TOWN OF PATAGONIA REGULAR COUNCIL MEETING MINUTES
JANUARY 14, 2026 @ 6:00 P.M.
ZOOM MEETING I.D. 957-511-4862 PASSWORD 338501

1. CALL TO ORDER—Mayor Wood called the meeting to order at 6:00 pm.

2. ROLL CALL/THIS MEETING WILL BE HELD IN PERSON AND VIA ZOOM MEETING. Mayor Wood present, Vice-Mayor Stabile present via zoom, Council Members Finch, Claverie & Retherford present.
STAFF PRESENT: Town Manager Robinson & Library Clerk Debbie Robinson
PUBLIC PRESENT: See attached sign in sheets.

3. PLEDGE OF ALLEGIANCE—Mayor Wood led the Pledge of Allegiance.

4. CORRECTION AND OR APPROVAL OF MINUTES FROM:
A SPECIAL COUNCIL MEETING HELD DECEMBER 17, 2025, AT 6:00 PM IN PERSON AND VIA ZOOM.
MOTION: Council Member Finch moved to approve the minutes from A SPECIAL COUNCIL MEETING HELD DECEMBER 17, 2025, AT 6:00 PM IN PERSON AND VIA ZOOM.
SECOND: Council Member Claverie.
VOTE: The motion passed by a 5-0 vote, with Council Members Voting as follows:
AYES: Mayor Wood, Vice-Mayor Stabile via zoom, Council Members Finch, Claverie & Retherford.
NAYS: None
ABSTAINERS: None
ABSENT: None

5. CALL TO THE PUBLIC A. R. S. §38-431-01(H): AT THIS TIME, THE PUBLIC WILL ONLY BE RECOGNIZED TO SPEAK ON AGENDA ITEMS LISTED FOR PUBLIC INPUT PURSUANT TO TOWN CODE SECTION 2-5-6. ANY MEMBER OF THE PUBLIC IS ALLOWED TO ADDRESS THE TOWN COUNCIL, SUBJECT TO A REASONABLE TIME SET BY THE COUNCIL PURSUANT TO THE ARIZONA OPEN MEETING LAW. AT THE CONCLUSION OF THE CALL TO THE PUBLIC, INDIVIDUAL MEMBERS OF THE COUNCIL MAY RESPOND TO CRITICISM MADE BY THOSE WHO HAVE ADDRESSED THE COUNCIL MAY ASK STAFF TO REVIEW THE MATTER, OR MAY ASK THE MATTER BE PLACED ON A FUTURE AGENDA. HOWEVER, MEMBERS OF THE PUBLIC BODY SHALL NOT DISCUSS OR TAKE LEGAL ACTION ON MATTERS RAISED DURING AN OPEN CALL TO THE PUBLIC UNLESS THE MATTERS ARE PROPERLY NOTICED FOR DISCUSSION AND LEGAL ACTION. Eighth graders Ayla LaDage & Isabella Felix encouraged the Council to approve Item 15 allowing the Eighth grade to sale baked goods on Town Property to raise money for their end of year field trip. Carolyn Shafer gave a prepared speech about 21st Century mining in the Patagonia Mountains related to Item # 8. Amy Krug complained about traffic in front of her house on Harshaw Ave. and suggested it be slowed down.

6. MAYOR'S REPORT ON CURRENT EVENTS. AT THIS TIME THE MAYOR MAY WISH TO CALL UPON THE COUNCIL OR STAFF FOR CURRENT EVENTS OR MONTHLY REPORTS. Mayor Wood read a statement honoring the life and legacy of former Mayor Richard "Ike" Isakson, attached.

7. REPORTS FROM DEPARTMENTS AND COMMITTEES ON ONGOING ACTIVITIES. In the books.

NEW BUSINESS

8. CHRIS GARDNER, HYDROLOGIST, WITH FRIENDS OF SONOITA CREEK, WILL PRESENT FINDINGS IN WATER DISCHARGE FROM SOUTH32 HERMOSA MINE. Chris introduced his presentation and proceeded with a Power Point Presentation, attached.

9. DISCUSSION AND POSSIBLE ACTION TO APPROVE THE TOWN MANAGER SIGN A CONTRACT WITH KE&G CONSTRUCTION TO REPLACE THE CORRODED STEEL WET WELL CAP WITH AN ALUMINUM CAP AND REMODEL THE OUTDOOR ELECTRICAL CONTROL PANEL AT THE WASTEWATER TREATMENT PLANT. THE CONTRACT AMOUNT IS $33,290.00.
MOTION: Council Member Finch moved to approve THE TOWN MANAGER SIGN A CONTRACT WITH KE&G CONSTRUCTION TO REPLACE THE CORRODED STEEL WET WELL CAP WITH AN ALUMINUM CAP AND REMODEL THE OUTDOOR ELECTRICAL CONTROL PANEL AT THE WASTEWATER TREATMENT PLANT. THE CONTRACT AMOUNT IS $33,290.00.
SECOND: Council Member Retherford.
DISCUSSION: Council Member Retherford mentioned he had asked the Town Manager for details on the project to justify the expense and was satisfied with the information.
VOTE: The motion passed by a 5-0 vote, with Council Members Voting as follows:
AYES: Mayor Wood, Vice-Mayor Stabile via zoom, Council Members Finch, Claverie & Retherford.
NAYS: None
ABSTAINERS: None
ABSENT: None

10. DISCUSSION AND POSSIBLE ACTION TO ADOPT ORDINANCE 25-01, AN ORDINANCE OF THE MAYOR AND COUNCIL OF THE TOWN OF PATAGONIA, ARIZONA, AMENDING TOWN CODE SECTION 3-2-1 BY ADDING NEW SUBSECTION (A) TOWN MANAGER DUTIES. SECOND READING.
MOTION: Council Member Claverie moved to adopt ORDINANCE 25-01, AN ORDINANCE OF THE MAYOR AND COUNCIL OF THE TOWN OF PATAGONIA, ARIZONA, AMENDING TOWN CODE SECTION 3-2-1 BY ADDING NEW SUBSECTION (A) TOWN MANAGER DUTIES. SECOND READING.
SECOND: Mayor Wood.
VOTE: The motion passed by a 5-0 vote, with Council Members Voting as follows:
AYES: Mayor Wood, Vice-Mayor Stabile via zoom, Council Members Finch, Claverie & Retherford.
NAYS: None
ABSTAINERS: None
ABSENT: None

11. DISCUSSION AND POSSIBLE ACTION TO ADOPT ORDINANCE NO. 25-02, AN ORDINANCE OF THE MAYOR AND COUNCIL OF THE TOWN OF PATAGONIA, ARIZONA, AMENDING MULTIPLE SECTIONS OF TOWN CODE CHAPTER 12 WATER AND SEWER TO REPEAL CERTAIN FEES AND CHARGES SET FORTH THEREIN AND REPLACING SPECIFIC FEES WITH REFERENCES TO FEES AND RATES ADOPTED BY RESOLUTION OF THE TOWN COUNCIL, AND DELETING ALL REFERENCES TO TOWN CLERK/TREASURER AND REPLACING WITH TOWN MANAGER. SECOND READING.
MOTION: Council Member finch moved to adopt ORDINANCE NO. 25-02, AN ORDINANCE OF THE MAYOR AND COUNCIL OF THE TOWN OF PATAGONIA, ARIZONA, AMENDING MULTIPLE SECTIONS OF TOWN CODE CHAPTER 12 WATER AND SEWER TO REPEAL CERTAIN FEES AND CHARGES SET FORTH THEREIN AND REPLACING SPECIFIC FEES WITH REFERENCES TO FEES AND RATES ADOPTED BY RESOLUTION OF THE

TOWN COUNCIL AND DELETING ALL REFERENCES TO TOWN CLERK/TREASURER AND REPLACING WITH TOWN MANAGER. SECOND READING.
SECOND: Council Member Calverie.
VOTE: The motion passed by a 5-0 vote, with Council Members Voting as follows:
AYES: Mayor Wood, Vice-Mayor Stabile via zoom, Council Members Finch, Claverie & Retherford.
NAYS: None
ABSTAINERS: None
ABSENT: None

12. DISCUSSION AND POSSIBLE ACTION TO ADOPT ORDINANCE NO. 2025-03, AN ORDINANCE OF THE MAYOR AND COUNCIL OF THE TOWN OF PATAGONIA, ARIZONA, AMENDING SECTION 7-1-5 FEES OF TOWN CODE CHAPTER 7 BUILDING TO SIMPLIFY CONSTRUCTION VALUATION AND REDUCE OVERALL FEES. SECOND READING.
MOTION: Council Member Claverie moved to adopt ORDINANCE NO. 2025-03, AN ORDINANCE OF THE MAYOR AND COUNCIL OF THE TOWN OF PATAGONIA, ARIZONA, AMENDING SECTION 7-1-5 FEES OF TOWN CODE CHAPTER 7 BUILDING TO SIMPLIFY CONSTRUCTION VALUATION AND REDUCE OVERALL FEES. SECOND READING.
SECOND: Council Member Finch.
VOTE: The motion passed by a 5-0 vote, with Council Members Voting as follows:
AYES: Mayor Wood, Vice-Mayor Stabile via zoom, Council Members Finch, Claverie & Retherford.
NAYS: None
ABSTAINERS: None
ABSENT: None

13. DISCUSSION AND POSSIBLE ACTION TO RE-APPOINT JUDGE MIGUEL A. LOPEZ AS COURT MAGISTRATE PRO-TEMP EFFECTIVE FOR ONE YEAR. REQUESTED BY PRESIDING MAGISTRATE CONCEPCION BRACAMONTE.
MOTION: Council Member finch moved to RE-APPOINT JUDGE MIGUEL A. LOPEZ AS COURT MAGISTRATE PRO-TEMP EFFECTIVE FOR ONE YEAR. REQUESTED BY PRESIDING MAGISTRATE CONCEPCION BRACAMONTE.
SECOND: Council Member Claverie.
VOTE: The motion passed by a 5-0 vote, with Council Members Voting as follows:
AYES: Mayor Wood, Vice-Mayor Stabile via zoom, Council Members Finch, Claverie & Retherford.
NAYS: None
ABSTAINERS: None
ABSENT: None

14. DISCUSSION AND POSSIBLE ACTION TO ADOPT ORDINANCE 26-01, AN ORDINANCE OF THE MAYOR AND COUNCIL OF THE TOWN OF PATAGONIA, ARIZONA, REPEALING TOWN CODE SECTION 2-6-3 TO ALLOW FOR PASSAGE OF ORDINANCES IN ONE READING.
MOTION: Council Member Finch moved to adopt ORDINANCE 26-01, AN ORDINANCE OF THE MAYOR AND COUNCIL OF THE TOWN OF PATAGONIA, ARIZONA, REPEALING TOWN CODE SECTION 2-6-3 TO ALLOW FOR PASSAGE OF ORDINANCES IN ONE READING.

