Douglas County Workshop

January 18, 2022

Michael Sullivan

CDWR

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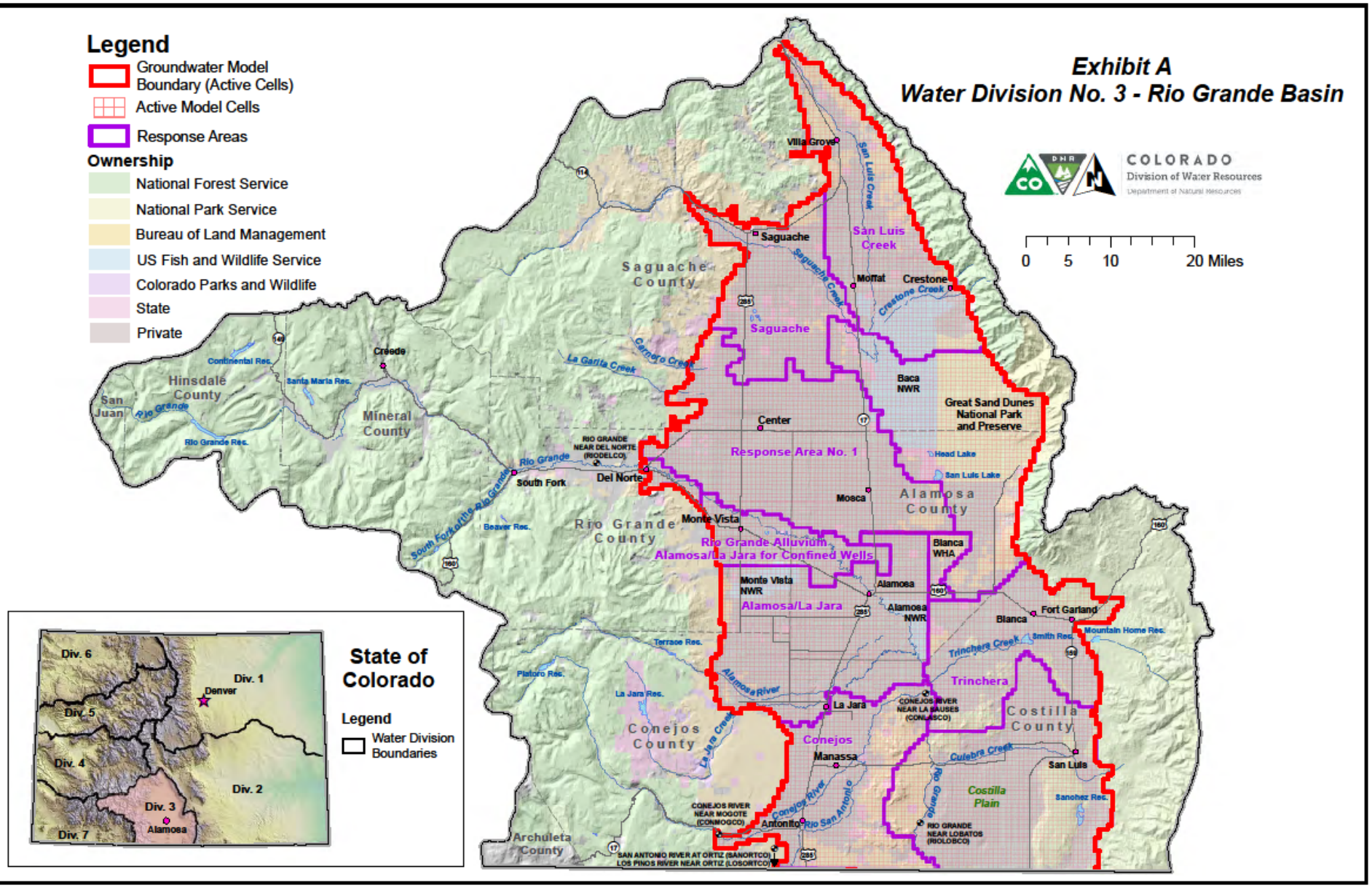
Department of Natural Resources

