

TEXAS WATER DEVELOPMENT BOARD

WELL SCHEDULE

55-15-609

Aquifer Alluvium & Edwards Field No.State Well No. 55-15-609 County Schleicher San Saba River Fork 851/4 mi fr. E line & 1/2 mi N of S line.Owner's Well No. Head of San Saba Spring1. Location: 1/4 Sec. 85, Block --- Survey A.G. Dary2. Owner: H. Leslie JonesAddress: ---Tenant: Robert KellyAddress: Sonora, TexasDriller: ---Address: ---3. Elevation of LSD (G.L.) 2086 ft. above msl, determined by Parking Altitude4. Drilled: 19; Dug, Cable Tool, Rotary, ---5. Depth: Rept. --- ft. Meas. --- ft.6. Completion: Open Hole, Straight Wall, Underreamed, Gravel Packed ---7. Pump: Mfr. --- Type ---No. Stages ---, Bowls Diam. --- in., Setting --- ft.Column Diam. --- in., Length Tailpipe --- ft.8. Motor: Fuel --- Make & Model --- HP ---9. Yield: Flow --- gpm, Pump --- gpm, Meas., Rept., Est. ---10. Performance Test: Date --- Length of Test --- Made by ---Static Level --- ft. Pumping Level --- ft. Drawdown --- ft.Production 1000 gpm Specific Capacity --- gpm/ft.

11. Water Level: 10-12-65 65 ft. above below surface which is 1.0 ft. above below surface.

19 ft. above below surface which is --- ft. above below surface.

19 ft. above below surface which is --- ft. above below surface.

19 ft. above below surface which is --- ft. above below surface.

12. Use: Dom. Stock Public Supply, Ind. Irr. Waterflooding, Observation, Not Used, ---13. Quality: (Remarks on taste, odor, color, etc.) ---Temp. 68 °F, Date sampled for analysis 7-12-65 Laboratory SHDTemp. --- °F, Date sampled for analysis --- Laboratory ---Temp. --- °F, Date sampled for analysis --- Laboratory ---14. Other data available as circled: Driller's Log, Radioactivity Log, Electric Log, ---Formation Samples, Pumping Test, ---15. Record by: D. Muller Date 10-12-65Source of Data obs.16. Remarks: ---

CASING & BLANK PIPE			
Cemented From		ft. to	
Diam. (in.)	Type	Setting, ft.	
		from	to

WELL SCREEN			
Screen Openings			
Diam. (in.)	Type	Setting, ft.	
		from	to

* Please Ask Email *
to send results

WQ FY 2020

TWDB Spring Field Data Sheet

Newly Invented Spring N

SWN: 55-15-609
County: Schleicher
County Code: _____
Aquifer Code: 110 AVME
Aquifer Id: _____

Name: Steve Holifield
Address: _____
Attention: Jake Holifield

ID Number: 106
Date: 7/16/20
Sampler(s): P.V. & C.B.

Spring Name or #: Head of San Saba Springs

①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩	11
250 ml filtered	500 ml filtered	250 ml filtered	40 ml unfiltered	1 L unfiltered	250 ml unfiltered	250 ml unfiltered	1 L unfiltered	1 L filtered	1 L filtered	
Cation	Anions/T. Alk.	Nitrate	Atrazine	C14/C13 corr	O-18	Sr-87/Sr-86	Tritium	GROSS	Radium	
RED		YELLOW		Deuterium	Deuterium			Alpha	226/228	
HNO ₃	ICE	ICE + H ₂ SO ₄	ICE	NaOH by lab	None	None	None	HNO ₃ by Lab	HNO ₃ by Lab	

Calibration Verification Readings	
Field instrument: <u>Orion 230 A+</u>	
pH	SLOPE = <u>96.2</u>
@ 40.2°C	7 = <u>6.97</u>
	4 or 10 = <u>4.03 / 9.99</u>
Field instrument: <u>Orion 105 A+</u>	
Conductivity	500 = <u>500</u>
	1000 = <u>984</u>
	2000 = <u>1945</u>

FLOW G.P.S. readings
Latitude: 30.828032
Longitude: -100.131222
GPS Accuracy: ± 14 ft

SAMPLE G.P.S. readings
Latitude: 30.829469
Longitude: -100.132155
GPS Accuracy: ± 18 ft

Flow Setting: Confluence with San Saba. Notes: Main spring issues

x measured just after gravel bar where San Saba river segments meet.
Measured after meandering 2
Streams from small island.
Flow: 4.8 CFS

Sample Point: spring channel emergence after pump house

Sample Time: 18:50

from underneath old stone pump house. Owner reports frequent snakes in pump house.
- Stream had rocky river bed.
- Flow was taken 187 yds SE from where samples were taken.

Filter pressure: hand pump peristaltic pump

Water Quality Stabilization

Parameters Table (At least 3 readings @ 5 min. intervals)

Time	18:34	18:39	18:44		
pH	<u>7.12</u>	<u>7.11</u>	<u>7.12</u>		
Celsius Temp.	<u>20.4</u>	<u>20.4</u>	<u>20.4</u>		
Conductivity	<u>405</u>	<u>406</u>	<u>406</u>		

Weather: Sunny, hot, Dry
99°F

Field Alkalinity Titration	
<u>7.40</u>	Start pH
<u>4.49</u>	End pH
<u>50</u>	mL Sample Size
<u>14.45</u>	mL Acid Total (to pH 4.5)
<u>289</u>	@ 25.4°C Total Alkalinity (mg/L)
mL acid added x 20 = Alkalinity	

Photo Check List	
☒	spring head(s)
☒	spring habitat
☒	cross section for flow
☐	other: _____
☐	

SWN: 55-15-609 Spring Name: Herd of San Saba Springs Date: 7/16/20
 Cross Section Description: confluence were San Saba 2 streams but measured after merging.
 Time Begin: 17:00 Time End: 17:35 Meter Type: Marsh McBirney Flow Mate 2000
 Observers: PV & CB Stream Width: 14 ft Section Width (W): 0.75 ft
 Observations: Last 2 measurements (14.12' & 14.87') were unavoidable with spear mnts plant. Rocky river bed.

(N)	Section Midpoint (ft) (m)	Section Depth (D) (ft) (m) (cm)	Observational Depth (ft) (m)	Velocity (V)		Flow (Q) (m³/s) (ft³/s) Q = (W)(D)(V)
				At Point (ft/s)(m/s)	Average (ft/s)(m/s)	
1	1.375	0.45			0.212	0.0716
2	2.125	0.40			0.916	0.2748
3	2.875	0.50			0.804	0.3015
4	3.625	0.60			0.622	0.2799
5	4.375	0.75			0.492	0.27675
6	5.125	0.80			0.600	0.36
7	5.875	0.80			0.542	0.3252
8	6.625	0.70			0.950	0.49875
9	7.375	0.80			0.724	0.4344
10	8.125	0.65			0.574	0.279825
11	8.875	0.65			0.744	0.3627
12	9.625	0.60			0.864	0.3888
13	10.375	0.60			0.554	0.2493
14	11.125	0.55			0.476	0.19635
15	11.875	0.50			0.628	0.2355
16	12.625	0.65			0.456	0.2223
17	13.375	0.60			0.070	0.0315
18	14.125	0.55			-0.024	-0.0099
19	14.875	0.35			-0.054	-0.014175
Total Flow (Discharge) (ΣQ)						4.8 ft³/s

m³/s x 35.3 = ft³/s

WQ FY 2021

TWDB Spring Field Data Sheet

Newly Inventoried Spring N

SWN: 55-15-609
 County: Schleicher
 County Code: 413
 Aquifer Code: _____
 Aquifer Id: _____

