

November 14, 2024

Public Meeting - Emery/Johns Valley Appropriation Policy

Division of Water Rights



Teresa Wilhelmsen | State Engineer
Jim Reese | Assistant State Engineer
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Agenda

1. Welcome/Introduction
2. Summary of Groundwater Hydrology Study by UGS Staff
3. Water Rights Policy Discussion and Next Steps
4. Questions/Comments

*Division of Water Rights Discussion of
UGS Study*

Table 6. The valley-fill aquifer (VFA) water budget (in acre-feet per year)

Water Budget Results (ac-ft/yr)

¹ SWB = soil water balance.

² Assumes 3% runoff from south basin makes it past the diversion.

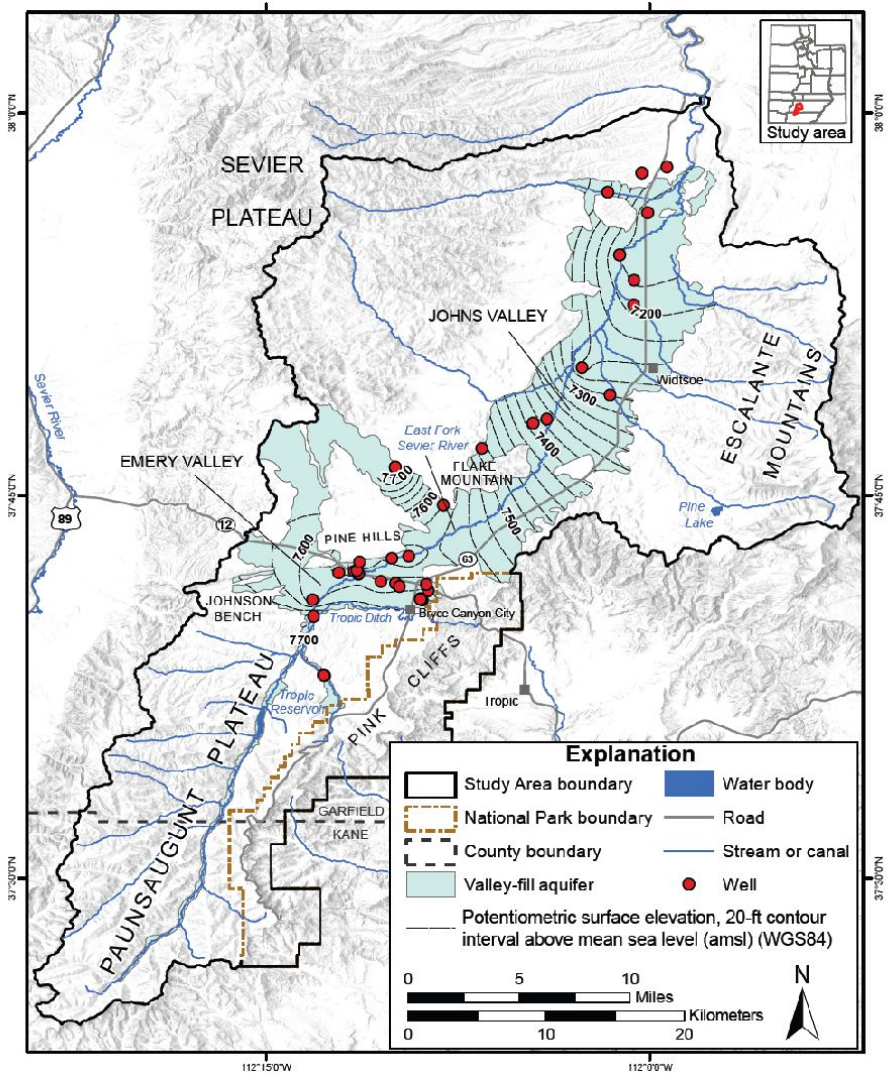
³ Assumes 100% of infiltration to bedrock adjacent to the VFA recharges the VFA eventually, as well as 9.5% upper bedrock area recharge.

⁴ Utah Division of Water Rights and Utah Division of Water Resources.

