

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 65-22676

Exam Date: 9/14/2012

1. Current Owner: HORSESHOE BEND SCHOOL DISTRICT # 73
398 SCHOOL DR
HORSESHOE BEND ID 83629
(208)793-2225
2. Accompanied by: Cody White
Phone No: (208) 781-0781 (cell)
Address: Same
Relationship to Permit Holder: Maintenance Dept.
3. SOURCE TRIBUTARY
GROUND WATER PAYETTE RIVER

B. OVERLAP REVIEW

1. Other water rights with the same place of use: 65-7635, 65-10886, and 65-12051
2. Other water rights with the same point of diversion: None

C. DIVERSION AND DELIVERY SYSTEM**1. LOCATION OF POINT(S) OF DIVERSION:**

GROUND WATER L1 (SW1/4SE1/4) Sec. 27, Twp 07N, Rge 02E, B.M.
BOISE County
Method of Determination: GPS Location N 43° 54.597' W 116° 12.232' Garmin model GPSmap 76 Datum NAD 83

2. PLACE OF USE: IRRIGATION

Twp	Rge	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
07N	02E	27															7		7
																	L 1		
07N	02E	34		4															4
				L 4															

Total Acres: 11

Method of Determination: Bing (2011) Aerial Photography w/ field verification.

3. ☒ Delivery System Diagram Attached (required). Indicate all major components and distances between components. Indicate weir size/pipe as applicable.
☒ 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. **Well or Diversion**

ID No.*	Motor Make	Hp	Motor Serial No.	Pump Make	Pump Serial No. or Discharge Size
WC Metal Tag #					
D0048097	unknown	15	unknown	unknown submersible	unknown - 4" discharge pipe

*Code to correspond with No. on map and aerial photo

D. FLOW MEASUREMENTS**1. Measurement**

<u>Equipment</u>	<u>Type</u>	<u>Make/Model No.</u>	<u>Serial No.</u>	<u>Size</u>	<u>Calib. Date</u>
No physical measurement @ exam	N/A	N/A	N/A	N/A	N/A

Supplemental well. System not operating @ exam. See Flow Calculations Section below for Theoretical HP Equation and Pipe Diameter flow estimations.

2. Measurements: None taken @ exam. Did not require owner to turn on supplemental well solely for examination purposes.

E. FLOW CALCULATIONS

X Additional Computation Sheets Attached

Measured Method: Theoretical HP Equation:

$$HP = 15$$

$$PSI = 60 \text{ (closed irrigation system est.)}$$

$$Z = 95 \text{ ft } \{ [200 \text{ ft (completed well depth)} - 10 \text{ ft (static level)}] \div 2 = 95 \text{ ft dynamic pumping level est.} \}$$

$$Q = (8.8 \times 0.7 \times HP) / [Z + (2.31 \times PSI)] = (8.8 \times 0.7 \times 15) / [95 + (2.31 \times 60)] = \mathbf{0.40 \text{ cfs est. capacity of pumping system}}$$

Measured Method: Pipe Diameter Flow Estimation:

$$\text{Discharge Pipe Dia} = 4 \text{ in} \rightarrow Q = \mathbf{0.44 \text{ cfs}} \text{ (see attached "Expected Flows For Pipe Diameters" computation sheet)}$$

Theoretical HP Equation est. = **0.40 cfs**

Pipe Diameter Flow Estimation = **0.44 cfs**

Permitted Rate = **0.81 cfs**

Beneficial Use Limit = 11 ac $\times$ 0.02 cfs/ac = **0.22 cfs**

Proof of Beneficial Use fee paid = \$100.00 = up to **1.00 cfs**

Recommend Beneficial Use Limit Rate = 0.22 cfs

Beneficial Use Limit rate recommended as system is capable of diverting more than enough to provide 0.02cfs/ac.