Name: Steve Holifield
 Address: _____

ID Number: 005
 Date: 4/20/21
 Sampler(s): CB, PV

Attention: Jake Holifield

Spring Name or #: Head of San Saba Springs #1

①	②	③	④	⑤	⑥	⑦	⑧	⑨	10	11
250 ml filtered	500 ml filtered	250 ml filtered	1 Liter filtered	1 Liter filtered	1 L unfiltered	250 ml unfiltered	1 L unfiltered	40 ml unfiltered		
Cation	Anions/T. Alk.	Nitrate	Gross Alpha	Radium	C14/C13 corr	Sr-87/Sr-86	Tritium	Atrazine		
RED		YELLOW	S-RE900-A	S-RAD228/226	O-18 & H2					
HNO ₃	ICE	ICE + H ₂ SO ₄	HNO ₃ by lab	HNO ₃ by lab	None	None	None	ICE		
6 months	28 days Alk 14	28 days	6 months	6 months	1 year	6 months	6 months			Holding Times

Calibration Verification Readings	
Field instrument:	<u>Orion 230A+</u>
pH	SLOPE = <u>97.4</u> 7 = <u>7.02</u> @19.4°C 4 or 10 = <u>3.96/10.07</u>
Field instrument:	<u>Orion 105A+</u>
Conductivity	500 = <u>500</u> 1000 = <u>981</u> 2000 = <u>1958</u>

FLOW G.P.S. readings

Latitude: 30.828032
 Longitude: -100.131222
 GPS Accuracy: ± 14 ft

Flow Setting: hold isotopes
confluence of San Saba Notes: Owner has cleared

river segments after
gravel bar / small island

trees around and
near spring house
about 2 weeks
ago (mostly mesquite).
Water pennies, frogs,
other various aquatic
wildlife. Minor signs
of hogs.

Flow: 4.3 CFS

Sample Point: Spring channel emergence
after pump house

Sample Time: 12:47

SAMPLE G.P.S. readings

Latitude: 30.829469
 Longitude: -100.132155
 GPS Accuracy: ± 18 ft

Filter pressure: hand pump / peristaltic pump

Water Quality Stabilization

Parameters Table (At least 3 readings @ 5 min. intervals)

Time	<u>12:24</u>	<u>12:29</u>	<u>12:34</u>		
pH	<u>6.88</u>	<u>6.88</u>	<u>6.88</u>		
Celsius Temp.	<u>20.4</u>	<u>20.4</u>	<u>20.3</u>		
S. Conductivity	<u>596</u>	<u>596</u>	<u>596</u>		

Weather: Sunny, clear,
windy 66°F

Field Alkalinity Titration

<u>7.36</u>	Start pH
<u>4.50</u>	End pH
<u>50</u>	mL Sample Size
<u>14.75</u>	mL Acid Total (to pH 4.5)
<u>295</u>	Total Alkalinity (mg/L)
mL acid added x 20 = Alkalinity	

Photo Check List

- ☒ spring head(s)
- ☒ spring habitat
- ☒ cross section for flow
- ☒ other: vegetation
- ☐

X = Removed abundant algae & large rocks from cross section area.

SWN: 55-15-609 Spring Name: Head of San Saba Spring #1 Date: 4/20/21
 Cross Section Description: Majority Floor covered with algae. Started cross section from top of largest Rock on W side
 Time Begin: 15:00 Time End: 15:39 Meter Type: _____
 Observers: C.B. & P.V. Stream Width: 14.5 ft Section Width (W): 0.70 ft
 Observations: Algae present on Stream base (~75% coverage); Spearment plants next to end of cross section base.

Section Midpoint (ft) (m)	Section Depth (D) (ft) (m) (cm)	Observational Depth (ft) (m)	Velocity (V)		Flow (Q) (m³/s) (ft³/s)
			At Point (ft/s)(m/s)	Average (ft/s)(m/s)	Q = (W)(D)(V)
1.35	0.60		0.50 0.50	0.50	0.21
2.05	0.60		1.01 1.00	1.005	0.4221
2.75	0.60		1.04 1.05	1.045	0.4389
3.45	0.65		0.92 0.87	0.895	0.4072
4.15	0.60		0.32 0.34	0.33	0.1386
4.85	0.70		0.67 0.66	0.665	0.3259
5.55	0.80		0.37 0.43	0.4	0.2240
6.25	0.75		0.35 0.31	0.33	0.1733
6.95	0.80		0.33 0.36	0.345	0.1932
7.65	0.75		0.34 0.33	0.335	0.1759
8.35	0.70		0.64 0.52	0.58	0.2842
9.05	0.65		0.23 0.20 0.23	0.215	0.0978
9.75	0.65		0.55 0.55	0.55	0.2503
10.45	0.70		0.37 0.27	0.295	0.1446
11.15	0.65		0.05 0.11	0.08	0.0364
11.85	0.60		0.26 0.25	0.255	0.1071
12.55	0.60		0.65 0.66	0.655	0.2751
13.25	0.60		0.52 0.53	0.525	0.2205
13.95	0.65		0.35 0.37	0.36	0.1638
14.65	0.50		-0.04 -0.05	-0.045	-0.0158
15.35	0.35		-0.07 -0.06	-0.065	-0.0159
m³/s x 35.3 = ft³/s			Total Flow (Discharge) (ΣQ)		4.3 CFS

* Could NOT avoid eddie ^{due} next to spearment plant growing on bank.

WQ FY 2022

TWDB Spring Field Data Sheet

Newly Inventoried Spring Y or N

SWN: 55-15-609
 County: Schleicher
 County Code: 413
 Aquifer Code: _____
 Aquifer Id: _____

Name: Steve Holifield
 Address: _____
 Attention: Jake Holifield

ID Number: 018
 Date: 4/14/22
 Sampler(s): CB, CK

Spring Name or #: Head of San Saba Spring #1

1	2	3	4	5	6	7	8	9	10	11
250 ml filtered Cation RED HNO ₃	500 ml filtered Anions/T. Alk. ICE	250 ml filtered Nitrate YELLOW ICE + H ₂ SO ₄	1 Liter filtered Gross Alpha S-RE900-A HNO ₃ by lab	1 Liter filtered Radium S-RAD228/226 HNO ₃ by lab	1 L unfiltered C14/C13 corr O-18 & H2 None	250 ml unfiltered Sr-87/Sr-86 None	1 L unfiltered Tritium None	40 ml unfiltered Atrazine + dup 3 blank ICE		
6 months	28 days Alk 14	28 days	6 months	6 months	1 year	6 months	6 months			Holding Times

Calibration Verification Readings

meter: Orion Star A325

pH SLOPE = 98.0%
 probe: 7 = 7.0
 8107UWMMMD 4 or 10 = 4.0/10.0
 Conductivity 500 = 503
 probe: 1000 = 1013
 013010MD 1413 = 1431
 2000 = 2021

FLOW G.P.S. readings

Latitude: 30.827889
 Longitude: 100.131179
 GPS Accuracy: ± 10 ft

Flow Setting: Poorly sorted sand to
small cobbles. About 50ft

Flow: 3.7586 CFS
4.26% uncertainty

Sample Point: Spring channel emergence
after pump house

Sample Time: 09:55

Notes: Mesquite re-growth
near pump/spring house
(owner cleared ~1 yr
ago and plans to
do it again soon).
Rocks on bank of
spring channel (after
spring house) have
algae/wet water mark
~1 inch higher than
current water mark/level.

