

# ZION NATIONAL PARK WATER RIGHTS SETTLEMENT AGREEMENT

This Agreement is made and entered into by and among the United States of America (United States), the State of Utah (Utah), the Washington County Water Conservancy District (Washington District), and the Kane County Water Conservancy District (Kane District).

## RECITALS

A. Utah, pursuant to Chapter 4, Title 73, Utah Code Ann. 1953, as amended, initiated a statutory adjudication of water rights on July 21, 1980, in the Fifth Judicial District Court of the State of Utah in and for Washington County, Civil No. 800507596, which encompasses all the rights to the use of water, both surface and underground, within the drainage area of the Virgin River and its tributaries in Utah.

B. The United States has been joined as a party to this statutory adjudication pursuant to the provisions of 43 U.S.C. § 666. A "Statement of Water User's Claims on behalf of the United States of America on Lands Administered by the Department of the Interior, National Park Service, for Division No. 3," was filed on May 18, 1987.

C. In order to remove causes of present and future controversy over the waters of the Virgin River system without further litigation, the United States, Utah and the Washington and Kane Districts have conducted extensive negotiations regarding

the settlement of reserved water right claims filed by the United States for Zion National Park (or Park).

D. These negotiations have resulted in the recognition of the reserved water rights of the United States for Zion National Park and also the agreement of the United States to subordinate its reserved water rights to existing State water rights, and to allow for some potential future development of water above Zion National Park, as set forth herein.

E. Pursuant to the terms of this Agreement, the Washington District has agreed to abandon two major reservoir sites above Zion National Park, the Bullock site on the Upper North Fork Virgin River and a site in the Barracks area of Parunuweap Canyon on the East Fork Virgin River (East Fork). Steps have also been taken which have resulted in the elimination of a proposal to divert water out of the Virgin River Basin from points above the Park. The Washington District has identified potential projects below the Park, which include: (1) the Sand Hollow Reservoir Project; (2) a collection system and pipeline to divert the flows of Pah Tempe (La Verkin) Springs; (3) securing a reduction in the minimum flows required in the Virgin River from 86 to 50 cubic feet per second (cfs) during the period of November 1 to March 31; and (4) the Ash Creek Project. A more detailed description of each of these four projects is set forth in the draft Virgin River Management Plan dated May 2, 1996.

F. The terms and provisions of the Zion National Park Settlement Agreement are set forth below.

NOW, THEREFORE, based on the mutual promises contained herein, the parties agree as follows:

## AGREEMENT

### Article I: Federal Reserved Water Rights for Zion National Park

A. To fulfill the purposes for which lands now comprising Zion National Park were reserved from the public domain, the United States has water rights for all federal lands within the present boundaries of Zion National Park that were reserved and withdrawn from settlement, occupancy, or disposal under the laws of the United States. This federal reserved water right originates and is defined in federal law. The aliquot part descriptions of these reserved lands are set forth in the applicable proclamations, executive orders, and legislation identified below and in Appendix A. The United States has a reserved right to all water underlying, originating within or flowing through Zion National Park, including perennial, intermittent, and ephemeral streams, springs, seeps, lakes, ponds, ground water, and other natural sources of water, pertaining or belonging to the reserved lands, that was unappropriated as of the dates of reservation of the lands now within the boundaries of the park, which waters are to remain in a free flowing condition, subject to present and future administrative uses necessary to fulfill reservation purposes. The date of priority for either in-stream or administrative uses of the United States' federal reserved water rights for Zion National Park will be the date on which the place of use was first reserved from the public domain.

B. By virtue of mesne conveyances and appropriations, the United States also holds state appropriative rights in wells, springs and surface diversions on streams, at the locations, in the amounts, and for the uses indicated in the table attached as Appendix B. Water diverted and used for present and future administrative purposes necessary to fulfill reservation purposes will first be satisfied from existing state appropriative rights held by the United States for Zion National Park. In addition to the water provided by the state appropriative rights listed in Appendix B, at least 466 acre-feet per year (AFY) may be diverted and used from those waters reserved for Park purposes, in order to satisfy the administrative needs of the Park. At least 180 days prior to placing any increment of this federal reserved water right for administrative purposes to use or changing the use thereof, the United States agrees to provide notice to the State Engineer concerning the location and means of diversion, the source, quantity, and diversion rate of water, depth and diameter of well (if applicable), the nature of use, the anticipated effective date, and a map depicting the existing system and proposed modifications. This information will be publicly available. The total amount of water available for Park administrative purposes under state and federal reserved rights combined shall not exceed 1295 AFY. The state appropriative rights identified in this paragraph and in Appendix B, and the federal reserved water rights for administrative purposes identified in this paragraph, are not subject to the subordination set forth in Article II.

C. The purposes for which Zion National Park was established and priority dates to water reserved therefor are as identified in Presidential Proclamation No. 877, 36

Stat. 2498, dated July 31, 1909; Presidential Proclamation No. 1435, 40 Stat.

1760, dated March 18, 1918; the Act of November 19, 1919, 41 Stat. 356;

Executive Order No. 4181, dated March 24, 1925; Executive Order No. 5037,

dated January 28, 1929; the Act of June 13, 1930; 46 Stat. 582; Presidential

Proclamation No. 2221, 50 Stat. 1809, dated January 22, 1937; the Act of July

11, 1956, 70 Stat. 527; the Act of February 20, 1960, 74 Stat. 4; the Antiquities

Act of June 8, 1906, 59 Stat. 225, 16 U.S.C. § 431; the Act of October 21,

1976, 90 Stat. 2732; and the National Park Service Establishment Act, 64 Stat.

535, 16 U.S.C. § 1. The purposes and uses of the reserved water rights include

the preservation of extraordinary examples of canyon erosion, preservation of the

area for scientific research, protection of objects of historic and scientific interest

and, pursuant to the National Park Service Establishment Act, conservation of "the

scenery and the natural and historic objects and the wild life therein and to provide

for the enjoyment of the same in such manner and by such means as will leave

them unimpaired for the enjoyment of future generations." 16 U.S.C. § 1.