F. VOLUME CALCULATIONS**1. Volume Calculations for Irrigation:**

$$V_{I.R.} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = 11 \text{ ac} \times 4.5 \text{ afa/ac} = 49.5 \text{ afa}$$

$$V_{D.R.} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 = 0.22 \text{ cfs} \times 231 \text{ days} \times 1.9835 = 100.8 \text{ afa}$$

$$V = \text{Smaller of } V_{I.R.} \text{ and } V_{D.R.} = 49.5 \text{ afa} < 100.8 \text{ afa} = \mathbf{\text{Recommend } 49.5 \text{ afa}}$$

2. Volume Calculations for Other Uses: N/A. No other uses permitted.**G. NARRATIVE/REMARKS/COMMENTS****SYSTEM DESCRIPTION:**

System consists of an 8" dia 200 ft deep well with a 4" steel discharge line to a 6" buried mainline to underground sprinkler system. Sprinkler system connected to surface water source (POD 65-7635 + 65-10886) and an older well (POD 65-12051) also used for irrigation of the school grounds. See attached system diagram and Overlap section below for details.

IRRIGATION PRACTICES:

This well is used to supplement surface water irrigation within the POU. Same distribution system for both ground and surface water. Owner irrigates the POU via buried sprinkler system. Typically irrigates every night from 10 pm to 6 am beginning in May and ending approximately the 1st week of October. Sometimes rate in excess of 0.02cfs/ac required for irrigation of areas with constraints on irrigation time, such as parks and schools, but no excess rate/ac requested in permitting, so beneficial use limit calculated above based on standard 0.02cfs/ac quantity.

G. NARRATIVE/REMARKS/COMMENTS CONTINUED**POU CLARIFICATION:**

Permitted POU included up to 6.5 acres in Gov't Lot 4 of Section 34 T07N R02E. However, Gov't Lot 4 was described as being in the NENW rather than the NWNE (correct 40 ac-tract). Considering the 40 ac-tract description is considered a qualifier/descriptor of PLS descriptions for POU's and PODs when Gov't Lots are specified, a licensing amendment is not required to clarify the 40 ac-tract of the authorized Gov't Lot POU location.

TRIBUTARY INFORMATION:

This ground water permit was issued without specifying a tributary. Typically a tributary is not specified for ground water. However, the tributary (Payette River) is being recommended as part of the license, considering this use was permitted with all the associated water district related conditions as if this use is from a surface water source (adding the tributary would not further restrict the use) and doing so clarifies the record. This recommendation is consistent with the POD well's construction.

OVERLAP:

Surface water from owner's Payette River rights 65-7635 and 65-10886 serves as primary source of water for irrigation of POU. This permit (65-22676) and associated POD serves as main source for supplemental irrigation of the POU. Right 65-12051 also authorizes irrigation of up to 3 acres within a portion of the POU (NWNE of Section 34) from an older well. The sprinkler system is designed to allow for water from all sources (Payette River, newer supplemental well, and older well). There is a control/shut-off valve within the sprinkler system that allows for separation of the system into the portion irrigated with the newer supplemental well versus the portion irrigated with the older well. However, the valve can remain open to allow for irrigation of the entire POU from only the newer supplemental well. Typically, when ground water is needed for irrigation, the owner will run both wells, but not always. Therefore, this permit is being recommended for supplemental irrigation of the entire 11 acres irrigated by the owner. A combined use condition limiting diversion for irrigation use under this permit (65-22676), right 65-12051 (ground water right), and right 65-7635 (surface water right) to 0.22 cfs, 49.5 afa, and 11 acres shall be placed on this permit at licensing. Right 65-12051 authorizes domestic use in addition to irrigation use, so condition X35 language should be modified to limit combined use quantities to only water diverted for irrigation use. Surface water right 65-7635 authorizes irrigation of 11 acres similarly described as the 11 acres recommended for this permit (65-22676). However, surface water right 65-10886 includes some but not all of the acres within the same POU, as well as additional acres outside the recommended POU of this permit. Considering the exact extent of overlap between 65-10886 and the other three rights is unclear, I am recommending this right be excluded from the combined use condition. However, the overlap will be addressed via use of the standard (R65) condition limiting diversion under all rights to no more than 0.02cfs/ac and 4.5 afa. There are no other overlapping rights associated with the POU or POD.