Field Alkalinity Titration

Start pH
 End pH
 50 mL Sample Size
 mL Acid Total (to pH 4.5)
 Total Alkalinity (mg/L)
 mL acid added x 20 = Alkalinity

Water Quality Stabilization

Parameters Table (At least 3 readings @ 5 min. intervals)

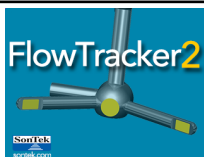
Time	09:45	09:50	09:55		
pH	6.68	6.64	6.63		
Celsius Temp.	20.4	20.4	20.4		
Conductivity	619	620	620		

Filter pressure: hand pump / peristaltic pump

Weather: Sunny, clear
50-60s

Photo Check List

- ☒ spring head(s)
☐ spring habitat
☒ cross section for flow
☐ other: _____
☐



Discharge Measurement Summary

Site name HeadOfSanSaba1
Site number 1
Operator(s) CB
File name HeadOfSanSaba1_20220414-114211.ft
Comment

Start time	4/14/2022 10:57 AM	Sensor type	Top Setting
End time	4/14/2022 11:38 AM	Handheld serial number	FT2H2124011
Start location latitude	30.828	Probe serial number	FT2P2123014
Start location longitude	-100.131	Probe firmware	1.30
Calculations engine	FlowTracker2	Handheld software	1.7

# Stations	Avg interval (s)	Total discharge (ft³/s)
24	40	3.7586

Total width (ft)	Total area (ft²)	Wetted Perimeter (ft)
12.000	7.2825	12.484

Mean SNR (dB)	Mean depth (ft)	Mean velocity (ft/s)
31	0.607	0.5161

Mean temp (°F)	Max depth (ft)	Max velocity (ft/s)
69.498	1.100	0.6018

Discharge Uncertainty		
Category	ISO	IVE
Accuracy	1.0%	1.0%
Depth	0.3%	3.4%
Velocity	0.3%	2.3%
Width	0.1%	0.1%
Method	1.7%	
# Stations	2.1%	
Overall	2.9%	4.3%

Discharge equation	Mid Section
Discharge uncertainty	IVE
Discharge reference	Rated

Data Collection Settings	
Salinity	0.000 PSS-78
Temperature	-
Sound speed	-
Mounting correction	0.000 %

Summary overview

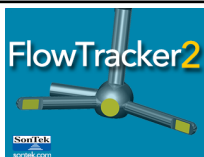
No changes were made to this file
Quality control warnings

SWN: 55-15-609 Spring Name: Head of San Saba #1 Date: 4/14/22
 Cross Section Description: Poorly sorted sand to small cobbles. About 50ft downstream from previous yr transect.
 Time Begin: 10:39 Time End: 11:27 Meter Type: Flowtracker 2
 Observers: CB (instrumenting), CK Stream Width: 12 ft Section Width (W): 0.6 ft (0.3')
 Observations: Better transect than previous years; better laminar flow

Section Midpoint (ft) (m)	Section Depth (D) (ft) (m) (cm)	Observational Depth (ft) (m)	Velocity (V)		Flow (Q) (m³/s) (ft³/s) Q = (W)(D)(V)
			At Point (ft/s)(m/s)	Average (ft/s)(m/s)	
2.0	Right Bank 0				
2.6	0.3			0.5406	0.0973
3.2	0.3			0.4593	0.0827
3.8	0.4			0.5291	0.127
4.4	0.4			0.493	0.1183
5.0	0.4			0.546	0.131
5.6	0.4			0.4374	0.105
6.2	0.45			0.4237	0.1144
6.8	0.5			0.5658	0.1697
7.4	0.6			0.5008	0.1803
8.0	0.7			0.5561	0.2336
8.6	0.7			0.5345	0.2245
9.2	0.85			0.532	0.2713
9.8	0.9			0.5184	0.28
10.4	0.85			0.5572	0.2131
10.7	0.95			0.5476	0.1561
11.0	1.1			0.552	0.1822
11.3	1.05			0.537	0.1692
11.6	1.05			0.4439	0.1398
11.9	1.0			0.5107	0.1532
12.2	0.9			0.4685	0.1897
12.8	0.75			0.6018	0.2708
13.4	0.6			0.415	0.1494
14.0	Left Bank 0				
Total Flow (Discharge) (ΣQ)					3.7586 CFS

m³/s x 35.3 = ft³/s

4.26 % uncertainty



Discharge Measurement Summary

Site name HeadOfSanSaba
Site number 1
Operator(s) CB
File name 1_20230120-132711.ft
Comment 1st measurement

Start time	1/20/2023 12:56 PM	Sensor type	Top Setting
End time	1/20/2023 1:24 PM	Handheld serial number	FT2H2124011
Start location latitude	30.828	Probe serial number	FT2P2123014
Start location longitude	-100.131	Probe firmware	1.30
Calculations engine	FlowTracker2	Handheld software	1.7

# Stations	Avg interval (s)	Total discharge (ft³/s)
19	40	2.8251

Total width (ft)	Total area (ft²)	Wetted Perimeter (ft)
13.000	7.9500	13.324

Mean SNR (dB)	Mean depth (ft)	Mean velocity (ft/s)
39	0.612	0.3554

Mean temp (°F)	Max depth (ft)	Max velocity (ft/s)
67.734	1.100	0.4505

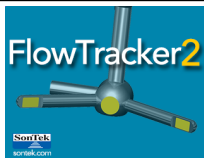
Discharge Uncertainty		
Category	ISO	IVE
Accuracy	1.0%	1.0%
Depth	0.3%	3.6%
Velocity	0.3%	2.8%
Width	0.1%	0.1%
Method	1.9%	
# Stations	2.6%	
Overall	3.4%	4.7%

Discharge equation	Mid Section
Discharge uncertainty	IVE
Discharge reference	Rated

Data Collection Settings	
Salinity	0.000 PSS-78
Temperature	-
Sound speed	-
Mounting correction	0.000 %

Summary overview

No changes were made to this file
Quality control warnings



Discharge Measurement Summary

Site name HeadOfSanSaba
Site number 1
Operator(s) CB
File name HeadOfSanSaba1v2_20230120-140217.ft
Comment 2nd measurement

Start time	1/20/2023 1:33 PM	Sensor type	Top Setting
End time	1/20/2023 1:59 PM	Handheld serial number	FT2H2124011
Start location latitude	30.828	Probe serial number	FT2P2123014
Start location longitude	-100.131	Probe firmware	1.30
Calculations engine	FlowTracker2	Handheld software	1.7

# Stations	Avg interval (s)	Total discharge (ft³/s)
20	40	2.9233

Total width (ft)	Total area (ft²)	Wetted Perimeter (ft)
13.000	8.0875	13.339

Mean SNR (dB)	Mean depth (ft)	Mean velocity (ft/s)
32	0.622	0.3615

Mean temp (°F)	Max depth (ft)	Max velocity (ft/s)
68.525	1.150	0.4306

Discharge Uncertainty		
Category	ISO	IVE
Accuracy	1.0%	1.0%
Depth	0.3%	3.5%
Velocity	0.3%	1.6%
Width	0.1%	0.1%
Method	1.9%	
# Stations	2.5%	
Overall	3.3%	4.0%

Discharge equation	Mid Section
Discharge uncertainty	IVE
Discharge reference	Rated

Data Collection Settings	
Salinity	0.000 PSS-78
Temperature	-
Sound speed	-
Mounting correction	0.000 %

Summary overview

No changes were made to this file

WQ FY 2023

TWDB Spring Field Data Sheet

Newly Invented Spring Y or N (Y)

SWN: 5515-609
 County: Schleicher
 County Code: 413
 Aquifer Code: _____
 Aquifer Id: _____

