

1 ZION NATIONAL PARK WATER RIGHTS SETTLEMENT AGREEMENT

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

6 RECITALS

7 A. Utah, pursuant to Chapter 4, Title 73, Utah Code Ann. 1953, as amended,
8 initiated a statutory adjudication of water rights on July 21, 1980, in the Fifth
9 Judicial District Court of the State of Utah in and for Washington County, Civil No.
10 800507596, which encompasses all the rights to the use of water, both surface
11 and underground, within the drainage area of the Virgin River and its tributaries in
12 Utah.

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

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

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

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

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

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

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

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

1 Stat. 2498, dated July 31, 1909; Presidential Proclamation No. 1435, 40 Stat.
2 1760, dated March 18, 1918; the Act of November 19, 1919, 41 Stat. 356;
3 Executive Order No. 4181, dated March 24, 1925; Executive Order No. 5037,
4 dated January 28, 1929; the Act of June 13, 1930; 46 Stat. 582; Presidential
5 Proclamation No. 2221, 50 Stat. 1809, dated January 22, 1937; the Act of July
6 11, 1956, 70 Stat. 527; the Act of February 20, 1960, 74 Stat. 4; the Antiquities
7 Act of June 8, 1906, 59 Stat. 225, 16 U.S.C. § 431; the Act of October 21,
8 1976, 90 Stat. 2732; and the National Park Service Establishment Act, 64 Stat.
9 535, 16 U.S.C. § 1. The purposes and uses of the reserved water rights include
10 the preservation of extraordinary examples of canyon erosion, preservation of the
11 area for scientific research, protection of objects of historic and scientific interest
12 and, pursuant to the National Park Service Establishment Act, conservation of "the
13 scenery and the natural and historic objects and the wild life therein and to provide
14 for the enjoyment of the same in such manner and by such means as will leave
15 them unimpaired for the enjoyment of future generations." 16 U.S.C. § 1.

16 Accordingly, for enforcement purposes, the federal reserved water right for Zion
17 National Park shall be deemed to comprise those waters in the Virgin River Basin as
18 set forth in Article I.A. and I.B., less those quantities subject to the subordinations
19 set forth below. The federal reserved water rights recognized hereby include all
20 water rights of every nature and description derived from the reserved water rights
21 doctrine, from all sources of water, both surface and underground, and includes all

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

3 Article II. Subordination of Federal Reserved Water Rights

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

9 B. Generally

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

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

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

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

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

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

14 a) There may be up to 3,750 AFY of new depletion in the drainage
15 basin of the Upper North Fork (North Fork Virgin River above the confluence with
16 Deep Creek), Crystal Creek, Deep Creek, and Kolob Creek, with no more than
17 1,000 AFY occurring in each the Upper North Fork and Crystal Creek, no more than
18 2,000 AFY in Kolob Creek, and no more than 750 AFY in Deep Creek (excluding
19 Crystal Creek) with a maximum of 250 AFY being taken from surface water in
20 Deep Creek, resulting from the new development of water resources, except that

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

1 other subsequent application filed to cover this project) and such diversions exceed
2 1,000 AFY, then no other new depletions within the Crystal Creek drainage are
3 allowed. All depletion of water attributable to the Crystal Creek/Kolob Reservoir
4 project shall be charged against the overall depletion limit of 6,000 AFY for the
5 drainage basin of the North Fork Virgin River and other streams set forth in Article
6 II.C.1.,

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

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

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

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

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

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

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

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

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

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

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

19 D. East Fork of the Virgin River

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

1 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
12 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).

1 5. Cumulative releases from new reservoirs constructed on streams defined
2 in II.D.1.a) above, shall not increase the flow measured at the U.S. Geological
3 Survey (USGS) gage on the East Fork Virgin River near Springdale (USGS No.
4 09404900), by more than 25 cfs during any 7-day period and shall not exceed the
5 long-term monthly average at the Springdale gage by more than 15 cfs. As
6 measured at said gage, the maximum instantaneous flow attributable to releases
7 from such reservoirs shall not exceed 50 cfs, except for matters involving dam
8 safety.

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

12 Article III: Other Provisions

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

18 B. This Agreement shall be effective immediately upon the completion of a land
19 exchange between the U.S. Bureau of Land Management (BLM) and the
20 Washington District, whereby the Washington District acquires title to BLM public
21 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
22 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
12 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
22 covering the portion of the Virgin River Basin encompassing Zion National Park, and

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

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

16 K. Upon entry of a decree covering the water rights of the United States for Zion
17 National Park, the East Entrance Well and the Taylor Creek Well, described in
18 Appendix F, will be administered with priority dates of June 13, 1930, and January
19 22, 1937, respectively, pursuant to the terms of Article I.A., and the State
20 appropriative water rights thereon will be withdrawn.