OVERLAP CONDITION RECOMMENDATIONS:

To illustrate POU overlap and combined use limitations the following conditions are recommended for licensing of 65-22676:

1. (X35 Modified) Rights 65-7635, 65-12051, and 65-22676 when combined for irrigation use shall not exceed a total diversion rate of 0.22 cfs, a total annual maximum diversion volume of 49.5 af at the field headgate, and the irrigation of 11 acres.
2. (R65) This right when combined with all other rights shall provide no more than 0.02 cfs per acre nor more than 4.5 afa per acre at the field headgate for irrigation of the place of use.

COMPLIANCE WITH PERMIT CONDITIONS:

Use of ground water under this right is supplemental to surface water in accordance with conditions of the permit. The diversion has a dedicated power supply/box which may be locked in the event the watermaster would need to shut down this diversion. However, no measuring device has been installed. Spoke with Basin 65 Watermaster Ron Shurtleff 1/28/2013 regarding this diversion. He concurred the tributary information will be helpful on the record and stated it's ok to modify condition(s) to upon future notification the user shall install a measuring device (01M). Permit conditioned when water is not available to fill the right, the right holder shall rent water from the Payette River Rental Pool. This condition in place to allow for watermaster regulation within the water district, should it be necessary. To the best of my knowledge, owner has complied with all other permit conditions.

Have conditions of permit approval been met? ____ Yes ____ X No – Modifications of measurement device as discussed above approvable per watermaster comments. All other conditions met.

H. RECOMMENDATIONS**1. Recommended Amounts**

<u>BENEFICIAL USE</u>	<u>PERIOD OF USE</u>	<u>DIVERSION RATE</u>	<u>ANNUAL VOLUME</u>
IRRIGATION	03/15 to 10/31	0.22 CFS	49.5 AF
<u>Totals:</u>		0.22 CFS	49.5 AF

