

BLM Protest

Tru South, LLC
Change Application a50177
Water Right Nos. 81-4717 and 81-4887

January 10, 2024



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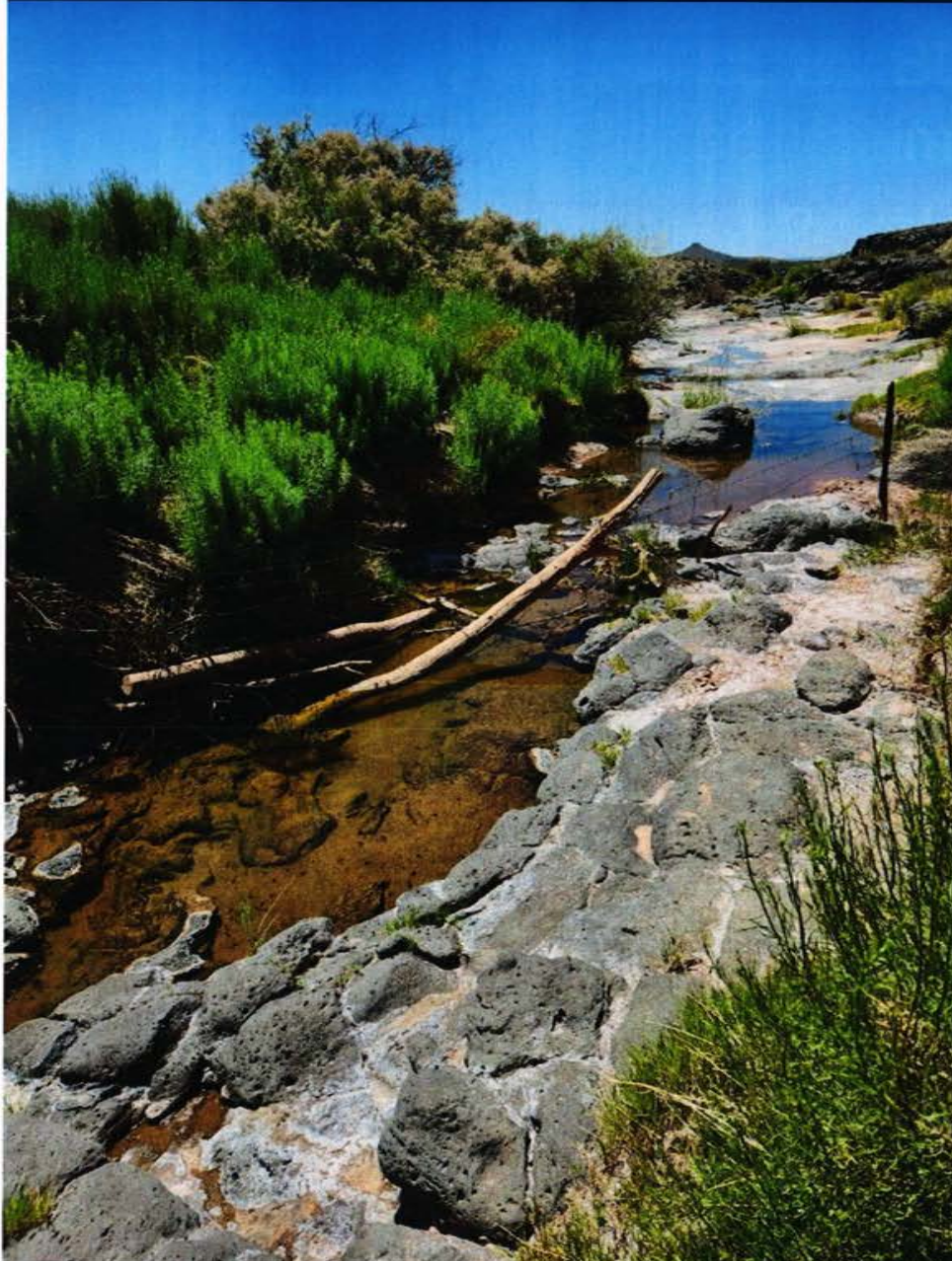
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WATER RIGHTS
SALT LAKE

Summary of BLM's position on this application:

- BLM requests a careful review of the Application by the State Engineer to determine if requested municipal use is speculative.
- Certain PODs in the application are very close to BLM senior water rights.
- USGS groundwater analysis shows that the volume in the Application, if diverted every year at PODs 12, 13, 23 and 24, will impair BLM's senior water rights.
- PODs 12 and 13 are on BLM-managed lands. Given likely impairment of BLM water rights, BLM is unlikely to provide land use authorization for these PODs.