Accordingly, for enforcement purposes, the federal reserved water right for Zion

National Park shall be deemed to comprise those waters in the Virgin River Basin as

set forth in Article I.A. and I.B., less those quantities subject to the subordinations

set forth below. The federal reserved water rights recognized hereby include all

water rights of every nature and description derived from the reserved water rights

doctrine, from all sources of water, both surface and underground, and includes all

types and kinds of uses whatsoever, and encompasses all claims asserted by or  
through the United States for Zion National Park as now constituted.

## Article II. Subordination of Federal Reserved Water Rights

A. The United States subordinates the non-administrative federal reserved water rights described in Article I.A., subject to the limitations contained herein, to all valid existing perfected water rights and approved applications with priority dates prior to January 1, 1996, and to certain new diversions and depletions, as set forth more specifically below.

### B. Generally

1. No reservoir shall be located upstream of Zion National Park on the main stems of the East Fork, the North Fork of the Virgin River (North Fork), La Verkin Creek, Deep Creek, Crystal Creek, or on any tributary of the North Fork or East Fork, except as specifically provided herein.

2. Any flood control structure constructed upstream of the Park shall be designed only to attenuate high flows which are dangerous to life or property. The parties agree to consult on flood control proposals and will develop operational guidelines by mutual consent which are consistent with this Agreement and which will protect the resources of Zion National Park.

3. A ground water protection zone shall be established as shown in Appendix C for the drainage basins of the East and North Forks, located up gradient and

within 2 miles of the park boundary. Development of ground water within this zone shall be limited to a diversion rate of 35 gallons per minute (gpm) or less per well, shall withdraw no more than 15 AFY per well, and is subject to the overall limitations on depletions contained in Articles II.C.1. and II.D.1., respectively.

C. North Fork of the Virgin River and Certain Other Streams

1. Subject to the limitations contained herein, the United States' subordination extends to new diversions and depletions from surface and ground water sources of up to but not to exceed a total depletion of 6,000 AFY, with no more than 2,500 AFY occurring from surface water, within the composite comprising the drainage basin of the North Fork above the southern boundary of Zion National Park near Springdale, Utah, and the portions of the drainage basins of Ash Creek, La Verkin Creek, North Creek, and Shunes Creek located upstream of Zion National Park (see Appendix D), distributed as described below.

a) There may be up to 3,750 AFY of new depletion in the drainage basin of the Upper North Fork (North Fork Virgin River above the confluence with Deep Creek), Crystal Creek, Deep Creek, and Kolob Creek, with no more than 1,000 AFY occurring in each the Upper North Fork and Crystal Creek, no more than 2,000 AFY in Kolob Creek, and no more than 750 AFY in Deep Creek (excluding Crystal Creek) with a maximum of 250 AFY being taken from surface water in Deep Creek, resulting from the new development of water resources, except that

i) if the Washington District develops a project which diverts Crystal Creek flows to Kolob Reservoir (Water Right Number 81-355, A29398 or

other subsequent application filed to cover this project) and such diversions exceed 1,000 AFY, then no other new depletions within the Crystal Creek drainage are allowed. All depletion of water attributable to the Crystal Creek/Kolob Reservoir project shall be charged against the overall depletion limit of 6,000 AFY for the drainage basin of the North Fork Virgin River and other streams set forth in Article II.C.1.,

ii) the maximum diversion rate from Crystal Creek to Kolob Reservoir shall not exceed 50 cfs,

iii) the average annual diversion from Crystal Creek to Kolob Reservoir shall not exceed 4,000 acre-feet (AF) less any amounts exchanged to ground water development, based on a 5-year moving average,

iv) the maximum annual diversion from Crystal Creek shall not exceed 6,000 AF, less any amounts exchanged to ground water development,

v) the active storage capacity of Kolob Reservoir shall not be increased beyond its present capacity by more than 4,000 AF,

vi) the flow of Crystal Creek immediately below its confluence with Spanish Hollow shall be maintained at no less than 0.5 cfs when diversions are being made from Crystal Creek,

vii) new surface water diversions from Deep Creek and its tributaries downstream of the confluence of Deep Creek and Crystal Creek shall not cumulatively exceed 1 cfs,

viii) new surface water diversions on the Upper North Fork shall not exceed the lesser of a) one-half of the existing flow, measured immediately upstream of the diversion, or b) that rate of diversion which maintains a flow of 2 cfs in the channel immediately below the diversion,

ix) the regulated discharge from Kolob Reservoir shall not exceed 35 cfs, except for matters involving dam safety.

b) There may be up to 750 AFY of new depletion per drainage, with no more than 250 AFY per drainage from surface water, from La Verkin Creek, North Creek, and Orderville Canyon, and up to 250 AFY of new depletion per drainage from surface and groundwater combined, from Camp Creek, Clear Creek, Goose Creek, Echo Canyon, Shunes Creek, and Taylor Creek.

c) No new reservoirs upstream of the Park with individual total storage capacities of more than 20 AF shall be constructed in any of the drainages covered by Article II.C., with the exception of the proposed enlargement of Kolob Reservoir.

d) New reservoirs upstream of the Park with individual total storage capacities which are less than or equal to 20 AF and located in any of the drainages covered by Article II.C. shall not be limited as to number but shall be subject to the overall limitation upon depletion contained in Article II.C.1.

#### D. East Fork of the Virgin River

1. Subject to the limitations contained herein, the United States' subordination also extends to new diversions and depletions from surface and ground water sources in the East Fork upstream or up gradient of the eastern

boundary of Zion National Park, of up to but not to exceed a total depletion of  
2 5,000 AFY (see Appendix D), with no more than 3,250 AFY occurring from surface  
3 water, as set forth more specifically below.

4 a) One or more new reservoirs with cumulative active storage capacity  
5 of up to but not to exceed 6,750 AF may be constructed on Stout Creek, Lydia's  
6 Canyon, Muddy Creek or Cove Canyon (not both), East Fork above Stout Canyon,  
7 and on other tributaries of the East Fork upstream of Glendale (see Appendix E).

8 b) The number of new reservoirs at the locations described in Article  
9 II.D.1.a) above, having individual total storage capacities greater than 20 AF, shall  
10 not exceed 10.

11 c) New reservoirs with individual total storage capacities which are  
less than or equal to 20 AF shall not be limited as to number but shall be subject to  
13 the overall limitation upon depletion in Article II.D.1.