Name: Steve Holifield
 Address: _____

 Attention: Jake Holifield

ID Number: _____
 Date: 3/7/23
 Sampler(s): C. Bjornson

Spring Name or #: Head of San Saba #1

1	2	3	4	5	6	7	8	9	10	11
250 ml filtered	500 ml filtered	250 ml filtered	1 Liter filtered	1 Liter filtered	1 L unfiltered	250 ml unfiltered	1 L unfiltered	40 ml unfiltered		
Cation	Anions/T. Alk.	Nitrate	Gross Alpha	Radium	C14/C13 corr	Sr-87/Sr-86	Tritium	Atrazine		
RED		YELLOW	S-RE900-A	S-PAD228/226	C-18 & H2					
HNO ₃	ICE	ICE + H ₂ SO ₄	HNO ₃ by lab	HNO ₃ by lab	None	None	None	ICE		
6 months	28 days & Alk 14 days	28 days	6 months	6 months	1 year	6 months	6 months	8 weeks		Holding Times

Calibration Verification Readings	
meter: Orion Star A325	
pH <u>29.5°C</u>	SLOPE = <u>99.7%</u>
probe: 9107BN	7 = <u>7.00</u>
	4 or 10 = <u>9.98</u>
Conductivity	500 = <u>—</u>
probe: 013010MD	1000 = <u>—</u>
	1413 = <u>1404</u>
	2000 = <u>—</u>

FLOW G.P.S. readings

Latitude: 30.827889
 Longitude: -100.131179
 GPS Accuracy: ±10 ft

Flow Setting: Poorly sorted sand to small cobbles.

Notes: Baseline WQ

AVERAGE Flow: 2.44835 CFS { ① 2.4067 CFS
 ② 2.49 CFS

parameters and spring flow ONLY. Removed some aquatic vegetation for flow measurement.

SAMPLE G.P.S. readings

Latitude: 30.829469
 Longitude: -100.132155
 GPS Accuracy: ±18 ft

Sample Point: Spring channel emergence after pump house

Sample Time: 14:10

Field Alkalinity Titration	
Start pH	
End pH	
50 mL Sample Size	
mL Acid Total (to pH 4.5)	
Total Alkalinity (mg/L)	
mL Acid added x 20 = Alkalinity	

Filter pressure: hand pump / peristaltic pump

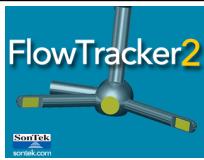
Water Quality Stabilization

Parameters Table (At least 3 readings @ 5 min. intervals)

Time	13:55	14:00	14:05	14:10	
pH	6.79	6.84	6.90	6.92	
Celsius Temp.	20.6	20.5	20.5	20.5	
Conductivity	633	634	635	635	

Weather: Low 80s °F
Sunny, little to no clouds. Spring is in shade.

Photo Check List	
☐	spring head(s)
☐	spring habitat
☒	cross section for flow
☐	other: _____
☐	other: _____



Discharge Measurement Summary

Site name HeadOfSanSaba1
Site number 1
Operator(s) CB
File name HeadOfSanSaba1_20230307-124448.ft
Comment 1stMeas

Start time	3/7/2023 12:13 PM	Sensor type	Top Setting
End time	3/7/2023 12:39 PM	Handheld serial number	FT2H2124011
Start location latitude	30.828	Probe serial number	FT2P2123014
Start location longitude	-100.131	Probe firmware	1.30
Calculations engine	FlowTracker2	Handheld software	1.7

# Stations	Avg interval (s)	Total discharge (ft³/s)
19	40	2.4067

Total width (ft)	Total area (ft²)	Wetted Perimeter (ft)
12.100	7.5725	12.296

Mean SNR (dB)	Mean depth (ft)	Mean velocity (ft/s)
30	0.626	0.3178

Mean temp (°F)	Max depth (ft)	Max velocity (ft/s)
73.592	1.100	0.4640

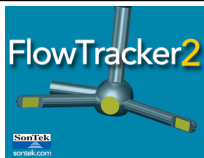
Discharge Uncertainty		
Category	ISO	IVE
Accuracy	1.0%	1.0%
Depth	0.3%	4.1%
Velocity	0.4%	2.2%
Width	0.1%	0.1%
Method	1.9%	
# Stations	2.6%	
Overall	3.4%	4.8%

Discharge equation	Mid Section
Discharge uncertainty	IVE
Discharge reference	Rated

Data Collection Settings	
Salinity	0.000 PSS-78
Temperature	-
Sound speed	-
Mounting correction	0.000 %

Summary overview

No changes were made to this file
Quality control warnings



Discharge Measurement Summary

Site name HeadOfSanSaba1
Site number 1
Operator(s) CB
File name HeadOfSanSaba1_20230307-131222.ft
Comment 2ndMeas

Start time	3/7/2023 12:46 PM	Sensor type	Top Setting
End time	3/7/2023 1:09 PM	Handheld serial number	FT2H2124011
Start location latitude	30.828	Probe serial number	FT2P2123014
Start location longitude	-100.131	Probe firmware	1.30
Calculations engine	FlowTracker2	Handheld software	1.7

# Stations	Avg interval (s)	Total discharge (ft ³ /s)
19	40	2.4900

Total width (ft)	Total area (ft ²)	Wetted Perimeter (ft)
12.100	7.6975	12.270

Mean SNR (dB)	Mean depth (ft)	Mean velocity (ft/s)
30	0.636	0.3235

Mean temp (°F)	Max depth (ft)	Max velocity (ft/s)
74.227	1.100	0.4430

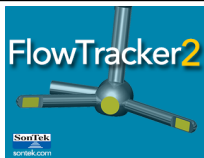
Discharge Uncertainty		
Category	ISO	IVE
Accuracy	1.0%	1.0%
Depth	0.3%	4.0%
Velocity	0.4%	2.4%
Width	0.1%	0.1%
Method	1.9%	
# Stations	2.6%	
Overall	3.4%	4.8%

Discharge equation	Mid Section
Discharge uncertainty	IVE
Discharge reference	Rated

Data Collection Settings	
Salinity	0.000 PSS-78
Temperature	-
Sound speed	-
Mounting correction	0.000 %

Summary overview

No changes were made to this file



Discharge Measurement Summary

Site name HeadOfSanSaba1
Site number 1
Operator(s) CB
File name HeadOfSanSaba1_20230802-160938.ft
Comment Meas1

Start time	8/2/2023 3:36 PM	Sensor type	Top Setting
End time	8/2/2023 4:05 PM	Handheld serial number	FT2H2124011
Start location latitude	30.828	Probe serial number	FT2P2123014
Start location longitude	-100.131	Probe firmware	1.30
Calculations engine	FlowTracker2	Handheld software	1.7

# Stations	Avg interval (s)	Total discharge (ft³/s)
20	40	1.5048

Total width (ft)	Total area (ft²)	Wetted Perimeter (ft)
12.250	6.2063	12.443

Mean SNR (dB)	Mean depth (ft)	Mean velocity (ft/s)
32	0.507	0.2425

Mean temp (°F)	Max depth (ft)	Max velocity (ft/s)
80.103	1.050	0.3353

Discharge Uncertainty		
Category	ISO	IVE
Accuracy	1.0%	1.0%
Depth	0.4%	4.4%
Velocity	0.3%	2.9%
Width	0.1%	0.1%
Method	1.9%	
# Stations	2.5%	
Overall	3.3%	5.4%

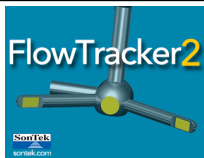
Discharge equation	Mid Section
Discharge uncertainty	IVE
Discharge reference	Rated

Data Collection Settings	
Salinity	0.000 PSS-78
Temperature	-
Sound speed	-
Mounting correction	0.000 %