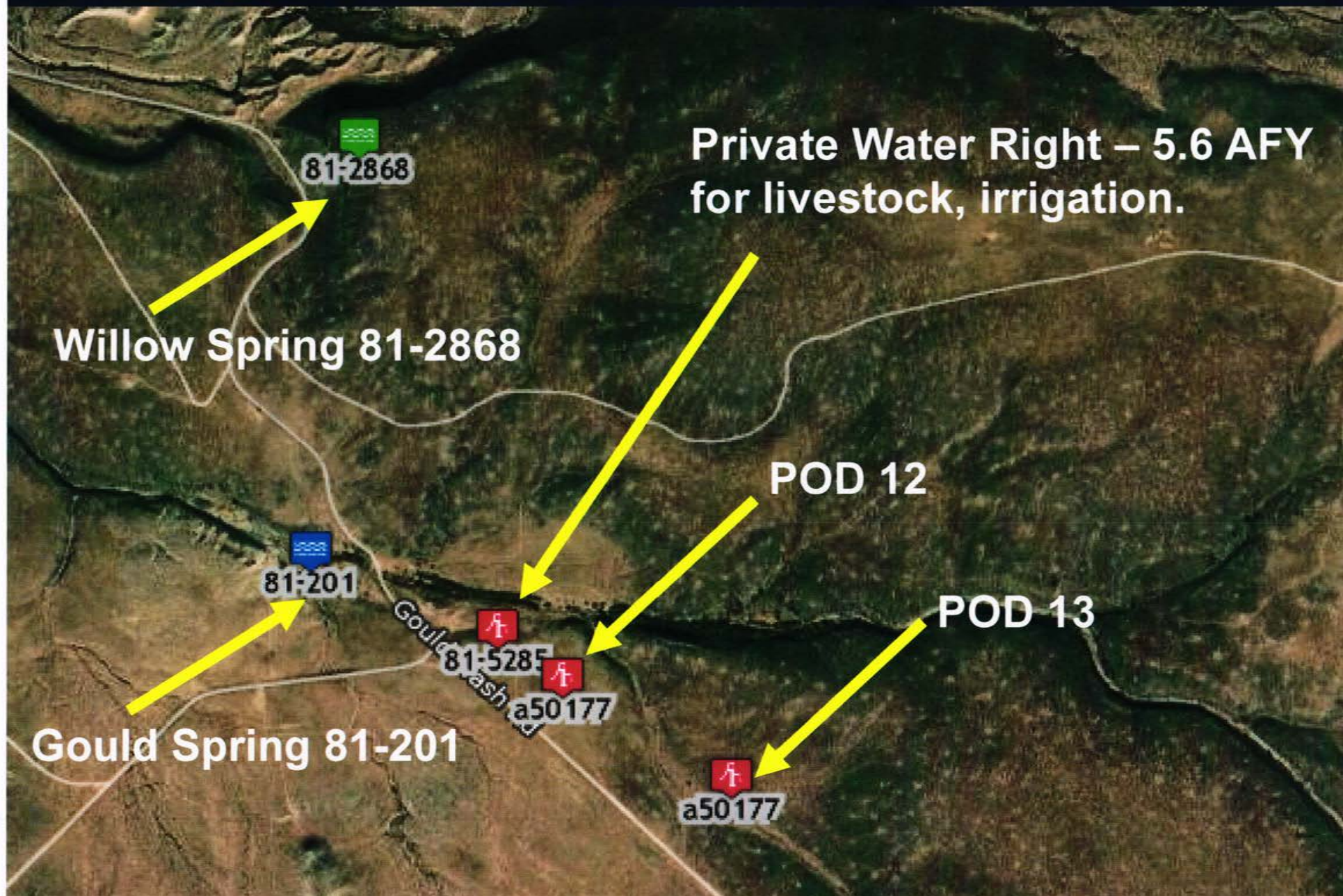
Overview of Testimony



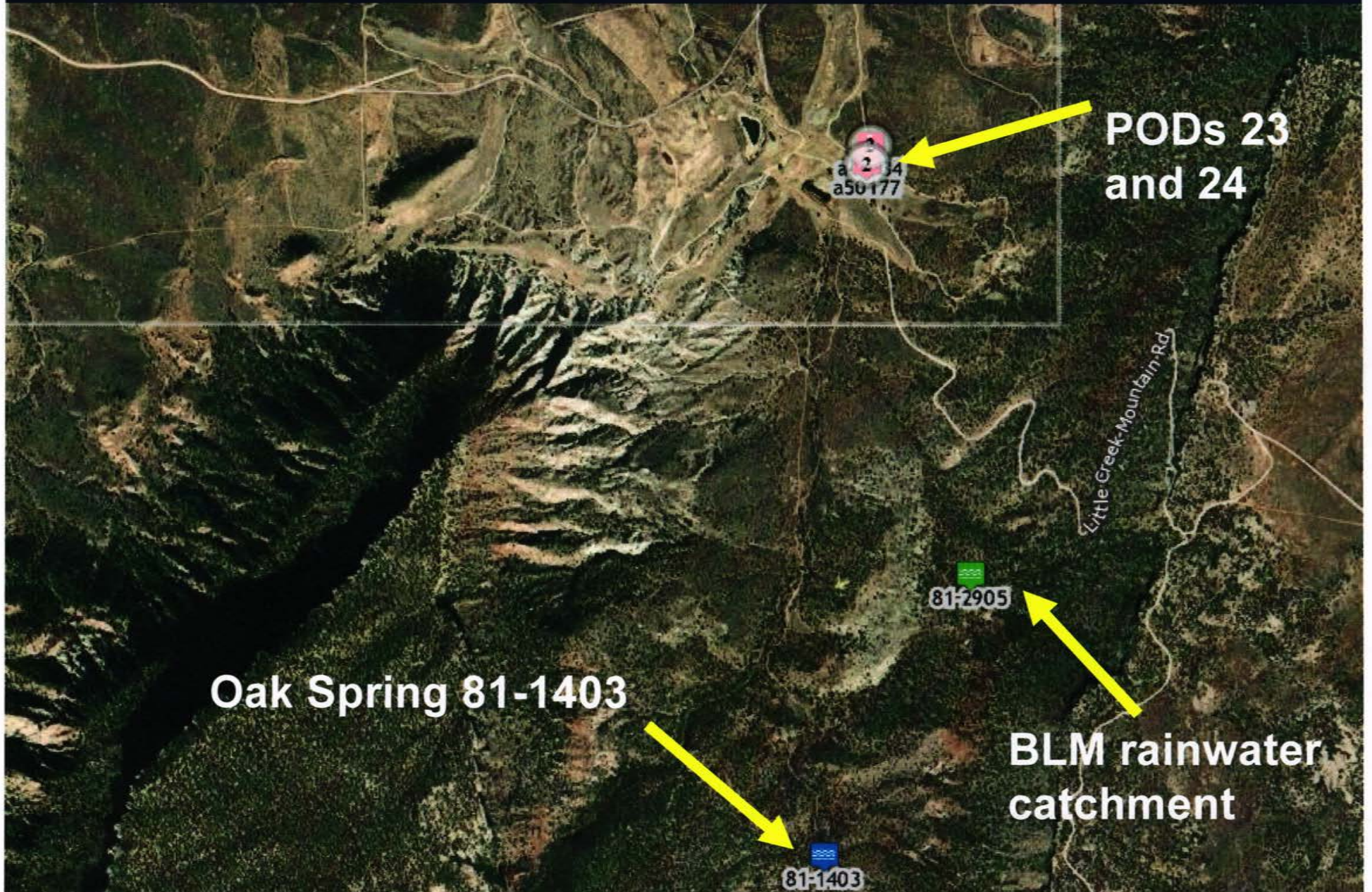
1. BLM water rights potentially impaired by the Application.
2. Hydrogeology of the area close to BLM springs.
3. USGS This analysis of the application – procedures used and results.
4. Conclusions and recommendations.