SECOND: Council Member Claverie.
DISCUSSION: Council Member Claverie clarified that this ordinance eliminated the procedure of the second reading and the Town Manager responded yes.
VOTE: The motion passed by a 5-0 vote, with Council Members Voting as follows:
AYES: Mayor Wood, Vice-Mayor Stabile via zoom, Council Members Finch, Claverie & Retherford.
NAYS: None
ABSTAINERS: None
ABSENT: None

15. DISCUSSION AND POSSIBLE ACTION TO ALLOW THE PATAGONIA MIDDLE SCHOOL TO HOLD A BAKE SALE, SATURDAY, FEBRUARY 7TH 2026 LOCATED BETWEEN THE SENIOR CENTER AND PARKING LOT, (FACING MCKEOWN AVE) TO RAISE FUNDS FOR THE 8TH GRADE END OF YEAR FIELD TRIP. REQUESTED BY JEFFREY GUDENKAUF.
MOTION: Mayor Wood moved to ALLOW THE PATAGONIA MIDDLE SCHOOL TO HOLD A BAKE SALE, SATURDAY, FEBRUARY 7TH 2026 LOCATED BETWEEN THE SENIOR CENTER AND PARKING LOT, (FACING MCKEOWN AVE) TO RAISE FUNDS FOR THE 8TH GRADE END OF YEAR FIELD TRIP. REQUESTED BY JEFFREY GUDENKAUF.
SECOND: Council Member Claverie.
VOTE: The motion passed by a 5-0 vote, with Council Members Voting as follows:
AYES: Mayor Wood, Vice-Mayor Stabile via zoom, Council Members Finch, Claverie & Retherford.
NAYS: None
ABSTAINERS: None
ABSENT: None

16. DISCUSSION AND POSSIBLE ACTION TO APPROVE PAYMENT OF ACCOUNTS PAYABLE.
MOTION: Council Member Finch moved to approve payment of accounts payable.
SECOND: Council Member Claverie.
VOTE: The motion passed by a 5-0 vote, with Council Members Voting as follows:
AYES: Mayor Wood, Vice-Mayor Stabile via zoom, Council Members Finch, Claverie & Retherford.
NAYS: None
ABSTAINERS: None
ABSENT: None

17. **FUTURE AGENDA ITEMS:**
AT THIS TIME, THE COUNCIL MAY BRING FORTH TOPICS FOR FUTURE AGENDAS, AND IF PREVIOUSLY REJECTED BY THE MAYOR, THE COUNCIL MAY VOTE ON WHETHER TO PLACE THOSE ITEMS ON A FUTURE AGENDA PURSUANT TO SECTION 2-5-5 OF THE TOWN OF PATAGONIA, ARIZONA CODE. THE COUNCIL MAY NOT DISCUSS, DELIBERATE, OR TAKE ANY ACTION ON THE SUBSTANCE OF THE TOPICS OTHER THAN TO VOTE TO INCLUDE THEM ON A FUTURE AGENDA. A. R. S. §38-431.02(H). Firebreaks Plan from PVFR, Item 11, MOU with the Friends FROM May 28th, Item 12 Forest Lane rename from May 28th Meeting. No items.

TOWN OF PATAGONIA REGULAR COUNCIL MEETING MINUTES
JANUARY 14, 2026 @ 6:00 P.M.
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SPECIAL NOTE: JUDGE BRACAMONTE SWORE IN JUDGE LOPEZ AS A PRO-TEMP JUDGE FOR THE PATAGONIA MUNICIPAL COURT. (From Agenda Item 13.)

18. **ADJOURN**
MOTION: Mayor Wood moved to adjourn.
SECOND: Council Member Finch.
VOTE: The motion passed by a 5-0 vote, with Council Members Voting as follows:
AYES: Mayor Wood, Vice-Mayor Stabile via zoom, Council Members Finch, Claverie & Retherford.
NAYS: None
ABSTAINERS: None
ABSENT: None

THE MEETING ADJOURNED AT 7:01 PM.

I hereby confirm the foregoing minutes are a true and accurate copy of the minutes from a Regular Council Meeting held January 14, 2026 at 6:00 pm. I further certify that the meeting was duly called, held, and that a quorum was present.

Dated this _____ Day of _____, 2026

APPROVED:

_____
Andrea Wood, Mayor

ATTEST:

_____
Ron Robinson, Town Clerk

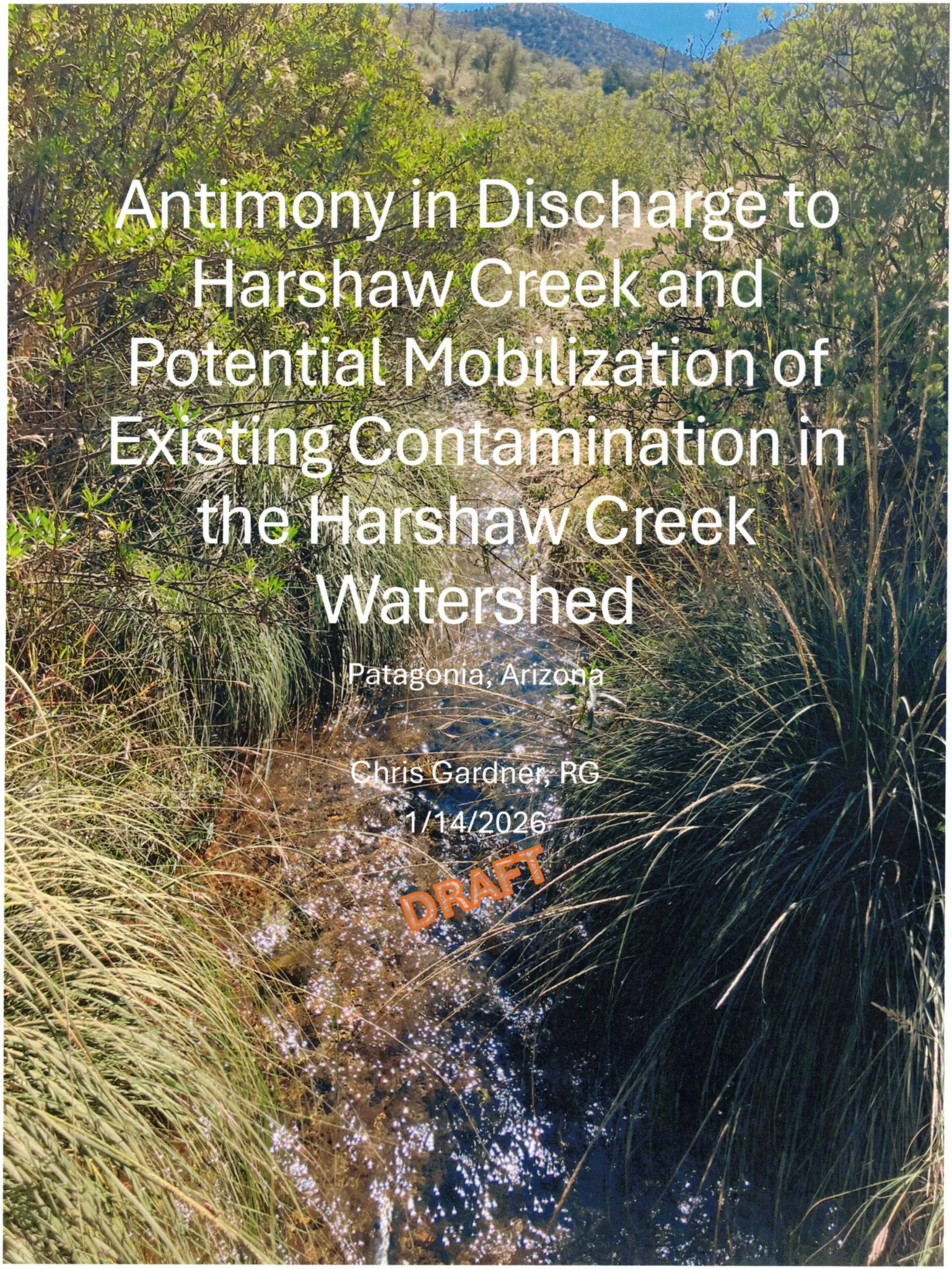
Patagonia's beloved Richard (Ike) Isaakson passed on December 23rd, 2025.

Ike joined the Patagonia Volunteer Fire Department in the 1990's, protecting our community and fighting wildfires. During his tenure with the department, he became a certified EMT and Fire Chief, responding with compassion and dedication to many emergencies, including my parents, in and around Patagonia.

Ike was elected Mayor for the Town of Patagonia in 2010 and served diligently and with continued commitment until his 2nd term ended in 2018.

May Richard (Ike) Isaakson now rest in peace and may his years of stewardship serve as a legacy and example of true commitment to the Town of Patagonia and its citizens now, and for generations to come.

Please join us for a moment of silence in honor of Richard (Ike) Isaakson.



Antimony in Discharge to Harshaw Creek and Potential Mobilization of Existing Contamination in the Harshaw Creek Watershed

Patagonia, Arizona

Chris Gardner, RG

1/14/2026

DRAFT

December 17, 2025

Santa Cruz County Supervisors,

Antimony in the discharge from South32 to Harshaw Creek is now present in drinking water along the creek and appears to exceed the Drinking Water Standard. Please see the chart on the other side of this page. I'm concerned that the technology for industrial treatment of high concentrations of antimony in water to safe levels may not exist.

When the discharge rate to Harshaw Creek increased from about 1.0 to 2.5 million gallons per day (referred to as MGD) concentrations of antimony exceeded permit alert levels in September 2024. South32 attributed this exceedance to one bad well, which they shut down. Discharge rates decreased and concentrations of antimony in the discharge decreased until a sudden increase in June 2025 after an increase in the discharge rate from about 1.4 to 1.7 MGD. Once the June 30 sample result was available to the public, I asked the ADEQ to take a look into this issue in mid-August. About a month later, the ADEQ got back to me and described a loophole in the permit which prevented them from looking further into the issue, even though a sample result submitted to them had exceeded the permit Alert Level.

Based on an October 31st sample result and an increase in discharge rate from about 1.2 to 1.4 MGD, I asked the ADEQ earlier this month to check what South32 reported. The ADEQ realized that a different result for a sample collected October 3rd, was misreported by South32 and actually exceeded the state's permit discharge limit.

My concern is that the water associated with that one bad well is now being captured by the cone of depression and high concentrations of antimony will persist or get worse as the mine discharges more water and goes deeper. I'm afraid the ADEQ is not capable of addressing this issue and South32 will continue discharging contamination using a social license from the community to pollute such as the current phased approach to the Community Benefits and Protection Agreement where impacted communities may never realize protections.

I ask for an immediate Couty Board of Supervisors study session including a presentation from South32 and the ADEQ on the progress of studies and investigations regarding the concentration of antimony in the discharge to Harshaw Creek.

I ask that the Community Benefits and Protection Agreement be one agreement that includes protections, not a phased approach starting with benefits only.

The final Environmental Impact Statement will be available February 6th. To help better understand what protections need to be in the agreement, I can contribute to a study session on the Environmental Impact Statement findings and deficiencies to the Board of Supervisors in April or May.

Please feel free to contact me at [redacted]

Chris Gardner

January 7, 2026

Santa Cruz County Supervisors,

Thank you Board of Supervisors and South32 for having this study session. I'm a hydrogeologist and live near the Town of Patagonia. My statements are preliminary based on limited available data and limited peer review. I'm recently become concerned about the discharge of concentrations of antimony above permitted limits several times since October 2024. However, my long-standing concern is the mobilization of existing contamination as dry contaminated sediments are saturated due to the discharge to Harshaw Creek. Data suggests that antimony and other contaminants can mobilize in surface water and/or groundwater. Sub Reach B of Harshaw Creek, between the road to San Rafael Valley and a tributary from Saddle Mountain, is likely a naturally occurring, highly mineralized area. Field parameters collected on January 4th, 2026 showed the specific conductivity (which is related to total dissolved solids in water) increased from about 1,000 µS/cm at the top of Sub Reach B, to about 2,000 µS/cm in the middle of the reach, then to about 2,800 µS/cm at the end of Sub Reach B. Increases in conductivity may represent increases in contamination.

South32 has tracked groundwater quality in a drinking water well along this reach and the concentration of antimony has increased through 2025. Laboratory results for a sample collected by Friends of Sonoita Creek and verified by the ADEQ showed the concentration of antimony in drinking water was twice the drinking water standard. South32 also collected a sample from this well at about the same time and I ask that those lab results be shared with the well owner ASAP.

Downstream of Sub Reach B, surface water is likely diluted by groundwater flow along drainages from Saddle and Indian Head Mountains, however I'm very concerned that potential mobilization of contamination will occur downstream as the discharge saturates sediments in Sub Reach G, just downstream of the Arizona Trail parking lot to about 1-mile from the Town of Patagonia. Drainages from several mining areas likely contribute contaminated sediments into Sub Reach G. This is the area where the draft environmental impact statement indicates a groundwater mound will develop, potentially saturating a thickness of up to 60 feet of contaminated sediments. My concern is that contamination from the Harshaw Creek watershed may be mobilized into the drinking water for people in and around the Town of Patagonia.

The potential for mobilization of existing contamination has not been adequately analyzed by South32, the Forest Service or the ADEQ. Who is responsible for the potential mobilization of contamination into the drinking water supply? Sadly, none of entities will likely take responsibility for this potential issue, leaving the public vulnerable to potential groundwater contamination. The issue of potential mobilization of existing contamination and protection of the public drinking water supply needs to be included in a single Community Benefits and Protections Agreement, not as a protection to be addressed later as is the current phased approach.