Summary overview

No changes were made to this file

*PUMP IN SPRING HOUSE WAS ACTIVELY PUMPING
DURING THIS MEASUREMENT
*MEASUREMENT IS NOT REPRESENTATIVE OF BASE
FLOW CONDITIONS



Discharge Measurement Summary

Site name HeadOfSanSaba1
Site number 1
Operator(s) CB
File name HeadOfSanSaba1_20230802-163940.ft
Comment Meas2

Start time	8/2/2023 4:11 PM	Sensor type	Top Setting
End time	8/2/2023 4:37 PM	Handheld serial number	FT2H2124011
Start location latitude	30.828	Probe serial number	FT2P2123014
Start location longitude	-100.131	Probe firmware	1.30
Calculations engine	FlowTracker2	Handheld software	1.7

# Stations	Avg interval (s)	Total discharge (ft³/s)
20	40	1.4769

Total width (ft)	Total area (ft²)	Wetted Perimeter (ft)
12.250	6.2625	12.451

Mean SNR (dB)	Mean depth (ft)	Mean velocity (ft/s)
32	0.511	0.2358

Mean temp (°F)	Max depth (ft)	Max velocity (ft/s)
79.797	1.050	0.3339

Discharge Uncertainty		
Category	ISO	IVE
Accuracy	1.0%	1.0%
Depth	0.4%	4.8%
Velocity	0.3%	2.1%
Width	0.1%	0.1%
Method	1.9%	
# Stations	2.5%	
Overall	3.4%	5.4%

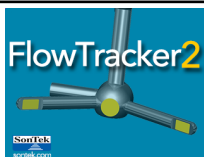
Discharge equation	Mid Section
Discharge uncertainty	IVE
Discharge reference	Rated

Data Collection Settings	
Salinity	0.000 PSS-78
Temperature	-
Sound speed	-
Mounting correction	0.000 %

Summary overview

No changes were made to this file

***PUMP IN SPRING HOUSE WAS ACTIVELY PUMPING
DURING THIS MEASUREMENT
*MEASUREMENT IS NOT REPRESENTATIVE OF BASE
FLOW CONDITONS**



Discharge Measurement Summary

Site name HeadOfSanSaba1
Site number 1
Operator(s) CB
File name HeadOfSanSaba1_20231116-152416.ft
Comment 1stMeas

Start time	11/16/2023 1:37 PM	Sensor type	Top Setting
End time	11/16/2023 2:10 PM	Handheld serial number	FT2H2124011
Start location latitude	30.828	Probe serial number	FT2P2123014
Start location longitude	-100.131	Probe firmware	1.30
Calculations engine	FlowTracker2	Handheld software	1.7

# Stations	Avg interval (s)	Total discharge (ft³/s)
21	40	2.2852

Total width (ft)	Total area (ft²)	Wetted Perimeter (ft)
13.500	8.1750	13.785

Mean SNR (dB)	Mean depth (ft)	Mean velocity (ft/s)
31	0.606	0.2795

Mean temp (°F)	Max depth (ft)	Max velocity (ft/s)
71.058	1.150	0.3790

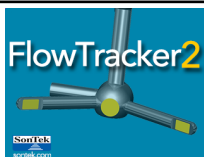
Discharge Uncertainty		
Category	ISO	IVE
Accuracy	1.0%	1.0%
Depth	0.3%	3.7%
Velocity	0.3%	2.0%
Width	0.1%	0.1%
Method	1.8%	
# Stations	2.4%	
Overall	3.2%	4.4%

Discharge equation	Mid Section
Discharge uncertainty	IVE
Discharge reference	Rated

Data Collection Settings	
Salinity	0.000 PSS-78
Temperature	-
Sound speed	-
Mounting correction	0.000 %

Summary overview

No changes were made to this file



Discharge Measurement Summary

Site name HeadOfSanSaba1
Site number 1
Operator(s) CB
File name HeadOfSanSaba1_20231116-160145.ft
Comment 2ndMeas

Start time	11/16/2023 2:14 PM	Sensor type	Top Setting
End time	11/16/2023 2:45 PM	Handheld serial number	FT2H2124011
Start location latitude	30.828	Probe serial number	FT2P2123014
Start location longitude	-100.131	Probe firmware	1.30
Calculations engine	FlowTracker2	Handheld software	1.7

# Stations	Avg interval (s)	Total discharge (ft³/s)
23	40	2.2753

Total width (ft)	Total area (ft²)	Wetted Perimeter (ft)
13.500	8.2500	13.770

Mean SNR (dB)	Mean depth (ft)	Mean velocity (ft/s)
30	0.611	0.2758

Mean temp (°F)	Max depth (ft)	Max velocity (ft/s)
70.905	1.150	0.3815

Discharge Uncertainty		
Category	ISO	IVE
Accuracy	1.0%	1.0%
Depth	0.3%	3.4%
Velocity	0.3%	2.0%
Width	0.1%	0.1%
Method	1.7%	
# Stations	2.2%	
Overall	3.0%	4.1%

Discharge equation	Mid Section
Discharge uncertainty	IVE
Discharge reference	Rated

Data Collection Settings	
Salinity	0.000 PSS-78
Temperature	-
Sound speed	-
Mounting correction	0.000 %

Summary overview

No changes were made to this file

WQ FY 2024

TWDB Spring Field Data Sheet

Newly Inventoried Spring Y or N

SWN: 55.15.609
 County: Schleicher
 County Code: 413
 Aquifer Code:
 Aquifer Id: 13

Name: The Black Ranch
 Address:

 Attention: Jake Holifield

ID Number: 006
 Date: 5/22/24
 Sampler(s): C. Bjornson
C. Corrington
C. Goldmann

Spring Name or #: Head of San Saba #1

1	2	3	4	5	6	7	8	9	10	11
250 ml filtered Cation RED HNO ₃	500 ml filtered Anions/T. Alk. ICE	250 ml filtered Nitrate YELLOW ICE + H ₂ SO ₄	1 Liter filtered Gross Alpha S-RE900-A HNO ₃ by lab	1 Liter filtered Radium S-RAD228/226 HNO ₃ by lab	1 L unfiltered C14/C13 corr O-18 & H2 None	250 ml unfiltered Sr-87/Sr-86 None	1 L unfiltered Tritium None	40 ml unfiltered Atrazine ICE		
6 months	28 days & Alk 14 days	28 days	6 months	6 months	1 year	6 months	6 months	8 weeks		Holding Times

Calibration Verification Readings

meter: Orion Star A325

pH SLOPE = 95.9%
 probe: 7 = 7.01
 9107BN 4 or 10 = 3.99/10.01
 Conductivity 500 = 496
 probe: 1000 = 991
 013010MD 1413 = 1407
 2000 = 1987

FLOW G.P.S. readings

Latitude: 30.827836°
 Longitude: -100.131202
 GPS Accuracy: GOOGLE EARTH

Flow Setting: Poorly sorted sand
to small cobblesNotes: Baseline WQ

Flow: 0.915 CFS { ① 0.9266 CFS
 max Q = 5%
 ② 0.9041 CFS
 max Q = 6% }

Sample Point: inside spring house
(not enough flow coming
out of spring house)
to submerge probes

Sample Time: 13:15Filter pressure: hand pump / peristaltic pump

Water Quality Stabilization

Parameters Table (At least 3 readings @ 5 min. intervals)

Time	13:00	13:05	13:10	13:15	
pH	7.02	6.91	6.92	6.91	
Celsius Temp.	21.5	20.6	20.6	20.6	
Conductivity	622	635	636	636	