Gould Spring 81-201

BLM Water Rights



BLM Water Rights

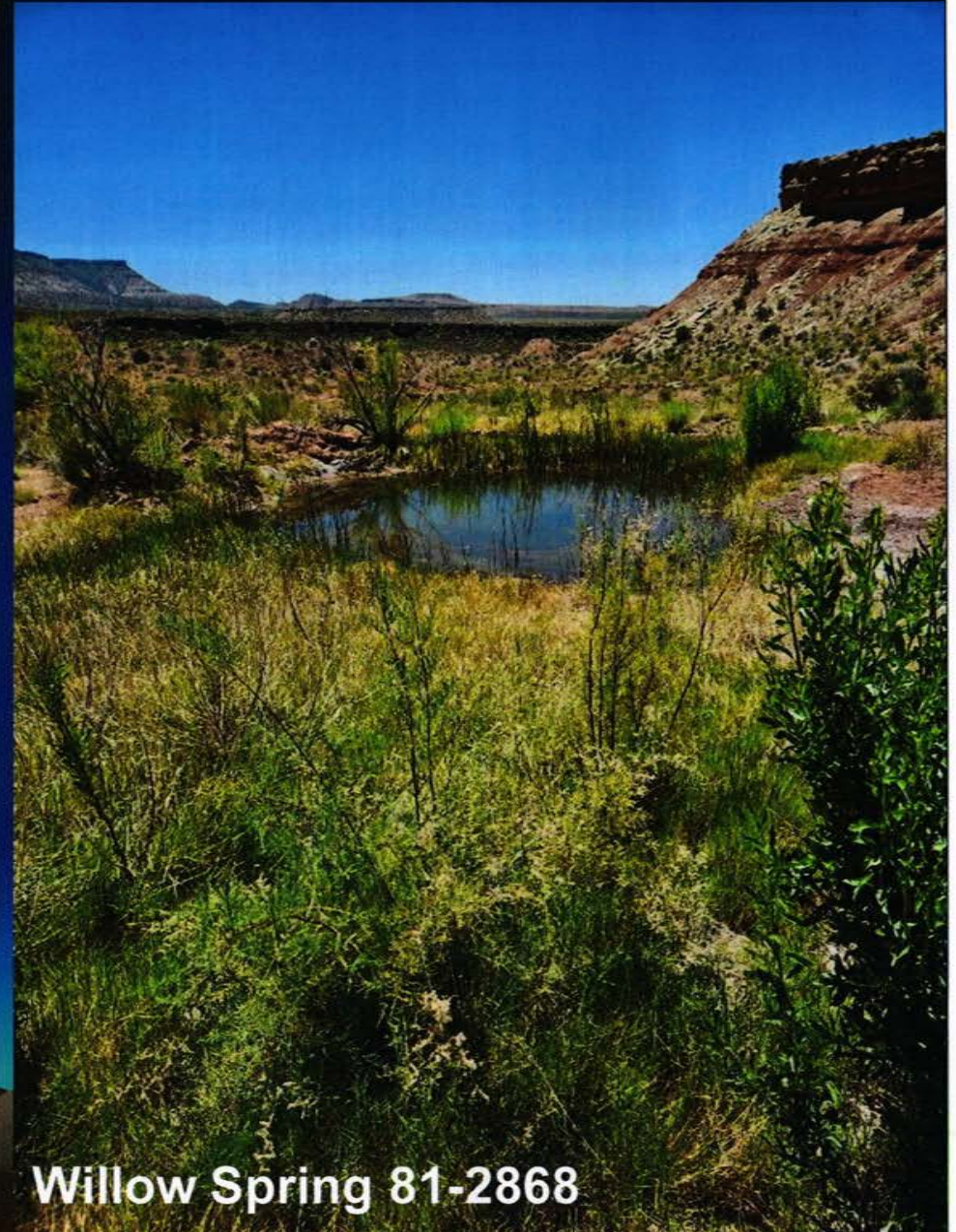


BLM Water Rights

Confirmed in Proposed Determination:

- 81-201 Gould Spring
 - 0.0155 cfs for livestock watering under 1946 priority.
 - 0.57 AF reservoir
- 81-2868 Willow Spring
 - 0.0155 cfs for livestock watering under 1856 priority.
- 81-1403 Oak Spring
 - 0.011 cfs for livestock watering under 1974 priority.

Critical sources for Hurricane Fault and Eagle Allotments.