Division 3


Legend
Groundwater Model Boundary (Active Cells)
Active Model Cells
Response Areas
Ownership
National Forest Service
National Park Service
Bureau of Land Management
US Fish and Wildlife Service
Colorado Parks and Wildlife
State
Private
Exhibit A
Water Division No. 3 - Rio Grande Basin
COLORADO
Division of Water Resources
Department of Natural Resources
0 5 10 20 Miles
Saguache County
Hinsdale County
Mineral County
Rio Grande County
Alamosa County
Conejos County
Costilla County
Archuleta County
Response Area No. 1
Rio Grande Alluvium Alamosa/La Jara for Confined Wells
Alamosa/La Jara
Trinchera
Costilla Plain
Villa Grove
Saguache
Moffat
Crestone
Creede
Center
Mosca
Monte Vista
Alamosa
La Jara
Manassa
Antonito
San Luis
Fort Garland
Blanca
Del Norte
South Fork
Baca NWR
Great Sand Dunes National Park and Preserve
Monte Vista NWR
Alamosa NWR
Blanca WHA
Head Lake
San Luis Lake
Mountain Home Res.
Smith Res.
Sanchez Res.
Continental Res.
Santa Maria Res.
Rio Grande Res.
Beaver Res.
Terrace Res.
Platoro Res.
La Jara Res.
San Luis Creek
Saguache Creek
Crestone Creek
Carnero Creek
La Garita Creek
Trinchera Creek
Culebra Creek
Alamosa River
La Jara Creek
Conejos River
Rio San Antonio
Rio Grande
South Fork (Rio Grande)
RIO GRANDE NEAR DEL NORTE (RIODELCO)
CONEJOS RIVER NEAR LA SAUSES (CONLASCO)
CONEJOS RIVER NEAR MOGOTE (CONMOGCO)
RIO GRANDE NEAR LOBATOS (RIOLOBCO)
SAN ANTONIO RIVER AT ORTIZ (SANORTCO)
LOS PINOS RIVER NEAR ORTIZ (LOSORTCO)
State of Colorado
Legend
Water Division Boundaries
Div. 1
Div. 2
Div. 3
Div. 4
Div. 5
Div. 6
Div. 7
Denver
Alamosa

Surface Water Division 3

- Surface Water
  - Rio Grande
  - Conejos
  - Trinchera
  - La Jara
  - Alamosa
  - Closed Basin area
    - La Garita
    - Carnero
    - Saguache
    - Kerber
    - San Luis
      - Sangre Tributaries

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Surface Water

- Generally over-appropriated since ~1900
- Compact tends to limit supplies
- Hydrology highly variable
  - RioDelCo 1,000,000 - 150,000 af/yr
    - ave 640,000 af/yr
  - SagSagCo 88,000 - 18,000 af/yr
    - ave 47,000 af/yr
  - LajCapCo 30,000 – 1,340 af/yr
    - Ave 11,000 af/yr
  - CocRmiCo 12,000 – 3,720 af/yr
    - Ave 7,700 af/yr

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Surface Water

- Compact Requirements – Rio Grande
  - Index in-out relationship (increasing obligations)
  - Compact curtailments 365
  - Current litigation (TX v NM & CO) Original #141
- Costilla Compact
  - Priority administration

Groundwater Division 3

- Groundwater
  - Confined Aquifer
    - Underlies much of the valley
    - Fed by streamflows and recharge around edge
  - Unconfined Aquifer of the Closed Basin
    - North of the RG generally in SW portion of the basin
    - Fed by diversions from the Rio Grande and some tributary inflows
  - Alluvial Aquifers
    - Along the Rio Grande and Trinchera Creek
- All GW is tributary