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

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

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

8 Article IV: Definitions

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

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

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

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

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

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

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

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

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

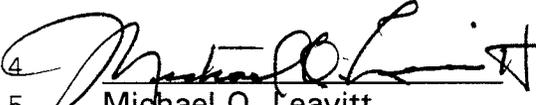
1 **Surface Water** - Water on the surface of the earth in rivers, streams, creeks,
2 channels, lakes, reservoirs and other water bodies. Wells within the 500-year
3 floodplain of the East and North Forks of the Virgin River, Camp Creek, Clear Creek,
4 Crystal Creek, Deep Creek, Echo Canyon, Goose Creek,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

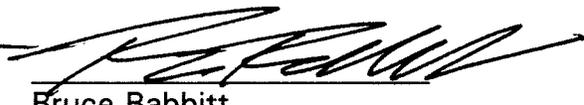
7 **Year** - A calendar year commencing January 1 and ending December 31.

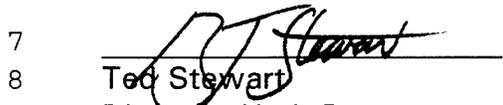
1 It being resolved and agreed to as delineated above, the undersigned parties
2 express their mutual agreement hereto this 4th day of December, 1996.

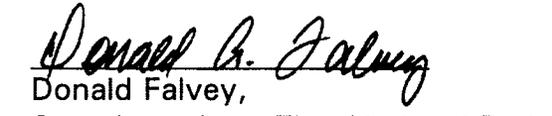
3 For the State of Utah:

For the United States:

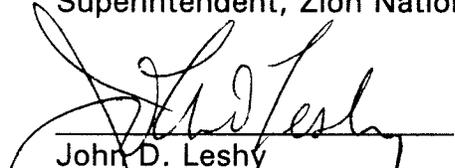
4 
5 Michael O. Leavitt
6 Governor, State of Utah

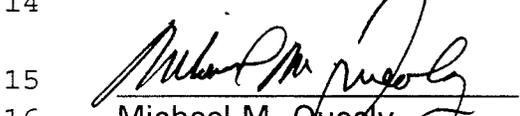

Bruce Babbitt
Secretary of the Interior

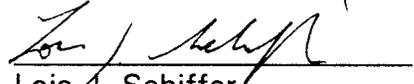
7 
8 Ted Stewart
9 Director, Utah Department
10 of Natural Resources

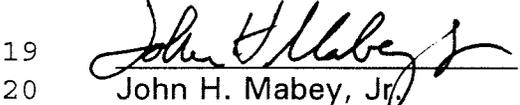

Donald B. Falvey,
Superintendent, Zion National Park

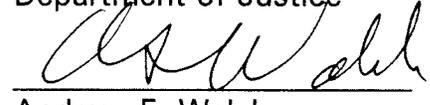
11 
12 Robert L. Morgan,
13 Utah State Engineer


John D. Leshy
Solicitor
Department of the Interior

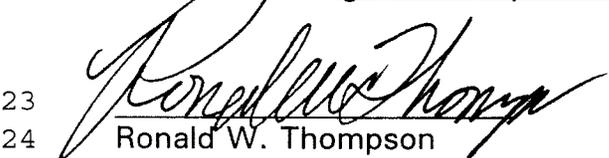
15 
16 Michael M. Quealy
17 Chief, Natural Resources
18 Attorney General's Office


