

**FIRST AMENDED**

**OCTOBER 19, 2006**

**OFFICE OF THE STATE ENGINEER  
STATE OF NEVADA**

**PERMIT NO. R-015**

**PERMIT**

**TO ESTABLISH AND OPERATE A PROJECT  
TO RECHARGE, STORE AND RECOVER  
UNDERGROUND WATER**

**PERMITTEE:** Truckee Meadows Water Authority  
PO BOX 30013  
Reno, NV 89520

**SOURCE OF WATER:** Truckee River (Permit 58882)

**ANNUAL QUANTITY:** 1,000 Acre-Feet

**LOCATION OF PROPOSED  
PROJECT/RECHARGE WELLS:**

**1. Army Air Guard Well:**

Located within the SE ¼ NW ¼ Section 19, T.21N., R.19E., MDB&M., OR at a point from which the W ¼ corner of said Section 19 bears South 52 18' West, a distance of 1,894.0 feet situated in Washoe County, State of Nevada.

**2. Silver Lake Well (New Well):**

Located within the SE ¼ of the NW ¼ of Section 30, T. 21N., R. 19E., MDB&M., or at a point from which the Northwest corner of said Section 30 bears North 39° 51' 35" West, a distance of 2,847.19 feet situated in Washoe County, State of Nevada.

**LOCATION OF RECOVERY WELLS:**

Same as Recharge Wells.

**AREA OF ACTIVE MANAGEMENT:**

The Lemmon Valley Groundwater Basin (Western Part), Hydrographic Area No. 7-92A, as described in State Engineer's Order No. 391, dated July 14, 1971

## **DURATION OF PERMIT:**

This permit is issued for an indefinite period, subject to periodic review by the State Engineer.

## **TERMS AND CONDITIONS OF PERMIT:**

1. During recharge the amount of water recharged at each well location shall be recorded on a daily basis.
2. During recovery the amount of water being pumped from each recovery well shall be recorded on a daily basis. If electronic equipment is used for the collection of data on a daily basis, said equipment shall be physically checked and calibrated for proper operation per the manufacturer's specifications.
3. The withdrawal of recharged water will be restricted on a well by well basis. The amount of water injected into a particular well can only be recovered by pumping that particular well.
4. Water level measurements for each recharge well shall be taken prior to the start of any recovery/production cycle, followed by a water level measurement 24 hours after the start of any recovery/production cycle and then on a monthly basis thereafter.
5. Monitoring Wells:
  - A. See attachment "A" for list of monitoring wells
  - B. During the recharge period monitoring wells will be pumped only when it is required to obtain water samples.
  - C. The use of any other well, except as shown in Attachment "A", as a monitoring well must be authorized by the State Engineer. Any new monitoring well shall be constructed as per NAC 534.4351 through NAC 534.4365.
6. Information on the pumping of TMWA's Recharge/Recovery Wells shall be provided with the Permittee's quarterly groundwater reports. Notice shall be given to this office of when recharge and recovery events will begin and end.
7. Collection of Water Quality Data:

For each water quality sample or water level measurement taken pursuant to this permit, the permittee shall record the following information:

  - A. The exact place, date and time of sample or measurement;
  - B. The dates the analyses were performed;
  - C. The person(s) who performed the analyses or measurements;
  - D. The analytical techniques or methods used; and
  - E. The results of all required analyses and measurements.

8. Per Nevada Division of Environmental Protection (NDEP) Permit No. UNEV92209, the following table identifies the water quality monitoring frequency and water quality parameters, in addition to the constituents listed in ATTACHMENT "B", which will be reported.