14 2. New surface water diversions on the East Fork or its tributaries shall not  
15 cumulatively exceed 60 cfs.

16 3. The existing flow or 2 cfs, whichever is less, shall be maintained  
17 immediately below any new surface water diversion to reservoirs constructed on  
18 streams defined in Article II.D.1.a).

19 4. The existing flow or 1 cfs (including seepage), which ever is less, shall be  
20 maintained immediately below any new reservoir constructed on streams defined in  
21 II.D.1.a).

5. Cumulative releases from new reservoirs constructed on streams defined in II.D.1.a) above, shall not increase the flow measured at the U.S. Geological Survey (USGS) gage on the East Fork Virgin River near Springdale (USGS No. 09404900), by more than 25 cfs during any 7-day period and shall not exceed the long-term monthly average at the Springdale gage by more than 15 cfs. As measured at said gage, the maximum instantaneous flow attributable to releases from such reservoirs shall not exceed 50 cfs, except for matters involving dam safety.

6. Surface water diversions to new reservoirs described in II.D.1.a) above shall not occur except during the period from November 1 to May 31, subject to the by-pass flow requirements described above.

### Article III: Other Provisions

A. During the month of March each year, a meeting will be scheduled between Zion National Park and the Washington District to discuss forecasted runoff, water levels in Kolob Reservoir and the anticipated schedule and duration for that year's reservoir releases. Other details concerning Kolob Reservoir releases will be worked out by separate agreement, if necessary.

B. This Agreement shall be effective immediately upon the completion of a land exchange between the U.S. Bureau of Land Management (BLM) and the Washington District, whereby the Washington District acquires title to BLM public lands at the site of the proposed Sand Hollow Reservoir.

1 C. If any federal legislative or administrative action hereafter prevents the State of  
2 Utah from permitting development and use of water in any drainage or subdrainage  
3 subject to the subordination of the United States' federal reserved water right for  
4 Zion National Park herein contained, the undeveloped remainder of the water herein  
5 listed as available for future development in such drainage or subdrainage shall be  
6 made available in one or more other drainages covered by this Agreement. In the  
7 event of such federal legislative or administrative action, the parties hereto shall  
8 attempt to agree as to the drainage or drainages in which any such relocated  
9 quantity may be developed and how the limitations of the United States'  
10 subordination will be modified to facilitate the transfer of such water, provided that  
11 such development must occur within the drainages herein identified, and that no  
12 party will unreasonably withhold consent to such relocation.

13 D. The subordination to listed quantities and locations of future water development  
14 shall not be effective to the extent and upon proof that specific wells have caused,  
15 are causing, or may cause specific and significant adverse impacts to an identifiable  
16 resource or resources of Zion National Park. This notwithstanding, the provisions  
17 of this paragraph shall not apply to any groundwater rights presently perfected or  
18 approved under State law, with priority dates prior to January 1, 1996.

19 E. If any provision of this Agreement is found to be unlawful and of no effect, the  
20 remaining provisions shall remain in effect and fully binding on the parties, and if  
21 necessary, the parties hereto shall resume negotiations to revise any such unlawful  
provision.

1 F. Upon a proper showing of necessity, the provisions of this Agreement may be  
2 modified, with proper notice and concurrence of the Court, only upon the mutual  
3 consent of the parties to this Agreement, which consent shall not be unreasonably  
4 withheld.

5 G. Because of the unique nature of Zion National Park, nothing in this Agreement  
6 shall constitute an admission, waiver or precedent as to any party for any other  
7 federal reserved water right claim in the State of Utah.

8 H. Nothing in this Agreement shall be construed or interpreted to:

9 1. in any way affect the water rights of the United States in the Virgin River  
10 Basin for agencies and interests other than Zion National Park;

11 2. establish any standard to be used for the quantification of federal reserved  
water rights in any other judicial or administrative proceeding;

13 3. limit in any way the rights of the parties or any person to litigate any issue  
14 or question not resolved by this Agreement;

15 4. restrict the power of the United States to reserve water in the future, or  
16 to acquire additional rights to the use of water under the laws of the State of Utah;

17 or

18 5. restrict the power of the State of Utah or the State Engineer in allocating,  
19 administering or distributing the waters of the State.

20 I. Upon becoming effective, this Agreement will be the subject of a separate  
21 proposed determination of water rights issued by the State Engineer specifically  
covering the portion of the Virgin River Basin encompassing Zion National Park, and

the parties hereto will cooperate to obtain an interlocutory decree covering same. If the parties hereto are not successful in securing such interlocutory decree, this Agreement shall nevertheless remain binding as among the parties hereto until a final decree issues covering these water rights. The water rights of the United States, as set forth and quantified herein, shall be protected under State law in the same manner as any water right originating under State law, without losing its character as or the attributes of a federal reserved water right as provided under federal law.

J. The provisions of this Agreement, and particularly the provisions of Article II hereof, shall be taken into consideration by the State Engineer in acting upon applications, under State law, for new appropriations or change applications upstream or up gradient of Zion National Park and shall be afforded the same consideration in such proceedings as state appropriative rights; however, the United States shall have the primary responsibility for protecting its own rights and for filing appropriate protests in any proceedings before the State Engineer.

K. Upon entry of a decree covering the water rights of the United States for Zion National Park, the East Entrance Well and the Taylor Creek Well, described in Appendix F, will be administered with priority dates of June 13, 1930, and January 22, 1937, respectively, pursuant to the terms of Article I.A., and the State appropriative water rights thereon will be withdrawn.

L. Upon written request from the United States, the State Engineer will provide information regarding new diversions and total depletions of water in the respective drainages above the Park pursuant to Article II of this Agreement.

M. Depletion amounts attributable to specific diversions, as well as to usage and storage patterns, shall be determined by procedures approved by the parties hereto.

N. This Agreement is executed in quintuplicate. Each of the five copies bearing original signatures shall be deemed an original.

#### Article IV: Definitions

**Acre-foot** - The amount of water necessary to cover one acre of land to a depth of one foot, equivalent to 43,560 cubic feet or 325,851 gallons.