Thank you,

Chris Gardner, RG

Antimony in water is not a surprise to South32. The following information is from a 2017 permit application from South32 to the ADEQ.

ARIZONA MINERALS

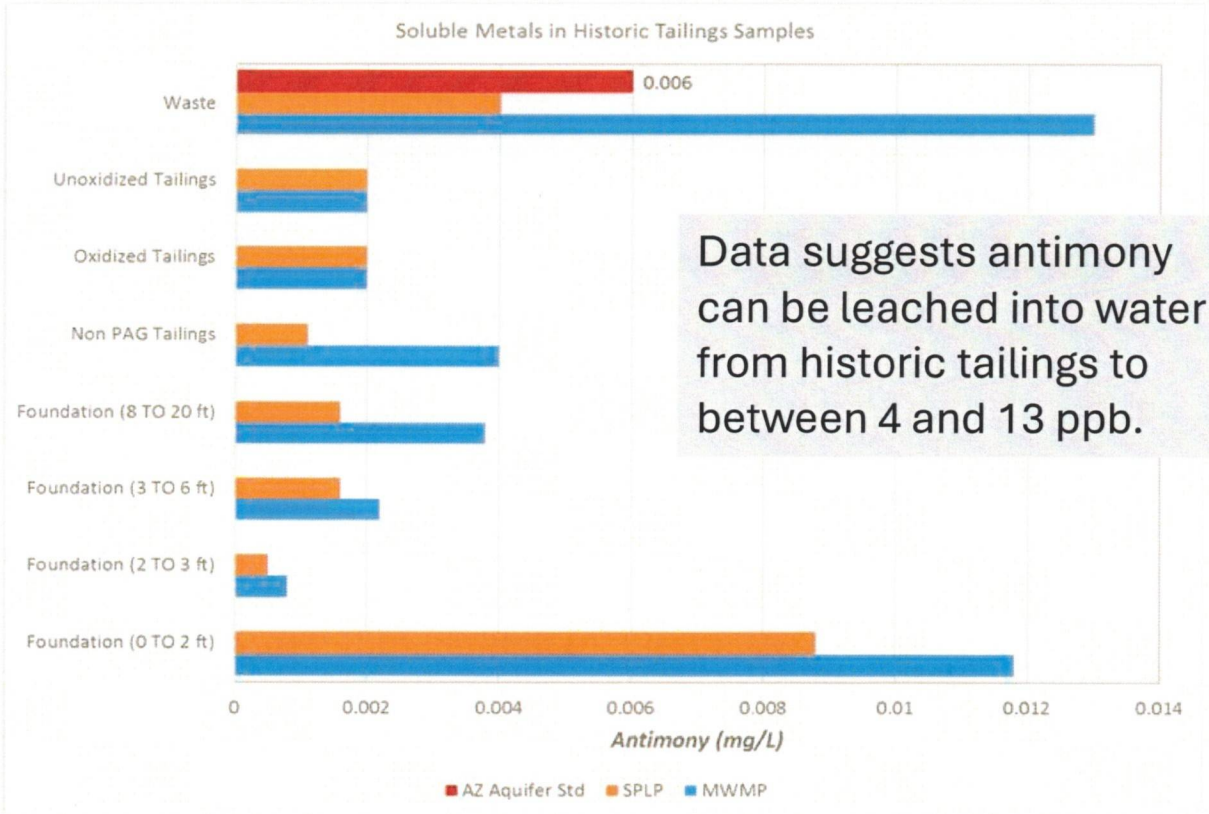
3845 North Business Center Drive
Suite 115
Tucson, AZ 85705
Tel: 520-485-1300
Email: info@arizonamining.com
Web: www.arizonamining.com

June 5, 2017

Mr. Luke Peterson
Arizona Department of Environmental Quality
Groundwater Aquifer Protection Permit Unit
1110 W. Washington St.
Phoenix, AZ 85007

Re: Aquifer Protection Permit Application
Trench Camp Property (January Mine, Norton Mine and Trench Camp Mine Claims)
Arizona Minerals, Inc.

Arizona Minerals Inc.
Trench Camp Historic Tailings
Geochemistry and Material Characterization



Data suggests antimony can be leached into water from historic tailings to between 4 and 13 ppb.

Figure 5. Soluble antimony in samples collected from the historic tailings area.

Antimony in water is not a surprise to South32. The following information is from a 2017 permit application from South32 to the ADEQ.

"Soluble metals in SPLP extracts [leach tests] exceeded Arizona aquifer standards for four constituents in one or more samples: antimony, cadmium, lead, and nickel. Since contact water within the lined repository will be collected and treated, the elevated levels of metals will not pose an environmental risk. "

From a different section in the 2017 permit application from South32 to the ADEQ.

"Monthly monitoring of water discharged to Alum Gulch (if none is discharged, no sampling required) will be analyzed (dissolved fraction) for As, Ba, Be, Cd [**Cadmium**], Cr, F, Pb [**Lead**], Hg, Ni [**Nickel**], Nitrate/Nitrite as N, Se, Tl. Note that additional analytes may be required under the AZPDES permit."

Antimony in wastewater at concentrations above aquifer standards was discussed but **antimony was not considered in the design of the first water treatment facility** by South32 or the ADEQ.

"Water chemistry from mine water and the existing tailings seepage (worst-case surrogate for UP water) were characterized using water samples collected the week of January 9, 2017. In addition to characterizing the two separate water sources, these waters were combined in a 20:3 ratio (Mine to seep water) and characterized. Chemistries of these three water sources have been characterized and are shown in Table 3-1. "

Why was antimony (Sb) was not considered in the design of the first water treatment plant?

Table 3-1
Water Quality and Jar Testing Results

Constituent	Units	Mine Raw	Seep Raw	Mine + Seep Mixed 20:3	Seep pH 9.0	Seep pH 9.0 air	Seep pH 9.0 air + filter	Seep pH 10.5	Seep pH 10.5 air	Seep pH 10.5 air + filter	Mixed pH 9.0	Mixed pH 9.0 air	Mixed pH 9.0 air + filter	Mixed pH 10.5	Mixed pH 10.5 air	Mixed pH 10.5 air + filter	Surface Water Quality Standards: A&W (EDW) chronic (1)	A&W (EDW) acute (1)	AWQS	Partial Body Contact	Ag & Livestock Watering
Conductivity	µmhos/cm	4600	14000	6000		8100			4600			6000			5900						
Hardness	mg/L	2100	4200	2300	4000	4200	3900	1900	1800	1700	2900	3000	3000	2700	2800	2800					
Ca, Dissolved	mg/L	480	480	440	660	630	580	770	700	670	720	730	730	870	850	860					
Fe, Dissolved	mg/L	<0.0044	25	<0.0044	<0.0044	<0.0044	<0.0044	<0.0044	<0.0044	<0.0044	<0.0044	<0.022	<0.0044	<0.022	<0.022	<0.0044	1				
Mg, Dissolved	mg/L	220	740	280	570	640	600	<3.0	19	18	280	280	280	130	160	150					
Al, Dissolved	mg/L	<0.0400	148	10.6	<0.400	<0.400	<0.40	<0.400	<0.40	<0.400	0.0701	<0.40	0.134	<0.40	<0.40	<0.40					
As, Dissolved	mg/L	0.00099	0.027	0.0030	0.00055	<0.0050	<0.0050	<0.0050	<0.00050	<0.0050	0.0010	0.00091	0.00070	<0.00050	0.00084	0.00056	0.15	0.34	0.05		
Be, Dissolved	mg/L	<0.00025	0.031	0.0045	<0.025	<0.025	<0.0025	<0.00025	<0.00025	<0.00025	<0.00025	<0.0025	<0.00025	<0.0025	<0.0025	<0.0025	0.0053	0.065	0.004		
Cd, Dissolved	mg/L	<0.00025	18	0.23	0.023	0.055	0.058	<0.00025	<0.00025	<0.00025	0.0080	0.010	0.011	<0.00025	0.00068	0.00064	0.00622	0.01912	0.005		
Cr, Dissolved	mg/L	0.00051	0.0027	0.00053	<0.00050	<0.0050	<0.00050	<0.0050	<0.00050	<0.0050	0.00072	<0.0050	<0.00050	<0.00050	<0.00050	<0.00050			0.1		
Cu, Dissolved	mg/L	0.0015	2.4	0.35	0.0013	<0.0050	<0.0050	<0.0050	0.0015	<0.0050	0.00093	0.0011	0.0015	0.00075	0.00084	0.00079	0.02928	0.04962			
Mn, Dissolved	mg/L	56	1200	210	49	110	110	0.011	0.0076	0.073	96	100	100	0.30	2.2	1.4					
Ni, Dissolved	mg/L	0.062	1.2	0.23	0.028	0.034	0.034	0.047	0.026	0.041	0.051	0.059	0.060	0.040	0.051	0.056	0.16804	1.51289	0.1		
Pb, Dissolved	mg/L	<0.00050	0.015	<0.00050	<0.00050	<0.0050	<0.00050	<0.00050	<0.00050	<0.00050	<0.0050	<0.0050	<0.0050	<0.00050	<0.00050	<0.00050	0.01094	0.28085	0.05		
Se, Dissolved	mg/L	0.0022	0.073	0.0081	0.003	0.0025	0.0047	<0.0016	0.0022	0.0017	0.004	0.0029	0.0028	0.0017	0.002	0.0019			0.05		
Tl, Dissolved	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.0050	<0.00050	<0.00050	<0.00050	<0.00050	<0.0050	<0.0050	<0.0050	<0.00050	<0.00050	<0.00050	0.15	0.7	0.002		
Zn, Dissolved	mg/L	6.3	670	84	0.062	<0.40	<0.40	<0.40	<0.40	<0.40	0.074	0.060	0.057	<0.040	<0.040	<0.040	0.3793	0.3793			
Fe, Total	mg/L	21	25	21	<0.0044	<0.0044	<0.0044	<0.0044	<0.0044	<0.0044	<0.0044	<0.0044	<0.0044	<0.0044	<0.0044	0.34					
Al, Total	mg/L	<0.400	176	25.0	<2.00	<2.00	<2.00	<2.00	<0.00050	<2.00	<0.40	<0.40	0.131	<0.800	<2.00	<0.800					
Ag, Total	mg/L	0.048	0.029	0.054	<0.0050	<0.0050	<0.0025	<0.0050	<0.0025	<0.0050	<0.0050	<0.0050	<0.00050	<0.0050	<0.0050	<0.00050				0.28	0.2
Be, Total	mg/L	<0.0025	0.042	0.0058	<0.013	<0.013	<0.0013	<0.013	<0.0025	<0.013	<0.0025	<0.00025	<0.00025	<0.0050	<0.0050	<0.0050				1.867	
Cd, Total	mg/L	0.0010	1.3	0.25	0.038	0.067	0.076	0.00052	<0.0025	0.0023	0.021	0.024	0.022	0.0035	0.0030	0.0064				0.7	0.05
Cr, Total	mg/L	<0.0050	<0.025	<0.0050	<0.025	<0.0050	<0.0025	<0.025	<0.025	<0.025	<0.0050	<0.0050	0.0015	<0.010	<0.0050	0.0016					1
Cu, Total	mg/L	<0.0051	2.8	0.38	<0.025	<0.0050	<0.0025	0.0068	<0.025	<0.025	0.0051	<0.0050	0.0054	0.0045	<0.0050	0.017				1.3	0.5
Mn, Total	mg/L	65	1200	200	51	98	120	0.99	1.1	1.7	110	110	100	45	5.2	8.0				130.667	
Ni, Total	mg/L	0.053	1.5	0.29	0.025	0.028	0.033	0.042	0.046	0.037	0.040	0.038	0.035	0.053	0.033	0.037				28	
Pb, Total	mg/L	0.0075	<0.025	0.011	<0.0050	0.00068	<0.0050	<0.0050	0.00083	<0.0050	0.0015	<0.00050	<0.00050	0.00090	<0.00050	0.0024				0.015	0.1
Se, Total	mg/L	0.0031	0.063	0.011	<0.008	0.0054	0.008	0.0017	<0.008	0.019	0.0028	0.0046	0.0019	0.0011	0.002	0.0018	0.002			4.667	0.05
Tl, Total	mg/L	<0.00050	<0.025	<0.00050	<0.0050	<0.00050	<0.0050	<0.0050	<0.00050	<0.0050	<0.0050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050				0.075	
Zn, Total	mg/L	6.6	680	91	<2.00	0.53	<2.00	0.58	<2.0	<2.00	0.33	0.83	0.47	0.60	<0.40	1.6				280	25
TDS	mg/L	3200	13000	4400		5600			3100			4400			4200						
SO4	mg/L	2200	8800	3100		4500			2300			3000			2900						

Notes: (1) limits or hardness-based metals (cadmium, copper, lead, nickel, silver, zinc) are based on a hardness of 400

The following information was provided to the ADEQ from South32 to support amending the permit to include the second water treatment plant (WTP2).