<u>Parameter</u>	<u>Location</u>	<u>Monitoring Frequency</u>	<u>Period</u>
a. Constituents as listed under Attachment "B" of this permit	Injectate (distribution system)  Produced water from each well that was used for recharge the previous season	Quarterly during recharge  Quarterly during pumping (year round)	Concentrations may not exceed enforceable State and Federal Primary and Secondary Drinking Water Regulations
b. Total Trihalomethanes; Bromodichloromethane; Bromoform; Dibromochloromethane; and Chloroform.	Produced water from each well that was used for recharge the previous season	Quarterly from 23 distribution system locations during pumping (year-round)	Running Annual Average (RAA) of Total trihalomethanes for the past 4 Quarters may not exceed Primary Drinking Water Standards
c. Haloacetic acids (HAA5); Dichloroacetic acid; Trichloroacetic acid; Monochloroacetic acid; Bromoacetic acid; and Dibromoacetic acid.	Produced water from each well that was used for recharge the previous season	Quarterly from 23 distribution system locations during pumping (year-round)	Running Annual Average (RAA) of Haloacetic acids for the past 4 Quarters may not exceed Primary Drinking Water Standards
d. Chlorine concentration	Injectate (distribution system)	Monthly during recharge	Injectate may not exceed Primary Drinking Water Standards
e. Groundwater Elevations (amsl) and Depth to Water	Recharge wells	Continuous using SCADA (data acquisition system) during recharge and non-recharge periods	Monitor and Report
f. Injection rate (gal/min) Cumulative volume (gal)	Totalizing flow meter with capability for instantaneous flow rate. Meter to be located on the injection pipe line between the injection pump and the wellhead	Continuous using SCADA during recharge period	Monitor and Report
g. Water Levels (nearest one-tenth foot)	Monthly	Injection/Production wells, MW-116C, TMW-01 (MW-118C), TMW-02 (MW-120A), TMW-03 (MW-121B), TMW-04 (MW-121C), MW-B1, TMW-05, TMW-06, TMW-07, TMW-08, TMW-09, and Red Rock Well (RRW)	

8. Per Nevada Division of Environmental Protection (NDEP) Permit No. UNEV92209, the following table identifies the water quality monitoring frequency and water quality parameters, in addition to the constituents listed in ATTACHMENT "B", which will be reported.

PARAMETER	FREQUENCY	LOCATION	LIMITATIONS
Secondary Standards: chloride, Cu, Fe, Mg, Mn, pH, Sulfate, TDS <sup>1</sup> , Zn, Al, Ag	Quarterly	Injectate sampled between final treatment and wellhead/ Produced water sampled at wellhead	Must not exceed respective State and Federal Drinking Water Standards
Chlorine Concentration	Monthly during injection cycle	Injectate, sample port between final treatment and wellhead	Monitor and Report
PARAMETER	FREQUENCY	LOCATION	LIMITATIONS
Inorganic Compounds Phase II and V: Fluoride, Ba, Cd, Cr, Se, Nitrate, Nitrite, Sb, Be, Ni, Tl, As	Quarterly	Injectate sampled between final treatment and wellhead/ Produced water sampled at wellhead	Must not exceed respective State and Federal Drinking Water Standards
Volatile Analytes, EPA method 8260	Semi-annual (July and January)	SLR, MW-111A, MW-116A, and MW-120A	Monitor and Report
Total Trihalomethanes (THM)	Quarterly	Samples from 20 distribution sites within TMWA's distribution system	Total THM = 100 ppb
Injection Rate (gpm) and Cumulative Volume (gal)	Recorded bi-weekly during injection cycle	Injection well, at totalizing flow meter capable of instantaneous readings located on wellhead, or electronic equipment capable of equivalent readings at another location	Monitor and Report
Water Levels (nearest one - tenth foot)	Monthly	Injection/Production wells, , MW-116C, TMW-01 (MW-118C), TMW-02 (MW-120A), TMW-03 (MW-121B), TMW-04 (MW-121C), MW-B1, TMW-05, TMW-06, TMW-07, TMW-08 TMW-09 and Red Rock Well (RRW)	Monitor and Report <sup>3</sup>

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9. Reporting:

A. Additional monitoring by Permittee:

If the permittee collects any other data than required by this permit, using approved analytical methods, the results of these analyses or measurements shall be included in any reports, as specified in item 8, to the State Engineer.