**Active Storage Capacity** - The volume of water available for release from a reservoir between the bottom of the outlet and the bottom of the spillway. This shall not include any storage designated as dead storage or a conservation pool.

**Annual** - Period of time which begins on October 1 and ends on September 30 (water year).

**Depletion** - The amount of water which is consumptively used by any action or process or otherwise removed from a drainage basin and not returned thereto.

**Diversion** - The removal of water from its natural source by means of a dam, ditch,  
canal, flume, bypass, pipeline, conduit, well, pump, or other act of man, that  
results in a decrease in the amount of water in the source at the point of such  
removal.

**Existing Flow** - Annual, monthly and daily flows which exist as of the effective date  
of this Agreement, which reflect historical diversions and depletions associated  
with existing perfected water rights and approved applications (except for Water  
Right No. 81-355, A29398 on Crystal Creek), as determined from available stream  
gage records and accepted hydrologic methods.

**Ground Water** - Water beneath the surface of the earth in pores, crevices, and  
spaces in rock and soil, under saturated conditions and in sufficient quantities to  
supply water to wells, springs, seeps, rivers, streams, creeks, and natural lakes.

**New** - After January 1, 1996.

**Reservoir** - A man-made impoundment for storing water from which water may be  
withdrawn for beneficial purposes. Impoundments constructed solely for flood  
control or sediment retention are specifically excluded.

**Surface Water** - Water on the surface of the earth in rivers, streams, creeks,  
channels, lakes, reservoirs and other water bodies. Wells within the 500-year  
floodplain of the East and North Forks of the Virgin River, Camp Creek, Clear Creek,  
Crystal Creek, Deep Creek, Echo Canyon, Goose Creek, Kolob Creek, La Verkin  
Creek, Orderville Canyon, Shunes Creek, or Taylor Creek, which are less than 100  
feet in depth, shall be considered to draw from surface water.

**Year** - A calendar year commencing January 1 and ending December 31.

It being resolved and agreed to as delineated above, the undersigned parties

express their mutual agreement hereto this 4<sup>th</sup> day of December, 1996.

For the State of Utah:

For the United States:

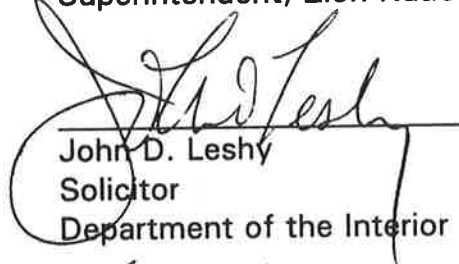
  
Michael O. Leavitt  
Governor, State of Utah

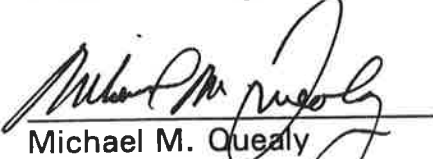
  
Bruce Babbitt  
Secretary of the Interior

  
Ted Stewart  
Director, Utah Department  
of Natural Resources

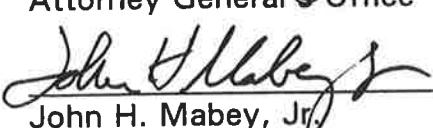
  
Donald Falvey,  
Superintendent, Zion National Park

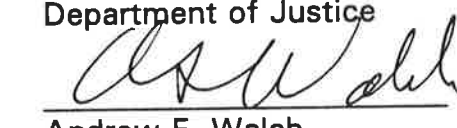
  
Robert L. Morgan,  
Utah State Engineer

  
John D. Leshy  
Solicitor  
Department of the Interior

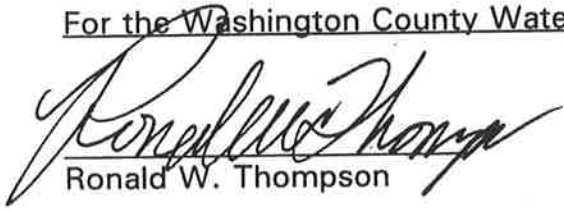
  
Michael M. Quealy  
Chief, Natural Resources  
Attorney General's Office

  
Lois J. Schiffer  
Assistant Attorney General  
Department of Justice

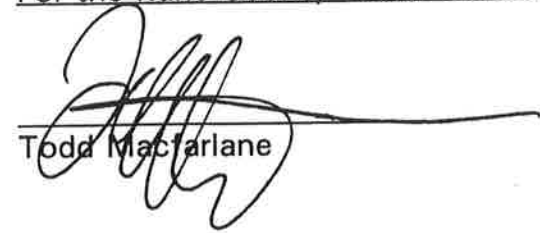
  
John H. Mabey, Jr.  
Assistant Attorney General

  
Andrew F. Walch  
Department of Justice

For the Washington County Water Conservancy District:

