EXECUTIVE SUMMARY
STAR VALLEY RANCH
GROUNDWATER LEVEL II STUDY
FEBRUARY 2009

Prepared for the:
Wyoming Water Development Commission
and

Submitted by:
WESTON GROUNDWATER • ENGINEERING
FORSgren Associates Inc.
EXECUTIVE SUMMARY
FOR THE:
STAR VALLEY RANCH
GROUNDWATER LEVEL II STUDY

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INTRODUCTION
In 2005, the Star Valley Ranch Association applied to the Wyoming Water Development Commission (WWDC) to fund a Level I Water Supply Project. The Level I Study was completed by Forsgren Associates, Inc. in 2008. The Level I Study determined that additional water supply source capacity was critically needed to prevent service interruptions. In 2006 the Town of Star Valley Ranch (TSVR) applied to the WWDC for funding for a Level II Water Supply Project for drilling three test borings and one exploration well. The Town’s application for Level II project funding was approved at the 2007 Wyoming State Legislative Session.

SCOPE OF THIS REPORT
This report summarizes the groundwater development program completed in 2008 for the TSVR, including the choice of the drilling target and well site, along with the well design. A summary of the drilling program and the results of long-term well testing and chemical analyses are also provided. The report concludes with a summary of the construction and testing program and provides conceptual-level designs and cost estimates to the WWDC for completing the well and incorporating it into the water supply system.

TSVR WELL NO. 1
Contractor mobilization for drilling the exploration well began on October 7, 2008. Drilling and construction of the test well was performed from October 7 to 24, 2008 by the drilling contractor, Thomas Drilling of Afton, Wyoming. TSVR Well No. 1 was drilled to a depth of 500 feet and was completed with 10 3/4-inch steel casing to a depth of 334 feet and an 8-inch stainless steel screen liner from 345 to 490 feet.

Following well development, the well was pump tested at a rate of 317 gallons per minute (gpm) for a period of seven days. The drawdown at the end of the pump test was 97 feet, which corresponds to a pumping water level of 275 feet below ground level. The transmissivity of the aquifer was calculated to be 33,475 gpd/ft from the late-time pump test data and 55,800 gpd/ft from the late-time recovery data. The projected drawdown from pumping the well at 300 gpm for 70 days is 102 feet.

The quality of the water developed by TSVR Well No. 1 during the aquifer testing was assessed through a series of field and laboratory analyses. These analyses indicate that the water developed by the well is excellent and is suitable to serve as a municipal drinking water supply.

CONCEPTUAL DESIGN AND COST ESTIMATES
Based on the results of testing TSVR Well No. 1 and the immediate need for additional source capacity the new well should be equipped with pumping equipment and it should be tied into the water system. Forsgren identified other improvements that should be made to the TSVR water system and funding has been obtained from the WWDC for a Level III Project to be completed in 2009-2010. The proposed improvements include:

• A new 400,000 gallon Prater Canyon Tank;
• A transmission line from Green Canyon Tank to Prater Canyon Tank; and
• A SCADA system.
The estimated cost for the Level III project improvements are summarized in the table below. These improvements are eligible for a 67 percent grant from the WWDC in the amount of $1,768,125.14. TSVR Well No. 1 can be purchased from the WWDC for 33 percent of the eligible construction costs, which equals $50,526.47. The well purchase and 33 percent of the improvement costs will need to be paid for by the TSVR. The total cost that must be funded by the TSVR is $921,394.08. A 30 year 4 percent loan from the WWDC or a 2.5 percent 20-year loan from the SRF can be obtained to complete the project financing.

### 2009 – 2010 LEVEL III PROJECT COST ESTIMATES

<table>
<thead>
<tr>
<th>PROJECT COMPONENT</th>
<th>COST</th>
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<tbody>
<tr>
<td>Connect TSVR Well No. 1</td>
<td>$388,119.75</td>
</tr>
<tr>
<td>Prater Canyon Tank</td>
<td>$1,022,778.00</td>
</tr>
<tr>
<td>Green Canyon – Prater Canyon Transmission Line</td>
<td>$884,251.00</td>
</tr>
<tr>
<td>SCADA System</td>
<td>$343,844</td>
</tr>
<tr>
<td><strong>TOTAL COST ESTIMATE</strong></td>
<td><strong>$2,638,992.75</strong></td>
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</tbody>
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The current total monthly water bill for a residential customer is $28.00. The new monthly water bill will need to be raised to approximately $35.74 to pay for the debt service associated with the 2009 - 2010 Level III improvements, operations and maintenance of the TSVR Well No. 1, and funding of a sinking fund.