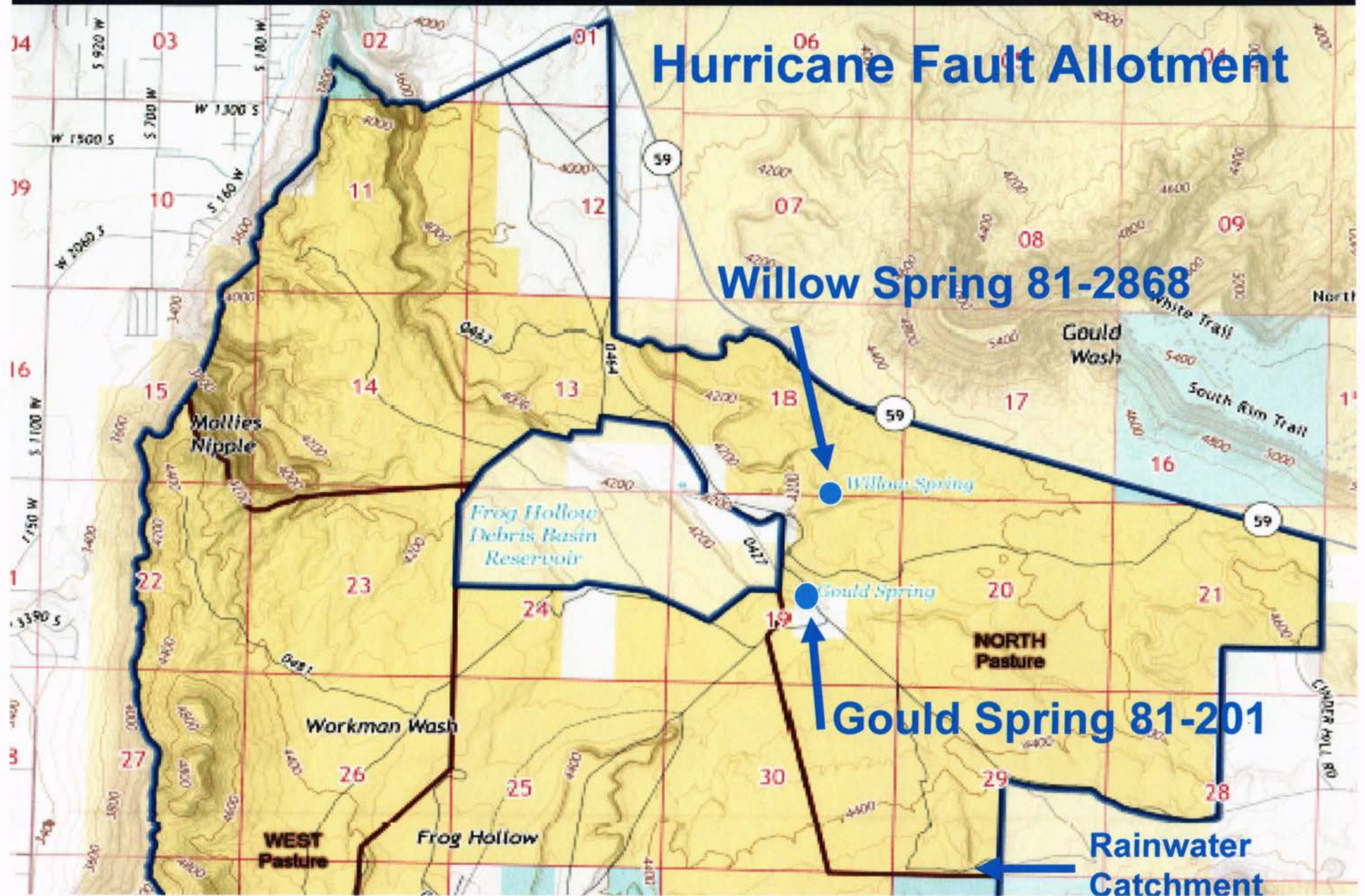
Willow Spring 81-2868

Role of Water Sources In Grazing

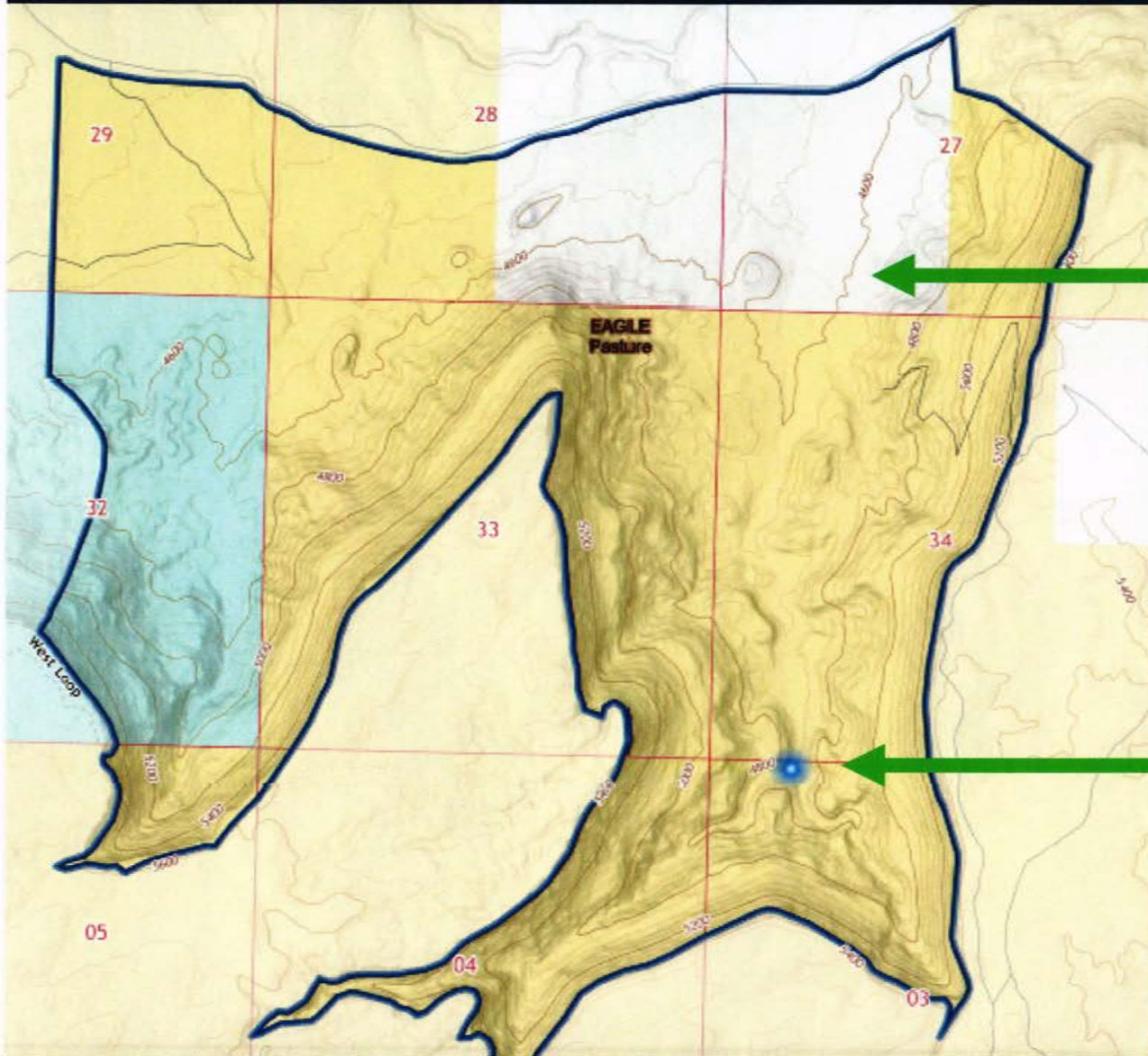


Oak Spring 81-1403

Role of Water Sources In Grazing Management



Role of Water Sources In Grazing Management



Eagle Allotment

POD 23
and 24

Oak Spring
81-1403

Hydrogeologic Context

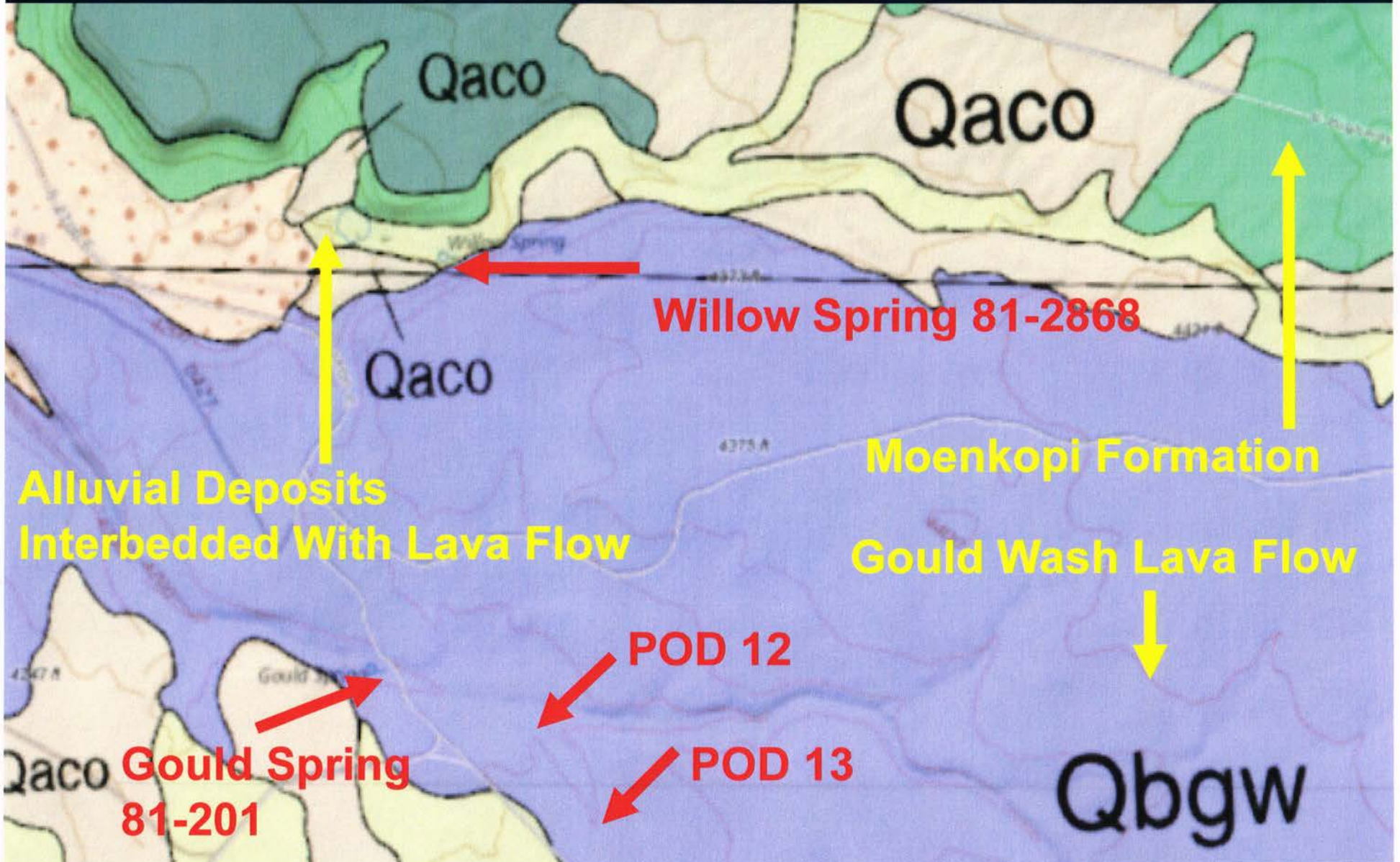
- In the protest document, BLM preliminarily concluded that the source of water for the springs may be the Moenkopi Formation. However, BLM's analysis has evolved after consultation with USGS.
- USGS analysis of previous studies/literature revealed that the less permeable Moenkopi Formation likely retards downward infiltration from overlying formations, resulting in significant groundwater storage in overlying formations. The overlying formations are the likely source of water for BLM's springs.