Weather: Partly cloudy,
some breeze ~80s°F

Field Alkalinity Titration

Start pH
 End pH
 50 mL Sample Size
 mL Acid Total (to pH 4.5)
 Total Alkalinity (mg/L)
 mL acid added x 20 = Alkalinity

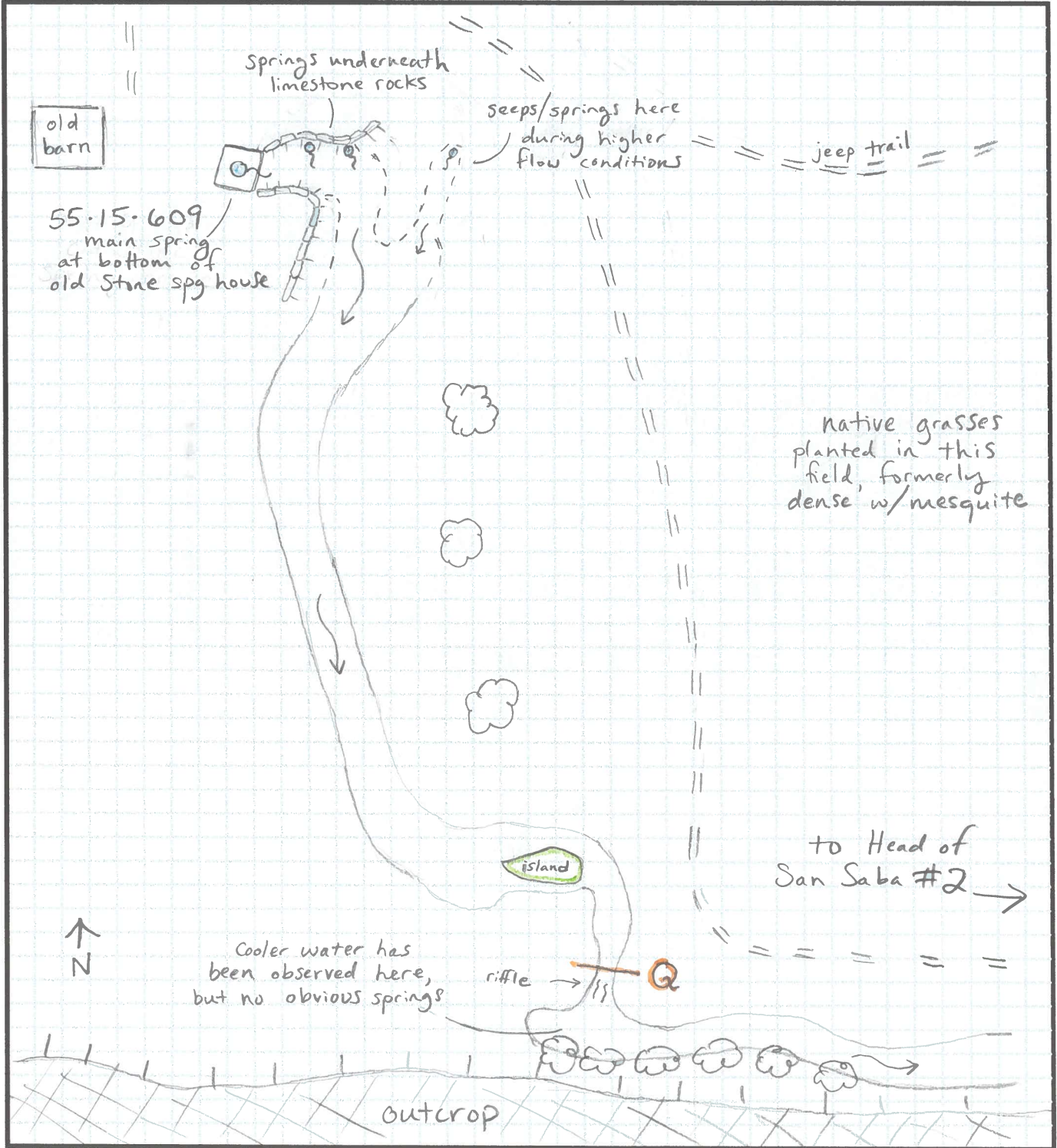
Photo Check List

- ☒ spring head(s)
☒ spring habitat
☒ cross section for flow
☐ other:
☐ other:

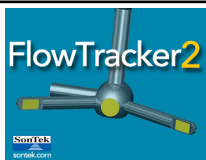
Texas Water Development Board - Well Location Sketch

By: C. Bjornson Date: 5/22/24 G.P.S Coordinates: _____ " _____ " _____ "

County Schleicher M.P. = N/A State Well Number: 55.15.609



State Well Number 55-15-609



Discharge Measurement Summary

Site name HeadofSanSaba1
Site number 1
Operator(s) CG
File name HeadofSanSaba1_20240522-122652.ft
Comment

Start time	5/22/2024 11:28 AM	Sensor type	Top Setting
End time	5/22/2024 12:24 PM	Handheld serial number	FT2H2231001
Start location latitude	30.828	Probe serial number	FT2P2231010
Start location longitude	-100.131	Probe firmware	1.30
Calculations engine	FlowTracker2	Handheld software	1.7

# Stations	Avg interval (s)	Total discharge (ft³/s)
30	40	0.9266

Total width (ft)	Total area (ft²)	Wetted Perimeter (ft)
12.000	6.1850	12.228

Mean SNR (dB)	Mean depth (ft)	Mean velocity (ft/s)
22	0.515	0.1498

Mean temp (°F)	Max depth (ft)	Max velocity (ft/s)
78.265	1.000	0.2108

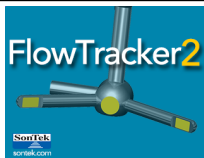
Discharge Uncertainty		
Category	ISO	IVE
Accuracy	1.0%	1.0%
Depth	0.3%	3.3%
Velocity	0.4%	2.4%
Width	0.1%	0.1%
Method	1.5%	
# Stations	1.7%	
Overall	2.5%	4.2%

Discharge equation	Mid Section
Discharge uncertainty	IVE
Discharge reference	Rated

Data Collection Settings	
Salinity	0.000 PSS-78
Temperature	-
Sound speed	-
Mounting correction	0.000 %

Summary overview

No changes were made to this file
Quality control warnings



Discharge Measurement Summary

Site name HeadofSanSaba1
Site number 1
Operator(s) Cc
File name Headofsaba1_20240522-123313.ft
Comment Secondpass

Start time	5/22/2024 11:39 AM	Sensor type	Top Setting
End time	5/22/2024 12:31 PM	Handheld serial number	FT2H2124011
Start location latitude	30.829	Probe serial number	FT2P2123014
Start location longitude	-100.133	Probe firmware	1.30
Calculations engine	FlowTracker2	Handheld software	1.7

# Stations	Avg interval (s)	Total discharge (ft ³ /s)
34	40	0.9041

Total width (ft)	Total area (ft ²)	Wetted Perimeter (ft)
12.300	6.1925	12.611

Mean SNR (dB)	Mean depth (ft)	Mean velocity (ft/s)
30	0.503	0.1460

Mean temp (°F)	Max depth (ft)	Max velocity (ft/s)
78.449	1.000	0.2038

Discharge Uncertainty		
Category	ISO	IVE
Accuracy	1.0%	1.0%
Depth	0.3%	3.2%
Velocity	0.4%	2.9%
Width	0.1%	0.1%
Method	1.5%	
# Stations	1.5%	
Overall	2.4%	4.5%

Discharge equation	Mid Section
Discharge uncertainty	IVE
Discharge reference	Rated

Data Collection Settings	
Salinity	0.000 PSS-78
Temperature	-
Sound speed	-
Mounting correction	0.000 %