  
Ronald W. Thompson

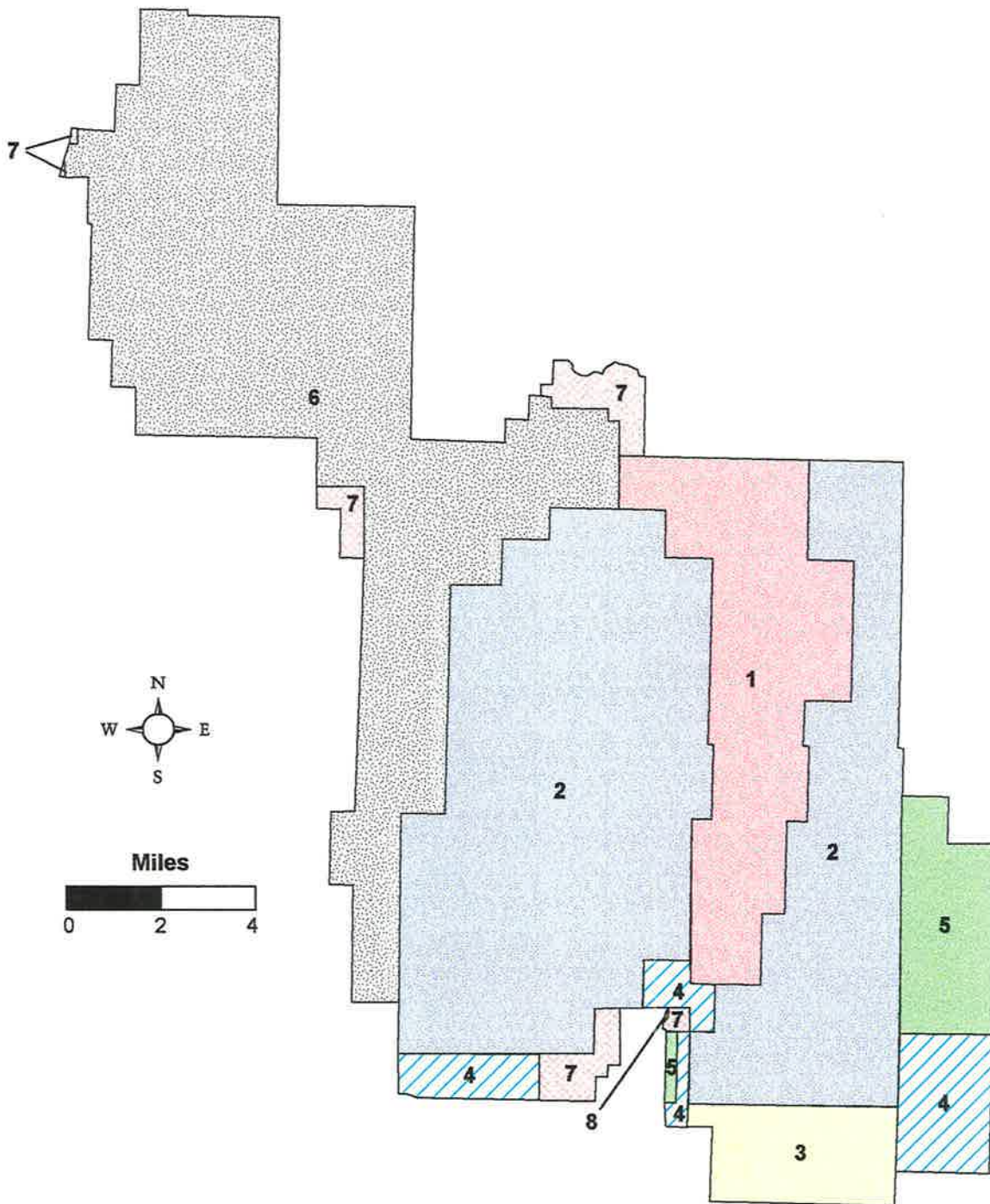
For the Kane County Water Conservancy District:

  
Todd Macfarlane

# APPENDIX A

## DATES OF LAND RESERVATIONS

### ZION NATIONAL PARK



#### **LEGEND: Lands Reserved from the Public Domain**

- 1** National Monument withdrawal by Presidential Proc. 877, dated July 31, 1909 (36 Stat. 2498). Designated a National Park by the Act of November 19, 1919 (41 Stat. 356).
- 2** National Monument withdrawal by Presidential Proc. 1435, dated March 18, 1918 (40 Stat. 1760). Designated a National Park by the Act of November 19, 1919 (41 Stat. 356).
- 3** National Monument withdrawal by Executive Order 4181, dated March 24, 1925. Designated a National Park by the Act of June 13, 1930 (46 Stat. 582).
- 4** National Monument withdrawal by Executive Order 5037, dated January 28, 1929. Designated a National Park by the Act of June 13, 1930. (46 Stat. 582)
- 5** Withdrawal for National Park by the Act of June 13, 1930 (46 Stat. 582).
- 6** National Monument withdrawal by Presidential Proc. 2221, dated January 22, 1937 (50 Stat. 1809). Designated a National Park by Act of July 11, 1956 (70 Stat. 527).
- 7** Added to and made part of the National Park by the Act of February 20, 1960 (74 Stat. 4).
- 8** Added to and made part of the National Park by the Act of October 21, 1976 (90 Stat. 2732).