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 ☐ Other

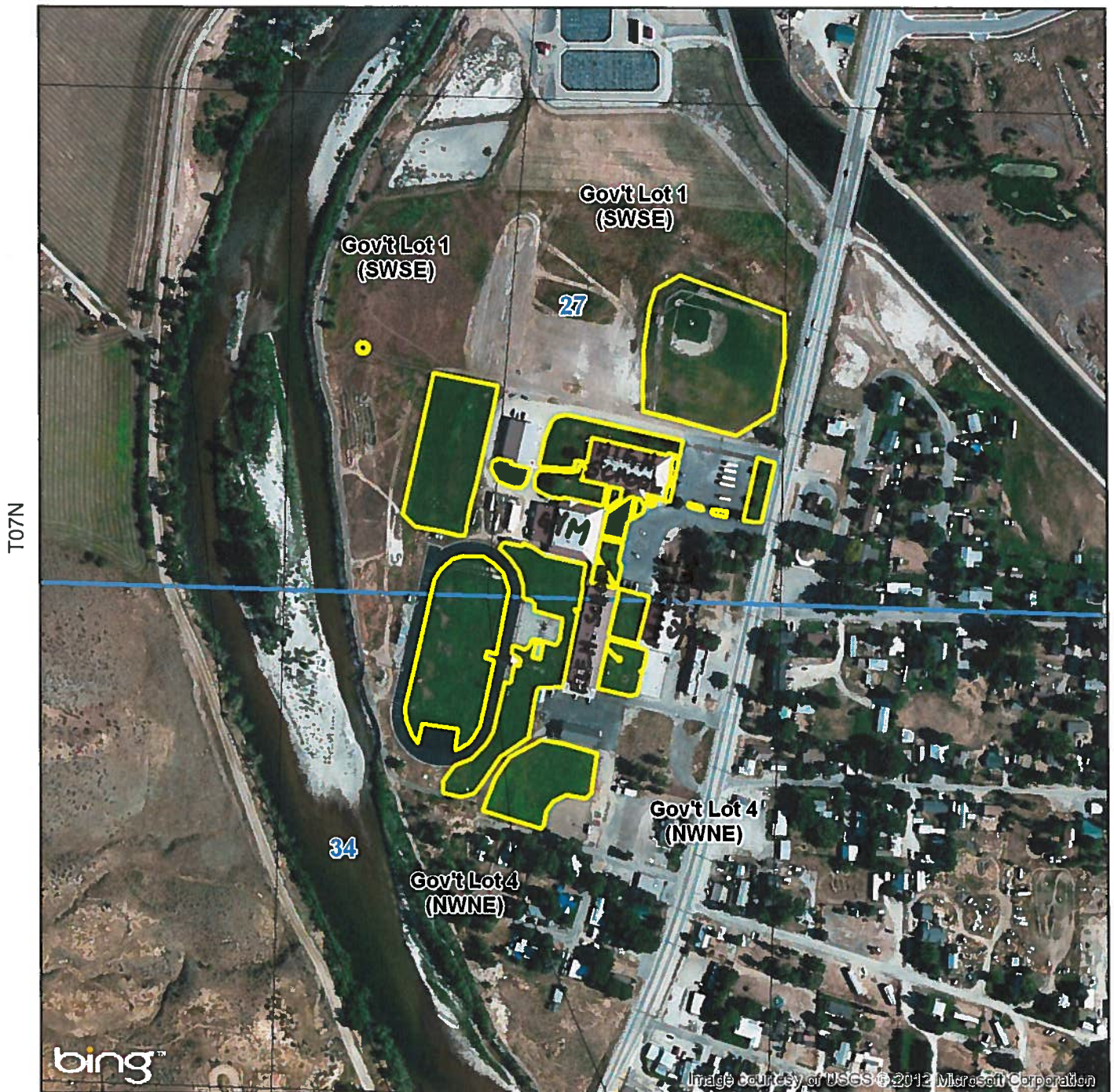
I. AUTHENTICATION

Field Examiner's Name Angela M. Gumm Date 1/20/2013

Reviewer _____ Date _____

65-22676 Beneficial Use Field Report Map