Summary overview

No changes were made to this file
Quality control warnings

WQ FY 2025

TWDB Spring Field Data Sheet

Newly Inventoried Spring Y or (N)

SWN: 55-15-609
 County: Schleicher
 County Code: 413
 Aquifer Code: —
 Aquifer Id: 13

Name: The Black Ranch
 Address: _____
 Attention: Jake Holifield

ID Number: 001
 Date: 3/24/25
 Sampler(s): C. Bjornson
E. Dwelle

Spring Name or #: <u>Head of San Saba #1</u>										
<u>(1)</u>	<u>(2)</u>	<u>(3)</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>	<u>(9)</u>	<u>10</u>	<u>11</u>
250 ml filtered	500 ml filtered	250 ml filtered	1 Liter filtered	1 Liter filtered	1 L unfiltered	250 ml unfiltered	1 L unfiltered	40 ml unfiltered		
Cation	Anions/T. Alk.	Nitrate	Gross Alpha	Radium	C14/C13 corr	Sr-87/Sr-86	Tritium	Atrazine		
RED		YELLOW	S-RE900-A	S-RAD228/226	O-18 & H2			+ dup and blank		
HNO ₃	ICE	ICE + H ₂ SO ₄	HNO ₃ by lab	HNO ₃ by lab	None	None	None	ICE		
6 months	28 days & Alk 14 days	28 days	6 months	6 months	1 year	6 months	6 months	8 weeks		Holding Times

Calibration Verification Readings	
meter: Orion Star A325	
pH	SLOPE = <u>98.4%</u>
probe:	7 = <u>6.94</u>
9107BN	4 or 10 = <u>3.96/9.94</u>
Conductivity	500 = <u>503.3</u>
probe:	1000 = <u>1007</u>
013010MD	1413 = <u>1403</u>
	2000 = <u>—</u>

FLOW G.P.S. readings

Latitude: 30.827836°
 Longitude: -100.131262°
 GPS Accuracy: GOOGLE EARTH

Flow Setting: Poorly sorted sand to small cobbles

Notes: * pump in spring house is ON & unable to turn off, flow meas. not representative of base flow conditions.

* Flow: 0.75 CFS {
 ① 0.7824 CFS max Q = 4%
 ② 0.7084 CFS max Q = 5%

SAMPLE G.P.S. readings

Latitude: 30.829245°
 Longitude: -100.132234°
 GPS Accuracy: GOOGLE EARTH

Sample Point: in spring house next to submersible pump

Sample Time: 18:37

Field Alkalinity Titration	
Start pH	136 × 2
End pH	—
50 mL Sample Size	—
mL Acid Total (to pH 4.5)	—
<u>★ 272</u>	Total Alkalinity (mg/L)
mL acid added × 20 = Alkalinity	

Filter pressure: hand pump (peristaltic pump)

Water Quality Stabilization

Parameters Table (At least 3 readings @ 5 min. intervals)

Time	<u>18:17</u>	<u>18:22</u>	<u>18:27</u>	<u>18:32</u>	<u>18:37</u>
pH	<u>7.13</u>	<u>6.93</u>	<u>6.81</u>	<u>6.81</u>	<u>6.83</u>
Celsius Temp.	<u>20.8</u>	<u>20.6</u>	<u>20.6</u>	<u>20.6</u>	<u>20.6</u>
Conductivity	<u>646</u>	<u>649.3</u>	<u>649.3</u>	<u>649.4</u>	<u>649.4</u>

Weather: Sunny, no clouds, slight breeze, high 70s - low 80s
digital
 ★ Hach titrator used for alkalinity

Photo Check List	
☒	spring head(s)
☐	spring habitat
☒	cross section for flow
☐	other: _____
☐	



Discharge Measurement Summary

Site name HeadOfSanSaba1
Site number 1
Operator(s) CB
File name HeadOfSanSaba1_20250324-142735.ft
Comment Pump in spring house is ON

Start time	3/24/2025 1:05 PM	Sensor type	Top Setting
End time	3/24/2025 2:23 PM	Handheld serial number	FT2H2124011
Start location latitude	30.828	Probe serial number	FT2P2123014
Start location longitude	-100.131	Probe firmware	1.30
Calculations engine	FlowTracker2	Handheld software	1.7

# Stations	Avg interval (s)	Total discharge (ft³/s)
33	40	0.7824

Total width (ft)	Total area (ft²)	Wetted Perimeter (ft)
11.900	5.2425	12.058

Mean SNR (dB)	Mean depth (ft)	Mean velocity (ft/s)
33	0.441	0.1492

Mean temp (°F)	Max depth (ft)	Max velocity (ft/s)
77.095	0.850	0.2227

Discharge Uncertainty		
Category	ISO	IVE
Accuracy	1.0%	1.0%
Depth	0.3%	3.8%
Velocity	0.2%	1.4%
Width	0.1%	0.1%
Method	1.4%	
# Stations	1.6%	
Overall	2.3%	4.2%

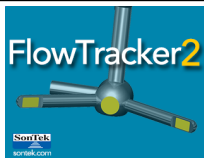
Discharge equation	Mid Section
Discharge uncertainty	IVE
Discharge reference	Rated

Data Collection Settings	
Salinity	0.000 PSS-78
Temperature	-
Sound speed	-
Mounting correction	0.000 %

Summary overview

No changes were made to this file
Quality control warnings

***PUMP IN SPRING HOUSE WAS ACTIVELY PUMPING
DURING THIS MEASUREMENT
*MEASUREMENT IS NOT REPRESENTATIVE OF BASE
FLOW CONDITONS**



Discharge Measurement Summary

Site name	HeadOfSanSaba1
Site number	1
Operator(s)	ED
File name	HeadOfSanSaba1_20250324-150845.ft
Comment	Pump in spring house is ON

Start time	3/24/2025 1:30 PM	Sensor type	Top Setting
End time	3/24/2025 3:05 PM	Handheld serial number	FT2H2432017
Start location latitude	30.828	Probe serial number	FT2P2432014
Start location longitude	-100.131	Probe firmware	1.30
Calculations engine	FlowTracker2	Handheld software	1.9

# Stations	Avg interval (s)	Total discharge (ft ³ /s)
31 [32]	40	0.7084 [0.6933]

Total width (ft)	Total area (ft ²)	Wetted Perimeter (ft)
11.900 [11.900]	5.3925 [5.3800]	12.058 [12.059]

Mean SNR (dB)	Mean depth (ft)	Mean velocity (ft/s)
32 [32]	0.453 [0.452]	0.1314 [0.1289]

Mean temp (°F)	Max depth (ft)	Max velocity (ft/s)
79.228 [79.165]	0.850 [0.850]	0.2098 [0.2098]

Discharge Uncertainty		
Category	ISO	IVE
Accuracy	1.0%	1.0%
Depth	0.3%	3.7%
Velocity	0.4%	2.8%
Width	0.1%	0.1%
Method	1.4%	
# Stations	1.7%	
Overall	2.4%	4.8%

Discharge equation	Mid Section
Discharge uncertainty	IVE
Discharge reference	Rated

Data Collection Settings	
Salinity	0.000 PSS-78
Temperature	-
Sound speed	-
Mounting correction	0.000 %

Summary overview

One measurement was removed
Quality control warnings

**The data in brackets [] are the original data before editing*

***PUMP IN SPRING HOUSE WAS ACTIVELY PUMPING
DURING THIS MEASUREMENT
*MEASUREMENT IS NOT REPRESENTATIVE OF BASE
FLOW CONDITONS**