**APPEAL B  
STATE APPROPRIATION WATER RIGHTS  
ZION NATIONAL PARK**

| WUC. No. | Right Evidenced By:                                 | Priority Date | Diversion Works                                                                                                                                                                                                               | Water Source                                                                                                                                                                              | Legal Location<br>(Salt Lake Basin & Meridian)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Type of Use                                       | Period of Use | Diversion Rate (cfs) | Irrigated Acres in Original Decree | Volume of Use** (acre-feet) |
|----------|-----------------------------------------------------|---------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------|---------------|----------------------|------------------------------------|-----------------------------|
| 81-1128  | CERT. a222, Award No. 66 of the Virgin River Decree | 1877          | [Zion Canyon Water System]*<br>CRAWFORD DITCH<br>GIFFORD DITCH<br>OAK CK. SPG. AREA<br>BIRCH CK. SPG. AREA<br>SINAWAVA SPRINGS<br>SCOUT LOOKOUT PIPELINE<br>UPPER GROTTA SPG. A.<br>LOWER GROTTA SPG.<br>WYLIE RETRT. SPG. A. | North Fk. Virgin R.<br>North Fk. Virgin R.<br>Oak Ck. Springs<br>Birch Ck. Springs<br>Sinawava Spg.<br>Scout Lookout Spg.<br>Upper Grotto Spg.<br>Lower Grotto Spg.<br>Wylie Retreat Spg. | N.50 deg. 29' E. 1998 ft. from NE Cor., Sec. 21, T41S, R10W<br>N.41deg.28'45" E. 4233.80 ft. from NE Corner, Sec.21, T41S, R10W<br>S.86deg.23' W. 8633.70 ft. from NE Corner, Sec. 21, T41S, R10W<br>N.21deg.56' E. 9151.95 ft. from NE Corner, Sec. 21, T41S, R10W<br>N.18deg.43' E. 27901.20 ft. from NE Corner, Sec. 21, T41S, R10W<br>N.16deg.59' E. 25095.34 ft. from NE Corner, Sec. 21, T41S, R10W<br>N.29deg.47' E. 17059.55 ft. from NE Corner, Sec. 21, T41S, R10W<br>N.31deg.39' E. 18223.11 ft. from NE Corner, Sec. 21, T41S, R10W<br>N.32deg.25'25" E. 13167.50 ft. from NE Corner, Sec. 21, T41S, R10W | MUNICIPAL                                         | 01/01-12/31   | 1.21                 | 66.7                               | 266.8                       |
| 81-1124  | CERT. a224, Award No. 63 of the Virgin River Decree | 1881          | [Zion Canyon Water System]*<br>Same As Cert. a222                                                                                                                                                                             | Same As Cert. a222                                                                                                                                                                        | Same As Cert. a222                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | MUNICIPAL                                         | 01/01-12/31   | 0.53                 | 29.4                               | 117.6                       |
| 81-1129  | CERT. a223, Award No. 65 of the Virgin River Decree | 1894          | [Zion Canyon Water System]*<br>Same As Cert. a222                                                                                                                                                                             | Same As Cert. a222                                                                                                                                                                        | Same As Cert. a222                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | MUNICIPAL                                         | 01/01-12/31   | 0.53                 | 29.0                               | 116                         |
| 81-117   | A10618<br>a1657<br>CERT. a221                       | 05/31/29      | [Zion Canyon Water System]*<br>Same As Cert. a222                                                                                                                                                                             | Same As Cert. a222                                                                                                                                                                        | Same As Cert. a222                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | MUNICIPAL                                         | 01/01-12/31   | 0.01                 | —                                  | 3.15                        |
| 81-3608  | Award No. 67 of the Virgin River Decree             | 1880          | FLANIGAN DITCH                                                                                                                                                                                                                | North Fk. Virgin R.                                                                                                                                                                       | S. 550 ft. and E. 950 ft. from the NW Corner, Sec. 22, T41N, R10W                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | IRRIGATION                                        | 01/01-12/31   | 1.38                 | 75.9                               | 303.6                       |
| 81-728   | DILIGENCE CLAIM No. 1031                            | 1900          | —                                                                                                                                                                                                                             | EARL SPRING                                                                                                                                                                               | S. 340 ft. and E. 900 ft. from NW Corner, Sec. 9, T40S, R11W                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | DOMESTIC & STOCKWATER                             | 03/01-11/30   | 0.092                | —                                  | 1.73                        |
| 81-113   | A8113<br>CERT. 1197                                 | 05/24/19      | —                                                                                                                                                                                                                             | UNNAMED SPRING                                                                                                                                                                            | S. 957 ft. and W. 841.5 ft. from NE Corner, Sec. 5, T40S, R11W                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | DOMESTIC                                          | 01/01-12/31   | 0.0002               | —                                  | 0.14                        |
| 81-327   | A28355 NPR                                          | 07/18/56      | 10 INCH DIAMETER WELL<br>68 FEET DEEP                                                                                                                                                                                         | SPENDLOVE WELL                                                                                                                                                                            | N. 1700 ft. and W. 600 ft. from SE Corner, Sec. 8, T40S, R11W                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | DOMESTIC                                          | 03/01-11/30   | 0.015                | —                                  | 0.34                        |
| 81-514   | A34289<br>a10851<br>Cert. 10754                     | 05/03/62      | 8 INCH DIAMETER WELL<br>925 FEET DEEP                                                                                                                                                                                         | EAST ENTRANCE WELL                                                                                                                                                                        | S.75 deg.54'20" W., 6382 ft. from N 1/4 cor Sec. 21 T41S, R9W                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | IRRIGATION,<br>STOCKWATER,<br>DOMESTIC &<br>OTHER | 01/01-12/31   | 0.0223               | —                                  | 10                          |
| 81-1373  | A36328a<br>a7522<br>Cert. 9697                      | 08/13/64      | 7 INCH DIAMETER WELL<br>367 FEET DEEP                                                                                                                                                                                         | HAMILTON WELL                                                                                                                                                                             | S.2810.7 ft. and E. 1857.4 ft. from E 1/4 cor Sec. 8, T40S, R11W                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | IRRIGATION & DOMESTIC                             | 01/01-12/31   | —                    | 0.25                               | 1.73                        |
| 81-662   | A36782<br>Approved<br>Proof filed 10/14/92          | 02/23/65      | 6 INCH DIAMETER WELL<br>206 FEET DEEP                                                                                                                                                                                         | TAYLOR CREEK WELL                                                                                                                                                                         | N. 3348 ft. and E. 2873 ft. from SW Corner, Sec. 29, T38S, R12W                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | DOMESTIC & OTHER                                  | 01/01-12/31   | 0.0688               | —                                  | 7.94                        |
|          |                                                     |               |                                                                                                                                                                                                                               |                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                   |               |                      | <b>Total Volume: 829 acre-feet</b> |                             |

