo Log

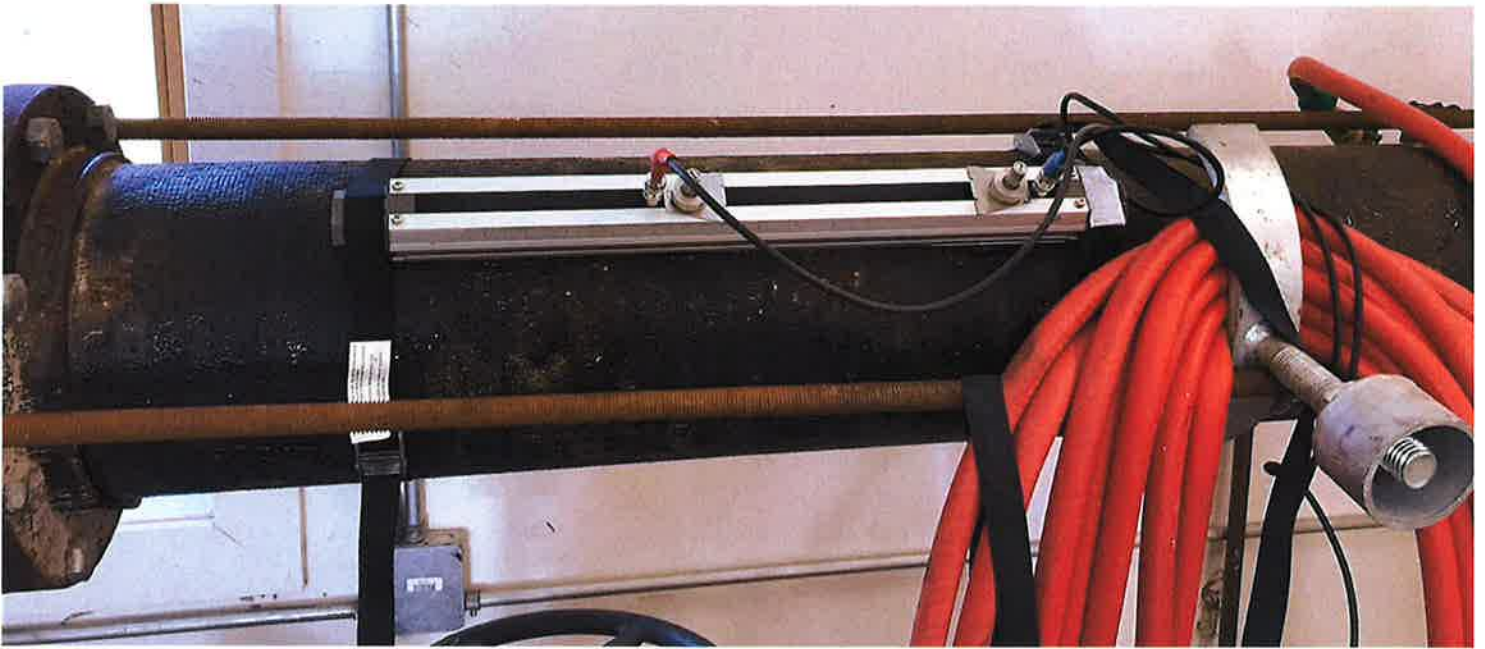


Photo 21. Tyme Flyte flowmeter installed adjacent to the the Panametric flow meter seen in the previous photo.



Photo 22. Mid Mountain Well 1 (disconnected, but not abandoned) and Mid Mountain Well 2 (operational). Construction of the Mid Mountain Tamarack lodge is mostly complete, but was never put into service. The water supply infrastructure was put into place before the project was abandoned during the economic downturn around 2008. Water from Mid Mountain Well 2 was going to be pumped into three (3) 2,100 gallon tanks located in the basement of the lodge. The well is operational and water from this well is used for incidental needs for the adjacent yurt and other low volume activities. We measured the well capacity with a 5 gallon bucket and stopwatch during the field exam (15.8 gallons per minute; 0.035 cfs).

Beneficial Use Exam Photo Log



Photo 23. Mid Mountain Well 1 (8 inch diameter). Not connected. The tag number welded on this well is D0047295, which was issued for Mountain well 2. The well drilling application shows that this well was drilled as a drill and fill and no tag was issued.



Photo 24. Mid Mountain Well 2 (6 inch diameter). Note the broken cast iron well cap. Tamarack representatives ordered a replacement cap for this well while we were on site. No Tag on well, but well records indicates that the Tag Number is D0047295, which was welded on the Mid Mountain Well 1, for which no tag was issued.