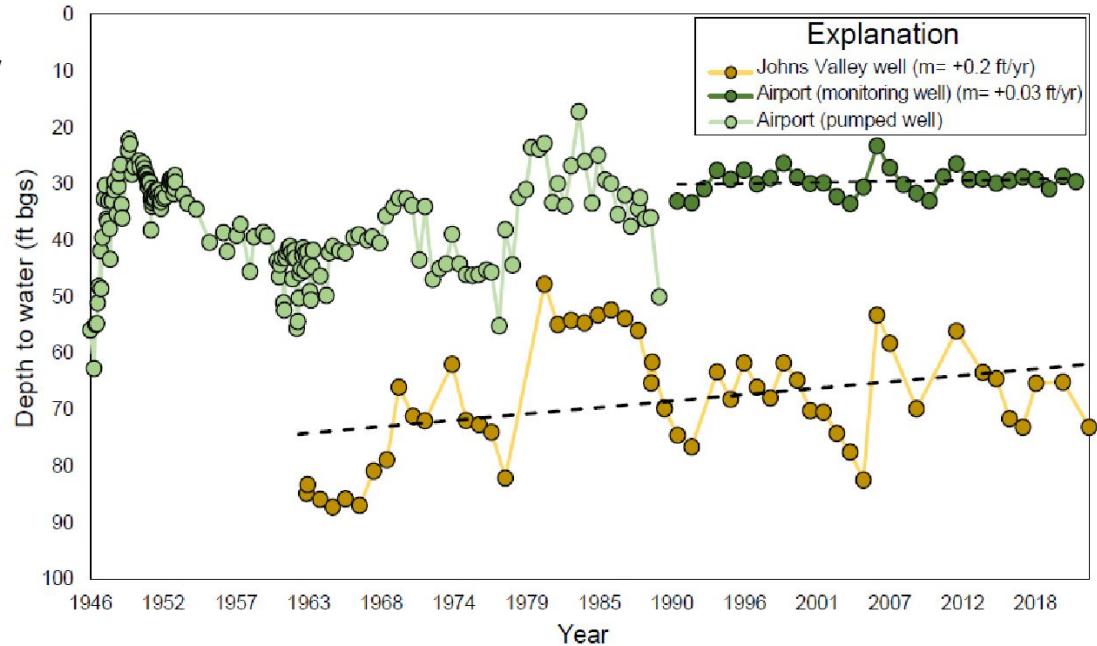
Recharge	2017	2018	2019	2020	2021	Averages	Source/Notes
Precipitation infiltration	678	191	2748	497	308	884	SWB model ¹
Recharge from septic tanks	62	62	62	62	62	62	36 domestic tanks and 3 large underground disposals
Recharge from surrounding runoff	3312	413	7054	2503	5549	3766	SWB model
Recharge from upper East Fork	81	8	178	29	114	82	SWB model ²
Interflow from above diversion that recharges VFA	-	0	16	6	0	6	Seepage runs and darcy equation range of 6-16 ac-ft/yr
Groundwater recharge from adjacent mountain bedrock	4005	400	12465	3664	1035	4391	SWB model ³
Total Recharge	8138	1074	22523	6761	7068	9190	
Discharge	2017	2018	2019	2020	2021	Averages	Source
Total phreatophyte evapotranspiration	6060	3654	6653	4274	4635	5055	
Wetlands	1918	1066	2162	1281	1474	1580	SWB model
Riparian	1929	1080	2057	1223	1385	1535	SWB model
Agriculture	2213	1508	2435	1770	1777	1940	SWB model
Pumping Total	346	361	375	342	369	358	
Public	296	311	325	292	319	308	Estimated from water rights ⁴
Domestic	50	50	50	50	50	50	Estimated from water rights ⁴
Groundwater Discharge to East Fork at North Boundary	4489	537	10976	3365	7435	5578	SWB
Total Discharge	10,895	4553	18005	7981	12,440	10,992	
Net Groundwater Change	-2757	-3479	4518	-1220	-5372	-1801	



- Figure 12. Potentiometric surface maps of water levels from wells. Overall direction of groundwater flow is north-northeast.
- Study area boundary includes both valleys.