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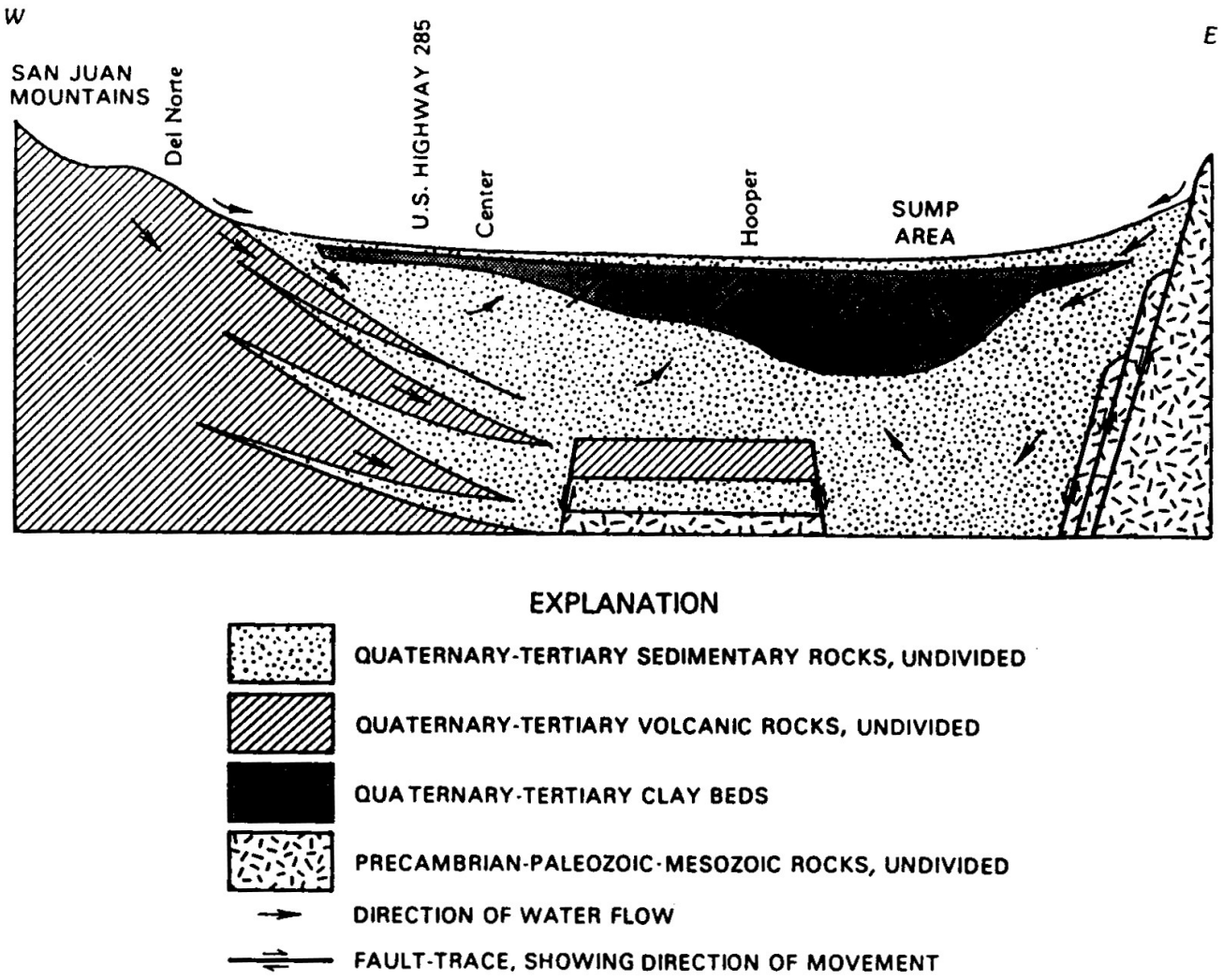
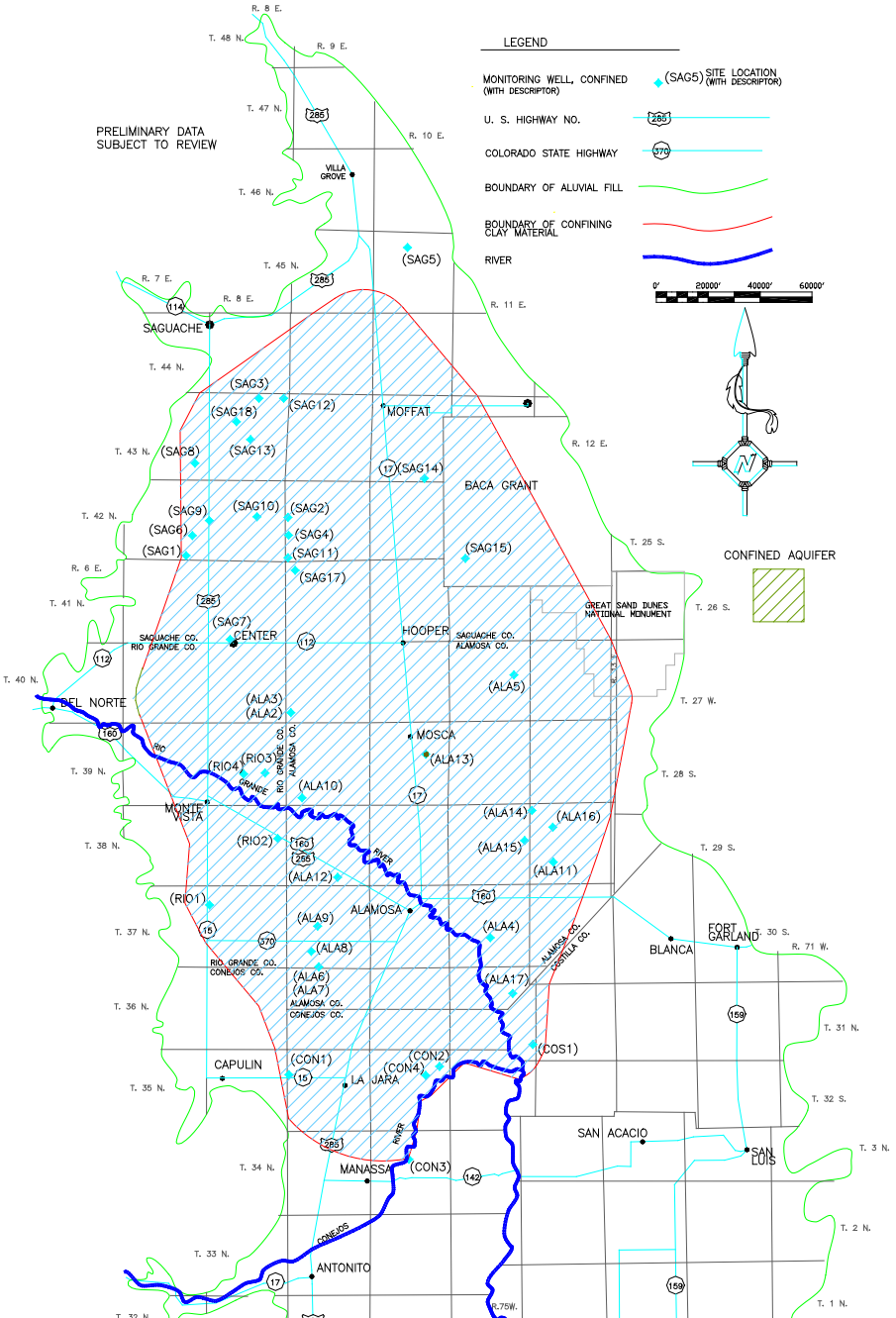