B. Quarterly Reports

The Permittee shall provide quarterly reports that include just a tabulation of the pumping information as described in item 7.

C. Semi-Annual Report

The Permittee shall provide a copy to this office of the semi-annual report filed with NDEP under their Permit No. UNEV99209 no later than August 31 of each year.

D. Annual Report:

The permittee must file with the State Engineer an annual report as required by NRS § 534.280. Each annual report will be due no later than January 31 of each year.

10. Recharge and Recovery Amount:

This permit for recharge shall be limited to no more than 1,000 acre-feet in any calendar year. The amount recovered during any calendar year shall not exceed the amount established by the State Engineer in the storage account for this project. The amount of recoverable water will be based on the information provided to the State Engineer in the Quarterly and Annual reports. Use of the recovered water shall be limited to Truckee Meadows Water Authority's certificated water service area and further to the terms set forth under this permit.

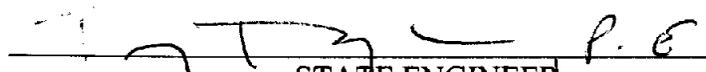
11. The State Engineer shall levy and collect an annual fee from the permittee as prescribed in NRS § 534.310.

12. The State Engineer reserves the right to change, modify or amend the terms and conditions of this permit based on just cause.

IN TESTIMONY WHEREOF, I Tracy Taylor, P.E., State Engineer of Nevada, have hereunto set my hand and the seal of my office for approval of this permit,

this \_\_\_\_\_ day of \_\_\_\_\_

A.D. \_\_\_\_\_,

  
STATE ENGINEER

ATTACHMENT "A"

Monitoring Wells For Recharge Wells

Recharge Well

Silver Lake (New) and Army Air Guard Wells

Monitoring Well

- MW-B1
- MW-116C
- TMW-01 (MW-118C)
- TMW-02 (MW-120A)
- TMW-03 (MW-121B)
- TMW-04 (MW-121C)
- TMW-05
- TMW-06
- TMW-07
- TMW-08
- TMW-09
- Red Rock Well (RRW)

**ATTACHMENT B**

<b>Characteristic</b>	<b>Symbol</b>	<b>Drinking Water Standard (mg/l)</b>
Alkalinity	HCO <sub>3</sub>	--
Aluminum	Al	0.05 – 0.2 (Advisory Standard)
Antimony	Sb	0.006
Arsenic	As	0.05 (0.010 starting 1/23/06)
Barium	Ba	2
Calcium	Ca	--
Chloride	Cl	400
Chromium	Cr	0.1
Color	Color units	15
Copper	Cu	1.3
Dissolved Oxygen	DO	--
Fluoride	F	4
Hardness	mg/l	--
Iron	Fe	0.6
Lead	Pb	0.015
Magnesium	Mg	150
Manganese	Mn	0.1
Mercury	Hg	0.002
Nickel	Ni	0.1
Nitrate as Nitrogen	NO <sub>3</sub> -N	10
Nitrite as Nitrogen	NO <sub>2</sub> -N	1
pH	Value	6.5 - 8.5
Potassium	K	--
Total Dissolved Solids	TDS	1000
Sodium	Na	--
Specific Conductance	µmhos/cm	--
Sulfate	SO <sub>4</sub>	500
Total Suspended Solids	TSS	--
Temperature	°C	--
Zinc	Zn	5