Hydrogeologic Context

Gould Spring / Willow Spring

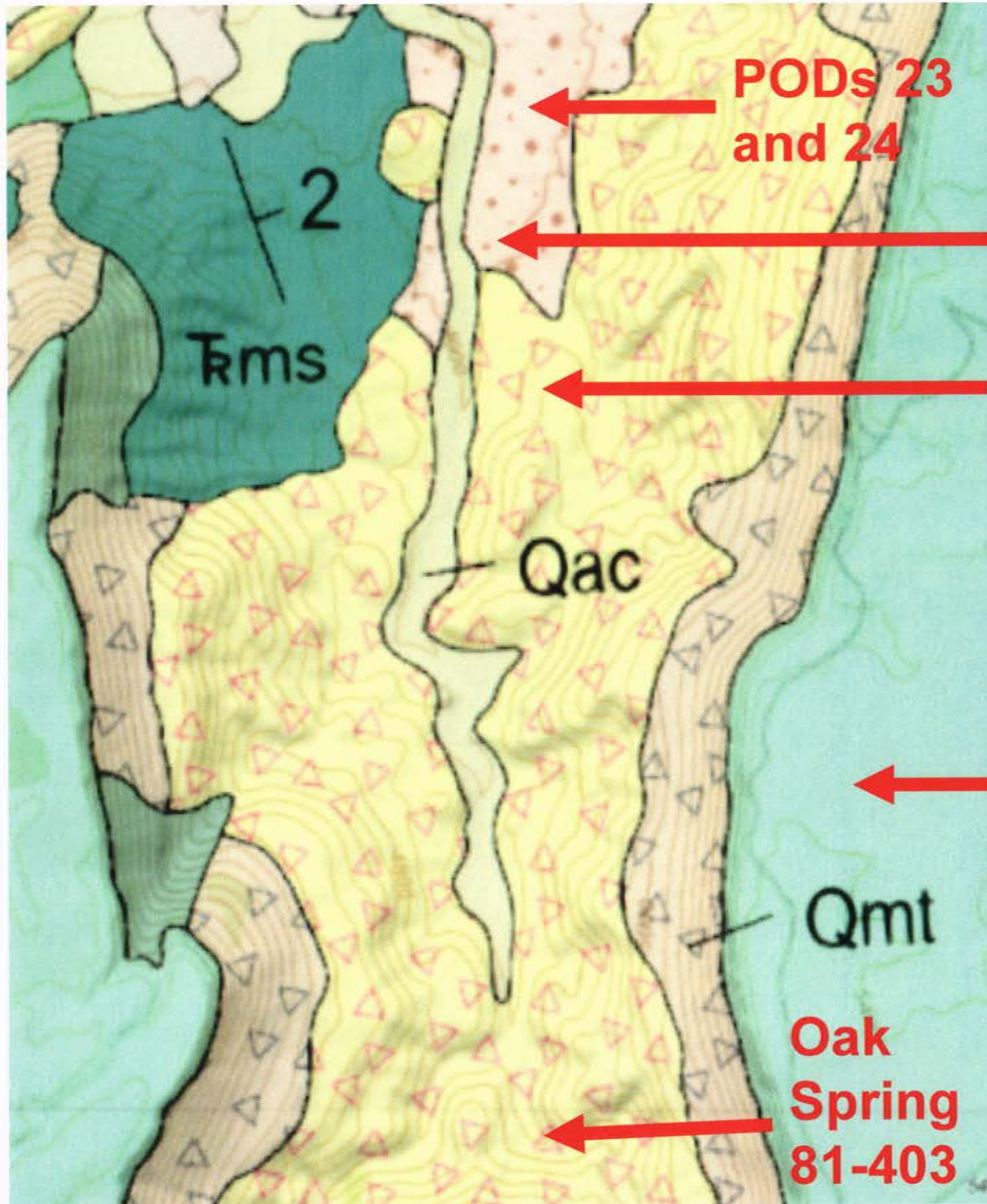
- The Gould Wash Lava Flow Formation, which overlays the Moenkopi Formation, has sufficient storage potential to serve as the water source. Loughlin Water Associates (2023) reports that this formation can be an excellent aquifer.
- Alluvial deposits along stream channels are in direct communication with the Gould Wash Lava Flow Formation and can also serve as a water source for springs.

Hydrogeologic Context



Hydrogeologic Context Oak Spring

- Alluvial and landslide deposits overlying Shinarump Conglomerate have sufficient storage potential to serve as the water source.
- It is also possible that the Shinarump Conglomerate could serve as the water source, or discharge could be comprised of a mixture of discharge from overlying alluvial/landslide deposits and Shinarump Conglomerate.