WTP2 Influent Water Quality and Treatment Objectives

The maximum predicted concentrations of contaminants in water feeding WTP2 are shown in Table 1. The treatment targets for each contaminant are also included in this table and were developed from the most stringent of applicable surface water quality standards, aquifer water quality standards, and effluent limitation guidelines. Only species for which anticipated influent concentration exceeds the treatment target are included in this table. Because other metals are not predicted to exceed the proposed treatment target, a treatment method has not been designed for them.

Table 1 Maximum predicted concentration of contaminants and the corresponding treatment targets for WTP2 (Source: Arizona Minerals, Inc.).

Analyte	UNIT	Feed Water Chemistry	Treatment Target*
Arsenic	mg/L	0.075	0.050
Copper	mg/L	0.045	0.0196
Iron	mg/L	1.2	1.0
Lead	mg/L	0.059	0.0067
Selenium	mg/L	0.029	0.0020
Zinc	mg/L	0.43	0.2547

Table 2.1 - WTP2 Feed Water Chemistry Predictions

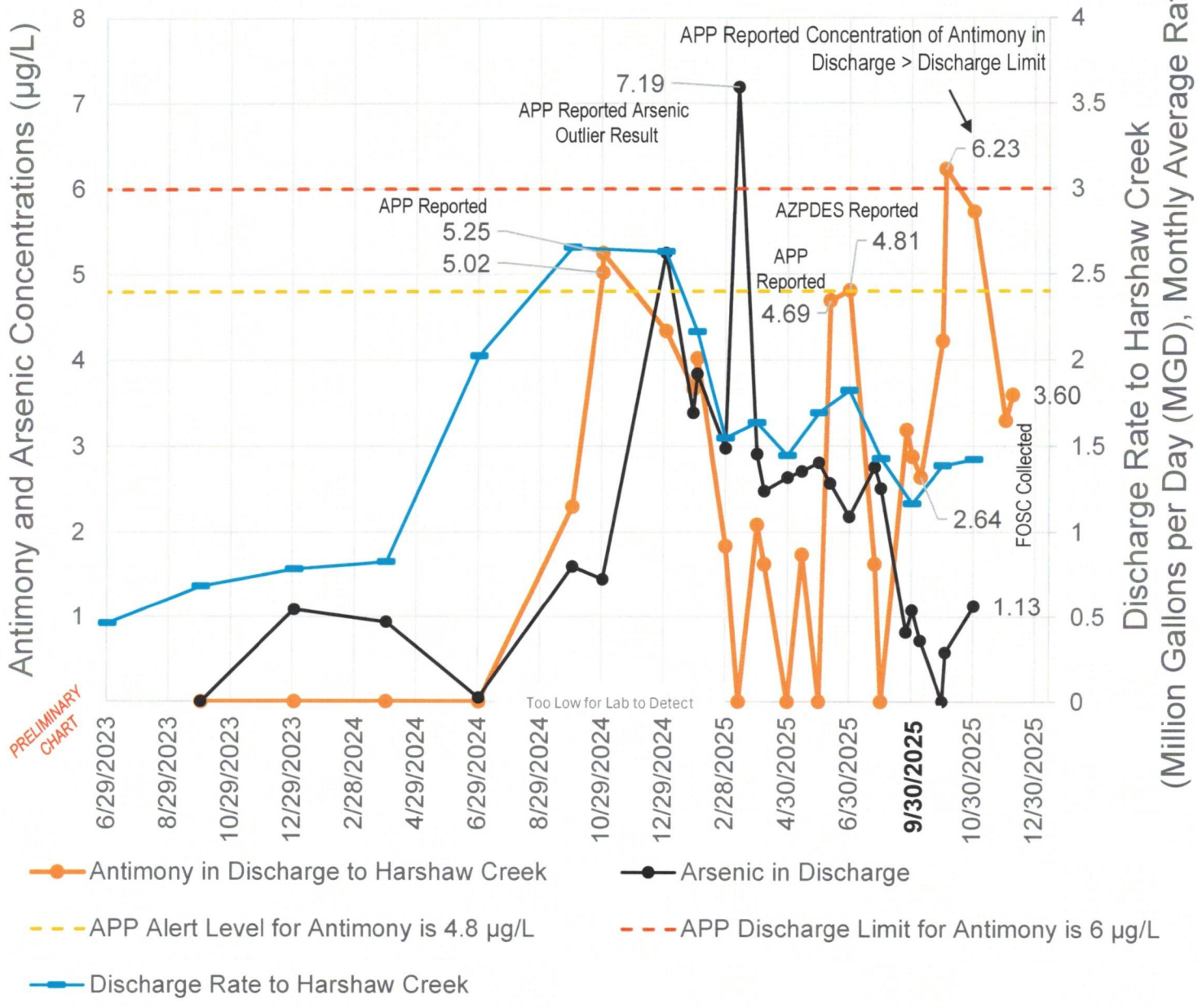
ANALYTE	UNIT	MINIMUM	MAXIMUM
Antimony	mg/L	0.0039	0.004
Arsenic	mg/L	0.073	0.075
Barium	mg/L	0.024	0.025
Beryllium	mg/L	Constituent Not Detected at Reporting Levels Ranging from 0.000013 to 0.002 mg/L	
Boron	mg/L	0.049	.05
Cadmium	mg/L	0.0009	0.0012
Chromium	mg/L	0.0046	0.0048
Copper	mg/L	0.044	0.045
Fluoride	mg/L	0.17	0.18
Iron	mg/L	1.1	1.2
Lead	mg/L	0.042	0.059
Manganese	mg/L	0.48	1.02
Mercury[1]	mg/L	0.0000051	0.0000051
Nickel	mg/L	0.008	0.009
Selenium	mg/L	0.027	0.029
Silver	mg/L	0.0003	0.0021
Sulfate	mg/L	32	152
Thallium	mg/L	0.0003	0.00033
Uranium	mg/L	0.0016	0.0018
Zinc	mg/L	0.23	0.43
pH	SU	7.12	7.16
TSS	mg/L	0	44
Hardness[2]	mg/L $CaCO_3$	258	340
Ammonia/Nitrate-N	mg/L	0.25	3.5
Cyanide (total)	mg/L	Constituent Not Detected at Reporting Levels Ranging from 0.1 to 0.0039 mg/L	

Why was antimony (Sb) was not considered in the design of the second water treatment plant WTP2 which discharges to Harshaw Creek and the drinking water supply?

Hermosa Mine APP & AZPDES Reported Heavy Metals in Discharge to Harshaw Creek and Rate

Concentrations of antimony & arsenic in 2025 generally tracked with the discharge rate until September 2025 when the discharge rate increased from ~1.2 to ~1.4 MGD; then antimony increased to above the APP Discharge Limit while arsenic remained ≤1 µg/L.

PRELIMINARY STATEMENT



Notes:

- APP - Aquifer Protection Permit, state law to protect groundwater quality. Data available upon state Records Request.
- AZPDES - Arizona Pollution Discharge Elimination System, federal law to protect surface water quality. Data online.
- APP Discharge Limit for arsenic is 50 µg/L, Aquifer Water Quality Standard for arsenic is 10 µg/L.
- Results compiled by Chris Gardner from publicly available sources and are presented as preliminary in this chart.

Friends of Sonoita Creek
Protecting the Watershed

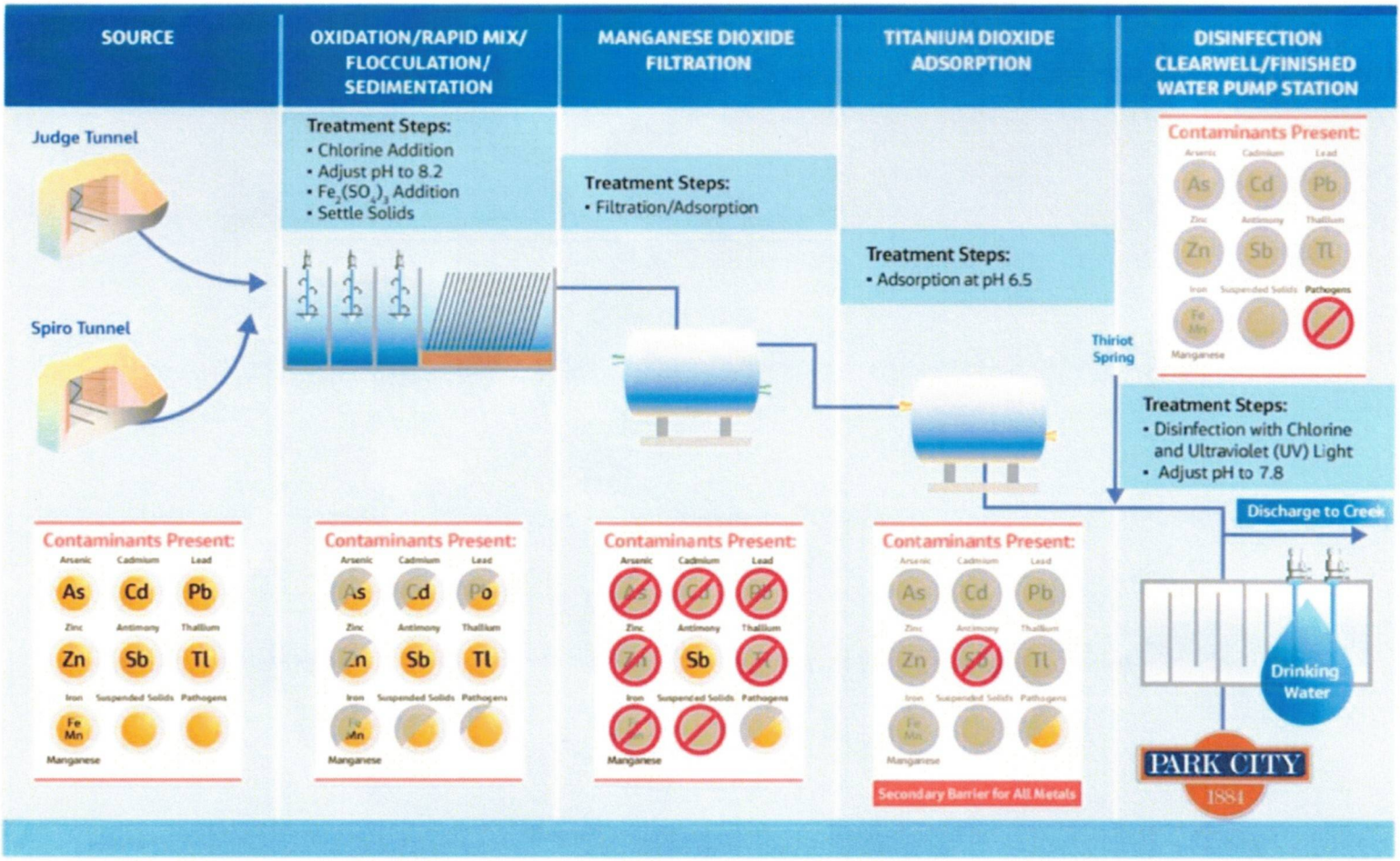
Antimony can be treated as demonstrated by the Three Kings Water Treatment Plant in Park City, Utah

Park City Water Quality and Treatment Manager Michelle De Haan

Park City has been operating an $80M drinking water treatment plant for about 1.5 years. Antimony influent is 7-10 ppb and is successfully treated to about 4.2 ppb at 7.2 MGD using a titanium powder adsorptive media.