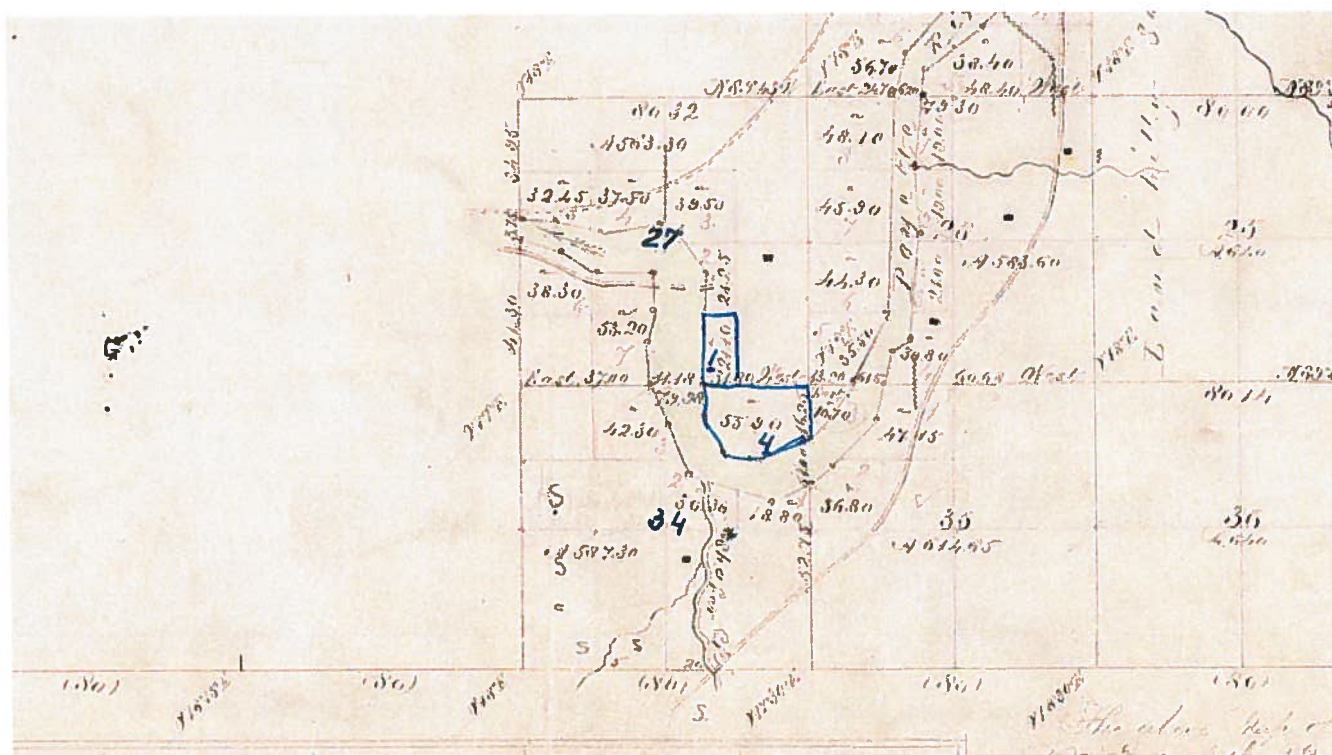
R02E



0 0.1 0.2 0.4 Miles

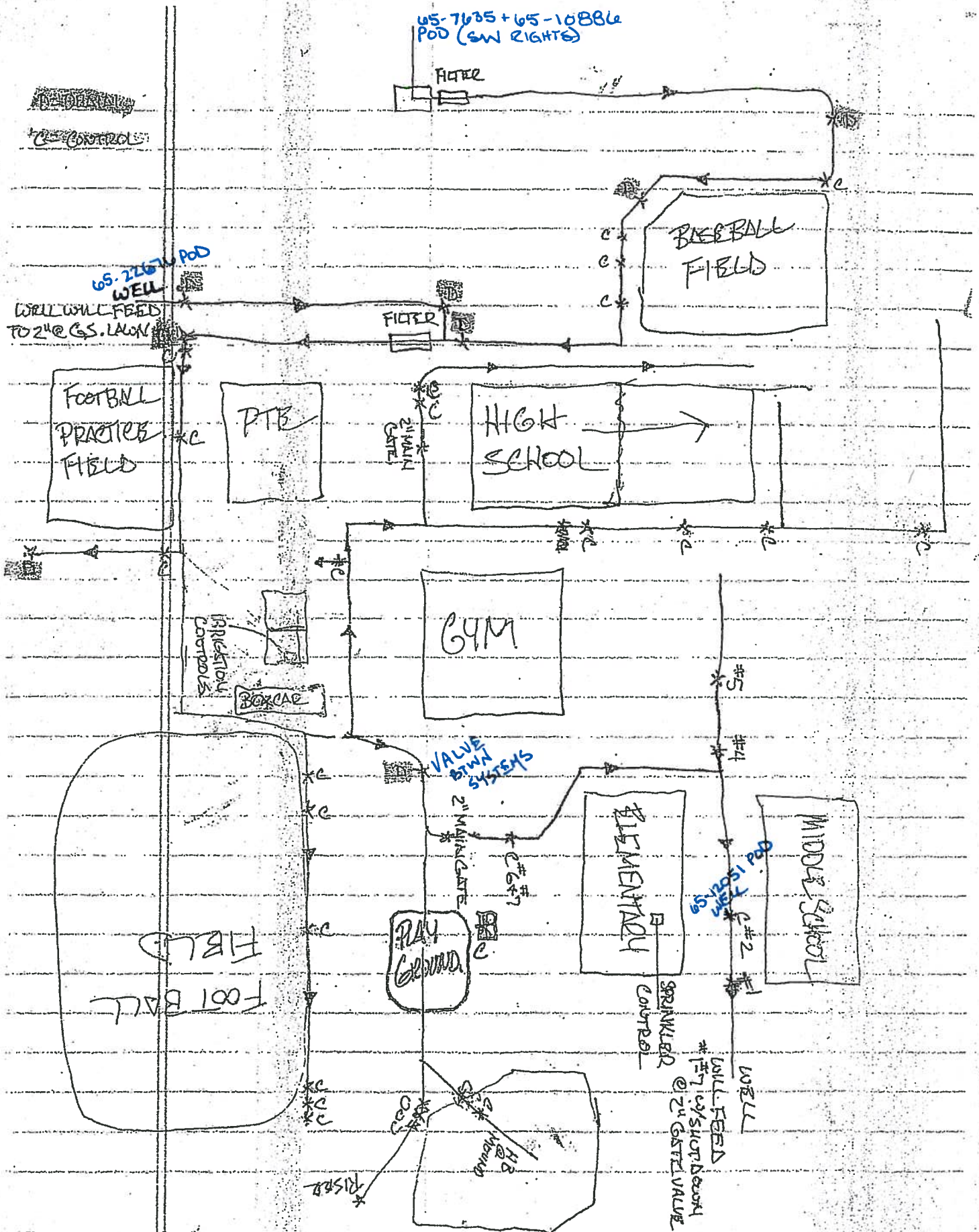
- Point of Diversion
- Place Of Use Boundary
- Townships
- PLS Sections
- Quarter Quarters