**PODs 23
and 24**

**Alluvial Deposit From
Shinarump Conglomerate**

**Landslide Deposits From
Shinarump Conglomerate**

Hydrogeologic Context

Shinarump Conglomerate

**Oak
Spring
81-403**

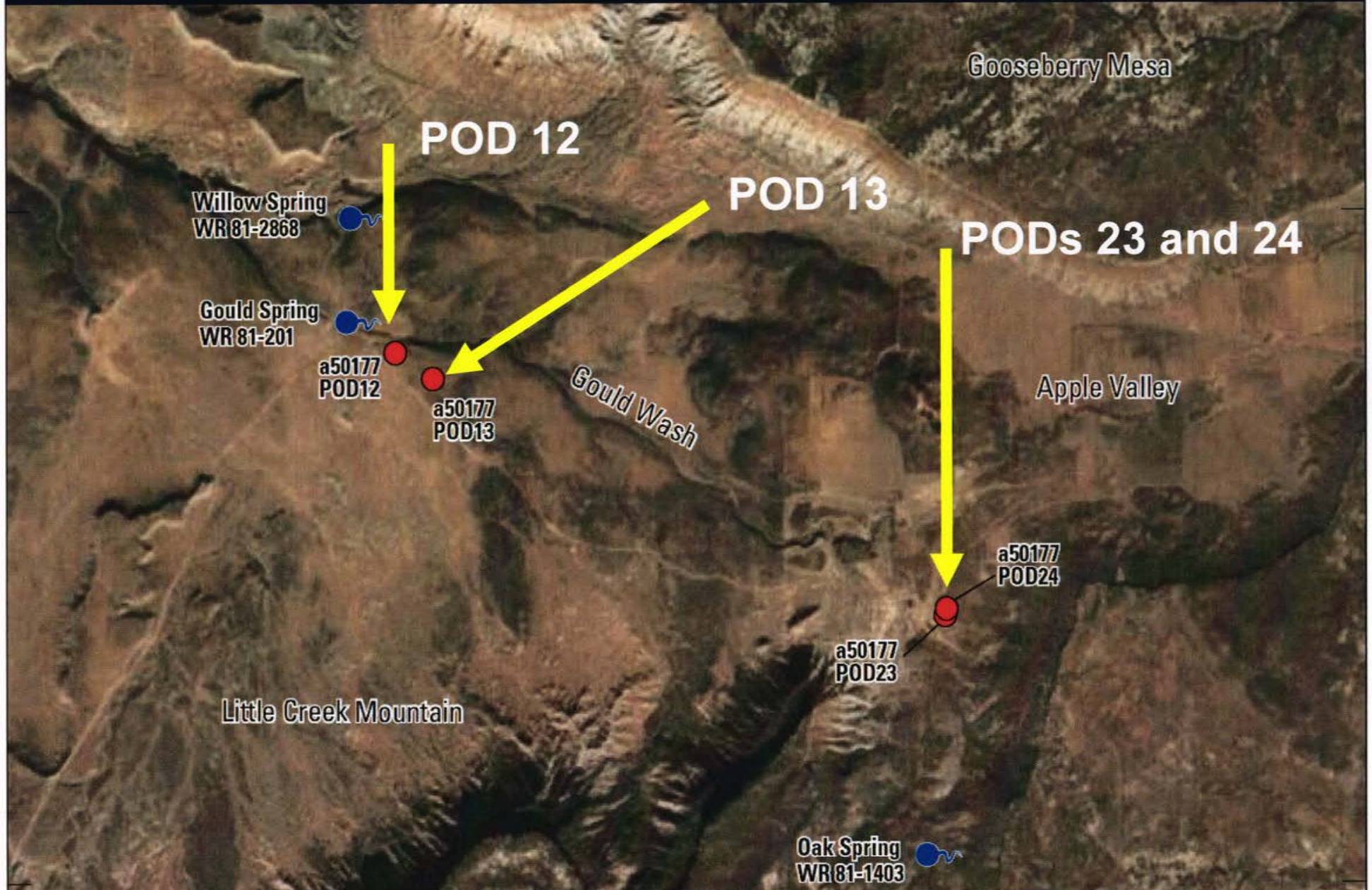
Hydrogeologic Conclusions

- Alluvial deposits, landslide deposits, and lava deposits sit on top of and are interbedded with the Shinarump Conglomerate.
- All of these geologic features are in hydrologic communication and operate under unconfined conditions.
- Drawdowns in one geologic features will be transmitted to adjacent features because there are no geologic barriers.

USGS Groundwater Analysis

- USGS conducted a Theis analysis of the proposed diversions.
- A Theis analysis uses an equation that considers volume and number of years of pumping, distance from water sources of concern, and aquifer parameters (transmissivity and specific yield). Equation adjusted to account for unconfined conditions.
- USGS ran three scenarios where each proposed POD that is close to BLM springs was pumped at 3, 20, or 101.2 AFY.
- Scenarios included a range of estimated transmissivity and specific yield estimates to provide best case and worse-case scenarios, in terms of potential impairment to BLM water rights.
- Even though Applicant proposed 600' depth wells, USGS assumed that proposed wells will not divert from Moenkopi Formation because of poor yield and water quality issues.

USGS Theis Analysis Pumping Locations



USGS Analytical Products

Unconfined correction applied

Elapsed time (years)	Drawdown (ft) from withdrawals occurring at a50177, PODs 12, 13, 23, & 24 (each pumping at $Q=20$ acre-ft/v)											
	Gould Spring (WR81-201); r=1,325; 2,372; 15,381; and 15,350 ft				Willow Spring (WR81-2868); r=3,197; 4,062; 16,435; and 16,303 ft				Oak Spring (WR81-1403); r=16,750; 15,771; 5,420; and 5,639 ft			
	Sy=0.05		Sy=0.3		Sy=0.05		Sy=0.3		Sy=0.05		Sy=0.3	
	T=80 ft ² /d	T=2,700 ft ² /d	T=80 ft ² /d	T=2,700 ft ² /d	T=80 ft ² /d	T=2,700 ft ² /d	T=80 ft ² /d	T=2,700 ft ² /d	T=80 ft ² /d	T=2,700 ft ² /d	T=80 ft ² /d	T=2,700 ft ² /d
5	5.1	0.7	0.6	0.4	0.9	0.5	0.0	0.2	0.0	0.3	0.0	0.1
10	8.1	0.8	1.8	0.5	2.5	0.6	0.0	0.3	0.6	0.5	0.0	0.2
20	11.7	1.0	3.7	0.6	4.8	0.8	0.3	0.4	2.0	0.7	0.0	0.3
50	17.1	1.3	7.3	0.8	8.9	1.0	2.0	0.6	5.0	0.9	0.4	0.5
100	23.0	1.4	10.7	1.0	13.4	1.2	4.1	0.7	8.9	1.1	1.5	0.6

If PODs 12, 13, 23, or 24 are pumped for 100 years, then the range of drawdown values (from pumping closest POD) are:

	20.0 AFY PUMPING	102.2 AFY PUMPING
Gould Spring 81-201	23.0 to 1.0 feet	30.0 to 1.8 feet
Willow Spring 81-2868	13.4 to 0.7 feet	30.0 to 1.4 feet
Oak Spring 81-1403	8.9 to 0.6 feet	34.5 to 1.2 feet

USGS Analysis Conclusions

- All three springs are likely to be impaired by pumping PODs 12, 13, 23, and 24, even if each of those PODs are pumped at only 20 acre-feet per year.
- Impairment will likely occur regardless of the transmissivity and specific yield estimates used within the range of reasonable estimates for these parameters, because of the proximity of the proposed pumping to the springs.
- Spring discharge is especially susceptible to pumping drawdown.

Springs Are Especially Sensitive To Groundwater Level Reductions



Needlepoint Spring: dried up by well pumping.