The antimony treatment vessel runs at low pH and low pressure. Any other metal will foul the antimony adsorptive media so other metals need to be very low to effectively remove antimony.

There is a low-cost antimony media supplier in Arizona called Canyon States Filtration. https://canyonstatefiltration.com/
They sell the MetSorb HMRG product from Graver Technologies, gravertech.com.



Park City Municipal

This graphic explains the water treatment process at 3Kings.

For more information on the treatment of antimony, please listen to the following:

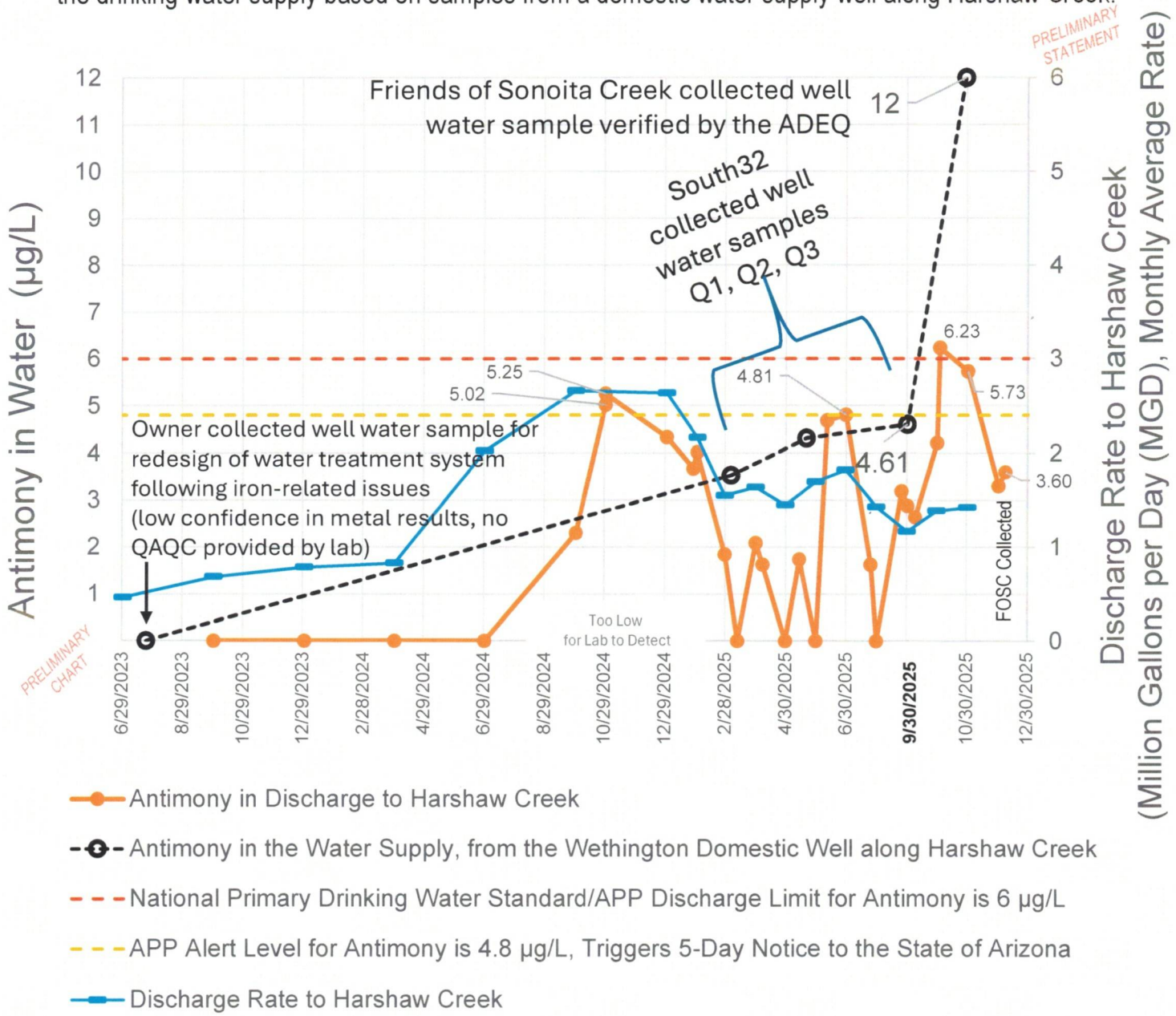
The science of Park City's drinking water

- https://www.kpcw.org/show/cool-science-radio/2024-07-11/the-science-of-park-citys-drinking-watercience of Park City's drinking water

Photo below from the 3Kings Water Treatment Facility shows the 6 vessels solely used to treat antimony in water from 7-10 ppb to about 4.2 ppb. Vessels must be operated at low ph and low pressure to be effective.

Hermosa Mine - Patagonia, Arizona
Reported Antimony in Discharge to Harshaw Creek and Impact to the Drinking Water Supply

Antimony in the 2025 discharge water from South32 to Harshaw Creek, reported to the State of Arizona by South32, generally tracked with the discharge rate until September 2025 when the discharge rate increased from ~1.2 to ~1.4 MGD; then antimony increased to above the State's Aquifer Protection Permit (APP) Discharge Limit of 6 µg/L. During this time, antimony has appeared and is increasing in the drinking water supply based on samples from a domestic water supply well along Harshaw Creek.



- Antimony in Discharge to Harshaw Creek
- Antimony in the Water Supply, from the Wethington Domestic Well along Harshaw Creek
- National Primary Drinking Water Standard/APP Discharge Limit for Antimony is 6 µg/L
- APP Alert Level for Antimony is 4.8 µg/L, Triggers 5-Day Notice to the State of Arizona
- Discharge Rate to Harshaw Creek

Friends of Sonoita Creek
Protecting the Watershed

	Turbidity (NTU)	Arsenic (mg/L, total)	Lead (mg/L, total)	Iron (mg/L, total)	Sulfate (mg/L)	Mangan-ese (mg/L, total)	Zinc (mg/L, total)	pH (SU)
Primary or Secondary Standard		0.010	0.015	0.3	250	0.05	5	6.5 - 8.5
Sample Date (Source)								
8/27/2009 (Turner, 2009)	0.4	0.0083	<0.0025	6.6	260	<0.02	0.049	Not Analyzed
Regular on-site pumping began in early 2016 (Garrett email, 2024). In 2017, a long-term aquifer test was conducted on South32 Hermosa private land on well WW-1. Approximately 43,000,000 gallons pumped from WW-1 were discharged to Harshaw Creek during the aquifer test (South 32, 2025)								
5/27/2019 (Schrag, 2020)	Not Analyzed	<0.040	<0.040	21.77	312	Not Analyzed	0.12	6.00
Water from the 10-day aquifer test for WW-1 was discharged to Harshaw Creek in 2019, under a de minimis discharge permit from ADEQ (Garrett email, 2024)								
8/19/2021 (Turner, 2021)	220	0.015	0.0007	46	560	1.8	0.36	Not Analyzed
December 2021, first AZPDES reported discharge. August 2023, first discharge of treated water from WTP2 to Harshaw Creek (Garrett email, 2024)								
3/6/2025 (ACZ, 2025)	1.46	0.0059	0.0001	11.4	305	0.549	0.123	7.8
5/21/2025 (ACZ, 2025)	3.24	0.00726	0.0001	12.4	329	0.559	0.108	7.9
5/22/2025 (CAS, 2025)	128.8	Not Analyzed	0.479	8.92	Not Analyzed	0.375	0.215	Not Analyzed
7/29/2025 (Friends of Sonoita Creek, Eurofins, 2025)	87.9 (casing)	Not Analyzed	<0.0002	Not Analyzed	Not Analyzed	Not Analyzed	Not Analyzed	7.16
	5.29	0.0064 (dissolved)	0.0002	Not Analyzed	250	0.36	Not Analyzed	6.90

Friends of Sonoita Creek
Protecting the Watershed

DRAFT

Water Quality Trends in a Drinking Water Well along Harshaw Creek

Friends of Sonoita Creek
Protecting the Watershed

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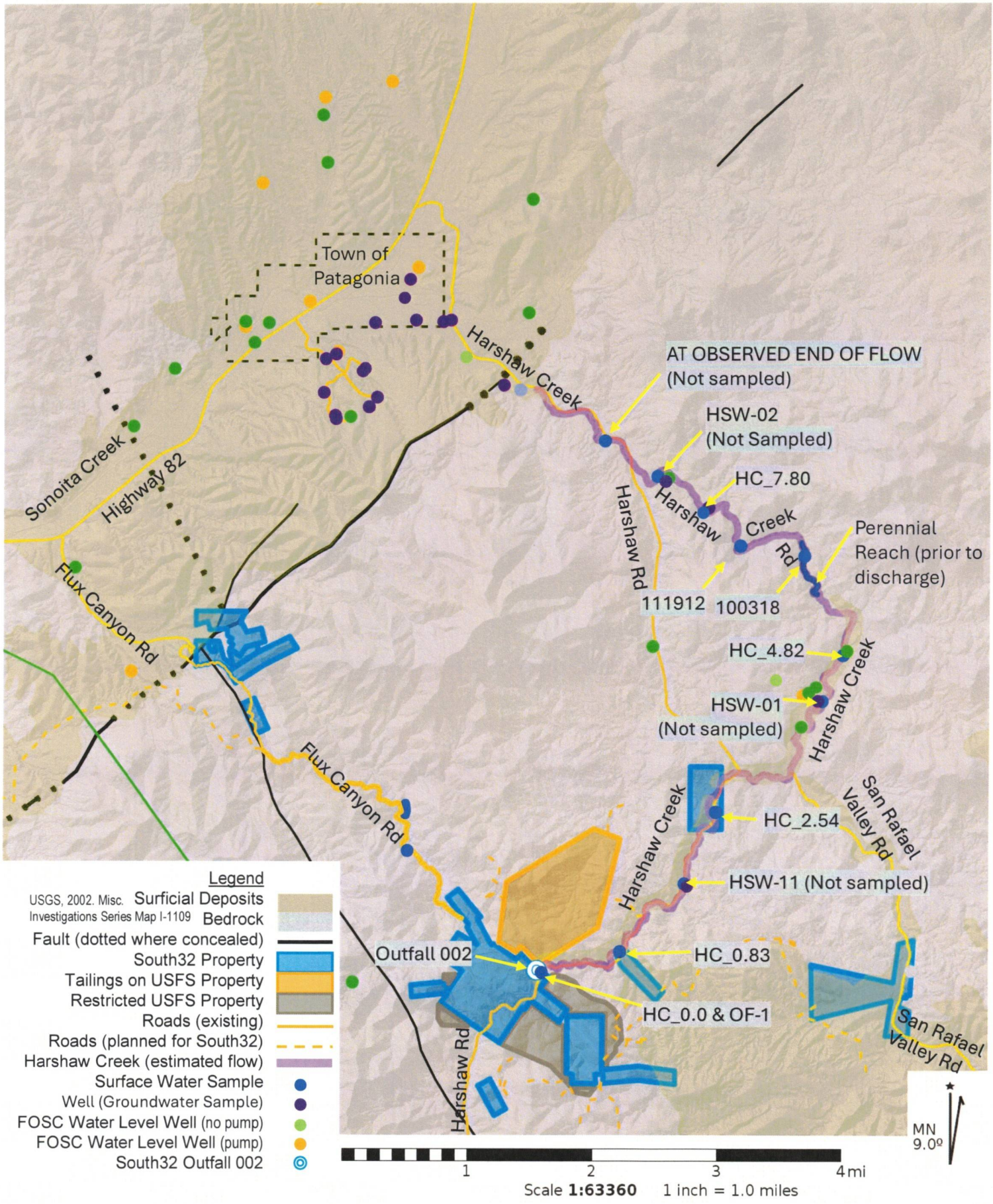
Iron in Discharge from a Tank Filled with Water from a Drinking Water Well along Harshaw Creek