Lois J. Schiffer
Assistant Attorney General
Department of Justice

19 
20 John H. Mabey, Jr.
21 Assistant Attorney General


Andrew F. Walch
Department of Justice

22 For the Washington County Water Conservancy District:

23 
24 Ronald W. Thompson

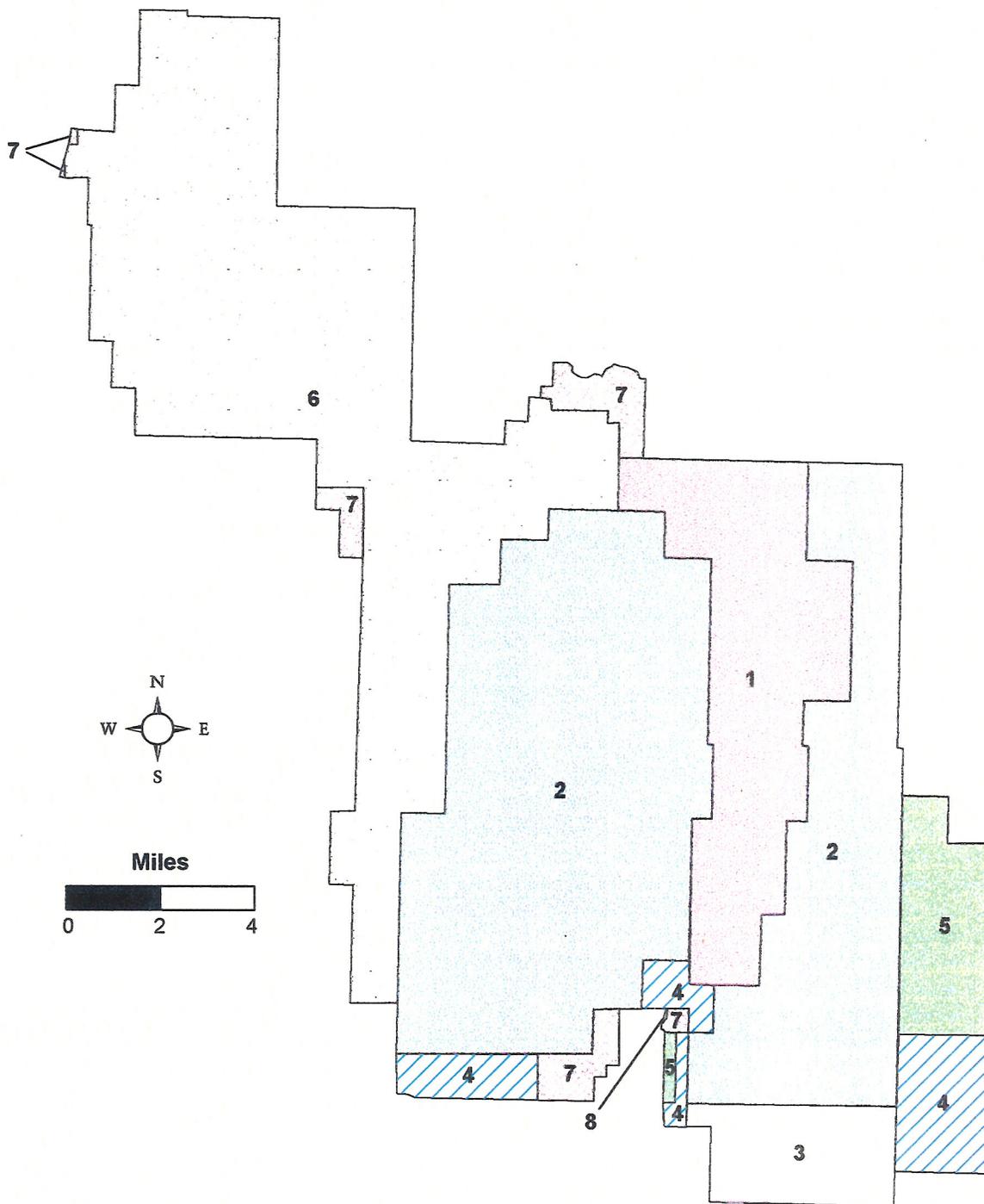
25 For the Kane County Water Conservancy District:

26 
27 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).