1. If groundwater levels are reduced, there less pressure forces water out of the spring orifice, reducing discharge.
2. If groundwater levels go below the spring orifice, flow will cease.
3. Once flow ceases, it is very difficult to reverse, because groundwater levels must be restored to historic elevations before flow resumes.
4. Springs provide reliable, low-cost water supplies for livestock grazing operators, which operate on low profit margins.

Feasibility Issues



Given that results of the USGS analysis show substantial impairment to BLM water rights, BLM is extremely unlikely to approve land use authorization for PODs 12 and 13.

Willow Spring 81-2868

BLM Recommendations

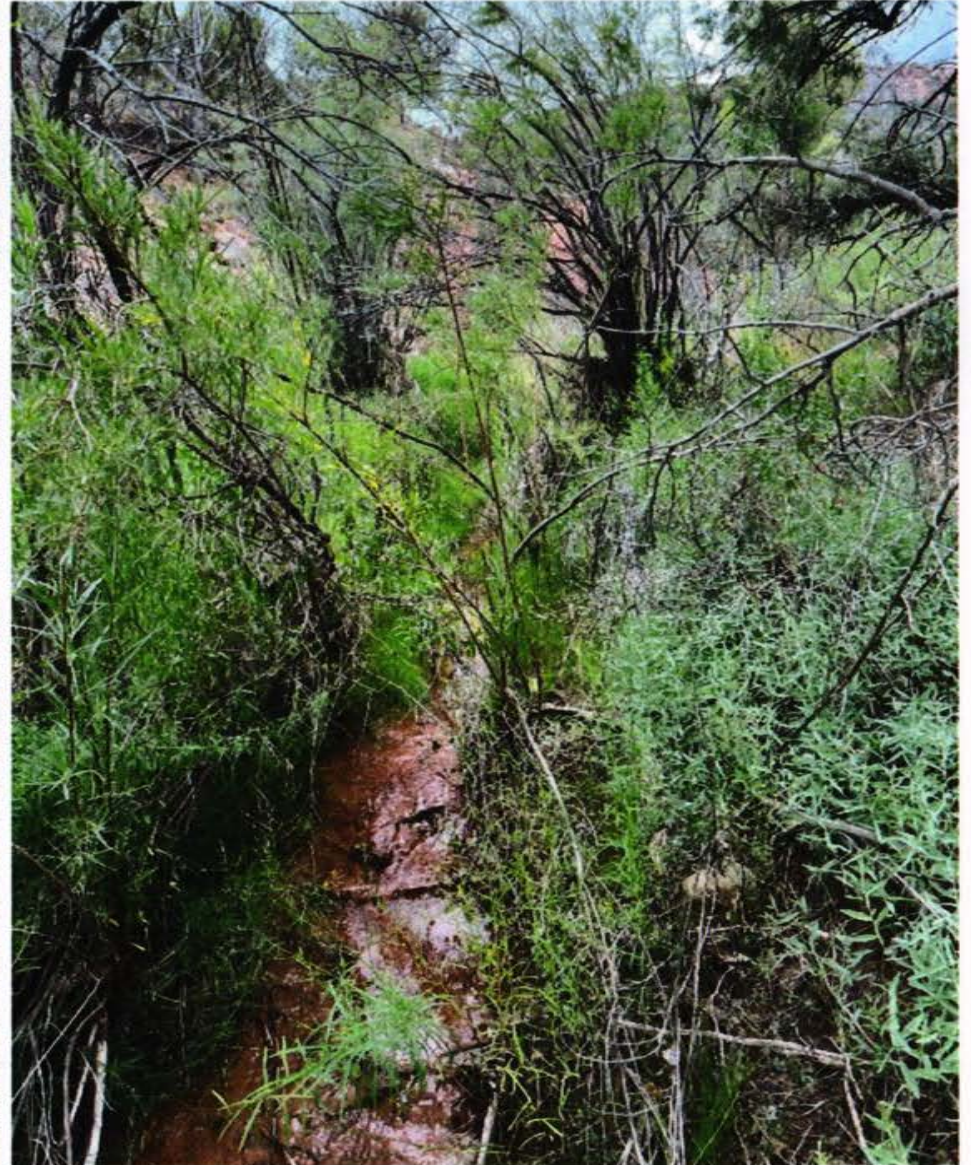
If the Application is approved:

- Impacts to BLM's senior water rights should be avoided by denying the request to pump at PODs 12, 13, 23, and 24. There are other proposed PODs to the northeast of PODs 23 and 24 that could minimize impacts to BLM water rights.
- The Applicant should be required to meter the wells and provide accounting of all use under Applicant's changed water rights.
- The Memorandum Decision should clarify the relationship between the approval and previous change application approvals under a47314 and a499097.

Questions for BLM?



Oak Spring 81-1403





Doralee Cannon <doraleecannon@utah.gov>

Fwd: Tru South LLC Hearing - Application Number a50177

1 message

Willa Knight <willaknight@utah.gov>
To: Doralee Cannon <doraleecannon@utah.gov>

Mon, Jan 8, 2024 at 7:55 AM

For the hearing this week.



Willa Knight
Public Inquiry Program Manager

W: (801) 538-7407
E: willaknight@utah.gov

Utah Department of Natural Resources
Division of Water Rights



waterrights.utah.gov

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----- Forwarded message -----

From: **Smith, Roy E** <r20smith@blm.gov>
Date: Sat, Jan 6, 2024 at 8:13 AM
Subject: Tru South LLC Hearing - Application Number a50177
To: Willa Knight <willaknight@utah.gov>
Cc: ericjones@utah.gov <ericjones@utah.gov>, Johnson, Cameron B <cameron.johnson@sol.doi.gov>, West, Jason R <jrwest@blm.gov>

Greetings Willa -

In the event that we have any technical difficulties, I am attaching the PowerPoint that BLM intends to present at the hearing scheduled for 10 am on January 10. If you can confirm receipt, I would appreciate it.

Roy E. Smith
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r20smith@blm.gov

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