Analytical Results

Client ID: TWDB	Date Collected: 03/24/2025 18:37	Matrix: Aqueous
Lab ID: Q2511975001	Date Received: 03/27/2025 08:40	Sample Type: SAMPLE
Sample ID: 5515609	Location:	
Project ID: TWDB CAN	Facility:	
	Sample Point:	

ALKALINITY (SM2320B, Alkalinity)

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qualifier
Phenolphthalein Alkalinity	0.00	mg/L	0.00	0.00		1	03/27/2025 19:21	VR	03/27/2025 19:21	VR	N
Hydroxide Alkalinity	0.00	mg/L	0.00	0.00		1	03/27/2025 19:21	VR	03/27/2025 19:21	VR	N
Bicarbonate Alkalinity	303	mg/L	0.00	0.00		1	03/27/2025 19:21	VR	03/27/2025 19:21	VR	N
Carbonate Alkalinity	0.00	mg/L	0.00	0.00		1	03/27/2025 19:21	VR	03/27/2025 19:21	VR	N
Total Alkalinity (CaCO ₃)	303	mg/L	20.0	20.0		1	03/27/2025 19:21	VR	03/27/2025 19:21	VR	

HEAVY METALS (245.1Hg)

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qualifier
Mercury Dissolved	<0.20	ug/L	0.20	0.070		1	04/14/2025 20:57	JLL	04/14/2025 20:57	JLL	N

INORGANICS (E200.7 Prep/E200.7 Metals, Trace Elements)

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qualifier
Boron Dissolved	56.1	ug/L	50.0	20.0		1	04/01/2025 12:41	ML	04/04/2025 13:39	ML	
Calcium Dissolved	98.5	mg/L	0.200	0.0700		1	04/01/2025 12:41	ML	04/04/2025 13:39	ML	
Strontium Dissolved	432	ug/L	10.0	4.00		1	04/01/2025 12:41	ML	04/04/2025 13:39	ML	
Iron Dissolved	<50.0	ug/L	50.0	20.0		1	04/01/2025 12:41	ML	04/04/2025 13:39	ML	
Magnesium Dissolved	22.2	mg/L	0.200	0.0700		1	04/01/2025 12:41	ML	04/04/2025 13:39	ML	
Potassium Dissolved	1.58	mg/L	0.200	0.0700		1	04/01/2025 12:41	ML	04/04/2025 13:39	ML	
Sodium Dissolved	9.39	mg/L	0.200	0.0700		1	04/01/2025 12:41	ML	04/04/2025 13:39	ML	

Analytical Results

Client ID: TWDB
Lab ID: Q2511975001
Sample ID: 5515609
Project ID: TWDB CAN

Date Collected: 03/24/2025 18:37
Date Received: 03/27/2025 08:40
Location:
Facility:
Sample Point:

Matrix: Aqueous
Sample Type: SAMPLE

INORGANICS (E200.8, ICP-MS Prep/E200.8, ICP-MS)

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qualifier
Aluminum Dissolved	<5.00	ug/L	5.00	1.50		1	04/01/2025 12:33	ML	04/03/2025 13:41	FO	
Antimony Dissolved	<1.00	ug/L	1.00	0.400		1	04/01/2025 12:33	ML	04/03/2025 13:41	FO	
Arsenic Dissolved	1.35	ug/L	1.00	0.700		1	04/01/2025 12:33	ML	04/03/2025 13:41	FO	
Barium Dissolved	122	ug/L	1.00	0.400		1	04/01/2025 12:33	ML	04/03/2025 13:41	FO	
Beryllium Dissolved	<1.00	ug/L	1.00	0.400		1	04/01/2025 12:33	ML	04/03/2025 13:41	FO	
Cadmium Dissolved	<1.00	ug/L	1.00	0.400		1	04/01/2025 12:33	ML	04/03/2025 13:41	FO	
Chromium Dissolved	1.84	ug/L	1.00	0.400		1	04/01/2025 12:33	ML	04/03/2025 13:41	FO	
Cobalt Dissolved	<1.00	ug/L	1.00	0.400		1	04/01/2025 12:33	ML	04/03/2025 13:41	FO	
Copper Dissolved	<1.00	ug/L	1.00	0.400		1	04/01/2025 12:33	ML	04/03/2025 13:41	FO	
Lithium Dissolved	6.04	ug/L	2.00	0.700		1	04/01/2025 12:33	ML	04/03/2025 13:41	FO	N
Lead Dissolved	<1.00	ug/L	1.00	0.400		1	04/01/2025 12:33	ML	04/03/2025 13:41	FO	
Manganese Dissolved	<1.00	ug/L	1.00	0.400		1	04/01/2025 12:33	ML	04/03/2025 13:41	FO	
Molybdenum Dissolved	<1.00	ug/L	1.00	0.400		1	04/01/2025 12:33	ML	04/03/2025 13:41	FO	
Selenium Dissolved	<5.00	ug/L	5.00	1.50		1	04/01/2025 12:33	ML	04/03/2025 13:41	FO	
Silver Dissolved	<1.00	ug/L	1.00	0.400		1	04/01/2025 12:33	ML	04/03/2025 13:41	FO	
Thallium Dissolved	<1.00	ug/L	1.00	0.400		1	04/01/2025 12:33	ML	04/03/2025 13:41	FO	
Uranium Dissolved	1.17	ug/L	1.00	0.400		1	04/01/2025 12:33	ML	04/03/2025 13:41	FO	N
Vanadium Dissolved	9.02	ug/L	1.00	0.400		1	04/01/2025 12:33	ML	04/03/2025 13:41	FO	
Zinc Dissolved	<5.00	ug/L	5.00	1.50		1	04/01/2025 12:33	ML	04/03/2025 13:41	FO	

INORGANICS (E300.0, Anions)

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qualifier
Chloride Dissolved	13.1	mg/L	1.00	0.400		1	03/27/2025 20:33	MAB	03/27/2025 20:33	MAB	
Bromide Dissolved	0.0909	mg/L	0.0200	0.00800		1	03/27/2025 20:33	MAB	03/27/2025 20:33	MAB	
Fluoride Dissolved	0.195	mg/L	0.0100	0.00400		1	03/27/2025 20:33	MAB	03/27/2025 20:33	MAB	
Sulfate Dissolved	8.70	mg/L	1.00	0.400		1	03/27/2025 20:33	MAB	03/27/2025 20:33	MAB	

INORGANICS (SM1030B Cation/Anion Balance)

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qualifier
Cation/Anion Balance	3.350	%				1	04/07/2025 12:58	CW	04/07/2025 12:58	CW	

NITRATE AND NITRITE (SM4500-NO3-H, Nitrate/Nitrite)

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qualifier
Nitrate/Nitrite as N Dissolved	1.61	mg/L	0.0200	0.00800		1	04/03/2025 12:45	VR	04/03/2025 12:45	VR	

Analytical Results

Client ID: TWDB	Date Collected: 03/24/2025 18:37	Matrix: Aqueous
Lab ID: Q2511975001	Date Received: 03/27/2025 08:40	Sample Type: SAMPLE
Sample ID: 5515609	Location:	
Project ID: TWDB CAN	Facility:	
	Sample Point:	

SILICA (SM4500-SiO₂-C, Silica)

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qualifier
Silica as SiO ₂ , Dissolved	15.7	mg/L	0.500	0.200		1	04/04/2025 14:47	VR	04/04/2025 14:47	VR	

TOTAL PHOSPHATE AS P (E365.4 / E351.2 Water Prep/E365.4 Phosphorus, Total)

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qualifier
Phosphorus, Dissolved (As P)	<0.0200	mg/L	0.0200	0.00800		1	04/01/2025 14:00	MAB	04/02/2025 12:40	VR	