- Figure 15. Long-term monitoring records of groundwater levels (depth below ground surface) measured at Johns Valley well and airport wells. The airport well record reflects active pumping until replacement in 1991, at which point it became a monitoring well
- Generally, these two wells indicate stable groundwater levels



Key Findings and Concerns

- Johns Valley
 - An average of 5,578 acre-feet (AF) of annual groundwater discharge at north boundary of the study area
 - How much of this discharge comes from Emery Valley?

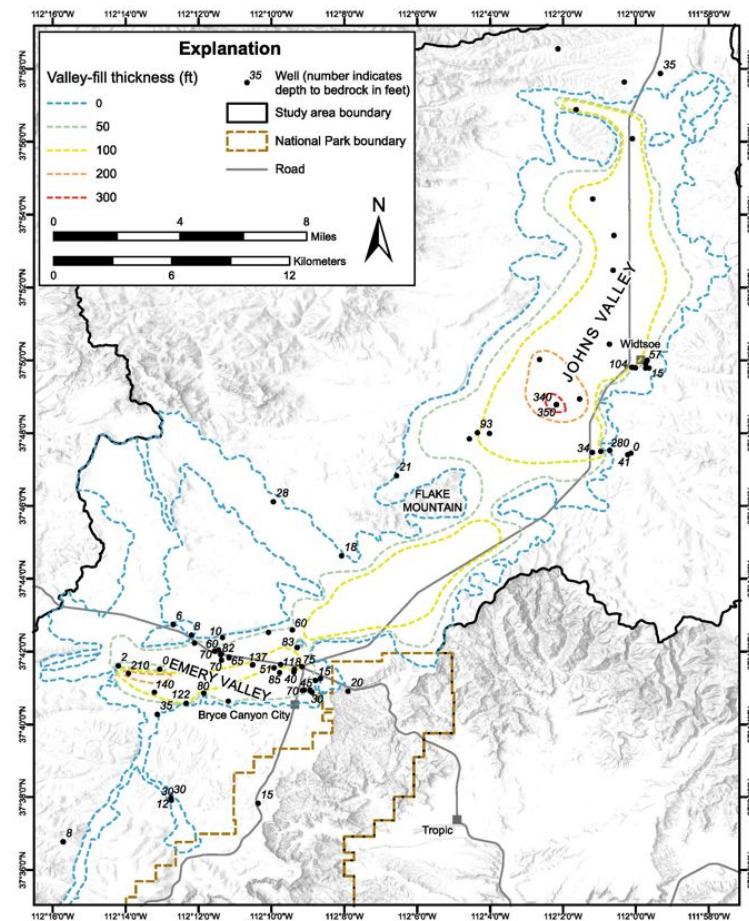


Figure 8. Isopach map for the valley fill based on well logs and gravity data.

Key Findings and Concerns

- Emery Valley
 - Shallow valley-fill aquifer (50-250 feet deep)
 - UGS study shows groundwater levels are more sensitive to winter precipitation and drought years
 - Safe yield for Emery Valley valley-fill aquifer = ???
 - Well-to-well interference?