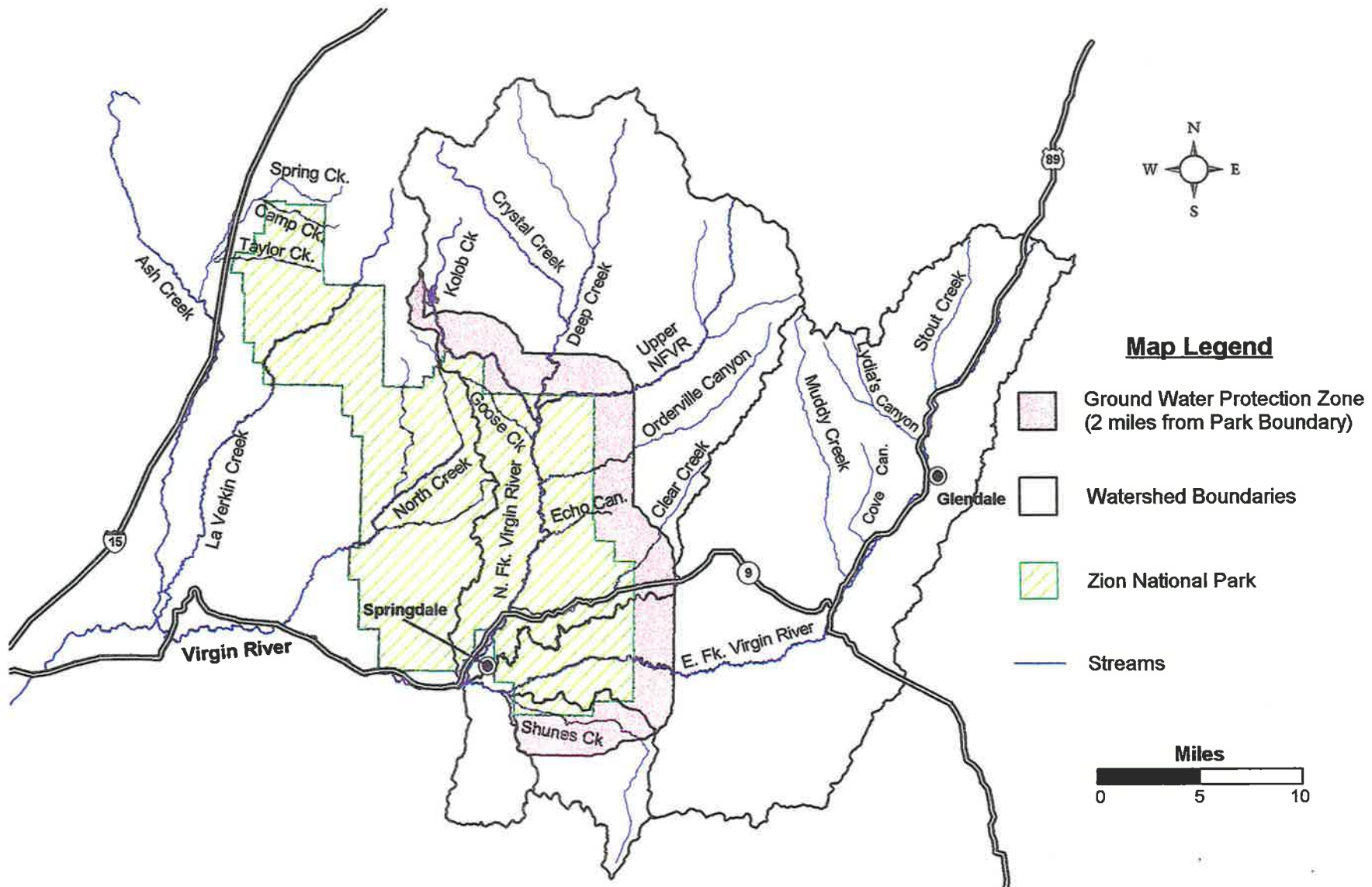
\* — Water is diverted from various sources and comingled in the ZION CANYON WATER SYSTEM. The water rights, as described in each of the individual certificates, entitles the United States to "...divert the water at any, each, or all of the... described points of diversion..."

\*\* — Water Right Volumes are calculated using the following assumptions:  
 —a water duty of 4 ac-ft per acre is used for irrigable land  
 —a value of 0.45 ac-ft per year per family of four is used for domestic use  
 —a value of 10 gallons per visitor is used for use by park visitors (EPA -570-9-82-004)  
 —a value of 2.8 ac-ft per one-hundred head of livestock is used for stockwater use