T7N R2E SEC 27+34

65-22676 BENEFICIAL USE FIELD REPORT SYSTEM DIAGRAM



EXPECTED FLOWS FOR PIPE DIAMETERS

This is for rough estimate for **pump & closed pipeline** system.

Use to double check other measurements/estimates.

Assumes optimum design.

$$Q = VA \quad \text{where: } V = 5 \text{ ft/sec} \quad A = \pi r^2 \quad (\text{radius in ft.})$$

DIAMETER (INCHES)	RATE (CFS)
01	0.03
02	0.11
03	0.25
04	0.44
06	0.98
08	1.74
10	2.73
12	3.93
14	5.34
16	6.98
18	8.83
20	10.90
22	13.19
24	15.70
36	35.34
48	62.83

65-22676 Beneficial Use Field Report Photos



65-22676 Exam 9/14/2012: P/D facing west towards Payette River (background where trees are).



65-22676 Exam 9/14/2012: Portion of POU (lawn between elementary and middle schools with high school gym in photo background) facing north.



State of Idaho

DEPARTMENT OF WATER RESOURCES

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C. L. "BUTCH" OTTER
Governor

GARY SPACKMAN
Interim Director

July 19, 2012

Horseshoe Bend School District No. 73
Attn: Jerry Sampo
398 School Dr.
Horseshoe Bend, ID 83629

RE: Scheduling Field Exam for Water Right Permit No. 65-22676

Dear Mr. Sampo:

We are planning to **conduct water right examinations** in the vicinity of the above-referenced permit **during the weeks of July 23 and July 30, 2012**. An examination is needed to verify your water use in order to issue a water right license.

Please be advised that you will need to operate your system under normal conditions during the examination. The permit authorizes diversion of ground water for supplemental irrigation of up to 40.7 acres.

In order to conduct your exam as efficiently as possible, we ask that you call this office to schedule a day and time convenient for you. **Please call me at 208-334-2190 by July 27, 2012.** If there is a problem with scheduling or conducting the examination at this time, please call and other arrangements can be made. I appreciate your attention in this matter and I look forward to hearing from you.

Sincerely,

A handwritten signature in black ink, appearing to read 'Angela M. Grimm', with a large, fluid loop at the end.

Angela M. Grimm, P.G.
Water Resource Agent, Sr.