**APPENDIX B
STATE APPROPRIATIVE WATER RIGHTS
ZION NATIONAL PARK**

WUC. No.	Right Evidenced By:	Priority Date	Diversion Works	Water Source	Legal Location (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]* CRAWFORD DITCH GIFFORD DITCH OAK CK. SPG. AREA BIRCH CK. SPG. AREA SINAWAVA SPRINGS SCOUT LKOUT PIPELINE UPPER GROTTTO SPG. A. LOWER GROTTTO SPG. WYLIE RETRT. SPG. A.	North Fk. Virgin R. North Fk. Virgin R. Oak Ck. Springs Birch Ck. Springs Sinawava Spg. Scout Lookout Spg. Upper Grotto Spg. Lower Grotto Spg. Wylie Retreat Spg.	N.50 deg. 29' E. 1998 ft. from NE Cor., Sec. 21, T41S, R10W N.41deg.28'45" E. 4233.80 ft. from NE Corner, Sec.21, T41S, R10W S.86deg.23' W. 8633.70 ft. from NE Corner, Sec. 21, T41S, R10W N.21deg.56' E. 9151.95 ft. from NE Corner, Sec. 21, T41S, R10W N.18deg.43' E. 27901.20 ft. from NE Corner, Sec. 21, T41S, R10W N.16deg.59' E. 25095.34 ft. from NE Corner, Sec. 21, T41S, R10W N.29deg.47' E. 17059.55 ft. from NE Corner, Sec. 21, T41S, R10W N.31deg.39' E. 18223.11 ft. from NE Corner, Sec. 21, T41S, R10W 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]* 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]* 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 a1657 CERT. a221	05/31/29	[Zion Canyon Water System]* 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 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 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	A34269 a10851 Cert. 10754	05/03/62	8 INCH DIAMETER WELL 925 FEET DEEP	EAST ENTRANCE WELL	S.75 deg.54'20" W., 6382 ft. from N 1/4 cor Sec. 21 T41S, R9W	IRRIGATION, STOCKWATER, DOMESTIC & OTHER	01/01-12/31	0.0223	---	10
81-1373	A36328a a7522 Cert. 9697	08/13/64	7 INCH DIAMETER WELL 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 Approved Proof filed 10/14/92	02/23/65	6 INCH DIAMETER WELL 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

Total Volume: 829 acre-feet

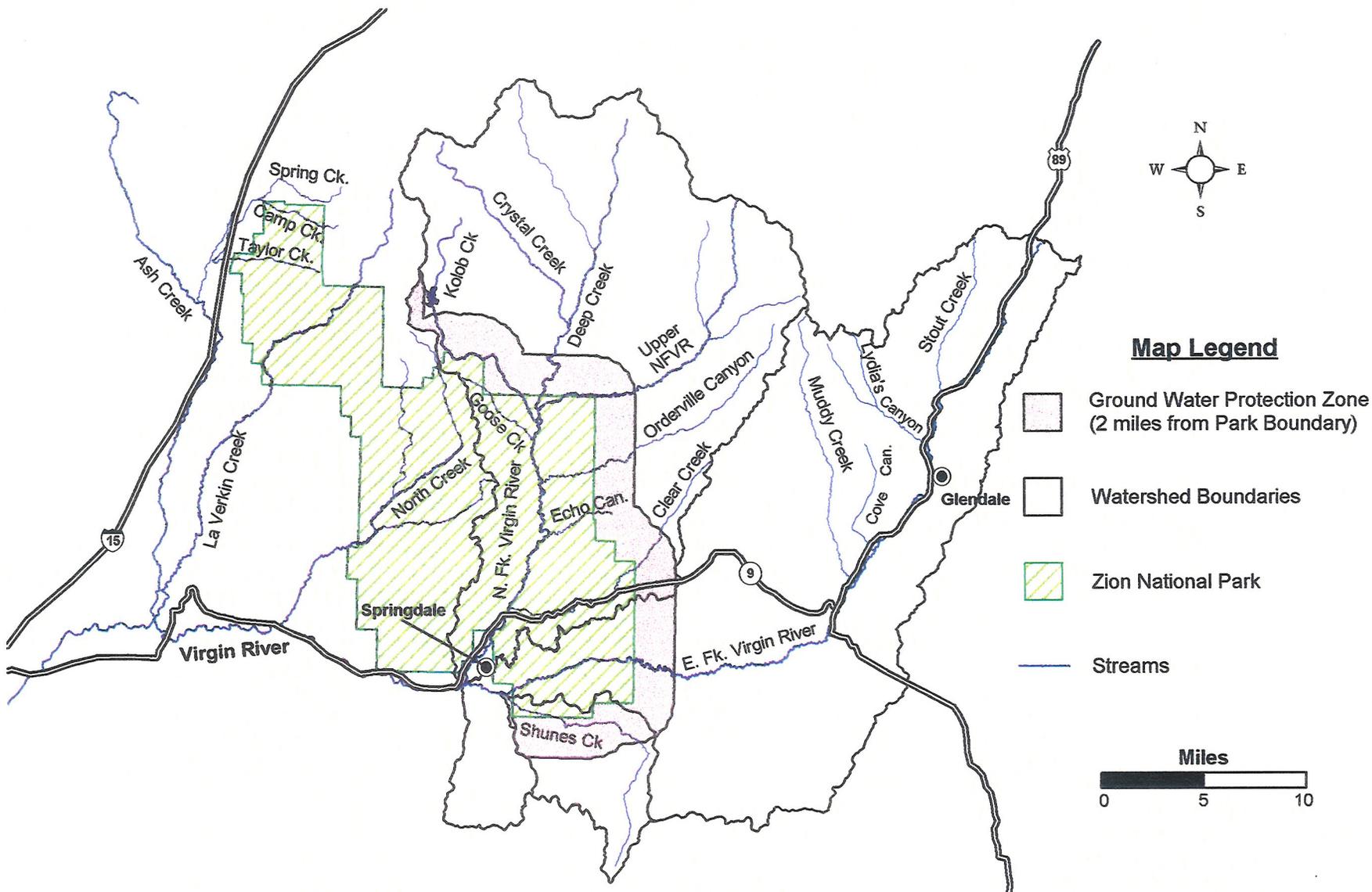
* -- Water is diverted from various sources and comingled in the ZION CANYON WATER SYSTEM. The water rights, as described in each of the individual certificates, entitles the United States to "...divert the water at any, each, or all of the... described points of diversion...".