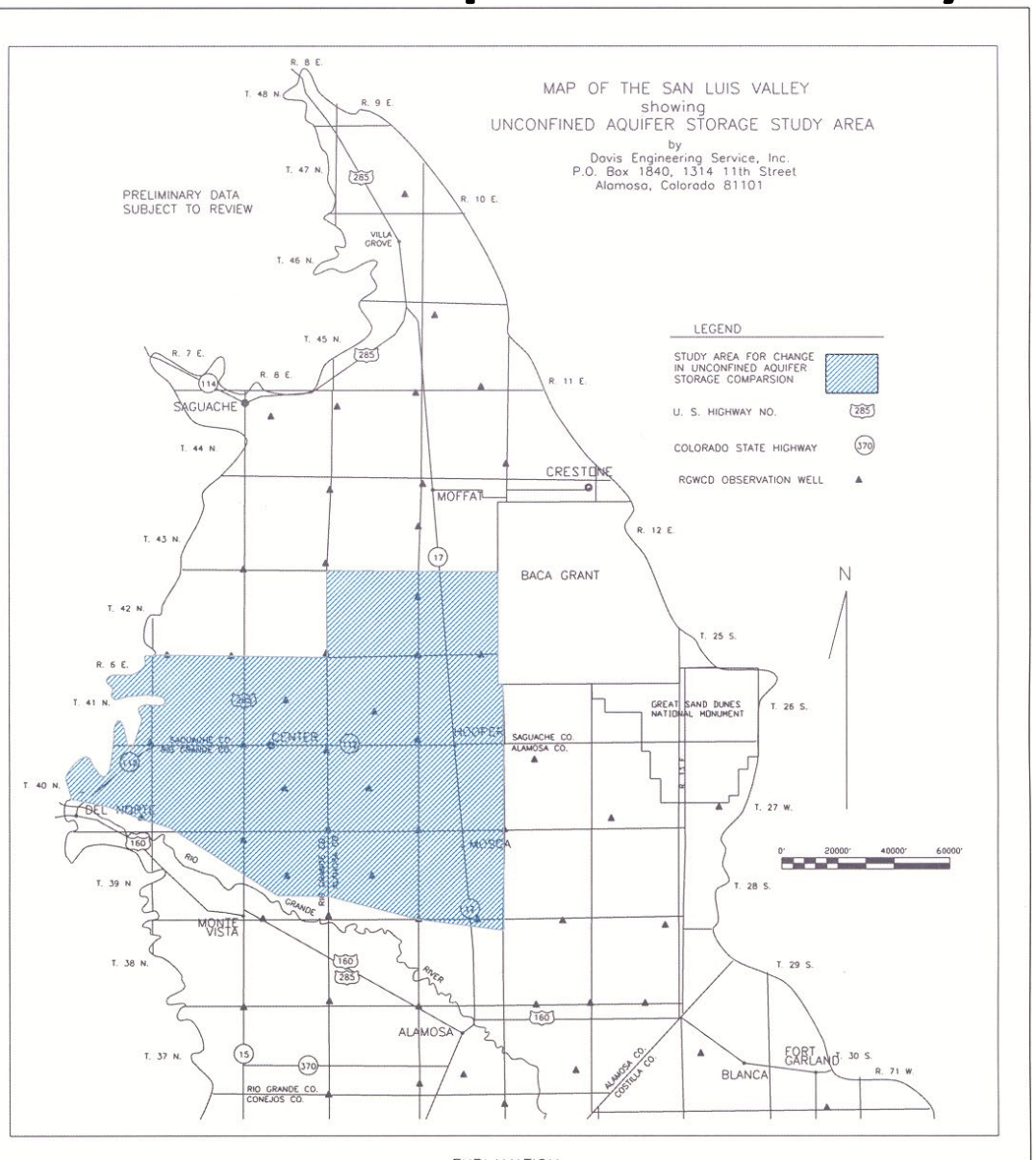