# APPENDIX C

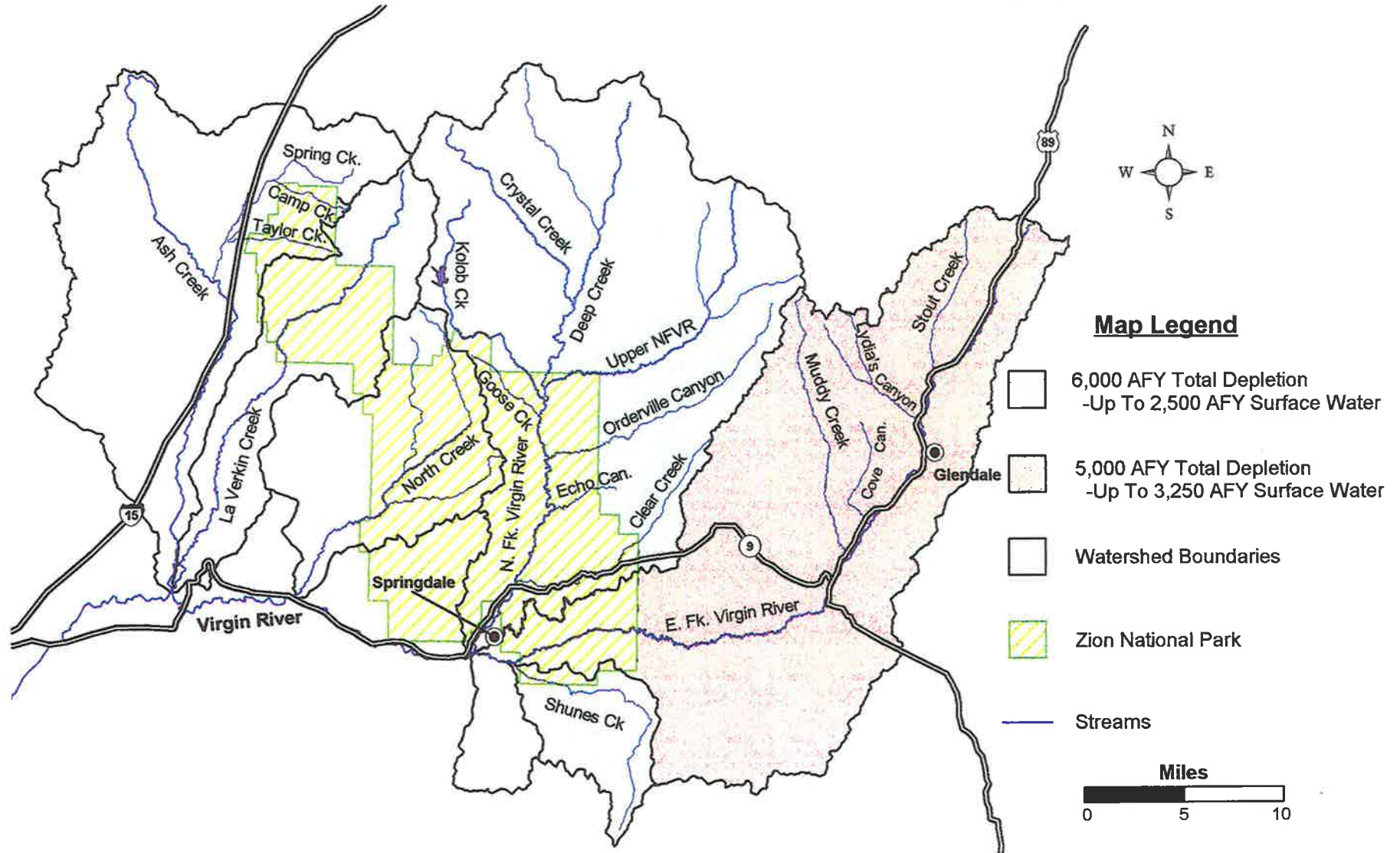
## GROUND WATER PROTECTION ZONE

### East and North Forks of the Virgin River

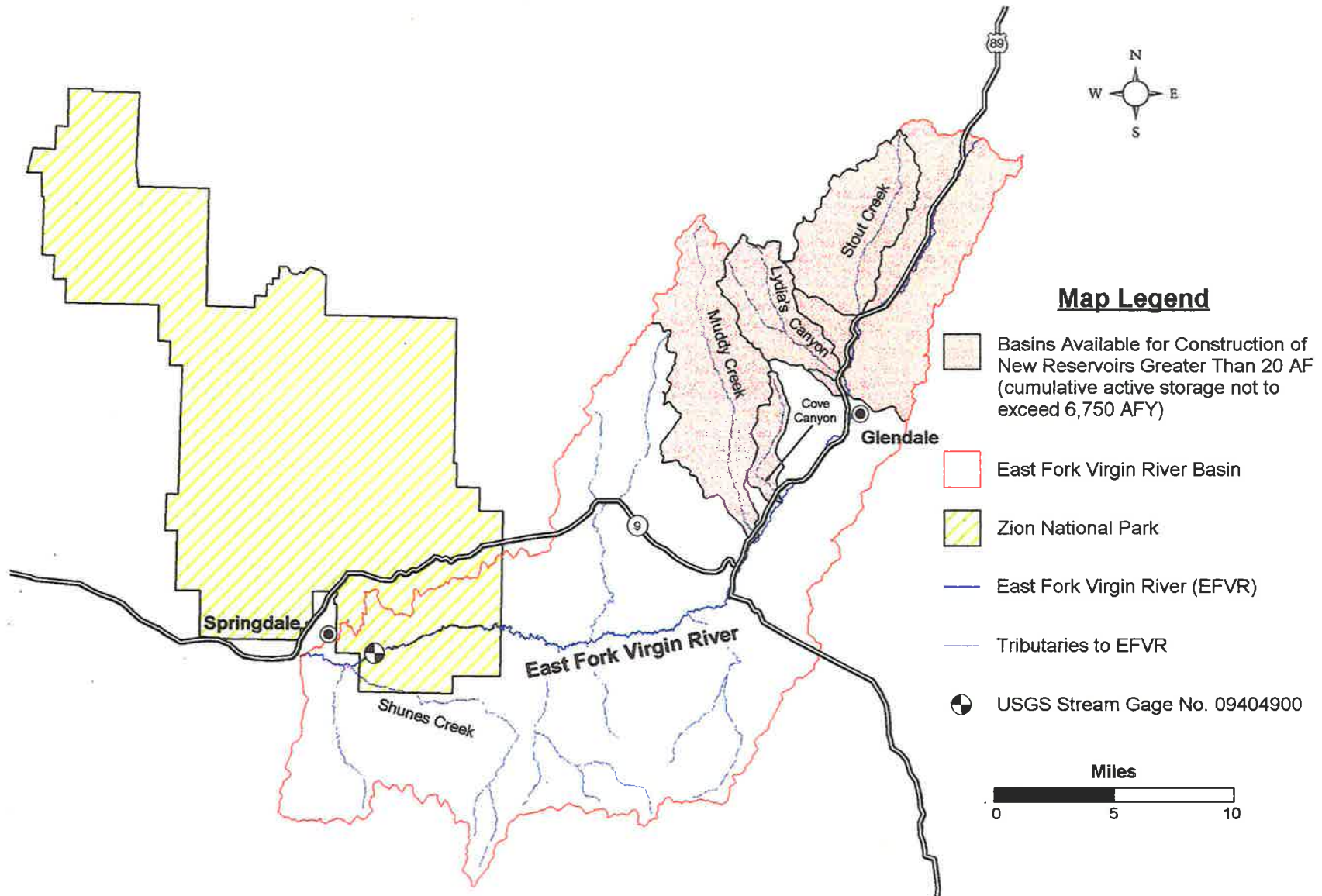


## APPENDIX D

### Allowable Depletion Levels for the East and North Forks of the Virgin River, and North, La Verkin and Ash Creeks, Draining Above, and Through, Zion National Park



**APPENDIX E**  
**Basins Available for Construction of New Reservoirs (Greater Than 20 Acre-Feet)**  
**East Fork Virgin River Above Zion National Park**



**APPENDIX F**  
**DIVERSION WORKS ASSOCIATED WITH FEDERAL RESERVED WATER RIGHTS**  
**ZION NATIONAL PARK**

| Water Source       | Diversion Works                       | Priority Date | Legal Location<br>(Salt Lake Basin & Meridian)                  | Type of Use                                       | Period of Use | Diversion Rate<br>(cfs) |
|--------------------|---------------------------------------|---------------|-----------------------------------------------------------------|---------------------------------------------------|---------------|-------------------------|
| EAST ENTRANCE WELL | 8 INCH DIAMETER WELL<br>925 FEET DEEP | 06/13/30      | S.75 deg.54'20" W., 6382 ft. from N 1/4 cor Sec. 21 T41S, R9W   | IRRIGATION,<br>STOCKWATER,<br>DOMESTIC &<br>OTHER | 01/01-12/31   | 0.0223                  |
| TAYLOR CREEK WELL  | 8 INCH DIAMETER WELL<br>206 FEET DEEP | 01/22/37      | N. 3348 ft. and E. 2873 ft. from SW Corner, Sec. 29, T38S, R12W | IRRIGATION,<br>DOMESTIC &<br>OTHER                | 01/01-12/31   | 0.0688                  |