

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 36-8763

Exam Date: 10/30/2007

1. Current Owner: City of Paul
P.O Box 130
152 South 600 West
Paul, ID 83347
(208) 438-4101

2. Accompanied by: Richard Rau
Phone No: 208-438-4181
Relationship to Permit Holder: Public Works Director

3. **SOURCE** **TRIBUTARY**
GROUND WATER

B. OVERLAP REVIEW

1. Other water rights with the same place of use: 36-7206, 36-7899, 36-12179, 36-4083
2. Other water rights with the same point of diversion:

C. DIVERSION AND DELIVERY SYSTEM

1. **LOCATION OF POINT(S) OF DIVERSION:**

GROUND WATER	NE1/4SE1/4SE1/4	Sec. 32, Twp 09S, Rge 23E, B.M.
Minidoka County	E0008014	WEST MINICO WELL

2. **PLACE OF USE:** Municipal

Place of use is within the City of Paul and surrounding service area.

Method of Determination:

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).
__X__ Photo of Diversion and System Attached

4.

<u>Well ID No.*</u>	<u>Motor Make</u>	<u>Hp</u>	<u>Motor Serial No.</u>	<u>Pump Make</u>	<u>Pump Serial No.</u>
E0008014	U.S. Electric	100	J248-804-3373M	Ingersoll-Dresser	12H135
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

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

D. FLOW MEASUREMENTS

1.

<u>Measurement Equipment</u>	<u>Type</u>	<u>Make</u>	<u>Model No.</u>	<u>Serial No.</u>	<u>Size</u>	<u>Calib. Date</u>
Portaflow	Sonic	Fuji		240332		5/2006
_____	_____	_____	_____	_____	_____	_____

2. Measurements:

Was unable to take flow measurement at wellhead because of insufficient space to place meter on pipe. Although, two measurements have been taken on the out-flow pipe of the storage tank averaging between 300-400 GPM, neither are relevant to the actual system capacity. By calculating the theoretical HP equation and obtaining the pump curve from the operator, the estimated discharge of the entire system is between 2.72 cfs and 2.75 cfs.

E. FLOW CALCULATIONS

 x Additional Computation Sheets Attached

Measured Method:

HP Equation: $\frac{100 \times 8.8 \times 0.8}{238+9+(5 \times 2.31)} = 2.72 \text{ cfs}$

Theoretical yield is slightly lower than pump curve. The pumping depth from the drill log is 238' + 9' of lift to the storage tank discharge and the system is estimated at 5-7 psi. It's assumed that the pump is operating at 80 % efficiency. (Physical measurement with probe to static water level was 234'.)

The pump curve's TDH was estimated at 260' and an 82.5 % pump efficiency to establish a flow of 2.75 cfs, which is what the permit initially asked for. (Attached)

F. VOLUME CALCULATIONS

1. Volume Calculations for Irrigation:

$$V_{I.R.} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) =$$

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

$$V = \text{Smaller of } V_{I.R.} \text{ and } V_{D.R.} =$$

2. Volume Calculations for Other Uses:

System Capacity Volume = N/A

G. NARRATIVE/REMARKS/COMMENTS

The permit lapsed in August 31, 1999 due to beneficial proof not filed. The city submitted the evidence of beneficial use and the permit was reinstated on February 2, 2000 with an advanced priority date of October 18, 1999.

The system consists of one well with a 100 HP pump, which discharges into a partial underground storage tank. The capacity of the tank is 1,000,000 gallons. The well pump is activated whenever the tank level drops down two feet. The water from the tank is then discharged into a manifold, which is split to three boosters (20 HP, 60 HP, and 75 HP) that run independently at any given time. The water is then combined into a pressurized (60 psi) 12" mainline and delivered to the city.

The city has installed a flow meter on the downside 12" mainline, which measures the instantaneous flow from storage and records the total volume pumped. The measuring device does not reflect the rate output of the well but appears to record all the volume. The system and measuring device are well maintained. A calibration test was completed in the summer of 2006 and the meter was within -1.65% of compliance.

During my field exam I discovered that the drill log had a wrong legal of 9S 23E 31 NWNW and the permit layer showed the well in 9S 23E 32 NESE and was also incorrect. A GPS point was taken and the actual physical location of the well is 9S 23E 32 SESE. The series of events and discrepancies appear to be unintentional and the well was drilled during the permit development period. Therefore, I am recommending a license amendment.

After licensing of this permit, the city will then file for transfer to consolidate all water rights within the entire municipal system.