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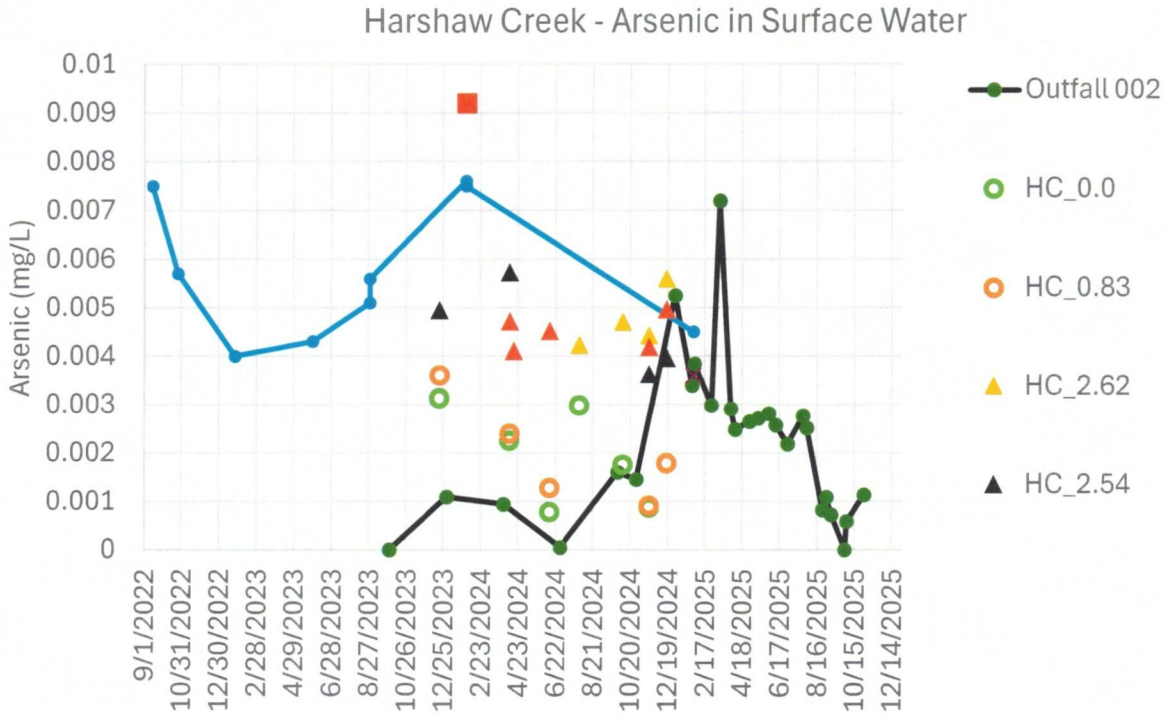
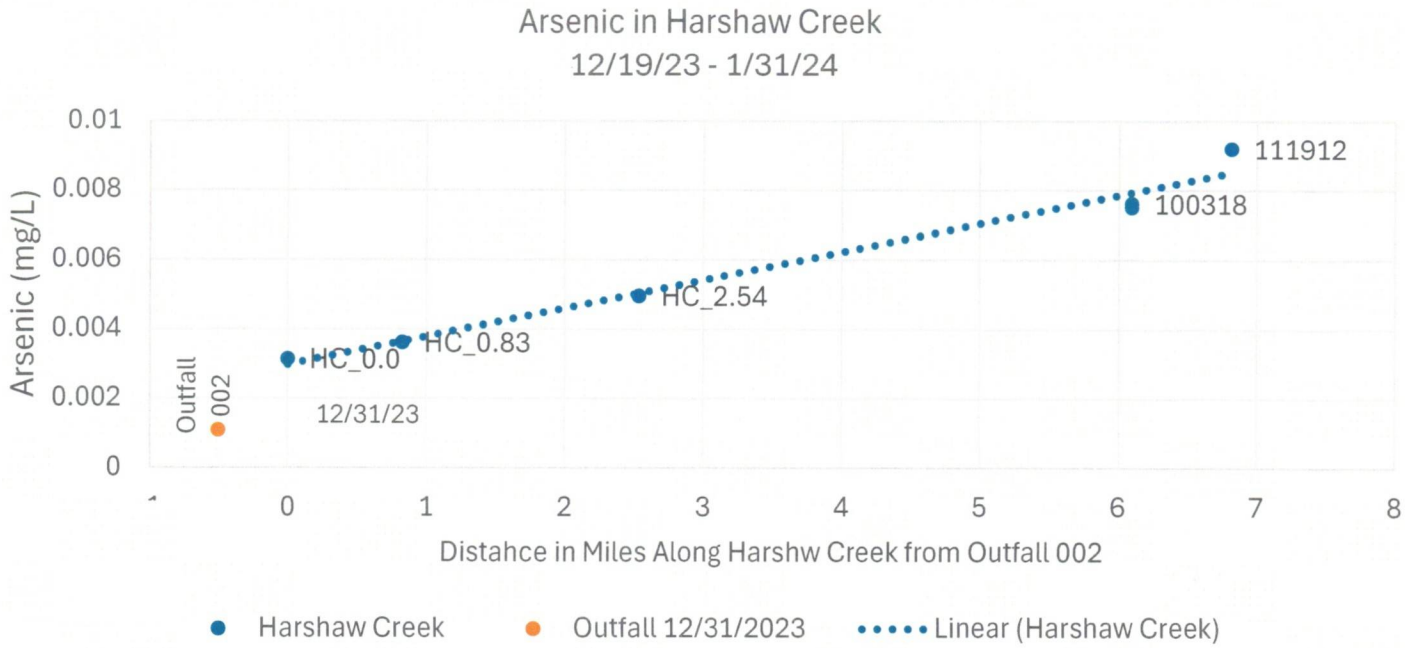
Harshaw Creek Surface Water Sample Locations 2023 - 2024





Data Sources:
https://www.epa.gov/waterdata/water-quality-data
ADEQ Records Request

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Protecting the Watershed

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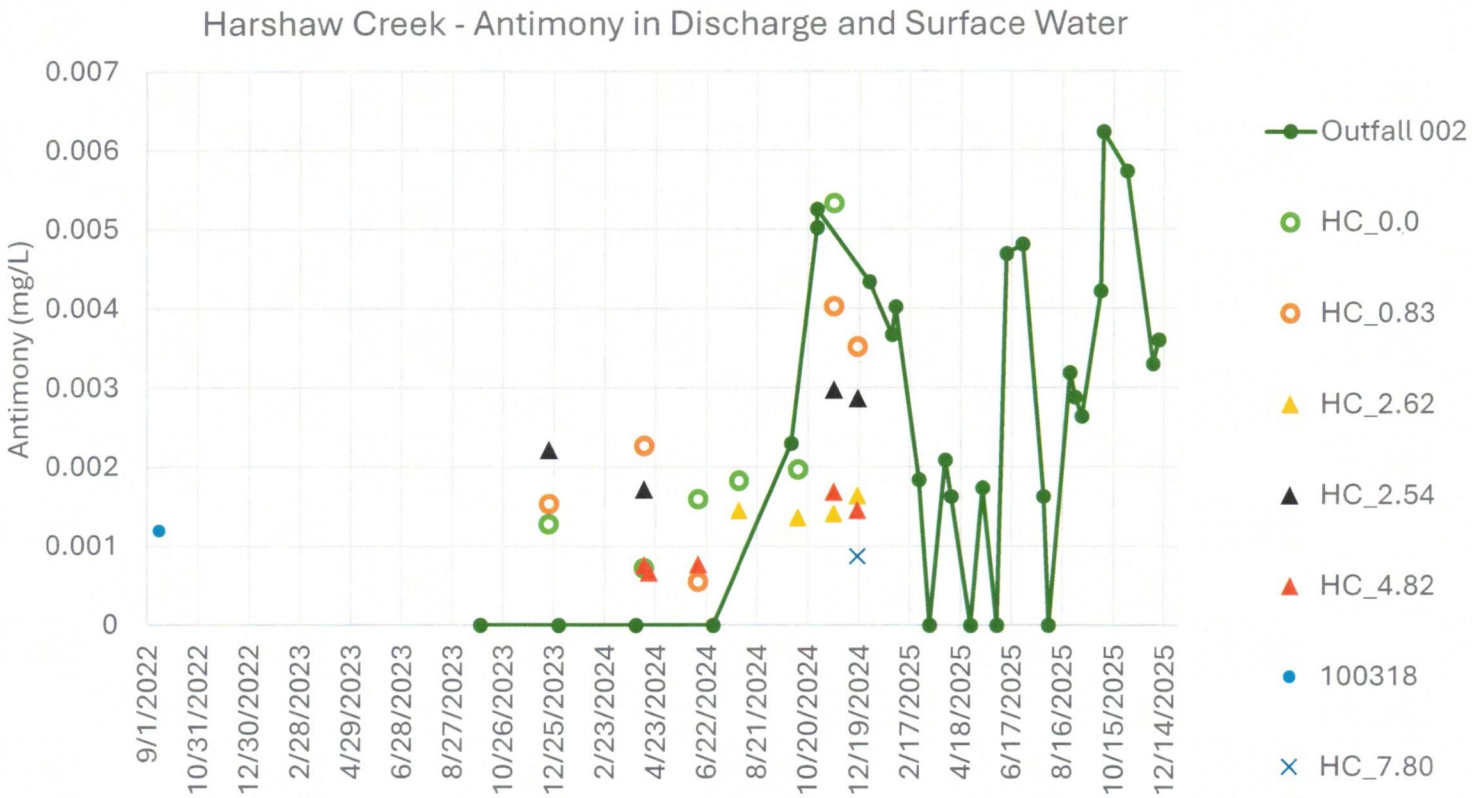
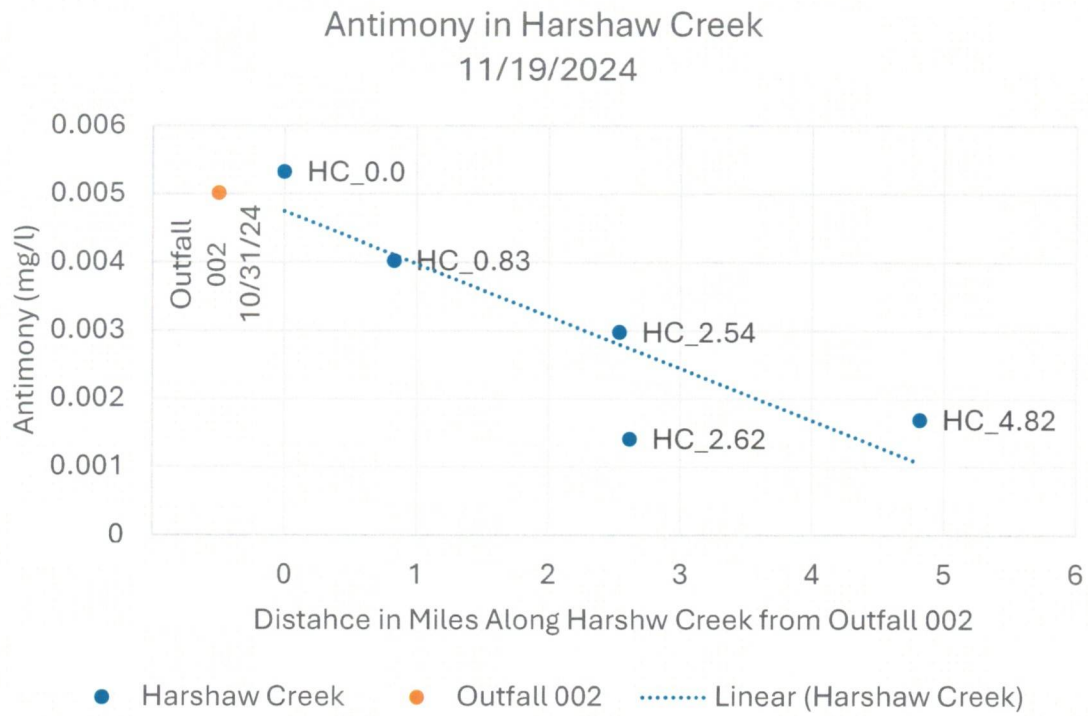
Arsenic Concentrations in Harshaw Creek 2023-2024