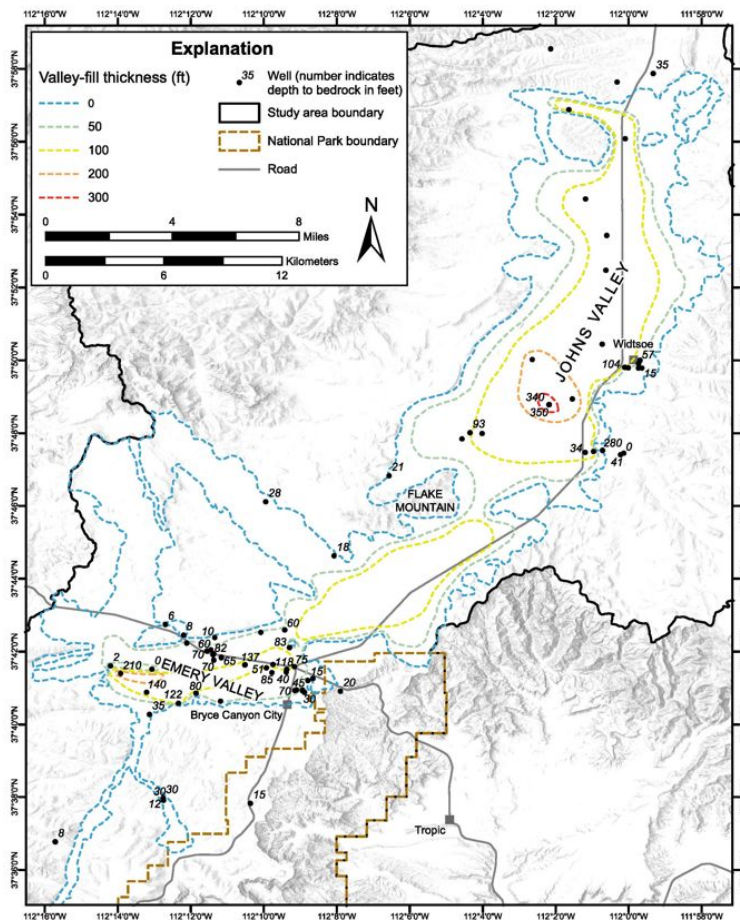


Figure 8. Isopach map for the valley fill based on well logs and gravity data.

Key Findings and Concerns

- Emery Valley
 - Safe Yield - the amount of groundwater that can be withdrawn from a groundwater basin over a period of time without exceeding the long term recharge of the basin or unreasonably affecting the basin's physical and chemical integrity
 - Long term recharge of Emery Valley valley-fill aquifer = ???
 - Groundwater discharge from wells in Emery Valley =
 - Approximate existing well water rights \approx 550 AF
 - Approved, undeveloped water \approx 330 AF
 - Total groundwater discharge \approx 880 AF
 - How much additional water can be developed?

Water Rights Policy and Next Steps

Current Sevier River Basin Water Rights Policy

(Includes Johns and Emery Valleys)

- Policy was adopted November 5, 1997
- Surface and groundwater are closed to all new consumptive appropriations
- All new water development will be based on the acquisition and changing of existing water rights
- The State Engineer's policy on Applications for Permanent and Temporary Change of Water within the basin will be flexible.
- The State Engineer will consider applications which seek to move direct flow or storage water rights to groundwater sources on a case-by-case basis
 - The primary criteria that will be considered for such applications is impairment of other water rights, including that no enlargement of the underlying water right(s) occurs.
 - For permanent changes, other statutory requirements set forth under Title 73, Chapter 3, Sections 3 and 8 of the Utah Code Annotated will be considered.



Current Sevier River Basin Water Rights Policy

(Includes Johns and Emery Valleys) - Cont.

- Applications for Permanent and Temporary Change of Water which seek to change the period of use that is less than a full year to year-round uses will be considered on a case-by-case basis. Such applications will be critically evaluated to ensure that the diversion pattern of the new uses will not impair other water rights.
- Requests for Reinstatement and Extension of Time will be critically reviewed.
- Applications submitting Proof of Diversion and Use of Water on water rights involving changes from irrigation to other uses will be required to submit data and/or maps showing the lands being taken out of production.

Potential Policy Updates to Area 61 (if any)

- Estimating the Safe Yield
 - Limit the quantity of additional water than can be transferred into Emery Valley via change applications
- Defining “into Emery Valley”
 - Valley-fill aquifer boundary
 - Potential well interference
 - Townships, Ranges, and Sections
- Water may continue to transfer out of Emery Valley via change applications

Next Steps

- Division of Water Rights will continue to estimate the safe yield for the valley-fill aquifer and monitor aquifer conditions
- No change to the policy is currently being proposed
- Please provide us your comments

Questions/Comments

Please send us your comments!

Email:

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Subject: Public Comment Regarding
Emery/Johns Valley Appropriation Policy

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