** -- 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

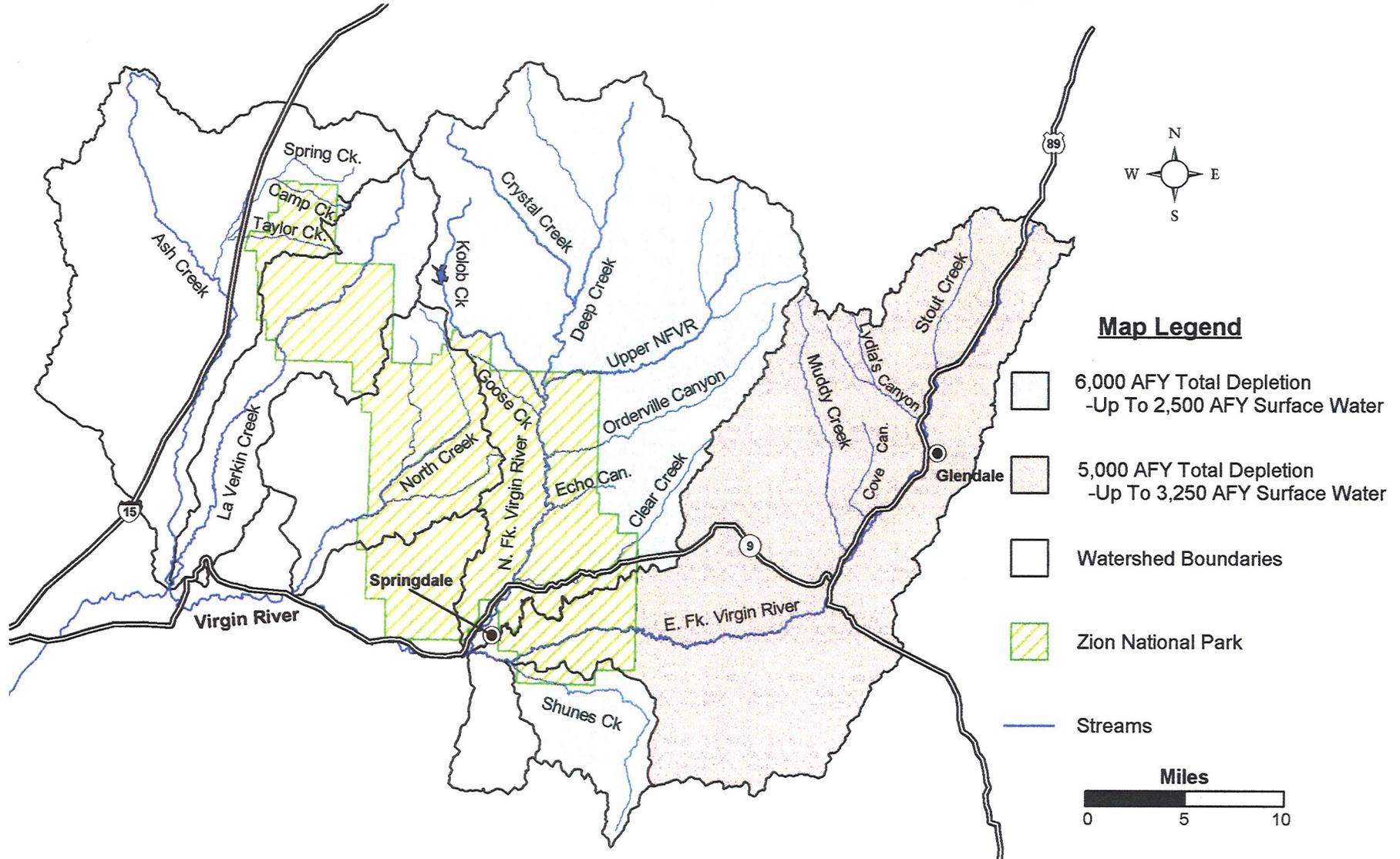
GROUND WATER PROTECTION ZONE