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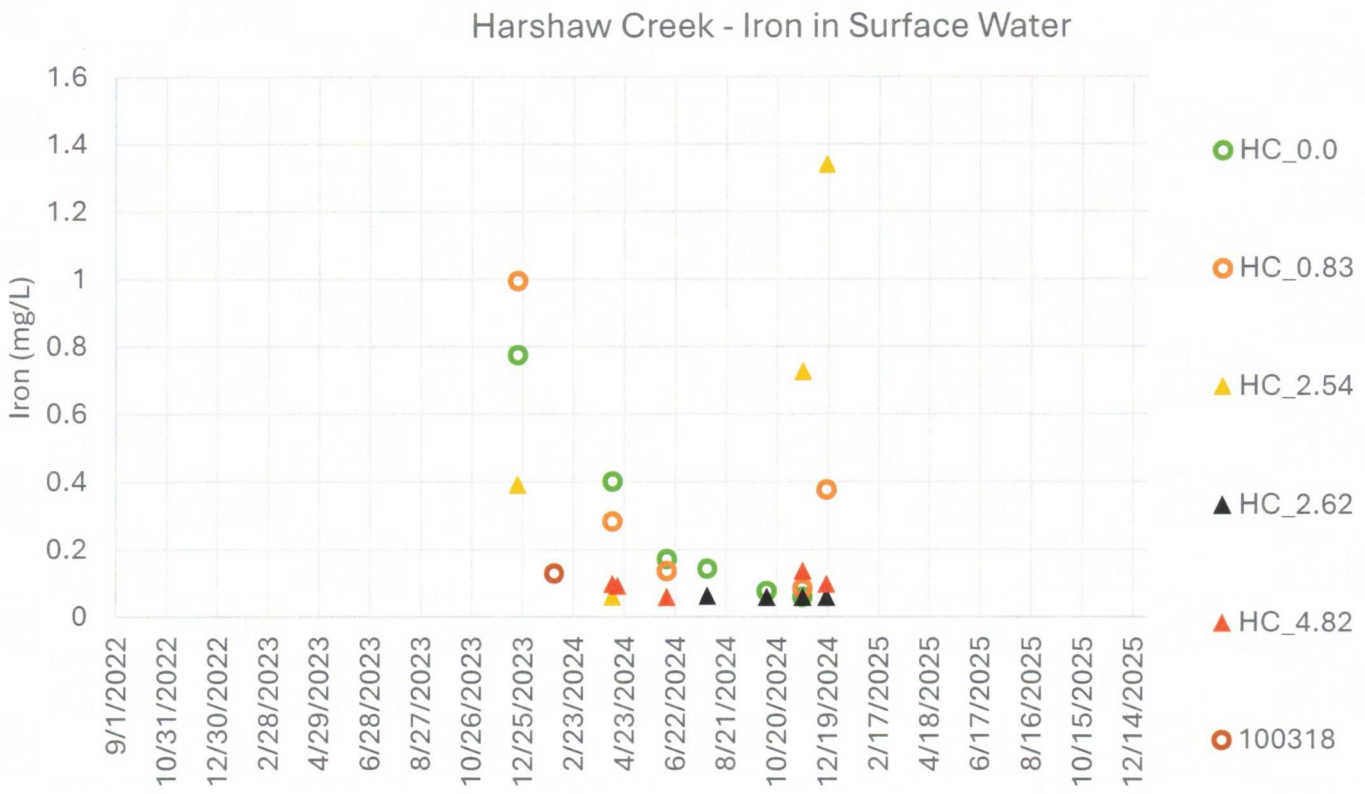
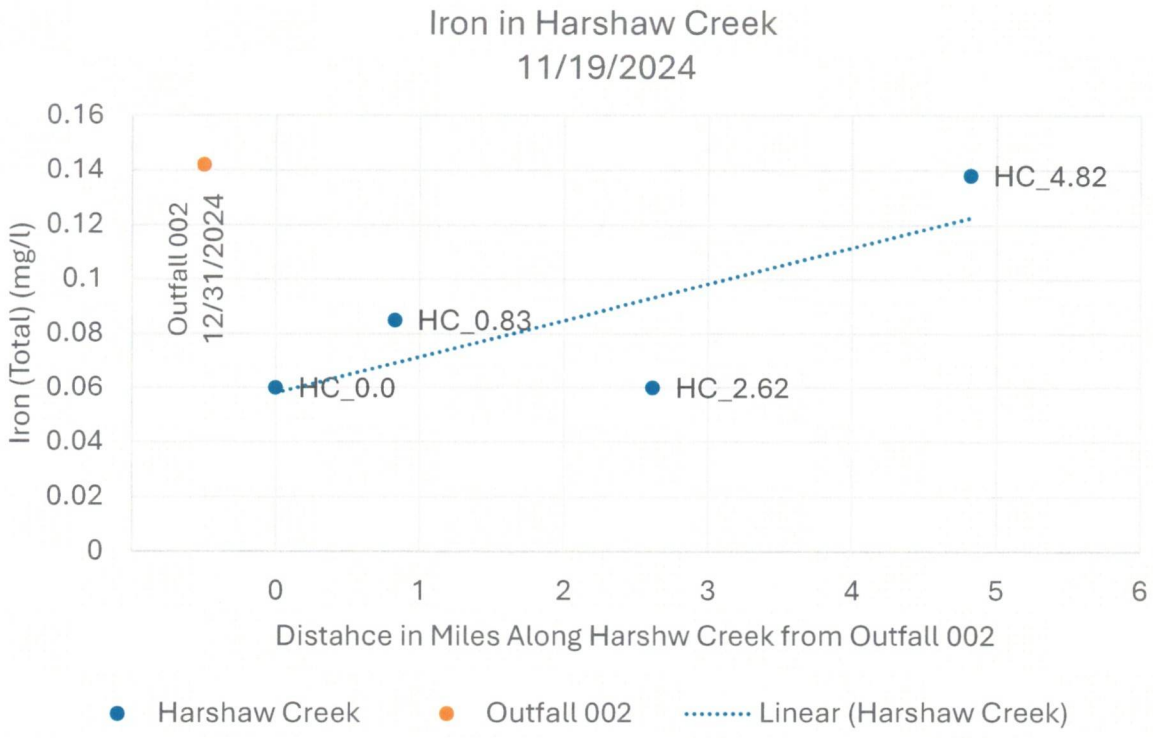
Antimony Concentrations in Harshaw Creek 2023-2024





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Protecting the Watershed

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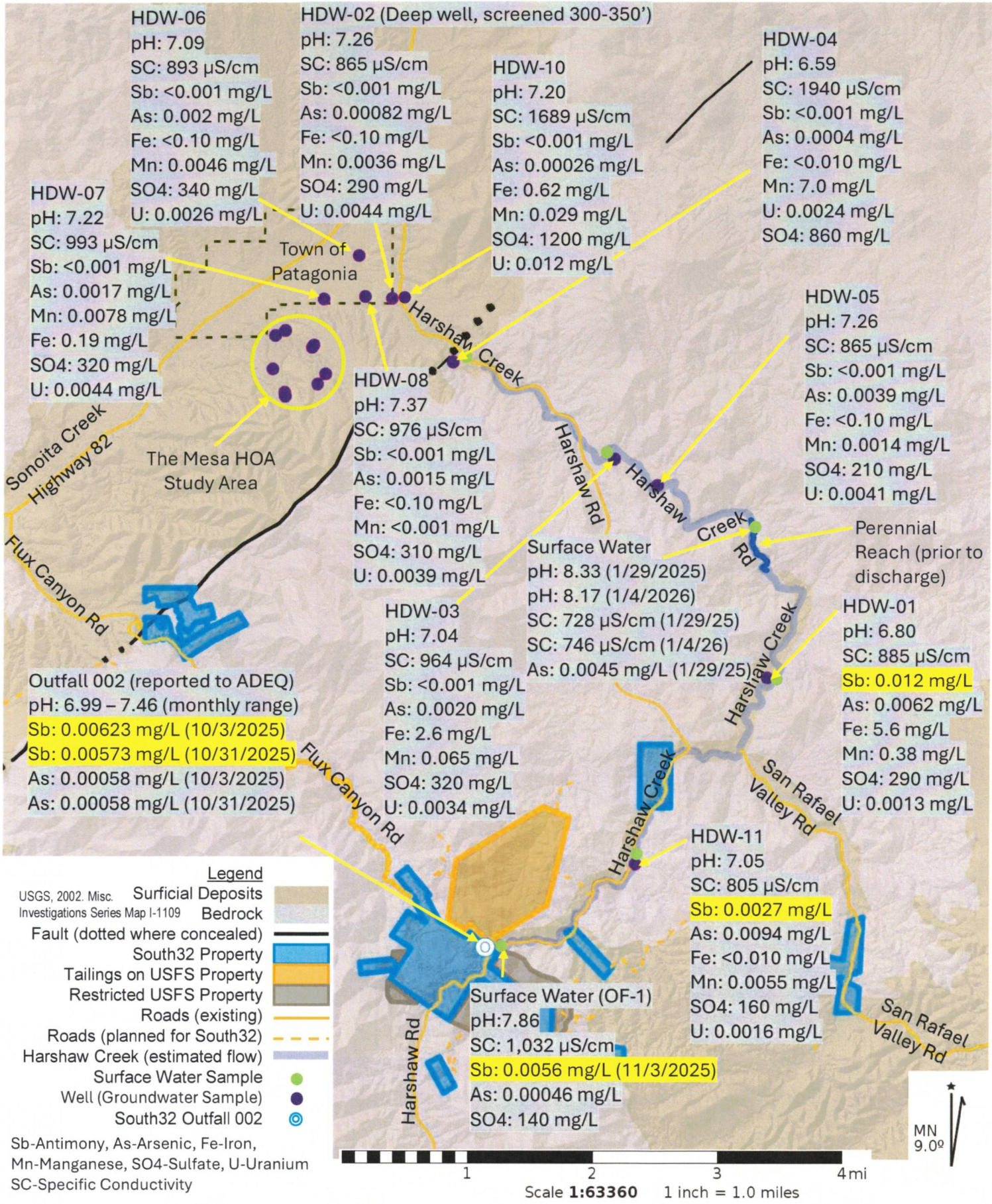
Iron Concentrations
in Harshaw Creek 2023-2024



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Protecting the Watershed

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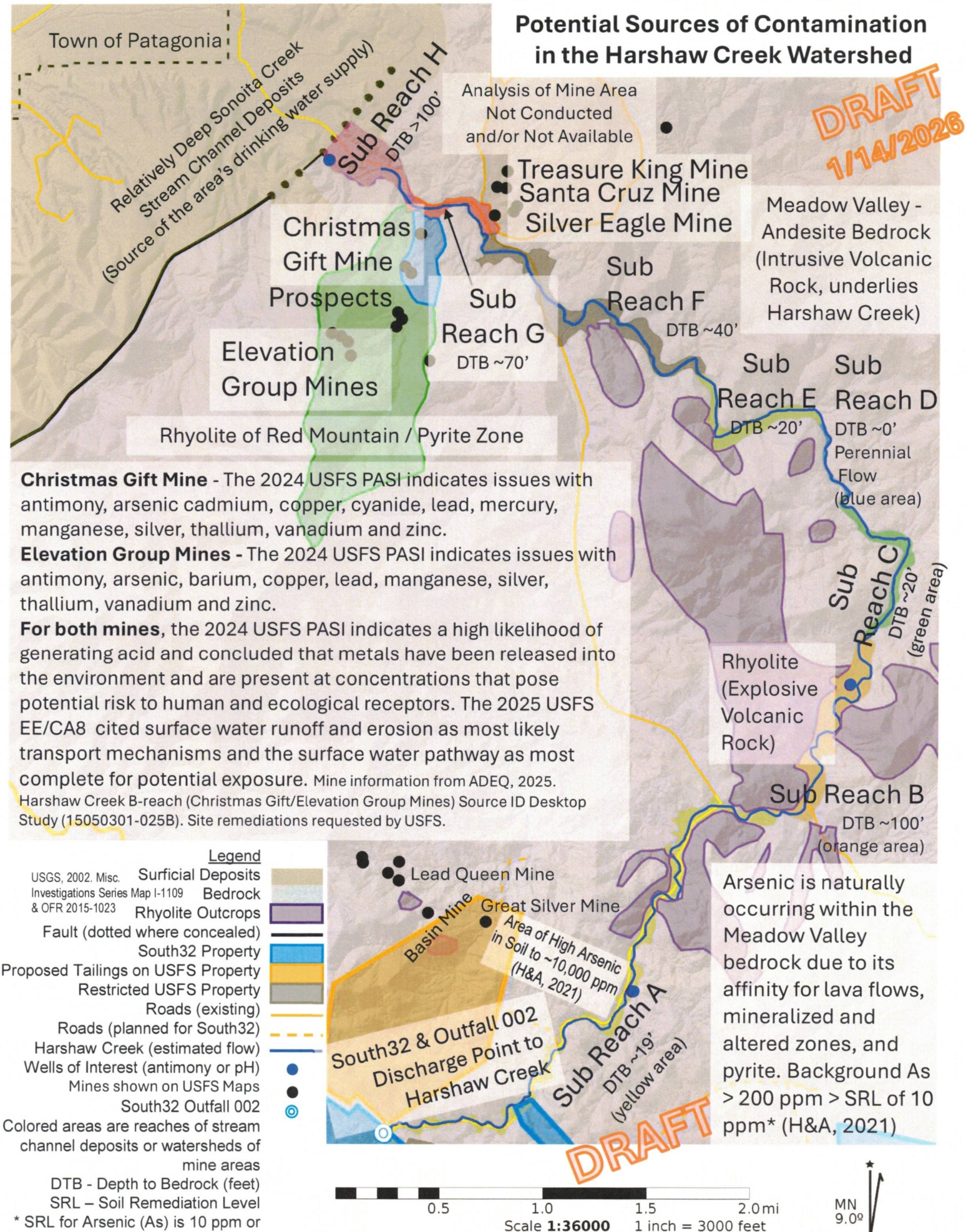
Outfall 002 & Groundwater Quality Results
Sampled October 29, 2025 to November 11, 2025 by FOSC