Figure 4.--Generalized west-to-east section across the Alamosa Basin.



MAP OF CONFINED AQUIFER (Illustrative)

Unconfined Aquifer Study Area



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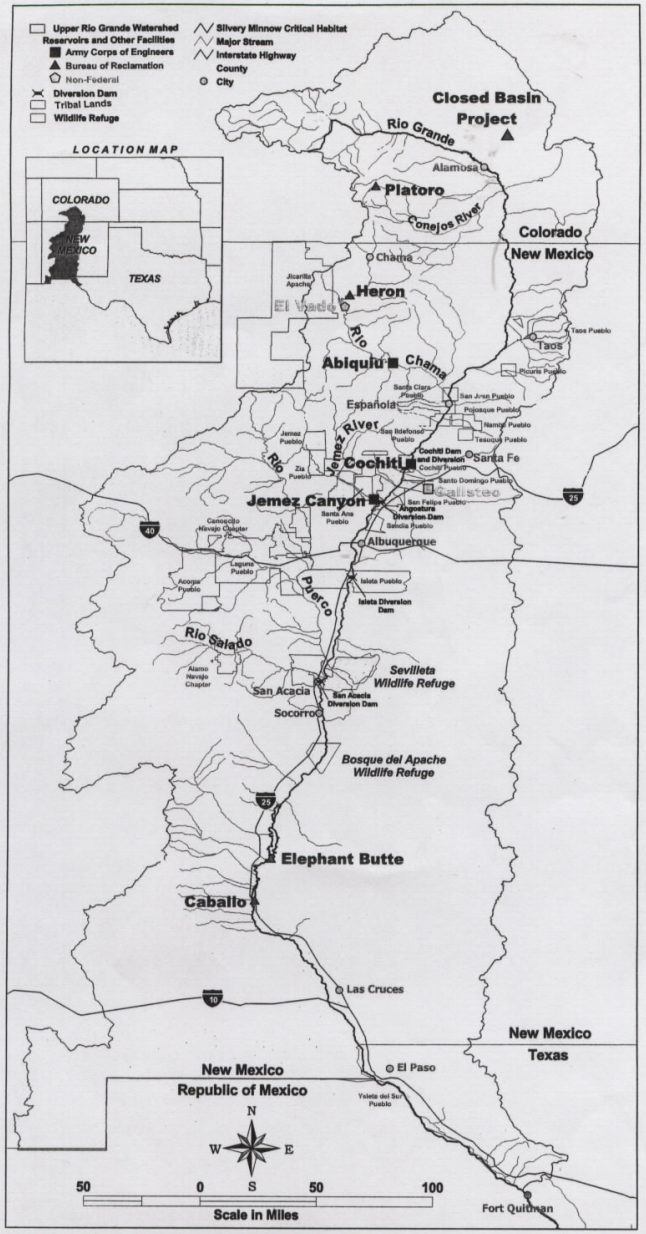

Upper Rio Grande Basin
Water Operations Review and EIS

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History

- 1967 - Interstate Litigation
- 1968 - Compact Administration begins
- 1972 - Moratorium on new wells in the Confined Aquifer
- 1981 - Moratorium on new wells in the Unconfined Aquifer of the Closed Basin
- 1998 – HB98-1011 (RGDSS)
- 2004 – SB04-222 (Rules)

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Rules

- Confined Aquifer New Use Rules (2004)
  - Any new well or a change of existing use: causes a change in rate or direction of flow of confined aquifer
    - 1:1 replacement via retired confined wells or injection
    - Not impact artesian pressures (78-2000 standard)
- Measurement Rules (2005)
  - All groundwater diversions require measurement/reporting
- Groundwater Use Rules (2015)
  - Remedy existing GW use impact to surface streams

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Groundwater Use Rules (1)

- Groundwater depletions impact surface water
- GW use Rules promulgated 2015, Effective 2019
- POWM or Augmentation Plan to remedy impacts
  - Annual Replacement Plan to SE
    - Short and Long term impact remedies
      - Multiple streams or reaches
      - 20 yr timeframe, remedy current and past pumping impacts
    - Sustainability requirements

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Groundwater Use Rules (2)

- Outside Model Domain (glover)
- Inside Model Domain (RGDSS GW Model)
  - 7 Response Areas (RA)
    - 7 POWM in place
    - Additional augmentation plans are in court
  - Response Functions
    - via RGDSS GW Model
    - Determines impacts to various streams and stream reaches from use in a RA
    - Stream impacts are not limited to within a RA

Groundwater Use Rules (3)

- Sustainability
  - Confined set by legislature
    - 1978-2000 average pressure maintained
      - At present RA is limited to average pumping from that period
    - 4 “confined” response areas (San Luis, Saguache, Conejos, Alamosa-La Jara
  - Unconfined
    - SD#1 – 200,000-400,000 below level of 1976
    - Trinchera – Limited pumping based on water level measurements
    - Alluvial (of the RG) – no storage volume available