This system will overlap with the city's other municipal water rights. (36-7206, 36-7899, 36-12179, 36-4083).

Have conditions of permit approval been met? ☒ Yes ☐ No

H. RECOMMENDATIONS

1. Recommended Amounts

<u>BENEFICIAL USE</u>	<u>PERIOD OF USE</u>	<u>DIVERSION RATE</u>	<u>ANNUAL VOLUME</u>
MUNICIPAL	01/01 to 12/31	2.75 CFS	
<u>Totals:</u>		2.75 CFS	

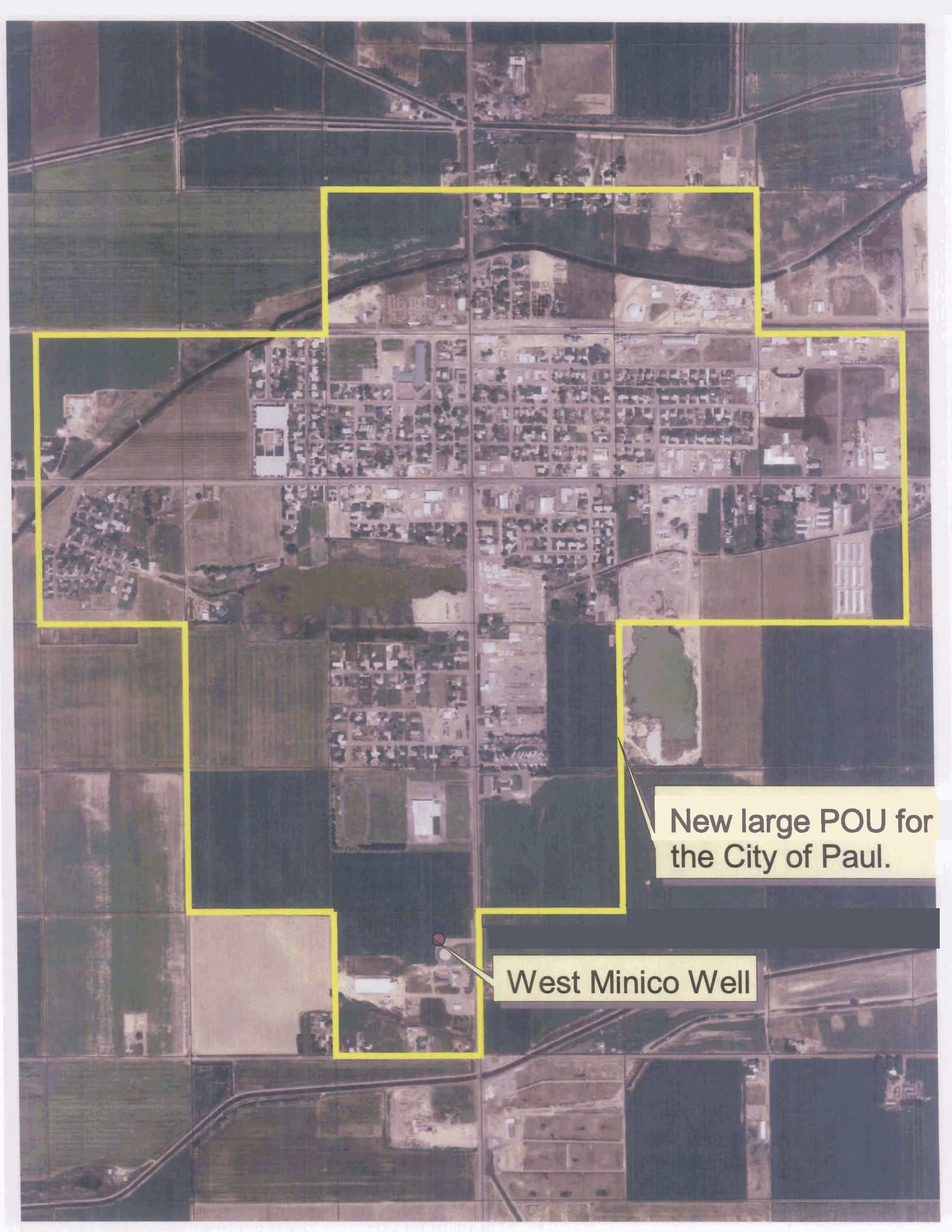
2. Recommended Amendments

☒ 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 John Jones Date 11/13/07
Reviewer _____ Date _____



New large POU for
the City of Paul.

West Minico Well

Pump house and Storage tank



Tank = 1,000,000 gallons
9' Lift



Wellhead

20 HP

60 HP

75 HP