Potential Sources of Contamination in the Harshaw Creek Watershed



Christmas Gift Mine - The 2024 USFS PASI indicates issues with antimony, arsenic cadmium, copper, cyanide, lead, mercury, manganese, silver, thallium, vanadium and zinc.

Elevation Group Mines - The 2024 USFS PASI indicates issues with antimony, arsenic, barium, copper, lead, manganese, silver, thallium, vanadium and zinc.

For both mines, the 2024 USFS PASI indicates a high likelihood of generating acid and concluded that metals have been released into the environment and are present at concentrations that pose potential risk to human and ecological receptors. The 2025 USFS EE/CA8 cited surface water runoff and erosion as most likely transport mechanisms and the surface water pathway as most complete for potential exposure. Mine information from ADEQ, 2025. Harshaw Creek B-reach (Christmas Gift/Elevation Group Mines) Source ID Desktop Study (15050301-025B). Site remediations requested by USFS.

Legend

USGS, 2002. Misc. Investigations Series Map I-1109 & OFR 2015-1023

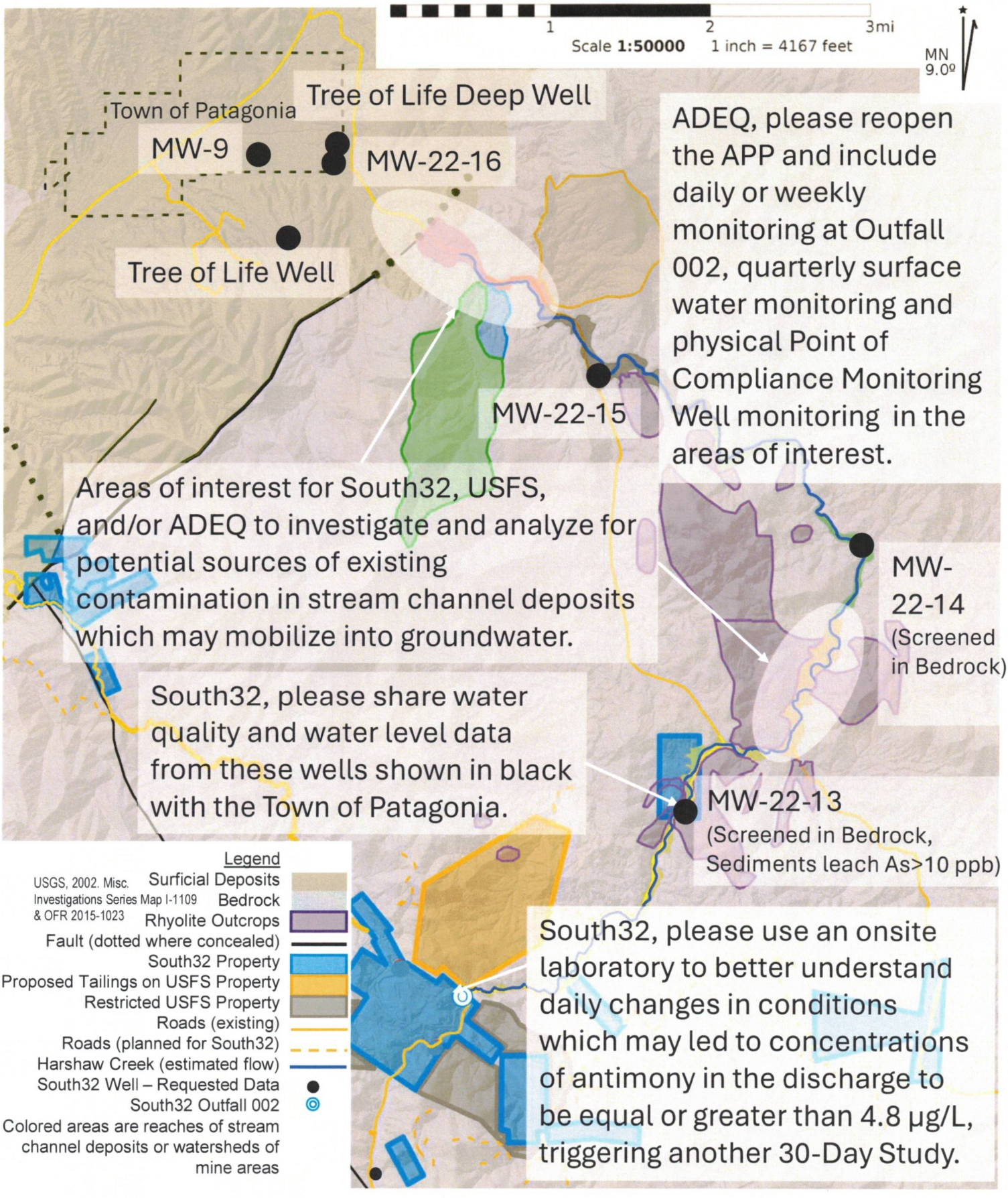
- Surficial Deposits
- Bedrock
- Rhyolite Outcrops
- Fault (dotted where concealed)
- South32 Property
- Proposed Tailings on USFS Property
- Restricted USFS Property
- Roads (existing)
- Roads (planned for South32)
- Harshaw Creek (estimated flow)
- Wells of Interest (antimony or pH)
- Mines shown on USFS Maps
- South32 Outfall 002

Colored areas are reaches of stream channel deposits or watersheds of mine areas

DTB - Depth to Bedrock (feet)

SRL – Soil Remediation Level

* SRL for Arsenic (As) is 10 ppm or Background, whichever is greater



Friends of Sonoita Creek
Protecting the Watershed

Requests for South32, USFS and ADEQ to Protect Human Health and the Environment

What can the Town of Patagonia do?

If drinking water is impacted from the mobilization of existing contamination, neither the ADEQ or South32 will be held responsible.

Use the Community Protections and Benefits Agreement (CBPA) as a single agreement to provide protections to the community, not as separate agreements where protections are promised for later.

Use the CBPA to provide protection of drinking water quality which goes beyond legal requirements. This may include the installation of individual and/or municipal water treatment systems, relocation of water supply wells and new water distribution pipelines.

Use the CBPA to require that South32 provide all water level and water quality data for wells along Harshaw Creek and wells in and near the Town of Patagonia.

Use the CBPA to require that South32 adequately analyze for the potential mobilization of existing contamination, including analysis and mobilization of soil contamination, in the areas of interest along Harshaw Creek.

What can the Town of Patagonia do?

Use the CBPA to require third party verification that WTP2 is better managed, operated and improved to prevent the discharge of antimony and all other contaminates to Harshaw Creek to below permit Alert Levels.

Use the CBPA to require third party verification of potential gaps in the design, operation and monitoring of the mine air quality treatment system for potential deficiencies and require South32 to meet and exceed air quality standards.

Use the CBPA to require adequate analysis and impact of potential vehicle trackout of soil contamination.

Ask the ADEQ to reopen the APP to require daily or weekly monitoring of the discharge to Harshaw Creek, surface water monitoring and Point of Compliance Well groundwater monitoring. POC monitoring wells should be designed to sample water in the stream channel sediments in Harshaw Creek in areas of concern.

Town of Patagonia

Sign in Sheet for Regular council meeting

January 14, 2026 6:00 p.m.

Print Name	Signature	Address
IN PERSON //////////////////////	/////////////////////////////////	/////////////////////////////////
Tomas Goode	Tomas Goode	Tucson
Cathy Crane	[signature]	Tucson
Linda Ramsey	[signature]	
Jeff Gudenkauf	[signature]	200 Naugle Ave, Patagonia
Susan Lange	Susan Lange	Patagonia
Marc Fauchald	[signature]	PATAGONIA
Peggy Fauchald	[signature]	PATAGONIA
Anna [illegible]		Tucson
Kathleen James	K. James	
Chris Gardner	R.C. Gardner	5 Squirrel Tail Ln
Charlene Saltz	[signature]	" " " "
Denise Bowdon	Denise Bowdon	Patagonia
Patty Cooper	Patricia Cooper	Patagonia
Kara Haas	[signature]	Patagonia
[illegible] Gay	[signature]	249 Duquesne
VIA ZOOM MEETING////////////	/////////////////////////////////	/////////////////////////////////
Carolyn Shafer	C Shafer	Patagonia
Cornelia [illegible]	[signature]	Patagonia
Elvia Gallahar	[signature]	Patagonia
Bob Paulsen	Robert Paulsen	11 Azteca Ct
Miguel Lopez	[signature]	717 [illegible]
Erin O'Mara	[signature]	421 Sonoita (Patagonia)
Kim Turner	[signature]	421 Sonoita Ave, Pata
GREGG GORTON	[signature]	31 CROSS CREEK

Town of Patagonia

Sign in Sheet for Regular council meeting

January 14, 2026 6:00 p.m.

Print Name	Signature	Address
IN PERSON //////////////////////	//////////////////////////////////	////////////////////////////////////
Ayla	Ayla	Patagonia
Isabella Felix	Isabella Felix	Nogales
Judge Concepción Bracamonte	C Bracamonte	
Zev Hartiga	[illegible]	Patagonia
Kevin McArthur	[illegible]	Bisbee
Chuck + Sarah Klingenstein	[illegible]	Patagonia
John R Dilcoe	John R Dilcoe	Patagonia
Bard Saulsbury	[illegible]	Patagonia
Lily	Lily	
Ralph Schmitt	Ralph Schmitt	Patagonia
John Hughes	John Hughes	104 Red Mtn Ct
Meg Gilbert	Meg Gilbert	458 Naugle
Alex Johnson	[illegible]	354 Penn. Ave
Amy Krug	[illegible]	212 Harshaw
Madison Lewton	Madison Lewton	370 N. 3rd Ave
~~VIA ZOOM MEETING~~////////////	//////////////////////////////////	////////////////////////////////////
Summer Smith	[illegible]	370 N. 3rd Ave
EMMETT RAIN-OAKES	[illegible]	320 SMELTER AVE.

Town of Patagonia

Sign in Sheet for a Regular Council Meeting

January 14, 2026, 6:00 p.m.

Print Name	Signature	Address
VIA ZOOM MEETING////////////	////////////////////////////////////	////////////////////////////////////
Joel Robinson		
Ashlee Wolf		
PRT Editor		
Julie Holding		
Colin McKenzie		
Hunter Williams		
Wendy Islas		
	////////////////////////////////////	////////////////////////////////////