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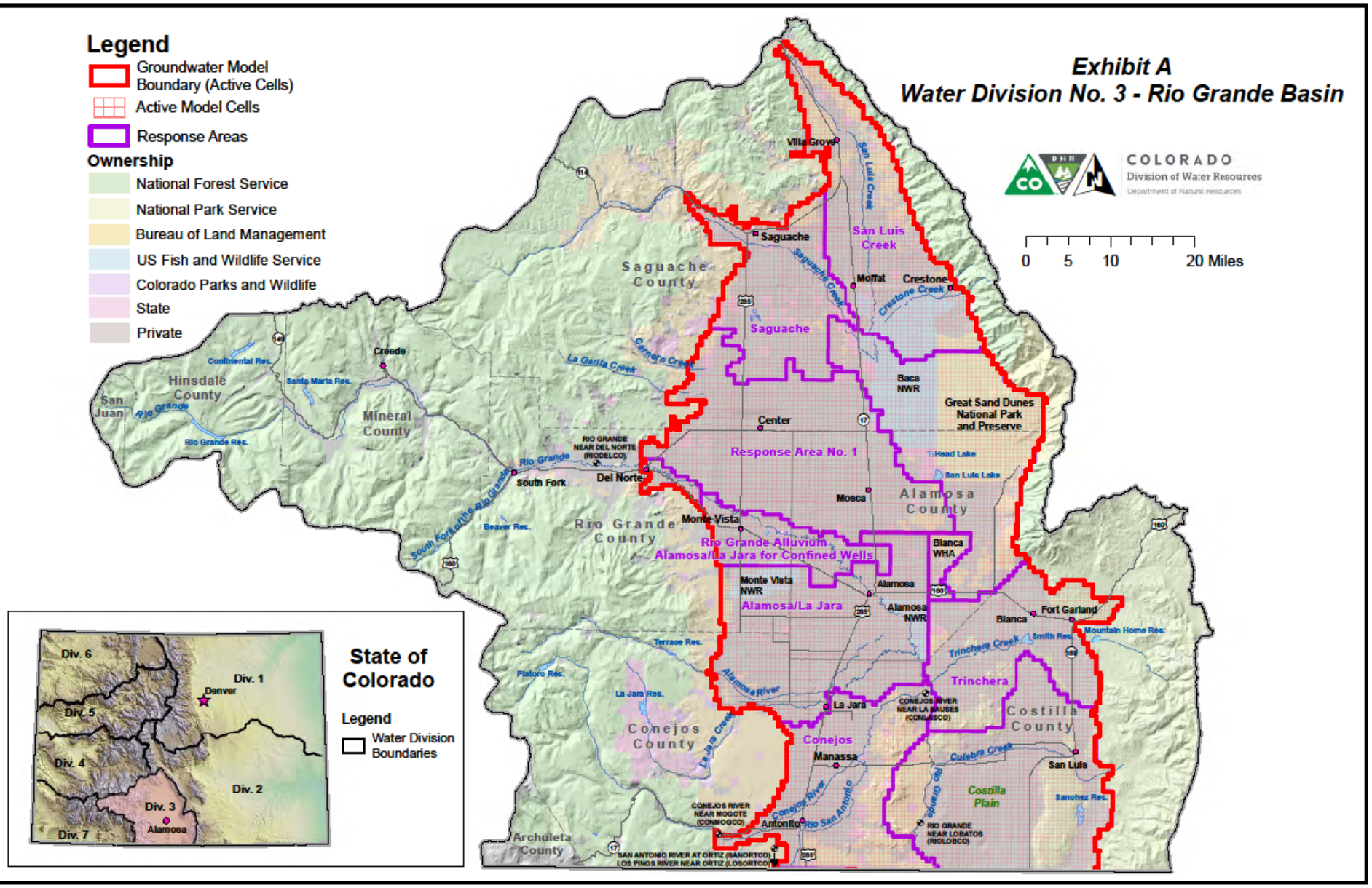
Groundwater Use Rules (4)

- Requires updates of RGDSS
  - In process
- Requires review and/or new RF's
  - Will review after updates complete

Division 3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Status

- 7 POWM in place
- 6 ARP in operation
- Augmentation plans in court (outside MD and inside)
- RGDSS is being updated
- RG Compact
  - Colorado in slight credit status
  - Active litigation with TX & NM

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Questions?

- Mike.Sullivan@state.co.us
- Additional information available at https://dwr.colorado.gov/

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