East and North Forks of the Virgin River



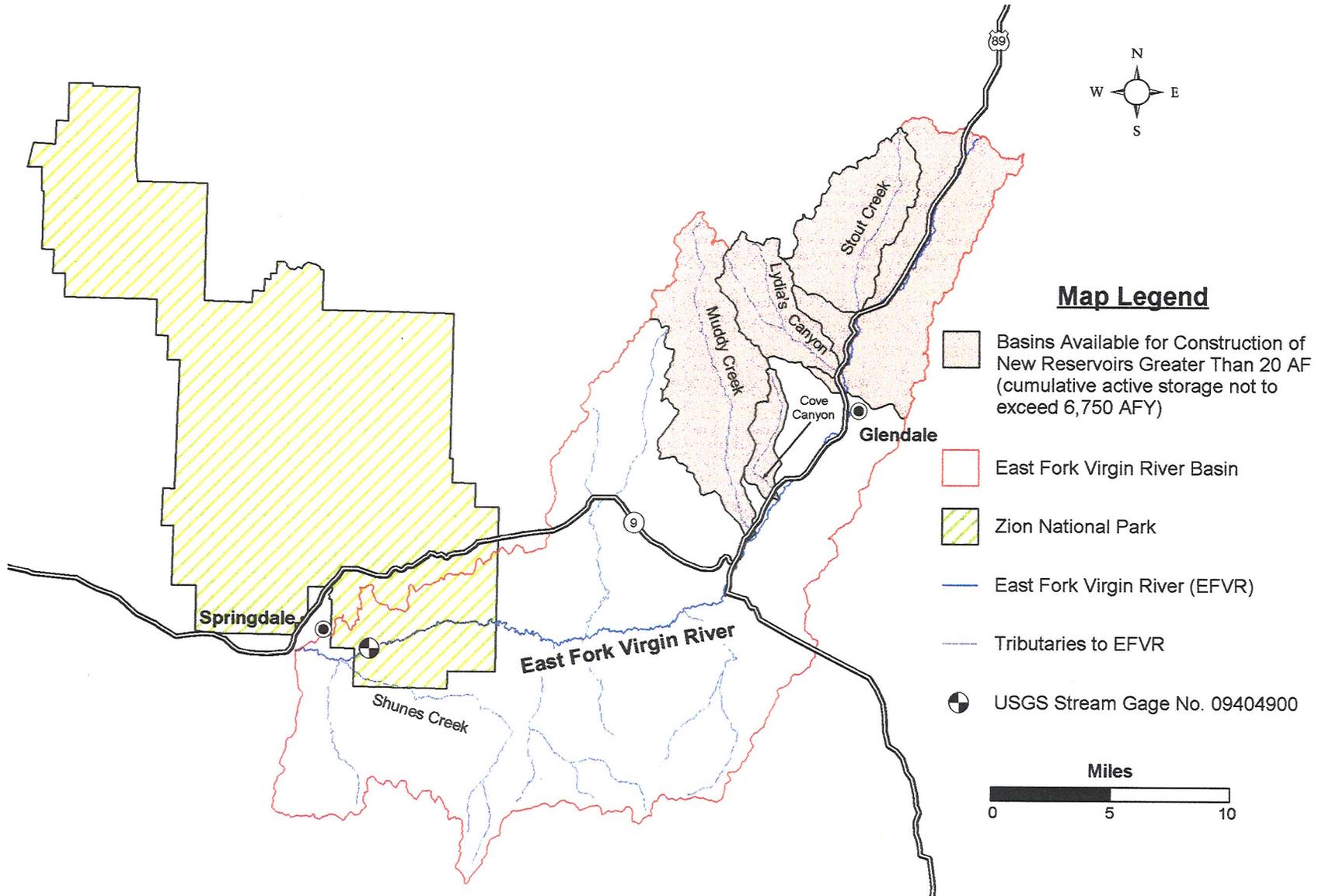
APPENDIX D

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