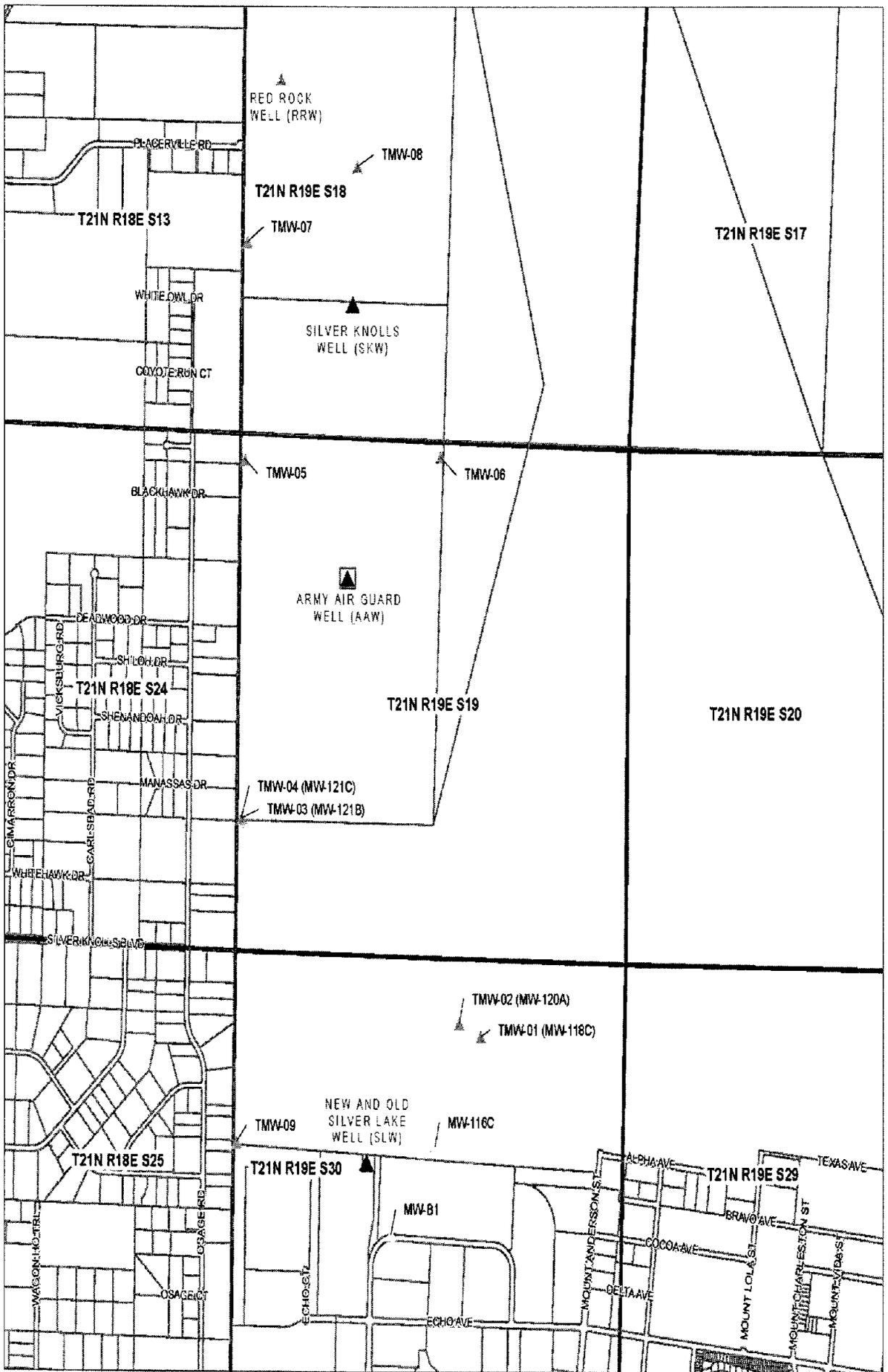
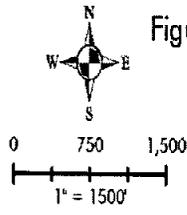


Figure 1: West Lemmon Valley Recharge Permit - Recharge and Monitoring Wells



- ▲ TMWA Production Well
- ▲ TMWA Monitoring Well
- ▲ Private Monitoring Well



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